



*"this performance . . . . is  
little short of marvellous"*

"Springroyd,"  
Sandal Road,  
BAILDON, Yorks.  
January 12th, 1927.

Lodge Plugs, Ltd.,  
Rugby.

Dear Sirs,

Enclosed herewith are two Lodge plugs,  
which I have pleasure in sending for your  
inspection.

The plug with the shorter central  
electrode has sparked continually in my  
"Rover 8" air-cooled car for 40,000 miles,  
the other plug has done approx. 36,000.

Needless to say, I am more than highly  
satisfied with this performance which I think  
is little short of marvellous, especially  
considering my engine is air-cooled.

I shall take a pleasure in recommending  
your plugs to all my motoring friends.

Yours faithfully,

(Sig.) A. R. SMITH.



**LODGE**

Standard Lodge C3  
(as illustrated)

5/-  
In sealed red  
metal box.

Lodge CH3  
3" reach recommended for  
"Rover 8"

5/-  
In sealed bronze box.

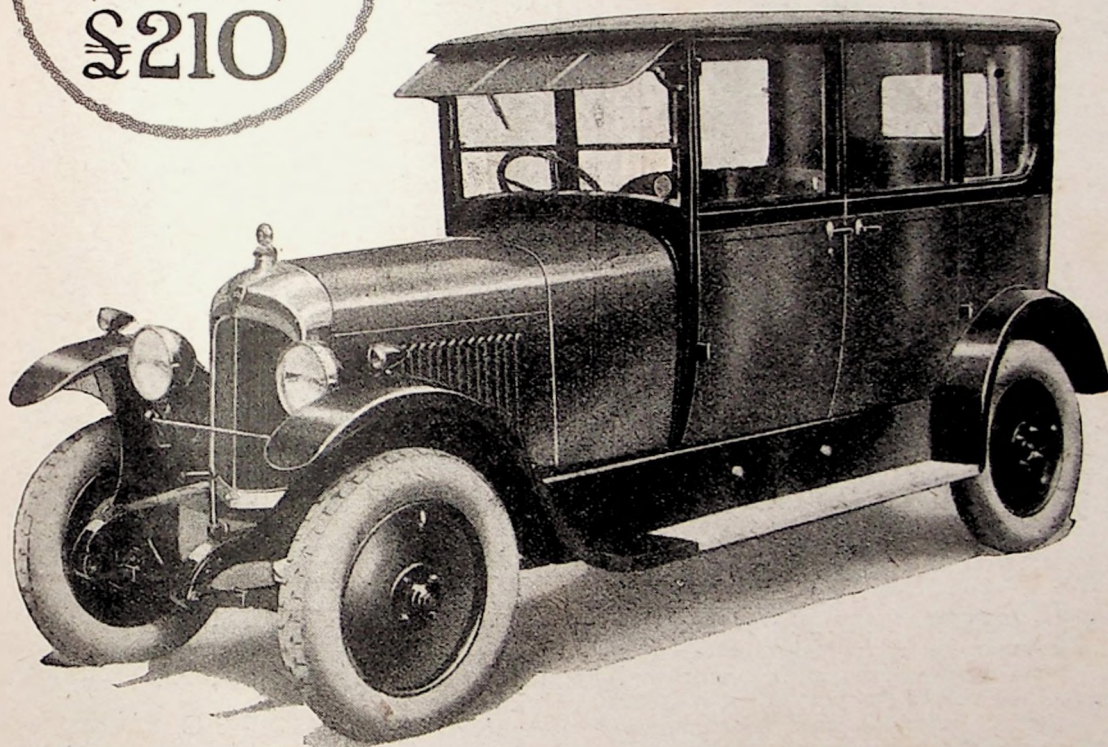
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LODGE PLUGS LTD.  
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# CITROËN

11-4 h.p.  
ALL STEEL SALOON  
**£190**  
WITH FRONT WHEEL BRAKES  
(as illustrated)  
**£210**

*4 Door Fully-Appointed Saloons*



*Supreme  
Closed Car  
Value!*

THE bodies of these Saloon models have generous proportions, deep roomy seats, ample leg room for four full-sized persons, and luxurious upholstery. Fitted throughout in excellent taste and with exceptionally complete equipment they have all the appointments and refinements which the owner-driver requires.

Immediate Delivery  
from  
BRITISH WORKS,  
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CITROËN BUILDING, BROOK GREEN,  
HAMMERSMITH, LONDON, W.6.

West End Showrooms:  
Devonshire House, Piccadilly, W.1.

*British all through*

Introducing  
**ROBBIALISER**  
 THE NEW CAR POLISH

Now comes ROBBIALISER the perfect Car Polish, made in London by the Makers of Robbialac Enamel. Soon every Motorist in the country will be using ROBBIALISER, for here at last is a Car Polish that actually imparts a richer gloss to the surface itself—a gloss that will not smear when touched or rubbed. And all the time ROBBIALISER preserves the finish and makes mud and dirt easier to remove. It is so fine a polish that your wife

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ROBBIALISER  
 CAR POLISH

4/9

Polishing Cloth  
 Free with every  
 tin.

Trade Supplies through usual Factors



Made by the Makers of Robbialac Enamel

Jenson & Nicholson Ltd., Robbialac Works, Warton Road, Stratford, London, E.15

ROBBIALISER  
 CAR CLEANER

4/9

Cleaning Cloth  
 Free with every  
 tin.

CHURCH WHARF,  
CHISWICK MALL,  
LONDON, W.4.  
CHISWICK 3531/2.

S.M.S.,  
LTD.

Sole Concessionaires  
for the U.K. and  
British Dominions.

FEBRUARY 11, 1927.

THE LIGHT CAR AND CYCLECAR

HAT

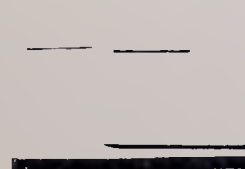


Four-Seater



mann Saloon

£275



£225

SPECIAL  
SHOW OF  
ALL MODELS AT

SOLE LONDON DISTRIBUTORS:

GORDON WATNEY & Co., Ltd., 31, BROOK ST

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### How to Minimize Skid Dangers.

The Causes of Side-slips and Skidding Reviewed, with Hints on How to Avoid or Correct them.

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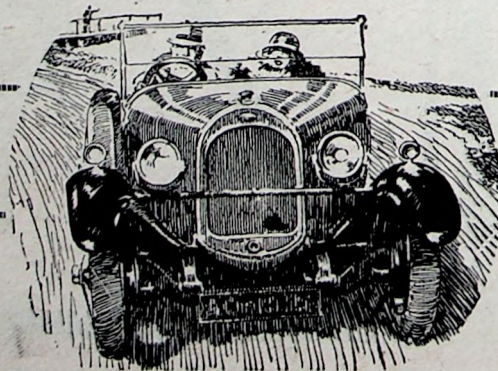
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**NEXT WEEK**—Special Second-hand Car Number. SELLING A USED CAR. BUYING A SECOND-HAND CAR. HOW LONG DOES A CAR LAST? PREPARING A USED CAR FOR SALE. WHY NOT FIT A FIRE EXTINGUISHER? And all the Week's News.



"The Motor"  
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**FOUR WHEEL**

**£155**

**BRAKES**

**N**EVER before in motoring history has a name compatible with that of Renault been associated with a car selling at £155. It is the important innovation of 1927. It makes economical motoring absolutely safe and reliable—and far more enjoyable, for there is plenty of comfortable leg room in the Renault 9/15. These sturdy cars never give any trouble. They run 40 miles to the gallon and their speed is over 40 m.p.h. See them at our Showrooms and order now to secure immediate delivery.

Four door Standard Open Tourer **£155**  
 Standard Four door Saloon ...  
 De Luxe Four door Tourer ...  
 De Luxe Four door Saloons from

9/15 Models  
 now ready for  
**IMMEDIATE  
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*Built to last a lifetime*

RENAULT LTD., Head Office & Works, 14, SEAGRAVE ROAD, WEST BROMPTON, S.W.6

Showrooms: 21, Pall Mall, S.W.1 (Phone: Regent 0974).

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with the  
first push  
on the  
starter  
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Better Spark—Instant Start

**REMY**

(Delco-Remy-Hyatt)  
**COIL IGNITION  
MAGNETO REPLACEMENT UNIT**

Suitable for many Light Cars.  
Prices from  
£3-15-0 to £5-10-0 } Postage 1/6  
Wiring and Switch extra.

Write for particulars and quotations for YOUR car!

**REMY  
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Model 25, 75/- Post 1/-

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Model 15, 30/- Post 9d.

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When ordering  
the Electric Horns  
specify 6 or 12 volt.

**HAND-OPERATED**  
Model 3V,  
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Post 9d.

Free  
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on request

Fill in, cut out  
**POST YOUR ORDER**

To Delco-Remy & Hyatt Ltd., Dept. L.C.6, 111, Grosvenor Road, S.W.1.  
Attached please find P.O. or cheque for..... (or enquiry regarding.....)

- (Cross out words not required.)
- ☐ Delco-Remy Coil Ignition Magneto Replacement Unit suitable for many light cars.—“Better Spark—Instant Start.” From £3-15-0 to £5-10 Postage 1/6. Wiring and Switch, 12/6. Full particulars on request.
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## CLUB Black Enamel

Dries in twenty minutes, and is petrol, grease and oil proof.

Small Size - **7  $\frac{1}{2}$  d.**

Large Size - **1/3**

Of all Ironmongers, Stores, Garages and Cycle Dealers.

Sent post free unobtainable from our local dealer.

THE  
**CLUB  
BLACK  
ENAMEL**  
SPECIAL HARD DRYING  
MOST BRILLIANT & DURABLE  
DRIES

Sole Manufacturers

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## “WELLINGTON” LIQUID METAL POLISH

**A  
POLISH  
THAT  
with a  
minimum  
of labour  
GIVES A  
REAL  
BURNISH  
THAT  
LASTS.**

**CLEANS  
and  
POLISHES  
ALL  
METALS  
(including  
Silver)  
and  
GLASS  
(Windows,  
Mirrors),  
Motor-Screens  
(Glass or  
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**TRY IT  
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PROVE IT.**

In TINS, 3d., 4  $\frac{1}{2}$  d., 7  $\frac{1}{2}$  d. & 1/3; also in  $\frac{1}{2}$ , 1 & 1 Gallon Cans.

**JOHN OAKLEY & SONS, LTD.,**  
WELLINGTON MILLS, LONDON, S.E.1.

'How lovely!'

How lovely to have a car, which, to quote an opinion, has the appetite of a canary. (The Jowett has also the "pull of an elephant.") A car which is so docile, that it will, so to speak, eat out of your hand. A graceful car. A car which covers distances with the smooth and perfect sense of flying. . . Effortless ease. There are no bad roads to a bird, and a Jowett makes bad roads into good ones. The car backed by 21 years' experience. The cheapest to buy, the cheapest to run.

Short two, £139. Long two, £150. Light four, £145.  
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May we send our interesting literature?

You may take delivery for £35, which also includes insurance and registration.

Dunlop Balloons and Stewart Speedometer standard.

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# The SILENT that means so

The wheels of a car are like the strong right hand of a healthy man—they are "taken for granted." It is only in times of emergency that any test can be made; only in a crisis can the strong hand—the sturdy wheel—be appreciated.

Sankey Pressed Steel Wheels have, since 1908, carried millions of people safely and silently through every phase of joy and danger. The catastrophes these unbreakable wheels have averted cannot be catalogued—but they can be borne in mind. When you see the word "Sankey," there also is the word "Safety."

# Sankey WHEELS

Joseph Sankey & Sons Ltd., Wellington, Shropshire



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EWER ST., SOUTHWARK, LONDON, S.E.1

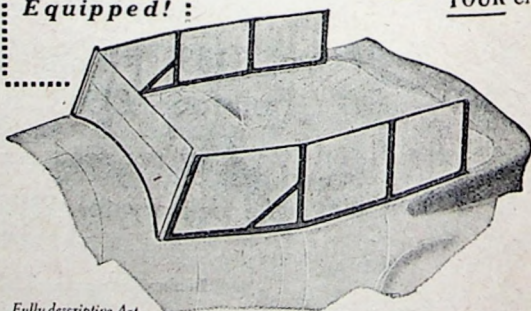
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# Starling

More than 20  
Cars in the  
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Equipped!

## ALL-WEATHER EQUIPMENT

WILL FIT  
YOUR CAR



Fully descriptive Art  
Literature post free.

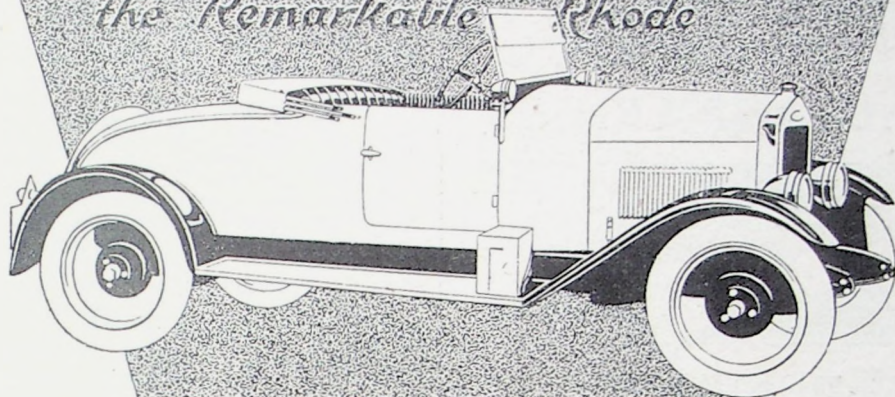
The Starling Co., Ltd.

Empire Works,  
Highgate Road,  
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Narrow all-metal frames, stoved ebony black, give refined appearance and maximum light and vision. In every respect "Starling" Equipment offers something different; something superior. Sidescreens 45/- per pair.

**A SALOON OR OPEN TOURING CAR AT WILL!**

*Exclusive Features of  
the Remarkable Rhode*



## ALL GEAR ENGINE

No fans, belts or pulleys! The all-gear engine of this famous model Rhode 10-30 is the last word in specialised car construction. In addition it embodies many new and exclusive features which have earned for this new model the character as the most modern as well as the most economical car. Fully compensating four-wheel brakes, which can automatically be adjusted from the driver's seat, while travelling if necessary, are only one of the many innovations and improvements in this new model. You really ought to inspect the Rhode before you decide—and if you do, there's no question as to your decision. 10.8 h.p. B.H.P. 30, 5 to 55 on top. 40 m.p.g. Tax £11.

CELLULOSE FINISH

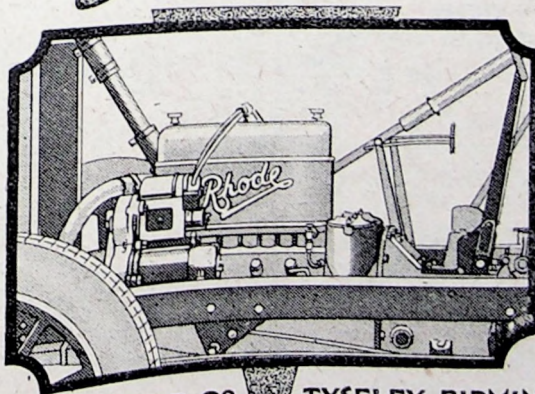
*Two-seater  
with large  
double dicky*

**£198**

*Four-Five  
seater model.*

*Your Agent will arrange a demonstration for you, or  
we shall be pleased to forward all details on request.*

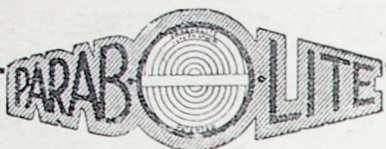
**Rhode**  
**10-30**



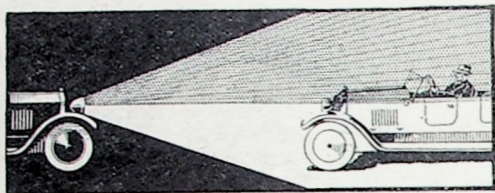
THE RHODE MOTOR CO

TYSELEY BIRMINGHAM.

TO THE READER.—By mentioning "The Light Car and Cyclecar" when replying to advertisements, the progress of the small car movement will be assisted.



## HEADLAMP LENSES



**INCREASE ROAD-SURFACE ILLUMINATION  
ELIMINATE DANGEROUS DAZZLE.**

In addition to the above, Parabolite Lenses fulfil in every way the requirements of the proposed new regulation of the Ministry of Transport. Satisfaction is guaranteed. You merely replace existing glasses . . . . . Prices from **7/6** per pair.

Write for our List 110 L. and copy of R.A.C. Certificate No. 600.



## RADIATOR MUFFS ARE THE BEST

In addition to being well made and fitting perfectly, the loose front is made in two sections, giving a remarkably wide range of temperature control. Prices for any car from **18/-**



THE  
GAITER WITH

THE  
WICK TUBE.

**—one hand —one push  
lubricates the entire spring.**

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| CITROEN (11'4) 1927 ..     | .. | .. | .. | £4: 10: 0 |
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Prices for any car on application.

**COVER YOUR  
CAR WITH A  
FABRAM  
DUST SHEET**

**COVER YOUR-  
SELF WITH A  
RAMSO  
COVER COAT**

Write for Free Illustrated Lists to Dept. L.  
**RAMSDENS (HALIFAX) LIMITED**  
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& STATION WORKS, HALIFAX, ENGLAND.

# A NIPPY AUSTIN 7

A BODELO BRAKE ATTACHMENT fitted to your Austin 7 will make driving in traffic much easier. You will be able to pull up or get away much quicker and it will leave you a free hand for signalling.

The BODELO BRAKE ATTACHMENT enables all four brakes to be worked by the foot pedal only, but at the same time does not interfere with the operating of the front brakes by means of the hand lever.

## 30/-

The BODELO ATTACHMENT can be fitted in a few minutes.

Let us send you our illustrated leaflet giving full instructions.

**LLOYD & DEELEY,**  
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BIRMINGHAM.

Wholesale Stockists:  
BROWN BROTHERS,  
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## LOOSE COVERS for SEATS and UPHOLSTERY

Clean, beautiful, washable, fadeless, and 20 Patterns to choose from.

|                                                    | A Quality.<br>£ s. d. | B Quality.<br>£ s. d. | C Quality.<br>£ s. d. |
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| Two-seater or Coupe and Austin 7                   | 4-15-0                | 4-0-0                 | 3-0-0                 |
| Two-door Tourer or Saloon ..                       | 6-15-0                | 6-0-0                 | 4-0-0                 |
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Where door and side-pieces are not required deduct 15 per cent.

Write for full Price List and Book of Patterns.

**OYLER & Co.,** The Car Tailors,  
35, New Cavendish Street, W.1.



# GAMAGES

## CLOTHING VALUES FOR THE CAR & GARAGE

Motorists shopping personally will find our Motor Clothing Salon situated floor.

If unable to call, order with complete confidence by post, or phone Holborn 2700.

### The "RIPLEY" Motor Driving Coat.

A practical garment for all weathers, made from a specially manufactured Drab Gabardine, lined with a proofed woollen check and interlined with super quality oiled cambric, which makes the coat waterproof and windproof, also fitted with detachable fleece lining can easily be removed when the weather turns suddenly warm. A perfect fitting smart model.

**79/6**

Stocked ready to wear in all usual sizes.

### Tan Leather WAISTCOATS.

Strong and practical garments for all-weather driving, warm and comfortable. Absolutely windproof, made from soft and pliable skins. These are guaranteed all-leather, including back and sleeves. No motorist should be without one.

**30/-**

Price, Post Free.  
When ordering by post, kindly send size round chest over waistcoat.

### The "GARAGE" Cleaning Coats.

Made in extra strong GOVERNMENT KHAKI DRILL, easy fitting, full length button cuff, three large pockets, detachable buttons. Especially made for hard wear and frequent washing.

All sizes 36 to 46 in. chest.

**12/6** each  
Post Free.

Two coats for **24/-**

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### The "GARAGE" Cleaning Overalls

British made, fully guaranteed. Blue Dungaree Cloth, very strong and durable, made to stand hard wear and frequent washing. All seams double stitched, two front pockets, hip pocket.

the Suit.  
Post 6d.

Two suits for **15/6**

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### Superior MOTORING RUGS.

The Ideal Rug for Open or Closed Car Driving. Bedford Cord. SHOWERPROOF, LINED CAMEL FLEECE. Size 60 x 48 in. Price **63/-**

Also in Navy Box Cloth.

Made in Superior Quality

**75/-**

These Rugs are a Real Boon to Motorists.

### LEATHER MOTOR COATS for the All-weather Car.

Light in weight, warm and windproof, made from selected semi-Chrome skins and lined throughout with a woollen fleece. The latest DOUBLE-BREASTED, with belt all round and elastic windcuffs on sleeve. 44 in. long.

**84/-**

Also made 36 in. long **77/6**

Ready to wear, in all usual stock sizes

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A very warm and cosy Helmet suitable for ladies or gentlemen. Made from soft pliable Tan Leathers with Fur Peak and Neck. Each

**12/6**

Post Free.

Send your order per return if post

### Tan Leather

Motoring Helmets for Ladies or Men. Ear guards to open or fold, buckle and strap under chin. Below manufacturer's price.

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Post Paid. Each The Leather alone is worth the money.

**A. W. GAMAGE, LTD., HOLBORN, LONDON, E.C.1**  
THESE VALUES ARE ALSO OBTAINABLE AT OUR WELL-KNOWN CITY HOUSE, 107, CHEAPSIDE, E.C.2

WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.

All

# This luxuriously equipped and expensively finished SINGER 4-Seater at **£220** **YOURS** for £50 down

THIS puts real luxury Motoring at your disposal immediately.

Roomy, Pneumatic Upholstered Real Leather Covered Seats, Balloon Tyres, Semi-Elliptic Springs back and front, Shock Absorbers, Automatic Screen Wiper, 12-volt Lighting Equipment, and every other luxury you need.

As completely protected from weather as a Saloon. Fast, quiet, and effortless on hills.

£50 down and you can drive away this Value-For-Money Car.

Prices arranged for twelve months or eighteen months at your convenience.

May we send you further particulars?

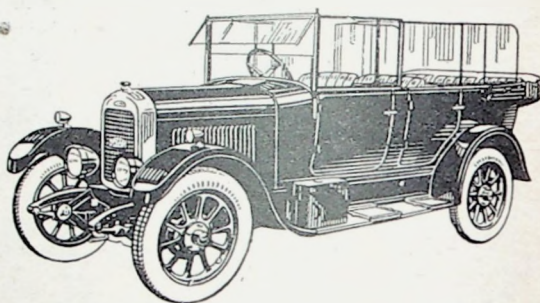
## SOLE LONDON DISTRIBUTORS:

COOK & PALMER, Ltd.,

202, Great Portland Street, W.1.

'Phone - - - - Langham 3314.

New Model  
2-Seater with Dickey  
**£220**  
Luxurious Coachbuilt  
Saloon **£260**



"SENIOR" ALL-WEATHER, £220

Woodieright.



A Stepney Retread

## IT PAYS TO RETREAD

**D**ON'T discard your old tyre.

If the casing is sound, let us retread it for you.

We retread any make of tyre in a Bevel Grip Non-Skid tread and make a good job of it, too.

**REMEMBER!** We return retreaded tyres  
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| 700 x 80.. 22/6  | 30 x 3 .. 22/6  | 32 x 4½ .. 55/-  | 26 x 3'50.. 22/6 |
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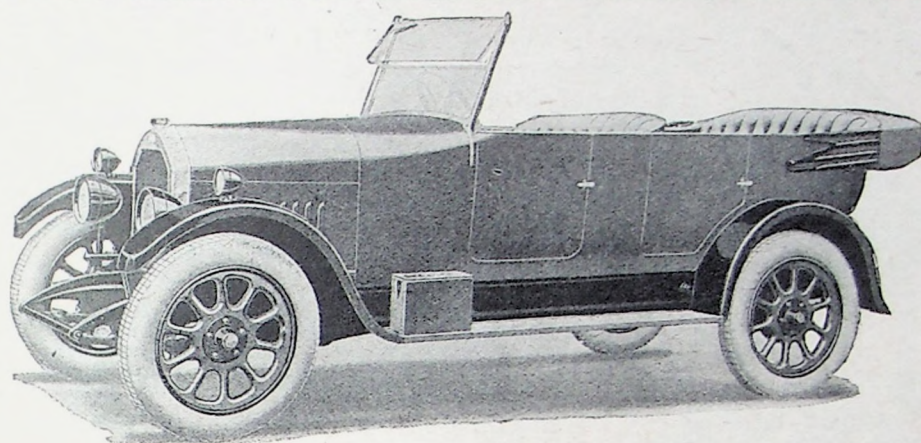
All tyres for retreading and repairs should be sent Carriage Paid to:—

**STEPNEY TYRES LTD.,**

STEPNEY RUBBER  
WORKS,

**WALTHAMSTOW, LONDON. E.17**

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## High performance, low running cost

ONLY a high degree of running efficiency could earn for a car the widespread popularity enjoyed by the Humber 9/20 H.P. models.

These serviceable cars are in all respects the constructional equals of the higher-powered models. This and the smart lines and exceptionally careful finish of the bodywork make them extraordinary value and justly places them in the front rank of cars of their class.

9/20 H.P. 2/3-Seater with  
Dickey Seat.

9/20 H.P. 4-Seater 3-Door  
Tourer.

9/20 H.P. 4-Seater 3-Door  
Saloon.

9/20 H.P. 2/3 and  
4-Seaters .. £260

Saloon .. £315

Dunlop Tyres to all models.

Send for  
fully illus-  
trated Cata-  
logue and name  
of nearest  
Humber agent.

# Humber

HUMBER LIMITED, COVENTRY.

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West End Showrooms: 94, New Bond Street, W.1.

Export Branch Office: 32, Holborn Viaduct,  
E.C.1.

Repair Works and Service Depot: Canterbury  
Road, Kilburn, N.W.6.

## THE WISE-MAN OF THE ROAD

A Set of STOTT ANTIBOUNCE CLIPS fitted to the springs of your car, no matter what the make, will effectively eliminate all swaying and bouncing, due to bad roads, cornering, etc. They fit and act direct on to the springs themselves.

A Singer owner writes:—

"I have covered over 1,500 miles since fitting the STOTT ANTIBOUNCE CLIPS and I am more than delighted with them. Apart from the shock-absorbing and anti-bounce properties which are beyond question, the most outstanding feature is the general increase in speed. They seem to damp out all vibration, and the sensation is delightful. I can thoroughly recommend them to all car owners."

Fit a Set of STOTT ANTIBOUNCE CLIPS and drive in comfort.

PRICES from 11/6 per pair.

RICHARD BERRY & SON,

Department "A.C.,"

MAFeking ROAD, SMETHWICK.

"Phone: Smethwick 631.

"Grams: 'Sp'ings, Smethwick."

### What you Get for what you Spend.

Search where you will, you cannot get better value.



#### The OWNER-DRIVERS' Garage

Built of Thornber's Loojoint Weatherboards—the only suitable boards for outdoors. All sections complete, ready for easy erection. No loose timber. All fittings sent. Gliding out-of-way Doors. 2 windows. Insured. Built to last. 2 sizes.  
Size: 16' x 9' x 7' x 9½' £15 Carr. fwd.  
Floor £4 extra. Carr. fwd.  
Size: 19' x 9' x 7' x 9½' .. £18 Carr. fwd.

#### The SAFETY FIRST

Asbestos Fireproof Garage. All frame sections complete ready for Asbestos Sheets which are supplied. Gliding out-of-way Doors. Two windows. All fittings supplied. Insured. Built in 3 sizes.

14' 5" x 8' 1" x 7' 12 kns  
x 9½' Carr. fwd.  
Floor £3 10 extra Carr. fwd.  
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x 9½' Carr. fwd.  
Floor £4 extra. Carr. fwd.  
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FREE!

12 Guineas

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CARR. PAID.

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For EVERYTHING in WOOD

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9, MYTHOLMROYD, YORKS.

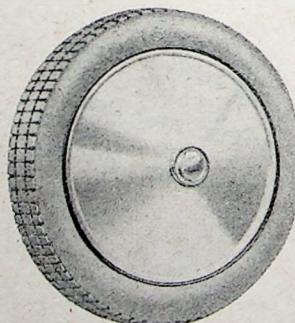
London Office: 47, Victoria Street, S.W.

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The illustration below shows the wire wheel of an Austin Seven fitted with Ace Super Discs. They give a smart and distinctive appearance to the car and save much valuable time in spoke cleaning. The discs are made in seamless aluminium with locking ring attachment for the outer disc. Fitting is a simple matter, a screwdriver being the only tool necessary.

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Ace Super Discs can be supplied in suitable sizes for all types of wire and artillery wheels, also for American wood spoked wheels with demountable rims.



