



THE WONDERFUL EFFICIENCY  
OF THE

**LODGE**

**PLUG**

means a great deal to you  
as a motorist.

It means that you will be  
practically immune from  
plug trouble: starting will  
be easy, with slow running  
quite smooth and even;  
acceleration up to full power  
will be rapid, and over-  
heating non-existent.

**LODGE** "*There is no better plug made.*"

MADE IN ENGLAND

Standard Lodge C3,  
sold everywhere

**5/-**

packed in sealed  
red metal box.

**LODGE PLUGS 1  
RUGBY.**

*Luxury Motoring in All But Cost*

An 11.4 h.p.

**CITROËN**

4-Door SALOON or 3-Seater COUPÉ

11.4 h.p. Saloon,  
4 Doors, F.W.B.

**£198**

Fully Equipped.

A delightfully roomy 4-seater Saloon with all-steel body, giving maximum visibility to driver and passengers. A trial run will convince you of its qualities.

11.4 h.p. Coupé  
Three-seater

The most inexpensive  
"quality" Coupé on the  
British market to-day.

**DEFERRED TERMS and PART EXCHANGES from ANY ONE  
OF THE 500 CITROËN AGENTS**

*Send for the Citroën Book 18.*

**CITROËN CARS LTD.,**

CITROËN BUILDING, BROOK GREEN, HAMMERSMITH, LONDON, W.6.

Showrooms: Devonshire House, Piccadilly, W.1. WORKS: SLOUGH, BUCKS.



11/11/1111

11/11/1111111111

After thoroughly testing THE STOTT ANTIBOUNCE CLIPS on all sorts of cars of many different types, sizes and makes I can recommend them to every motorist. THE STOTT ANTIBOUNCE CLIPS are only small fittings, easily attached to the springs of your car, but the difference which they make to the vibration, steering and general driving comfort is marvellous. Get a set of STOTT CLIPS for your own car and give them A MONTH'S FREE TRIAL—you will be delighted with the results. They are made to suit every make of car.

Here is a testimonial from a Motor Owner who decided to try a set of STOTT ANTIBOUNCE CLIPS.

"Please find enclosed cheque in payment for the STOTT CLIPS, there is no necessity to wait for full months trial as the Clips have already proved themselves remarkably efficient in damping road shocks and also in improving the steering."

**PRICES from 1 1/6 per pair.**

A postcard to the makers will bring you their booklet on Car Suspension.

**RICHARD BERRY & SON**

(Department "A")

Mafeking Road - - SMETHWICK.

'Phone: Smethwick 631.

'Grams: "Springs, Smethwick."

## Ready-to-Erect Garages in Wood or



GLIDING  
DOORS

**10  
Guineas**

GLIDING OUT-  
OF-WAY DOORS

FREE INSURANCE  
AGAINST FIRE

FREE PLANS FOR  
COUNCIL APPROVAL

DEFERRED TERMS  
CAN BE ARRANGED

Any handyman can erect a Thornber Garage in one afternoon. All the work is done for you—it is just a matter of bolting **complete** sections together. No loose timber is sent, every section is fully framed and complete, and the holes are bored in exact register to receive the bolts. All fittings are supplied and to ensure a no-trouble job every Garage is erected at Thornbers Works before it is despatched in sections.

### BUILT TO LAST AND TO PLEASE.

Workmanship throughout is solid and clean. No better value in Portable Garages is offered anywhere. Thornbers are experts at their job, and modern machinery which cuts out expensive hand labour is solely responsible for the low prices. When you buy a Thornber Garage, your outlay is completed—you have no additional expenses to meet for fittings, etc.

Gliding Out-of-Way Doors that move at a child's push, occupy no room and obviate hinged door weakness. Free Fire Insurance Policy. Free Plans for submitting to Council. Sizes for all popular makes of Cars. Deferred Terms arranged. Quick Deliveries. Garages can be inspected at works. **SEND FOR FREE FOLDER AND STATE REQUIREMENTS.**

Thornbers make all kinds of Portable Buildings for all purposes—Army Huts, Shops, Pavilions, Institutes, Bungalows, Poultry Houses, etc. State requirements—we will send free folders.

**THORNBERS**  
For EVERYTHING in WOOD

9, MYTHOLMROYD, Yorkshire.

London Office: 47, Victoria St., S.W.1

(where Model Garages may be inspected).

HOPS from



New Army Huts FROM







## EXPERIENTIA DOCET.

*Ballymena, Co. Antrim.*

*"Having now completed over 21,000 miles on my 4-seater Jowett during the past eighteen months, no doubt you will be interested to have a report from me as to the reliability of this car. I may say the public and myself are amazed at the amount of work this car has done without practically any attention whatever.*

*"I have had the engine decarbonised twice, and all who saw same when down were amazed at the perfect condition of all the bearings. I do not believe that any other make of car on the road, no matter what the price, would have stood up to the work as mine has done. The finish and appearance of this car is almost as new although it is out in all weathers, and sometimes has been run for months without washing, so you will see that it has not been pampered in any way. -*

*"Another important point is the service I have had from the Dunlop Balloon Tyres. The tread of these tyres is still good for at least 6,7,000 miles, although half the roads here are covered with rough, broken stones, unrolled. I think that this was really a greater test than crossing the Sahara."*

*Yours truly, R. A. M.*

The above letter from a Jowett owner substantiates our claims for the car's unfailing reliability. Designed right and built right of the best materials—yet the Jowett is the cheapest car to buy—and the cheapest to run.

All models are fitted with the little engine with the big pull.

FULL 4 (as illustrated) £150. SALOON, £185.

LONG 2, £150. LIGHT 4, £145 SHORT 2, £139.

Like the cars, our literature is unique and will be sent on receipt of a P.C.

ALL models can be had on our own Hire Purchase Terms.

Dunlop Balloons and Stewart Speedometers standard.

## JOWETT CARS LTD., IDLE, BRADFORD

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

# Player's "Country Life" TOBACCO

COUNTRY LIFE 1/0<sup>1</sup>/<sub>2</sub> per  
(Mild and Medium) oz.  
COUNTRY LIFE 11 D. per  
(White Label) oz.

After a trial of other tobaccos, smokers who come to "Country Life" are impressed by its remarkable freshness.



*"As Fresh and Sweet as the Country Air."*

C.L. 156

**To cure**  
**worn or oval cylinders**  
have them  
**REGROUND**  
by **LAYSTALL**  
and fit  
**DE LUXE**  
**LIGHTWEIGHT**  
**PISTONS**  
**ALUMINIUM** for  
Sports or Racing cars.  
**CAST IRON** for  
General use.  
BOTH THE LIGHTEST AND  
STRONGEST OF ALL PISTONS.

**LAYSTALL**  
EVER ST., SOUTHWARK, LONDON, S.E.1  
Telephone: HOP 6140 (9 lines)  
Millers Branch Works: 55, FONTENOY ST., LIVERPOOL

WRITE FOR THE  
LAYSTALL  
BOOKLET  
POST FREE

## 5 BENEFITS YOU GET FROM AUTO-CLIX

The Scientific Sparking Plug Attachment.

(World-wide Patents and Provisional Patents.)

- 1 You don't have to screw or unscrew terminals to clean or test your plugs. "Auto-Clix" connects or disconnects simply by a push or pull.
- 2 You get a perfectly rigid, reliable electrical contact; and "Auto-Clix" greatly enhances the appearance of the engine.
- 3 You can test plugs instantly with "Auto-Clix" without stopping the engine.
- 4 You save time, keep your hands clean, and there is nothing to get lost.
- 5 You foil car thieves. By withdrawing the scientific "Auto-Clix" plug the engine is rendered unstartable. Thieves do not wait to locate engine trouble.

1/- each. 4/- per set of 4.

Complete with

1. Adapter. (Extra Adapters for spare plugs, 4d.)
2. Resilient Non-Vibratory Plug and Insulator, Nickel-Plated.

Of all Dealers or direct from

**LECTRO LINX LIMITED,**  
MOTOR DEPT.

Manufacturers of Clix Radio Fitments.

254, Vauxhall Bridge Road, S.W.1.

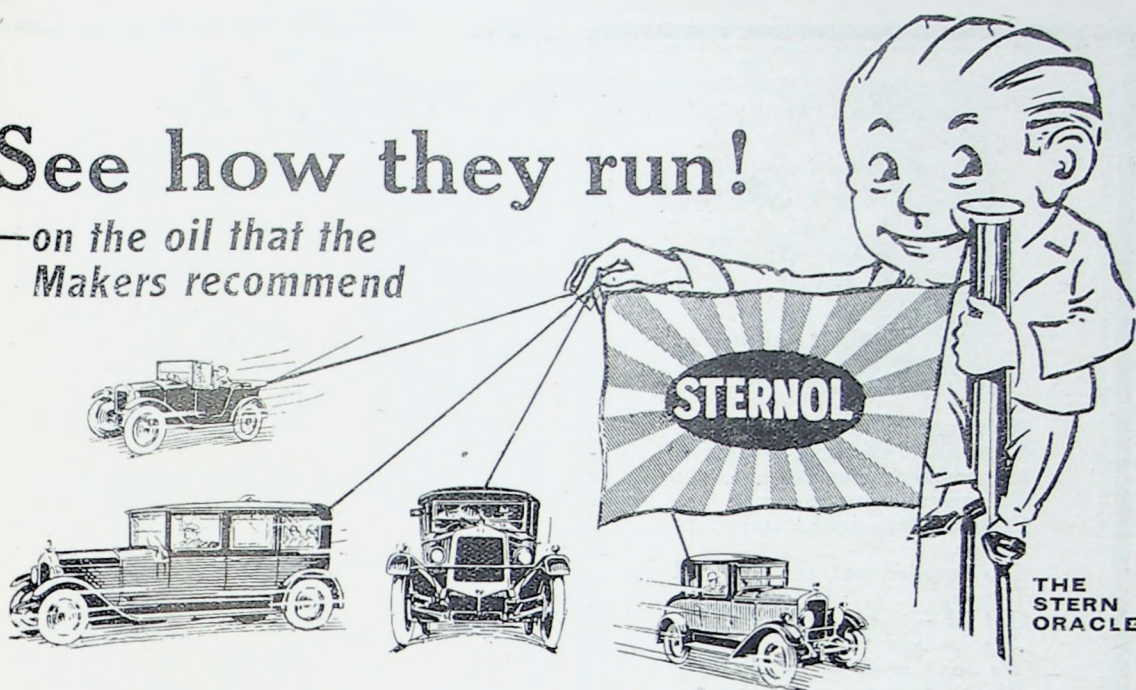
Telegrams: "Trolinx, Charlton."  
Telephone: Victoria 5120.

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



# See how they run!

—on the oil that the  
Makers recommend



THE  
STERN  
ORACLE

## It's Your Fault if You Don't Follow the Maker's Advice!

We know that every Austin Car is capable of giving the greatest possible measure of satisfaction to its owner. Each model is a glittering masterpiece of engineering.

## Get the Greatest Pleasure out of Your AUSTIN

Whatever model it be, you can obtain the finest performance from it; secure the utmost delight and, incidentally, PRESERVE IT in the most practical manner possible if you use the oil which the Austin Co. RECOMMEND you to use and which they themselves have used EXCLUSIVELY for the last 9 years,

VIZ.:

# Sternol WW

HEAVY  
MOTOR OIL

Makes Engines Purr Like Pussies

Follow the advice of other Austin owners and particularly of the famous makers of your excellent car.

The Austin Co. not merely approve, but RECOMMEND Sternol WW. They themselves use it exclusively.

STERNS, LTD., 46, ROYAL LONDON HOUSE, FINSBURY SQUARE, E.C.2

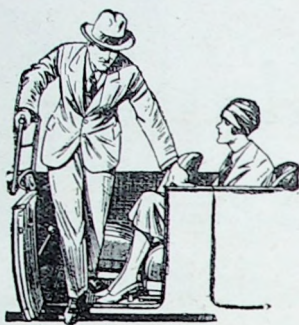
READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.



From hundreds of testimonials we have received from Austin Owners, we quote the following which is just to hand from the engineer of a well-known Electrical Tramway Undertaking:—

"I have been running on WW for the past 18 months with great satisfaction. There is less carbonisation in 12 months than with another very well-known oil in 4 months, and therefore have much pleasure in recommending it to my friends."





As owner driver of your Light car, you appreciate the Ups and Downs and Ins and Outs Of running a small car. Present-day mechanical perfection

Has levelled out the Ups and Downs, But Oh—

The Ins and Outs!

We don't need to tell you Of the tortuous mode of the Ingress and egress Necessary to driver and passengers.

We want to tell you of Amazing LEVEROLL seat mechanisms

Which give you up to Two feet extra door and floor space—

Instantaneously and effortlessly— Permitting unhampered exit and entrance

And allow you to adjust your seat By a mere finger touch, Without leaving it!

IF YOU WOULD USE YOUR CAR

IN A MANNER BECOMING TO YOU

YOU MUST BE COMING TO US!

Fit LEVEROLLS and throw away your shoe-horn. They can be easily fitted, and make your light car as roomy as a Rolls. Price £3-10-0 per set.

## A REMINDER.

In the CAR DEPARTMENT of Messrs. A. W. CHAPMAN LTD. a large selection of new and second-hand cars is available, any of which can be LEVEROLL fitted. Special Sets can be supplied for the SINGER "Junior," the CITROEN Saloon and other popular makes of cars with fixed seats.

**A. W. CHAPMAN LTD.,**

Patentees and Manufacturers,

Ranelagh Gardens, HURLINGHAM, S.W.6.

Telephone: Putney 2372/3.

# Oakeys' helps to motorists



## "WELLINGTON" LIQUID METAL POLISH

gives a supreme, lasting burnish to ALL METALS and GLASS—motor mirrors, lamps, windows, screens, etc.

In tins, 3d., 4½d., 7½d., and 1/3. Also in ½, 1, and 1 gallon cans.

## "WELLINGTON" VALVE GRINDING PASTE

FINE or COARSE.

A perfect paste made of the finest materials. Absolutely non-greasy, it possesses great cutting properties. In Tins and Tubes.



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

# PRATTEN'S "Big Three" Garages

Each of the Garages illustrated is manufactured in our own workshops of the best quality materials and supplied in sections which can be easily erected without skilled labour. Carriage paid. You are invited to inspect them at our works. Prices are lowest consistent with first-class workmanship. All Garages supplied by us are insured against fire—free.



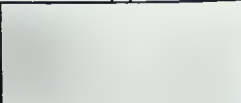
The "STERLING" Asbestos Garage  
15' 0" x 8' 4" x 7' 3" .. £14 0 0  
17' 0" x 10' 0" x 7' 3" .. £16 0 0



THE "POPULAR" GARAGE.  
12' 0" x 7' 0" x 6' 0" .. £9 0 0  
14' 0" x 8' 0" x 6' 0" .. £11 0 0



Full specifications contained in Folder No. 37. Other designs described in Catalogue No. 35. Post free.



THE "DUPLX" JOINT GARAGE.  
14' 0" x 8' 0" x 6' 0" .. £15 6 0  
16' 0" x 8' 0" x 6' 0" .. £16 10 0



Illustration of "Duplex" Joints, which shows how boarding is weatherproof.

**F. PRATTEN & CO., LTD.,**  
12, Midsomer Norton, Nr. Bath.



# An entirely new development in Saloon Car Construction

Write to-day for details of the latest Rhode Saloon—the Saloon which is acknowledged by the Trade and Public alike as being the most forward advancement in specialised car construction.

The riding ease of the fabric type saloon, coupled with all the advantages of the coachbuilt saloon, yet eliminating the many disadvantages of both. That very briefly, but very truly, epitomises the value to be obtained in this individually built saloon—the saloon which embodies new and exclusive features which are PATENT to the Rhode only.

There's nothing of the 'mass-production' element about the Rhode, for much thought and care have been expended and lavish attention given to those details of bodywork and finish which enhance so greatly the convenience and comfort of the owner.

Write to-day for the latest literature, or your local Agent will be pleased to arrange a demonstration for you. There's no obligation, but every facility for a trial run.

Standard finish in Dual Brown or Amethyst with Bedford Cord Upholstery.

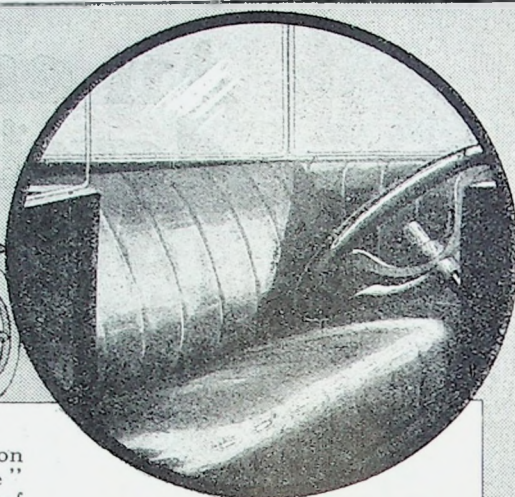
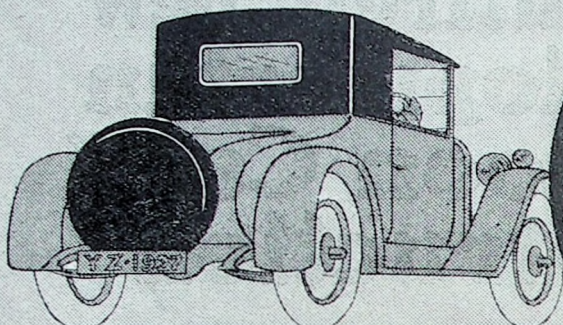
## £259 - 10 - 0

In real leather hide £10 extra.

## 10.30 SALOON

THE RHODE  
MOTOR COY.  
TYSELEY  
BIRMINGHAM





Hard wear in all sorts of weather soon makes leather upholstery shabby. "Rexine" Leathercloth is infinitely better—it is proof against water and grease, cannot fade, looks exactly like leather but costs less. When soiled it can be sponged clean.

"Rexine" Rubbercloth is ideal for Hoods, Hood Envelopes, etc.—it is absolutely waterproof and keeps smart for years.

**"Rexine"**  
BRAND LEATHERCLOTH  
& RUBBERCLOTH

REXINE LTD., 70 Spring Gardens, Manchester.  
London Office: 60, Wilson Street, Finsbury, E.C.  
M7

BUY BRITISH GOODS — SELL BRITISH GOODS

**Semi-Automatic Type, Price 35/-**  
complete  
as below

**Fit The "Master" Extra**  
**Air Valve on 30 days' Free**  
Trial, and obtain

- 1.—More miles per gallon.
- 2.—Increased power, due to the admission of a larger volume of more intimately mixed gaseous fuel into the cylinders. A super charger in simple form.
- 3.—A sweeter running engine.
- 4.—Freedom from oily plugs and less oil consumption.
- 5.—More efficient braking power with less wear on linings.

Send for our 54-page Booklet giving the Opinions of Owner-Drivers under all sorts of conditions.

**ALDAM & CO.**

(M Dept.), MISTERTON, DONCASTER.

Distributors for Birmingham and District:  
Ashton Engineering Co., Ltd., Floodgate St., Birmingham.



Hand-operated model with Patent Diffuser  
Coil as above.

**Price 30/- Complete.**

FITTED TO  
HORIZONTAL CARBURETTOR

**Automatic Type with**  
**Rubber Diaphragms, Price 40/- complete**

## HOMAC'S, LONDON'S LEADING MORGAN SERVICE HOUSE

OFFICIALLY APPOINTED BY  
THE MORGAN MOTOR CO.

Invite you to try a Morgan from their huge  
range before you come to any final light car  
decision.

Catalogue on request. DEFERRED TERMS.

**HOMAC'S**  
MOTOR AGENTS

DE LUXE MODEL.  
Air-cooled £110 :

AERO MODEL.  
Side Valve £127. O.H.V., 10/40 h.p., £140

TRADE SUPPLIED  
ALL SPARES IN STOCK.

243/7, LOWER CLAPTON ROAD.

Works: 46, London Road, Clapton, E.5.

Phone: Clissold 2403.

EXPERT REPAIRS  
BY SKILLED  
MORGAN MECHANICS.

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





## Birds of a feather flock together.

THAT is why in our Show-rooms you will find so many of the world's best cars. Only the best cars find room at the Service Company's showrooms.

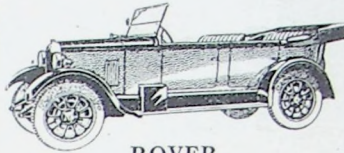
But they are all there... from cyclecars to luxurious saloons. You can come in and inspect them at any time. If you prefer to go round on your own nobody will worry you. If you want an expert to come round with you one of our salesmen will be happy to oblige you.

If you're buying your first car we recommend you to take a conducted tour, for then you will learn all about running costs and taxes and garages and all sorts of useful things. You are under no obligation to purchase because you make use of our service.

If, when your choice is made, you want to buy from us we will serve you further by guaranteeing you complete and absolute satisfaction. Our service department will give you advice and help and even minor adjustments and repairs without a penny charge...at all times and for as long as you like.

Come and have a look round our showrooms. Ask about our plan of deferred payments if you want to keep your capital intact.

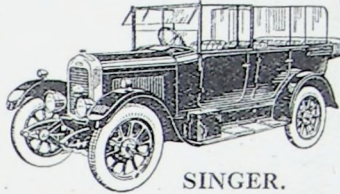
**FREE!** Write to-day for a copy of our novel catalogue "The Diary of a Car Tester."



### ROVER.

4-Seater Tourer .. £225  
£45 down.

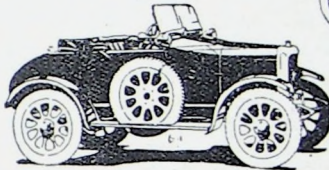
12 payments of	£15	15	0
18 "	"	10	15 0
24 "	"	8	5 0



### SINGER.

4-Seater Senior .. £220  
£44 down.

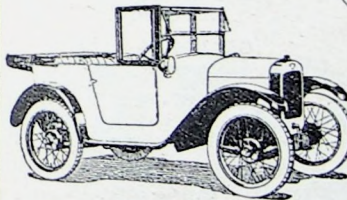
12 payments of	£15	8	0
18 "	"	10	10 2
24 "	"	8	1 4



### JOWETT.

2-Seater .. £150  
£30 down.

12 payments of	£10	10	0
18 "	"	7	3 4
24 "	"	5	10 0



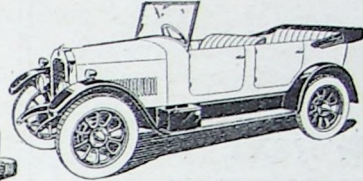
### AUSTIN "7."

7 h.p. Chummy .. £145  
£29 down.

12 payments of	£10	3	0
18 "	"	6	18 6
24 "	"	5	6 4

### NO DEPOSIT SCHEME.

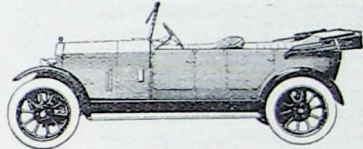
We can supply any new car. First monthly instalment secures delivery.



### SWIFT.

4-Seater Touring .. £210  
£42 down.

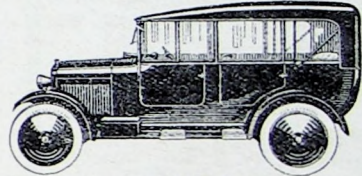
12 payments of	£14	14	0
18 "	"	10	0 8
24 "	"	7	14 0



### WOLSELEY.

4-Seater Touring .. £215  
£43 down.

12 payments of	£15	1	0
18 "	"	10	5 5
24 "	"	7	17 8



### SINGER.

Junior 8 h.p. .. £148 10 0  
£29 down.

12 payments of	£10	10	0
18 "	"	7	3 4
24 "	"	5	10 0

### USED CARS.

Should you be wanting a second-hand car, we have a number of overhauled demonstration and used models that can be bought for cash or easy payments. Every one is a genuine bargain and is backed by our reputation.

# The Service Company Ltd.

273-274, High Holborn, London, W.C.1.

Telephone: Holborn 0666 (3 lines).

Telegrams: "Admittedly, London."



## Special Features of this week's issue

### \* NEXT WEEK!

EXPERIMENTS IN FAST  
CORNERING.

SOME DRAWBACKS OF  
SERVO-OPERATED BRAKES.

AUTOMATIC ENGINE CON-  
TROL WHEN GEAR  
CHANGING.

NEW INVENTIONS: Steam  
Cooling—Self-adjusting Brakes  
—Induction Pipe Heating—  
Car Ventilation—etc.

BACKLAND MOTORING—  
Avoiding Congested Roads.

THE CAUSES OF  
ACCIDENTS—An Interesting  
Analysis.

## Tues., Aug. 9th.

BRITISH CAR POSSIBILITIES OVERSEAS.

AMERICAN SPEEDWAY RACING.

Board Tracks not a Financial Success. What it Costs to  
Win Races. The Advent of the Front-wheel-drive Racer.  
Remarkable Speeds by 1,500 c.c. Cars.

ALL ABOUT FABRIC BODYWORK.

Some Informative Comments upon a Type of Bodywork  
Concerning Which Much will be Heard and Seen at the  
Forthcoming Olympia Show. A Feature of 1928 Programmes.

ANOTHER EASY-TO-CHANGE GEARBOX.

Addition to Growing List of Gear-change Devices. Invention  
of an American Engineer.

BEAUTIFUL NORTH WALES.

Three Places Worth Visiting: Llangollen, Dolgelley,  
Barmouth.

HOW TO SPEND AN INTERESTING DAY IN  
CAMBRIDGE.

Things to See in Famous Old University Town.

THE DEWPOONDS OF THE SOUTH DOWNS.

Mysteries of Construction That Remain Unsolved.

A DRAG HUNT.

A Popular Day's Sport for Motorists.

CYLINDER HEADS THAT GIVE MORE POWER.

Improving the Performance of Standard Models.

A LOW-BUILT TRIPLE-PURPOSE BODY.

