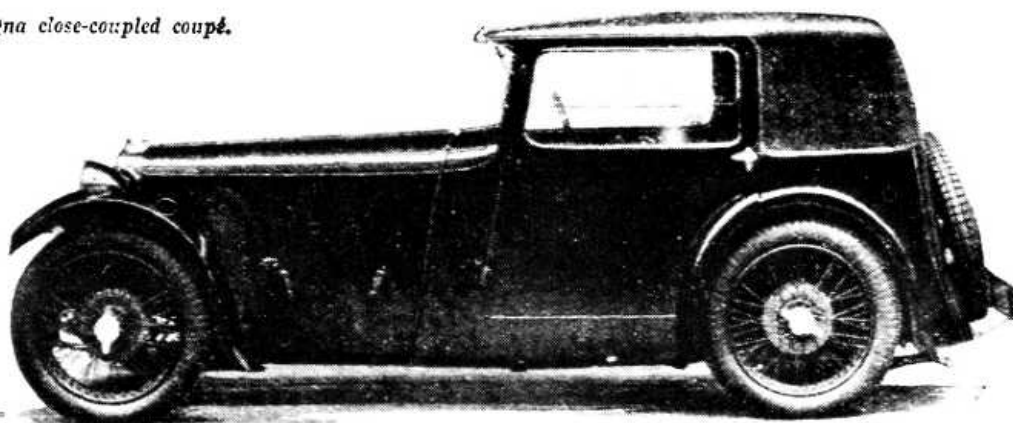


The M.G. Magna close-coupled coupé.



THE 12-70 h.p. M.G. MAGNA

FOLLOWING the preliminary announcement which appeared in last week's issue of *The Autocar*, it is now possible to give a detailed description of the new M.G. Magna 12-70 h.p. small six-cylinder car. It is a design which must inevitably fascinate those enthusiasts to whom a sporting performance is the true zest of motoring, in whom there is an æsthetic ability to appreciate beauty of line, and by whom refinement of running is admired and enjoyed.

To look first at the low-built and utterly workmanlike chassis of the Magna, and then at the finished clean-cut car, is to experience a feeling of insular gratification that this job is British. Emanating as it does from a firm whose 750 c.c. Montlhéry Midgets have handsomely won this year the three most important international races held on British and Irish soil, the Magna is definitely something more than a mere new model: it is a car of latent possibilities.

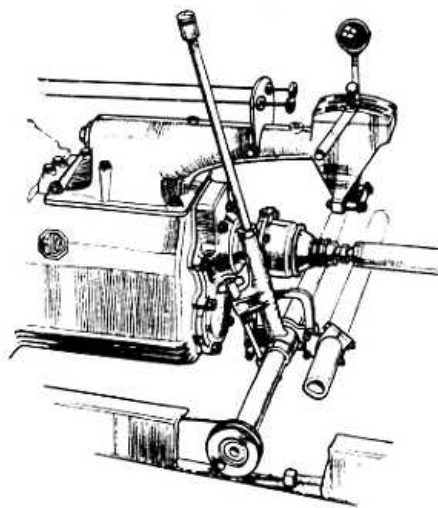
Simple and Light

Possibly the outstanding feature is the simple directness of the design. The car is light, because it is devoid of complication. The frame, for example, follows the principles adopted for the successful Montlhéry Midgets; that is to say, the channel section side-members are arched over the front axle, and thereafter drop low down and parallel with the ground, and pass some five or six inches below the rear axle. Steel tubes form all the cross-members, and the springs, which are of the half-elliptic type and almost flat, are attached with the ordinary spring eyes at the front, and rollers at their rear ends in place of shackles, so that the possibility of side-play due to wear is brought down to a minimum, a point which considerably affects lateral stability. Hartford shock-absorbers are fitted back and front. At the extreme rear of the frame is a cradle in which a long, narrow battery is supported.

One of the reasons why the chassis looks so clean is that the brake-operating mechanism is so simple. In a heavily ribbed drum on the hub of each wheel is an expanding shoe brake provided with an individual adjustment. The brakes are operated by means of flexible steel cables, which pass through armoured casings, and the cables run to the centre

Further Details of a High-performance Small Six of the Most Interesting Character

of the car, where they pass over grooved pulleys on the ends of a cross-shaft. The mechanism is so arranged that the pedal operates all four brakes, while the centrally placed lever separately operates four brakes. By the base of the central lever is a fly nut master adjustment within easy reach of the driver's hand, whilst below the floorboards is another master adjustment for the pedal. One of the points about the brake mechanism is the fact that it is unaffected either by steering movements or spring movements of the axle. Care is taken to make sure that the cables do not rust, and that they can move freely in their casings, by providing a proper system of lubrication, and a grease gun applied to one of the nipples grouped in sets just in front of the dashboard pillars forces grease through the cable casings. Rudge-Whitworth detachable hub wire wheels are fitted.



Layout of gear and brake mechanism on the Magna chassis. Note the position of the strangler and throttle controls.