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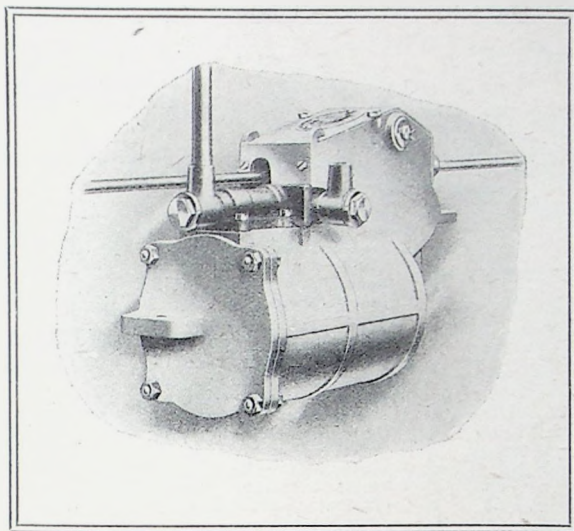
"Phone: 4123.

"Grams:

"Discs, Coventry."

THE WORLD'S BEST DISCS  
FOR ALL WIRE & ARTILLERY WHEELS.

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## Danger-proof Braking

The Dewandre Vacuum Servo is a highly efficient contributor to safety on the road.

It is an added insurance to your car.

Simple and reliable, it requires no irksome attention or adjustments.

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**DEWANDRE**  
VACUUM SERVO SYSTEM

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Telegrams . . . . . "ABBEY, LINCOLN."  
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***Clayton***

MENTION of "The Light Car and Cyclecar" when corresponding with advertisers assists the cause of economical motoring.

**Motor** says:

**KARVALLY**  
Regd

gives remarkably  
good results.



"—was also tried on the bonnet of a Morris-Oxford car which was very spotted and scratched.

After about 15 minutes' work the bonnet looked almost as if it had been re-varnished. It may seem difficult to understand how this preparation can remove scratches, and the writer cannot advance any theory as to why it does, but facts are facts, and the scratches have certainly disappeared."

(Excerpt from article appearing in "The Motor," Jan. 18th, 1927.)

Karvally is obtainable from all leading Motor Agents or (wholesale only) Imperial Motor Industries, 11, Denmark Street, London, W.C.2

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removes stains, spots, etc. Gives a Brilliant Lustre on all smooth surfaces. Cleans Celluloid, Brasses, Nickel-Plate, Aluminium, Black Enamel, etc. Essential for Cellulose finish and all paintwork.

*"Works Miracles on Furniture."*

Standard Large Tin

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DECIDE ON AN

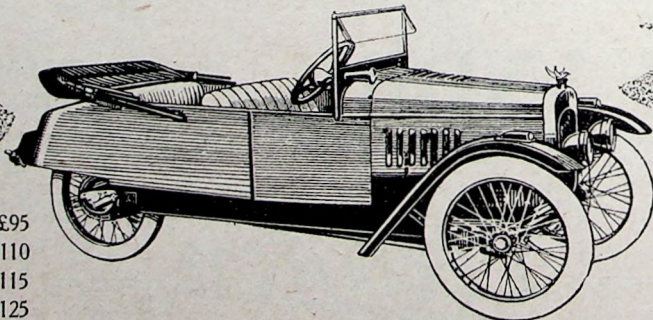
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Three-wheeler  
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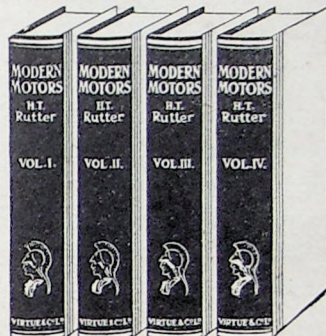
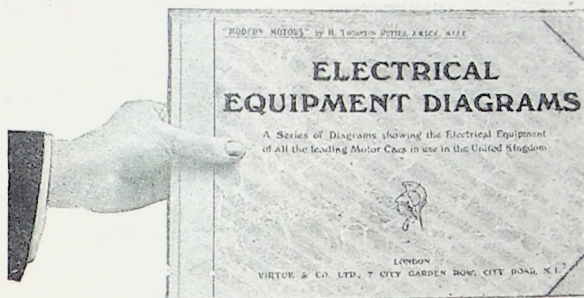
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Please send me, free of charge, descriptive booklet on "MODERN MOTORS," by H. Thornton Rutter, with all particulars of your offer to send the complete work for first payment of 4/- only, the balance to be paid by a few small monthly payments; also quote cash price.

Name ..... Send this form in unsealed envelope, stamped 4d., or write a postcard.

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**"Filtrate"**  
REGISTERED

FOR THE  
**AUSTIN SEVEN**

**"A British Oil for a British Car."**

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*The best market for*

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WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.



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THE NO-TROUBLE CARBURETTOR

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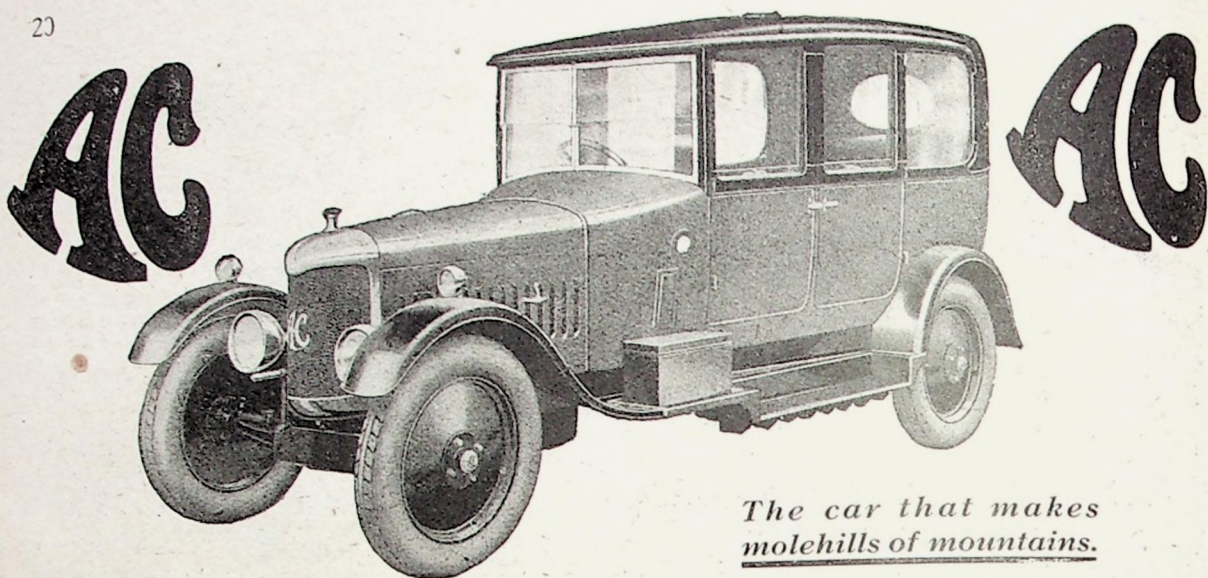
223 - 231, MARYLEBONE ROAD, LONDON, N.W.1.  
Telephones—Paddington 8621, 8622, 8623, 8624, 8625, and 8626. Telegrams—"Solexcarb, London."

*'fit Solex—and note the difference'*

READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.

Goodall Ad.

B3



## ACCESSIBILITY

The A-C Car is essentially an owner driver's car, and the attention required has been reduced to a minimum. There are only three greasers on the car which need attention, as compared with an average of 20 to 30 on other cars. Only two points require filling with oil,—the engine, and the back axle; the A-C system of gearbox and axle lubrication being such that oil is forced to all parts from the one central filler on the back axle.

The brake adjustment is the most accessible that can be conceived, four nickel-plated wing nuts above the running board being all that is required to keep the brakes in perfect adjustment.

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The A-C with its ease of control, comfort and reliability, makes an ideal ladies' car.

We can supply  
perfect used cars,  
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Dunlop Cord Tyres  
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(Opposite Marlborough House)

4-cyl. 12-24 and 12-40 h.p. from £285 *f*



**MECHANICAL RENOVATIONS.** — In order to enjoy a trouble-free season owners should make sure that the mechanical details of their cars are in good order. Work which cannot be done at home should be entrusted to a good garage or to the maker's service station.

## NOTES, NEWS & GOSSIP *of the* WEEK

### Safer Night Driving.

The diagrammatic key signs which denote the character of Ministry of Transport warning notices are, in some parts of the country, being picked out on the reflex principle. They show up very plainly in the beams of headlamps.

### Dates that Clash.

The date fixed for both the B.A.R.C. opening meeting and the Essex Motor Club's One-day trial is March 19th. We learn from the latter club that alternative dates are open to objection and that the E.M.C.'s trial will take place on the Saturday arranged. This year a restricted permit has been obtained, a new course in Essex has been mapped out and a good entry is anticipated. The entry fee will probably be 12s. 6d.

### This Week.

Our main theme in this issue is renovation, and we have endeavoured to cover every aspect of direct interest to owners who have facilities for repainting, overhauling and so on. Further to the article "Easier Starting From Cold," which appeared in our issue dated November 19th, we include some additional information on a subject which is of topical interest.

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### LIGHTING-UP TIMES (Rear Lamps) for Saturday, February 12th.

|                    |                    |
|--------------------|--------------------|
| London ... 5.35    | Edinburgh 5.35     |
| Newcastle ... 5.31 | Liverpool ... 5.43 |
| Birmingham 5.39    | Bristol ... 5.45   |

Moon—Full, February 16th.

### Motoring for the Beginner.

The third instalment of "Motoring for the Beginner," and the concluding article "Problems of High-speed Carburation" are unavoidably held over until next week.

### Chromium Plating.

Owing to certain technical difficulties in connection with the process the use of chromium instead of nickel for plating motorcar parts has not yet been very extensively adopted. As chromium is an exceedingly hard metal, with a high resistance to oxidation or tarnishing its use in place of nickel on motorcars would be welcome to most owners who clean their own cars.

### Next Week.

Do racing drivers suffer from nerves? This is the very human question which will be discussed in next week's issue. The writer is a keen psychologist and his analysis of the hopes and, perchance, fears which assail men who handle the leviathans of track, sands and road will make engrossing reading. An article which reveals the detailed operations involved in making road springs will be another prominent feature of next week's issue.

### London Street Widening.

It is announced that a scheme to widen Kensington High Street to 80 ft. or 85 ft., at a cost of £451,550, has been adopted by the London County Council.

### Cyclists, Please Note!

A by-law making it an offence for a cyclist to hold on to any moving vehicle has recently been adopted in Birmingham. This dangerous practice is already an offence in most districts.

### Wonderful!

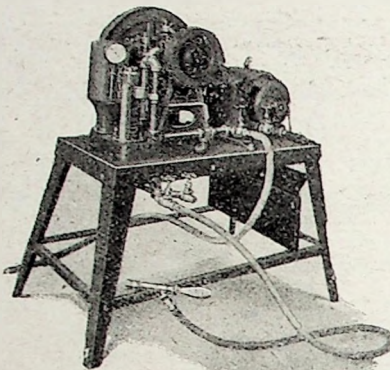
Summoned at Tower Bridge Police Court recently, a motorist who gave an address at Sutton stated that he had never been to a police court before; at which the magistrate remarked: "What! You live at Sutton and have never been in court for a motoring offence? Wonderful!"

### Automatic Dipping Headlamps.

A light-operated control for dipping headlamps forms the subject of a recent patent. The device consists, briefly, of a silenium cell mounted in front of the car and connected to the dipping mechanism through the medium of a relay. Light from the headlamps of an approaching car falls on the silenium cell causing it to operate the relay which, in turn, brings the accumulator into a circuit containing solenoids which actuate the dipping mechanism. An addition to the device consists of a glare shield, which swings up in front of the driver's eyes when the headlamps of the approaching car are not dipped.

### Back to the Roads.

A motorbus service has recently been inaugurated between Glasgow and Perth, the length of the route followed being no less than 67 miles; and so we go back to the roads.



Designed to deliver a high-pressure jet of water or a mist, Hardie car washing pumps are being installed in public garages. The machine is being handled by Brown Bros., Ltd.

### To Aero-Morgan Owners.

Police operating silence traps appear to pull up every Aero-Morgan "on suspicion." Our readers are advised to fit fishtails or any other signs of good faith which occur to them.

### Six-wheeled Buses.

A feature of the Passenger Vehicle Number of *The Commercial Motor* is the numerous six-wheelers which are described and illustrated.

### An Ingenious Rear Light.

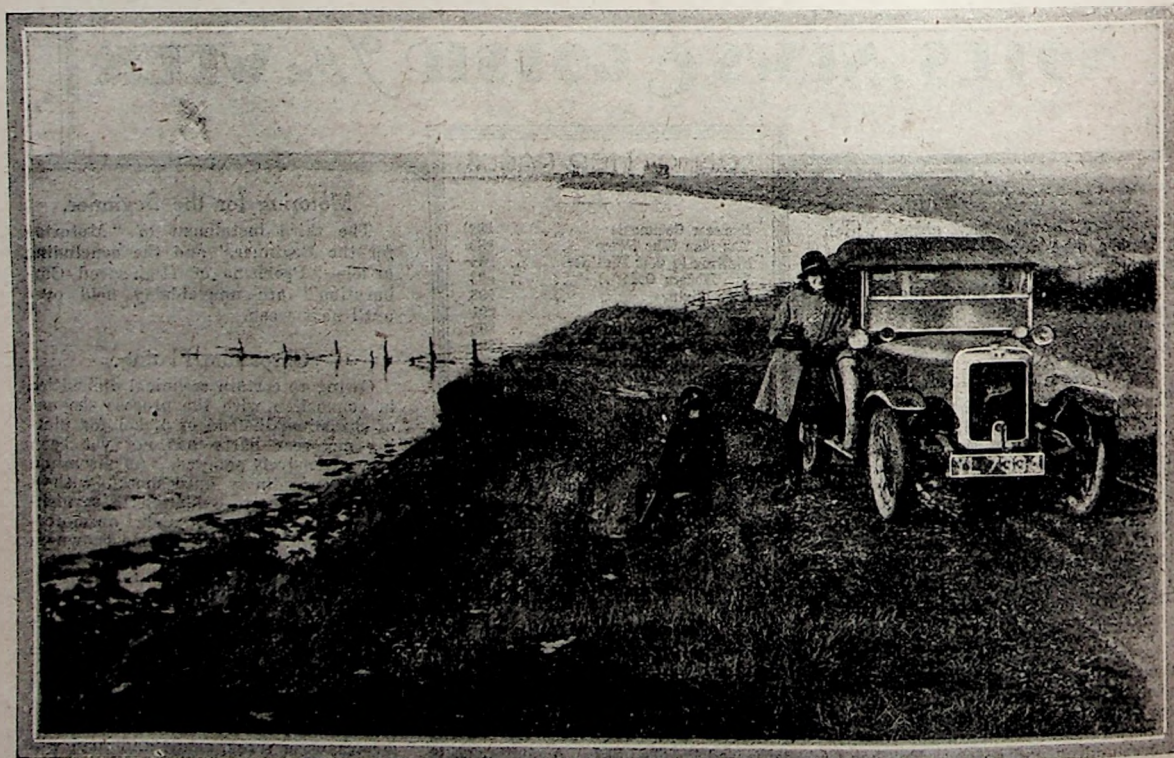
A rear reflector made on a novel principle and recommended for cycles is being marketed by Bluemels. Known as "Raylight," it is constructed on the principle of an electric headlamp. Two lenses and a concave mirror are employed and it is claimed to produce the steady glowing effect of a miniature lamp when acted upon by the rays of car headlamps.

### Insurance Profits.

In the course of his speech at the annual general meeting of the Scottish Automobile and General Insurance Co., Ltd., at which a final dividend at the rate of 15 per cent. per annum was agreed upon, the chairman said, "... it is undoubted that the increasing ratio of new drivers is increasing road risks and forms a real menace to insurance companies."

### Help Wanted.

*Sunbac News*, the official organ of the Sutton Coldfield and North Birmingham Auto Club, issues an appeal to all who would care to spend a day in the glorious Cotswold country to send their names along to the secretary (Mr. J. D. Woodhouse, 10, Warwick Chambers, Corporation Street, Birmingham), who would appreciate their services as observers in the Culmore Cup trial.



### AN ESSEX BEAUTY SPOT.

From Beacon Hill, St. Osyth, looking up the River Colne, which flows down from Colchester, one can see the Blackwater and Crouch rivers, whilst Brightlingsea Creek lies just beyond the Martello Tower in the middle distance. The well-known Colchester "natives" are dredged from the bed of the river near here.

FEBRUARY 11, 1927.

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### Air or Watercooled?

The manufacturers of Napier aero engines point out that at the present moment there are 51 world's records for aeroplanes and seaplanes. Of these 48 are held by watercooled engines and three by aircooled.

### A.A. and Flooded Roads.

The recent floods which, in some places, covered the roads to a depth of 4 ft., caused considerable inconvenience to motorists. A.A. road patrols did everything possible to assist motorists driving in flooded districts. In many cases lamps were used after dark to warn road users of the danger areas.

### Road Widening at Harrow.

A road improvement of considerable interest to residents in north-west London is to be started shortly, as the Harrow-on-the-Hill Council have just placed a £20,000 contract with a Rochdale concern for the reconstruction and widening of Northolt Road. The work will be carried out with a 6-in. reinforced concrete foundation.

### Adding Insult.

Within twenty miles of Leeds there is a disused railway cutting some 2½ miles long. This in itself must be sad news for railway enthusiasts, but, to add insult to injury, plans are now afoot for concreting the surface and turning the cutting into a motor speedway! The embankments on each side are to be terraced to form natural grand-stands. This scheme and the suggestion that non-paying sections of our railways should be converted into roads will surely make George Stephenson turn in his grave!

### French Visa Decision.

The Office National du Tourisme states that the French Government will not re-establish the visa for British travellers in France.

### On Land and Sea.

A high-speed motor boat which is being built in France is to be equipped with three eight-cylinder in line Bugatti engines.



"... AT THE  
CROSS ROADS."

This sign, erected on the Portsmouth-Rowland's Castle road, is not easily overlooked by passing motorists who, presumably, take steps to avoid the grim alternative which is suggested.

### The Fastest Ever.

Congratulations to Captain Malcolm Campbell who attended nearly 175 m.p.h. in "Bluebird" at Pendine on Friday last, thus lowering the previous world's high-speed record held by Mr. J. G. Parry-Thomas.

### Tunis to Tripoli Race.

In connection with the Samples Fair at Tripoli, at which there will be 2,000 exhibitors, a motorcar race from Tunis to Tripoli will be held on March 2nd, and on March 6th there will be a tour in which a number of well-known manufacturers and drivers will take part.

### Swedish Tax Proposals.

Suggestions made by members of the Riksdag to encourage the building of motorcars in Sweden include, says Reuter, an increase in customs duties on imported cars, a lower inland tax on cars built in Sweden and a reduction in customs duties on imported motorcar parts to be assembled in the country.

### "Safety First" Competition.

The "Freedom from Accidents" competition inaugurated by the National "Safety First" Association can now be entered by drivers in any part of Great Britain. Horsed-vehicle and tram drivers, as well as motor-vehicle drivers are eligible to compete subject to the rules of the Association, and medals and diplomas form the awards to be won for freedom from accidents during the year.

### Traffic Control!

The presence of mind of an R.A.C. guide recently averted what might have been a serious accident. Whilst directing traffic at a road junction he signalled to two cars travelling on the subsidiary road to come on, at the same time signalling to a car which was approaching up the main road to slow down. This car, which was driven by a woman, continued to come on, however, and the guide realized that it was out of control. He immediately signalled to the other cars to pull up, and as the woman's car passed leapt on to the running board, climbed into the car, and succeeded in stopping it.

B7



THE LONELIEST  
INN?

Some 1,727 feet up on the Yorkshire moors, Tan Hill Inn, beside which this A.C. is shown, is six miles from the nearest habitation.

### About Motoring Maps.

In connection with the article in last week's issue entitled "About Motoring Maps," Edward Stanford, Ltd., 12, 13, and 14, Long Acre, London, W.C.2, point out that the Stanford-Bridge's method of steering wheel mounting for maps is becoming increasingly popular with tourists.

### The Daventry By-Pass.

An important road scheme in the Midlands is to proceed shortly now that the Ministry of Transport has given its approval to the proposed Daventry by-pass. The work is to be carried out by the Northampton County Council, who, it is learned, intend to begin the work at the earliest possible date.

### Eldridge Better.

Our Paris correspondent informs us that Mr. E. A. D. Eldridge, who met with a serious accident when attacking 1,500 c.c. records in his modified Miller at Monthlery on Saturday last, is now pronounced to be out of danger. There



Mr E. A. D. Eldridge, to whom an accident occurred last Saturday at Monthlery.

is no fracture of the skull as was feared at first. The cause of the accident is unknown; Eldridge was using smaller wheels than usual and tyres of smaller section, but, although the car is very much damaged, all the tyres and wheels are intact. Mr. Eldridge was travelling at about 130 m.p.h. when the mishap occurred.

### Glasgow Grants.

During 1926 Glasgow motorists have paid the large sum of £251,407 in taxation. During the same period the city has received grants of only £24,459 from the Road Fund. The explanation is, of course, that the amount received from the Road Fund depends almost entirely upon the amount spent by the city in road maintenance. Perhaps Glasgow is to be congratulated on the quality of its roads as they cost so little to maintain.

### A Wise Arrangement.

The corporation omnibus garage at Burton-on-Trent is fitted with apparatus to collect and store rain water for use in radiators.

### Entries for French Grand Prix.

Three Delages—the same cars that raced last year but considerably improved—have been entered for the French Grand Prix. A fourth entry, as already announced in this journal, is that of G. E. T. Eyston (Halford Special). The race will take place on July 3rd.

### Pity the "Point."

Point-duty policemen seem to be at everybody's beck and call. If the public realized that their most important duty is the regulation of traffic, delays to wheeled traffic would be far fewer. For example, the driver of a large enclosed car pulls up half across a busy junction to inquire the way—thereby holding up traffic in all directions, or a pedestrian produces an envelope bearing an address and asks the patient constable how he is to proceed: again delays occur. The situation is admittedly difficult, but it should not be incapable of solution.

The brushes of a professional coach-painter and how they are kept when not in use. See "Successful Re-painting" in this issue.

### One-way Difficulties.

"One way" becomes "which way?" when translated by flurried pedestrians endeavouring to cross roads where circular-traffic control is in operation. To ease the situation the authorities will probably lay down new refugees, move old refugees to more desirable positions, erect "Please cross here" signs and extend the white-line idea.

### Battery Maintenance.

Our correspondence pages this week contain interesting letters relating to the question of overcharging batteries. There appears to be some difference of opinion upon the subject amongst experts, but their views will be read with interest.

### Clever Advertising.

Apropos of the correspondence on advertising which has appeared recently in our pages, a glance through our advertising announcements will prove interesting. What could be more "catchy," for instance, than "The drum that cannot be beaten"—referring to the Filtrate oil container, or "Contains no tar"—one of the many ingenious picture-phrases adopted by Jensen and Nicholson, Ltd. Other advertisements of the same order are the Trojan "Grandpa" simile and the pointed "Why walk?" of Singers. May we, incidentally, offer a suggestion to Jowett's, who, apparently, have the only Idle factory near Bradford working night and day?

### Back to Work.

Parliament re-assembled on Tuesday. According to unconfirmed rumours reformists are determined (1) to tax bicycles, (2) to amend the Roads Vehicles Bill, (3) to abolish all motor taxes and (4) to permit road racing in the Metropolis. It is to be hoped, at least, that full attention will be given to the more urgent matters which directly affect motorists.

### Norfolk Road Estimates.

Roads are to cost the Norfolk County Council considerably more than they did last year. This is the time of estimates and those prepared for Norfolk indicate that road works of all classes will cost £516,255 during the coming year, against £406,839 for the period just ending. In the eastern division of the county the amount required for first-class roads is £128,511, second-class roads £83,609 and unclassified roads £86,060.

### A Giant Carburetter.

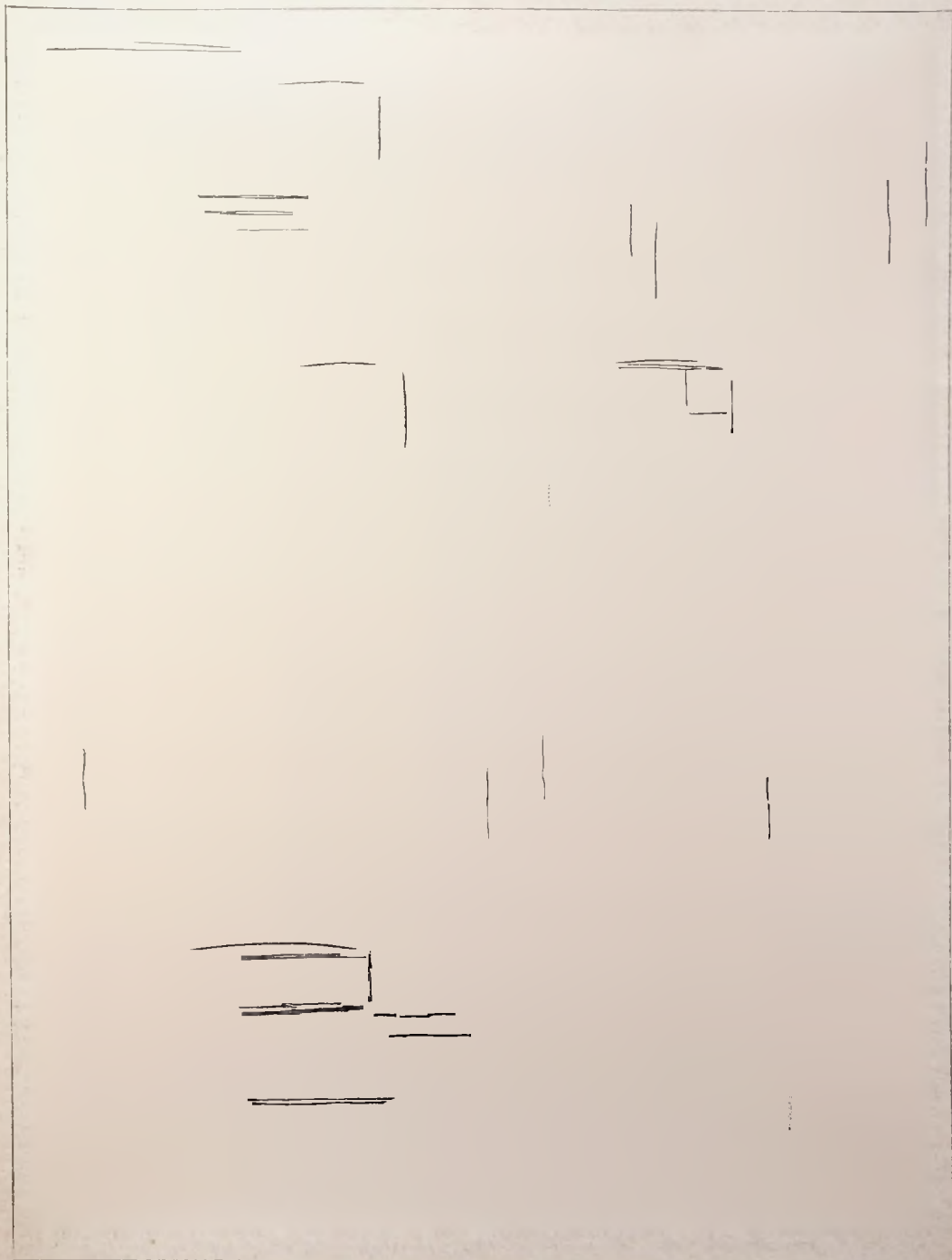
A giant model of a Schebler carburetter has been constructed for advertising purposes by the American manufacturers. The model is perfect in every detail and all the parts function as they do in the actual product. It took two skilled pattern-makers two months of full time to build it and it is valued at £300. If a car were built to fit it, the wheelbase would be 250 ft. and it would be able to carry 200 passengers. Proportionate-sized balloon tyres would be 65 ft. in diameter on 40-ft. rims.



TO BY-PASS  
WELWYN.

Rapid progress is being made with the Welwyn by-pass which will effect a big saving of time for users of the Great North Road. It should be open by about May.

## DON'T LISTEN TO FRIENDS.



No two people have similar ideas on colour schemes. If you are going to repaint, therefore, decide on the colour yourself and prevent interference by keeping the garage doors locked. It will improve the resulting finish whilst obviating any chance of untoward incidents like those depicted above.



DESIGNING A CHEAP  
CYCLECAR—WHAT TYPE  
OF TRANSMISSION?—  
A SIMPLE TWO-SPEED  
LAYOUT — REAR-AXLE  
ARRANGEMENTS AIR-  
COOLING.

A LETTER has been passed to me by the Editor from a Streatham reader who wishes to build a cheap cyclecar for his own use. As the questions which he asks are of a practical nature, and, therefore, probably of interest to other enthusiasts, I propose to deal with them here in detail instead of replying by post.

The main idea is to use a presumably air-cooled twin-cylinder J.A.P. engine fitted at the rear of the chassis and to drive the solid rear axle by belt, chain or friction gearing. It is proposed to mount the axle in ball bearings, the housings of which will be secured directly to the chassis frame, no springs being used.