Enclosed-drive Limousine, Coupe de Ville or Saloon  
Limousine at Will.

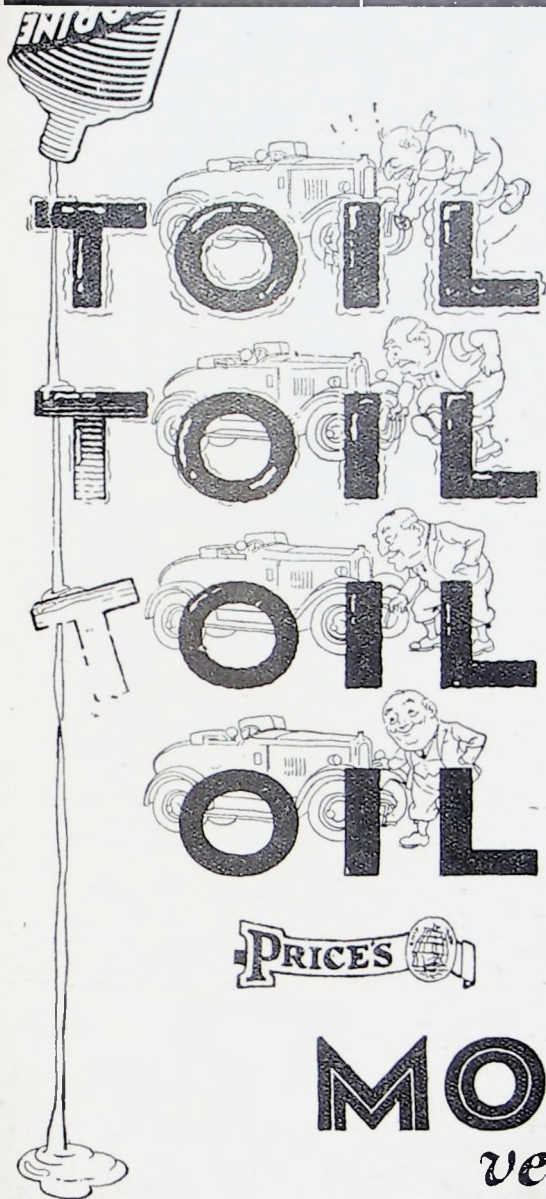
SOME NOVEL AMERICAN "NOTIONS."

Ingenious Mechanisms Suggested by Young Engineers in  
a Competition Organized by the S.A.E.

EVERY  
TUESDAY

4<sup>d</sup>.

Offices: 5-15,  
Rosebery Ave.,  
London, E.C.1.



## TAKING THE "T" OUT OF "TOIL"

Snap-ah-ah, snap-ah-ah, snap-ah-ah. Cranking wastes time and elbow-grease; sitting with your finger on the starter wastes battery juice. The kind of oil you use can help or hinder. Use the right grade of Motorine and the first "swing" starts the engine.

The merits of "fatty oils" plus "hydrocarbons" are simply explained in the book we have written called "The Car." (And a companion volume "The Motor Cycle.") Either or both are yours for the asking. Simply fill in and post us coupon below.

And the benefit of free advice from Price's Technical Bureau is always to be had. We revel in unravelling knotty oil problems. That's our job.



# MOTORINE

*very special oil*

<b>COUPON</b>	To PRICE'S, The Oil People (Dept. EE18) London, S.W.11
Please send the books I've ticked. "The Car" ( <input type="checkbox"/> ), "The Motor Cycle" ( <input type="checkbox"/> ). Both ( <input type="checkbox"/> ). I'm interested	
Name .....	
Address .....	

PRICE'S PATENT CANDLE COMPANY LIMITED, LONDON, S.W.11



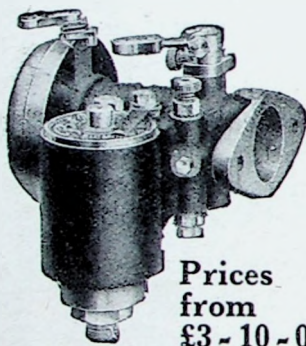
WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.



# The only Carburetter of its kind

**That Gives**  
both double  
atomisation  
and double  
diffusion.

**That is so**  
simple to under-  
stand and takes  
so little time  
to fit.



Prices  
from  
£3-10-0

**That, by**  
means of its  
automatic  
compensation,  
gives more  
m.p.g. and  
greater power  
and acceleration

We invite you to PROVE  
FOR YOURSELF these and the  
many other advantages of the



at our expense—under our  
30 Days money-back guarantee

Write us—stating the make of  
your car and ask for a copy of our  
latest book on "The Carburetter  
that Thinks."

**BROWN & BARLOW LTD.,**  
Carburettor Works, Witton, Birmingham.  
London Service Agents: Dartford Eng. & Carriage  
Co., Ltd., 23/24, Hythe Road, Willersden, N.W.10.

## B&D STABILIZERS

3 SIZES  
52/6, 63/6, 72/6  
per axle, brackets included  
*Can be purchased on trial  
under guarantee.*

### Unique Advantages!

*Ease of Fitting.  
No frame Drilling.*

Simple and  
sound con-  
struction  
which has  
stood the  
test of time.

*The Light Car & Cyclecar  
says:—"We found no diffi-  
culty in assembling them...  
the only tools used being two  
set spanners... Whereas before  
it had been practically impossible to  
travel at more than 30 m.p.h. with-  
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R.N.R.

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attention, to mention "The Light Car and Cyclecar" in your enquiries.



AUGUST 12, 1927.

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### For any need or any road

Wherever the need is felt for a thoroughly serviceable all-purpose car, there you will surely find the 9/20 H.P. Humber. You see it often because no other car of its class combines so many popular features in automotive design with so moderate a price.

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The front wheel brakes are of the internal enclosed type operated by means of levers and cams located above the axle bed. The entire mechanism forms a unit with the front axle.

**MODELS ARE AVAILABLE FOR  
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When Capt. M. Campbell startled the speed world by driving a car at 150.76 m.p.h.—“Aero” springs helped.

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—when Major Segrave drove his 1,000 h.p. Sunbeam 207 m.p.h.—“Aero” valve springs helped.

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Jaws have a parallel lift from 0 to  $5\frac{1}{2}$ ” and lock at every point leaving hands free. The tool is capable of a 250 lbs. pressure. Each jaw is reversible, and may be turned very easily and quickly. The “Terry” is adaptable to practically all side-by-side valves, and many o/h valves, too.

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**7/6**

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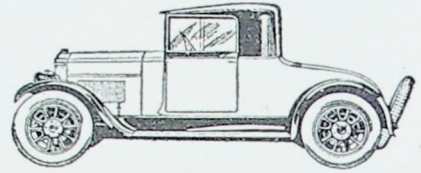
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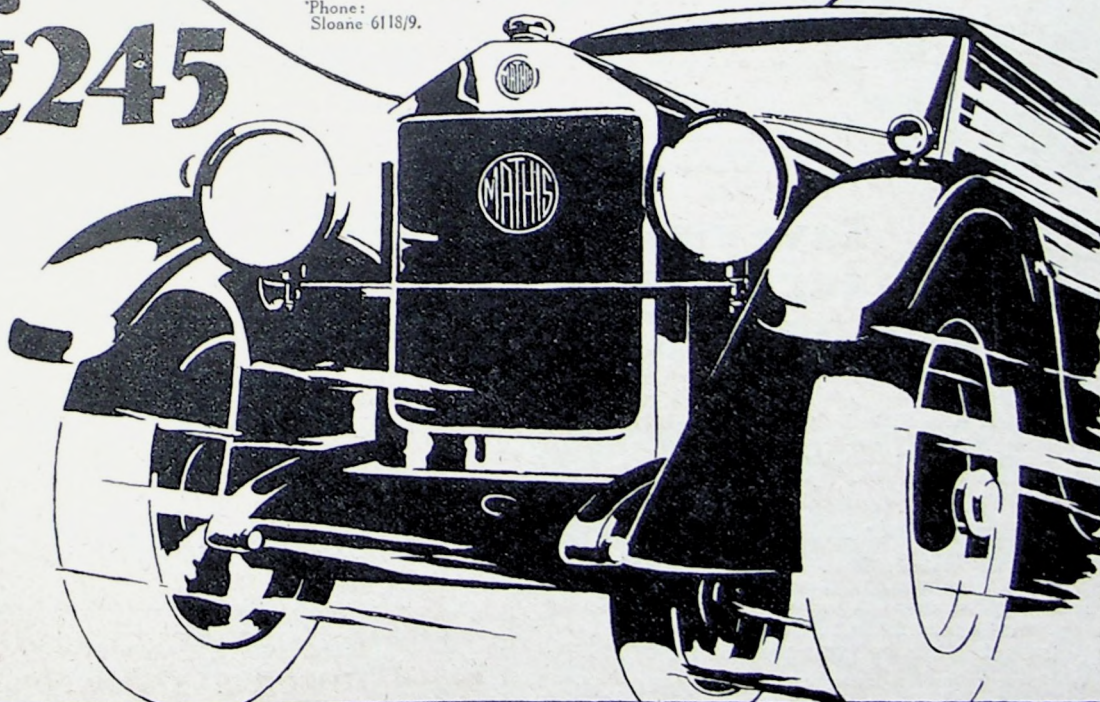
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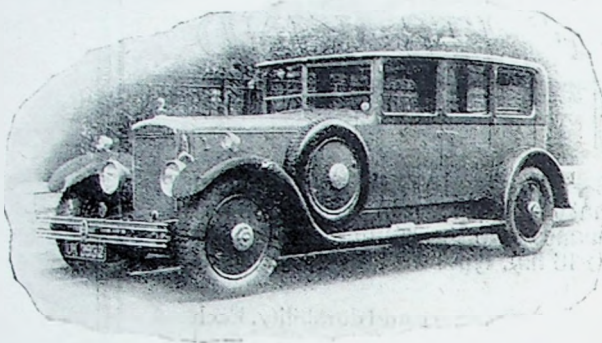


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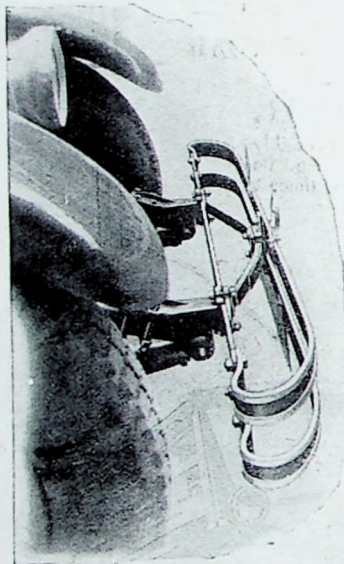
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WHY run the risk of your car being burnt out? It may happen to you any time. There is a Pyrene Fire Extinguisher for your car—the Standard Model for Large Cars—the Junior Model for Light Cars. Get one from your Garage now.

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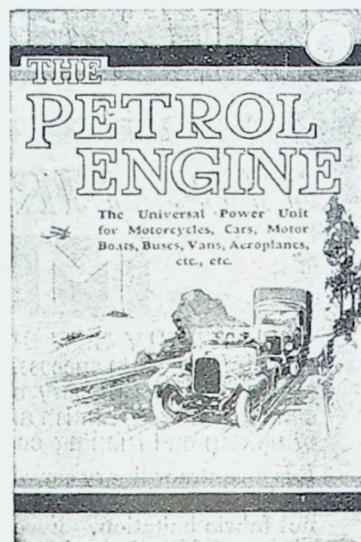
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**King's Cup Race**  
**1st, 2nd & 3rd Places**  
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Two machines fitted with B.T.H. Magnets.

Special Award - - - - - Levis

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3 Silver Medals

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1 Silver Cup

Raleigh - - - - - 2 Silver Cups  
1 Silver Medal

Calthorpe - - - - - 1 Silver Medal

Montgomery - - - - - 1 Gold Medal

Dunelt - - - - - 3 Silver Cups

Levis - - - - - 1 Bronze Medal

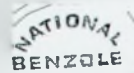
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## Pride in performance demands 'National'

Every motorist inherently takes pride in the performance of his car. He likes to hear the musical rhythm of a sweet running engine, and to feel a wealth of power at his command.

*Motor spirit controls performance.* It is necessary for the best results to buy the spirit that is scientifically constituted to produce them.

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Write for copy of "Running your Car on Coal," an interesting two-colour booklet written in the lighter vein. It tells you a lot about motor spirit.

*"The Guaranteed* **BRITISH** *motor spirit"*

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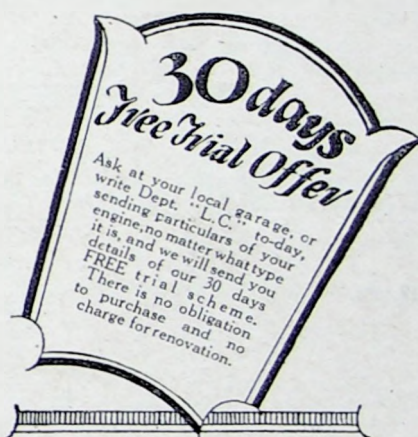
Why be content with ordinary results?  
Follow the lead of thousands of motorists  
who daily find economy, simplicity and  
all-round improvement with the "Solex."

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"Solex" has held the world's  
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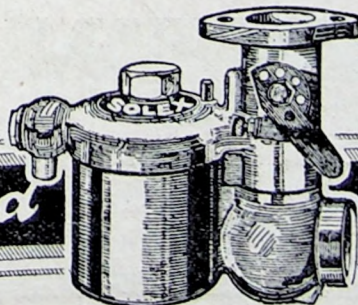
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# We bow gracefully

A REMARKABLE compliment has been paid to us by "MOTOR COMMERCE," the official organ of the Motor Trade, having a private circulation among its members.

In the August issue an article describing the methods we employ in connection with the sale of Used Cars is given as a shining example that other firms would do well to follow. Our "USED CAR GUARANTEE," which has now been in operation for eight months, is given as being the only satisfactory means of convincing the public that they may purchase a second-hand car with confidence.

A reprint of this article will gladly be forwarded on request, but meanwhile if you are contemplating the purchase or exchange of cars may we suggest that you get in touch with us immediately.

## A FEW SPECIAL HOLIDAY BARGAINS.

AUSTIN, 1925, 7 h.p. Chummy, mileage under 4,000 since new, perfect condition .. .. .	£98
1924, 7 h.p. Chummy, in particularly nice condition .. .. .	£72
CITROEN, 1925, 7 h.p. coupe, repainted light blue, balloon tyres, excellent condition .. .. .	£78
JOWETT, 1926, 7 h.p. full four-seater with full equipment .. .. .	£98
ROVER, 1927 model, 9 h.p. two-seater with detachable coupe top, full equipment and in perfect order .. .. .	£155
1924-25, 9 h.p. four-seater, in reliable condition .. .. .	£95
SINGER, 1927, 10 h.p. Saloon, in perfect condition throughout .. .. .	£210
1926, 10 h.p. four-seater with full maker's equipment .. .. .	£135
AMILCAR, 1926, 8 h.p., Grand Sports two-seater, in excellent condition .. .. .	£155
CLYNO, 1926, 11 h.p., Royal two-seater, painted dark blue .. .. .	£145
1926, 11 h.p., Standard model, two-seater, F.W.B., balloon tyres, usual accessories .. .. .	£110
SWIFT, 1927, 10 h.p. two-seater, in special red and black finish, with Hartford shock absorbers and Andre bumper, run few miles as demonstrator and guaranteed perfect .. .. .	£200
1926, 10 h.p. two-seater in grey finish, very good order .. .. .	£145
1927, 10 h.p. four-seater in red and black finish, run small mileage, licensed to 30/9/27 .. .. .	£195
A-C, 1924-25, 12 h.p. four-seater, painted violet, usual accessories .. .. .	£135
1924, 12 h.p. Anyweather two-seater, repainted and in excellent condition .. .. .	£105
SINGER, 1926, 10 h.p. two-seater, in exceptionally good condition .. .. .	£165



'Phone: Riverside 4646.

Main Agents for Austin, Jowett, Lea-Francis, Rover, Singer and Swift, and "USED" cars with a 3 months' guarantee.

Ask for our brochure, "Cars of Beauty," and particulars of our "Repurchase Facilities for Overseas Visitors."





**CAMPING  
BY CAR.**

— The convenience of a car has brought many new recruits to the ranks of ardent campers. A camping holiday is the ideal combination of economy and open air, and one former difficulty—that of reaching the venue—is of no moment to motorists.

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

### A 150-mile Race.

"Speed with economy" sums up the objects of the Surbiton "150" race, which will be run off at Brooklands on September 3rd.

### At Long Last!

The hay market in Whitechapel High Street, which in recent years has caused very serious traffic obstruction, is shortly to disappear. To do away with the market a special Act of Parliament has been necessary, and the London County Council is said to have paid out £17,000 to holders of the market rights.

### This Week.

We present a very varied contents, which includes an informative technical article showing how gearwheels are made; a contribution for tourists entitled "To the Source of the Thames," in which some quite delightful sidelights on the source of the famous river are given; a description of the latest Rover semi-sports, which will interest Rover enthusiasts; and an entertaining little article, "The Best Way to Picnic," the title of which explains itself. Problems of insurance have occupied our correspondents lately, and a special article on this subject appears. No. 766. VOL XXX.

### ON OTHER PAGES

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### LIGHTING-UP TIMES (Rear Lamps) for Saturday, August 13th.

London	8.55	Edinburgh	9.24
Newcastle	9.14	Liverpool	9.14
Birmingham	9.05	Bristol	9.05

Moon—Full, August 13th.

### New Club for Cyclecarists.

The proposed new club for cyclecar owners is taking shape, but the difficulty of finding a suitable name crops up. Why not "The Eleven-Hundred Club"?—a dignified appellation signifying the engine capacity limit, and entirely removed from "The Cyclecar Club," which was at one time the title of the present J.C.C.

### Horse-sense.

An appeal has been issued by the Automobile Association asking motorists to give way to horse traffic in hot weather.

### Blackwall Tunnel Closed.

The Blackwall Tunnel under the Thames was closed on August 8th, and will not be opened again until September 4th. The Automobile Association has erected loopway signs indicating the Woolwich Ferry and Rotherhithe Tunnel routes.

### Next Week.

What are the actual effects of impact in its various forms? This is one of the questions of considerable interest which is dealt with in an article called "The Laws of Energy and Impact," which will appear next week. Holidays abroad are still as popular as ever, and in an entertaining chronicle, "Alp Climbing in an Austin Seven," quite a new light will be thrown on the pros and cons of Continental motoring. Our principal competition report will deal with the Junior Car Club's sporting car race for modified production cars, which takes place at Brooklands to-morrow (Saturday).



### Manchester Traffic.

Complaints are being made with regard to the police control of traffic in Manchester. Are the recently introduced "roundabouts" not working as they should?

### Sad Statistics.

Americans are always ready to bring out statistics of a more or less startling nature. The latest is that 137,017 people have been killed in car accidents in the United States during the past eight years.

### Buses, Please!

That people prefer motorbuses to trams is a fact discovered from statistics by the tramway authorities in Vienna. Motorists would be impartial were it not for the rails that are necessary adjuncts to trams.

### The Great Unemployed.

A representation to the Ministry of Labour, whereby unemployed men could provide extra assistance to the police for traffic duty during the summer months, was suggested at a recent meeting of the Leiston Urban District Council.

### A.C. Arctic Tour.

The tour into the Arctic Circle which the Hon. Mrs. Victor A. Bruce undertook in an Acedes car is now at an end. Roads in Belgium, Holland, Germany, Denmark, Lapland and Finland were covered in the itinerary.

### The Fejes Car.

Mr. George Watson, the consulting engineer, of 50, Pall Mall, London, S.W.1, authorizes us to state that there is no truth in the rumour that the Fejes car is to be produced by a London factory almost at once. It is stated, however, that following very severe and exhaustive tests of experimental chassis which have been built, the car will make its appearance in the 1928 Motor Show at Olympia.



Sir Alfred S. Mays-Smith, formerly president of the S.M.M. and T., who has been appointed to the board of directors of the Rover Co., Ltd.

### Peugeot Price Reduction.

Peugeot (England), Ltd., announce that the price of both cabriolet and all-weather saloon types of the 7-12 h.p. Peugeot is reduced from £165 to £155.

B10



### WEEKLY WISDOM.

Beware of the tram. It obeyeth no law that is known unto man, its weight if it striketh thee is heavy, and a mishap will be thy fault even though thou sayest otherwise.

### Helping the Hospitals.

In order that motorists may be encouraged to assist the funds of the Royal Berkshire Hospital, labels for attaching to car windcreens are being issued to subscribers of 2s. 6d.

### Gallons of "Gas."

An Austrian engineer has patented a scheme for obtaining gas from waste material and shavings, and it is claimed that the gas produced is suitable for burning in internal-combustion engines. The age of the really economical car seems near at hand!

### Swiss Motoring Troubles.

There is at present much discussion being carried on between Swiss motorists and road authorities, as motorists are anxious that at least a few of the 5,000 level-crossings in that country shall be removed. The cost of removing them all would be nearly £20,000,000.

### Brighter Filling Stations.

One of the filling stations on the Kingston Promenade has set an example which, if it does not cause other filling stations to follow suit, will at least be a cause of envy. The assistants are dressed in attractive uniforms, one of the outstanding features of which is a row of bright buttons down the front of the short jacket. If a passing motorist displays the slightest interest in the station the attendants reward him with a smart salute.

### German Road Signs.

On September 1st an entirely new system of road signs comes into operation in Germany. The new signs, eight types exclusively for motorists and six for all road users, are of a highly complicated nature, and indicate cross-roads, tramlines, closed roads, speed limits and so forth, and give all necessary warnings. On certain signs are painted white spots and circles, indicating such details as "closed to lorries," "closed for a few hours," "closed to cyclists and motercyclists." Details of the new signs have been published so that no one need be ignorant of their meaning.

### Southampton-Exeter Trial.

All entries for the J.C.C. Southampton-Exeter Trial must be sent in by August 21st. Particulars of this trial were given on page 269 of last week's issue of *The Light Car and Cyclecar*.

### Road Saving.

Figures recently published show that although Nottinghamshire roads have been kept in good repair, the upkeep cost has been £177 less per mile than in other counties.

### Holiday Touring Articles.

We are refusing about a dozen holiday touring articles every day. Readers who think their holiday tours would make interesting reading should send us a synopsis in the first place and thus save disappointment. No touring articles are accepted unless they are accompanied by large, sharp photographs of exceptional merit.



This illuminated notice has been erected at Swindon, Wilts., to thank motorists who obey the caution sign placed at the approach to roads which are "up."

### Ashdown Forest Warning.

At the request of the conservators of Ashdown Forest, the Automobile Association has erected on the forest roads a number of warning signs, which read, "Ashdown Forest. Beware of Cattle. Safety First."

### "Infernal Syrens."

"Infernal screeching motor syrens are causing mental anguish to hundreds of patients in London nursing homes, even to the extent in some cases of causing death," said Sir Robert Thomas recently in Parliament. The Home Secretary's reply was that 5,700 motorists had been prosecuted in six months in the Metropolitan area for excessive noise. How long will it be before the Home Secretary receives from motorists and non-motorists alike complaints of a far "noisier noise"?

We refer to aeroplanes. During the past weeks the nights have been one long continuous buzzing hum over certain parts of South London, and it is probably just as bad in the regions north, east and west, for an aeroplane does not stay for long in one place. Apparently the result of these noisy night manoeuvres has been to discover that London is not adequately protected.



### For Theatre Goers.

Londoners living in suburban districts who use their cars as means of transport when visiting theatres will be interested to know that free garaging is provided for patrons of the Chiswick Empire, the accommodation being sufficient for about 50 cars and 500 cycles and motorcycles. To gain access to the garage it is necessary merely to show the voucher issued by the box office with the ordinary tickets.



The new illuminated refuges now being tried out in Paris consist of a number of concrete pillars in which are red reflectors.

### The "International."

Two Morgans, driven by R. T. Horton and W. A. Carr, have been entered for the A.C.U. International Six Days' Trial, to be held from August 15th to 20th inclusive.

### Alpine Improvements.

The Stelvio, the highest Alpine road, has now been improved, and those who intend to tour in Italy need have no fear that they will be unable to tackle the famous highway. Many other mountain passes have also been improved, and roads in the Dolomites are by way of becoming ideal.

### Gainsborough Bridge.

Gainsborough Bridge, Lincolnshire, which for miles on each side of the river forms the only means of crossing the Trent in that part of the country, is shortly to be freed from toll for pedestrians. After seven years, it is said, it will be possible to free the bridge for motor traffic.

### An Experimental Road.

To determine the most economical and efficient method of road surfacing an experimental stretch of road was laid down some time ago near Brunswick, Germany. It is stated that results obtained so far show that concrete surfaces have given the most satisfactory service.

### R.A.C. Inns.

Since the inauguration of the R.A.C. scheme some 12 months ago for the supply of meals at moderate prices to motorists, 1,200 inns have been approved in various parts of the country. The scheme provides for a standard hot or cold meal, including tea, at a fixed price of 2s., and the inns at which these meals can be obtained are distinguished by a sign bearing the words "R.A.C. Inn." The principal advantages are that the exhibition of the sign by an innkeeper is, first of all, a guarantee that one or other of the two standard meals is always available, and, secondly, that the charge is constant, no matter in what part of the country the inn is situated.

### Motors from Bilbao.

Plans are being made for the erection at Bilbao of a large factory for the construction of complete cars and accessories.



Proving its worth. An Austin Seven about to ford a river in India after covering several miles in the deep sand.

### Rules of the Road Abroad.

Following a number of accidents that have been reported in foreign countries, due to the ignorance of local driving regulations on the part of foreign drivers, the R.A.C. now issues a leaflet to all members who contemplate touring abroad. In this leaflet the rules of the road in all Continental countries are clearly explained.

### "Salesman or Order Taker"?

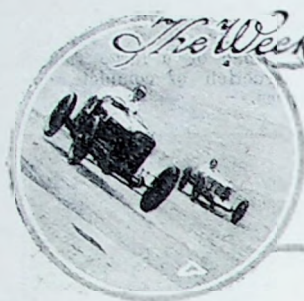
In *The Christian Science Monitor* Mr. Ollier, managing director of Studebaker (England), Ltd., says, "The British dealer to-day is not a salesman; he is an order taker, and until he learns to adopt the intensive methods of selling that have been proved successful in the United States and the British Dominions, he is hopelessly handicapping himself." No doubt British car manufacturers and dealers have their own views on this subject!



LIGHT CAR ENGINE  
ON WATER.

In the International Motor Boat Races held at Southampton recently this American-owned craft, fitted with a Miller 14-litre supercharged engine, captured the Duke of York's Gold Trophy. During the race speeds of nearly 40 m.p.h. were attained. [*The Motor Boat* photo.





## The Week-End Programme

### SPORTING CAR RACE TO-MORROW.

ANTICIPATED ALVIS-LEA FRANCIS  
DUEL IN J.C.C.'S ANNUAL EVENT.



IT has often been said by those who promote important sporting fixtures at Brooklands that a large field is not always an advantage because it is difficult for the public to take any interest in the trials and sorrows of individual competitors; when the field is small a far greater amount of personal contact is assured and the event consequently is more instructive and amusing.

To-morrow's Sporting Car Race of the Junior Car Club falls into the category of "small entries," for there are but 16 cars down to start, but the entry as a whole is distinctly interesting because it includes some of the best-known sporting light cars of the day, the performances of which, either on the track or on the road, are always a matter of comment.

One of the outstanding features of this Sporting Car Race for modified production cars should be the struggle for supremacy between the five Alvis Specials and the three Lea Francis Specials, for both makes belong to a marque with a reputation for speed and reliability, whilst their drivers will be men of experience, cool judgment and determination.

The race is of four hours' duration, starting promptly at 2 p.m., the cars being sent off in mass formation. Mechanics will be carried and standard fuel must be used. All spares except fuel, tyres and wheels must be carried on a competing car throughout the race. The winner of each class will be the driver of the car that covers the

greatest distance up to the time a maroon is fired, after which the race will be stopped.

The course is the same as that used last year, that is to say, competitors will travel the normal way round the track, but, coming off the Byfleet banking, they will enter the finishing straight, negotiate a hair-pin bend approximately opposite the Press box, proceed to the fork,

awarded to the driver of every car which has completed three-quarters of the distance covered by the winner of its class at the expiration of the time limit.

Admission arrangements for the public are as follow:—Boxhall's Gate, i.e., the entrance nearest to Weybridge Station, will be the only entrance, 3s. being charged for each person and 5s. for cars. J.C.C.

#### THE SPORTING CAR RACE ENTRIES.

(All are Four-cylinder Cars.)

##### 1,500 c.c. CLASS:

No.	Entrant.	Driver.	Car.	Bore.	Stroke.	c.c.
1	A. P. Glenny ..	Entrant ..	Frazer-Nash Special ..	69	× 100 ..	1,496
2	C. I. Randall ..	Entrant ..	Aston-Martin Special ..	66.5	× 107 ..	1,486
3	A. E. Clutterbuck ..	Entrant ..	Alvis Special ..	68	× 103 ..	1,496
4	K. S. Peacock ..	Entrant ..	Lea Francis Special ..	69	× 100 ..	1,496
5	T. G. John ..	C. M. Harvey ..	Alvis Special ..	68	× 103 ..	1,496
6	W. H. Green ..	Entrant ..	Alvis Special ..	68	× 103 ..	1,496
7	C. N. Green ..	Entrant ..	Alvis Special ..	68	× 103 ..	1,496
8	S. G. Nash ..	Entrant ..	A.C. Special ..	69	× 100 ..	1,496
9	H. E. Tatlow ..	R. M. V. Sutton ..	Lea Francis Special ..	69	× 100 ..	1,496
10	H. E. Tatlow ..	S. H. Newsome ..	Lea Francis Special ..	69	× 100 ..	1,496
11	Ian MacDonald ..	Entrant ..	Alvis Special ..	68	× 103 ..	1,496
12	T. E. Rose Richards ..	Entrant ..	Bugatti Special ..	69	× 100 ..	1,496

##### 1,100 c.c. CLASS:

13	G. Newman ..	Entrant ..	Salmon Special ..	62.2	× 90 ..	1,097
14	A. Bovier ..	J. C. Douglas ..	Salmon Special ..	62.2	× 90 ..	1,097
15	R. A. Myers ..	Entrant ..	Senchal Special ..	59	× 100 ..	1,094
16	C. M. C. Turner ..	Entrant ..	Gwynne Special ..	57	× 100 ..	1,020

##### 750 c.c. CLASS CANCELLED.

swinging left at "Chronograph Villa," and carry on round the home banking.

The premier award in each class is a silver cup, whilst a silver medal will be given to the competitor who gains second place in the 1,500 c.c. class; a bronze medal will also be

members will be admitted free, whilst the charge for their cars will be 2s. 6d. The transfer fee to the fork grandstand is 2s. 6d.

The most interesting vantage points will be those overlooking either of the bends, the actual hair-pin being the more easily seen.

## HAIR-PIN BEND FOR MONDAY'S HEPOLITE MEETING.

STARTING promptly at 2.30 p.m., the Bradford and District Motor Club will hold a hill-climb on Monday next, August 15th, at Hepolite Scar, the famous Bradford freak gradient. The meeting is open to motorcycles, sidecars and three-wheeled cyclecars under an A.C.U. permit, whilst a R.A.C. closed permit for cars has been granted; there is every indication, therefore, that the afternoon will provide excellent sport, and it is fully anticipated that a big crowd will be in attendance.

Hepolite Scar is about one mile from the city of Bradford along the Canal road. The hill is on private property and the gradients vary as follow:—The climb is 400 yards in

B12

length and after a level start of 30 yards it rises for 15 yards with a gradient of 1 in 3½. A grass-grown track some 50 yards long and with a gradient of 1 in 10 is followed by a sudden rise of 1 in 4 on the actual "Scar," the course then continuing straight up the hill to a right-hand bend, with a gradient of 1 in 3½. The final section consists of a left-hand bend (1 in 8) and a right-hand bend about 15 yards from the actual summit, with a gradient which varies between 1 in 2½ and 1 in 3½.

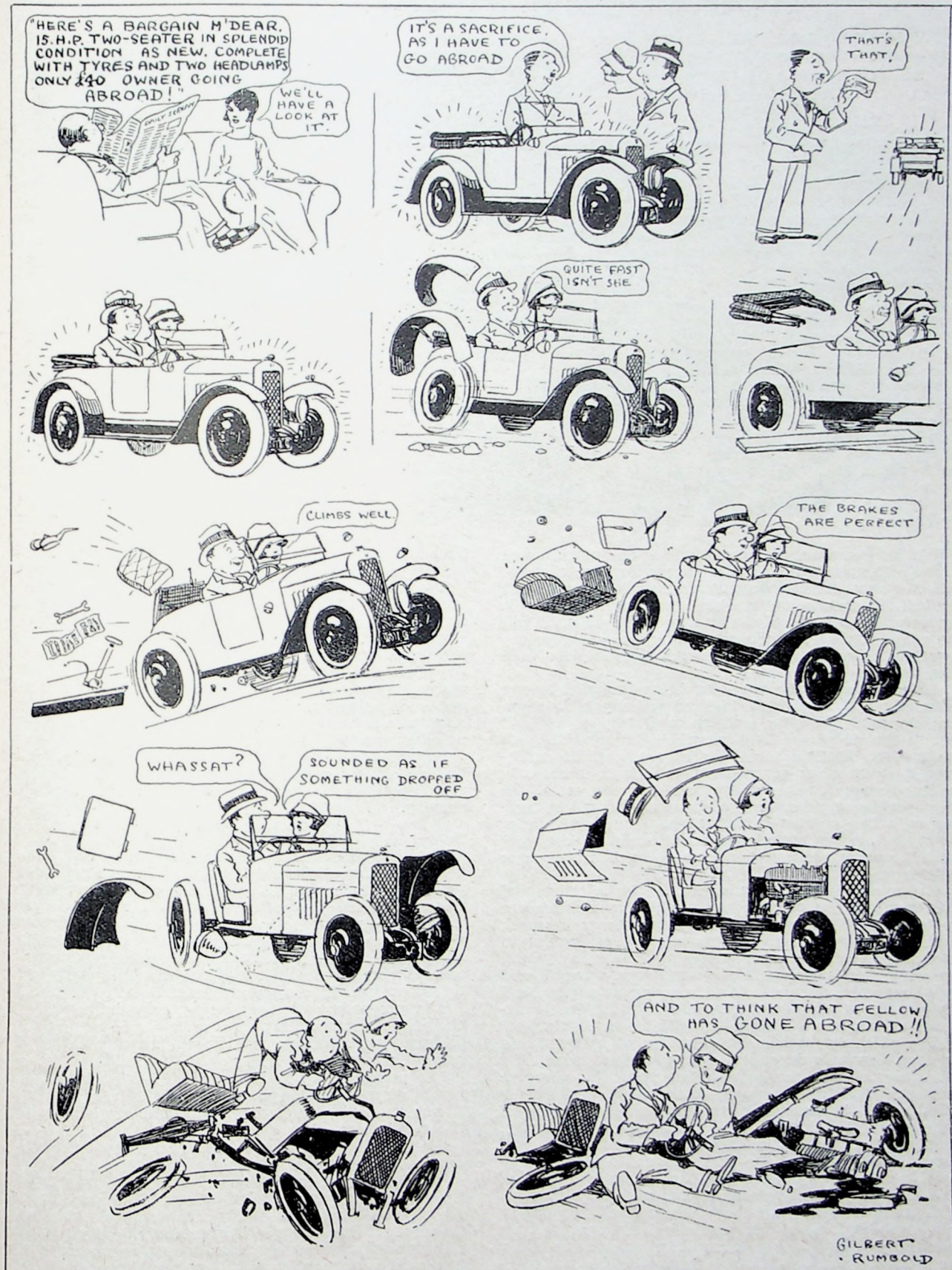
This is the easy way up, but there is also the rodeo course, which runs up the hill practically in a straight line with a gradient of 1 in 4, finishing on a prepared stretch 20 yards in

length, the gradient being 1 in 1½. To add a greater degree of interest to the rodeo classes by calling for a high degree of skill in driving, artificial obstructions will be placed near the foot of the concluding stretch to form an S-bend.

A charge of 6d. is made to each member of the public for admission, and by permission of the City Corporation the "cinder park" at the foot of the hill will be available for spectators' cars. Access from the road is easy, and should this park become full other accommodation will be available in the field adjoining. The charge for parking is:—Cars, 1s.; three-wheeled cyclecars, 9d.



# THE BARGAIN!



Moral: Never judge a second-hand car by its shine or it may "let you down."



## GEARWHEELS IN THE MAKING.

THE NEED FOR CAREFUL DESIGN  
—HOW THE TEETH ARE CUT ON  
SPECIAL MACHINES—HEAT  
TREATMENT METHODS.

THE production of gearwheels is one of the most specialized branches of motorcar manufacture. In the careful selection and treatment of the materials and in the accuracy of machining, the standards which govern the work are of a very high order. Thus it will be realized that the production of gears calls for the special attention of designers, metallurgists and machinists.

In addition to the need for being designed to run correctly and to give the desired velocity ratio, gearwheels must also be sufficiently strong to transmit easily the maximum load to which they are likely to be subjected. The formation of the teeth is so designed that, when gears are revolving in mesh, only rolling contact takes place between the teeth. In theory this provides that adjoining teeth shall be making only line contact at any time. If a definite area of contact is set up between teeth, sliding takes place and the gears are not then running at their maximum efficiency.

Great care must be exercised in the selection and treatment of the material from which gearwheels are to be made. The two essential properties are strength and wearing qualities. Unfortunately, these overlap to a certain extent and compromises must be made. Thus, an alloy steel which will give maximum strength and toughness has not quite ideal wearing properties, and conversely an alloy steel treated to give the best wear-resisting surface is rather more liable to breakage.

The efficiency and smooth running of gear teeth in mesh are entirely dependent upon the accuracy of their machining. The tooth formation must be very accurate; if "flats" are made on the flanks of the teeth friction will be caused by the teeth sliding instead of rolling, or "backlash" will make the gears noisy. Similar ill-effects and perhaps complete breakage will occur if the bore of the wheel is not machined concentric with the diameters of the teeth; in a case of this kind the wheel acts as a cam and when in mesh with another gear sometimes forces itself too deeply into mesh and sometimes partially loses contact with the other teeth. These points will indicate the necessity for precision machining which cannot be obtained without the employment of specialized gear-cutting machinery.

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(Above) A Fellows tooth generator cutting a special gear. (Left) A finished gearwheel and the cutting hob in a Barber-Coleman hobbing machine.

Gears can be classified broadly into four main groups—spur, bevel, worm and helical. Spur gears transmit motion only in parallel planes. They are very advantageous for arranging speed changes between shafts and are used in automobile gearboxes.

Bevel gears will transmit power between shafts at right angles to each other and, at the same time, effect any desired change in the relative speeds of the shafts. They are commonly used both in the transmission of the main drive to the back axle and in various differential combinations. Where two or more pinions are meshing with one large gear the former are known as bevel pinions and the latter as the crown wheel.

The combination of a worm and a worm wheel will transmit power from one shaft to another at a right angle, changing relative velocities at the same time. As a main drive, worm-gearing is very successful, being noiseless, scarcely affected by wear and efficient.

Helical gears are spur or bevel wheels with teeth inclined angularly to the plane of their axes instead of parallel. This inclination proves an aid to noiseless running.

### Gearwheel Materials.

High duty gears, with the exception of worm wheels, are always made from steel alloys. These vary in composition according to the different makers' specifications. The chief constituent of steel alloys is iron, which usually forms at least 95 per cent. The physical properties of the metal are mainly governed by the amount of carbon present, which varies between 0.1 and 1.0 per cent. Other constituents frequently contained are nickel, chrome and vanadium.

The properties of steels are widely influenced by their heat treatment, which can be carried out in two different ways. These are known as case-hardening and oil-hardening.

The process of heat treatment by case-hardening will give a glass-hard skin with a tough and fibrous core. Thus, the hard skin resists wear and abrasion while the tough core gives strength.

Oil-hardening steels are heat-treated by raising to certain temperatures and quenching in oil. This quenching may be carried out at different temperatures successively to give a desired effect. The structure of the steel is altered uniformly throughout its mass by this process. Accordingly, it is not satisfactory to make oil-hardened gears as hard on the surface as the case-hardened variety, otherwise they would be too brittle, not having a tough core to strengthen them. In oil-hardened gears a compromise has to be reached which



will give as hard a surface as possible consistent with the necessary strength.

The manufacture of gears can be divided into five stages. First, the steel to be used is forged roughly to the shape required. Secondly, the forging receives a preliminary machining in a lathe. Thirdly, the teeth are cut on a gear-tooth generating machine. Fourthly, the partially machined gear receives its requisite heat-treatment, either case-hardening or oil-hardening. Fifthly, the gear is finished by precision grinding.

The process of forging produces a lump of steel with just the right amount of extra metal for removal by machining. If the gearwheel is to be a plain spur without bosses the material can be obtained by sawing pieces off a steel bar of the correct diameter.

### Machining the Blanks.

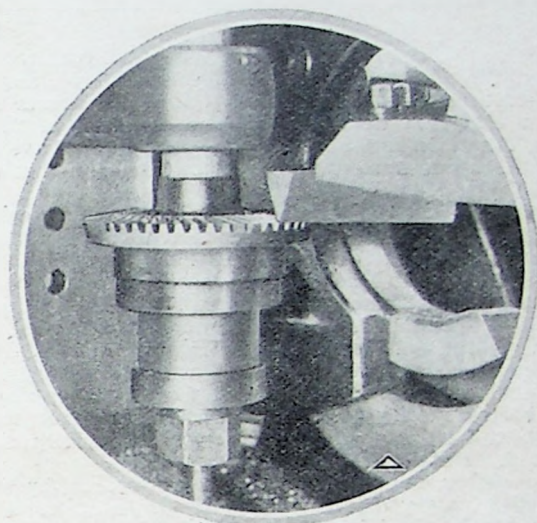
The forging or blank is then set up in a lathe, machined all over and a hole bored through the centre. This operation removes all the rough outside skin, but the process of forging will have set up a series of strains in the structure of the steel. These must be removed by subjecting the metal to a method of heat-treatment called normalizing. If this treatment is not carried out the gear is very liable to distort in the later stages of machining, when it cannot easily be corrected.

The actual cutting of the teeth is carried out on gear generating machines specially designed and built for this sole purpose. The teeth on an ordinary spur gear would seem to be easy to produce, but this is by no means the case. As previously explained, it is vital that the teeth be accurately formed to the exact profile called for.

Imagine two obvious ways of cutting the teeth. They could be cut by traversing to and fro an ordinary lathe tool ground to cut the shape of the teeth; this method is called shaping. Alternatively, they could be formed by traversing to and fro a rotating milling cutter ground to cut the profile of the teeth. It will be obvious that after a period of operating the tool cutters will require sharpening. Unfortunately, this cannot be performed

Although the different methods of gear cutting in detail are several they can be divided broadly into three groups, hobbing, shaping and planing.

The process of hobbing is shown in an accompanying illustration. The plain gear blank is mounted on a shaft and is machined by a cutter. Both the blank



This photograph shows the tool which cuts the teeth in spiral-bevel gears. It has been moved round out of engagement with the teeth.

and the cutter are rotated, through fixed drives on the machine, at pre-arranged speeds, which are calculated to generate the correct number of teeth on the blank. The cutter is formed similar to a worm and is known as a hob. The thread, however, is interrupted at frequent intervals by serrations which have their faces ground to form cutting edges. These hobs are made from special tool steel, hardened and tempered for the work. If a hob is fed into the gear blank along the axis of the latter, both hob and blank being rotated, it can be realized that teeth will be formed on the blank, the profile of the teeth depending upon the shape of the hob thread.

Gear shaping is carried out upon somewhat similar lines with the exception that the hob is replaced by a pinion-shaped cutter which traverses to and fro across the outside diameter of the blank in a direction parallel to its axis. Both the gear blank and the pinion cutter are rotated whilst the teeth are being cut.

The next stage in the manufacture of a gearwheel is hardening. If the gear has to be case-hardened it is packed in a box filled with carburizing material which is sealed and placed in a furnace for a pre-determined length of time. This causes the surface of the gear to absorb carbon from the carburizing material. Thus, for a certain depth the gear becomes glass hard, as carbon has the property of hardening steel. The core remains soft and tough to resist fracture.

Oil-hardening is carried out by heating the gears in special temperature-controlled ovens and quenching at certain temperatures which vary with the composition of the steel and with the physical properties required.

Finally, the gears are machined by grinding out the bores to very fine limits. This operation will ensure that the tooth profile is concentric with the bore. As previously explained, this accuracy is essential in order that the gears will roll smoothly together.

The photographs which illustrate this article were taken in the works of Beard and Fitch, Ltd., 34, Aylesbury Street, London, E.C.1. This concern specializes in cutting gears of all types.

A bevel-gear planer in action and (inset) a group of forgings and finished gears.



without altering their shape unless they are completely remade, which proves too expensive.

If the cutters are used after sharpening, the teeth will vary slightly in outline each time until the difference between the first and the last tooth cut is quite appreciable. Obviously, these methods are useless where extreme accuracy is required, consequently special machines and cutters had to be developed for generating precision gears.



## TO THE SOURCE OF THE THAMES.

ADVENTURERS WHO TRY TO DISCOVER EXACTLY  
WHERE THE GREAT RIVER RISES WILL FIND THAT  
THE TASK IS BY NO MEANS EASY.

IT is at Oxford, so far as most people are concerned, that the Thames starts—or finishes. Folly Bridge, where the pleasure steamers plying downstream as far as Kingston tie up, marks the beginning of "no man's land." Yet the school geography books have it that the Thames rises in the Cotswolds—and that is a long way from Folly Bridge.

Curiosity—use the vulgar term and call it "nosiness," if you will—has always been a special weakness of the present writer; in this case it led him to buy an Ordnance map and to study it. There, surely enough, was "Source of the Thames" marked in bold letters just by the third milestone from Cirencester along the road to Tetbury—the old Roman Fosse Way, as, in fact, this highway is. So it was that the writer, having that unswerving trust in the infallibility of Ordnance maps that becomes every good and true small car driver, was led to think that his objective would be easily discovered. But in this he was disappointed.

Proceeding, then, out of Cirencester—where, by the way, the hungry driver will do well to look after the inner man at the King's Head Hotel—the road crosses the Thames and Severn Canal and passes from Wiltshire into Gloucestershire just before the third milestone out is reached. This bridge is known as Thames Head Bridge. The bridge itself—an ancient hump-backed brick structure, with no special characteristic

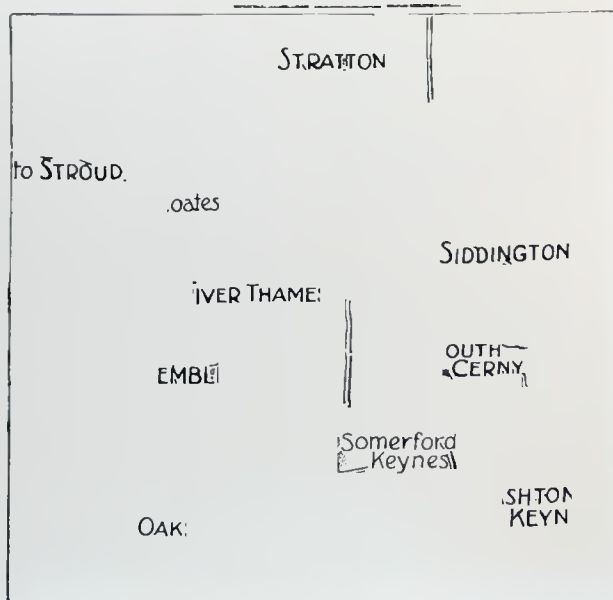
factors that appear to have militated all the while against the prosperity of the undertaking.

It was in 1799 that the canal was opened, providing a navigable channel for small barges from the Severn to Lechlade, a distance of 30 miles. Towards the end of the past century it was acquired by railway interests and allowed to lie idle. It was reopened a year or two later, however, and it is only of recent years that it has been allowed to run dry.

There is something indescribably mournful about the sight of this disused canal bed. Nature has, as usual, stepped in and covered up with grass and wild flowers the deep channel cut through these pleasant rolling pasture lands, but of the massive lock gates that must have at one time stood just by the bridge there is now not a trace.

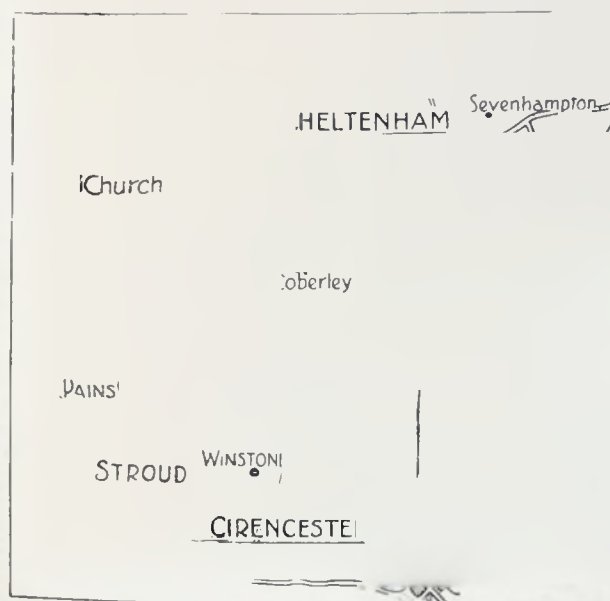
to distinguish it from the scores of similar ones over the canals around London—calls for little comment; it stands now as it probably did in the days when the canal was a waterway of some commercial importance, over 100 years ago. But of the canal itself there is one striking characteristic that even the most casual observer can hardly miss—it contains not a drop of water!

The phrase "not a drop" is by no means exaggerated, as even on the occasion of the writer's visit, when rain was falling, it was possible to walk about in the bed of the canal without wetting the feet, which was more than could be done in the surrounding meadows. The canal lies at a higher level, in many places, than the surrounding country and the soil is exceedingly porous—



Ordnance maps locate the source of the Thames as shown above. The photograph depicts the old Thames Head pumping station and the dried-up canal.





This map and photograph show the source of the Churn at Seven Springs. It is said also to be the source of the Thames.

Half a mile along the towpath to the south of the bridge is the old Thames Head pumping station, its smokeless chimney stack standing gaunt and upright, dominating surroundings over which it must, at one time, have exercised so important an influence. It is said that at the original pumping station wind was the motive power used.

At the pumping station as it now remains it is interesting to see the crude windlass device, whereby it would appear that about ten men were able to concentrate their efforts upon the raising of the massive sluice gate. Now everything there seems to have been deserted and quite forgotten. Gone, along with the water that used to bear them, are the barges, with their gaudily painted poops and their grotesquely carved tillers. Silenced for ever are the voices of the gaily-clad barge women and the crunch of the horses as they proceeded crabwise along the towpath. Now and again a hare rushes across the canal bed and disappears in the thick undergrowth on the opposite bank, but, apart from this, all is still and nothing is left to remind the wayfarer of departed glories.

Just by the old engine house the canal bed lies some 10 ft. or more above the level of the meadows, and it

is somewhere on this embankment and on the steep embankment separating this meadow from the road that the Thames is supposed to rise. Actually, no water has been seen there in living memory. All that now remains are one or two small dried-up watercourses, marked by thick, dark green grass and rushes. The writer explored these watercourses down to half a mile or so from the road, but his search for water was unrewarded; wherever the water may start—on this the map is not altogether helpful, and, in any case, there is probably no fixed point—it was too far to reach on foot from that road point, and so, with a heavy heart, the writer returned to Cirencester.