To keep down costs as much as possible, the builder is anxious to avoid fitting a gearbox, and asks whether expanding pulleys can be used with success. His other questions relate to the best method of fixing sprockets or pulleys to the axle-shaft, and the mounting of rear wheels.

To start at the beginning, I am all in favour of fitting the engine at the rear of the chassis, provided that adequate cooling arrangements are made, but I do not care for the unsprung-axle idea. Quarter-elliptic springs are by no means expensive to buy, nor are they difficult to fit, and unless large-section balloon tyres are used, a cyclecar without springs would be very uncomfortable.

I do not see how it will be possible to avoid using some kind of gearbox, as direct drive would call for a very good clutch, designed to withstand any amount of slipping, and would limit the hill-climbing powers of the machine.

Expanding pulleys and belt drive form a quite satisfactory form of variable-speed transmission, but with the engine at the rear the belt, or belts, would be so short that slip would be inevitable. In my opinion, the driving and driven pulley centres should be at least 3 ft. apart for rea-

sonable efficiency, and a 5-ft. or 6-ft. drive is not too much.

Friction drive, as applied by an amateur mechanic, is, I am afraid, quite out of the question. Its design calls for a fairly large experience, and, in any case, a gear of this type built to order, as it were, would probably be quite as costly as an ordinary gearbox. In the present case, therefore, we are limited to the use of a gearbox or to a two-speed gear of the dog-clutch and two-chain type.

It should be easy to find a good second-hand motorcycle-type gearbox which could be adapted to suit the job, especially as, in all probability, it would have a clutch incorporated. This would be the cheapest way out of the difficulty. The dog-clutch and chain system has the merit of simplicity, but a friction clutch on the engine shaft would be necessary in addition.

A layout of this kind, as I see it, would consist of a countershaft mounted forward of the engine and having a dog clutch and sprocket on each side. A main sprocket on this shaft in line with another on the clutch shaft would form the primary drive and provide a reduction of, say, 4 to 1.

Two different-sized sprockets on the rear axle would be connected by chains to the two countershaft dog-clutch sprockets. In fact, this part of the layout would be exactly that adopted on orthodox three-wheelers. The axle chains would run one on each side of the engine crankcase, and the primary chain could be enclosed if necessary.

Chain adjustment would present no difficulty; it could be carried out by having slotted bolt holes in the countershaft bearing housings. Thus, sliding the shaft forward would tighten all three chains, and vice versa.

The rear axle would be quite strong enough if made of good-

quality 1½-in. diameter steel shafting. To save cost in machining it would be sufficient, probably, to secure the flanged collars carrying the sprockets by means of two ½-in. taper pins at right angles, but one pin and a key might be better, in order to avoid weakening the shaft. The wire wheels should be fitted with hubs machined out on the taper and provided with a keyway. The ends of the axle would be turned taper to suit the hubs and also slotted for a key.

At each extremity of the axle a parallel thread would be cut to take a nut for holding the wheel in place. Collars between the inner faces of the hubs and the axle bearings would serve to locate the axle and take the side thrust; if the bearings were of the deep-groove type the need for separate thrust races should not arise.

As the inquirer's letter contained no reference to other parts of the proposed cyclecar, I suppose he is not in need of advice concerning them.

In connection with my recent remarks upon the advantages of air-cooling, there is another point which I do not think is generally realized; an air-cooled engine normally runs at a much higher temperature than a water-cooled one, with the result that it is far less susceptible to changes of atmospheric temperature.

The only drawback is the question of mechanical noise, which, in an air-cooled engine, makes itself far more obtrusive after a year or two than it does in a water-cooled unit in which the sound is, to a great extent, damped out by the water-jackets. Apart from this, however, I think air-cooling has everything to recommend it, especially for amateur cyclecar builders, who have to study simplicity. So far as my experience goes, modern air-cooled engines are not at all prone to overheating; thus, there is no real need to provide fans or air scoops for cooling one fitted in a cyclecar.

# THE MAN WHO FORGOT THE "INNARDS."



A tragedy of overhauling; in six chapters. Those who are concerned chiefly with appearance must also remember that the engine sometimes needs attention.

## STARTING THE ENGINE IN COLD WEATHER.

AL CHARLES

TRACING THE CAUSES OF TROUBLE-  
SOME STARTING — CARBURETTER  
AND IGNITION ADJUSTMENTS—FIT-  
TINGS WHICH REDUCE LABOUR.



**T**HERE are people who believe that an engine which is persistently obstinate has some supernatural failing, which never can be overcome by every-day means, and consequently they spend perhaps half an hour starting up every morning when a little intelligence would reduce the time they waste to less than half a minute.

The writer knows a man who owns a reasonably modern car—a 1924 model—which has done only about 20,000 miles and which is in quite good condition. This man, on a cold morning, takes round to his garage with him a small bottle containing a 50-50 solution of Aviation spirit and methylated ether, a hot-water bottle and a robust chamois leather mitten.

The hot-water bottle is laid on the induction pipe, the dope is poured into the cylinders through special priming plugs, the mitten is donned and the owner sets to work on the starting handle. All this paraphernalia is really absolutely unnecessary and the whole business is nothing more than a fetish, for there are hundreds of other identical cars in use which start up quite readily even when snow is lying on the ground.

There are many variations of the hot-bottle and methylated-ether procedure, and none of them is in the slightest degree necessary except in the case of an engine which has done an enormous mileage. With such an engine starting is difficult, not because of one fault, but on account of, maybe, a dozen, and it may actually be a cheaper proposition in time and money saved to go through a complicated rigmarole when starting from cold than to have the entire engine overhauled.

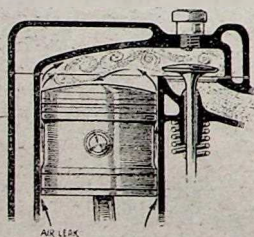
Some of the principal causes of difficult starting with

old engines may be dealt with briefly. With regard to ignition, if good plugs, properly adjusted, are used and if the insulation of the cables is in good order, the fault must lie with the magneto, and this can be tested quite easily by laying a plug on the cylinder block and turning the starting handle at the normal speed to see whether the spark is strong or otherwise. If the magneto is in fair order a good fat spark will be seen at the plug points, but if it is in need of an overhaul the spark will be thin and streaky. The owner cannot do more to his magneto than make sure that the contact-breaker points are clean, making good contact, and separating approximately 25-thousandths of an inch. He can also make sure that the distributor is clean and that the brushes, which are accessible, are making proper contact.

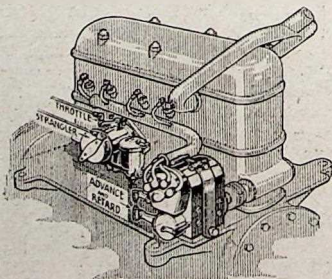
If attention to these matters does not produce a better spark the instrument should be sent to a qualified repairer.

Turning to carburation, it must be remembered that the fundamental requirement for starting is a fairly strong mixture, and that, as the starting handle cannot be turned at a very high speed, the velocity of air past the jet will not be sufficient unless all the mixture which is sucked into the combustion chambers actually comes past the throttle and does not make its way in through any other source.

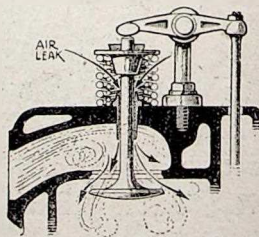
Worn inlet-valve guides, slightly oval cylinders, badly fitting piston rings, leaky induction-pipe joints and worn throttle spindle bearings are points which suggest themselves as calling for investigation, the inlet-valve guides being very likely culprits. If these are renewed it should be borne in mind that they must



Air leaks past the piston rings cause troublesome starting in the case of most engines in their third season.



Provided it is in good condition any engine should start after the controls identified have been properly set.



Leaky valve guides are often the principal cause of difficult starting with engines which have passed their prime.

be absolutely concentric with the seatings and the job of renewing them is therefore best given to a good repair shop which can recut the seatings after the new guides have been fitted.

Cylinder boeing to-day is not nearly so expensive as it used to be, and having the bores ground true and oversize pistons fitted not only gets over the starting-up difficulty, but gives an old engine a great deal more power.

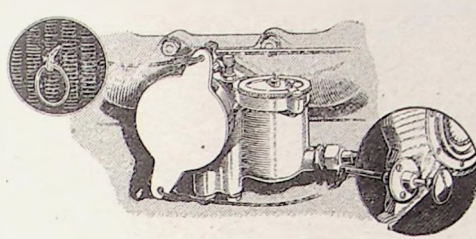
With regard to the induction pipe, it will be found that detecting air leaks is quite a simple matter. The joints must be made with a good packing and smeared with Seccotine or one of the special preparations which are sold for the purpose, whilst the pipe itself should be tested for cracks or blow-holes. This is quite easily done by holding a lighted cigarette alongside the pipe whilst the engine is running. If any leaks are present it will be noticed that the smoke is being drawn into the pipe.

So far as the carburettor itself is concerned, there will probably be no wearing parts except the throttle spindle bearings and maybe a toggle mechanism operating the needle valve. The latter may be the cause of erratic running, whilst the former will certainly exercise a harmful influence on starting.

Turning now to up-to-date cars which have not covered a particularly large mileage and which are in reasonably good mechanical condition, the causes of difficult starting will be found to be much less costly and troublesome to remove.

A good start can be made by setting the sparking-plug points to a gap of 20-thousandths of an inch (.02). This in itself is often sufficient to make a considerable improvement, whilst the test already outlined will reveal whether the magneto needs attention.

When the time comes to attend to the carburettor the best plan is to start by asking the maker of it what he considers to be the most satisfactory setting. If the jets and chokes recommended are the same size as those fitted, nothing can be done—in the case of fixed-aperture jets—beyond obtaining new ones. This is a safeguard against the jets which are in use possibly being incorrectly marked, and as jets are very



It is best to use the starting handle when the engine is cold. An auxiliary strangler control passing through the radiator is then found to be helpful.

cheap the purchase of a new set is certainly to be recommended.

In the case of carburetters having an adjustment for the mixture supplied by the slow-running jet, it is wise to obtain information from the maker with regard to the proper way to make use of it. Some adjustments of this kind strengthen the mixture when the adjuster is screwed in and others when it is screwed out. The possibility of the parts having been tampered with by a

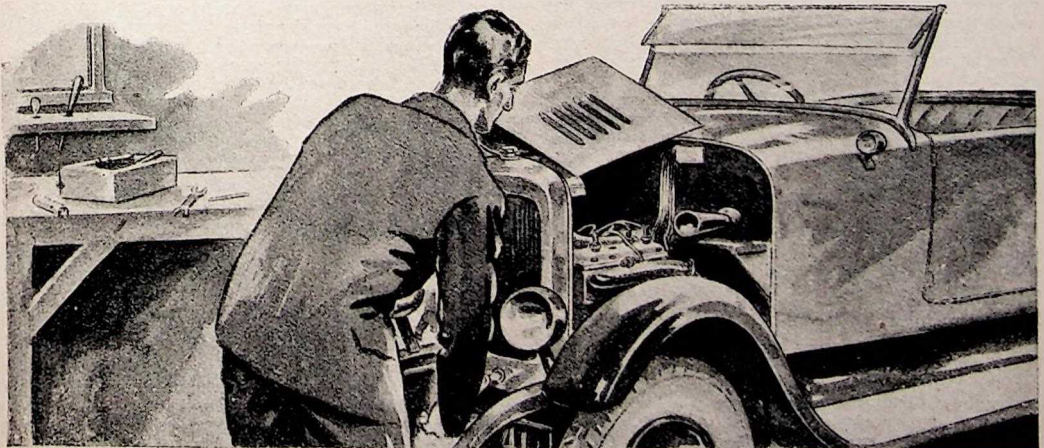
previous owner, or of their having become worn or damaged, should be borne in mind.

Most modern cars have an air strangler fitted to the carburettor to aid starting, and it should be needless to say that one of the first measures when endeavouring to cure bad starting is to make sure that the strangler is working properly. If none is fitted it is quite probable that the carburettor maker markets a strangler which can readily be adapted to the instrument. The cost would be only a few shillings and fitting up is quite simple.

An alternative fitting is a dashboard-operated flooder, but this is not so effective as a strangler and in cold weather it will probably be found that it will still be necessary to block up the main air intake of the carburettor by some such means as stuffing into it a piece of thick rag.

An important matter which has not been touched upon so far is the selection of a non-gumming oil for the engine. There is probably no more prolific cause of difficult starting than the use of old or inferior lubricants which become very thick in cold weather. All the well-known brands are obtainable in special winter grades which are suitable for use from September to April and which many people actually use throughout the year. It must be remembered that it is the effective viscosity of a lubricant which counts, that is, its "thickness" under working conditions as distinct from its body at atmospheric temperature.

Now that aluminium pistons—which must be a slack fit when cold—are so widely used there is no excuse for engines being stiff to turn even in the coldest weather.

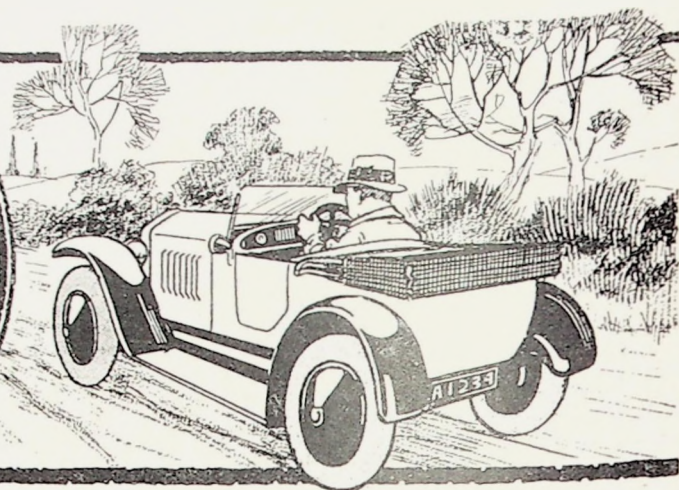


**A SURE TEST.** — The ignition system is easily tested by taking out a sparking plug, laying it on the cylinder block and watching for a spark whilst the handle is turned.

## THE MODERN ORDER OF HORN BLOWERS.

THERE ARE MANY DIFFERENT  
WAYS OF SOUNDING A HORN AND  
THEY ALL REVEAL THE  
CHARACTER OF THE  
DRIVER.

-RUMBOLD



THOSE amongst us who keep our eyes (and ears) open will agree that there are almost as many fashions of horn-blowing as there are makes of light car.

There is the fellow with the bulb-horn, who gives a tootle on it at regular five-second intervals, and whose staccato approach and retreat disturbs our post-prandial nap. He is most likely a retired lighthouse keeper.

There is the man in the little two-seater, with a raucous electric horn that works overtime. Some of these models appear to have buttons fitted in the seat-cushion, for the horn starts operating so soon as the owner sits down, and continues its uninterrupted song until the car is out of sight. Such drivers are the mainstay of the battery manufacturers, and from their ranks are recruited the men who ring the bells on fire-engines.

Then we have the fellow with the beret and the fast sports model. He appears to be horn-less, and lets us know he is there by treading on the accelerator. The open exhaust does the rest. Careful examination will usually reveal a little "pip-squeak" nestling in some inaccessible position. Thus is the majesty of the law satisfied.

We must not forget the collector. He has a gasping snake on his right mudguard, an ordinary bulb-horn on the dash, a mechanical horn at his elbow, and an electric hooter on the steering column. He varies the combination according to circumstances, and is capable in an emergency of playing three out of the four at the same time. He is generally a jazz-drummer by profession.

As to methods of sounding the horn, these vary with the manipulator. Whilst thumbs and fingers are usually employed in pressing the button, some people use the closed fist, the elbow, or even the foot, accord-

ing to their contortionist abilities, and the position of the button. Bulbs are treated in similar fashion.

Persons just starting to drive grasp the steering wheel tightly, sit forward, sound the horn long and loudly, and wobble alarmingly in the process. It is generally possible to forecast their intentions of giving warning, by the strained expression on their faces, as they prepare to do a little one-handed steering.

An experienced driver does not sound the horn too often. He uses the bulb horn in traffic, to the exclusion of the electric hooter, knowing that a sudden raucous blast will startle some people into mental confusion and nervous agitation.

Electric hooters always make old ladies dodge, so the seasoned motorist keeps them for use in the country, sounding a short and sharp blast as he approaches a side turning or cross-road. When overtaking a slower car, he does not, as do some people, start sounding the horn a considerable distance away. He waits until he is just behind the car and sounds it once or twice, sharply and authoritatively. The other driver hears him then and gives way to the short, sharp blast just behind.

An experienced motorist knows that the driver of a heavy lorry or steam wagon often cannot hear a horn that has been sounding in a slowly gathering crescendo for the last quarter of a mile.

The electric horn hustles chickens but depresses ducks and scares sheep. There is a time to use it and a time to leave it alone. The average British motorist appears to possess the art and psychology of horn-blowing that the foreigner lacks.

This is fortunate, or the babel of London would surpass that of Paris, where taxi-drivers and private motorists vie with each other in the immoderate use of piercing horns, of which no Frenchman now takes the slightest notice.

## USEFUL METHODS FOR CLEANING CELLULOSE.

AS a result of a universal clamour for cellulosed cars it is more than probable that at the next Olympia Show this durable finish will be either a standard part of specifications or obtainable as an alternative to the ordinary finish.

The somewhat exaggerated opinion is freely expressed that cellulose lacquer can be cleaned, no matter how dirty it is, by merely rubbing it vigorously with a dry cloth. Now, although this applies quite truly to a car which is covered with nothing more than a superficial film of dust, such brutal methods are not recommended where the polished surface is hidden by heavy mud spots or, worse still, coated with dry mud.

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One or two hints as to keeping cellulose lacquer clean—gathered as the result of six months' experience with a car having this finish—will be of interest.

During the summer months a dry clean works wonders. Two cloths should be used—one for removing the dust by means of light strokes and the other for finishing off. Any good furniture cream or body polish may be used so as to obtain a final lustre, and it may be emphasized here that the more cellulose lacquer is polished the more lustrous it becomes. This will be easily understood when it is pointed out that polishing is one of the most important initial operations which takes place in the lacquer shop before the body is passed out.

After a wet run cellulose may be treated in exactly the same way as ordinary coachwork, that is, with sponge and leather; on the other hand, no harm will result if the car is not given this attention, the water being allowed to dry off. Good cellulose lacquer should not spot in any circumstances.

Assuming that a car has not been cleaned for, say, a week, during wet weather, it can be treated in one of two ways. The first is that which is familiar to the majority of motorists, namely, hosing, leathering off and polishing, but this treatment is necessary only on those parts where mud usually collects in large quantities. The dry cleaning process previously mentioned will suffice for, say, the bonnet, scuttle and the forward parts of the sides of the body.

For a really quick clean down the writer has tried the following procedure with the greatest success. Surprising as it may sound to those accustomed to the care of paint and varnish, petrol was the principal cleansing medium employed, the liquid being carried in a large-size cycle-type oilcan.

The initial operation was to squirt petrol over the surface, following it up with a large soft rag. This treatment had the effect of removing not only the caked-up mud, but also stains which it had been found previously did not give way at all readily to sponge and water.

The result over a given area was, of course, smeary, but before the petrol could dry off properly a second duster was brought into play, and it was found that

by rubbing with light strokes the surface came up perfectly clean and free from the suspicion of a speck of dirt.

This method was used on the rear wings, which were literally coated with dried mud. A careful examination of the body afterwards revealed that the surface was proof against the obvious possibility of scratching, whilst the general appearance of the car was as good as on the day it left the factory.

To remove any impression that this method of cleaning is expensive or dangerous, it might be as well to point out that very little more than an eggcupful of spirit was required for the whole job. Benzole mixture would probably give equally good results, but of this the writer cannot speak authoritatively.

As we have pointed out, one of the claims made for cellulose lacquer is that the more it is rubbed the better it gets. The truth of this was exemplified recently by a retouching job carried out on a dented wing. The lacquer surrounding the new work naturally came in for a useful share of the polishing given to the freshly applied lacquer, receiving a thorough process polishing in addition to that given when the car left the factory. The result, over the particular area concerned, was surprising, the lustre obtained being equal to the best paint and varnish finish. Incidentally, this retouching work proved that a really good job can be made of a damaged cellulosed wing, providing the firm to whom the work is entrusted has up-to-date lacquering equipment.

## SAYING GOOD-BYE TO THE OLD CAR.

HOW IMPENDING DEPARTURE MAKES  
THE HEART GROW FONDER.

"BILL," said my wife, as she dug me in the ribs with her elbow.

"Wassermarrer?" I grunted. "Tisn't time yet!" I cast a baleful eye at my wrist watch the luminous figures of which showed five-thirty.

"No, but . . ."

I remembered, and sleep fled. Our new car was due that very day. We talked of the wonderful comfort we should have. No more hood raising in pelting rain; no more cranking up after a dance; just a slight pressure of the switch and the engine leaps into life. We quoted the prospectus we had almost learnt by heart.

"At breakfast I said: 'I shall be dashed glad to see the last of Susan. I am sick and tired of all her nasty little ways. There's no comfort at all.'"

No, Susan is neither cook nor housemaid, but our first car, which was going in part exchange for the new one.

"In a way I shall be sorry," said Ethel, who is apt to wax sentimental at times.

"Sorry?" I queried, waving my egg spoon in the air. "Sorry to get rid of that confounded thing?"

Why only yesterday she gave me quite a nasty kick.

"Well, if you will advance the spark so much, what can you expect?"

I merely grunted.

"What about a last run in Susan—just one?" said Ethel meditatively.

I thought the suggestion mad, but the jolly old new year and what not! We went round to the garage.

"I expect she'll take about three years to start," I grumbled, as I gave the starting handle a vicious pull up. To my amazement she fired, and soon we were tootling merrily down the road.

"Running well," said Ethel, contentedly snuggling down in her furs.



"We heard just one faint bleat from her aged, feeble horn."

"Oh! so so," I agreed, striving to keep the satisfaction out of my voice.

As we sped along in the frosty air, Ethel spoke of some wonderful runs we had had—Cornwall, the Lakes and the New Forest. Yes, Susan had been great; but she had borne the burden and heat of the day, and now, with changing fashion, she looked what she was—an old car.

I turned homewards and left Susan outside the gate. Never again would she see the inside of our garage. Soon a long blast on an electric horn brought us rushing out. The new car had come.

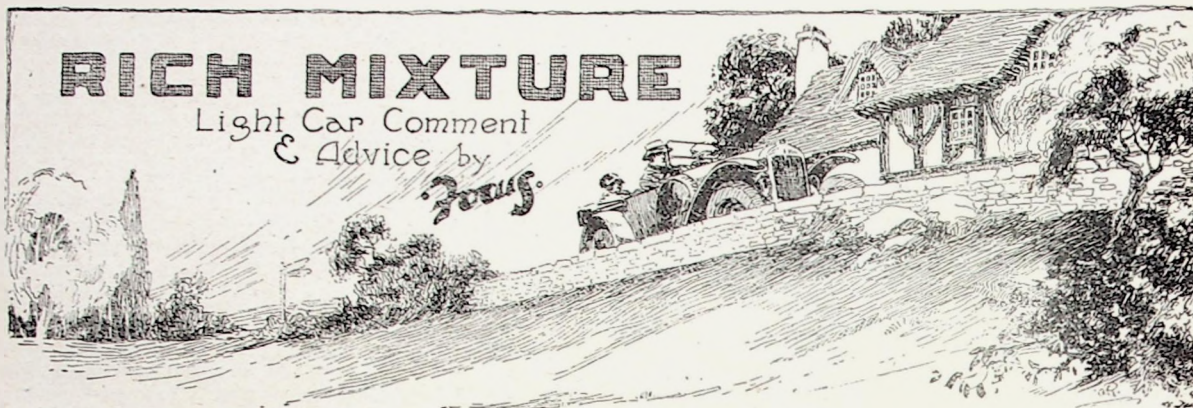
There she stood—a perfect beauty; but it was at Susan we looked when business details had been settled and the man got in to drive her away.

"I don't like her going one tiny bit," said Ethel, as Susan moaned when the clutch was let in too swiftly. (Susan took a lot of handling.) We watched the little car disappear down the road and heard just one faint bleat from her aged, feeble horn.

"Good-bye, Susan—good-bye!" whispered Ethel.

"I'm sorry, dashed sorry!" I muttered, but Ethel could only nod and blink very quickly.

J.D.L.  
R15



### On Seasoned Models

WHEN I read last week that this was to be a Renovation Number, it really made me wish that I owned a car that could be renovated. I am expected to keep myself up to date in motoring matters and, consequently, before the first bloom of youth is off my cars they find themselves being critically examined with a view to all the good points being picked out for inclusion in a small advertisement under "Second-hand Cars for Sale."

You may think that it must be very pleasant always to own a car of the latest type, seldom to have new tyres to buy, and never to know the need for apologizing for seat cushions which have become lumpy, but I am not at all sure that it is. There is something "matey" about a car in its second season which is entirely lacking during its first.

### A Healthy Veteran

A WEEK or two ago I borrowed a 1924 Eric Campbell which used to belong to a colleague, and which has now covered nearly 22,000 miles. Possibly it was the novelty of having no side curtains or other modern fall-lals, or maybe it was that the car had been well looked after in its youth, but the fact remains that I thoroughly enjoyed the 30 miles I covered behind its wheel.

The steering was a little "sloppy," the pedals had worn smooth and rattles could be heard if you cocked your ear for them, but the general running of the car was faultless, and it was really quite a pleasure to drive. At 40 m.p.h. it ran as sweetly as any inexpensive 1927 model which I know, whilst at 50 m.p.h. it was quite happy, although practically fully extended.

### Idle Thoughts.

THE present owner of this car has not spent a great deal on it. Re-upholstering was necessary shortly after it came into his possession, the wheels and wings were repainted—the rest of the car is bright aluminium—the engine required a little attention to some of its bearings, the dynamo needed overhauling, and a pound or two were spent on the gearbox. The total expenditure for renovation actually amounted to less than £20, and the car now looks smart and, as I have said, it runs extremely well in spite of the fact that it is now in its fourth season.

I cannot believe that that particular car is unique. There must be many hundreds, if not thousands, like it, and there must be an equal number of con-

tented owners who are congratulating themselves on having chosen wisely in the second-hand market, and not grudging a relatively small outlay for repairs and renewals. Personally, I cannot see that there is more pleasure to be obtained from owning a new car than a seasoned model, provided that it is reliable, and when one comes to compare the cost of a second-hander it shows up to very great advantage.

How easy it is to theorize. As I write, the thought enters my mind that it will be a proud moment when, in a few weeks' time, I take delivery of the new car which I have on order!

### Dual Control?

A READER who likes to share a joke with others has sent me a rather priceless little cutting from a Yorkshire paper. The cutting is part of a report dealing with Mrs. Victor Bruce's Monte Carlo trip, and part of it reads as follows:—

Mrs. Bruce, who was awarded a prize for the best performance put up by a woman in the motor rally from John o' Groat's to Monte Carlo, makes a hobby of finding the least known and most difficult hills in England in order to climb them by car. She does all her own gear-changing and running repairs.

I do not know whether Mrs. Bruce has seen this paragraph yet, but, in any case, it is far from complimentary to the A.C. for Mr. Edge always tells me—and the Hon. Victor and Mrs. Bruce are ardent disciples of his—that any really good car should run over all normal roads entirely in top.

### A Cheap Year.

MANY and wonderful have been the ways in which at various times we have been told how to enjoy our motoring for nothing. The claims of some carburetter inventors alone have been sufficient to assure us of indefinite m.p.g., whilst we all remember gentlemen who have solemnly informed us that, provided we used a certain powder of which they held the secret, we need go no farther than the domestic tap for our fuel. And as for the wilder members of the dope, vaporizer, extra-air and hot-spot brigade—well, according to the assertions of some of them, there is no reason why we should ever have to replenish supplies at all.

Recently, however, I came across a car owner who, with some justification, could claim that in two important respects he is about to enjoy a year's motoring gratis. The facts are these.

Three years ago he sold his 12 h.p. car and,

somewhat reluctantly and sceptically, purchased one of under 1,000 c.c. His yearly mileage is just over 12,000. The tax on the old car was £12; that on the present one is £9. The respective petrol consumptions can be represented roundly as 30 m.p.g. and 40 m.p.g., and the annual cost for petrol at 1s. 6d. a gallon as £30 and £22 10s. Thus in three years he has saved £9 on the licence and £22 10s. on petrol, which is exactly the cost of his licence and fuel for the coming year. Happy man!

#### *Saloons Still Booming.*

THE sales manager of a prominent light car concern, who spends most of his time poring over order books and delivery sheets, told me a few days ago that in a couple of years the output of the works will be almost entirely saloons. Judging by the relative increase of saloon sales in the past three years and the decrease of tourers, he is planning for a complete reversal of the factory programme for 1929 models.

The big demand for saloons which this particular concern has experienced is by no means unique. In my travels I am told by a very large number of people in the trade that they, too, are noticing the same thing, whilst, strangely enough, agents tell me that even canny folk who are waiting for the March quarter-day before taking delivery of their new cars have specified saloons, although the first six months that they own them will be the warmest and finest of the year. The success with which modern saloons can be "opened up" in hot weather adds very much to their attractiveness.