The other source of the Thames, or, more accurately, the source of the Churn, is at Seven Springs, some three miles south of Cheltenham, just off the main road to Cirencester. Here there is water in plenty. Only a few yards after leaving the main road there is a sharp hair-pin bend and right in the elbow of the hairpin is a deep hollow where water trickles out from a number of points in the bare rock. The actual stream can be followed, however, for only a few yards, when it disappears through a grill in a stone wall. Getting close up to the wall on the large, flat, stepping stones in the bed of the stream, the curious explorer is able to look through the iron bars of a little window in the wall.

The other side of the wall there is a private garden that appears to be quite a little fairyland. Looking through the wooden railings of a rustic footbridge, it is seen that the little stream broadens out all at once into quite a fair-sized lake, on which float the leaves and blossoms of many water-lilies. On a stone immediately above the window in the wall is carved the inscription:—"Hic Tuus O Thamesine Pater Septem-geminus Fons." Any attempt at a literal translation of this would take the present writer altogether out of the very limited depths of his Latinity, but the meaning is clear enough. What is not clear, however, is the answer to the question: Where, exactly, does the River Thames rise?



## THE LATEST 10-25 ROVER SEMI-SPORTS.

HOW IT HAS BEEN IMPROVED  
COMPARED WITH THE 9-20 H.P.  
MODEL, WHICH IT SUPERSEDES  
—ADEQUATE POWER AND  
MARKED ECONOMY ARE OUT-  
STANDING FEATURES.



### A GREATLY IMPROVED MODEL.

The 10-25 h.p. Rover semi-sports in whole and in part. Many of the improvements mentioned in the text can be seen in these photographs. The model shown is finished in buff and brown cellulose.

It is now generally known that the 10-25 h.p. Rover is a considerable improvement on the 9-20 h.p. model, which it supersedes, the main departures being the substitution of an enclosed propeller shaft for the open shaft and an engine of slightly larger capacity. An examination of one of the latest 10-25 h.p. semi-sports chassis, however, shows that, compared with the semi-sports turned out about this time last year, a large number of detail improvements also have been effected.

Dealing with the engine first, the big-ends are now of larger diameter, the camshaft has a centre bearing, the dip-stick has been extended so that it is more accessible, there is a sturdier starting handle and mounting, the o.h.v. gear is enclosed by a cast-aluminium cover, there is an inspection hole for gaining access to the starter-motor pinion, and an improved dog-clutch device has been incorporated in the drive for the water pump.

The driven member of the clutch is now mounted on

a splined shaft, the clutch pit being covered in by a removable plate. More even torque is assured by a heavier flywheel rim, whilst the nipple for feeding the clutch thrust race with lubricant has been brought above the clutch pit so that it is easily accessible. Provision is made to prevent surplus oil finding its way on to the clutch plates, holes being drilled in the flywheel from which the oil can escape.

Wider teeth on the gearbox pinions have made the gears dead quiet, and should result in a much longer life; in fact, when all out in second gear one can hear nothing but the hum from the engine and the more subdued exhaust note. A very commendable point is the enclosed speedometer drive, the mechanism forming part of the gearbox assembly.

The torque tube is, of course, ball-mounted at the front end, and a prop-shaft bearing about half-way down the tube ensures freedom from whip at high speeds. This bearing is lubricated before a car leaves



the works by oil poured into the torque tube. The ball mounting is fed with grease via a nipple in the outer case.

The tie-rod below the back axle has been abandoned, the axle casing having been strengthened, whilst each of the rear brake operating shafts is given an additional bearing support. There are only two shoes per drum at the rear; the foot brake operates the four-wheel brakes, the hand brake acts only on the rear wheels through the same pair of shoes as are used for the foot brake. The master leaves of the rear springs roll over hardened steel rollers, this system giving every satisfaction in practice.

Body improvements include a more pleasing fascia-board, longer gear lever, more handy brake lever, a tipping driver's seat, a deeper well for the rear passengers' legs, and a V-screen in which the panels open instead of being fixed, as on the 9-20 h.p. model. The new 10-25 h.p. Rovers are distinguishable by the artillery wheels, which are fitted as standard, but wire wheels can be had as an extra.

In performance, this new semi-sports is far superior to the old type, the increased power of the engine

appearing to be out of all proportion to the added 111 c.c. Hills which, with the early 1927 semi-sports, called for a change down, not only can be scaled in top gear but with an altogether pleasing and surprising amount of vigour as well. The carburettor used, by the way, is a Smith single jet, which gives very easy starting and is commendably economical.

The clutch is now quite one of the best mechanical features of the car. It is really "velvety" in action and a perfectly smooth getaway is possible—even in top gear, if one desires to carry one's test to extremes.

We have already mentioned that the intermediate gears are quiet and that the exhaust note is more subdued, and these improvements are in keeping with the general endeavour which has been made to produce a really silent-running vehicle. The makers long since set the seal on their reputation as small-car builders, but this new 10-25 h.p. range of chassis proves conclusively that their slogan is, apparently, "Improve—and then improve!"

The price of this model is £260, the address of the manufacturers being The Rover Co., Ltd., Meteor Works, Coventry.

## A VERY MODERN MATHIS SALOON.

IN our issue of February 4th last we described the performance of the 10 h.p. Mathis saloon, which made a very favourable impression upon us. B. S. Marshall, Ltd., 25, Basil Street, Knightsbridge, S.W.11, now announce what are to be termed the Mathis "Big—Light class," of which one of the outstanding examples is the four-door Weymann sports-type saloon.

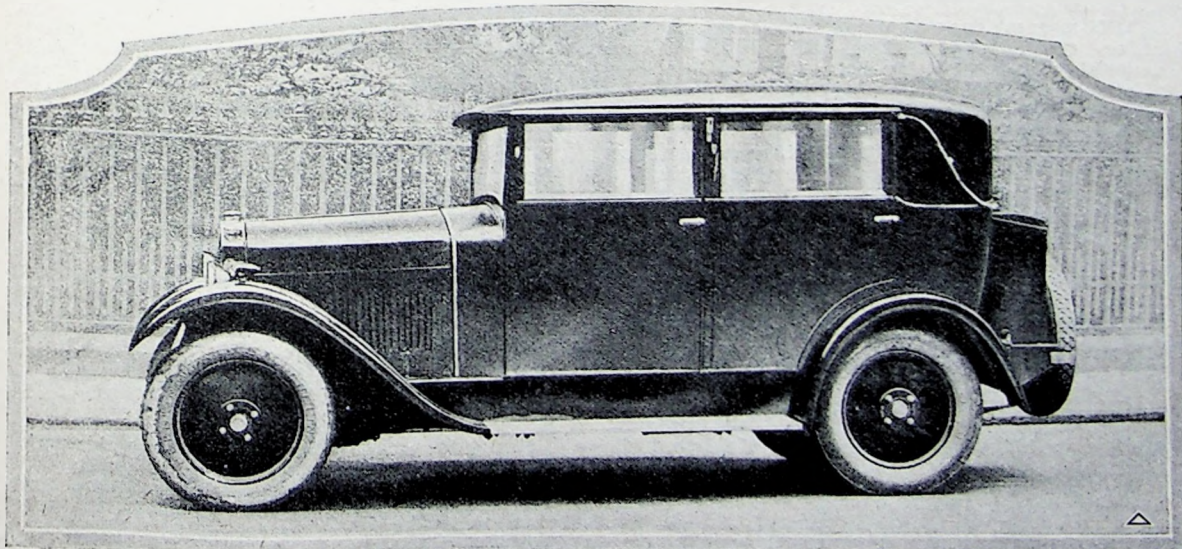
The general lines of the new model can be seen from the accompanying photograph, from which it will be observed that the latest all-enclosed Mathis is even more attractive than its predecessor.

The interior is very tastefully finished, roomy and with plenty of headroom, despite the low build of the car. So far as the last-named point is concerned, this saloon follows closely the general trend of design, and it gives one the impression of being a large and capacious vehicle. The impression is heightened by the high-waisted body and the shallow windows, but lest it be thought that these somewhat limit the outlook, we should emphasize the fact that the vision all round is equal, if not superior, to that obtained with previous

models. Whilst on the question of window area the very large rear window, which greatly facilitates reversing, is worth mentioning. The body is finished in black, straight-grained leather, relieved by one thin red leather moulding line, and the general effect is very pleasing. Three adults can be seated quite comfortably at the rear, whilst the front seats are, of course, adjustable.

This saloon should fulfil a long-felt want, for not only is it comfortable and smart, but it gives from 36 m.p.g. to 40 m.p.g. of petrol and 1,400 m.p.g. to 1,500 m.p.g. of oil. The Weymann body is mounted on the 10 h.p. chassis, of which we were able to give such a satisfactory report in February. The price, complete with generous equipment, is £325.

A point which should appeal to those interested in the new Mathis range is the "trial from your own door" inaugurated by B. S. Marshall, Ltd. Appointments can be made either by writing or telephoning, and no obligation is incurred, even though a trial run be given under the arrangement outlined.



A Weymann saloon in up-to-date form—the four-door 10 h.p. Mathis. Note the permanent trunk at the rear.



TOUJOURS  
LE TOUR!BEING SOME COMMENTS ON HOLIDAY TOUR-  
ING IN SMALL CARS—RECOLLECTIONS OF A  
PIONEER—THE WOMAN IN THE CASE.

I DO not know if anybody has ever tackled a summer tour, carrying the usual baggage and impedimenta, on a Morgan Monotrace or a Harper Runabout. If there be such a genius here is the opportunity for him to spend a quiet week-end showing me how to squeeze into a two-seater car half the contents of a two-storey house.

If one intends to go touring, with a light car, en famille, it is necessary first to spend a few months overseas as a packer at a sardine cannery—at least, that is my opinion.

No true motorist wants to carry a lot of holiday junk about the countryside. A man of the true breed is content with a toothbrush and a bar of soap in one pocket and a spare plug in the other—or all in one if a set of tyre valve "innards" and a spanner are being taken in the other.

So, if you see a light car crawling over the countryside under a couple of cabin trunks, three suitcases, numerous hat boxes and one or two attaché cases thrown in, and towing a caravan modelled on a scale only a little smaller than that of a modern desirable residence—then *cherchez la femme!*—only a woman would have so little respect for a car as to load it with cabin trunks, and so little sympathy for the poor male.

Vivid recollections remain of a pseudo-tour which I undertook somewhere about '08 or '09 in a small car typical of the period—belt drive and an engine of which the many rated horses were all long since dead. A log-book was never kept, but I believe the total mileage was about 100, accomplished in short but by no means easy stages, the duration of each stage being dependent entirely upon the distance between the nearest garages. The discoveries made were two. First, that the only

"To spend a few months . . . as a packer."

where luggage could be carried without risk of being bumped off was on the seat, which was unfortunate, for the tools were carried underneath the seat; secondly, that a garage was a place which was shut, or at which the only man who knew anything about anything had just gone out to tea.

Except for freedom from mechanical trouble I fear me that things have not greatly improved with the times. Even when I have crammed the last scrap of luggage into the dickey, and in doing so have given vent to far more comments on cycle-

cars than "Shacklepin" would need in a year, there is still the problem of obtaining food en route.

I had more than a sufficiency of canned beef and biscuits some years ago in common with others, and unless a portable spirit stove is carried somewhere in or on the car—which means unhitching and dumping into the road all the aforementioned cabin trunks, hat boxes and attaché cases—there is no other way of enjoying a proper, Christian, cooked meal. It may be possible, of course, to use the hot parts of an engine à la kitchen stove, but I doubt it: anyway, sausages aux cylindres, herrings à la exhaust pipe and eufs pochés radiator all have too much of a mechanical twang to please the sensitive palate.

So much for the disadvantages. Since that memorable trip nearly two decades ago I have regularly, each year, decided that the railway company and not the garage man shall make the profit out of my summer vacation. And regularly, each year, I have been persuaded otherwise (*cherchez la femme!*) and—despite all—have thoroughly enjoyed the proceedings. For me, anyway, it is a case of *toujours le tour!* PARVUS.

## THE "NEAREST GARAGE" OWNER SPEAKS.

THE meanest one-man petrol shed is, at some time or other, the "nearest garage" for luckless motorists who break down in the locality. Something affects either the minds or the morals of people who push their breakdowns to the nearest garage door for repairs, as some years in charge of a concern have shown me, and I am led to wonder if motorists always know just how they appear to the garage man. A large number seem to have little or no idea of the "other point of view" when their cars have let them down and they need help.

Nowadays, many garages are a combination of petrol-filling station, repair depot, components stores, car agents and electricians—and the whole concern may be run by one man. This has to be so, obviously, for motorists need a startling variety of things; but isn't it a little unreasonable to expect the one-man band to play all tunes and at all hours of the day and night?

Here is just one instance of the unreasonableness of car owners. A man pushed his small two-seater, assisted by his wife and a retinue of children, a distance of a quarter of a mile to the nearest garage (mine), as he had taken a corner too quickly and broken the steering arm. Although I was just shutting up for the night, I promised to see what could be done to enable him to cover the few miles farther he had to go to reach home. Having no mechanic to assist, the most satisfactory repair that could be effected was

with the aid of a box-spanner driven tightly over the broken ends of the arm. He seemed pleased with the repair and asked me to order a new part from the makers, promising to pay for the whole job when it was finished. He packed his family into the car and left, showering thanks on me for what he called a "nifty job." That is the last I have seen or heard of him and there is still a brand-new steering arm and an unpaid-for bill in the repair shop.

An old-stager was recently brought to me—again at an hour when respectable folk were abed—as the spider of a universal joint had sheared its keyways, putting the transmission hors de combat. Could anything be done? There was no need to place the car over a pit, for it was of the very much pre-war variety, built after the manner of a horse carriage. The work was started at 11.30 p.m., the necessary parts were "down" at midnight, and by the beginning of the grey dawn new keyways had been cut on the shaft and a strong joint improvised.

The owner promised to send a cheque on his arrival home, but the first post brought instead a note stating that my repair had given out within a mile, and as the next garage had made a good job of it, he had no intention of paying me for wasted time. As there is no "next" garage between my shop and his home, and as the car is still chuffing about the town, I am tempted to wonder what really happened in the chilly dawn!



These are bad cases, admittedly, but countless other instances show that some motorists forget the garage man has to live on his profits and is not merely a human form of the assisting angel.

There is also the man who goes to the other extreme and who expects his local garage man to have the same facilities at his command as the car manufacturers. This form of nuisance will bring his car round and order a complicated overhaul job which will necessitate the mechanic making up special tools. The car manufacturers, on the other hand, will have these special tools in ordinary use, and, obviously, if the owner sent his car back to the works the bill would in many cases be less. What the owner should remember is that when paying for the cost of the fittings the local man is compelled to make, he is paying for the convenience of not having to send his car a hundred or more miles, perhaps, to the manufacturer's works.

In the early days it was considered correct for the garage owner to live and sleep on the premises. I was soon forced definitely to shut up shop at night owing to inconsiderate motorists who came to the nearest garage in the early hours demanding instant attention for trifling repairs that they themselves could quite easily carry out.

The advent of the automatic shilling-in-the-slot petrol pump will enable me to give service to motorists who pass in the night when I am snugly in bed. Yet I dread to think what will happen if the machine goes wrong.

thereby enabling passers-by to obtain "juice" gratis until the tank runs dry! What motorists really need is an automatic Robot which will mend punctures, change plugs and so forth in the sma' wee hours, when the necessary coins are inserted. The Robot need never sleep, but the garage man must—sometimes.

Perhaps the best joke that was ever played on me—I can only regard it as a joke—was when I received a midnight 'phone call to inspect a car reputed to have broken down within a hundred yards of the garage. When I arrived on the scene I found the car parked outside a popular hotel, with the over-happy owner under the close watch of two policemen.

The fault appeared to be one which could be traced only by a process of elimination, and I worked for half an hour in pouring rain before discovering that the positive coil ignition lead was making faulty contact at the battery end. The fact was mentioned to the owner, but he seemed not in the least surprised; the trouble was remedied, the engine was started and he drove off under the puzzled gaze of the police. A letter sent to me in the morning explained that the car had been outside the hotel for over five hours. I strongly suspect that the owner had seen the police mounting guard over it, and, fearing a summons, had told them the car was stranded with engine trouble and had 'phoned a garage to make the case look genuine. No cheque accompanied the letter, and, strangely enough, the writer had overlooked the desirability of including his address.

## AN EASILY MADE DASH LAMP.

**A**N electric light on the fascia-board of a car adds greatly to the comfort of the passengers and increases the utility of the electrical equipment without placing too great a strain on the battery.

Dash lamps of the ordinary commercial pattern, fitted with a shield to prevent the rays dazzling the eyes of the driver, are comparatively expensive, and as their construction is not above the capabilities of an average small-car owner, many would, doubtless, prefer to make one rather than to buy one.

Bulbs of two distinct types are available, of the bayonet-socket and festoon type. The former necessitates the use of a special retaining socket carrying spring connections at one end, and the construction of this portion of the lamp is a matter of no little difficulty.

Festoon bulbs can be clipped between simple right-angle spring supports, as the connections to the filament are made at the extreme ends in this type of bulb. Several methods of holding the bulb in position should be obvious and it is quite an easy matter to incorporate some form of simple tumbler switch with the mounting board so that the dash lamp is self-contained.

Right-angle clips of  $\frac{1}{8}$ -in. springy brass should be cut and arranged to hold the lamp approximately 24 ins. away from the fascia board. If the wood of which the instrument board is built is of dry, well-seasoned material, the clips may be fixed direct by long bolts passing through both the feet of the supports and the thickness of the fascia board. A better appearance is to be obtained by mounting the supports on a small strip of fibre, matt ebonite, or similar insulating material, this in turn being attached to the fascia board by means of ordinary wood screws. The bolts holding the clips to the ebonite should be countersunk so that the inverted heads do not make electrical contact with the instrument board.

There is one other advantage obtained if this type

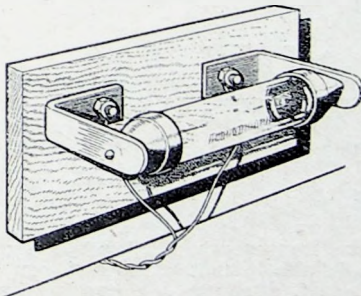
of mounting be adopted: if the clips be attached to the board, the fixing bolts will, in most instances, have to pass through the wood, and terminal connections must be made behind it. If the clips be mounted on an intermediate strip, however, the holding bolts can be reversed and the thickness of the material will permit small terminals to be screwed on to the free ends. Flexible wire connections may then be taken from the face of the instrument board to the switch-box or direct to the accumulator.

Electrical and wireless dealers sell neat nickel-plated tumbler switches which are capable of dealing with currents of a small fraction of an ampere as consumed by dash-lamp festoon bulbs. As the lamp will be required only momentarily, generally speaking, it is perhaps better to use some type of bell-push switch in series with one lead from the bulb. There will then be no danger of the lamp being accidentally left in circuit for a long period.

A metal shield should be fitted above the bulb, to ward off the rays from the eyes of the driver, or, as an alternative, a short length of black paper or passe-partout tape may be stuck over part of the festoon bulb. By making the shield movable, the light may be directed in any required direction.

Small car owners who fear mechanical trouble after dark may care to make up a further ebonite strip carrying brass supporting strips, attached by a long length of flexible wire to two points in the wiring layout. The festoon bulb may then be transferred from the fascia-board lamp to the improvised inspection lamp, and the latter, with its length of flex, taken to the source of trouble. The inspection lamp can also be used as a carrier of spare bulbs for the dash lamp when the filament circuit of the former is disconnected.

A small switch may be placed in one of the leads to the inspection lamp holder so that the lamp may easily be switched in and out of circuit.



The bulb is supported by two right-angle clips of springy brass. Electrical connection to the filament is also made through these supports.



## WITH A LIGHT CAR IN SOUTH AFRICA.

AN INTERESTING ACCOUNT OF A TRIP FROM JOHANNESBURG TO VICTORIA FALLS IN A 10-20 H.P. BERLIET.

THE term "light car," applied to the 10-20 h.p. Berliet, in which I successfully covered 2,273 miles in three weeks during June, seems somewhat of a misnomer, for whilst its engine capacity of 1,171 c.c. makes it essentially a light car in the recognized and accepted sense, its diminutive power unit, rated at 9.5 h.p., was called upon to propel a load of no less than 3,600-odd lb. Incredible as it may appear, the weight of the petrol, spare oil and water carried was no less than 200 lb. These few facts enable one better to appreciate the performance of the car and the possibilities of light cars in South Africa.

Accompanied by two friends I set forth on my trip early on Sunday morning, June 5th. It was not my intention to endeavour to establish any speed or economy records, nor did I bind myself to adhere to any definite schedule, for which reasons it was not until Wednesday evening that Bulawayo was reached, close on two days having been spent in stops en route. The distance from Johannesburg to Bulawayo is 555 miles, of which 219 miles were covered in one day. For the most part the country is flat and uninteresting, a welcome break being afforded by the Zoutpansberg mountains, just north of Louis Trichardt. The scenery in the vicinity of Wylie's Poort is quite charming, although, owing to the 57-odd miles between Louis Trichardt and Messina being covered at night on the outward journey, full appreciation of this portion of the trip had to be deferred until our return.

Two days at Bulawayo proved more than enough, and, had it not been for calling on friends in that town, we should in all probability have left after the first day. Of course, we had to visit the Matoppos and Rhodes's grave, but, personally, I was inclined to regard the famous "World's View" as very much overrated.

The police in Bulawayo are decidedly active in enforcing the 20 m.p.h. speed limit. I was fortunate in escaping with a caution for having sped round a corner at between 25 and 30 m.p.h.

Having loaded up with sufficient petrol to carry us the 254-odd miles to Wankie, Bulawayo was left behind after dinner on Thursday, June 10th, Lonely Mine being our first stop. The 50 miles of road between these two points is excellent and provided a pleasant run in the moonlight. Some 12 miles out of Bulawayo the fan-belt broke, but the remaining 37 miles were covered without the engine becoming unduly hot. Next morning the shop foreman at the mine kindly fixed us up with two new belts free of charge.

That day's running was probably the most monotonous and tiring of all, the almost endless bush and mopani proving most uninteresting. In all only 140 miles were covered, but we did not reach the Gwaai

b22

River rest-hut until a quarter-past seven at night, our actual running time for the day being 8½ hours.

From Gwaai River to Victoria Falls—179 miles—turned out to be an easy run for the next day, interest being added by the occasional appearance of a farmhouse.

The total distance from Johannesburg to the Falls is 925.6 miles, measured by a checked speedometer, and, on the whole, the road is very fair, the worst sections of the made road being in the neighbourhood of Potgietersrust, in the Transvaal, and between West Nicholson and Gwanda, in Rhodesia. From Lonely Mine to the Falls the road is, for the most part, nothing more than a track, which, however, is easily passable in the dry season. Care is necessary in driving, and, as an instance of this, at various points we came across four cars with broken springs.

Three days were spent at the Falls, and here we allowed ourselves the luxury of staying at the hotel; hitherto camping-out had been the order of the day.

Another two days saw us back at Bulawayo, and on Sunday, June 19th, we set forth for Gwelo, whence we slipped along to Selukwe, a matter of 23 miles. Through the courtesy of Mr. Musgrave, of the Rhodesia Chrome Mines, Ltd., we were able to travel on the company's light railway to the Selukwe Peak, the top of which is only a few feet lower than Johannesburg. The mine workings were most interesting, and from the top of the Peak we got a real "World's View." We were reliably informed that 10,000 square miles of country lay spread out around us.

Back to Gwelo and on to Fort Victoria, we passed on to the Zimbabwe ruins and thence to Messina en route for "home." At Bandolier Kop we deviated to Duivel's Kloof and Tzaneen and thence up Magoeba's Kloof to Pietersburg. This trip to the low-veld provided us with the finest scenery of the four and is recommended to all who pass that way.

In all we were away from Johannesburg for three weeks, during which time we motored 2,273.1 miles in 115 hrs. 33 mins. running time, the average speed thus being at 19.5 m.p.h. The petrol consumption throughout the whole trip worked out at 25.39 m.p.h.—quite a good figure considering the nature of the run.

I drove throughout the whole of this distance, and we all arrived back very much fitter, physically, and possessed of greater knowledge of our country than when we left.

We saw quantities of game on the run, but although we heard numerous lion stories did not so much as sight the spoor of either lion or leopard. Altogether the trip may be described as having been entirely successful, although, perhaps, from a scenic point of view, it was a bit dull.

L.V.H.



# MOTORING CONDITIONS IN SOUTH AFRICA.

*Photographs taken during  
the journey described on  
the opposite page.*



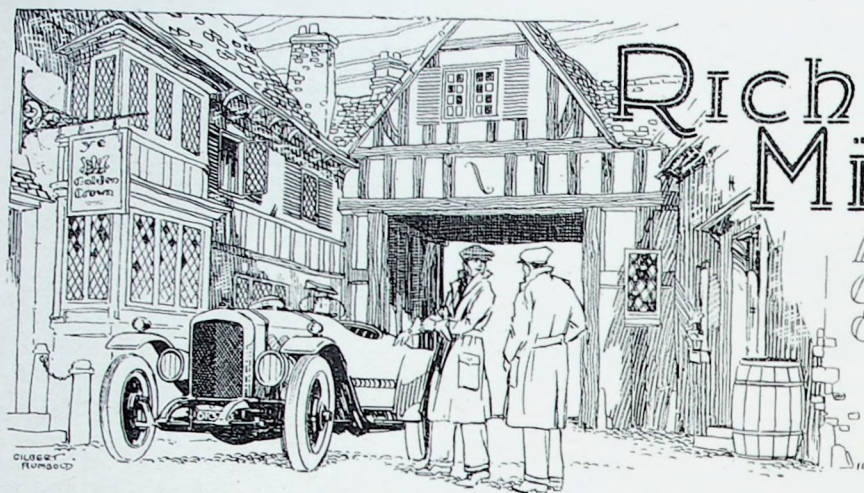
(Above) At the end of the outward journey—the Berliet outside the imposing hotel at Victoria Falls.  
(Left) Tokwe River, crossing between Fort Victoria and Messina.

A stop for filling up at Warmbaths shortly after the start. The building was gutted by fire two days after this photograph was taken.



A formidable "splash"—crossing the Limpopo River between Southern Rhodesia and Northern Transvaal in the dry season. Obstacles like these are met with frequently when real cross-country work has to be done in South Africa.





# Rich Mixture

LIGHT CAR  
COMMENT  
& ADVICE

By  
*Focus*

## The Warming-up Problem.

WITH Christmas less than five months hence it is not too early to begin to consider the problems which will face us as the colder weather draws on. There is, in my view, only one real problem which remains, and that consists of finding a really good means for insuring that the engine will warm up quickly from cold and remain at a more or less constant temperature.

Rapid warming-up means better lubrication for the whole engine. It means, in addition, improved running and increased economy, due to the oil in the sump remaining free from petrol, which condenses on the cylinder walls of a cold engine and makes its way past the piston rings to dilute the oil in the sump.

There are, I believe, proprietary thermostats which can be fitted into the top water-pipe, but these are feasible only with pump-circulated cooling water—if I am wrong in believing this I am, of course, open to correction, and should be happy to try out and report on any device not having this limitation.

## A Novel Suggestion.

IT occurs to me that an easy way out of the difficulty of warming up the engine quickly would be to fit non-return valves in the top and bottom water-pipes. These valves could be of the type commonly used in hand-operated semi-rotary pumps. They would normally remain closed under the influence of the force of gravity, but either would be opened under the influence of a very slight pressure or "suction." When an engine having a cooling system fitted with two valves of this kind was started up no water would circulate until that in the jackets just reached boiling point. A little pressure would then be generated, the upper valve would be opened and hot water would pass to the radiator, whilst simultaneously the lower valve would admit fresh cooling water to the cylinder jackets from the base of the radiator.

When the car was parked, both valves, of course, would be shut and circulation would cease, so that two or three hours would probably elapse before the temperature of the cylinder block fell to that of the atmosphere, although, as we all know, the radiator would cool off very much more

rapidly. This, of course, does not matter at all, the only thing with which we are concerned is keeping the water in the cylinder jackets at as high a temperature as possible.

## Has Anyone Experimented?

THERE are, in the scheme which I have outlined, one or two apparent objections, but I am not sure whether they are really of any consequence. It may be said that the boiling point of water is too high a temperature to be desirable; it might also be put forward that the generation of steam in the cylinder jackets is not advisable. The retort, I think, is that, with an engine appropriately designed, the formation of steam in the jackets need provide no drawbacks, although for its proper condensation, radiators with rather deeper head tanks than usual might be needed. On the score of simplicity and reliability this little scheme of mine has everything to recommend it, whilst the cost of including two non-return valves in the cooling system of a car would not amount to more than a few pence.

The views of anyone who has experimented along these lines would surely be of the greatest interest.

## Fabric Body Features.

A MAN who is in the trade tells me that he is astonished at the big demand which exists just now for fabric bodies. He says that he has never seen a very big future for them in the past owing to their lines and general appearance being rather drab and, in some cases, even unsightly, but he now believes that the public has overcome its aesthetic objections, and that the fabric body is the body of the future.

I do not entirely agree with him. After running a car with a fabric body for some months, I have found that it is delightfully easy to keep clean, that it is light, silent and trouble-free. But what of the future?

A good deal of rubber insertion figures in the construction; there are many little gadgets, known, I believe, as fillets, gussets, beadings and so forth, all of which in the course of time will presumably perish and need renewing. The fabric, for all I know, may get threadbare around the door handles.



It would be very interesting to hear from someone who has run a car with a fabric body for three or four years and to learn from him whether these are real or only theoretical objections. I have heard, by the way, that fabric bodies can be finished with cellulose, so that if one gets tired of the colour scheme, a new one can be obtained for a tenner or so. Perhaps somebody can let us know whether this is a fact or merely part of the sales argument of an enthusiast for the fabric body.

#### *An Interesting Comparison.*

**T**HEORETICALLY, two engines of the same make and cylinder dimensions, mounted in similar chassis, should put up about the same performance; but frequently they do not. Recently, however, I came across a convincing case. Not only did the two cars I tried behave in exactly the same manner, but on transferring the radiator thermometer, complete with filler cap, from one to the other—the cars had then been running in company for several miles—not the slightest alteration in cooling water temperature could be detected.

#### *Lincoln Bridge.*

**W**ITH pleasure, increased by the memory of a recent visit, I note the intention of the Society for the Preservation of Ancient Buildings to safeguard the picturesque old High Bridge at Lincoln.

Its protection is well deserved, for, apart from its beauty, it is the only instance in this country of a bridge with houses built upon it. From the western bank of the Witham, whence the best view is to be obtained, it seems indeed to be more of a house than a bridge.

The river passes beneath its single span, which is locally known as "The Glory Hole," and the black beams and whitewash of the walls above form a very pretty picture. De Windt has placed some of its beauty on canvas, and the picture can be seen in the South Kensington Museum.

#### *Yellow Wheels.*

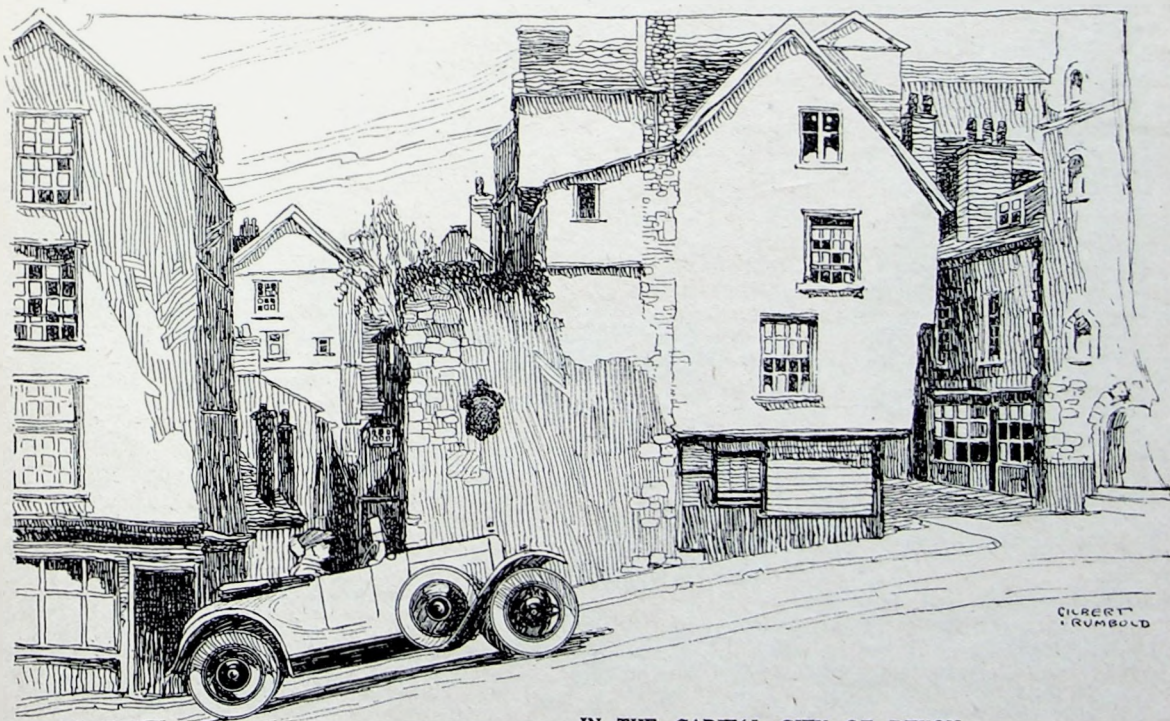
**T**HERE is a craze just now for painting wire wheels—and sometimes the artillery type—a light putty colour, and Austin owners are favouring the plan in increasing numbers. It has the advantage, they say, of making the car look smarter when the wheels are clean and less disreputable when they are dirty.

The notion has come, I believe, from America, and certainly has a good deal to recommend it. It is important, incidentally, before starting to repaint wheels to wash them as clean as possible with water and then to remove all traces of grease with petrol. Wheels which are already black will need at least two coats of paint if they are to look respectable when finished.

#### *Squeegee Faults.*

**A** MONTH ago I mentioned that I had found the squeegees commonly used for windscreen wipers were far from satisfactory, owing to their tendency to perish if pressed hard against the glass or to wipe a far-from-clean path if bearing lightly.

I am now experimenting with an American squeegee which costs 2s. 6d., and which has a combined felt and rubber "tread." The makers claim that with this squeegee in use an automatic wiper can be switched off after a minute or two, when the cleaned path will remain free from rainspots.



IN THE CAPITAL CITY OF DEVON.

One of the most interesting cities in the country and situated in the heart of a touring district providing unique seaside and moorland views, Exeter is always worth a visit. The old West Gate is shown.



for the rest of the run. I question whether this would concern many drivers, but if the squeegee will wipe clean and continue to do so I shall be happy in a few weeks to shout its praises from the housetops.

#### *Worth Attention.*

ON far too few light cars is there anywhere for the driver to put his left foot when it is not busy with the clutch. In consequence, many drivers keep their foot continually on the clutch pedal, which is far from good for the withdrawal mechanism and often leads to premature slip developing, whilst there are few clutch pedals which do not vibrate a trifle, causing tiredness on long journeys.

A plan which I have found effective on small cars is to fit a wooden block on the ramp just to the left of the clutch pedal in a position where one can conveniently rest the foot against it; but this is out of the question with many left-hand-control cars, owing to the brake and gear levers preventing one's leg from being moved comfortably to the left.

#### *Races Worth Watching.*

LAST Saturday I went to a motorcycle racing meeting held in the grounds of the Crystal Palace, and I have no hesitation in saying that it was the most interesting and exciting motor racing that I have seen.

The competitors, wearing jerseys of distinctive colour, are started abreast and four take part in each heat or race, the first man across the line being the winner. The course is about a mile in

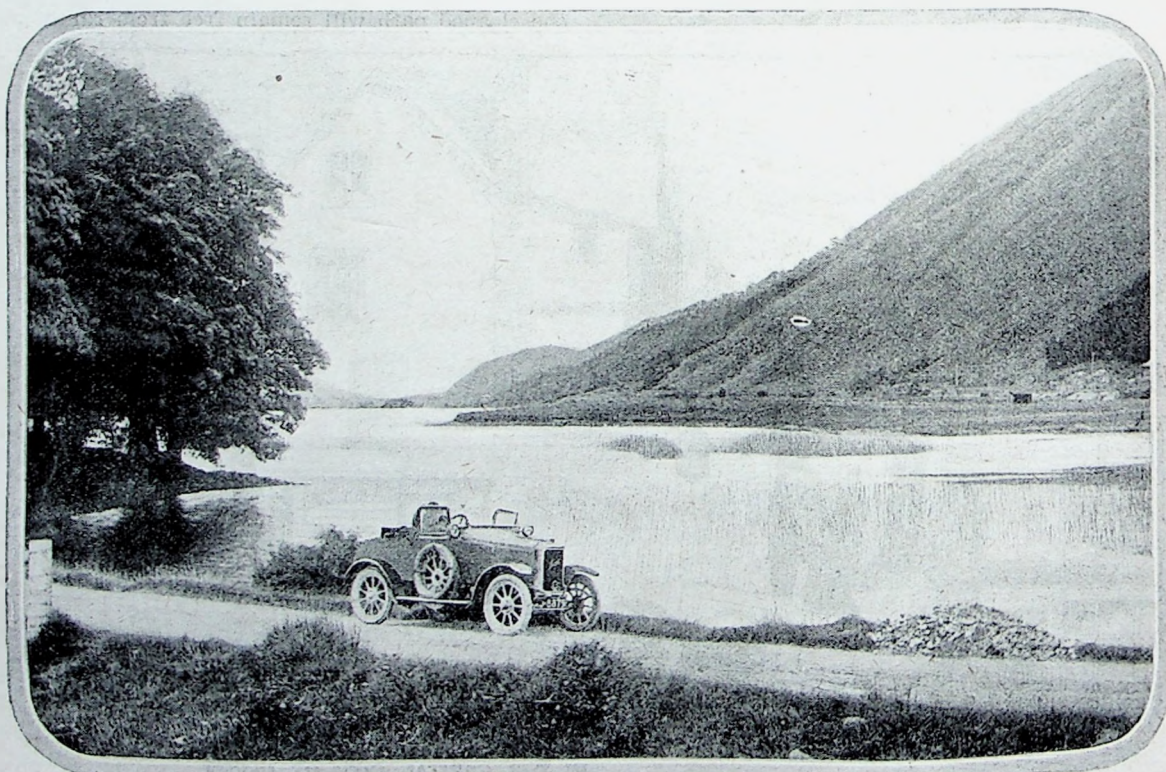
length and has so many corners and hair-pins that the fastest solo lap so far put up is at an average speed of only 32 m.p.h.

Unfortunately, the course would not be suitable for car events; but car owners in search of a good day's sport might do very much worse than turn their wheels in the direction of the Crystal Palace when the next meeting is held, on September 17th. If they are not thrilled by the racing—which would be most improbable—they will at least marvel at the skill of the riders and the "controllability" of the machines, especially on the acute bends.

#### *A Valve to Blame.*

WHAT is wrong with an engine which will start from cold fairly readily when the carburetter has been flooded and the strangler used, but which stops a few seconds later? A choked pilot jet most people would reply, and if that was ruled out, a sticky rocker-arm bush in the contact-breaker.

It was to these two common delinquents that I turned when faced with this age-old trouble a few days ago. The former, however, proved to be clear, whilst the latter was perfectly free. Half an hour elapsed before I found a slightly sticking inlet valve which apparently allowed just sufficient blow-back to upset carburation and yet did not give itself away by audible spitting from the carburetter. Incidentally, I have heard recently of several cases of valves sticking open beyond their normal travel—that is, wider open than the rocker pushes them.



IN THE GREAT GLEN. — The Great Glen of Inverness, through which passes the Caledonian Canal, consists of three lochs which divide Scotland into two sections. Loch Oich is shown.



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### Keep to the Left.

IN the interests of the comfort, safety and well-being of all road users we frequently refer to the need for keeping to the left. For some reason which it is hard to explain few drivers keep anywhere near the left-hand side of our new broad main roads. Some prefer to drive about six feet from the near side, some like the extreme centre and almost all decline to approach nearer than three feet to the kerb.

Is this due to lack of driving skill? Are the majority of present-day drivers so uncertain of the accuracy of their judgment that they dare not leave less than a yard between their wheels and the stone kerbs which flank arterial roads?

All the indications are that the answer to both these questions is in the affirmative, and that unless a very large number of drivers alter their methods the practice of passing (overtaking) on the near side will rapidly increase. Already it is becoming common and the number of accidents caused by it appears to be steadily growing. Drivers of large cars and lorries are the principal offenders against the "keep-to-the-left" rule. We ask them to waste no time in mending their ways, and we commend to those of our readers who are still in their novitiate the wisdom of learning to judge the width of their cars. With those who make a practice of overtaking on the near side we have little patience; but, even so, it is not hard to sympathize with occasional transgressors.

### A Hospital Scheme.

DOUBTLESS with the very best intentions the treasurer of the Royal Berkshire Hospital is endeavouring to start a "Motorists' Fund" to meet "the very great expense to which this hospital is put by virtue of the many motoring accidents we are called upon to treat." It is suggested that "motorists" should carry on their windcreens a card like a licence disc, indicating that they have donated at least 2s. 6d. to a hospital, and already a newspaper has seized upon the scheme and suggested that the cost of treating "persons injured in motoring accidents" should be regarded as "a debt of honour" by "the motoring fraternity." Have commercial-vehicle

THE LIGHT CAR AND CYCLECAR WAS FOUNDED IN 1912 TO CATER FOR THE NEEDS OF USERS AND POTENTIAL PURCHASERS OF LIGHT CARS AND CYCLECARS, AND IT HAS CONSISTENTLY 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 RECOGNISED AND ACCEPTED AS THE LIMIT FOR A LIGHT CAR ENGINE.

Conducted by  
EDMUND DANGERFIELD.

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owners, motorcyclists, cyclists and users of horse-drawn vehicles been considered in this connection? Why should "motorists" be made the scapegoats? A "motorist," it might be said, is anyone who makes use of a motor vehicle, but that is not the common impression.

Our experience has been that motorcar owners and passengers in private cars who meet with mishaps and receive treatment in hospital are always ready and

willing to pay for the care and attention they receive, and we believe they have every right to resent the introduction of a scheme which implies that they are not. In the case of accidents in which private cars are involved only as "third parties," persons injured are able to obtain compensation if the car owners are at fault, and if the hospitals are unable to obtain their fair share surely they have only themselves to blame.

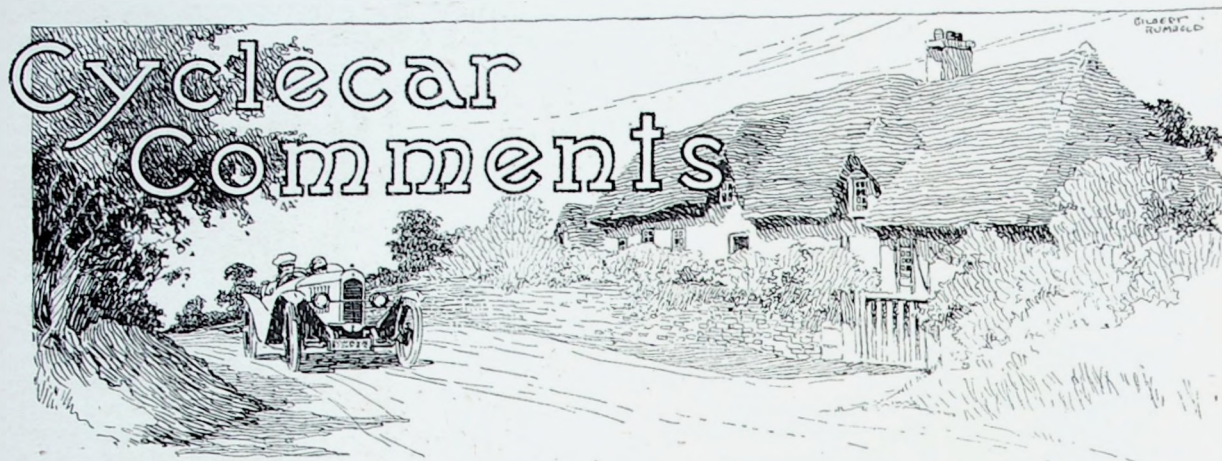
### The Spark Nuisance.

WE have repeatedly drawn attention to the nuisance, danger and inconvenience caused by the emission of smoke and sparks from traction engines and steam lorries, and we regret to notice—from personal observation and as the result of complaints we have received from time to time—that there are no signs of abatement of the evil. In fairness to drivers of steam vehicles, it should be pointed out that they are, to a certain extent, helpless owing to the low-grade fuel which they are obliged to burn. As a useful commentary on the situation, we cannot do better than quote from a leading article in a recent issue of our associated journal, *The Commercial Motor*, which said:—

The continued use by owners of steam wagons of soft coal and other smoke-producing fuels is leading to a number of complaints and to questions in Parliament, and it would appear to be advisable as quickly as possible to get on to hard coal so that the need for an amendment of the law on the subject can be avoided.

The public should realize that if sparks are emitted and cause damage, the owner of the vehicle will be liable, and it will be no defence for him to prove that he has complied with the statutory requirements as to the construction and equipment of the vehicle. In Ireland steam wagons must be fitted with spark arresters, but no such law exists in England.





SUPERCHARGING A MORGAN ENGINE — THE DRIVE PROBLEM — G.N. INQUIRIES —  
LOWERING THREE-WHEELER RECORDS — BELT DRIVE — A CLUB FOR CYCLECAR OWNERS.

A YOUNG friend of mine who has a very fast Aero-Morgan which he uses sometimes in the speed trials organized by his local club, has become obsessed with the idea of making his machine so fast that he will be certain of a win every time. Up to the present he has tried all the known dodges of engines "botted" at the works—cams with lifts like a jack and, of course, racing carburettors with jet orifices resembling tube tunnels. It must be admitted he has not done at all badly, but his craving is for ultra-hyper-speed.

As might be guessed, he is now playing with the supercharger idea. I have heard vague rumours of a supercharged Morgan, but I have never seen one and I do not know how it would work, but I know that there is a supercharged flat twin—the Coventry Victor—so I can see no obvious reason why a supercharged V-twin should not be quite satisfactory. My friend wonders whether chain drive would be suitable.

So far as strength is concerned I think it would be quite all right, for there are many chain-driven dynamos and dynamotors on modern cars which rev. at a very high speed and stand up to the strain with ease. In addition to this, chain drive is easy to accommodate, but I am inclined to think that for a job of this description shaft and gear drive would give a more solid and reliable transmission of power—which is what is wanted for a supercharger.

Chain drive, however, would be easier to fit to a Morgan for there is not much room for attaching a "blower" to the engine itself, quite apart from the fact that there are

no convenient shafts or gearwheels from which to take the drive. For a chain drive I should think that the sprocket could be attached to the flywheel alongside the dynamo belt pulley.

The scheme seems to me to be feasible, but whether the results would be worth the labour and expense I do not know. Do any of my readers?

I receive all sorts of inquiries regarding G.N.s, but few of my correspondents seem to think it necessary to state quite clearly the model to which they refer. The majority, of course, are concerned with the twin-cylinder job which emanated from East Hill, Wandsworth, soon after G.N., Ltd., had vacated the Bell Lane works at Hendon, but at the same works twin-cylinder side-valve and 1,100 c.c. four-cylinder water-cooled jobs were produced, whilst at a later period a 1,500 c.c. G.N. appeared.

In the old Bell Lane days the twin-cylinder car was identified by its exposed overhead inlet-valve rocker gear and final belt-drive. It was, I think, towards the end of the war that the rockers were enclosed and chain drive substituted for belt; in fact, this was the type first produced in large numbers at Wandsworth.

I see that W. D. Hawkes has been busy at Montlhéry in a 350 c.c. single-cylinder cyclecar, and that he has lowered certain records—presumably in class J. Hawkes, of course, was one of the finest exponents of the three-wheeler that we had just after the war, his "stripped" Morgan—christened "Land-crab," owing to its quaint appearance—being a familiar entry

at Brooklands. I wonder what has happened to "Land-crab"?

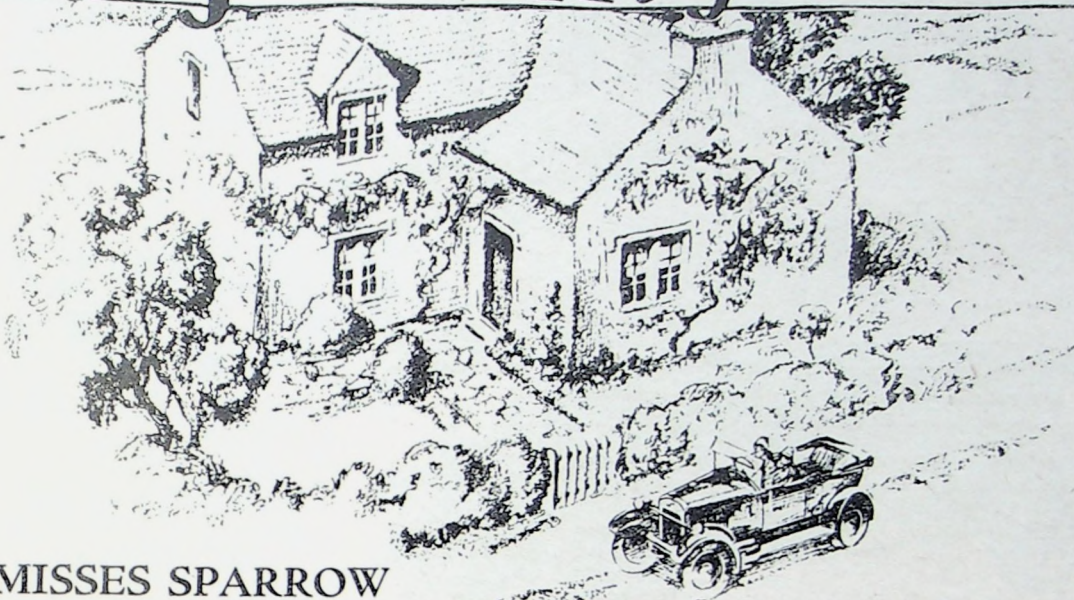
"Is belt drive practicable for a three-wheeler which I propose to build?" asks "J.S.C.," who hails from Crystal Palace way. Well, the only cyclecar of this particular ilk that I have come across was the Thurloe, and my reply is based purely on the facts which came under my notice during a brief run which I enjoyed in the first—and, I believe, the only—belt-driven model made. This was somewhere about 1920. It ran very comfortably, the drive being taken up by the single belt positively but without shock and, during the run, reasonable test hills like Rammore Common, Coombe Bottom and Pebblecombe were climbed successfully. In a later model the belt was superseded by a chain and this, I think, is the best guide "J.S.C." can have as to the merits of the former. To use belt drive successfully, I think that they should be duplicated, as in the 1912 G.N.s and other early cyclecars.

All keen cyclecar owners will be delighted to know that at the special meeting of the Morgan Club held on August 4th the proposal was carried that membership of the club should be available to owners of any make of cyclecar. This sporting action by a well-established club cannot fail to be of benefit to all cyclecarists.

A general meeting to discuss ways and means will be held at the Service Luncheon Club, Titchbourne Court, High Holborn, London, at 8.15 p.m. on Thursday, August 18th. Everyone who is interested is invited to attend, and I hope that the hall will be crowded. There will be many questions to settle, and if the meeting is well attended there will be a much greater chance of getting the new club into working order.