#### *Under Summer Skies.*

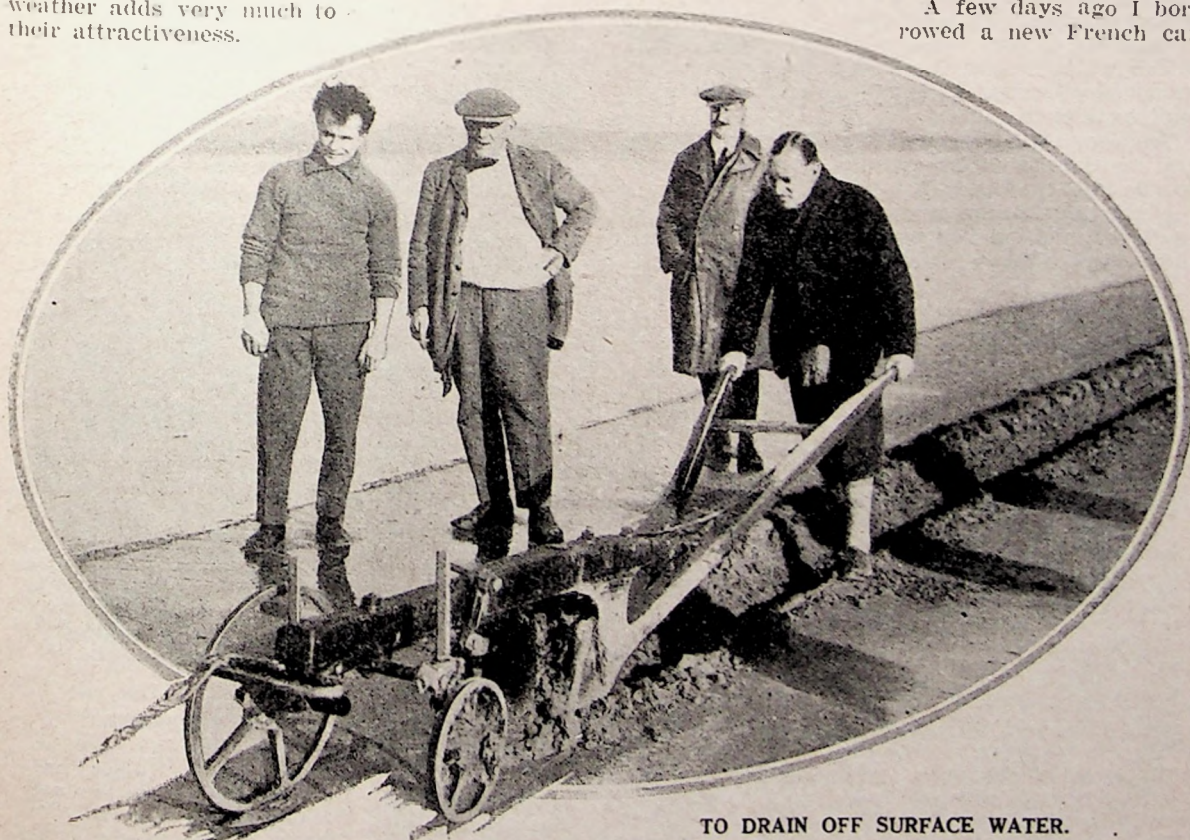
MY own experiences with a saloon which I have now been using since last October are wholly satisfactory. When I first took delivery of it I imagined that if I bought a new car in the spring—as I sometimes have during the past few years—it would certainly be an open model; but so pleasant has the saloon been that an order I have just sent to Lea and Francis for a sports chassis for long, fast runs and hard work during the coming summer specifies a Gordon England light saloon body.

How this car will suit me during the summer—if we have any—remains to be seen, for so far I have never had any extended experience of closed cars in hot weather. On paper the proposition sounds very attractive. The chassis is one of which I am particularly fond, and the Gordon England closed bodywork, which I tried a few months ago on a touring Lea-Francis chassis, is quite silent, whilst being remarkably light in weight.

#### *Our Friend the Adjustable.*

IN true engineering circles the adjustable spanner is regarded as an emergency spanner to be used only when the proper tools are not available. With most of us, however, it has a sad life, having to do the work of every other spanner and often the hammer's job as well! On some modern cars an adjustable no longer figures in the tool kit, fixed spanners to fit every nut being supplied instead; and thereby hangs a quite interesting tale.

A few days ago I borrowed a new French car



TO DRAIN OFF SURFACE WATER.

A dry course is extremely desirable for sand racing, but is usually very difficult to obtain. Captain Malcolm Campbell found that motor-ploughed furrows on each side of the "run" were helpful during his record-breaking attempts at Pendine. He is seen at the helm.

for a run, and had not gone far when I detected signs of plug trouble. Using a special spanner in the tool kit, I extracted the plug and discovered that one of the electrodes was just breaking off. There was a spare—of English make—in the locker, and I confidently inserted it. Unfortunately, the plug spanner would not fit, and to my dismay I found that I was without an adjustable spanner. It was impossible to screw the plug in by hand, and I had to wait there until a Good Samaritan came along to get me out of my difficulty.

#### *Everlasting Plugs.*

WHILE on the subject of plugs it would be interesting to know how far the average owner goes on a set. I do not remember having seen any correspondence on the matter for some time past, and my impression is that many people carry on with the same set for season after season. Some, indeed, never seem to bother their heads about plugs, and as for the finesse of the old days, which enabled a man to tell by looking at his plug points how his carburetter and oil supply were functioning—that seems to be unknown.

It can be assumed that if there was anything wrong with modern plugs the fact would be reflected in the correspondence columns, and the absence of such complaints is a fine testimony to the manufacturers.

#### *Look to the Handle.*

FOLK who experience a difficulty in cranking up in cold weather should see that they are not giving themselves unnecessary trouble through attempting to turn a starting handle that is stiff in the bush. It often happens that, in winter, wet weather will cause the spindle to rust or its lubricant to thicken.

The owner is apt to ascribe all the trouble to the engine, whereas a spot or two of oil on the starting handle bush would work wonders. On many cars the starting handle is so little used that it is neglected, and I have known people really exhaust themselves in this way without realizing the cause.

Incidentally, I know several cars which have starting handles so poorly designed as to be practically useless. Manufacturers should remember that when the handle is needed it is generally needed badly. A man who finds his engine troublesome to start does not like injury added to delay and annoyance.

#### *A Noisy Noise.*

MOST of us have had experience of the new and, at first, unaccountable noises which make themselves heard about our cars from time to time, and most of us, I take it, are never happy until we have traced and cured them. As a rule, the noises are only of a minor, but annoying, nature, and do not suggest the imminence of some dire catastrophe.

The other evening, however, I was driving a closed two-seater along a suburban road, when suddenly a loud and most alarming noise—a kind of harsh rattle—began. It seemed to come from the near-side rear wheel, and suggested broken ball races, but I did not stop at once. Two or three hundred yards was all I could stand, however, before slowing up preparatory to stopping. Imagine my surprise and relief when, as I came to a standstill, the noise went on past me and proceeded steadily up the road. In the darkness I could just make out the dim form of a small boy on roller skates, who evidently had been keeping pace with me.

#### *IN LAKELAND.*

The Lake District sees few tourists in the winter, and true solitude can thus be found at this time of the year. The owner of this Austin found there was no traffic problem on the steep, rough slopes of Honister Pass.

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### Mechanical Progress.

THE R.A.C. is to be congratulated upon the concise analysis of breakdown causes which it has just issued. The figures, which refer to the years 1924, 1925 and 1926, are of considerable interest, as they show for these years the exact causes of recorded breakdowns suffered by members of the Club. It is thus possible to evaluate the progress which has been made in the design and manufacture of these parts. Ignition troubles caused 22.5 per cent. of the breakdowns in 1926, an increase of 1.8 per cent. over the figure for 1924. This would seem to indicate that the design of ignition apparatus has not quite kept pace with the increase in engine efficiency brought about by the use of higher speeds and compression ratios—factors which tax ignition apparatus not a little.

Cylinders and pistons gave rise to 8 per cent. of the 1926 troubles, and here, again, we find an increase over the years 1925 and 1924 of 2.9 per cent. and 3.8 per cent. respectively. To what cause can this increase be traced? The only one which suggests itself is the misuse of new engines fitted with aluminium pistons, which are now used more generally than they were in 1924. That defective lubrication could hardly have been a direct contributory cause is indicated by the fact that mishaps traceable to the oiling system were only 2.3 per cent. in 1926 against 3 per cent. and 3.7 per cent for the two previous years.

### Unreliable Rear Axles.

IT will come as a surprise to most motorists to learn that rear-axle shaft failures totalled 12.6 per cent. in 1926, whilst differential mechanism and bevel and worm drives dead-headed with only 1.2 per cent. of the breakdowns. It is difficult to find a reason for this rather high ratio of axle troubles; they can hardly have been caused by misuse of the clutch, and they are not accounted for by skidding as, in that case, the road wheels also would have suffered, but wheels and suspension systems together caused only 5.9 per cent. of the breakdowns. The axle question, therefore, is rather a mystery.

Although the design of carburettors has not altered appreciably during the past three years, these instruments caused only 2.5 per cent. of the 1926 troubles as compared with 4.1 per cent. in

"THE LIGHT CAR AND CYCLECAR" WAS  
FOUNDED IN 1912 TO CATER FOR THE  
NEEDS OF USERS AND POTENTIAL  
PURCHASERS OF LIGHT CARS AND  
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ENTLY ENCOURAGED THE  
DEVELOPMENT OF THE ECONOMICAL  
MOTORING MOVEMENT FOR OVER  
FOURTEEN YEARS.

NO CAR WITH AN ENGINE CAPACITY  
EXCEEDING 1,500 C.C. (1½ LITRES) COMES  
WITHIN THE SCOPE OF THIS JOURNAL.  
THAT CAPACITY BEING GENERALLY  
RECOGNIZED AND ACCEPTED AS THE  
LIMIT FOR A LIGHT CAR ENGINE.

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1924. The more general practice nowadays of taking in fuel from a pump instead of from cans accounts, probably, for this comparative freedom from carburettor defects, as pump-supplied fuel is almost entirely free from troublesome impurities. That brakes have improved is shown by the fact that they caused only .3 per cent. of the breakdowns in 1926, whereas the figure was .5 per cent. in 1924.

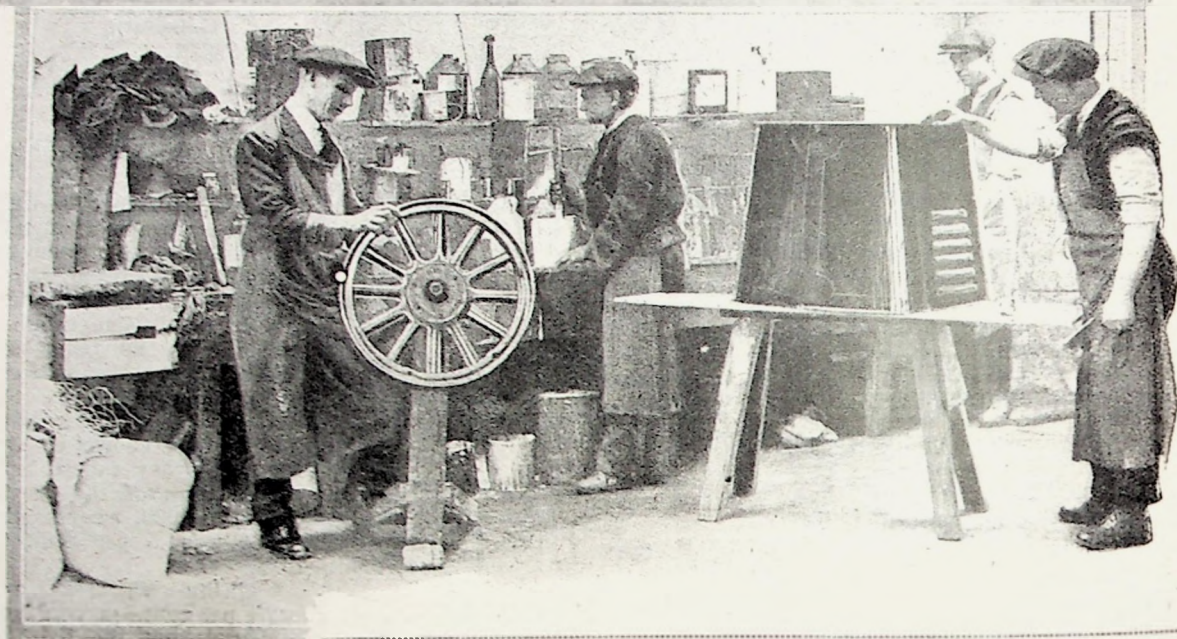
Lighting failures are given in the analysis as 2.1 per cent.—a very low figure when it is remembered that the lighting system of a car includes many delicate parts which are but little understood by the public. It is remarkable, too, that accumulators, which often are mishandled and which cannot from the very principle of their working be made particularly strong, should prove so very reliable. On the whole the analysis shows that there is continued progress in individual points of car design and construction.

### Long-delayed Legislation.

THE fact that there is, apparently, to be no important new motoring legislation this year will be regretted in many quarters, but in our view the further delay may be advantageous. Laws once made remain in force notoriously for an uncommonly long time. We have the old Motor Car Acts to provide a case in point. They were framed when motorcars bore little resemblance to present-day designs, when the number of cars in use was so small as to be almost negligible, and when public opinion concerning mechanical transport was utterly different from what it is to-day.

Next year a further huge batch of recruits will have joined the ranks of motorists, and tens of thousands of people will be converted by them to regard motorists as we would wish ourselves to be regarded. It is not improbable that some of the converts will be drawn from the newspaper offices, and that those who garner and present the news will thus do so with personal knowledge and experience of motoring conditions. They are the people who mould public opinion, and it will not be until they—and through them the "masses"—are calling for new motor legislation of a comprehensive, understanding and sympathetic nature that we can look for our long-standing wrongs to be righted and our position as a vitally important section of the community to be recognized.

# · SUCCESSFUL REPAINTING ·



BY FOLLOWING THE ADVICE GIVEN IN THIS ARTICLE WHEN REPAINTING A CAR, AMATEUR CRAFTSMEN WILL BE ASSURED OF SATISFACTORY RESULTS.

**H**OWEVER carefully a car may have been looked after so far as its appearance is concerned, there comes a time when the coachwork begins to look shabby and no amount of elbow grease and polishes will restore it. It becomes obvious, then, that the only solutions are either complete repainting or else rubbing down and varnishing, the latter process being, of course, the cheaper.

Although coach-painting is undoubtedly a specialized business and one not lightly to be undertaken by an amateur owner-driver, it is unquestionably practicable for anyone gifted with a certain amount of patience to carry out the job in a quite successful manner by emulating, so far as possible, the methods of the professional.

In the first place, it is essential that the car should be washed as clean as possible before the painting preparations are made, and it is equally important that the garage in which the painting is to be done should be entirely free from dust. It is a good plan, therefore, to sweep it out thoroughly and to suspend a sheet over the car to form, as it were, a subsidiary roof. A slightly damp atmosphere will tend to keep down any dust which may still be present, but it will have an ill-effect upon the drying of the varnish or paint; it is best, therefore, to work in a dry atmosphere and to risk the presence of a little dust.

If time permits—and it is a great mistake to hurry painting—it is as well to remove mudguards and any other fittings which prevent easy access to parts of the chassis or which can themselves be painted more easily when detached. Two or three wooden boxes or trestles will be found useful for supporting the various parts during repainting and whilst they are drying.

The materials required for preparing the car for painting are few and simple. Sandpaper, preferably of the waterproof type, pumice powder or rottenstone, a few pieces of felt and a good sponge are all that is

necessary, with the addition, of course, of a good supply of clean water from a handy source.

The first process consists of what is known as flattening down; that is, removing the varnish by rubbing it with a moistened felt pad coated with pumice powder. An ample supply of water should be used for this job and the motion of the rubbing should be circular. The "mud" which is formed by rubbing can be washed away from time to time with a wet sponge. The whole surface should be gone over in this manner until it is quite smooth and the paint beneath assumes an equal shade all over.

## An Open Secret

It cannot be denied that this job is of a very laborious nature, and patience will be required to carry it out in an efficient manner; but as the secret of successful repainting depends almost entirely upon the way in which the surface is prepared, amateur craftsmen will be well advised to persevere.

When the whole surface to be repainted has been flattened down, it should be washed thoroughly with clean cold water and afterwards leathered off in the ordinary way. When quite dry it will be ready to receive the paint or varnish.

Although, as we have already pointed out, it is sufficient in some cases merely to apply varnish over the flattened-down surface, in general it will be found preferable to apply first of all at least one coat of good enamel of the correct colour. Professional coach-painters as a rule grind and mix their colours, but it would not be advisable for an amateur to adopt this process, especially as there is a wide choice of really excellent ready-mixed enamels available in all colours at reasonable prices.

The choice of brushes is important, and a photo on one of the News pages shows a set of coach-painter's brushes. It will be noticed that these are all of the flat variety but of different widths. They show signs of

being worn down considerably with use, and for this reason, probably, they are dear to their user's heart, because they are in really good condition. This is largely due to the fact that not only have they been used correctly but, when not in use, they have been stored correctly by being suspended in water from a piece of wire.

Only the best-quality brushes should be bought, as it is an annoying trait of cheap brushes to shed their hairs, and although these may easily be picked from the wet surface, it happens often that a few will be overlooked and thus mar the appearance of the finished job.

### Applying the Paint.

Brush strokes should be straight and even, just overlapping, so that no bare or uncovered places are left. Cross-strokes are permissible, but most of the special enamels flow so well that the brush marks automatically become eliminated and a smooth surface results. It is a mistake to "dab" the brush on the work, especially so when using varnish, as this action is apt to cause the formation of bubbles, which are not always easy to eliminate.

Paint or varnish will be found to flow easiest if the temperature of the garage can be maintained at from 60 degrees to 65 degrees Fahr. during the painting process. No attempt must, however, be made to hurry the drying process, and a second coat should not be applied before the first is thoroughly dry. Quite often professional coachpainters rub down each successive coat of paint with very fine pumice dust before applying the next. In general, however, it should not be necessary for amateur painters to do so.

A single coat of varnish will often prove sufficient on a car body, but two are, of course, preferable, whilst even more can be applied if a thoroughly good and lasting result is desired.

The chassis frame, axles, and so forth must receive attention, and before painting every trace of grease

should be removed, whilst rust, where present, must be rubbed off with emery or glass paper until the bare metal is reached. If rust is present only here and there, in patches, a little skill in the rubbing-down process will enable the operator to blend the rubbed-down part with that which is untouched, so that when the enamel is applied a smooth general surface will result. Good-quality black enamel is the best for the parts under consideration, and there should be no need to varnish it afterwards.

When the body is finished and the varnish has become thoroughly dry, those parts which were dismantled can be reassembled, but before the car is taken on the road it should be washed down all over with plenty of clean cold water, not so much with the idea of cleaning it as to harden the varnish, and it should be remembered that although, apparently, the varnish is quite dry, it will be several days before it is hard right through.

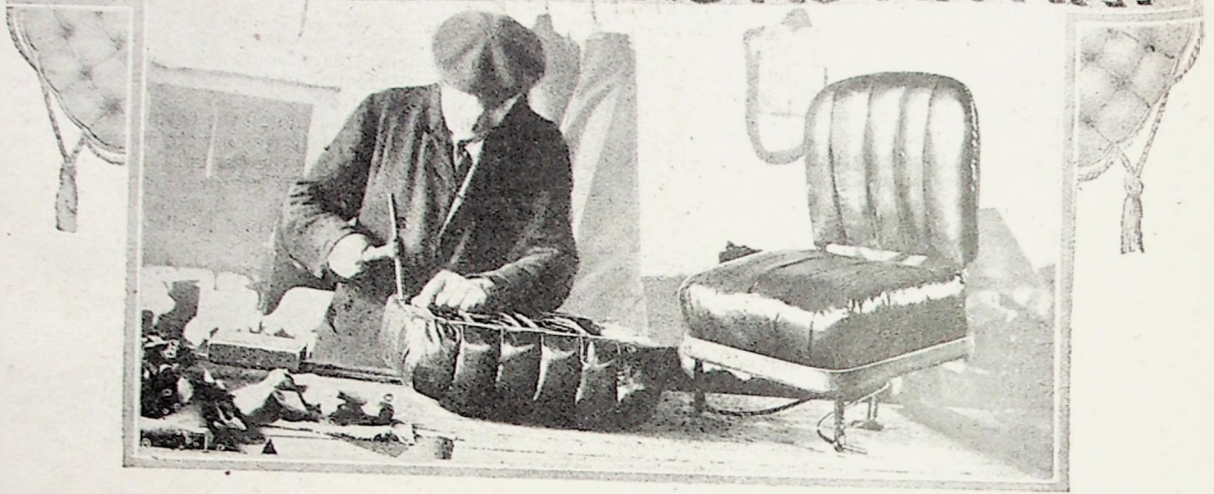
During this period it must be treated with considerable care, any washing which becomes necessary being carried out with copious supplies of water flowed on gently from a hose nozzle so that the mud is floated off the surface instead of being rubbed off with a sponge. The final polishing will, of course, be done with a perfectly clean chamois leather in the ordinary way.

PROFESSIONALS  
AT WORK.

AMATEURS,  
PLEASE  
COPY!

Trestles and boxes are very useful for supporting parts which are being rubbed down or painted, but they must be strong and firm.

## RE-UPHOLSTERING AS AN ART



Nothing makes a car look shabbier than dirty and worn upholstery, but many owners fight shy of having the work of re-upholstering done by a professional on the grounds of expense. The following article explains how an amateur may do the job himself, provided that he is enthusiastic enough to expend a certain amount of time and care.

UNLIKE most motor repair and renovation jobs, a good deal can be done with a few tools in the re-upholstery business, but before going farther into the matter it would be as well to point out that although such work is not difficult—in the sense that it is not complicated—it requires thought, time and careful workmanship. We would advise the owner who cannot meet these considerations to send his car to a professional man, but for the benefit of the amateur who feels that he would like to undertake the job himself the procedure may be outlined.

Saloon cars hardly enter into the question, for so soon as the cushions and squabs begin to appear dirty or worn, owners usually fit a set of loose covers of some pleasing chintz material.

Those who wish to do the job thoroughly, however, should make a beginning by removing the existing covers and using them as patterns, pinning the various pieces to the new fabric and carefully cutting round them. Cushions and squabs, of course, should always be removed from the car and laid upon a large table or bench before starting to work on them.

The shape and size of the material required have been found by using the old material as a pattern, but it is advisable to make the new pieces a little larger all round to allow for shrinkage, which may have affected the worn material. It is better, in any case, to have the job too big than too small, for stuffing will always rectify the former error.

Coarse canvas, or sackcloth, should be used to cover the springs. New springs here and there may be advisable. Before taking out the old ones, note how they and the canvas covering are fixed. Cotton-wool, fibre and horsehair are the recognized stuffing materials, and a useful tool for this job is a stuffing iron. This is a

strip of metal about 18 ins. to 2 ft. long and about  $\frac{1}{2}$  in. wide. One end is flattened to form a wedge like the end of a chisel and the edge is serrated. It is used to ram the stuffing down tightly between the sackcloth and the outer cover. It is advisable to sew pleats in stuffed jobs to prevent the stuffing from shifting, but a plain finish will be quite satisfactory if care is taken.

A sewing machine cannot be used to fix coverings in position, and an ordinary straight packing needle is equally unsuitable. The professional uses a curiously shaped instrument known as a half-round needle, which is of semicircular formation and has an ordinary eye at one end, the point being three-cornered. This shape is found to pierce the material much better than a round point. Cushions with wooden frames are the easiest to re-upholster, for the material can be neatly tacked down along its edges, the joins only being sewn.

Side curtains do not present much difficulty if they are of the non-rigid type. The professional has a

number of wooden templates from which he selects one that is suitable. He then lays it on the material, which he has previously pinned to the table, and marks round it with chalk. The templates are in the shape of open frames, the edges of the side members being about 1 in. thick. He runs his chalk round the inside of the frame when marking the curtain, but when cutting the celluloid he works round the outer edge, thus he has a margin 1 in. wide for sewing. A word of advice when working on celluloid—do not smoke.

A good thread for use on cushions, squabs and screens is No. 18 linen. When fitting press-buttons or similar fasteners it is as well to use a pair of special riveting pliers; a punch and hammer will serve, but are rather both slow and unsatisfactory to use.



An ordinary sewing machine is suitable for working upon even such thick materials as leather cloths, provided that strong needles and threads are used.

The prospect of recovering a folding hood dismays most amateurs. It is, however, simple if the job is approached and carried out as nearly as possible in a professional manner. The colour and nature of the material to be used should be decided upon and the amount which will be required—naturally depending upon the type and size of the hood—should be estimated. An obvious way to arrive at an approximate figure is to measure the old material when it has been stripped off.

The frame pivots should be fixed to temporary brackets screwed to the floor of the workshop. Pieces of string should be tied to the rear stick and to the front member which meets the screen, the ends of the four strings being secured to loops or eyes tacked on to the floor. In effect, the hood frame is then erected just as it would be on the car, except that it is held by string instead of clamps at the forward end.

In order to avoid making large screw-holes in the floor for holding down the brackets, it is a good plan to adopt the professionals' method. The brackets are screwed one to each of two pieces of timber about 3 ft. or 4 ft. long and 3 ins. square. These are laid parallel to one another, and the correct distance apart, on the floor. They can be fixed in position by wire pins or pegs dropped through holes at their extremities, the ends of the pins going into corresponding holes drilled in the floor. The professional has a number of holes so that he can alter the distance between the pieces of wood to suit the sizes of different hoods. He

#### PROFESSIONAL KIT.

(Below) A typical group of upholsterers' tools. Many of them are to be found in the owner-driver's garage and the "specialized" ones are easy and inexpensive to obtain.



uses loops of webbing tacked down to take the string so that when not in use they lie flat on the floor and are out of the way. But as the amateur wishes to do the job only once, screw eyes or hooks would probably be preferable.

Two new strips of webbing running from end to end—one on each side—should be fitted first; that is, if the hood sticks are of wood. If they are metal, the rear stick should first be covered where the hood material goes over it, with a strip of canvas wrapped round and securely sewn in position. The webbing strips can then be sewn to the binding, but ends should be left for fixing to the top of the rear body panel.

#### Covering the Hood.

Two lengths of material to form what are known as valances should be cut so that they reach from the front to the rear hood sticks, and they should be tacked in place temporarily along the sides. Next, the top of the hood should be cut to shape, laid right over the valances and also tacked at the front and rear. The

top and the valances are pinned together, marked to shape with chalk, removed from the frame and sewn.

The fitting of the back piece is best done when the frame is on the car, for the material can then be marked to fit the body. Sewing may be done on an ordinary treadle machine, but, naturally, a very strong needle is necessary and No. 35 linen thread is recommended for the purpose.

Suitable hood materials are waterproofed canvas, twill and leather cloths like Rexine. Professional upholsterers buy their materials in rolls measuring 72 ins. in width and between 50 yards and 60 yards in length, but the amateur would have no difficulty in obtaining smaller quantities.

#### The Necessary Tools.

As has already been pointed out, the amateur will find that he has most of the tools necessary for re-upholstering with the exception of needles. We have included among the illustrations a group of the tools used by a professional upholsterer, who assured us that they were all he required, excluding, of course, the sewing machine. It will be seen at once that at least eight out of the 20 are common to every household, these being the chisel, screwdriver, adjustable spanner, small needle and thread, pincers, scissors, tape and rule. The long flat strip and the bent rod

#### RECOVERING A HOOD.

(Above) A hood frame erected on temporary brackets. The webs, rear-stick wrapping, supporting strings and loops are clearly shown. The trimmer is seen fitting a strip of material to form the off-side valance.

on the left are stuffing irons. Just below the trimmer's hammer (which incorporates a nail puller on one of the arms) is a group consisting of three punches, a straight packing needle, two half-round needles and a joining pin. The tool in the upper right-hand corner is a pair of special pliers used for riveting fasteners to the material. The jaws are removable, special jaws being needed to suit the various types of fastener employed. The large shears are not essential, but they are exceedingly useful for cutting the heavier grades of leather cloth, especially when there are two or three thicknesses.

It is essential that materials should be accurately cut and sewn both neatly and strongly, otherwise the fit over the sticks will not be really satisfactory. It is always best to stretch the material tightly in the first place, for, in any case, it will stretch somewhat during the first few months of its use.

From the foregoing it might appear that the re-upholstering of a car was not too easy a job, but the reader should bear in mind that we have described how the professional carries out his work. No hand-and-fast rules can be laid down, for so much is left to the man who is going to undertake the work.

## THAT SMART-CAR FEELING.

THERE IS NOTHING LIKE KEEPING THE APPEARANCE OF A CAR UP TO SHOWROOM STANDARD IF YOU ARE KEEN ON OBTAINING THE MAXIMUM OWNING IT.

"... And what rapture he finds in setting forth from his home. . . . They are happy days."