# TROJAN *happy families*



No. 4

## The MISSES SPARROW of WISTARIA COTTAGE

ALL the countryside knows and loves the Misses Sparrow—two maiden ladies devoted to one another. Nothing has ever been known to come between them—except perhaps their Trojan, which they both love driving—and there's only one steering wheel! But they compromise by taking alternate days.

Miss Pamela always tells her friends that she never dared ride a pedal cycle—they were so dangerous—but she loves dodging traffic in the Trojan—she doesn't wonder the makers call it the simplest car in the world.

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[ All Trojan cars carry the makers' free maintenance undertaking for the first 5000 miles. ]

*All the names and addresses are fictitious, but in this series we intend portraying the lives of typical Trojan owners, showing the new freedom which the possession of a Trojan 4-seater car has brought.*

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*The World of Sport.*

## WOKING CLUB FINDS TWO NEW HILLS.

Successful "Seven Counties" Trial—Well Supported and Ably Organized.

**E**XCEPT for the usual grumble—the weather—we have nothing but unstinted praise for the Woking and District M.C. and C. Club in the organization of their second annual "Seven Counties" Trial. From the start at Staines, on Saturday evening, until the finish at Minehead on the following morning competitors expressed the utmost satisfaction, and at Minehead, where the finishers gathered on the windswept front, everyone was saying what a splendid event it had been.

As participants in the trial, we can say that throughout the 200-mile run the organization was as near perfect as is possible in such an event.

The timing was worked with the aid of specially tested chronograph watches kindly lent by J. W. Benson, Ltd., of Ludgate Hill, and A. V. Pickering, of Cheapside. The route was admirably marked and very well chosen, but there are two scores on which the club are to be particularly congratulated. They are the discovery of two new hills and the number of entries received. Last year 40 competitors started, but this year there were over 130. Nine were three-wheelers (all Morgans) and 15 cars; there were only two non-starters.

There was very little of interest on the night run: supper was taken at Frome, and here an amusing rumour was in circulation. It was said that C. D. Conradi (10 h.p. Salmson) had arrived in the town before the time-keepers, who found him ensconced in the official hotel when they came to take the first check. Conradi's team-mate, I. J. Higgs (Salmson), had to retire with a broken back-axle casing before he reached Frome.

### Grabhurst Hill.

The real business of the day started soon after a check at Dunster, with Grabhurst Hill, one of the two new "terrors." Grabhurst consisted chiefly of two acute hair-pins—left and right—separated by about 25 yards of very loose stones and sand. The hair-pins were also loose and were banked the wrong way, while the approach was about two miles long, a narrow lane rising steeply all the time.

The first unlucky man was H. W. Baker (Morgan), who stripped all but two of the studs holding his low-gear sprocket to the wheel. There were other unfortunates, but all were able to get going again except Baker, who had to retire. A short length of "rough stuff" led on to the main road to Porlock, which was in excellent condition. We believe that there were no failures among the car competitors, and the

### F. A. Boggis (Morgan) climbing Beggars' Roost.

three-wheelers all romped up. The usual route over the hills and down Countisbury was followed to Lynmouth, where breakfast was served.

Directly after breakfast Lynmouth had to be tackled, and here again the hill was in comparatively good condition. We noticed only one failure, D. S. C. Macaskie, whose air-cooled Morgan came to rest about half-way up. Lynmouth is full of visitors at this time of the year, and it seemed that all of them, as well as the residents, had congregated on the first hair-pin.

### The "Roost."

Beggars' Roost was the next tit-bit, but its toll was not so great as usual.

Soon after Lynmouth a new and entirely original trail—so far as trials are concerned—was laid. After crossing Hillsford Bridge, the road was followed to Rockford and Brendon, thence up the Doone Valley, past Lorna Deane's farm to Malmsmead. About a mile farther on came the "terror" of the trial—Hookway Hill. It is something after the style of Beggars' Roost, but much steeper and longer. The surface is composed of loose stones and the typical Somerset red sand. It is approached by a left-hand hair-pin of moderate dimensions, then follows almost immediately a right-hand bend. This appeared to the somewhat apprehensive competitors to be an almost perpendicular wall of red rock which sloped away steeply on the left into the far distance.

When they had rounded it they congratulated themselves upon having got over the worst of it, although there was still another bend the ascent of which seemed insignificant compared with what had gone before—although, actually, it was as steep as 1 in 5.

Of the Morgans, R. A. Martin, H. R. Taylor and F. A. Boggis all made beautifully clean and steady climbs, but R. Parsons and G. G. H. Hillyard were among the failures.

Of the cars, C. L. Clayton (Amilear), C. D. Conradi (Salmson) and Miss L. M. Roper (A.C.) made very good climbs.

Although we have said that the worst

was over when Hookway was surmounted, this is not, perhaps, strictly true, for there were about 12 miles of Exmoor sheep tracks and cart roads to be covered before the finish. This length of colonial going was really of a super-sporting nature, but although it required extremely cautious negotiation, it could not really be called "freak" stuff. It needed particularly careful driving on the part of the car competitors, for it was crossed frequently by deep gullies and mounds or ridges of stones, which sometimes made necessary a detour through the heather.

A drop down into Brandish Street brought the competitors back on to the main road to Porlock and Minehead, but before they reached it they passed through some of the most glorious scenery in Somerset and Devon, and, incidentally, had to tackle a hill which might well have been observed. It was unnamed on the route card, but it came soon after Cloutsham and very nearly caused a hold-up, for the sidecar drivers found it extremely difficult and one or two of them nearly baulked the Morgan drivers.

### Tricky Unobserved Hill.

These latter, however, by climbing banks and skidding their rear wheels, were able to keep going and so saved the situation, for had they stopped it would have been a severe task to get away again on account of the gradient and greasy surface. From Brandish Street it was only a short run into Minehead, where the final check was taken at the end of the Promenade, just in time for lunch.

The following car drivers finished:—

R. A. Martin (Morgan), H. R. Taylor (Morgan), E. L. Forge (Morgan), F. A. Boggis (Morgan), G. Pollard (Morgan), C. D. Conradi (Salmson), S. G. Smith (Austin), C. L. Clayton (Amilear), Miss I. M. Sefton (A.C.), W. L. Bishop (Bishop's Special), W. A. Schooley (Brocklebank), E. H. Buckingham (Sénéchal), C. G. Pitt (Austin), R. D. Wilson (Austin), Miss L. M. Roper (A.C.), D. Duncan-Smith (Fraser-Nash), H. J. Lovatt (Jowett), F. J. Sargent (Salmson).



Now is the ideal time for alfresco meals. In the following breezy little contribution—



**F**RANKLY, the terms picnic and holiday are—or at least should be—synonymous. It is of but little use including a picnic in a holiday jaunt if one be too irritable to put up with a hundred and one discomforts in which the true picnicker is said to revel; but who, having once dared to take food and drink in the company of cows and sheep—and with the more annoying table companions, flies, midges, dust motes and so forth—would not cheerfully repeat the experiment?

In reality there is no reason why, in a properly conducted picnic, the slightest hint of discomfort should be noticed; and, moreover, the alfresco meal will impart pleasure and the spice of novelty which conventional meals in conventional hotels can never give.

The essentials for the proper arranging of a picnic are few. The venue must not be too far away from home, for if a very ambitious distance has to be covered there is at least the *possibility* of something going wrong with the car—even in 1927—and mechanical trouble en route will spoil even the best of picnics. Provisions must not be too elaborate and should be chosen to suit the tastes of the party: food must be properly packed, and, as everyone should know, to take breakable

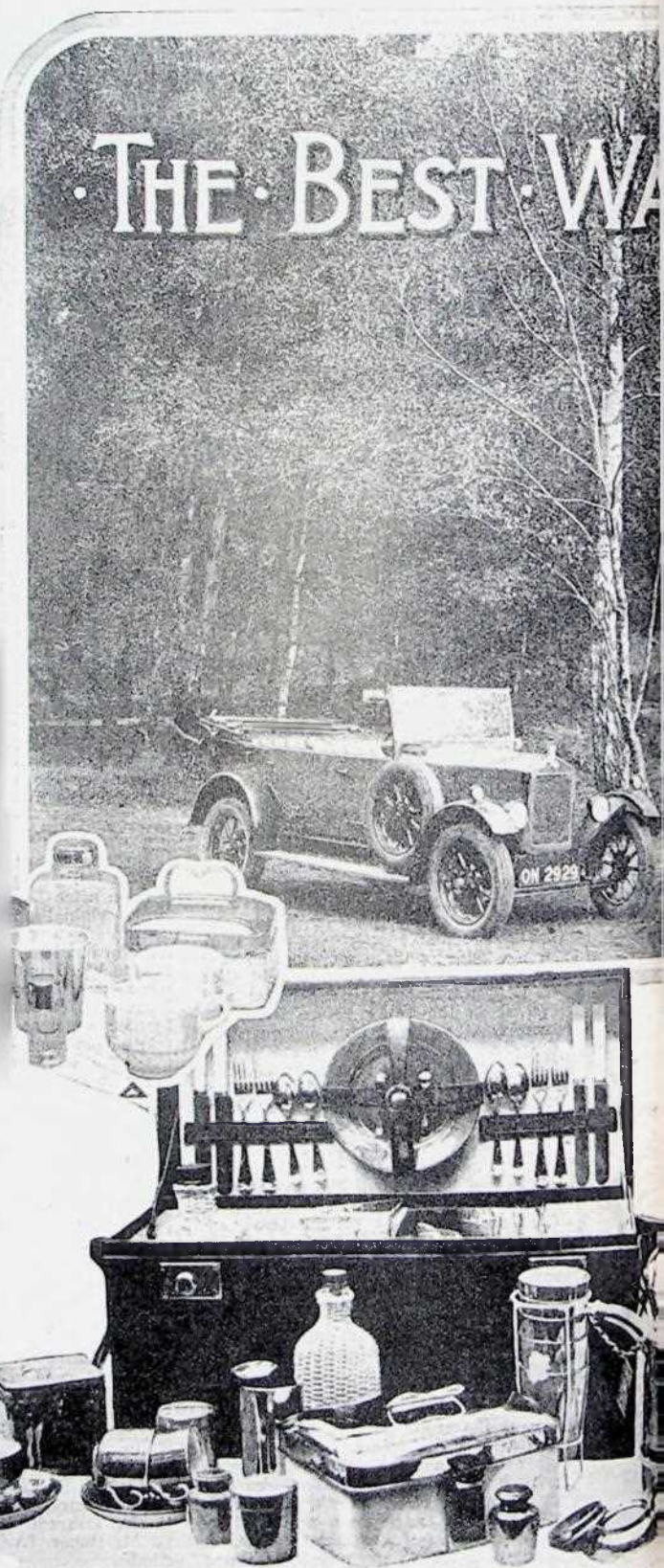
cups, saucers, plates, glasses and so on, in the hamper is inviting trouble.

The foregoing are "Don'ts," and the list might be extended; the tale of "Do's" is just as important.

The main part of the hamper should be packed overnight, leaving only the items which have to be freshly prepared to be packed in the morning. This will give plenty of time to make sure the important things are packed; it is easy, in the last-minute hustle, to overlook essentials and cast a gloom on the proceedings.

If possible, the hamper should be stowed near the centre of the car; in the rear seats or in the dickey it will be subject to more vibration, and the coffee may mix with the mayonnaise before the appointed time! Above all, keep the precious bundle at a respectful distance from oil and petrol and exhaust fumes, none of which is found inside the best cars and picnic baskets.

The housewife may save herself much time and trouble by packing the "eatables" in a proper hamper instead of attempting to make shift with a home-made container. There are many excellent picnic baskets now on the





—the writer suggests the best  
way to go to woods to make  
wayside picnic

played, it is proof positive  
will not welcome people  
his property. The law on the

of the land  
picnicking on  
under-  
stood, but common  
courtesy demands that  
the warning the  
notice board be  
observed.

It may be that the  
owner of the land was  
compelled to erect the  
notice board off  
who might  
otherwise make con-  
stant use of the land  
—for a "short cut,"

market, made especially to suit motorists' require-  
ments; the prices range from half-a-guinea for a  
simple tea basket à deux to nine and ten guineas  
for a luxurious "all-in" container. Three typical  
hampers of varying sizes are illustrated on these  
pages.

Once arrived in the locality in which the picnic  
has been planned—it is not advisable to leave the  
selection of a venue to chance—it is quite a good  
plan to park the car by the roadside and explore  
for a short distance on foot. The walk may prove  
worth while, even when a heavy hamper has to be  
carried, if a secluded spot be found some distance  
from main-road traffic.

The ideal site is secluded, grassy, dry, but near  
a running stream in which plates and sticky fingers  
may be washed after the meal—but one must not  
always expect to find the ideal. Dry ground is  
essential.

Much has been written on the subject of the law of  
trespass, with the result that some picnickers camp  
in constant fear that they are breaking some little-  
known local by-laws; others have been tempted  
flagrantly to disregard "prosecution" notices on pri-  
vate land, so causing annoyance to landowners and in  
some instances doing appreciable damage to property.

The rule to be observed, for safety's sake, is simple.  
If a "Trespassers will be Prosecuted" notice is dis-

perhaps, making the field a miniature highway—and it  
does not follow that if he be approached in the right  
way by prospective picnickers he will refuse permission.

If the courtesy be extended, however, make quite  
sure that no damage is done to the land and that no  
refuse is left behind. Either will make the landlord  
regret encouraging the picnickers and will perhaps  
compel him to refuse permission to others who might  
wish to use the same site. What is just "a nice spot  
for a picnic" to a motorist may be valuable property  
to a farmer, and, in consequence, many country people  
are justifiably "touchy" on the point and plant their  
"Private" signs with great profusely.

When an entirely suitable site is fenced off  
and no notice is displayed, it is advisable to inquire  
locally if there is any objection to the spot being used  
for picnicking. In very few instances is objection  
raised, although it must be confessed that in certain  
districts the action of a few foolish people in the way  
of causing damage to property has hardened the hearts  
of landowners against picnickers and motorists of all  
kinds.

It is nothing less than a crime to spoil both public  
and private land by leaving litter after a picnic, and  
the appeals broadcast recently to the public were  
very much to the point. Combustible refuse should be  
burnt and the ashes, together with used tins and bottles,  
should be buried. If there are no facilities to do this,  
tins, bottles, paper and so forth should be taken away  
as they were brought—in the car.

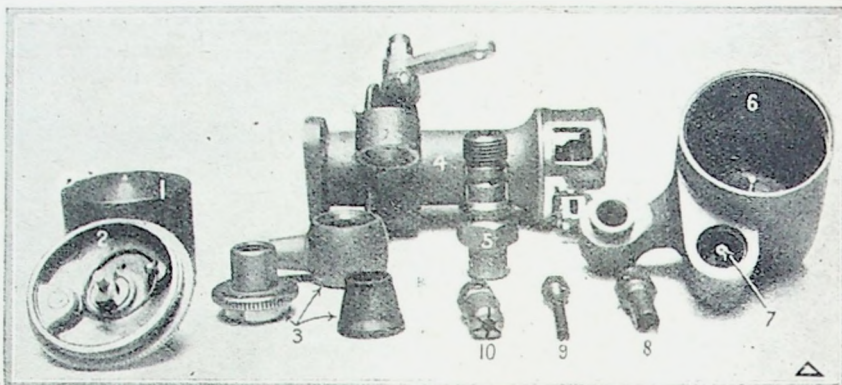
When the meal is finished and the things are packed  
away in the hamper, make a final inspection in case  
anything has been omitted. It is more than annoying  
to find, on returning home, that a treasured vacuum  
flask, or camera or similar article has been left behind.  
Empty containers which are being taken back in the  
hamper should be carefully packed to prevent them  
jolting against other things in the basket and causing  
damage.



## AN INGENUOUS NEW CARBURETTER.

A SIMPLE AND EFFICIENT INSTRUMENT RECENTLY INTRODUCED BY AMAC, LTD.

This photograph of the dismantled carburetter shows (1) float; (2) float chamber cover; (3) petrol union and filter assembly; (4) main body; (5) combined clamping bolt and pilot choke; (6) float chamber; (7) pilot jet; (8) main jet sleeve; (9) main jet; (10) slotted jet cap.



**K**NOWING the amount of interest taken by the majority of light car owners in questions relating to carburetters and carburation we welcome at all times any opportunity to test and report upon new instruments or modifications of existing types.

During the past few weeks we have had on test one of the latest model Amac carburetters which has been specially designed for use on Singer Junior engines. The makers, Amac, Ltd., Holford Works, Perry Barr, Birmingham, are very well known in the motorcycle world, and hitherto, although they have been making car-type carburetters for a number of years, their energies have been absorbed almost entirely in producing motorcycle instruments.

Recently, however, they introduced an entirely new type of car carburetter which embodies many novel features, although it works on tried and accepted principles.

One of the accompanying photographs shows the carburetter dismantled, and it will be noticed that the float chamber is of the top-feed type with the inverted needle placed centrally in the screw-on lid. The float is guided on a pin projecting upwards from the bottom of the float chamber, whilst secured to the top of the float is a small brass button which takes the wear of the needle valve stem.

A swivelling connection for the petrol feed pipe is provided, and this contains a large conical gauze filter, the assembly being made petrol-tight by means of coned joints. This method of jointing is used throughout the carburetter—a very commendable feature, as the possibility of lost or damaged jointing washers is eliminated.

A deep sump is formed in the float chamber so that any dirt or water which may chance to get past the

filter is very unlikely to find its way into the jets, the passageways to which are drilled upwards at a steep angle from points well above the sump. The main jet is of the submerged type and is formed with a drilled extension tube, the whole being surrounded by a shroud over which is fitted a slotted cap.

It is claimed that the slots of the cap, which project into the detachable choke tube, aid considerably in breaking up the emulsion issuing from the jet assembly. The pilot jet is supplied with air drawn in through holes drilled in the bolt which clamps the float chamber casting to the main body of the instrument. Other holes in this bolt allow the resulting mixture to be drawn into the engine via a small hole in the intake adjacent to the edge of the butterfly throttle.

The bolt has an extension at the top in which is formed a hexagon which enables the bolt to be used as a box spanner for removing the pilot jet. A neat spring-returned air shutter is fitted to the carburetter intake; it is easily detachable to enable the choke tube to be withdrawn.

A knurled, spring-loaded screw is provided for slow-running adjustments, and the throttle lever has a serrated boss which allows it to be clamped securely at any angle. The carburetter bears evidence of very careful workmanship; it is finished in nickel-plate, some parts being polished whilst others are left dull.

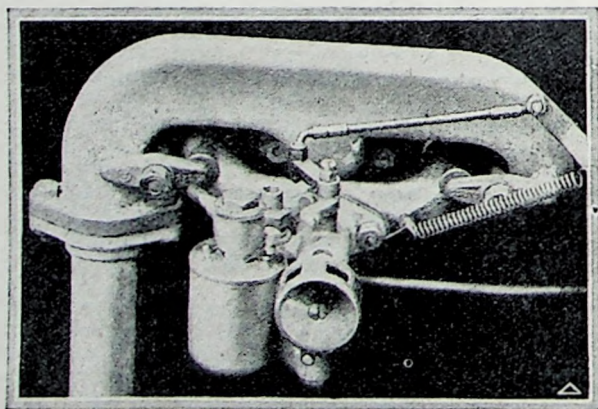
### The Road Tests.

On the road the Amac carburetter performs in an entirely satisfactory manner. The air shutter allows of a ready start from cold without the need for preliminary flooding, and so soon as the engine is warm it is possible to open the throttle to any extent without the least sign of a flat spot. Acceleration is particularly good, the engine showing no hesitation in picking up rapidly from a speed of under 10 m.p.h. in top gear.

This, of course, is a practical test not only of the carburetter but of the transmission mechanism of the car. In the second gear really good bursts of speed can be obtained, whilst the flat-out top-gear speed is just over 50 m.p.h. This speed appears to be about the limit of which a standard Singer Junior engine is capable, and, actually, it is an exceptionally good figure for an 8 h.p. four-seater car which makes no pretence at being a sports model.

Checked on the Great North Road by means of a calibrated tank the petrol consumption worked out at 48 m.p.g., but, subsequently, in the course of a tour in fairly flat country, 50 m.p.g. was recorded. Where a large amount of traffic has to be negotiated there is, naturally, an increase in consumption, but we found that we could rely upon getting nearly 45 m.p.g.

The choke size and the jet setting appear to form a very happy combination which is noticeable particularly on hills, the engine showing a "hanging-on" ability on full throttle which is very pleasing.



When fitted on a Singer Junior engine every part of the Amac carburetter is readily accessible without the use of special tools.

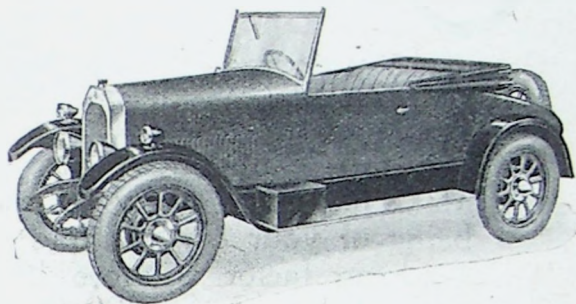


# THAT CAR YOU WANT

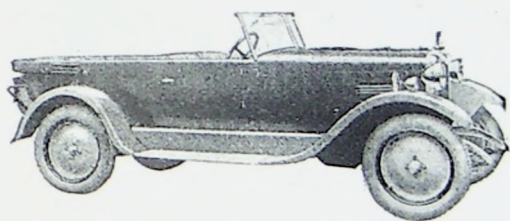
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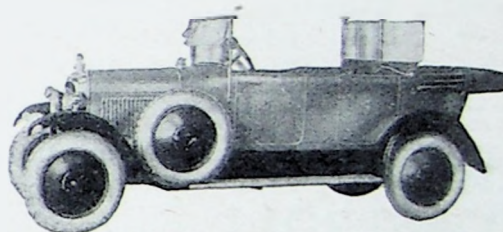
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etc.

## USED CARS. Some examples.

ALVIS, 1925 2-seater. Carefully used .. .. .	£235
FIAT, 9 h.p., 1926 Coupe, F.W.B. Small mileage .. .. .	£175
HUMBER, 11'4 h.p., 1926 3-Coupe. Indistinguishable from new .. .. .	£3'0
A-C, 12 h.p., 1926 2-seater Sports Tourer. Cost £375 .. .. .	£245
ROVER, 9/20 h.p., 1927 2-seater Semi-sports .. .. .	£195
FIAT, 10/15 h.p., 1925 4-seater. Very good condition .. .. .	£145
FIAT, 9 h.p., 1926 4-seater. Front-wheel Brakes .. .. .	£140
STANDARD, 11 h.p., 1926 2-seater with dickey. Complete equipment .. .. .	£155
SINGER, 10 h.p., 1926 2-seater with dickey. F.W.B. .. .. .	£140
AUSTIN, 7 h.p., 1927 "Cup" 2-seater. Excellent condition .. .. .	£125
STANDARD, 11'4 h.p., 1925 4-seater. Complete equipment .. .. .	£110
CITROEN, 7 h.p., 1925 2-seater. Small mileage .. .. .	£70

May we send you full particulars?

Devonshire House,  
Piccadilly - W.1.  
Grosvenor 2271.

91, 155-157, Great  
Portland St., W.1.  
Langham 3341 (7 lines)

1, 3 and 5, Peter  
Street, Manchester.  
City 9834.

# HENLYS

# HAVE IT WAITING

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





## SAN SEBASTIAN GRAND PRIX —July 25th, 1927—

- 1<sup>st</sup> Materassi  
BUGATTI  
2<sup>nd</sup> Dubonnet  
BUGATTI  
3<sup>rd</sup> Conelli  
BUGATTI

all using—

**Wakefield  
CASTROL!**

## SPEED RECORDS

(Subject to confirmation).

At Brooklands, on July 16th,  
Mr. George Duller, driving  
his Bugatti, broke the follow-  
ing World's International  
Class Records in Class E:—

100 Miles at 109.52 m.p.h.

100 Kilos at 176.254 k.p.h.

also on—

**Wakefield  
CASTROL.**

# Confidence

Care-free motoring implies abundant confidence  
—confidence in yourself—confidence in your car.

Let this confidence be well-founded!  
Make sure that every factor in the well-  
being of your car has had consideration.  
And no factor is more important than  
lubrication. Over 200 Motor Manufac-  
turers who recognise this recommend you  
to use Wakefield CASTROL.

They know that this world-famous lubri-  
cant is the result of years of experiment,  
research and conscientious endeavour to  
provide the best that science can produce.

Performance is proof—for years past almost  
every achievement of speed, endurance  
and reliability has been accomplished on  
Wakefield CASTROL.

Prove the irreproachable quality of Wakefield  
CASTROL for yourself—try it in your own  
engine and note the improved performance.  
You will then realise why so many Motor  
Manufacturers recommend—



—the Product of an All-British Firm.

C. C. WAKEFIELD & CO., LTD., Wakefield House, Cheapside, LONDON, E.C.2.

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.





## KNOTTY PROBLEMS of INSURANCE.

INTERESTING POINTS IN CONNECTION WITH MOTORCAR  
POLICIES EXPLAINED BY ONE WHO IS IN THE BUSINESS.



ONE frequently hears motorists complain of the treatment they receive from insurance companies, but it is seldom that the other side of the case is put forward. Motorists see the matter only from their own point of view—one cannot altogether blame them, for they know little or nothing of the business side of insurance—and, in consequence, most discussions on this subject are rather one-sided affairs.

It would undoubtedly be in motorists' interests to know more of insurance methods, for if they did they would not be so likely to hold the view—in most cases incorrect—that they are unjustly treated.

A typical example of the attitude of many car owners appeared in the form of a letter published in *The Light Car and Cyclecar* dated July 29th. The writer, BM/BGTT, commenced by stating that he was looking for an insurance company which did not adopt the principle, "haggle, quibble—anything but pay," and went on to give what he considered an instance of harsh treatment. With the latter I shall deal later.

Some companies should no doubt be avoided. With certain reservations it may be stated that smaller companies accepting business at low figures are more "tight-fisted" than larger and older-established ones. The reservations are, however, important. Some of the small concerns, by carefully selecting the business they accept and by keeping their working expenses lower—less palatial offices and smaller staffs in proportion to the volume of business conducted—are two obvious means of economy—are well able to issue comprehensive policies at low premiums and still remain first-class security.

"How, then," comes the enquiry, "are the good distinguishable from the bad?" The answer is that practically all the old-established concerns accepting business at a recognized tariff are "good." When cheap premiums are desired advice can always be obtained; a sound plan is to consult a reliable broker. Some complaints, however, arise regarding the treatment meted out by the larger concerns, and these are usually caused through misunderstanding on the part of the assured.

### Read Your Policy.

The policies issued are, to the majority, wretched, legally worded affairs, and far too much bother to read; but in fairness to the insurers we—I speak as a motorist myself—cannot expect these documents to be loosely worded, or the companies would undertake no "fixed" liability. This would be an unenviable position and one which would cause argument, litigation and much undesirable expense.

If a motorist has a policy with certain definite limitations for which he has accepted a rebate in premium, why should he grumble when he is expected to fulfil his part of the contract?

"But," cries the motorist, "I did not realize that I was to do this and that, and undoubtedly I have been very shabbily treated." Unquestionably, a man who argues in this way is beyond all reason. If he cannot trouble to see that his policy covers his requirements—and *actually* the policy is not so difficult to understand—he deserves all he gets.

*From time to time we receive letters from readers who complain that they have been harshly treated by their insurance companies. In a great many cases these complaints arise through motorists failing to appreciate the limitations of their policies and also through their having no knowledge of the business side of insurance. On this page an insurance broker, who is also a motorist, gives "the other side" of some of the questions which arise.*

Other individuals complain that "comprehensive" policies are not what they sound—to them. They expect every risk they incur through owning a car to be covered. No ordinary policy covers the holder against the numerous unexpected expenses, such as railway fares incurred after an accident, which arise through ownership. Special policies covering expenses which may arise as an indirect result of a crash can be obtained, but the premiums charged for them are naturally high.

Returning to a definite case, the correspondent mentioned above writes regarding his treatment under a "first £5 policy." Presumably this so-badly-treated gentleman will agree that his own company were not liable for the first £5 in any accident. "Of course," says the "victim," "but why can I not recover from the man who caused the accident or from his insurance company, and why should a confounded 'knock-for-knock' agreement hinder me in my claim?"

The gentleman has my sympathy—to some extent—but he must remember that favourable witnesses are always required; from his letter one gathers that he had no such witnesses.

The company insuring the other party may be excused on the ground that the evidence *as brought to them* did not warrant their paying the claim. It is possible, of course, that the company may artfully have realized that it would not be worth BM/BGTT's while to take legal steps and therefore confidently offered him £2 10s.

Such cases are common in all kinds of disputes, and few pay where, knowing the facts to be in the other's favour, they know also that the other side cannot prove a case; but even if this is so, BM/BGTT has only himself to blame for not getting favourable witnesses.

### The "Knock-for-knock" Agreement.

BM/BGTT, in common probably with many motorists, has a wrong idea of the "knock-for-knock" agreement, whereby, in actual practice, each company bears its *own* costs, within the limits of the policy, no matter who is responsible for the accident. This means that less money and valuable time goes in litigation and law costs.

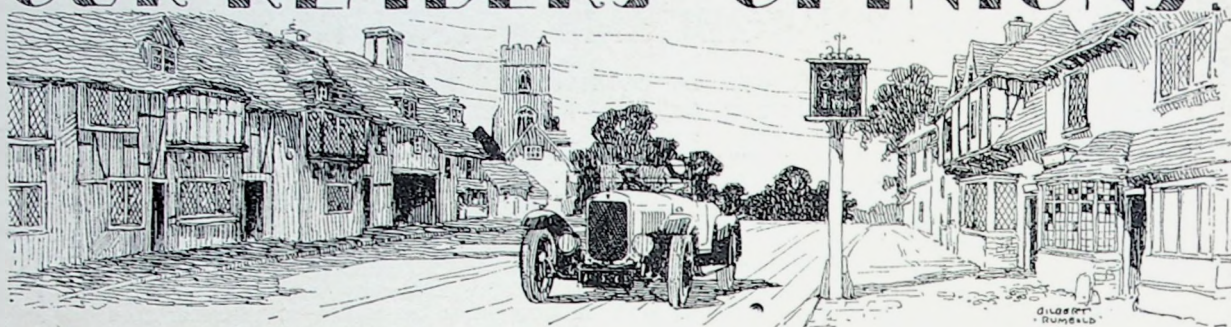
The argument is often put forward that this agreement causes motorists to be deprived unjustly of their no-claim bonuses. It should be remembered, however, that if the owner were uninsured at the time of an accident, he would undoubtedly be put to considerable expense, time and trouble to recover his loss, even if he succeeded in doing so. If, on the other hand, he is insured, his company saves him this work; but he has called upon their services under the terms of his policy and in justice to his insurers they should not be expected to grant a bonus on renewal.

Let motorists, however, be reasonable and not for ever expect to obtain those benefits for which they have not paid premiums, even supposing the "other fellow" may be to blame. The total claims paid by the companies must be balanced by the total premiums received, and those premiums come out of *our* pockets; if, therefore, we insist on claiming for what we have not insured the definite tendency of our insurance costs to rise will become still greater.

E.J.  
B37



# OUR READERS' OPINIONS



We welcome letters for publication in these columns, but take no responsibility for the opinions expressed. No anonymous communications will be accepted, but writers may use an *nom de plume*. To ensure publication in the next issue letters should be addressed to the Editor, "The Light Car and Cyclecar," 5-15, Rosebery Avenue, London, E.C.1, and should reach us on Monday. We reserve the right to make any alterations or deletions which we deem necessary. Please write only on one side of the paper and leave a wide margin.

## MOTORISTS WANT BETTER LIGHTING LAWS. The Road Transport Lighting Bill Criticised.

### Emergency Lamps.

In my opinion, any new measure introduced with the object of amending the "Lights on Vehicles" regulations should make it compulsory for some form of emergency lamp to be carried. Modern lighting systems approach as closely to the ideal as we are likely to get, but they are not absolutely proof against failure.

As things are at present, short-sighted motorists who do not voluntarily equip themselves with some form of emergency lamps think they are objects worthy of sympathy if a total lighting failure occurs, and put other folk to a good deal of trouble and inconvenience—not to mention risk—by waiting for help or driving on without lights. I further suggest that it should be made compulsory for an emergency lamp to be of the oil-burning type, always trimmed and ready for use at any time. I am not endeavouring to saddle motorists with yet another "restriction"; my object is explained by my *nom de plume*—

PRO BONO PUBLICO.

### A Motorist's Philosophy.

I have studied the Road Transport Lighting Bill with no little amusement. A few years ago, when I purchased my first car, it might have aroused my indignation, but

I am past that stage now. I have learnt that because I drive a motorear I am, to all intents and purposes, a criminal, and the legitimate game of our law makers, our police, our magistrates—in fact, of all "the powers that be." Other members of the community may be granted privileges or exempted from legislation, which, although wise, is inconvenient to them, but I, as a motorist, do not expect such good fortune.

I am the hare to be chased by the fierce hounds of officialdom, but what care I? Others have decreed that the game shall be played, and I am willing to play it. If I am caught I do not grumble—it is merely because I have not been cute enough to evade the hounds. I use every trick and put forth my utmost skill to evade capture, and so long as I am satisfied that I have *played the game* I laugh at my pursuers every time I escape.

Applying my philosophy to the Lighting Bill, I am merely amused at the weakness of the Government and the Ministry of Transport in letting an excellent piece of legislation be completely spoiled by vested interests. Their weakness, however, will not affect me, for my counter move is to fit the most powerful headlamps I can secure and thus save myself from the danger of inadequately lighted vehicles. If farmers are dazzled by my lamps—well, it is all in the game! If other motorists are dazzled I can only advise them to follow my move and fit equally powerful lights themselves.

A. SMITH.

B38

### A Question of Safety.

Every fair-minded road user will agree with your apt remarks in "Topics of the Day" on the new lighting regulations. Englishmen are supposed to be noted for fair-play, but this reputation is not justified in the Road Transport Lighting Bill. The aim of the Bill, presumably,

### An Unfair Measure.

is to ensure the safety of road users, and the point arises: is more than one light necessary for a four-wheeled vehicle? If one lamp is sufficient motorists are being unfairly pestered in being compelled to carry three. If, on the other hand, two front and one rear lamp are necessary for safety, motorists are again unfairly treated in being submitted to the danger of other inadequately lighted vehicles.

It is quite obvious that farmers have a powerful influence in Parliament and have used it to good (or bad) effect. They do not want to be put to the expense and trouble of keeping their wagons properly lighted and are seeking to put the onus of a collision on other vehicles. If the Bill, in its present form, becomes law any motorist who runs into an inadequately lighted farm wagon will be wholly responsible—in the eyes of the law at any rate. P.H.C.

### The Official Attitude.

I confess that, with regard to motoring matters, I have never solved the deep mystery of the official mind. This applies equally to magistrates and M.P.s, and after studying the Road Transport Lighting Bill and reading editorial comments on it in last week's issue of *The Light Car and Cyclecar*, the mystery deepens.

### More Red Tape.

Does not some high official, travelling in the small wee hours in his sumptuous saloon, ever ponder on the fact that his rear light is not half so important as that on the cycle or farm-cart? The lights which the said high official's car carries matter to no one but his chauffeur—unless the headlamps are such as to dazzle oncoming traffic—and only a negligible proportion of road users will have cars fast enough for their drivers to have a close-up view of the high official's rear lamp.

On the other hand, the badly lit cart, cycle or motorear is a genuine danger to motorists, and these latter are the most important road users and pay the most for their few privileges. I can only hope that some of the M.P.s concerned will find out that all roads are not so well illuminated as the perfect West End thoroughfares in which they are wont to travel, and that good lights for slow vehicles are urgently needed. If but one M.P. were to have a slight fracas with a farm-cart showing a not-too-perfect red light at the rear, we should hear no more of these agricultural privileges.

LUX.



Announcement

August 8th, 1927.

TO:- ALL PEUGEOT AGENTS.

Gentlemen,

Re:- 7/12 h.p. Cabriolet and Allweather  
Saloon type four-seater.

PRICE REDUCTION. Please note we are reducing the price from £165.0.0. to £155.0.0. on both types, operative from to-day's date, and this announcement authorises you to sell any brand new, un-used and un-registered cars in stock at the new list price of £155.0.0., and we will make the necessary adjustment on such sales. The new prices become possible by largely increased production to meet the World's demand for a high grade, economical and reliable car.

CARS FOR FUTURE DELIVERY. Having disposed of the whole of our stocks in the Country at this date, the only cars available for immediate delivery are those in Agents' possession. As you are aware, we have always endeavoured to give delivery within two days from receipt of order, and we hope to resume doing so within 14 days from the date of this announcement.

**PRICES D**  
from **£165** to

The above announcement has been  
dispatched to all our agents, and the  
new prices will operate from the date  
of this announcement.

Catalogues and all particulars from  
**PEUGEOT (England) LTD.,**  
76-80 BROMPTON ROAD, W 3

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



### A. A. ROAD SERVICE

includes Road Patrols, Road Service Outfits (Day and Night), Roadside Telephones, Free Routes, Free Legal Defence, etc., etc.

*The Secretary, The Automobile Association,  
29, Farnham House, New Coventry St., W.1.*

*Please send me full particulars of A.A. membership.*

Name.....

Address.....

PLEASE WRITE IN BLOCK LETTERS.

Special Subscription for Light Cars not exceeding 1,000 c.c.

*Membership now exceeds 335,000.*

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



## OUR READERS' OPINIONS (contd.).

## Delivery Charges.

I had no idea when I mentioned delivery charges in my first letter that the subject would receive the prominence it has, and when I replied to Mr. Vivian's letter I did not intend returning to the subject.

A Further Letter  
from "Rodeo."

but his further letter in your issue of July 29th contains one or two queries to which, out of courtesy to him, I will reply. I am quite pleased that Mr. Vivian thinks I am "amusing." I was rather afraid he might consider me to be like a bear with a sore head, instead of which I am really a firm believer in the value of smiles and good feeling.

Mr. Vivian then says he is on my side, as he believes that delivery charges should be included in catalogue prices. Now, if he agrees with me, where is the argument? I still think the question of rebates is one for the manufacturers and dealers to fight out for themselves, and I have nothing to do with their quarrel, except that, like so many others, whilst they are squabbling I pay.

Mr. Vivian asks me whether, in the event of manufacturers including these charges, I should expect a rebate if I collected a car at the works, and requires a simple "Yes" or "No." My answer is "No." I have not the least objection to paying a standard price, provided I know beforehand what that price is. Is that what Mr. Vivian calls "reasonable"? On the other hand, if Mr. Manufacturer turned to me and said, "Well, 'Rodeo,' you have saved us a pound or two by fetching your car; here is a box of cigars," I should say, "Thank you," and invite him to smoke the health and long life of the new car.

Mr. Vivian appears to have misunderstood my reference to licence, insurance and so forth. Perhaps the misunderstanding is due to my way of putting this, but I really did not wish to convey the impression that licence and insurance should be included in the catalogue price. My meaning was that it would be a convenience to customers if these matters could be attended to by the manufacturer

or dealer before delivering the car, so that a customer could write out his cheque to cover everything and drive the car away taxed and insured. I had no idea of suggesting the inclusion of these as a means of price-cutting. They would be legitimate "extras," which the customer knows beforehand he will be expected to pay; but there must be many hundreds of motorists—particularly new ones—to whom the item "delivery charges" was never mentioned when they ordered their cars, and to whom this item came as a surprise when the account was presented. That is what I call misleading the customer.

My whole contention is that "delivery charges" ought never to have been introduced. The term is so ambiguous and elastic that it is open to gross abuse. In fact, I have irrefutable evidence of this. No reasonable person will quarrel with a fair profit on the car, but when that profit is increased by a further profit on "delivery" it is grossly unfair to the customer. The abolition of delivery charges would keep honest dealers honest and would bring the dishonest ones a little nearer honesty.

Mr. Vivian concludes by a reference to my business. I am engaged in producing a certain commodity which Mr. Vivian probably uses daily. My charge to Mr. Vivian—who may live 100 miles from me—is the same as to my next-door neighbour. I make no charge for "delivery." My profits do not exceed an average of 10 per cent. (they vary with certain market fluctuations). It is obvious that I do not make the same profit when sending to a distance as I do at home, but surely it is also obvious that I have a better turnover. I do not care to be more explicit in the columns of a newspaper, but as a business man Mr. Vivian will understand me. It is evident from the correspondence that we are agreed on the main issue. It is only on its "application" that we must agree to differ.

RODEO.

\* \* This correspondence is now closed.—ED.

## British Cars Overseas.—Tyre Wear.

## An Austin in India.

In connection with the recent correspondence on the subject of light cars for overseas work, I think the following particulars of my Austin Seven, which has done some 21,000 miles—mostly on the "roads" of India—may be of interest:—The car came into my possession when it had covered some 7,500 miles, and when I reluctantly sold it just before I came home on leave in May it was still "going strong," despite its 21,000 miles of strenuous running.

Excellent  
Service.

After it had covered 18,000 miles the chassis and engine were taken to pieces and thoroughly examined. There was practically no wear in any part, and, although new piston rings, valves, valve springs and gudgeon pins were fitted, I was told that this really was not necessary, as the old ones were in excellent condition. When the car was sold it was doing nearly 48 m.p.g. on ordinary runs, and its maximum speed was in the neighbourhood of 43 m.p.h. with three heavy adult passengers.

The original C.A.V. battery was in the car when I sold it, and it never gave me a moment's trouble; in fact, for six months, when the starting handle was out of order and I was too busy—or lazy—to have it repaired, I had to rely entirely on the starter, and never once did it fail me. I have nothing but praise for the electrical equipment fitted to the car.

There is no hill round Laharanpur that the Austin would not climb on second, and those who know the Mohand Pass and the road leading to Rajpur (in Dehra Dun district) to Mussoorie know what this means. In the rains and the cold weather I had to take off the fan belt, as I could not get the engine to run hot enough; the water in the radiator never boiled. The car was not fitted with balloon tyres, but in place of the original tyres I fitted oversize Dunlops, 26 ins. by 3½ ins., and ran them with a pressure of 30 lb. in the rear and 25 lb. in the front tyres. This gave excellent comfort, and I was averaging 8,000 miles

per tyre—an excellent performance, considering the so-called "roads" which the car had to traverse most of the time.

I have driven the car over all sorts of roads, both "kuchha" and "pukka," and never has it failed. Once I drove the car—containing myself, wife, ayah, child of four and three suit-cases—over a forest "road," which a man, who owned a car popularly supposed to be able to go anywhere, assured me was quite impracticable for his car. Needless to say, I experienced no trouble. My car was the first of its type in the district, but, as a direct result of its performance, there are now four other Austin Sevens in Laharanpur.

Except for regular greasing and changing the oil, I have never worried much about the car's adjustments. I say this with no pride, but simply to show what the car has had to withstand. I am in no way connected with the makers, but write as an admirer of one of the best light cars on the market.

D 3527.

## Tyre Mileages on a Morgan.

In reply to "PF 6673's" letter in *The Light Car and Cyclecar* of August 5th on the subject of tyres for the Morgan rear wheel, I should like to state my own experience. I purchased my Aero-Morgan new in October, 1924, when the back wheel was fitted with a 700 mm. by 80 mm. Stepney tyre, whilst the front

wheels were equipped with 700 mm. by 80 mm. Beldam covers. With the Stepney on the back wheel I covered 8,900 miles, after which I fitted it to the front wheel, where it did another 2,000 miles, thus making a total of 10,900 miles. I replaced it last winter with a new cover, but I do not intend to scrap it. I shall have it retreaded, as, apart from the tread being worn, it is in perfect condition, not having a cut or crack in it. The two front tyres have each done 12,000 miles, and appear to be good for another 5,000 miles. I might add that I am not a potterer, and my Aero-Morgan has a really good turn of speed. All mileage stated has been taken with Bonniksen speedometer.

YB202.

n41



## OUR READERS' OPINIONS (contd.).

### An Appeal.

May I appeal to all motorists during the present warm weather to give way more than usual to our friend the horse? Even an empty van with "way on" is a trouble to pull up and restart, and the few seconds conceded are surely nothing by comparison with the good turn done.

STENSON COOKE, Secretary,  
The Automobile Association.

### Retreaded Tyres and Inflation Pressures.

I have read with interest the letter appearing in last week's issue of your journal under the name of "Theocsburian" on the question of inflation pressures of retreaded tyres, and venture to state that.

An Answer to "Theocsburian." although his experience has led him to believe his contention to be correct in practice, any reduction of the pressures recommended by the manufacturers, whether the casing has been retreaded or not, will tend to allow undue heat to be generated, and excessive flexing of the tyre will eventually break up the fabric. It would take up too much of your valuable space to explain the technical details of the manufacture of a tyre, but for all general purposes it is advisable to ascertain what the correct pressure should be and treat this as a minimum, checking it from week to week to rectify any small variation in pressure which may occur. I may state that I have records of tyres being re-rubbered three times, and giving over 10,000 miles on each occasion, and in my opinion this phenomenal mileage is due wholly to the fact that constant attention was given to correct pressures.

My statistics show that fully 90 per cent. of the premature failures of motor tyres to complete their normal period of service is due in some way to inadequate inflation pressures being maintained.

H. G. ST. JOHN.

Motor Tyre Re-Rubbing Works, Norwich.

### Free-wheel Drive.

Referring to your article in last week's issue on my free-wheeling experiments, may I point out with regard to the combined free-wheel and friction clutch that, although not apparent from the drawing illustrated, this free-wheel can be interlocked and put out of action when the bottom gear is engaged and not in top gear only, as stated. A slight additional movement of the change-speed lever in either top or bottom gear serves to throw the free-wheeling device out of action.

With regard to the best position in the transmission system for the free-wheel device, there are bound to be differences of opinion, because, whether placed before or behind the gearbox, there are advantages and disadvantages to be offset, and the most efficient location will possibly not be the same for every size of car or arrangement of transmission. The most serious objection to location behind the gearbox is the fact that owing to the gear reduction in bottom and reverse gears the free-wheel is required to carry from three to four times as much torsional load as when placed before the gearbox. This is a serious consideration for two reasons—first, the heavy pressures imposed on the working surfaces of the free-wheel; and therefore, secondly, the tendency of the free-wheel rollers to jam and the consequent effort required to release them when gear changes are being effected, so that the change is not so free from shock as it would otherwise be.

There is also some point in the comment of your correspondent Elsie Vernon with regard to the reverse gear. It is true that the free-wheel can be put out of action for reversing, but this involves extra manipulation. Experience proves, however, that your correspondent is quite wrong in the assumption that a free-wheel device in front of the gearbox makes gear changing more difficult. On the

contrary, it enables a "snatch" change down to be made safely and silently, even without releasing the friction clutch at all. Neither has it any detrimental effect on the upward changes.

I think, therefore, that a free-wheel located within the gearbox between top and second gear, as illustrated in your article, is a compromise which is extremely simple to carry out, while escaping the before-mentioned objections and at the same time probably gives a more free and silent change than can be obtained in any other way, without skilful manipulation of the friction clutch. There is only one additional part in the gearbox, and this is exceedingly light, and therefore has a minimum of inertia to cause shock when gear changes are made.

JOHN WELLER, M.I.A.E.

### Why Not Standard Fines For—

We would like to suggest that some steps be taken in order to do away with the waste of time and the inconvenience caused by summonses for purely technical offences.

There must be hundreds of owners and traders who unwittingly infringe the law and who are perfectly willing to plead guilty and pay, but they do object to having to spend (very often) the best part of a day at a police court in order to say they are sorry and pay a few shillings.

Why not have the technical offences (such as failure to notify change of ownership or change of colour, obscured number plates, defective side or tail lights and so forth) scheduled on a reasonable basis, and allow those admitting the offences to pay the fine upon presentation of the summons? Per pro R. M. VIVIAN AND CO.,

R. M. VIVIAN.

### Reintroduce the Rover Eight!

I quite agree with your correspondent's remarks concerning the Rover Eight which appeared in your issue of August 5th. This handy, economical little car should certainly be reintroduced with slight improvements.

#### The Plea Supported.

I have a 1922 de luxe two-seater which has been fitted with a dickey seat, and a recent run which I undertook to Skegness is interesting in that it shows the capabilities of this car. The distance from my home is 145 miles, and my passengers consisted of two adults and two children of 14 years and 6 years respectively, whilst a certain quantity of luggage was also carried. The time occupied was seven hours, including stops for lunch and dinner and a short stop for changing wheels. Four gallons of petrol were used, which works out at an average of slightly over 36 m.p.g., and the total cost of petrol and oil for the journey was 8s. 2d., which, considering that five people were carried, is very economical.

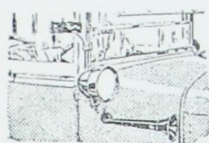
ANOTHER ROVER EIGHT.

\* Although the journey described above says much for the capabilities of the Rover Eight, overloading to such an extent should be avoided.—ED.

Patcham Mill, on the Sussex Downs, which is to be preserved for its archaeological interest; it now belongs to the Brighton Corporation.



# For your new car . . .



No. 277.

## BULB HORN.

Specially designed for Austin 7 Cars.  
Ebony finish.  
Price 10/6 each. Post free.



## DUNHILLS DRIVING CUSHION.

Prevent any strained position when driving by using one of Dunhills Driving Cushions. Made of plain leather cloth in brown, grey, green, blue and black, 27/6; in antique red, grey, brown and blue, 30/-. Post free.



## ASH TRAY.

A strong Ash Tray at a low price. Made of Electro-plated Nickel Silver. Easily detached from carrying bracket to facilitate emptying and cleaning. Complete with cigarette or cigar rest. No. 6430/80. 3/- each. Post free.



## WALLIS WINDSCREEN WIPER.

Simple, strong, neat, serviceable and effective.

Price 5/- Post free.

No. 3983/80.



## "STADIUM" AUTOSCOPE JUNIOR DRIVING MIRROR.

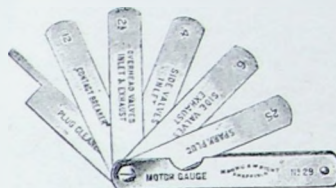
Specially suitable for Light Cars, the Mirror glass gives a clear and wide reflection, and concealed ball joint is embodied in this model. Well finished in black with N.P. mounts. Size of front, 4 1/2 in. by 2 1/2 in. Various fittings can be supplied. 9/- Post free.

*You will need these Dunhill accessories for your new car—they mean greater convenience and comfort, and will help you more fully to enjoy the pleasures of the road.*



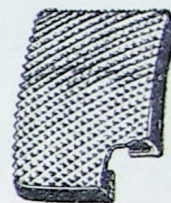
## "BARNACLE" LICENCE HOLDER.

Fixed by suction, in less than half a minute, to windscreen or side window. Detached with equal ease. No screws, no cracked cover glasses, and the "BARNACLE" cannot be dislodged by jolting. Absolutely watertight. 3838/80. Polished Brass, Nickel-plated or Dull Black finish. 7/6 each. Post free.



## MOTOR GAUGE No. 29.

This Gauge contains gauges for correctly setting: Spark gap, contact breaker, inlet valves on side-valve engines, exhaust valve on side-valve engines, inlet and exhaust on overhead valve engines, and plug cleaner. Price 2/9. Post free.



## PEDAL COVERS

For all cars. Prices on application.