THERE is not a woman in the world who, in a really smart car, does not feel even better than she does in a new hat. The glistening coachwork and nickel plating impart a feeling of superiority and luxury which makes a woman feel years younger. She will make the driver follow every street where there is the least likelihood of there being a friend—or enemy—to be filled with envy, and she will revel in the primitive joy of earning the covetous gazes of her fellow-beings.

These are very natural feelings. Man experiences them almost in like measure to woman. But some men are immune from them. They are a minority, certainly, but they exist. Most of them have passed the stage of the peacock which grows and proudly displays its magnificent plumage as an inducement to a prospective mate. They have settled down to a humdrum life, they have owned many cars, covered tens of thousands of miles and look upon a car merely as a conveyance. Some of them, however, belong to a different school; performance to their minds is the be-all and end-all of a motorcar. If all the nickel is green with fungus and the paint has flaked off in lumps as large as the back of their hands they are quite content—provided that the car is mechanically perfect.

### The Eternal "But."

But are they? Is that last sentence perfectly true? There is room for doubt. Have you ever heard a man say that his car is running perfectly? No. There is always a BUT. No mechanism exists which is perfect either in design or in condition. The performance fanatics are therefore never quite content. They spend all their time at the wheel wishing that this could be altered a little and that made quieter, sweeter or more responsive. They are impossible to please and hypercritical to a degree which makes them eternally discontented.

Enough of them, however; we are dealing with normal folk, ordinary common or garden hypocrites like you and me, who protest that we do not know the meaning of the word vanity, who place humbleness before pride and charity before covetousness.

Whilst we profess these noble sentiments we buy for our front window a larger aspidistra than our

neighbour's, he goes one better; we buy a geranium, so does he; we buy a camellia, so does he. Then we buy an orchid and grit our teeth as he does likewise.

It is just so with our cars. At first we feel that something modest will suit us quite well. We buy it second-hand. Then we have it painted. Next a little re-nickelling is put in hand, the hood is re-covered and the spare wheel black-leaded. The "lines" begin then to jar on us. We wish they could be a little straighter, that the scuttle did not slope down quite so steeply to the bonnet. Then we buy a new car; it is inevitable!

And what a marvellous feeling it is when we drive it home for the first time. That keen joy of ownership is too good to lose. It is worth clinging to for ever. No pains shall be spared to keep the new car perfect.

### The New Owner Goes Shopping.

So cleaning cloths are bought and patent polishes. A dust sheet follows. Boiled oil is bought for the hood, wax polish for the fascia board and stepmats to prevent unsightly mudstains from soiling the fleeting smartness of the mean, if temporarily attractive, bits of carpet on the floors.

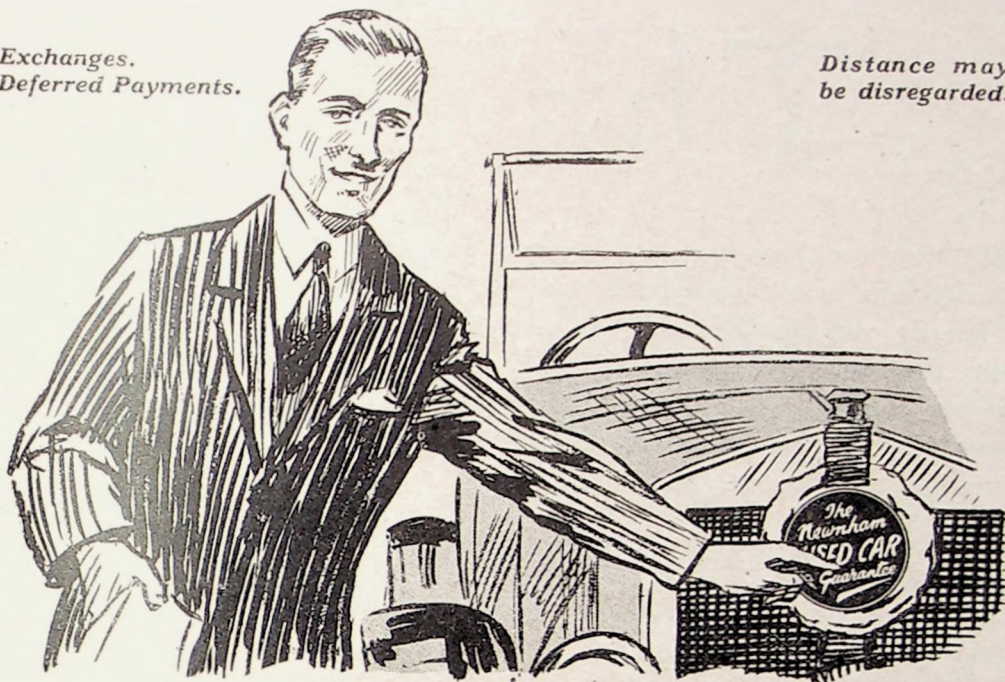
With what joy does the owner survey the result of hours of cleaning during those first few weeks. And what rapture he finds in setting forth from his home with the new cap set at just the right angle and the sleeve of the new tweed coat caressing the glistening top rail of the body. They are happy days. How few of us, however, have the energy to make them last. A wing gets damaged a little owing to a slight altercation with a gate post, a careless garage man makes a long ugly scratch across the scuttle, brass begins to peep through the plating—and gradually the owner gets slack. His pride of ownership slowly fades away and one of the principal joys of owning a car gradually and inevitably disappears.

Where lies the moral? Surely in making good even the most minute flaws so soon as they appear. If a wing is dented, have it straightened at once; when poor nickel plating makes its absence felt have the parts replated, and so soon as the coachwork begins to look shabby sport £6 on a repaint. The expense may be regarded as unjustified, but is it? A smart car is a constant joy to its owner, and it depreciates remarkably slowly. There is nothing so effective for keeping up the second-hand value as a really good well-kept appearance.

You may think that inexpensive cars are impossible to keep smart and trim-looking owing to the finish being not all that it might be, but the fact remains that there are to-day plenty of really smart 1924 models on the road, and there is no reason why 1927 models should not look just as well in 1931.

Exchanges.  
Deferred Payments.

Distance may  
be disregarded.



## "Thoroughly Dependable"

Other motor agents said it couldn't be done when we announced our intention of giving a written guarantee with second-hand cars. We are doing it and have every intention to continue doing so—in fact we consider it unreasonable to expect anyone to buy a used car without an assurance as to its condition. The reasons for our confidence are very simple: 1. We only sell to the public cars which we know to be thoroughly dependable. 2. Our works have definite instructions not to pass out any car until they are perfectly satisfied as to its condition.

### A FEW SUGGESTIONS

|                                                                                                                                 |      |                                                                                                                                               |               |
|---------------------------------------------------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| CLYNO, 1925, 11 h.p. 2-seater, repainted, Hartfords, balloon tyres, perfect .....                                               | £85  | ROVER, 1923, 9/20 h.p., 4-cyl., 4-seater, painted dark red ..                                                                                 | £150          |
| 1926, 11 h.p. 4-seater, repainted, F.W.B., very nice order ..                                                                   | £120 | 1924, 8 h.p. 4-seater, painted Nils blue ..                                                                                                   | £55           |
| 1926, 11 h.p. 2-seater, painted grey, F.W.B., balloons, excellent ..                                                            | £115 | SALMON, 1926, 10 h.p. 2-seater Sports, almost equal to new ..                                                                                 | £110          |
| CITROEN, 1924, 11 h.p. Coupe with dickey, balloons, strongly recommended ..                                                     | £115 | SINGER, 1927, 10 h.p. 4-seater, painted maroon, F.W.B., perfect condition ..                                                                  | £195          |
| 1925, 11 h.p. 4-seater, in excellent condition ..                                                                               | £110 | 1926, 10 h.p. Saloon, painted blue with leather upholstery, F.W.B. (choice of 2) ..                                                           | £185 and £180 |
| 1925, 7 h.p. Cloverleaf, 3-seater, painted blue ..                                                                              | £75  | 1925, 10 h.p. Saloon in really excellent condition, choice of 2 ..                                                                            | from £145     |
| 1923, 7 h.p. 2-seater, repainted and in good order ..                                                                           | £58  | 1926, 10 h.p. 4-seater tourer, in perfect condition throughout ..                                                                             | £160          |
| CROUCH, 1924, 12 h.p. All-weather 2-seater, Anzani engine, very nice car ..                                                     | £125 | We have 57 second-hand Singer cars in stock including SALOONS, TOURERS and 2-seaters of 1923-4-5-6-7 types. Full list gladly sent on request. |               |
| HORSTMAN, 1924, 12 h.p. 4-seater, painted maroon, excellent condition ..                                                        | £98  | WOLSELEY, 1925, 11/23 h.p. 4-seater, repainted and in excellent order ..                                                                      | £115          |
| JOWETT, 1926, 7 h.p. 2-seater and dickey, perfect order ..                                                                      | £110 | 1923, 10 h.p. 2-seater de luxe, very good condition ..                                                                                        | £70           |
| RHODE, 1925, Special Sports 2-seater, F.W.B., Hartfords, painted aluminium, blue and red, very attractive model ..              | £185 | STANDARD, 1926, 11 h.p. 4-seater, practically equal to new, painted red ..                                                                    | £170          |
| RILEY, 1925, 11 h.p. 4-seater tourer, in very nice order ..                                                                     | £175 | 1923, 11 h.p. 2-seater, in particularly nice condition ..                                                                                     | £125          |
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The small advertisement columns of "The Light Car and Cyclecar" form a unique mart for the disposal of all goods of interest to small car users.

# The Trojan

"One very foggy night, a week or two ago, I watched a procession of cars creeping towards a Midland town, at speeds varying between four and eight miles an hour, the leading car being a Trojan. The driver of this car sometimes sat in the driving seat, sometimes stood on the running board, and sometimes walked alongside the car, steering with his left hand.

"Those who were driving more conventional cars could not understand how he managed to keep control of the car, especially when walking beside it. To anyone who knows the Trojan, however, the matter is quite clear . . . . . The car can be started by pushing the gear lever into first, the driver being outside the car, and when visibility permits it is simple to hop on to the running board and move the gear lever into top and travel along at about six miles an hour on the level . . . . . For stopping it is necessary merely to move the gear lever from top back into reverse, which acts as a brake and then forward into control . . . . ."

*The above is extracted from an article which appeared in the recent issue of "Light Car and Cyclecar" and is yet another tribute to the extreme adaptability of the Trojan to all conditions in this and any other country.*

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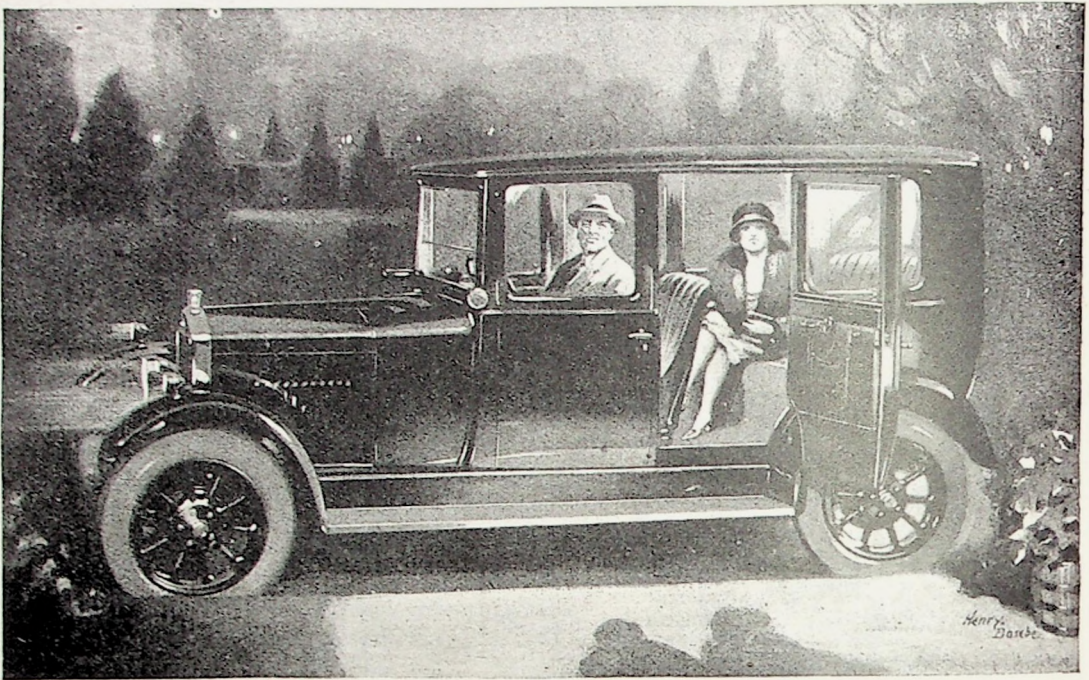
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**D**ON'T they look comfortable?" That is what your friends will say when they see you in your Wolseley 11/22 Saloon de Luxe. Deeply cushioned, perfectly proportioned, and artistically satisfying in its finish and appointments, it offers the quintessence of motoring luxury at small cost.

Four wide doors, plenty of head and leg room, and independent adjustable front seats. The "all-gear" engine is remarkably silent and efficient, with an astonishing reserve of power when required. The controls are simple and easy, and the four-wheel brakes are effective and powerful.

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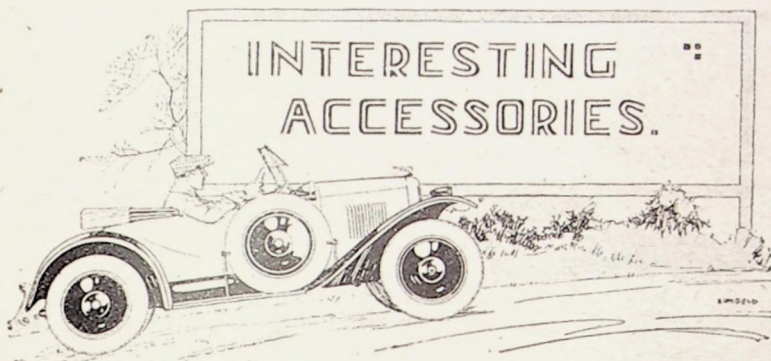
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**FACILITATE BUSINESS**, and ensure prompt attention to your enquiries, by mentioning "The Light Car and Cyclecar" when writing to advertisers. They will appreciate it.



A renovation is the principal subject dealt with in this issue, it will be fitting if we mention cleaning compounds and so forth in this week's "Interesting Accessories." Owing to limitations of space, however, we shall have to confine ourselves to a few of the proprietary articles which are advertised regularly in *The Light Car and Cyclecar* and to which the manufacturers have particularly drawn our attention.

Shabby coachwork can be brightened up considerably by the use of one of the many excellent polishes sold for the purpose. Imperial Motor Industries, 11, Denmark Street, Charing Cross, London, W.C.2, are marketing Karvally cleaner and Karvally polish, the price in each case being 3s. 9d. per tin. This medium is suitable for leather upholstery as well and is claimed to remove stains, spots and blemishes. We have tried Karvally and found that it gives excellent results.

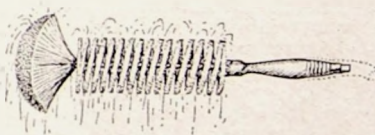
The County Chemical Co., Ltd., Bradford Street, Birmingham, market a very effective cleaning polish, and as this concern has been associated with cleaning materials for many years absolute dependence can be placed on its products.

A coach cloth cleaner is one of the specialties of R. Cadisch and Sons, 5 and 6, Red Lion Square, London, W.C.1. It is designed expressly for

owners at this time of the year when they are smartening up their cars. Prices are very reasonable, the actual cost depending upon the particular make of car. As an example, however, £3 12s. 6d. may be quoted for an ordinary two-seater.

Slipholstery provides a simple and rapid means of re-upholstering. The price depends upon the make of car, a representative figure for a two-seater being 32s. for cushions and squabs, or 50s. for cushions, squabs, sides and doors.

A hood paint which we can recommend is Accara, marketed by David S. Weston and Co., Atlantic Chambers, 45, Hope Street, Glasgow, C.2. Pint tins cost 6s. 6d. each and quart tins 9s. 6d. each. It is supplied in three qualities, jet black, khaki and lustre black, for leather or imitation leather.



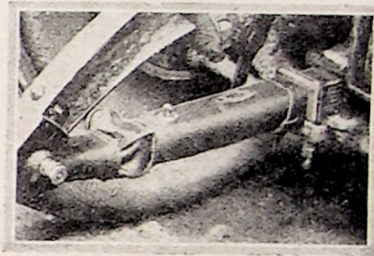
One of Gamage's specialties. The shaft of the brush is hollow, a hose attachment being incorporated.

In addition to the foregoing, such well-known renovators as Accordian, marketed by the Avondale Manufacturing Co., Avondale Works, Chippenham, Wilts, and Osco, marketed by Owen Bros. and Co., Ltd., of Hull, are worthy of mention.

A few general directions as to applying hood polishes may be useful. The hood should be perfectly dry and clean. To remove dust use a moderately stiff brush and afterwards wipe over the surface with clean rag. It is advisable to stir the liquid thoroughly before using it and to apply it evenly with a soft flat brush. Twelve hours at least should be allowed for a renovator to dry and, in any case, it is better not to use the car until the newly painted surface has ceased to be tacky.

Tyre trouble can be avoided to a large extent if care is given to tubes and covers. The range of Goodyear tyre accessories has now been supplemented by a new tube-repair kit; it sells for 1s., in the smaller size, which contains 27 sq. ins. of patching rubber and a tube of solution. The lid of the container serves as a buffer or rasp to clean the tube. A larger and more useful kit can be obtained for 3s. 9d. It includes a pair of scissors, valve-caps and valve "insides" in addition, of course, to a supply of patching rubber and solution.

Modern all-weather equipment adds considerably to the comfort of passengers and to the appearance of a car. The Grafton Engineering Co., Sycamore Grove, New Malden, Surrey, specialize in this branch of equipment, and screens are made to suit all makes of car. Type M screens have steel frames, 1 in. in width, finished in black stove enamel with narrow fabric flaps to overlap adjacent screens, whilst type F are constructed of steel frame covered with fabric to match the hood—a 1-in. border being provided. Fixing is by pegs on the frames registering with sockets let into the body. The pegs are of the



Incorporating a wick feed—the Jeavons gaiter made by Ramsdens (Halifax), Ltd.

swivelling type, guaranteed not to break off and claimed to eliminate jamming.

Prices vary according to requirements, but the following may be quoted as an example: Type M, two screens, £2 5s.; type F, £1 15s. When ordering customers should state the name of the car, the horse-power, year of manufacture and type of trimming material required.

For unusually neat side curtains motorists are recommended to the products of the Starling Co., Ltd., Empire Works, Highgate Road, Birmingham. Prices are reasonable and the curtains are constructed on very scientific lines.

A. W. Gamage, Ltd., Holborn, London, E.C.1, supply practically everything that a car owner requires for renovating purposes, whilst their car-washing outfits are designed on very practical lines. An illustration shows the Gamage water brush, which enables awkward parts to be reached and cleaned thoroughly. It is made of the best quality bristle and has a mop head. The handle is really a hollow shaft, to which a hose can be attached so that a constant stream of water issues from the brush itself. The price is 12s. 6d., post free.

To eliminate the trouble of cleaning and greasing exposed road springs, up-to-date gaiters can be recommended—particularly those fitted with means whereby grease or oil can be injected. A few well-known proprietary types are the Auster, B.W.B., Duco, Jeavons, Quick Fit, Rappa and Wefco.

Amongst the many useful lines distributed by Brown Bros., Ltd., Gt. Eastern Street, London, E.C., is Nickleen, a special polish suitable for nickel and aluminium. It is packed in two sizes, the smaller costing 4d. and the larger, known as the Big Fellow, 2s. Brown Bros. also handle the Simons range of cleaners.

Dunhills, Ltd., 359-361, Euston Road, London, N.W.1, specialize in everything for motorists. Hoods and upholstery can be renovated at Euston Road.



"It cleans as it polishes." Dunhill's car polish, which sells for 3s. 9d. in pint size and 2s. in half-pint size.

renovating twills, Bedford cord and all carriage trimmings and the manufacturers lay emphasis on the fact that it contains no chemicals that can damage the material or cause rot to set in. The price of small tins is 9d. each, whilst large tins cost 1s. 6d.

This concern also markets hood re-covering sets and a useful line called Slipholstery; the former will appeal to



## BRINGING THE EQUIPMENT UP - TO - DATE

HOW TO SET ABOUT THE TASK  
OF MODERNIZING A SECOND-  
HAND LIGHT CAR.

The sketch shows a typical five-year-old light car. It will be noticed that the standard equipment does not include many of the refinements which modern buyers take as a matter of course.

ACCORDING to a well-known proverb, comparisons are odious, and so they may be—in some cases. Like most sayings of a like nature, however, the one quoted should not be given too literal an interpretation. Is it not by comparisons that faults, or at any rate matters which would bear improvement, are often discovered and subsequently rectified? This applies with particular force to the question of how the equipment of an old car may be improved and brought up to date.

The sketch above depicts a typical light car with standard equipment as supplied to the public some four or five years ago, whilst on the opposite page appears a very good example of what John Citizen expects—and obtains—when he takes delivery of a light car in 1927; but John Citizen cannot always afford a new model and often has to be content with one which has celebrated its fourth, or even fifth, birthday.

When this is the case comparisons with the latest products certainly need not be odious. Admittedly they may set him longing for one of the very latest models, but at the same time will they not show him in what time respects his own car is out of date and thus suggest how it can be modernized?

Many second-hand cars of the type depicted are advertised each week in the small-advertisement columns of this journal at prices ranging from £20 to £50, and an excellent plan for a man of limited means is to buy a car of this description and set a ten-pound note aside for bringing its equipment as up-to-date as possible.

At the outset it should be emphasized that, in actual fact, a small fortune could easily be spent in this way, and the problem of choosing additional accessories is one that must very largely be settled by the individual owner.

The purpose for which the car is required naturally plays a large part in this selection. To a driver who uses the car every day, for instance, the efficiency or otherwise of the all-weather equipment would be of primary importance, but to one who used the car only for pleasure trips in favourable weather this point would not matter so much.

Again, the condition of the various components affects the question considerably. It would, for example, be folly for a man to neglect a poor lighting set and spend £2 or £3 on a set of new side screens when passably good ones were already fitted. For these reasons it is obviously impossible to lay down any hard and fast rule as to what components should and should not be renewed and what additional accessories are desirable. We can but indicate the lines on which the work should be carried out.

An owner is not advised to spend several pounds on equipment immediately he purchases a second-hand car. Some of the more obvious requirements can certainly be met right away; but, in the choice of other accessories, a few weeks' ownership will prove a far better guide than a mere examination of the car.

Let us compare the two cars depicted and see how the equipment of the older car can be improved and elaborated to bring it into line with modern ideas, as typified by the smart two-seater shown at the foot of the opposite page.

Perhaps the most striking difference is in the all-weather equipment. It will be noticed that no side screens are fitted to the older car, and unless it is to be used in fair weather only they are certainly among the more desirable purchases.

Many concerns specialize in fitting side curtains, and a large selection is available. The peg-in type are strongly recommended, as they have the advantage that they can be kept in position when the hood is lowered. In cold but fine weather the benefit of this

has only to be experienced to be appreciated. Another point in connection with screens is the need for as little obstruction as possible to the driver's view, and for this reason those having narrow metal frames instead of wide fabric borders are superior.

Some form of signalling flap for the driver is essential, and the cheaper types are usually provided with a triangular flap; this is fairly satisfactory, but possesses the disadvantage that the driver's arm, especially if gauntlet gloves are being worn, is

liable to be trapped. A very excellent system, which is employed on some of the latest cars, is to hinge the driver's screen vertically so that the rear portion may be swung outwards. This allows ample room for the arm to be thrust out and withdrawn, and owing to the fact that the movable part of the screen is hinged at its front very little draught enters the car.

The hood is the next item to be considered, and this will probably be found quite satisfactory, although the actual covering material may, perhaps, be a little dilapidated. Provided there are no large tears, however, it can soon be smartened up with a coat of hood paint, of which many excellent brands are on the market. If there are any small tears they should be sewn up or patched before painting. So far as the colour is concerned, black is recommended, as stains will not show and there is no danger of the hood becoming bleached by the sun.

These paints are quite easy to apply and no special preparation is necessary beforehand. In the case of a fabric hood it must be thoroughly brushed to remove any dust and should, of course, be perfectly dry when

"Many secondhand cars are advertised each week in the small-advertisement columns of this journal at prices ranging from £20 to £50, and an excellent plan for a man of limited means is to buy a car of this description and set a ten-pound note aside for bringing its equipment as up-to-date as possible."

the paint is applied. With leather or imitation leather sponging with petrol is all that is required.

An item which, although quite small in itself, effectively smartens up the general appearance, is a hood envelope. Any hood specialist will make one to fit a light car for about 15s., but with the aid of a member of the fair sex a practical owner should have no difficulty in making one from leather cloth at a small cost.

Whilst dealing with the hood the question of the rear window may be dealt with. Unless it has received attention since the purchase of the car the celluloid will probably be yellow and possibly cracked. It is a comparatively simple matter to fit a new pane, and if this is necessary it should, of course, be done before the hood is painted.

Although not directly connected with all-weather equipment, an accessory which certainly affects wet-weather driving is a windscreen wiper. These have been very much improved during the past two or three years, and if one was fitted to the four-year-old car it was most probably of the hand-operated type. Those who are on the road in all weathers will certainly find that the sum spent on a good automatic wiper is well repaid, for with this there is no need for the driver to lean forward every few moments and temporarily obstruct his own view to move the wiper backwards and forwards. Automatic wipers, both electric and suction-operated, are made to suit all types of light car.

When a comparison is made between the lighting sets provided on the two cars shown in these pages a very big difference will be noticed, for whereas the older has a simple three-lamp set consisting of a tail lamp and two combined head and side lamps, modern cars are equipped with five lamps.

#### Improving the Lighting Set.

Without going to a fairly heavy expense it is impossible to make the old set comparable with those usually fitted at the present time, for if large headlamps were used in addition to the existing ones, a larger battery and a dynamo with a greater output would be required. Matters can be improved to some extent, however, by mounting the existing combined lamps on brackets at the sides of the radiator, replacing the existing bulbs with two of greater power, and buying small side lamps.

Other useful additions to electrical equipment are a spotlight and an electric horn. The advantages of both these accessories are too obvious to need emphasis. In the case of the horn a powerful type should be chosen; it will then be possible to use the bulb horn for town work, reserving the electric one for emergencies and occasions when a really loud note is desirable, such as when overtaking noisy lorries.

This sketch, which depicts a normal modern two-seater with standard equipment, presents a striking contrast to the drawing on the opposite page, yet much can be done towards modernizing the older model.



The general riding comfort of a car is another matter to be considered, and a further comparison between the two illustrations will show that in the matter of tyres, at any rate, a considerable advance has been made. In place of the comparatively small high-pressure tyres of the five-year-old car, the later model is seen with balloons. In this matter the owner is in the fortunate position of being able to modernize his car without any extra expense, for so soon as new tyres are needed he can purchase low-pressure ones designed to fit the existing rims.

It is not advisable to have one high-pressure and one low-pressure tyre on the same axle, but there is no reason why balloons should not be fitted to the rear wheels, high-pressures being retained for the front until such time as further replacements become necessary.

#### Increasing Comfort.

In most cases shock absorbers will be found very beneficial, and here the owner has a very wide choice, prices ranging from £1 or so to about £10 per set of four. Again, spring gaiters will probably be found advantageous, for if a good make is chosen they will prevent the springs from becoming rusty, and at the same time will keep them well lubricated.

A good driving mirror may almost be classed among the necessities, particularly if the car has an enclosed body. In purchasing this item it is well worth while to go to a fairly large accessory dealer so that a varied selection can be inspected. A reducing mirror should, of course, be chosen, as one fitted with a plain glass will give a somewhat restricted view of the road behind; it is very important, however, to avoid buying a mirror which distorts the reflection.

For cold-weather driving a radiator cosy is practically essential if the owner wishes to avoid having continually to humour a cold engine. Alternatively, radiator shutters may be fitted, and these have the advantage that extremely delicate control of the temperature of the cooling system is possible. Radiator shutters will not retain the heat so well as a cosy when the car is stationary, however, but a rug thrown over the radiator when the car is parked serves the purpose quite well.

Although somewhat of a luxury, perhaps, a radiator thermometer is an extremely useful item—it is, in fact, a necessity, when radiator shutters are used. In winter it readily shows if an engine is overcooled, so that the owner can take steps to rectify the fault by blanking off part of the cooling surface, whilst in summer an overheated engine is revealed before the danger point is reached.

There are, of course, many other accessories, such as spare petrol-can carriers, step mats, and so forth, but the choice of these must be left entirely to the owner.