## "STADIUM" SPARK TESTER.

### Neon-Gas Filled.

Reveals the condition of your ignition "in a flash." It is Neon-Gas filled and diagnoses ignition troubles while the engine is running. Flashes vary with intensity of spark.

1/6 each. Post free.

## DUNHILLS RECOMMENDED ACCESSORIES FOR YOUR GARAGE.

Nesthill Oil Pump .. ..	7/6
Roll of Cleaning Cloth .. ..	4/9
Simoniz Outfit .. ..	15/-
Sorbo Sponges .. ..	4/9
Dust Covers, 10 ft. x 6 ft... ..	10/-
Battery Tester .. ..	3/-
Cushion Brush .. ..	5/-
Spoke Brushes .. ..	2/6
Double-ended Brush .. ..	5/9
Water Brush .. ..	7/6
Sorbo Car Washer .. ..	4/9

All the above are sent Post Free.

## "STADIUM" STEPMAT.

Well designed and composed of stout rubber bristles with aluminium frame. Both ornamental and useful. Size 12 in. by 8 in. Price 11/6

## "EASY-FIT" LUGGAGE GRIDS.

Made to fit practically any standard make of car. Write for quotation, stating name, year, body and h.p. of car.

## METAL TOOL BOX.

Suitable for light cars and small saloons. Made of heavy gauge steel fitted with strong combined lock and latch. Finished in hard glossy black enamel. Model 6664/80. Size 15 x 7 x 7 in. 12/6 each.

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## Free as wind!

SO will you feel on your trial run in an *England* Cup Model Austin Seven. Bounding away like a greyhound off the leash. Glad to be free. The engine running uncurbed—nothing to hold it back. For you must know that *England* bodywork is lighter than any bodywork made before.

Devouring the ribbon of road, yet sticking to it like a leech. At fifty-five miles an hour. Every bend a Brooklands! Try the surge of power available when weight is trimmed down to the minimum.

The Cup Model is absurdly cheap to run—under 10/- a week. Find out for yourself

what it will do, and how easily it will do it, by asking your agent for a trial run to-day.

A little book describing *England* Bodies in detail and giving full particulars about *England* Austin 7's, comes to you free if you write to Gordon England Ltd. *England* bodies can be built for any chassis. Their patent light-weight but rigid construction means increased speed, quicker acceleration, better hill-climbing, lower running costs, freedom from body noises, and elimination of driving fatigue.

The *England* Cup Model Austin 7 does 55 m.p.h. with ease, and will average 35-45 m.p.h. up hill and down dale. Petrol consumption 50 m.p.g. Real leather "Scaco" pneumatic upholstery. Unsplinterable safety glass screen. All-weather equipment, with rigid side curtains opening with doors, packs in boot with spare wheel and baggage when not required. Automatic wind-screen wiper, carpet, step mats, etc. Price complete

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SEVENS  
with

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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



## OUR READERS' OPINIONS (contd.).

## A New Train Danger.

I live in a district where the local rates exceed 25s. in the pound, of which no less than 7 per cent. is used to make up the deficit on the working of the trains. I have just had the experience of following one of these lumbering obstructions—to the maintenance of which I contribute several pounds a year—down a busy thoroughfare. As we approached a bottle-neck in the road the tramlines ran so near the pavement that it was impossible to pass on the near-side and owing to a bend in the road any traffic approaching on the other side was invisible. The tram naturally selected such a spot to stop, although there was no passenger to alight or mount.

I chose what I considered the wise course and stopped too, leaving a clearance of some four or five yards. Suddenly, without any warning, and for no reason so far as I could see, the tram went into reverse and bore down on

## "The Light Car & Cyclecar" PHOTOGRAPHS

Original photographs—for private use—of those pictures in the editorial pages of this journal that are marked with a triangle can be obtained from us at the undermentioned rates. This also applies to all photographs taken by "The Light Car & Cyclecar" photographers, whether published or not.

## Rates.

	Unmtd.	Mtd.		Unmtd.	Mtd.
6" x 4" .....	2/-	2/6	12" x 10" .....	5/-	8/6
8" x 6" .....	2/6	4/-	15" x 12" .....	7/6	12/6
10" x 8" .....	3/6	5/6	20" x 16" .....	12/6	17/6

Artist's Work extra. Package and Postage included. Send Cash with Order.

me in the most alarming manner. My car has a reverse stop which is only reached with deliberation, and being a saloon the state of the traffic in the rear is not quickly seen. In spite of these facts, however, a crash was fortunately avoided, but no credit for that is due to the driver of the tram. I expressed my compliments to the conductor in the hope that he would hand them on to the driver, who, of course, was quite invisible to me.

In addition to the numerous privileges inherent to trams, are they also to be held exempt from the common courtesy exercised by most other road users? E.17.

## Car Parking in London.

At last I have discovered a place where I can park my car in Central London without paying an extortionate price, being forced to move every two hours or being

A Useful  
"Discovery."

want to tell people of my discovery because of the risk of overcrowding the place, but I have grown tired of watching the policeman's two-hour tyranny at the established parking-places and the proprietor's two-and-sixpenny tyranny at the garages. Moreover, I have not seen more than about 70 cars at my parking-place and there must be room for 500.

My revenge upon police and garage proprietors, therefore, is to reveal my discovery to your readers. May all who wish to go to cinemas or business or to do their shopping by car profit by it!

My parking-place is the Luna Park car park. It is at the junction of Oxford Street, Charing Cross Road and Tottenham Court Road. The charges are 1s. for 6 hrs. and 6d. for subsequent periods of 3 hrs. A ticket entitling the holder to make use of the park for a week costs 5s. Attendants are on duty day and night.

I have absolutely no interest in the concern beyond being a user who believes that it would be a pity to allow the authorities to succeed in their present endeavour to squeeze the private owner's car out of London and force us all to travel—like rabbits—underground.

OLIVER STEWART.

## CONDENSED CORRESPONDENCE.

Mr. S. H. Jackson (Hackney) wishes to place on record his appreciation of the courtesy and prompt attention which he received at the Acton service depot of Joseph Lucas, Ltd. The dynamo of his car gave trouble after five months' use and was replaced with a new one, the only charge made being 7s. 6d. for labour.

## INFORMATION WANTED.

ROVER EIGHT.—Any reader who has fitted a dickey seat to a 1922 model is asked to give details of construction.—G. W. Smith, 110, Sunderland Street, Harpurhey, Manchester.

CELLULOSE FINISH.—Readers who have used a cellulose finish which can be applied satisfactorily by amateurs are asked to write, giving details, to James F. Whitaker, F.C.V., 10, Neville Place, Cardiff.

## CLUB ITEMS AND SPORTING EVENTS.

## AUSTIN SEVEN C.C.

A short run will be held on Sunday, August 14th, by the London branch, and members should meet at the Clock Tower, Epsom, at 11 a.m. Fresham Ponds will be the venue. Prospective members are cordially invited to accompany the club.

## IPSWICH AND D. M.C.C.

Speed trials will be held on the new concrete sea wall at Lowestoft on Thursday, September 1st, at 2.45 p.m., under the patronage of the Lowestoft Town Council. The event is open to cars, for which there will be five classes, but the three-wheelers will compete with the side-cars. The course will be 1 kilometre, from a standing start, and 1,000 yards will be allowed for a pull up. The entries close definitely on Thursday, August 25th, and should be sent to Mr. M. R. W. Fison, Martius Chambers (a), Butter Market, Ipswich.

## SURBITON M.C.

In the London-to-Barnstable trial held recently, O. H. C. Cornish claims a clean climb for his Frazer-Nash and for W. L. Bishop's Bishop's Special on Kipscombe, an unobserved hill.

The following is the list of awards gained by light car drivers:—

Nesbit Cup: C. L. Clayton (Amicar).  
Silver Cups: H. Jeffries (Frazer-Nash); O. H. C. Cornish (Frazer-Nash); R. M. Andrews (Lea-Francis); H. S. Stevens (Lea-Francis); K. H. Daniel (Avis).  
Silver Medals: G. A. Pollard (Morgan), I. Parsons (Morgan), Miss J. E. Weekes (A.C.), H. E. Hammetton (Talbot), J. A. Driskell (D.F.P.), D. West (Fiat), M. W. B. May (Talbot), W. Joyce (A.C.).  
Bronze Medal: F. A. Boggis (Morgan).

## MEETING DE L'ASSOMPTION.

The meeting of L'Assomption will commence at Monthery to-morrow, Saturday, when races will be run on the track over a distance of 100 kiloms. There will also be races on the following day, including one for women.

## FORTHCOMING EVENTS.

August 13.  
J.C.C. Production Car Race.  
Swiss Klausen Hill-climb.  
Kent and Sussex L.C.C. Paper-chase.

August 14.  
Klausen Hill-climb.  
Kent M.C. Frank Hill-climb.

August 15.  
Bradford and D. M.C. Hepolite Star Climb.

August 20.  
Essex M.C. Brooklands Meeting.  
Southport M.C. Race Meeting.  
M.C.C. London-to-Lugano Run Starts.  
Redditch M.C. and C.C. Mystery Trial.

August 21.  
Brighton and Hove M.C. Simpson Lea Trophy Trial.  
Morgan Club Run.  
Leeds M.C. Novices and Revenge Trials.

## J.C.C. SOUTH-WESTERN CENTRE.

The closing date for entries for the Southampton-to-Exeter trial starting on September 3rd is August 20th, and those intending competitors who have not already done so should communicate at once with the hon. organizing secretary, Mr. T. G. Haxter, 11, Union Bank Chambers, High Street, Southampton. (Phone 5325.)

## WORCESTERSHIRE M.C.

The club will hold speed trials at Malvern on Saturday, September 3rd. The course is a private one, the club having again obtained permission from the Earl of Beauchamp to run the event on the Gloucester Drive, Madresfield Court. There will be eight classes for cars, while the three-wheelers will run with the side-cars. Entries should reach Mr. Eric Williams, Lowestmoor, Worcester, not later than August 27th.

## WOOD GREEN AND D. M.C.

The regulations for the South Midland Centre London-Beggars' Roost-London trial are now available. The start will be from the Slough Trading Estate on August 27th at 9 p.m. The route, which will be about 350 miles, will include Doverhay, Lynton and Beggars' Roost, and a stop and re-start test will be made on Lynton. Entries should be sent to the hon. trials organizer, Mr. L. C. Ottley, Club Offices, Crescent Road, Alexandra Park, N.22.

## SUTTON COLDFIELD AND N. BIRMINGHAM A.C.

Speed trials will be run on the Avenue, Shackerstone, under the general competition rules of the R.A.C. for cars on Saturday, August 27th, commencing at 1 p.m. There will be four classes for cars, and two of these will be open to three-wheelers, while in addition there will be three classes especially for three-wheeled passenger vehicles. The course, available by the courtesy of Lord Waring, is about 2½ miles from Twycross, in Gop-all Park, on the Atherstone to Ashby-de-la-Zouch road. The length of the course is about 800 yards, and 10 yards flying start will be allowed. Entries close Thursday, August 18th, and should be sent to Mr. J. D. Woodhouse, 10, Warwick Chambers, Corporation Street, Birmingham.

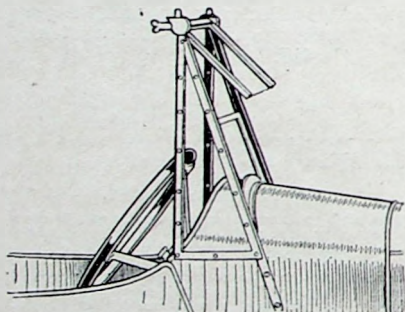




We invite readers to send us hints gained from their own experience for inclusion in this feature. Five shillings will be paid to the sender of any hint published, but we cannot undertake to return contributions not used.

### Side Shields for "Cup" Austins.

Neat and efficient side panels may easily be made for Gordon England Cup model Austins. The screens are cut out of good quality, fairly thick celluloid and the frames are made from sheet aluminium cut into strips about an inch wide and bent double along their lengths, so that they form channels about  $\frac{1}{2}$  in. wide. Aluminium rivets are used to hold the celluloid and the side members of the frame together. The illustration shows how the celluloid should be cut and how the frames are attached to the windscreen pillars by means of small round-headed screws. Bolts, nuts and washers are used to secure the bases of the two triangles to the bodywork. These screens harmonize well with the lines of the car and are difficult to detect as "extras," for at a distance of a few feet they appear to be part of the standard windscreen. They do not interfere with the erection of the ordinary side screens.



Celluloid side shields in thin aluminium frames may easily be fitted to Cup model Austins.

### A Mudguard Hint.

It will be noticed that on some cars the forward tips of the rear mudguards project below the lower edge of the running board. There may also be a gap between the running board and the forward edge of the guard, and through this slot mud and road dust are thrown up owing to the deflector action of the projecting guard.

A short length of leather or rubber strip tacked to the edge of the board at the gap—on the underside for preference—will stop the trouble. The material should be fairly thick, and should be bent slightly to conform to the bend at the point where the guard approaches the board at right angles.

B46

### Fitting a Driver's Door.

Owners of Family model Morgan cyclecars will find that it is an easy matter to fit a driver's door in the following manner.

First remove the top aluminium beading and lay back the upholstery to allow plenty of working room. Mark on the outside paintwork two vertical lines denoting the width of the door required, and with a fine-toothed hack-saw blade cut straight down the lines. The cut-away panel, including bottom cane beading, is then removed.

It is most important to strengthen the body side from which the section has been cut; a wooden upright of 2 ins. by  $\frac{1}{2}$  in. hardwood should be screwed to the base of the body and the existing body panel secured to it by round-head screws. The door is framed up with



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.

J.B. (Higham's Park).—Brake drums of certain cars are ribbed to increase rigidity and to aid cooling. As the makers of your car do not fit ribbed drums, we do not think that it will be worth your while to have special drums made with ribs formed on them.

D.S. (Leatherhead).—It is an easy matter to take up play in the steering worm of your Bayliss Thomas car. First slack off the locknut on the steering box and then screw inwards the small nut in the centre of the locking device until the play is eliminated.

P.M. (Teddington).—Your carburettor is of a very early type, and it is more than probable that the trouble of which you complain is caused by undue wear of the bobweights operating the float needle. You may possibly effect a cure by reversing the weights so that the worn surfaces at the ends of the arms no longer bear on the needle collar.

P.B. (Glastonbury).—The water leakage of which you complain on your 12 h.p. Calthorpe car would seem to be due to a fault in the packing gland on the water pump spindle. Holes for the insertion of a tommy bar are provided in the round gland nut, and before fitting a new gland you should see if tightening the nut tends to stop the leakage.

hardwood of similar dimensions, halved at the joints and screwed in place. Two lengths of  $\frac{1}{2}$ -in. by  $\frac{1}{2}$ -in. strip iron are bent edgewise to the required curve of the door and firmly fixed to the top and bottom rails.

Butt hinges should be fitted, together with a suitable catch or slam lock. The hinges, of course, are screwed to the upright, which is in line with the dashboard.

### A Jowett Modification.

To prevent dust and mud being carried up by air currents through the gear-lever shaft slot in the floorboards of a Jowett, cut a strip of American cloth or canvas large enough to cover the gap in the floorboards—a piece of material about 2 ft. by 6 ins. will be required—and fix the "eyes" of two turnbuttons to the edge of one of the long sides. The cloth should be then placed over the cross-shaft and the other halves of the turnbuttons should be screwed to the fixed floorboards to correspond with the position of the eyelet holes in the shield. On the other side the material should be tacked down to the loose floorboard. The turnbuttons will, normally, hold the material in position, but will allow the boards and cloth to be removed when necessary to give access to the cross-shaft lubrication points.

B.M. (Ilford).—Cable having an outside diameter of 7 mm. is recommended for the high-tension wiring of your car.

D.M. (Bolton).—There are one or two chemical preparations on the market which prevent raindrops from collecting on the windscreen. You should try these if you object to the movement of a mechanical windscreen wiper.

G.M. (Cleethorpes).—The spare battery which you intend to keep in store for some time should be given an occasional charge, although it will not be in use. The freshening charge should be given about once a month, and will suffice to keep the plates in good condition.

B.McD. (Mossley).—To prevent demagnetization you must slip a piece of soft iron between the pole shoes of your magneto directly you have removed the armature. We agree that your trouble is due probably to a faulty condenser.

H.P. (Walton).—It is possible that the efficiency of your brakes may be restored by removing the shoes, washing the linings with petrol to remove all traces of grease and roughening the surfaces with a rasp. You should, at the same time, wash out the drums with petrol.

B.I.M. (Woodford).—Corrosion caused by battery acid may be checked if a strong solution of ammonia or washing soda be applied to the clothing on which the acid is spilled. The alkali must be applied as quickly as possible, for it is impossible to prevent damage being caused by acid once corrosion has started.



12/40 h.p. Lea-Francis, 4-Seater

**£285**

## Power on Hills!!

The manner in which Lea-Francis cars sweep up the severest gradients is a constant source of surprise and wonderment, whilst their phenomenal acceleration brings a joyous thrill to the driver when negotiating traffic.

The scientific balance of the engine gives a sweetness of running which is another outstanding feature of Lea-Francis cars. Their reserve of speed, coupled with the highly efficient Lea-Francis brakes, gives absolute control and safety under all conditions.

Proof of this outstanding reliability is afforded by the special award made by the Royal Automobile Club to a standard Lea-Francis car for its exceptional performance in the 1,000 miles Light Car Trial for 6 days.

Another testimony to their merit is the fact that, after exhaustive tests, Lea-Francis cars were ordered by the Police Authorities.

May we demonstrate these unusual features to you?

Trial runs and catalogues on request.

# LEA-FRANCIS

**MODELS**—10 h.p. from £210, 12 h.p. from £285, 12/40 h.p. Sports from £370 also Coupé and Saloon Coachwork. *Deferred Payments and Exchanges*

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A-C, 1926, "Royal" Model, 2-str., f.w.b.	£185
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AUSTIN, 1927, 7 h.p., Chummy Models, immediate delivery	£145
" 1926, 7 h.p., Chummy Models, from ..	£100
" 1925, 7 h.p., Chummy Models, from ..	£90
CITROEN, 1926, 7 h.p., 3-seater ..	£85
" 1925, 7 h.p., 2-seater ..	£50
" 1925 model, 11'4 h.p., English 2-seated Coupe ..	£85
" 1925, English 4-seater, excellent condition ..	£85
CLYNO, 1925, 2- and 4-seaters, from	£75
FIAT, 1925, 10/15 h.p., 4-seated Saloon	£165
" 1924, 10/15 h.p., English body Coupe ..	£125
JOWETT, 1925, 2-seater and dickey, starter model ..	£85
LEA-FRANCIS, 1924, 10 h.p., Chummy Model, excellent condition	£95
RENAULT, 1925, 9 h.p., 4-seater, excellent condition ..	£95
ROVER, 1925, 9/20 h.p., 4-seater, excellent condition ..	£95
" 1924, 8 h.p., 4-seater ..	£55
SINGER, 1923, 10 h.p., 4-seater ..	£85
STANDARD, 1926, 11'4 h.p., 4-seater	£125
" 1925, 11'4 h.p., 4-seater	£95
" 1924, 11'4 h.p., 2-seater	£85
WOLSELEY, several 10 h.p., 2-seaters and Coupes, from ..	£45

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the cause of economical motoring.**

## AROUND THE TRADE.

The Service Petroleum Co., Ltd., opened its first service station at Gatten Park, Redhill, last Friday.

The Rippingille Petrometer, which we recently described among other "Interesting Accessories," is made by Rotherham and Sons, Ltd., Coventry.

We learn that René Thomas steering wheels were fitted to the Delage cars which were first and second in the Grand Prix of Spain, run on Sunday, July 31st.

We are informed by Fort Dunlop that the 1st, 2nd and 3rd cars in the Spanish Grand Prix were all running on Dunlop tyres, the original ones remaining unchanged throughout the race.

Mr. Frank Shorland's many friends in the motor trade will learn with regret that after twenty years connection with the Talbot Co. he has been compelled to resign his position under doctor's orders.

Quick and efficient radiator repairs are effected by the Gallay Radiator Co., Scrubb's Lane, Willesden, makers of many small-car radiators, including Alfa-Romeo, Fiat, Lea-Francis, Mathis, Rover, Salmson, Singer and Swift.

A leaflet, "How to Wash a Car," and full details of the "Iron Arm" pumps will be sent gratis to any motorist sending a postcard to the makers of the latter: Milwards, Redditch, England. Pump No. 1, price 37s. 6d., is suitable for hosing down light cars.

Messrs. Shippey Bros., makers of a decarbonizing preparation, ask us to point out that their address is 41, Finsbury Square, London, E.C.2. Although they have occupied their present premises for some time a number of inquiries have been sent to their old address.

We learn that at the Royal Aero Club's Nottingham meeting, on July 30th and August 1st, the aeroplanes achieving first, second and third places, and fastest time at 141.6 m.p.h., in the King's Cup race were fitted with B.T.H. magnetos. At the same meeting B.T.H. magnetos obtained not only first but second and third places in the Grosvenor Cup race, first and second places in both the Pelham Stakes and Ladies' Purse race, while the Challenge Cup presented by the Society of British Aircraft Constructors was won by a machine similarly equipped.

The Vacuum Oil Co., Ltd., have received a letter from the Wright Aeronautical Corp. stating that when this concern dismantled Col. Lindbergh's Wright Whirlwind engine after the famous New York to Paris flight no perceptible wear was found in any of the parts. All the bearings were in excellent condition, indicating perfect lubrication throughout approximately 90 hours of flying. As Mobiloil "B" was used exclusively in the engine the writers of the letter think that the condition of the engine was a splendid indication of the lubricating qualities of Mobiloil "B."

An action was brought recently by Jenson and Nicholson, Ltd., in the Chancery Division of the High Court of Justice against Postans and Morley Bros., Ltd., the proprietors of Rollamel, to restrain them from using colourable imitations of Messrs. Jenson and Nicholson's advertising and display matter for Robbialac enamel. The action was heard before Mr. Justice Romer, and judgment was given for the plaintiffs in the following terms:—"By consent defendants not to use Rollamel in a panel and to destroy existing stock of labels; this to cover all labels in defendants' possession or under their control, whether on this or not, and not to advertise Rollamel in any newspaper in future."





*Englebert*

**CHEVRON CORD TYRES**  
are built for  
**HIGH SPEED with SAFETY**  
and **SATISFACTORY SERVICE.**

The number of Motorists using them is increasing every day and they are chosen because there is **no other tyre so good**, no matter **where** it is made.

**YOUR MILEAGE IS ASSURED.**

**ENGLEBERT TYRES, LTD.,**

**162, Great Portland Street, London, W.1.**

SOUTHAMPTON:  
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BELFAST:  
13, Lombard St.

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12, Garthland St.

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79, Downing St.

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This  
Model 8.c.

# DELCO-REMY HORN

gives a note (treble A) that can be heard high above the drone of heavy city traffic or far down winding country lanes.

Its price is only **16/6** (Postage 9d.) and its finish is so perfect that it will grace the most expensive car or cycle.

*Ask your dealer for full particulars or write us direct, specifying 6 or 12 volts.*

**DELCO-REMY & HYATT Ltd., 111, Grosvenor Road, London, S.W.1.**  
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Model 18, **40/-** Postage 1/-  
Model 25, **73/6** Postage 1/-  
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B49



# The New BLACK CELLULOID Brushing Lacquer

**YOU** can now refinish the bodywork or wings of your car with **CELAMEL**. Each coat **DRIES IN ONE HOUR** and you **POLISH THE CELAMEL LACQUER WITH METAL POLISH!**

1. A Spray Plant is unnecessary. By using the Special Celamel Vulcanized Brush any amateur can brush it on.
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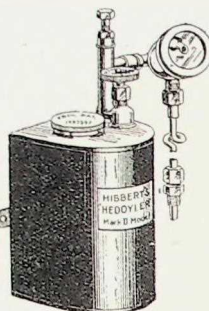
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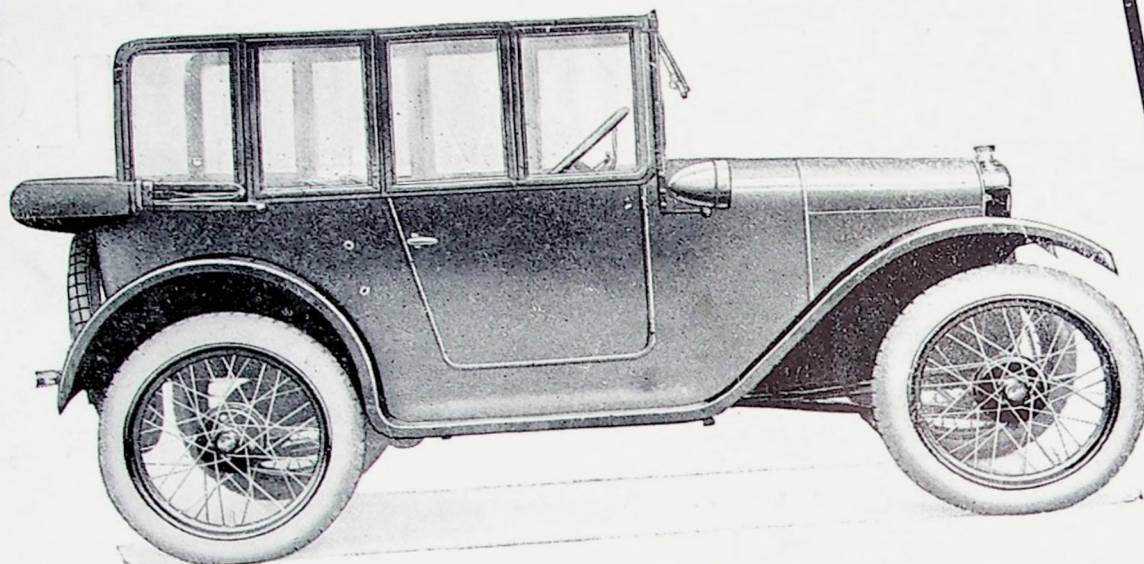


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