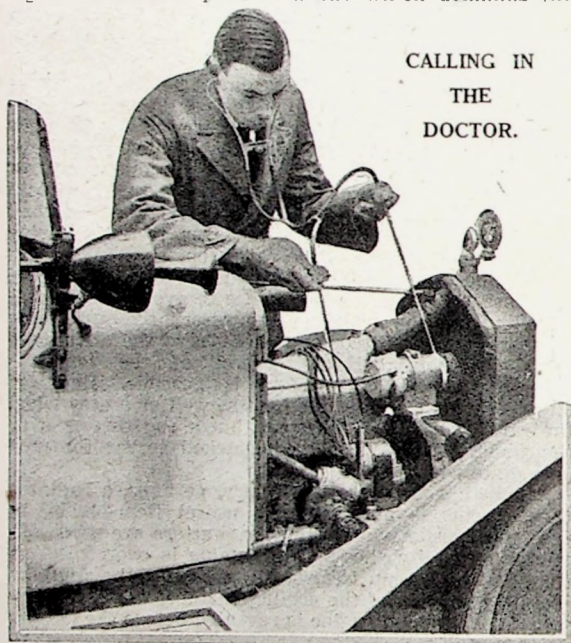
O.M.

**A**N amateur may experience some difficulty in settling to his own satisfaction just where ordinary maintenance jobs end and overhauling begins, for, quite obviously, if he intends to carry out the latter work himself and with the limited means at his disposal he cannot do a great deal. It is the little he *can* do, however, with which we are concerned, and it will be seen that the dividing line between maintenance and overhaul jobs is clearly marked.

That no part of a car works harder than the engine is a conclusion which is arrived at by most drivers, but it should not be forgotten that, realizing this, engine makers take care to provide everything calculated to ease the extra heavy burden which is imposed. Oil, the very life-blood of an engine, is fed liberally to every part requiring it, and the possibility of the oiling system ceasing to work has been reduced to a minimum.

Carefully tested metals are used throughout the construction of an engine, and all moving parts are made sufficiently strong to resist reasonable stresses to which they may be subjected. In spite of this, however, the engine is still the part of a car which demands the

### CALLING IN THE DOCTOR.



The scientifically constructed Bin-Aural instruments are very useful for gauging the condition of bearings and so on before an engine is dismantled. A detecting rod gripped between the teeth at one end and pressed against the casting at the other end is a practical alternative.

greatest attention, and it may well form the starting point of a spring overhaul.

Here is the list of the jobs which will most probably have to be done, assuming that only ordinary attention has been given during the winter:—Decarbonizing, grinding-in valves, draining the sump and thoroughly cleaning the oiling system, overhauling the magneto and carburetter, cleaning out the cooling system and tightening connections where necessary.

The two first-named jobs are, if we may use the term, the trickiest, for decarbonizing involves taking down important parts of the engine, whilst an inexperienced hand may do more harm than good when it comes to grinding in valves. If an owner decides that he will undertake such jobs, he should, at any rate, satisfy himself that he is qualified to do so, either as the result of former experience or by being present when a fellow-owner carries out similar work.

With modern designs of engine having detachable heads the dismantling process is not difficult, but there are, of course, one or two prominent points to bear in

b32

mind. It is wrong to attempt to lever off the head with a screwdriver or chisel. The correct plan is to slack off the nuts a trifle and then turn the starting-handle briskly. If this fails to "unstick" the joint the engine may be started up, and this usually will be effective. The gasket—that is, the copper-asbestos jointing washer between the head and the cylinder block—should be treated with the utmost care, so that it can be used again.

Thorough decarbonization is advisable, and it is a good plan to put in an overdose of elbow grease in actually polishing the combustion areas of the head and also the tops of the pistons with emery cloth after the carbon has been removed. This discourages the formation of carbon in the future. Hard carbon takes time to remove; a hammer and chisel form a ready and effective means of getting rid of the deposit, but it is a method which may bring unpleasant consequences in its train, and gentler methods must be employed.

### Grinding Valves.

Valve grinding calls for nothing more than the exercise of a little skill and a reasonable amount of care. The correct compound should be used and the secret lies in smearing the valve seating evenly with the compound and employing a semi-rotary movement when grinding. The valve should be lifted frequently and twisted, so that, relatively speaking, it beds down in a different position. A screwdriver should be used to rotate the valve and care should be taken to keep the screwdriver in line with the axis of the valve.

When the job has been completed to the satisfaction of the owner, every trace of grinding compound should be removed with a clean rag. Valve grinding alters tappet clearances—a point which must be borne in mind when the valves are reassembled.

The sump should be drained when the engine is warm—preferably after a run of at least 10 miles has been taken. First of all drain off the oil, then replace the plug and pour in about a pint of clean engine oil; paraffin is not recommended. In parenthesis, it should be noted that the quantity given is deemed sufficient to submerge the pump.

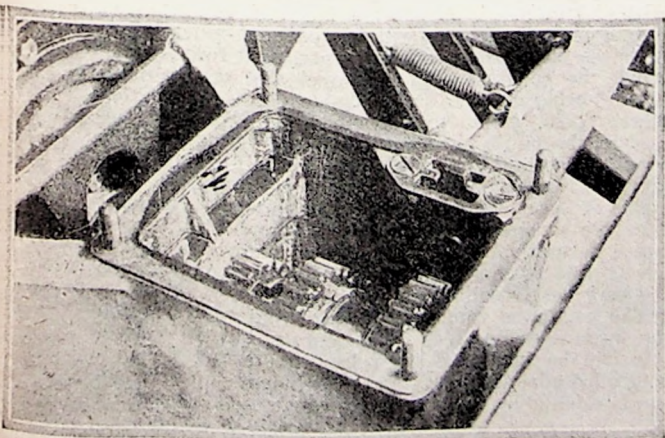
Now run the engine for a couple of minutes, revving

## NECESSARY PRECAUTIONS.

(Above) Sealing a Rover Eight crankcase with clean rag after the cylinders have been removed. The clutch pit inspection hole has also been covered. (Left) Covered with paper, running boards form convenient "tables" for dismantled parts.

it up very slightly above the normal idling speed and making sure, by a glance at the oil gauge, that the lubricant is circulating. Again drain off, and this time remove the filter gauze. Clean it thoroughly in a bath of paraffin, replace it, screw home the drain plug once more, and, if it is desired to be extremely meticulous, swill out again with a pint of clean oil. After treatment of this kind, the pump, oilways and bearings should be scrupulously clean and the sump can be filled to its proper level, as shown by the dip-stick. The filler-orifice gauze also should be cleaned.

Overhauling a magneto calls for expert knowledge, unless it is limited to adjusting the contact breaker and cleaning the distributor and slip-ring. These three jobs are well within the province of the amateur, but, bearing in mind how vitally important is the correct functioning of the magneto, it is quite a good plan to remove it from the engine and have it properly tested by a firm which specializes in this class of work. If the flanges of the magneto coupling are marked, the position of the distributor brush noted, and care is



It may be advisable to drain the gearbox and replenish with fresh oil. In this case a careful examination of the condition of the teeth and so on can be made when the box is empty.

taken not to rotate the engine, the instrument can be slipped back into position without the timing being disturbed.

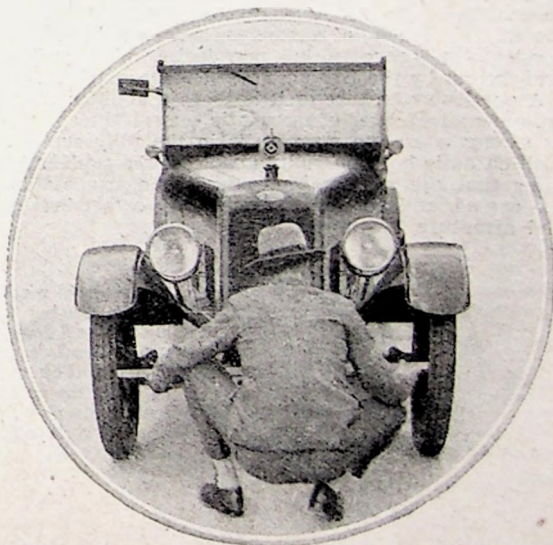
Carburettors as a rule call for nothing more than a thorough cleaning, and the owner should begin with the piping, which should be removed, a bicycle pump being used to ensure that it is perfectly clear. Holding a cup underneath the petrol tap, the operator can make sure that there is an unrestricted flow from the tank by opening the tap. Should it appear to be choked slightly, a piece of wire with a diminutive hook at the end may be pushed up through the tap and then pulled down, when it will probably bring with it any obstruction there may be.

To do this job thoroughly, it is preferable for the tank to be emptied, but the wire can be inserted whilst petrol is actually issuing from the tap if a sufficiently large container is placed beneath it. Attention should next be directed to the filter, and afterwards the float should be withdrawn, the float chamber being wiped quite dry with a piece of clean rag.

## Washing Out the Radiator.

If nothing but rain-water has been used in the radiator and there is a filter in the filling orifice, it will hardly be necessary even to flush out the system, but where tap water has been used there may be a certain amount of furring up. Common washing soda is recommended as a means for moving this deposit. About a handful should be put into the radiator and the car then run about 50 miles, after which the water should be drained off and the radiator refilled. Special compounds are also obtainable and give every satisfaction. So much for a brief résumé of engine overhaul; we may now turn to the transmission.

Clutches, like sleeping dogs, should be left alone



Incorrect front-wheel alignment often causes rapid tyre wear. A wood lath forms an excellent gauge. The wheels should "toe in" at the front; this is fully explained in the text.

unless they give obvious symptoms of trouble, such as excessive slipping or fierceness. Both dry-plate and cone clutches will usually submit to the simple treatment of being washed out with petrol, but in the case of a fierce clutch paraffin is recommended. Slipping may be due to want of adjustment of the spring or springs which maintain the pressure required to keep the driven and driving members together, but nowadays this is an unusual cause of trouble. Plate clutches running in oil will function for very long periods without attention.

Fabric universal joints are practically everlasting if the nuts holding them to the spiders are kept tight.

Frayed edges reveal the necessity for an early renewal of the fabric disc. Universals of the sliding-block type require nothing more than periodical lubrication, and this they should receive during the ordinary routine of maintenance.

The gearbox should require no attention at all during the spring overhaul unless the owner decides that the draining out of old oil or grease and the substitution of clean, fresh lubricant is advisable. The same applies to the rear axle.

If the steering mechanism has been properly attended to, it also may be absolved, but it is advisable to clean all the connections with paraffin.

A little job that should be done is to check the alignment of the front wheels, making any adjustment in the length of the track rod which may be necessary. The wheels should toe in  $\frac{3}{4}$  in. on each side; that is, the front edges of the rims of the wheels should be closer together than the rear edges. This has the effect of causing the wheels to run, theoretically, absolutely parallel with one another when the car is actually under way.

Braking on all four wheels has increased the lives of brake shoes to a very large degree, and if any re-

lining has to be done, the front brakes, as a rule, will be the offenders. Do not attempt to reline brakes without removing the shoes from the car. At first sight it may appear to be possible, but in most cases it is not. The job is of a rather tricky nature and may, with advantage, be placed in the hands of an experienced repairer.

The attention which springs will require depends on whether they are exposed or enclosed in gaiters. If they are not covered in any way they should be thoroughly washed with paraffin and—with the chassis jacked up—painted with a mixture of paraffin and oil. As the leaves will separate slightly owing to the weight of the axle and so on, the liquid will find its way between them. If gaiters are employed, fresh lubricant should be introduced either by hand or with the special grease-gun provided for the purpose.

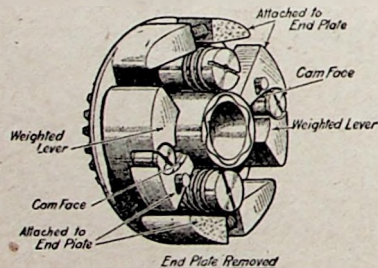
The final job is thoroughly to examine every nut and bolt on the chassis, making sure that all are quite tight and giving particular attention to body holding-down bolts and wing-stay anchorages. Do not omit to oil such points as the starting-handle bush, accelerator rod joints, brake-rod yoke ends, and so forth.

## AUTOMATIC IGNITION CONTROL.

### New B.T.H. Unit Having Several Advantages.

THE beneficial effect of correct spark control on the performance of a modern engine needs no emphasis, and, whereas a hand-controlled advance and retard can be made to give very satisfactory results in the hands of an experienced driver, amateurs often fail to understand exactly how a control like this should be manipulated; for this reason automatic ignition control has much to recommend it. An interesting development is revealed in a new device which has been brought out by the British Thomson-Houston Co., Ltd.

A particular feature of it is that, in addition to the ordinary advantages of automatic control, the spark is as strong when the magneto is in the fully retarded position as it is when fully advanced, the explanation being that the relationship between the contact breaker and the engine, and not that between the contact breaker and armature, is altered.



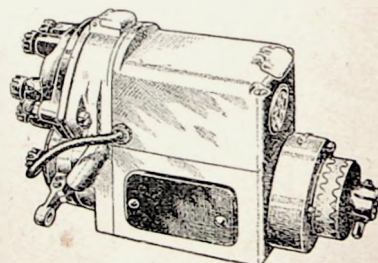
The internal mechanism, showing the weighted levers, rollers and cams upon which the action of the device mainly depends. The end plate on the driving side is omitted.

The device is being marketed in two forms—the first is for attachment to existing magnetos and the second for incorporation as a unit with the magneto itself. The only differences in construction are those determined by the forms of attachment and the method of driving.

The compactness of the unit may be gauged from the fact that it is contained within a cylindrical casing which is very little larger than an ordinary Vernier coupling. The principle employed is that of weighted levers influenced by centrifugal force, and the following is a brief résumé of the construction and action of the device:—

Connected through a Vernier coupling to the drive from the engine is a plate carrying two pawls or weighted levers, each being pivoted at one end and having a hardened-steel roller at the other and outer end. Fitted to the magneto shaft is a driven plate, upon which are mounted two cams against which the pawl rollers bear. When the unit is stationary, stops

Showing the compactness of the new B.T.H. unit. It fits very snugly between the Vernier coupling and the body of the magneto.



on the driving and driven plates are held a certain distance apart by helical springs, whilst the pawls, with their rollers in contact with the cams, are pressed against the centre boss of the magneto plate—as shown in the left-hand illustration.

At a predetermined speed the pawls begin to move outwards under the action of centrifugal force, which moves the rollers along the cams and results in a "lead" being given to the magneto plate, the ignition thereby being gradually advanced. As the speed increases, the pawls move farther outwards until finally a solid drive is taken up through the medium of stops provided for the purpose.

One of the advantages of the system is that the most desirable amount of advance per number of r.p.m., which naturally varies with different makes of engine, can be altered, and careful experiment should enable the very best results to be obtained.

The maximum range of advance and retard which the instrument provides is 30 degrees, but, if desired, this can be increased by using the ordinary hand-controlled advance-and-retard attachment—an arrangement which gives quite a unique range of spark control.

Light Car  
AND Cyclecar

Is the only journal in the world devoted exclusively to the interests of users of light cars. The journal is now in its fifteenth year adequate proof of the wide and continued appeal it makes to small-car owners. Why not place a regular order with your newsagent?

# YOURS FOR £25 DOWN

**N**OWHERE can you find a better example of true British workmanship and value for money than in the Swift. But this is not all, for the latest Swift is one of the smartest and speediest cars on the road. Its tax is only £10, yet it has power and to spare. In appearance, quality and finish, it stands alone among the small cars of to-day.

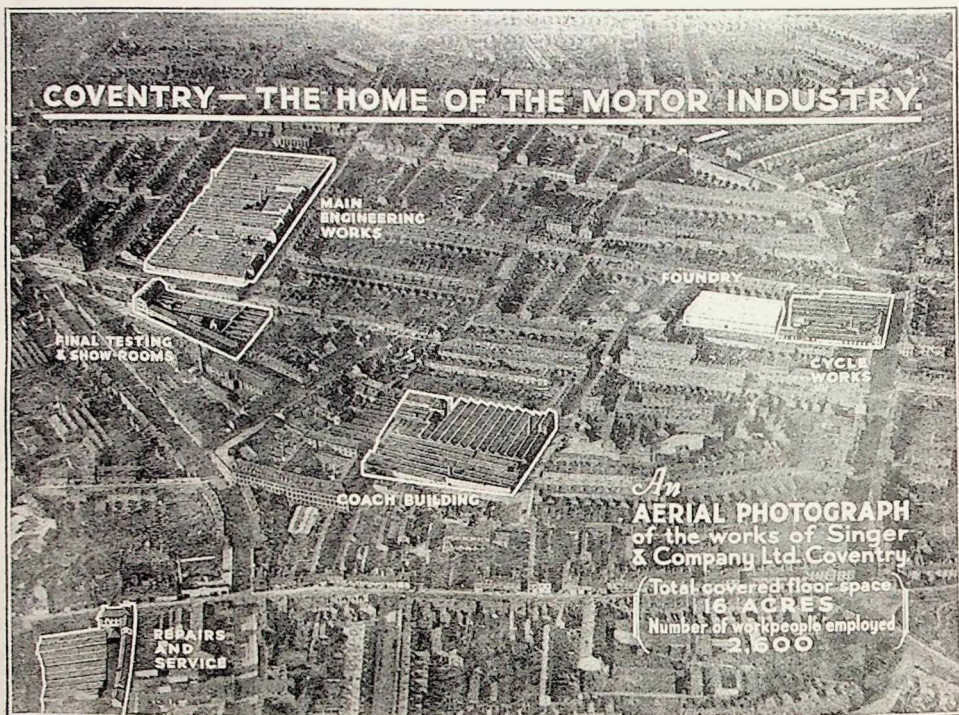
FOR this modest sum—£25—you can drive away one of these high-class Swift cars. The balance will be spread over a period up to two years, and strict privacy plus a straight deal is assured when dealing with HENLYS, CHIEF SWIFT DISTRIBUTORS

London.

**W**HEN you see a fine car on the road, you say "Sometime I will own such a car." But why "Sometime," when you can secure such a car as the Swift on such businesslike, yet easy terms. Make "Sometime" the present time—write or call on us to-day.

LONDON'S LEADING MOTOR AGENTS,  
91-155-157, GT. PORTLAND STREET, W.1,  
Langham 3341 (7 lines).

WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.



## Buy a "Coventry made" Car

"Coventry made," is well made, that is an axiom accepted the world over . . . it is particularly true of motor cars because Coventry is the hub of the world's motor industry. Coventry engineers have long been justly famed for the quality of their workmanship, simply because pride of production has always been their characteristic trait. It is this quality that is built into every Coventry made car, and Singer cars in particular. Situated in the heart of the City, the combined

resources and plant of the Singer Company employ 2,600 workpeople, and occupy a total covered floor space of sixteen acres . . . a monument to the reputation of Singer cars built upon the satisfaction of Singer owners throughout the world. When you buy a Singer car you buy the experience of generations of highly skilled engineers, sound honest workmanship, a perfected production . . . the best value it is possible to buy. Remember these facts when selecting a car . . .

Choose a



H.P.



## LITTLE THINGS THAT MATTER.

POINTS IN WORKMANSHIP AND DESIGN WHICH, ALTHOUGH APPARENTLY TRIVIAL, HAVE FAR-REACHING EFFECTS.

By J. HARRISON, A.M.I.A.E.



A MAZINGLY little things affect the running of motorcars in remarkable ways, especially when they are driven to the limit of their capacity, as in racing and competition work.

Within the past two years we have seen a car compelled to retire from an important race on account of the seizing up of a tight petrol tank filler, and on another occasion victory was snatched from a car by a staple which fell out of the upholstery and jammed in the gear quadrant, preventing the engagement of top gear. In each instance the cars were products of experienced firms and the drivers men of a type who leave nothing to chance, but both were beaten by an item too small to receive attention. Even in the last Exeter trial I was stopped by a competitor who had run out of petrol due to a union having vibrated loose on Peak Hill. He raced "all out" to Exeter after I had helped him fill up, but the delay cost him his gold medal.

Curiously enough, six years ago I experienced petrol feed trouble at that self-same place and it, too, robbed me of a "gold." In my case, however, the trouble

material was effected by slightly altering the shape of a pressing. The parts were stamped from a standard sheet of metal and by making them a little narrower the number that could be pressed from one sheet was increased from 48 to 60. The material cost was reduced to four-fifths of its original figure, without detriment to the performance or appearance of the car.

One of the things that may surprise the reader is the grave importance of that very small dimension—a thousandth part of an inch. The cover of *The Light Car and Cyclecar* is usually .004 in. thick, while the paper on which this article is printed is .0025 in. thick, yet the average working tolerance on a cylinder bore in a first-class light car engine is less than half the thickness of this sheet of paper. It is right that it should be so, for if the clearance between the piston and cylinder were reduced to .002 in., the engine would be very tight; .003 in. is the normal clearance for cast-iron pistons, while .010 in. spells destruction.

If we were to machine or wear a sheet of metal no thicker than this sheet of paper off the pistons and cylinder bores of an engine, we should probably take five years off its life and reduce it almost to scrap, for the clearance would have been increased from .003 in. to .013 in.

A skim of metal no thicker than this sheet of paper is all that stands between perfection and destruction in an engine.

In some parts, notably gudgeon-pin bearings, even greater accuracy is necessary, and a "shake" of .002 in. would rapidly develop into a knock. Half the thousandth part of an inch is the maximum error permissible on a gudgeon pin or its bush.

### PATH OF GRINDING WHEEL



The end of a camshaft, showing the danger of damaging the thread when grinding the taper.

was so mysterious that I did not discover the cause until the machine was back at the factory. I found that although, on removing the filler cap, the tank appeared to be a quarter full, no petrol would flow into the carburetter.

The tank had a strengthening baffle across the middle, and the centre of this baffle had a large hole cut in it. By rights a small hole should have been drilled in the bottom of the plate to allow the last half-gallon to flow through, but this hole had been omitted.

Small alterations in cars often lead to very big savings in manufacturing costs or greatly improved results on the road. It may appear to be ridiculous to alter a car in order to save a shilling on the cost of manufacture, but in these days of very large weekly productions a shilling per car represents hundreds of pounds per annum.

In the opinion of many, the saving of an odd half-penny here and there militates against efficiency, but the following example shows how money is saved without quality being sacrificed. An illustration shows the end of the camshaft of an engine as it was before the cheapening-down process commenced. Above it will be seen the outline of the grinding wheel used to finish the taper. Examination of costs revealed the fact that too much time was spent in grinding this taper, and investigation showed that the operator had been compelled to scrap one or two camshafts by allowing the wheel to run into the thread and so spoil it. To avoid further scrap he had formed the habit of going slowly over the taper.

When redesigned, as shown, there was no risk of the wheel touching the thread and the job was speeded-up accordingly. Money was saved in the reduction of time, which lowered the wage cost of the job; in addition, no further losses were incurred by scrapped camshafts.

The following shows how a considerable saving in

How the design of the camshaft, shown on the left, was altered to prevent the possibility of damaging the thread.



Exactness is required not only in the case of linear dimensions, for in many parts of the engine variations in weight are not to be tolerated. This applies especially to connecting rods, pistons, valves and other parts which work at high speed. As, perhaps, all motorists know, the piston does not move at a uniform speed in the cylinder. It attains its maximum speed at about mid-stroke and it comes to rest at top and bottom dead centre.

It is somewhat difficult to imagine an object like a piston, starting from rest, accelerating to its maximum speed and then slowing to rest again in the 1-10,000th part of a minute, but in a racing car the engine of which is rotating at 5,000 r.p.m. this is happening.

The force required to accelerate the piston is a big one, and as it goes up with the square of the speed it reaches gigantic figures at high r.p.m. On a 4-in. (102 mm.) stroke engine an ounce weight generates a force of 8 lb. at about 3,000 revs. per minute, which increases to 32 lb. at the racing speed of 6,000 r.p.m. Herein lies the reason for balancing pistons, for if one piston is even 1 oz. heavier than its fellows, it puts an additional load of 8 lb. on its big-end bearing once every revolution, even at ordinary touring speeds. This 8 lb. load, too, is unbalanced and therefore is adding to the vibrations of the car.



Famous French Light Car Factories.

## The SENECHAL WORKS at GENNEVILLIERS.

NOW A BRANCH OF THE FAMOUS CHENARD AND WALCKER CONCERN—PRESENT PRODUCTION ABOUT 30 SENECHALS PER WEEK.



**L**IKE that of most famous French motor businesses the history of Chenard and Walcker goes right back to the beginning of the movement.

Founded in 1888, the firm, after a few years of experiment, settled down to the production of high-grade Chenard-Walcker cars, which had an excellent reputation in England, as well as on the Continent, from very early days—a reputation enhanced since the war by successes in many sporting events.

It was not until 1925 that the Chenard-Walcker light car, the fruit of many years' study, made its appearance in public. This appearance was distinctly sensational.

In 1922-23-24 the larger Chenard-Walcker cars had been very successful in the Le Mans 24-hour Grand Prix. In 1923 a three-litre Chenard was first in the general classification; the following year the two-litre Chenards were first and second in their category, and the firm qualified for the triennial and biennial Rudge-Whitworth Cups.

In 1925 the new light cars appeared, little 1,100 c.c. vehicles with tank-like bodies. They covered themselves with glory, getting away from an enormous field of big cars, winning the triennial cup outright and the biennial cup for the year. The same two cars subsequently won the Belgian 24-hour Grand Prix, being first and second, and in 1926 the Spanish Grand Prix de Tourisme at San Sebastian, again being placed first and second.

The sporting record of Chenard-Walckers since the war is unparalleled, for it should be remembered that, in addition to their other successes, the Boillot Cup has been won each year by Chenards for the past four years. Last year, 1926, the first Chenard-Walcker light cars were put on the market and were well received.

The factory is situated at Gennevilliers, a few miles north-west of Paris. It is a factory of considerable importance, giving employment to 4,000 hands. Of these, the majority are employed on Chenard-Walcker productions, including the tractors and industrial vehicles, and a smaller number on the Senechal light car. No attempt at very large quantity production has ever



M. Robert Senechal.

been made, each car being given individual attention. The production of the works is, nevertheless, considerable, 50 chassis of the small Chenard-Walcker models being turned out every week. Export trade forms a very important section of the firm's business. At the present time about 60 per cent. of Chenard-Walcker productions is sold in the home market and the remaining 40 per cent. exported from France.

The Senechal light car is now, of course, a Chenard and Walcker production. Some two years ago a subsidiary of Chenards, the Société Industrielle de Gennevilliers, was formed to take over M. Robert Senechal's business, with M. Senechal himself as head of the new company.

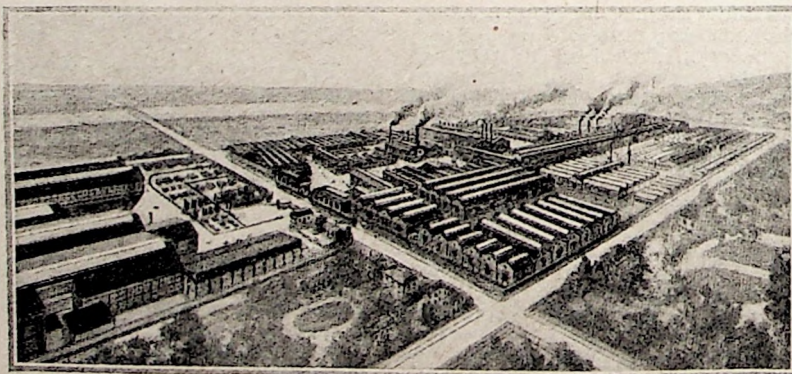
M. Senechal actually started building voiturettes in 1921, and rapidly gained a good reputation for his cars amongst the sporting fraternity. He is not only one of the cleverest and most courageous racing drivers in Europe, but is at the same time a capable engineer and business man—a most unusual combination!

Senechal voiturettes were originally fitted with certain high-grade proprietary engines, but since the amalgamation the engines are, very naturally, built in the Gennevilliers factory of Chenard and Walcker. An important section of the works is devoted to the manufacture of Senechal chassis, and an average of 30 cars leaves the works per week. Since its manufacture at

Gennevilliers the Senechal has, not unnaturally, taken on certain Chenard-Walcker characteristics.

Some idea of the size of the combined factory may be gained when it is mentioned that the covered floor space of the various shops amounts to a total area of 20 square kilometres! Iron, steel, bronze and aluminium foundries are included in the

works, also steel-stamping and drop-forging shops and rolling and pressing mills. Practically all the component parts of Chenard and Senechal cars are made on the spot. A new department has recently been started, in which the whole of the electrical equipment, with the exception of the headlamps, is turned out. There are also shops for the manufacture of hinges, door locks, door handles, and so on.



The factory at Gennevilliers where Chenard-Walcker and Senechal cars are made.

This is the second of a new series of announcements in which we shall indicate each fortnight the many points of technical superiority of "The Nippy Nine."

## More about the engine of "The Nippy Nine."

### 9/20 h.p. ROVER MODELS, 1927.

2-seater - £220

4-seater - £225

Coupé (detachable head) - £235

Sports 2-seater £240

Semi-Sports 2 or 4-seater - £260

Coachbuilt

Coupé - £285

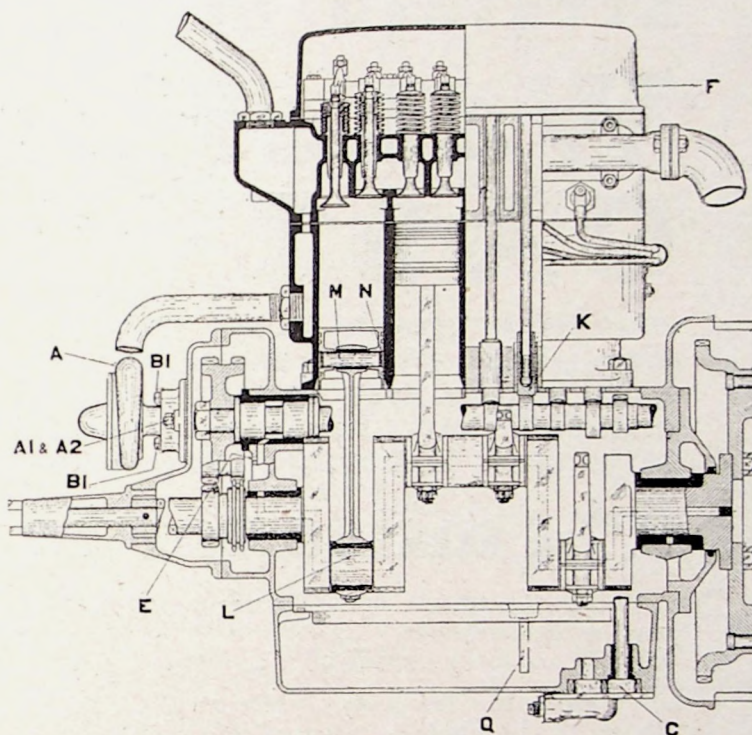
Saloon

(Weymann) - £285

Saloon

(Coachbuilt) £295

NOTE.—All models have 4-wheel brakes, seating in real leather, automatic screen wiper and lavish equipment. Choice of body colour: a wide range of smart two-colour body finishes is available.



In our last announcement we drew attention to the system of full pressure lubrication of the four-cylinder overhead-valve engine and the water circulation by pump—two of the features which go to make the 9/20 h.p. Rover such a speedy, powerful and "nippy" car. The cylinder barrel block is separate from the upper half of the crankcase (most experienced car owners know what a benefit this is),

and the cylinder head is readily detachable from the cylinder barrel for decarbonising purposes. Aluminium alloy pistons are fitted to the engines of Sports and Semi-Sports models. Note the sturdiness of the crankshaft and the ample size of the main bearings—these are just two of the points that endow the Rover engine with its well-known long life, smooth running and reliability. (To be continued.)

Have you seen the "Book of the Rover Nine"? We are holding a copy against your request—merely write your name and address on this page, tear it out and post to us. You will be very interested. The Rover Company, Ltd., 61, New Bond Street, W.1, and Coventry.



# ROVER

**The Highest Speed ever  
attained by a Car!**

# Wakefield CASTROL

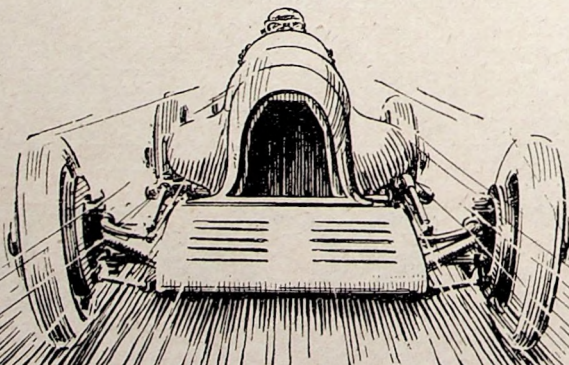
**was the lubricant used by Capt. Malcolm Campbell at Pendine, on February 4th, when, driving his Napier "Lion" engined car, he broke the World's Mile and Kilometre Records at over**

**174 miles per hour!**

Capt. Campbell's mean speed—the average of a run each way of the course—was 174.883 m.p.h. for the Flying Kilometre and 174.224 for the Flying Mile, *subject to confirmation.*

And only a few weeks before, on Dec. 31st, at Monthery, Mr. E. A. D. Eldridge captured the coveted 1 hour, 100 miles, and 100 kilometres World's Records at speeds up to 127.185 m.p.h., using Castrol on a Miller Special of only 2,000 c.c.!

Both Capt. Campbell and Mr. Eldridge used a standard grade of this world-famous lubricant—as supplied to you at any garage. The efficiency that means speed to them spells economy to you, so follow the recommendation of over 200 Leading Motor Manufacturers and insist on Wakefield CASTROL—the product of an all-British Firm, C. C. Wakefield & Co., Ltd., Wakefield House, Cheapside, London, E.C.2.





## OUR READERS' OPINIONS

We take no responsibility for the opinions expressed by readers. Correspondents may use a nom de plume, but every communication must be accompanied by the writer's full name and address. Letters for the next issue should reach us by Monday morning and should be addressed to the Editor, "The Light Car and Cyclecar," 7-15, Rosebery Avenue, London, E.C.1. We reserve the right to make any alterations or deletions which we deem necessary.

### THE CARE OF BATTERIES. Evils of Overcharging—The Voltage Question.

#### Battery-charge Regulation.

The correspondence concerning the overcharging of car batteries is very interesting, but, to my mind, it raises the question: Why should they be overcharged? Cannot an automatic regulator be devised which will stop the charge when it is complete? I believe that there is a charging apparatus in use by certain service stations which charges at "constant potential," therefore the batteries being charged cannot be spoiled. Perhaps this idea could be incorporated in the electrical system of a light car?

J.M.B.

#### Two Electrical Engineers Consulted.

In writing on the subject of overcharging a battery recently, I said I was open to correction, but I hardly expected such a broadside of it as Mr. McKinnon delivered in your issue of February 4th. Before writing my letter I had taken the precaution of consulting two electrical engineers, both having been in practice for some years and both university trained. They agreed with what I said.

'A.H.S.'  
Replies.

Whether an overcharged cell records 2.5 or 2.3 volts is relatively unimportant, as it still appears to me that a voltmeter forms a very ready means of testing whether a battery is overcharged or not. If, however, anyone is interested in the academic point of the actual voltage, may I refer him to the *Dictionary of Applied Physics*, vol. 2, page 82? In a long section dealing with secondary cells by Mr. W. R. Cooper, M.A., B.Sc., F.Inst.P., M.I.E.E. (an acknowledged authority), we read:—"Immediately after charging, the E.M.F. may be as high as 2.4 or even 2.6 volts."

Mr. McKinnon is doubtless better informed than I am on the properties of separators, but I should not have expected that it was difficult to find a suitable material which would withstand the action of bubbles of oxygen, since the bulk of them at any rate would have ceased to be nascent by the time they reached the separators.

Passing from the theoretical to the practical aspects of the matter, it may be mentioned that one well-known light car is fitted with an electrical system in which no switch is provided for breaking the charging circuit. This means that the battery is being charged whenever the car is running, yet this car is famous for the excellent behaviour of its battery and starter. I have driven one of these cars for two years; it carries a 6-volt battery and the cut-out is so arranged that the ammeter shows a charging current of 2 amperes when the engine is ticking over and at 20 m.p.h. the charge is 10 amperes.

I do very little night driving. When the car was new I started the engine by hand for the first few runs in order to make sure that the battery was well charged. Since then the battery has had no attention whatever beyond regular topping-up and, occasionally, as a precaution, the applica-

tion of a voltmeter. The latter, by the way, was calibrated, after purchase, in a well-equipped electrical engineering laboratory. It appears to me that if any car battery is submitted to overcharging it is mine. Yet after two years of such treatment I regularly start the engine from cold on the electric starter and I have never had a moment's anxiety on the question of the battery doing its job, even on recent frosty mornings.

Of course, one is bound to bow to the expert knowledge and highly specialized experience of Mr. McKinnon, but I cannot help feeling that the troubles caused by overcharging which he mentions are almost negligible compared with the results of leaving the battery in an undercharged condition.

A.H.S.

#### Damaging the Grids.

In your issue of January 28th there is a very interesting letter from "A.H.S.," referring to the effects of overcharging batteries. The damage caused by overcharging is as follows:—When the active material in the plates (i.e., the paste) is fully converted to peroxide of lead the charging current, having nothing else to do,

#### The Voltmeter Test.

sets to work on the lead of which the grid is composed and proceeds to peroxidize it; in fact, it does all it can to convert the lead grid to a material similar to the paste it holds. Moreover, excessive gases are generated within the active material which break up contact between the grid and the active material as they force themselves out. This causes unequal expansion and contraction of the plate, which usually results in cracking.

Your correspondent's simile between an accumulator and a dog is very apt, except that the dog can howl when it wants to, whilst the accumulator, poor beast, has never been able to do so. What an accumulator wants is regular treatment, proper charging and discharging, attention to acid gravity and level, and an understanding of what it is and the chemical laws that govern its working.

Testing with a voltmeter can be most misleading as a guide to condition. An accumulator that has been at rest for some hours and is in good condition may show 2 volts, although it is within an hour of being discharged. All voltmeter tests should be made with a small current flowing, when the voltage reading would probably be 1.9 volts per cell under the above conditions, whilst no voltmeter readings are of any use if the cells are being charged, as they only register the difference of potential of the charging current at the terminals.

If an accumulator shows as much as 2.5 to 2.6 volts per cell when the charging current is off, it would not only be very much overcharged, but the voltmeter would need recalibrating. Probably the highest true reading given by a fully charged lead cell may reach 2.4 volts, which immediately falls to 2.1 when any current is taken from it.

W.P.  
B41

## OUR READERS' OPINIONS (contd.).

### "Saving Time, Money and Trouble."

Your article in your issue of January 28th, on "Saving Time, Money and Trouble," is very stimulating to designers, if only from the quotation in the sub-title, which suggests

#### Easier Lubrication.

that much might be avoided if designers got down to their tasks. The article appears to deal principally with lubrication difficulties and calls for better access to lubrication points. Would it not be better to apply the constructive effort to eliminating the need for lubrication points rather than making them accessible?

The use of a high-pressure grease-gun has made greasing less distasteful, but the amount of effort is still considerable. It has been the policy of A.C. designers to reduce lubrication points to the minimum by the use of oilless bushes and only three greasers are needed on the whole car.

I quite agree that removing the floorboards to gain access to any greasing point is a greater amount of labour than the actual greasing, and it has been found possible to arrange all the oil-filling operations so that none of the interior coachwork need be disturbed.

The suggestion of carrying small-bore pipes above the floorboards connected with the oiling points is not a question of cost, but they would need to be made of material which would not fracture through prolonged vibration; a small crack due to fatigue would not be noticed, but would result in the lubricant being wasted and the seizure of the part it was intended to lubricate.

I quite agree with the suggestion that the best place for the universal joint is at the rear end of the propeller shaft, when the gearbox is made a unit with the engine; but in usual forms of construction it is also necessary to have a universal joint at the front end as well, although, of course, it need not be of the telescopic type.

The problem of the bright parts is one which involves a question of taste and can never be standardized. Whether it is best to have parts all black or whether the undoubted gain in appearance due to certain parts being bright is worth the effort involved in keeping them clean has been debated in the bicycle world for the past 30 years without any finish being universally adopted. However, our friends the

chemists have practically solved the problem by giving us Nevadull plating, which when wiped with a dry cloth immediately takes up its original silvery white brightness. The A.C. Co. has adopted this on certain models, and, as soon as the technical difficulties of dealing with Nevadull plating in production quantities have been overcome, will be able to offer it on all parts of the car.

Cellulose finish offers an enormous saving to the owner-driver, and here, again, when the initial troubles have been overcome there is no doubt that this form of painting will be adopted throughout the motorcar trade, and also that many metal parts which are now plated, oxidized or lacquered will be cellulose sprayed with a colourless coating which retains the polished surface of the metal.

I can assure you that the designer, the chemist and the engineer are, generally speaking, all getting down to their tasks, but it is obvious that some time must elapse between the technical details of a process appearing in the papers and its being offered to the public as a commercial proposition.

H. W. PITT.

### An Outing for Poor Children.

As you know, the Ancient Order of Froth Blowers has been working for some considerable time in aid of the Wee Waifs and Strays, and has up to date paid the sum of £13,000 to Sir Alfred Fripp, the whole of which money has been devoted to the Wee Waifs and Strays. In connection with the Ancient Order of Froth

Blowers I am now starting Auto Outings for Bairns, a scheme to enable us to take parties of children from the slums of London and give them a day in the country or at the seaside, and am asking all owners of cars to place their cars at my disposal for one day in the year. Later on dates will be fixed, and the owner of every car on my register will be given the choice of two or three different dates and asked to let me know which date would be most convenient to him.

Anybody wishing to assist in this good cause should communicate to me direct, addressing their letters to Lt.-Col. P. C. Saunders, O.B.E., c/o Messrs. Auto-Auctions, Ltd., Horseferry Road, London.

P. C. SAUNDERS (Monsoon, A.O.F.B.).

## The Police Attitude Towards Motorists.

### The Case for the P.C.

From time to time there have appeared in your columns letters from readers "strafing" the police in their methods against motorists. I am a very keen motorist and have

#### A Question of Duty.

driven all kinds of car and motorcycle, but have always found the police most polite and ready to give any assistance they can. I think a lot of trouble is caused by the majority of people forgetting that the police force is composed of men—human men—whether they are dressed in uniform or not, and anybody who speaks to one of them in a manner I have heard motorists talk to some constables is asking for trouble; if these people had addressed me in the same way I should have been very much inclined to hit them very hard under the jaw!

Some time ago I happened to be passing across Hyde Park Corner about 3 a.m., and noticing two constables standing on the kerb I pulled up and started talking about things in general. The conversation veered round to police persecution, and one of them said: "You see, sir, it's like this: it's all very well the motorist grumbling at us, but we have to run people in sometimes to safeguard ourselves. After all, it's our duty."

I asked him exactly what he meant. He explained that a short time before he was on point duty and was holding the traffic coming up a certain street, whilst another police officer was stopping the down traffic. He then noticed that his "mate" was signalling to him and turned round to find a car pulling across the road on the wrong side of the island. He stopped it, and the driver said: "I am Mr. — and am going to the House of Commons for a Division."

Having taken all particulars the constable let him go, and later consulted his mate as to what steps he should take; they decided that in the circumstances he would not report the matter. The next day, while on duty, a sergeant appeared and wanted to know why he had not

reported the occurrence, as Mr. — had rung up and wanted to know what he was being charged with, and it was only after a great deal of explanation that the constable was able to clear himself.

This is only one of the tales that this constable told me, but I think it shows that at heart the P.C. is really one of the "very best" and is out to help the motorist as much as he can. At the same time it must be remembered that he has got to carry out his duty or else he suffers for it. I am not in any way connected with the police, but am a great admirer of them. I take off my hat to you, Robert!

E.M./B.R.J.T.

### The Views of "Robert's Missus."

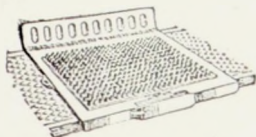
I have read with interest your readers' letters respecting their experiences at the hands of the Blue Force. As I am the wife of a member of that force, and as my husband dare not defend himself against the allegations of your correspondents, I

Politeness Pays. feel I must take up the glove. Now, the first words to a policeman are the most critical, for they may mean a caution or a prosecution. Again, do not exaggerate—4 m.p.h. does not look like 18 m.p.h. to either motorist or trapper. I have heard my hubby speak exceptionally well of some motorists, because of their common-sense.

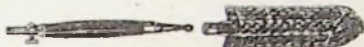
When leaving a car, even for a few minutes only, ask a policeman, if one is near, whether or not it is in the most convenient place; it takes but a moment and it might save £1. He may tell you that the spot is an unofficial bus halt, or that the car is in his way, but, above all, treat him with civility and he will treat you in a similar manner; be saucy, and so will he be, only in a different way. In conclusion, I may say that if he is treated in a proper way you will find him as nice a fellow as I have. ROBERT'S MISSUS.

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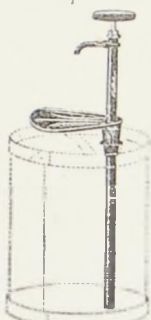
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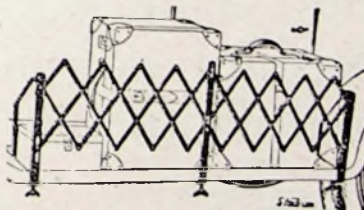
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| Citroen, 75 h.p.                 |       |       |       |       |
| Citroen, 12/24                   |       |       |       |       |
| Citroen (all models)             |       |       |       |       |
| Clyde                            |       |       |       |       |
| Crossley, 14                     |       |       |       |       |
| Crossley, 18/20 h.p.             |       |       |       |       |
| Crossley (all models)            |       |       |       |       |
| Daimler (all models)             |       |       |       |       |
| Daimler, 12/22                   |       |       |       |       |
| Daimler (all models)             |       |       |       |       |
| Hillman                          |       |       |       |       |
| Humber, 8                        |       |       |       |       |
| Humber, 9/20 h.p.                |       |       |       |       |
| Humber (all models)              |       |       |       |       |
| Jaguar                           |       |       |       |       |
| Laporte, 12/24 h.p.              |       |       |       |       |
| Model (all models)               |       |       |       |       |
| Riley, 11 and 1                  |       |       |       |       |
| Riley, 11 and 1                  |       |       |       |       |
| Rover, 8 h.p.                    |       |       |       |       |
| Rover (all models)               |       |       |       |       |
| Singer                           |       |       |       |       |
| Standard, 14 h.p.                |       |       |       |       |
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| Talbot (all other models)        |       |       |       |       |
| Triumph                          | A     | A     | A     | BB    |
| Vauxhall, 14/40 h.p.             | A     | A     | A     | BB    |
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| Vauxhall (all other models)      | BB    | A     | BB    | A     |
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## OUR READERS' OPINIONS (contd.).

**Illumination of Road Obstructions.**

I should like to know whether your readers agree with my contention that where a red light is placed on a road there should also be a green light to indicate to road users which portion of the road is open to traffic.

**Red and Green Lights.** The execution of the suggestion is very simple and the cost would be practically nil. In these days, when road repairs

and alterations are necessarily numerous, red lights often appear at frequent intervals, first on one side of a road and then the other, and it is puzzling, even to one who knows the road. A stranger is more than puzzled. Great caution and powerful headlights will, I admit, solve the puzzle, but there are road users who cannot boast of the latter, in which case the rope or plank protecting the public from the repairers' dump is not visible until it is too late.

I am sure all your readers would like such a guide as I suggest. One can rest assured that road contractors would not think the carrying out of my suggestion was a hardship if it were made law.

GREEN LIGHT.

**The Ideal Light Car.**

The letter from "Singer Owner," which appeared last week, naturally interested me considerably, as he referred to the specification which I put forward as being ideal for a light car. I do not quite know

**"Singer Owner" Taken to Task.** whether to take his remarks seriously or not. After giving the specification of the Singer Senior he says, "As I have stated, it is not identical with 'H.N.H.'s' specification, but save for the two points I have mentioned (i.e., engine capacity and gearbox) the difference is not great."

The difference between a 1,308 c.c. and a 1,496 c.c. engine is, of course, considerable, and the same may be said of the difference between a three-speed and a four-speed gearbox. "Singer Owner" admits these points and I should therefore have thought that they would have been sufficient to prevent him from suggesting a similarity between the specification of the Singer and the specification which I put forward in the first place.

Setting aside these points, however, does "Singer Owner" consider that there is no great difference between side and overhead valves, between open and enclosed propeller shafts, between bevel and worm final drive, or between semi-floating and fully floating rear axles? Again, does he think that medium-pressure and balloon tyres are one and the same thing, and that quarter-elliptic and semi-elliptic rear springs are identical? Of course, the number of crankshaft bearings and the body finish are also important, but "Singer Owner" was obviously misinformed on these points when he wrote the letter.

The other differences are quite sufficient, in my opinion,

however, to prevent anyone seriously thinking that there is any similarity between the specification I suggested and that of the Singer. Of course, most cars are similar in the sense that they usually have one wheel at each corner, and perhaps "Singer Owner" was regarding the matter in this light!

In conclusion, I should like to emphasize the fact that I do not wish to "crab" the Singer in any way, as I have a very high opinion of it, and it must also be pointed out that a car embodying all the features I suggested would probably cost about £400, whereas the price of the Singer Senior open touring model is only £220. I merely put forward a specification which, according to the opinions of myself and my friends, approached as near as possible the ideal. The car embodying all the features mentioned probably does not exist.

H. N. HOLLOWAY.

**Competing on a Level Footing.**

With reference to the letter from Mr. F. C. Poulter, which was published in your issue of February 4th, I should like to query his statement that "owing to the conditions under which the average trial is run, disabled drivers are automatically debarred from taking part." I am afraid

that I cannot see any reason why disabled drivers should not take part in the normal trials. I myself have lost my right leg and have competed (both on motorcycles and in cars) in normal trials and also raced at Brooklands without experiencing any special difficulty whatsoever.

Finally, I think I shall be voicing the opinion of a great many people if I say that we do not want to be distinguished in any way from more fortunate people and, although we may be "disabled," I am sure we would rather be looked upon as ordinary individuals.

RIVERS OLDMEADOW.

**Mr. Poulter's Letter Criticised.**

I note that in last week's issue of your journal Mr. Poulter, of the N.-E. London M.C.C., proposes to organize a trial for disabled drivers, giving the reason that they are not able to compete with able-bodied

**An Offer of Help.**

drivers on an equal footing. If the trial were confined to solo motorcycles, where it is sometimes necessary to foot it over rough ground, there might be some grounds for this statement; but give the disabled driver three or more wheels to balance on, and so save him the effort of performing athletic stunts, and he will meet the able-bodied man on level terms any day.

Apart from the paragraph referred to, Mr. Poulter's proposal is very sound, and we shall be pleased to have further details with a view to giving any assistance which lies in our power.

N. FIELDEN.

Hon. Secretary, Disabled Drivers' M.C.

**Which Average the Higher Road Speeds?**

After being a big-car driver and enthusiast for nearly a quarter of a century I am seriously considering if the time has not arrived for me to change over. There is a saying

**Large or Small Cars?** that a good big 'un is always better than a good little 'un, but I am doubtful if this is correct with regard to

average road speeds on certain makes of modern car. During the past month I have personally witnessed demonstrations which, in my experience, are unique.

It takes a really good car to hold my old war-time Rolls, in spite of its 250,000-odd miles. Its highest average, however, does not compare with that of the new Phantom, which is far and away the best car I have ever handled. Its normal cruising speed is fifty miles per hour and, if occasion arise, one can, if one wishes, push the needle of the speedometer round beyond the eighty miles per hour mark.

It may sound ridiculous, but I have actually averaged higher road speeds in this Rolls-Royce than in the big racing car, with which, a year or two ago, I captured the world's twelve-hour speed record at an average of over ninety-five miles per hour. I can honestly say that when in a hurry I have never yet been passed by any big make of car, yet, during the past month when driving just about as hard as safety permits, I have been fairly and squarely

"licked," first by a Bugatti, then by one of those really incomparable little Austin Sevens!

I do not suppose for one instant that either was a normal standard model, but it is the fact that both were fitted with ordinary closed bodies.

When one is trained to withstand the strain of lapping Brooklands for hours on end, at speeds exceeding one hundred miles per hour, one should be capable of averaging high speeds on the road for prolonged periods without feeling the strain unduly. In spite of this, I can truthfully state that after trying to keep up with the Austin referred to for about 160 miles I was all in. There was no question of racing. I just wanted to keep up until the terror stopped, so that I might have a good look at the car and congratulate its expert driver. I failed, due to running out of petrol, and again I marvelled where such a tiny vehicle could store fuel supplies which, even after allowing for the difference in consumption, would enable it to career on after my eighteen-gallon tank was empty.

There is a good story going round about the dude who, when his Rolls broke down, was annoyed with the chauffeur for not carrying an Austin Seven in the toolbox as a spare! According to my experience, however, that dude should have been in the Austin Seven and, if he wanted a spare, the only thing I can think of is "Babs," with Parry-Thomas up. Truly, we live and learn.

F. LIONEL THOMPSON.

## OUR READERS' OPINIONS (contd.).

### A Cheap Fog Filter.

Regarding the recent correspondence on driving in fog, may I suggest a cheap and practical form of filter which I have tried and found successful? It is nothing more

elaborate than a yellow oiled-silk tobacco pouch, which can be bought at Woolworth's for 6d. It should be opened out by tearing along the stitched edges, and to fix it in position the lamp front should be removed, the silk placed across the aperture and the front refitted: the loose edges can then be torn away and a satisfactory fog screen results.

W. J. MANN.

### The Furness Epicyclic Gear.

In the article "An Interesting Planetary Gearbox," published in your issue of February 4th, the writer endeavours to explain the reason for the reversal of rotation when using the reverse gear. He states that "if the two

layshaft gears were exactly the same size and were in mesh with two equal sun pinions, then the driven shaft would rotate at exactly the same speed as the flywheel." When he wrote "same size," one presumes he meant the same number of teeth.

What would really happen in such a case is this:—When the brake drum was gripped, causing the sun wheel in mesh with the rear pinion on layshaft to stop, the flywheel would carry the layshaft round the stationary sun wheel and so revolve the layshaft on its own axis. This in turn would have a tendency to revolve the driven sun wheel, but owing to the layshaft revolving in a circle about the sun wheel this tendency would be neutralized, with the result that the driven sun wheel would actually be stationary whilst the brake drum was held firm.

Really, the same size suns and the same size layshaft pinions provide the "idle spot" between forward and reverse.

A.B.

\* \* Our correspondent has detected, in an otherwise lucid description of a very complicated piece of mechanism, an error which evaded our supervision and which the writer of the article regrets having made.—ED.

### A Mysterious Pinking—

I had intended to write to you about an elusive "pinking" in the engine of my Austin Seven, but the cause is now apparent, and perhaps an account of it may be of interest to readers. Although the engine had not

done more than 1,000 miles since being decarbonized, it commenced to "pink" on hills, even steady gradients causing the unwelcome tinkle to commence. Retarding the ignition stopped it, but had an adverse effect on the speed of the car. Thinking that excessive carbon deposit must be the cause I decarbonized again. There appeared to be an improvement for about 200 miles, then the trouble again made itself evident.

The curious part of it was that previously one could not make the engine "pink." It would crawl on top gear without a sign of it. Thinking out every possible cause, I tackled the ignition system first, testing the timing of the magneto, testing the platinum points and readjusting, removing the sparking plugs and thoroughly cleaning and overhauling generally. On the first slight rise "tinkle, tinkle, tinkle" was my only reward. I was baffled. Pressure of work necessitated my carrying on without further investigation for a couple of months.

I had almost got used to the "pinking" and retarded automatically on every gradient when another sound developed, a faint but regular "tap, tap" audible only when the engine was running slowly in the garage. I went over and readjusted all the tappets without avail. The local garages rather pool-pooled it all and seemed to imply that I was worrying unduly over trifles. However, the tapping seemed to get worse and the pulling of the car was becoming affected, so I had the engine dismantled completely and then, and then only was the cause of the trouble discovered.

A gudgeon pin was broken clean in half, and incidentally, the cylinder scored. I must have run about 2,000 miles with the engine in this condition, which seems incredible. It is also curious how slight and elusive were the signs of the trouble.

NORMAN H. SMITH.

\* \* The experience of our correspondent points to the desirability, whenever possible, of taking a car to the makers' service station if an elusive trouble develops.—ED.

B46

## Maltreating Cars in Public Garages.

I have been extremely interested in the correspondence appearing under the heading of "Manhandling Cars in Garages." May I suggest, however, that a more comprehensive term could be used which would

### Are Owners to Blame?

cover both the actual handling and the misuse to which the mechanical parts are frequently subjected? In my opinion, the term "mal-handling" conveys the meaning better. The only time, when away from home, that I knew my car to be safe was when it remained out in the open during the period I was camping. I, therefore, sympathize with the two gentlemen who have already expressed their preference for leaving their cars out.

On one occasion a garage proprietor explained to me that he gave (and was obliged to give) complete satisfaction to his customers. On this point, however, I differed considerably, as I was then engaged in taking the car out of his garage to find a night's lodging for it elsewhere, having seen a sample of his "complete satisfaction" meted out to my bus.

Before criticising the average garage, however, I submit that the average owner should consider his own treatment of his own car. Often I have seen owner-drivers subject their cars to usages which proclaim either a lamentable lack of knowledge of the purpose for which certain parts of a car were designed, or a complete indifference to the results of such treatment.

Garages are aware of this casual treatment, yet misuse in their case is the more reprehensible, because (1) they are aware of what may result from wrong treatment, and (2) the owner has left the car with them on trust and naturally expects it to be fairly treated.

If owners generally were themselves more careful in their handling of their charges, anything approaching carelessness in others would soon be eliminated, for it would meet with universal condemnation.

BLUTL.

## CONDENSED CORRESPONDENCE.

"Victim" (Sunderland) points out that he has had a similar experience to the one which "Focus" mentioned in *The Light Car and Cyclecar* dated February 4th, in which a reader who forwarded cash for spare parts to a concern in financial difficulties was unable to recover the cash and could not get delivery of the parts he had ordered. "Victim" remarks that, having consulted a solicitor with regard to his position, he has learned that cash deposited with a concern against future orders for parts can be legitimately confiscated by a receiver, the depositors merely ranking amongst the other creditors.

## INFORMATION WANTED.

CASTLE THREE.—Readers' experiences of this car and the loan of an instruction book would be appreciated.—A. Partidge, 160, Queen's Road, Walthamstow, E.17.

HILLMAN.—The loan or opportunity to buy an instruction book dealing with the 1921 11 h.p. model P would be appreciated.—E. F. Saxton, 14, Haling Park Road, South Croydon.

ALLDAY.—The opportunity to borrow or buy an instruction book dealing with the 1917 10 h.p. model would be appreciated.—"Novice," 9, Kimpton Road, Camberwell, London, S.E.5.

BLERIOT-WHIPPET.—Anyone who is willing to lend or sell an instruction book on a 9 h.p. belt-driven model fitted with a J.A.P. engine is asked to write to Bell, 47, School Street, Gateshead-on-Tyne.

WOLSELEY.—Any reader who is willing to lend or sell an instruction book for the 1925 11-22 h.p. model is asked to communicate with H. J. Hewson, 2, Oakwood Road, Golders Green, London, N.W.11.

PEUGEOT.—Readers' experiences with the 7-12 h.p. four-seater model, with particular regard to petrol consumption, hill-climbing powers and general reliability would oblige.—"Ashburne," The Rectory, Whittington-in-Lonsdale, North Lanes.

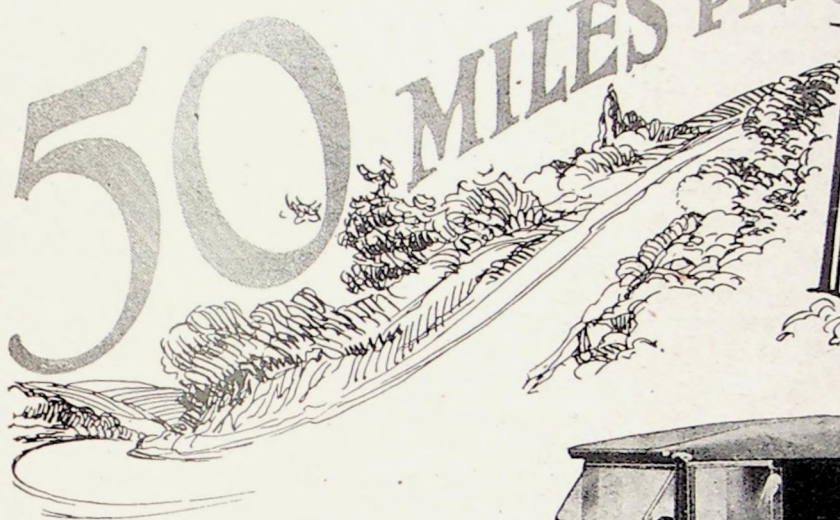
JOWETT.—The experiences of owners of these cars who have fitted shock absorbers would be much appreciated; the points on which information is particularly required are the increase in comfort given by the shock absorbers when the driver only is aboard and whether or not they are satisfactory when fitted to the rear axle only.—"E.F.S.," The Cottage, St. George's Road, Broadstairs.

# Peugeot

(PRONOUNCE IT PUR-JO)

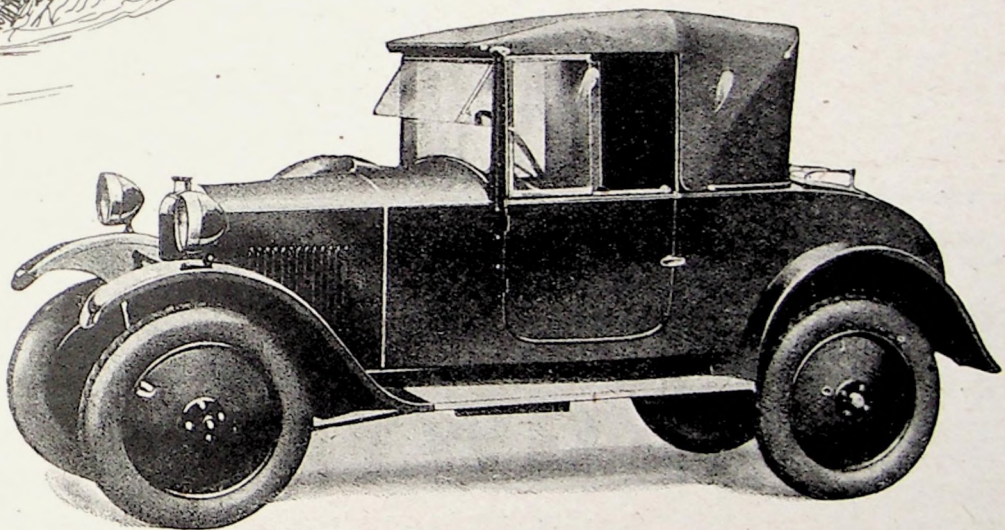
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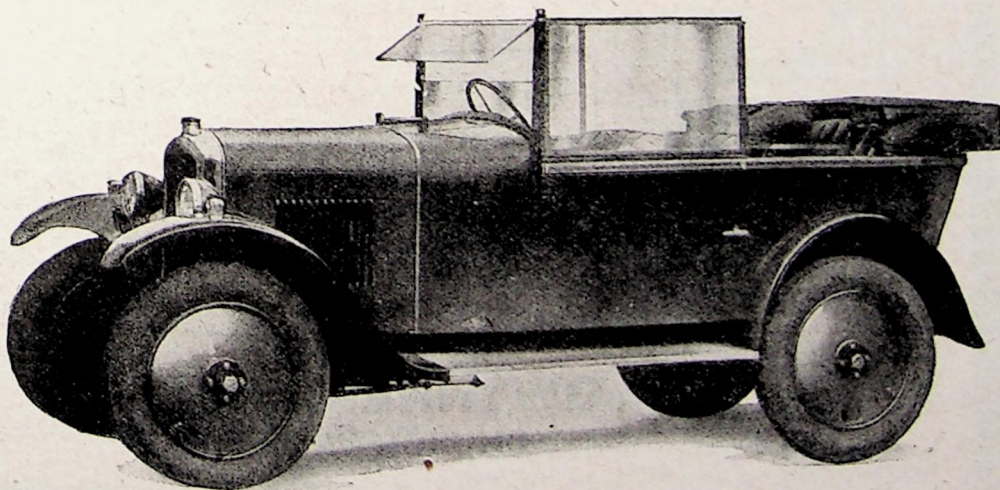
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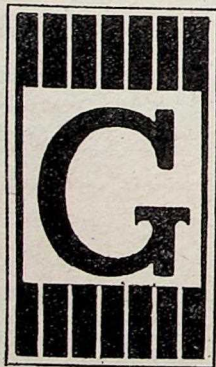
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| 9 h.p. Grand Sports, Fabric Body,<br>70 m.p.h., F.W.B. | £275 |
| 10 h.p., 2 or 4-seater, F.W.B.                         | £220 |
| 10 h.p. 4-door Saloon, Fabric or<br>Panelled, F.W.B.   | £260 |

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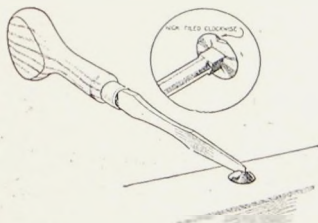
FACILITATE BUSINESS, and ensure prompt attention to your enquiries, by mentioning  
"The Light Car and Cyclecar" when writing to advertisers. They will appreciate it.



We invite readers to send us hints gained from their own experience for inclusion in this feature. Five shillings will be paid to the sender of any hint published, but we cannot undertake to return contributions not used.

### Correcting a Speedometer.

Having fitted larger tyres to the rear wheels of his car, a reader was not surprised to find that the speedometer was registering incorrectly. He put matters right by binding the groove of the pulley on the cardan shaft with 16 s.w.g. copper wire, drilling a small hole in the flange to secure the ends. The amount of copper wire needed was worked out and checked by experiment.



Showing the nick in the bolt-head and the method of holding the screw-driver.

### Tightening Coach Bolts.

Coach bolts are sometimes difficult to tighten up, especially when the square shank below the round head is a loose fit in the circular hole in the woodwork. A sure way of holding the bolt is to file a nick on the circumference, working clockwise when viewing the top of the head. Looking at it from the shank end, the nick will, of course, be in an anti-clockwise direction. If an assistant holds the point of a screwdriver in the nick so that the blade is at a tangent to the circumference of the bolt it is easy to tighten up the nut.

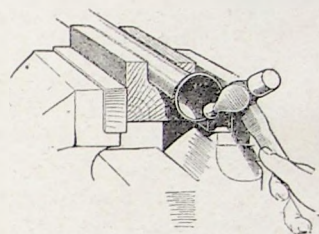
### Topping-up Batteries.

A very simple and efficient method of topping-up batteries, particularly if they are not in an easily accessible position, is by means of a hydrometer. Incidentally, the possession of this inexpensive instrument is really essential if batteries are to be kept in good condition. The specific gravity of the electrolyte can be tested at regular intervals, say, once a month, and the hydrometer can at the same time be used as a syringe to inject distilled water. The two processes can be carried out at the same time, and an additional advantage is that any acid in the hydrometer is returned with the distilled water which should not be added before the test.

### A Trojan Hood Cover.

A useful hood and dust cover for the rear seats of the Trojan occasional four-seater may be made from two yards of buff-coloured apron linen 48 ins. wide and costing about 2s. The material should lap over the backs of the front seats about 6 ins., go over the tonneau and over and round under the hood (when folded up, of course) until it meets the body of the car. The contours should be marked with a pencil and the shape cut out, the two ends being hemmed. From the remainder of the material two triangular pieces must be cut to form the sides of the envelope, and the whole should be neatly and firmly stitched together to fit tightly over the hood when the latter is closely folded and held by the springs. The front of the cover is held in place by two loops of tape sewn on to the sides, where they will pass over the screws at the base of the hood sticks. In the centre of the sheet some form of hook and eye should be sewn, the eye to the cover and the hook to a piece of tape passed round the upper hinge joining the two front seats.

When passengers occupy the rear seats the hood envelope may be left in position, the sheet being drawn back and tucked neatly under the back of the cushion.



Belling out the end of a tube with a ball-pene hammer.

### Belling Out Tubing.

It is sometimes necessary to bell-mouth the end of a piece of tubing to form a flange for a union nut. One of the most satisfactory ways of doing the job is to cut a semicircular groove in a block of wood to take the pipe. The block should be fixed in a vice with the groove uppermost. The pipe is held in the groove, while its end is tapped all round the edge with a ball-pene hammer, hitting slightly outwards with the ball. It is not advisable to attempt to do the work quickly by means of heavy blows; gentle and frequent taps, given while the pipe is revolved in the groove, are far preferable.



Queries of general interest will be answered under this heading whenever possible, but a stamped addressed envelope must be enclosed for reply by post. Telephonic inquiries cannot be answered.

C.E.H. (Tunbridge Wells).—The K.L.G. H.S.I. plugs you have can be used in a Rover Nine engine with very good effect.

S.M.H.B. (Kettering).—It is not advisable to grease or oil the screw of your Bendix starter mechanism. Grease collects dirt and leads to a sticking pinion. It is far better to keep the quick thread and spring perfectly clean and dry.

I.H.H. (Southwold).—The reason why oil is blown back through the sight feed of your Best and Lloyd lubricator is, probably, because you have omitted to replace the little steel disc or flutter valve in the base of the sight barrel. Alternatively, the valve may be stuck.

P.R. (Colwyn Bay).—The Treasury rating of the 1926 Fiat Nine (model 509) is 8 h.p. and the taxation fee is £8 per annum. The capacity is 990 c.c. and overhead valves and camshafts are fitted.

S.L.M. (London, S.W.).—Neither Gray's Inn Square nor South Square are authorized parking places, the nearest parking ground being Red Lion Square, between Theobald's Road and High Holborn.

N.O.C. (Oswestry).—The Binks three-jet damping mousetrap carburettor is quite suitable for use on your o.h.v. Hackburne-engined Morgan. Although it is not so economical as your present model, it is not extravagant, and can easily be tuned either for racing or touring by judicious alteration of the combination of jets used. Yes, it certainly gives very good acceleration. You should make a paper rubbing of your present induction-pipe flange when ordering; it is more satisfactory than giving measurements.

## Reports and Announcements of Sporting and Social Events.

### LEICESTER AND D. M.C.

The annual general meeting of the Leicester and District Motor Club will be held to-day (Friday) at the club headquarters, the Commercial Room, Royal Hotel, Leicester. The chair will be taken by Mr. A. Williams (vice-president) at 8.15 p.m. prompt.

### NORTH-EAST LONDON M.C.C.

The North-East London Motorcycling Club informs us that the light car and cyclecar section of the club is in need of more members. Owners of cars not exceeding 1,100 c.c. are eligible for membership. The club's next event is a one-day trial on February 27th, and all particulars are obtainable from the hon. secretary, 63, Well Street, Hackney, E.9.

### KENT AND SUSSEX L.C.C.

To encourage members to enter more freely in competitions, the committee of the Kent and Sussex Light Car Club has decided to present a gold medal to the member who enters the greatest number of the club's events during 1927. To encourage members to assist in increasing the membership, the Mayor of Tunbridge Wells will present a prize to the member who obtains the largest number of recruits during the ensuing year. A number of trials, including four speed events, have been arranged, and the opening fixture will be a rally and treasure-hunt on March 19th. This will finish at the Tudor Hotel, Hawkhurst. All communications should be addressed to Mr. Lewis Humphries, 12, Malling Street, Lewes.

### THE MORGAN M.C.

The annual dinner and dance of the Morgan Motor Club was such a jolly affair and met with such success that the organizers have been asked to run another on similar lines. It is interesting to learn, therefore, that the Prince's Hall at the Hotel Cecil has been secured for another dinner and dance, which will be held on Thursday, March 10th. Dinner will be at 7.30 p.m., dancing from 9 p.m. until 2 a.m. Owing to the fact that some difficulty was experienced on the last occasion in seating everybody, it is advisable to apply for tickets (12s. each) as early as possible. All particulars may be obtained from Mr. W. E. A. Norman, 422, Upper Richmond Road, Putney, S.W.15, or from any of the principal Morgan agents.

### NORTH YORKSHIRE A.C.

The 21st annual general meeting of the North Yorkshire Automobile Club was held at the Royal Station Hotel, York, on February 1st, under the presidency of Lord Deramore. It was resolved to accept light car members at a reduced subscription of 1 guinea per annum, and the necessary alterations were accordingly made in the rules. Lord Deramore was re-appointed president, and the Marquis of Zetland and Lord Bolton vice-presidents. Major H. A. Watson having expressed a wish to resign from the chairmanship, Col. Gardiner was elected in his stead, and a resolution was passed thanking Major Watson for his services as chairman for the past 21 years. He was re-elected as the representative of the club on the general council of the Royal Automobile Club. The balance-sheet showed a total credit of £456 on the reserve fund, and the annual report stated that the club was in a very flourishing condition.

### WOOD GREEN AND DISTRICT MOTOR CLUB.

The annual general meeting of the Wood Green and District Motor Club was held at the Alexandra Palace on January 27th. The secretary's and treasurer's reports showed that the club had enjoyed a very successful year and 1927 was looked forward to with optimism. Officers were elected as follows: Chairman, Mr. F. G. Butcher; vice-chairman, Mr. J. H. Glover; captain, Mr. L. C. Otley; vice-captain, Mr. W. Chelms; treasurer, Mr. R. G. Soward; hon. secretary, Mr. C. E. Harding; assistant hon. secretary, Mr. Ramsey; hon. Press secretary, Mr. E. L. Forge. Fourteen members attended the A.C.U. South Midland general meeting at Radlett on January 30th. On February 13th a petrol consumption test will be incorporated in a run to Westcliff. Great interest is already being shown in the sweepstakes trial to be held on February 27th.

Communications should be sent to the hon. secretary, Wood Green and District Motor Club, Offices, Crescent Road, London, N.22.

B50

### STEVENAGE AND D. M.C. AND L.C.C.

The annual dinner was held on February 4th and proved to be an enjoyable and well-supported function. Unfortunately, the president, Mr. O. A. L. Pollard, who gives a considerable amount of time to the club, was unable to be present owing to influenza. It was pointed out by several speakers that the club deserved to be better known, and it would certainly attract larger entries for its events if more local motorists were aware of their interesting nature and the excellent awards that were made.

### FORTHCOMING EVENTS

#### February 11.

Public School M.C. Annual Dinner and Dance.  
Oxford M.C. Annual Dinner and Dance.  
Leicester and D. M.C. Annual General Meeting.

#### February 12.

Leeds M.C. £200 Trial.

#### February 13th.

Wood Green and D. M.C. Petrol Consumption Trial.  
London Eagle M.C. Sporting Trial.

#### February 16.

J.C.C. (South-Western Centre). Annual Dinner and Dance.

#### February 19.

Colmore Cup Trial.  
Canford and D. M.C. Annual Dinner and Dance.  
J.C.C. Yorks Centre Social Event.  
Cambridge University A.C. Eliminating Trial.

#### February 20.

Leeds M.C. Paper-chase.

#### February 26.

City of London M.A. Dance at Stationers' Hall.  
Bristol M.C. and L.C.C. Team Trial.

#### February 27.

Leeds M.C. Winter Trial.  
Wood Green and D. M.C. Sweepstakes Trial.  
Woodford and D. M.C.C. Social Run.

#### March 5.

Inter-Varsity Hill-climb.

#### March 6.

Leeds M.C. Competition.  
Liverpool M.C. Opening Run.

#### March 10.

Morgan M.C. Dance, Hotel Cecil.

#### March 12.

Southport M.C. Race Meeting.

### HUDDERSFIELD MOTOR SPORTS CLUB.

The Huddersfield Motor Sports Club was formed at a meeting of motorists and motorcyclists at Huddersfield recently. Mr. H. Neaverson who had acted as chairman of the committee that has made all the inquiries and organized the preliminaries, reported that an ideal site had been found for a private hill for sporting climbs. The gradient of the hill varied from 1 in 8 to 1 in 1½, and to fit the land for their purpose it would be necessary to construct a rough track, fence it in and to carry out other minor alterations. By charging admission to view the events, he had no doubt that they would quickly raise the £500 that would be required to establish the club firmly. Any surplus funds would be devoted to local charities. In response to an invitation to speak, Mr. Alec Dovener, hon. secretary of the Yorkshire Centre of the A.C.U., said that Huddersfield seemed to have made no provision for motor sporting events since the Huddersfield Motor Cycle and Light Car Club had ceased to exist. Similar clubs formed at Leeds and Bradford had been very successful.

The motion for the formation of the club was carried unanimously, and Sir Emmanuel Hoyle was elected chairman, Mr. B. Kaye, hon. treasurer, and Messrs. A. F. Montgomery and H. Canby joint hon. secretaries.

### J.C.C. SOUTH-WEST CENTRE DINNER.

Members of the South-Western Centre of the J.C.C. are reminded that the annual dinner of the centre takes place at the Guildhall, Winchester, on February 16th.

### WOODFORD AND D. M.C.C.

The 1927 programme of events to be held by the Woodford and District Motorcycling Club includes an all-night reliability trial on June 18th and 19th, and several other sporting features and social functions.

### UXBRIDGE M.C.

The annual general meeting of the Uxbridge Motor Club was held at the Chequers Hotel, Uxbridge, recently. The various officers were re-elected and a vote of thanks was returned to Messrs. Hickson and Milgion for all the good work they had done for the club.

### SHEFFIELD M.C.

The Sheffield Motor Club has arranged a very full list of sporting and social events for 1927; there is a run or trial fixed for nearly every Saturday in the year. Many of the runs are to places of local interest, while gymkhanas, trials and fishing matches also figure prominently. The hon. secretary of this club is Mr. H. Garrett, 115, Vincent Road, Sheffield.

### VARSITY HILL-CLIMB.

The eliminating trial of the Cambridge team for the Inter-Varsity hill-climb is to be run on February 13th, assuming that a suitable course can be found. Failing this, the results of a trial held on February 5th will be used in selecting a team to represent the Cambridge University Auto Club. The date of the hill-climb is fixed provisionally for March 5th.

### LONDON EAGLE M.C.

The first sporting trial of the season organized by the London Eagle Motor Club will be held on February 15th, the event starting at the "Old Welsh Harp," Hendon, at 2 p.m. All members are asked to turn up and bring their friends; all are welcome. Annual subscriptions are now due and should be paid so soon as possible. The subscription is 8s. 6d. and the cost of the badge 1s. 6d. This quarter's fixture list includes two sporting trials, two social runs, a dance and an "American" hill-climb. The hon. secretary is Mr. L. E. Beckett, Hillcrest, Hollis Hill Lane, N.W.2.

### TO CLUB SECRETARIES.

*Club secretaries would greatly assist us if they would forward us copies of their 1927 fixture lists so soon as possible in order that we may compile a general table of events for the guidance of our readers and intending entrants.*

### THE COLMORE CUP.

*Sunbac News*, the official organ of the Sutton Coldfield and North Birmingham Automobile Club, states that it is practically certain that Ilmington, Stanton, Stauway Gypsy Lane, Bush-combe and Gambles Lane will be used either up or down, or in some cases both ways, in the forthcoming Colmore Cup trial, which will be run on February 19th. It is also expected that three or four new hills will be included, but it has been finally decided that Buckland will not be visited this year. Aston Hill has proved itself an ideal venue for the acceleration test, which will be a straightforward one of 100 yards to 150 yards from a rolling start. Owing to the alteration in the acceleration test, a new brake test is to be organized as follows:—Machines will be stopped at the top of a steep hill; at the word "Go" they will roll down the hill and must be brought to a dead stop between two tapes. Failure to stop or stopping before the first tape will incur a penalty.

### NORTH LONDON M.C.

At the annual general meeting of the North London Motorcycling Club it was decided after some discussion, to alter the name of the club to the North London Motor Club. This step does not indicate any proposed change in the constitution of the club, which has always catered for motorcyclists of every description, but it was considered that the new title would remove any misunderstanding that may have existed that members were drawn only from the ranks of motorcyclists. The club has a large number of valuable trophies to be competed for during the coming season, and the committee is now engaged upon the task of arranging a programme of events that, it is hoped, will prove both interesting and attractive to all. Prof. A. M. Low was again unanimously elected president, and Messrs. A. J. Ivison, Bernard Staley, W. H. Wells, vice-presidents. Details of the forthcoming events will be announced at an early date, and, in the meantime, inquiries from motorists will be welcomed. Applications for entry forms should be made to Mr. Alan W. Day, Claremont, Ballards Lane, Finchley, N.3.

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| <b>CITROEN</b>          | 1925, 7 h.p., Cloverleaf, all-weather, lighting, starter, excellent condition ..              | £72-10  |
| <b>CITROEN</b>          | 1924, 11'4 h.p., 4-seater, English body, lighting, starter, all-weather, etc. ..              | £85     |
| <b>PEUGEOT</b>          | 1926, 7 h.p., 2-seater, balloon tyres, equipped, mileage only 5,000 ..                        | £95     |
| <b>CITROEN</b>          | 1926, 7 h.p., Cloverleaf, like new, small mileage, fully equipped, several extras ..          | £97-10  |
| <b>AUSTIN</b>           | 1926, 7 h.p., Tourer, speedo., step mats, lighting, starter, all-weather, etc. ..             | £105    |
| <b>AUSTIN</b>           | 1926, 7 h.p., Tourer, all-weather, several extras, excellent order ..                         | £107-10 |
| <b>AUSTIN</b>           | 1926, 7 h.p., Tourer, splendid order, all-weather, lighting, starter, etc., extras ..         | £115    |
| <b>SINGER</b>           | 1925, 10/26 h.p., 4-seater de Luxe, maroon, fully equipped extras, excellent condition ..     | £119-10 |
| <b>SWIFT</b>            | 1925, 10 h.p., 4-seater, all-weather, numerous extras, excellent condition ..                 | £119-10 |
| <b>CITROEN</b>          | 1926, 11'4 h.p., 4-seater, English body, fully equipped, extras, repainted ..                 | £119-10 |
| <b>CLYNO</b>            | 1926, 2-seater, lighting, starter, all-weather, usual equipment, repainted ..                 | £119-10 |
| <b>PEUGEOT</b>          | late 1926, 7 h.p., 2-seater cabriolet, exceptionally fine condition ..                        | £125    |
| <b>CITROEN</b>          | 1926, 11'4 h.p., English body, 4-seater, usual equipment, like new, only done 4,000 miles. .. | £127-10 |
| <b>SALMSON</b>          | 1926, 10/20 h.p., 4-door, 4-seater, F.W.B., lighting, starter, all-weather, fine order ..     | £129-15 |
| <b>SINGER</b>           | 1926, 10/26 h.p., 4-seater, maroon, all-weather, lighting, starter, several extras ..         | £155    |
| <b>ROVER</b>            | 1926, 9/20 h.p., 4-seater, Super Model, F.W.B., fully equipped, excellent condition ..        | £162-10 |
| <b>SINGER</b>           | 1925, 10/26 h.p., Saloon, fully equipped, splendid order ..                                   | £159-10 |
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## AROUND THE TRADE.

Delco-Remy and Hyatt, Ltd., write to inform us that the Trojan car which travelled from Singapore to London was equipped with Delco-Remy coil ignition.

Jacking up is greatly simplified by the use of the Enots hydraulic jack, marketed by Benton and Stone, Ltd., Birmingham. The price with two-piece handle is 50s.

The British Thomson-Houston Co., Ltd., advise us that Captain Malcolm Campbell used B.T.H. Polar inductor magnetos on "Bluebird" when he created a new world's speed record at Pendine.

We have received from Graham Amplion, Ltd., 25-26, Saville Row, Regent Street, London, W.1, a copy of a very tastefully prepared brochure dealing with the Graham Amplion Public Speech and Band Repeater equipment.

Liquid Measurements, Ltd., Bush House, Aldwych, W.C.2, inform us that they have been honoured with an order to install a Hammond Visible petrol pump at Windsor Castle. The system will be a duplicate of that recently installed at Sandringham.

"A Huttonized car will not rainspot" is an interesting claim made by British Commodities, Ltd., New House, Hatton Garden, London, E.C.1, for "Huttonizing Fluid," a cleaning preparation which is intended to be added to water when washing down a car.

We are indebted to the Capital Motor Co., Ltd., Remington Street, City Road, London, for providing us with facilities for taking the photographs illustrating the articles entitled "Reupholstering 'as an Art'" and "Successful Repainting" which appear in this issue.

We are asked to emphasize the fact that the A.S. signalling device (Auto-Sphinx Engineering Co., Ltd., 97, Mortimer Street, London, W.1) is operated by a small lever fitted in such a position below the steering wheel that it can be worked by the thumb without removing the hand from the wheel.

Readers considering the erection of a home garage should investigate the claims of the sectional wooden buildings marketed by Messrs. A. C. and W. Reid, Holme Hale, Thetford, Norfolk. Three sizes are available; the smallest measures 12 ft. by 9 ft. and sells for £13, carriage paid, an extra £4 10s. being charged for the floor. These garages are sturdily constructed, and it is claimed that they can be erected in two hours.

Johnson, Hurley and Martin, Ltd., Alpha Motor Works, Gosford Street, Coventry, notify us that they are in a position to supply replacement parts for the following cars, which are now out of production, and which were fitted with Alpha engines:—Adamson, Arden, Autoernt, Eric Longden, Mendip, Milton, Sirron, Warren-Lambert, Webb, Whitehead and Wilton. They state that they will be pleased to quote for chassis renewals for these cars on receipt of old parts as patterns.

Certain changes in the sales organization of the Dunlop Rubber Co., Ltd., are announced. Whilst continuing to be a member of the local board of the company, Mr. E. Healey has relinquished his position as general sales manager. Mr. Healey is succeeded by Mr. H. Shankland, who is equally well known in the tyre trade, and he will be assisted in his new sphere by Mr. H. L. Kenward, lately the company's regional sales manager in the London area. Mr. Kenward will assume the title of assistant general sales manager. Mr. J. A. Taylor, who for many years has been the company's district manager in Birmingham, is appointed to headquarters as assistant to the general sales manager for special representation duties. It is interesting to note that Captain Malcolm Campbell broke the world's record on Dunlop tyres.

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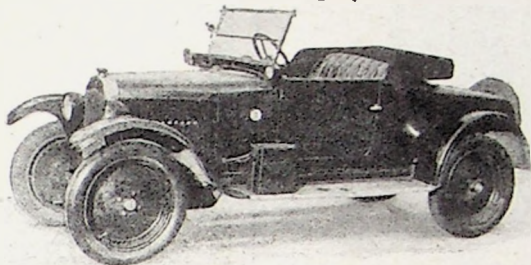
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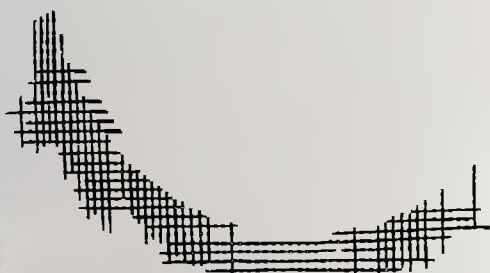
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