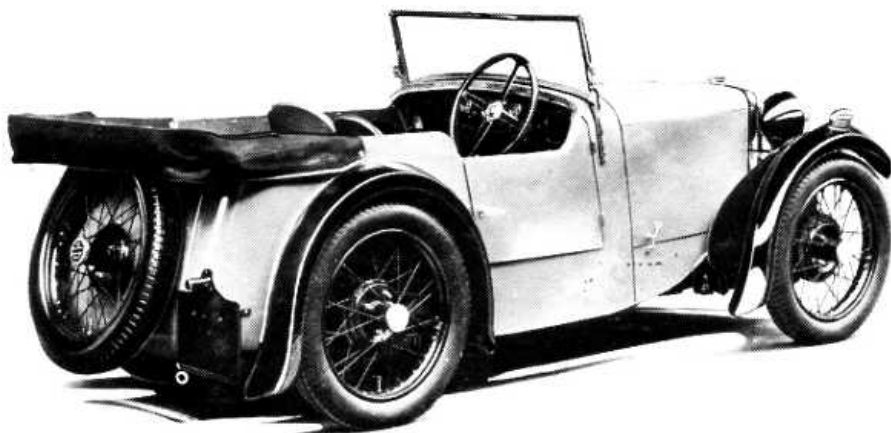
Sitting fairly well back in the front of the frame is the engine and gear box unit. It is mounted with a three-point form of suspension, and an extension of the centre bracket at the forward end is arranged to carry the radiator, so that this component is unaffected by torsional movements of the frame. Naturally, the greatest interest attaches to the engine. This is a six-cylinder design, 57 by 83 mm. (1,250 c.c.). The cylinder block and the greater part of the crankcase are formed in one casting, in which an exceptionally stiff crankshaft is carried in four main bearings. From the front end of the crankshaft a spiral-bevel gear conveys the drive through a vertical shaft, and via the spindle of a vertically mounted dynamo, to a second gear above the cylinder block, and through this agency an overhead camshaft is driven. The camshaft actuates the overhead valves through light fingers having adjustable fulcrum points.

Lubrication

At the front of the engine is a gear pump which draws its supply of oil from a large aluminium sump with cooling fins containing 1½ gallons of oil, and delivers it through an easily detachable filter to the main bearings, the big ends, and upwards to the camshaft and rockers. On the left side of the engine is a special induction pipe, fed by a pair of S.U. carburetters, and on the same side a large separate exhaust manifold is coupled up to an exhaust pipe situated by the front of the engine, and thus out of the way of the floorboards.

Aluminium pistons with three rings are employed in conjunction with steel connecting rods, and it may be mentioned that the crankshaft, reciprocating parts, valves, and so forth of this engine are specially prepared with a view to giving a sustained high performance.

Between the engine and the gear box is a large-diameter single-plate clutch. Four speeds are provided by the gear box, and the three top ratios are fairly close, the overall ratios being: First 19.6, second 9.79, third 6.65, and fourth 4.89. These close ratios give every possible opportunity for obtaining the best advantage from the gear box for acceleration, hill-climbing, and fast cornering. On the top of the box is a



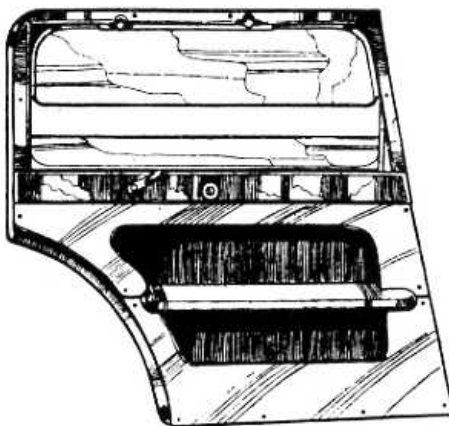
The 847 c.c. M.G. Midget with Montlhéry-type frame and four-seater body.

cast aluminium tunnel which proceeds backwards to a point convenient to the driver's left hand, and here there is mounted a short and comfortable little gear lever working in a normal gate. A plate just in front of the gear lever carries a mixture control, and a control for throttle setting.

Drive from the gear box passes to a three-quarter floating spiral-bevel-driven rear axle through an open propeller-shaft of not excessive length, and having a Hardy Spicer metal universal joint at each end. One particularly interesting point about the design is the way in which the front driving compartment is insulated from heat and smell from the engine by using the circular casing around the flywheel as a bulkhead to carry a large rubber sealing ring which, in turn, fills up the circular hole at the point where the dashboard crosses the engine and gear box unit. Mention has been made of a grouped lubricating system. Under the bonnet in front of the dashboard on each side is a group of three nipples, through which all the bearings of the chassis can be lubricated, with the exception of the front spring parts, and the joints on the front axle and steering gear which have their own individual grease gun connections. For the steering a worm and wheel gear is used. The drag link from the gear passes transversely across the car, as the column is considerably raked so as to give a comfortable position for the steering wheel, which is a 16in. celluloid-covered spring-spoke type. The water cooling system of the engine is of the thermo-syphon system, and the effectiveness of the radiator is increased by a belt-driven fan. The radiator itself is of a special design, in shape somewhat similar to the well-known Midget,

but deeper from back to front, and provided with a sloping front, in which a stoneguard is incorporated.

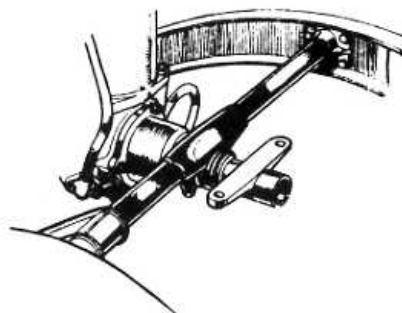
Accessibility in the design has been very carefully studied, and to that end the bonnet is very long and is arranged so that when opened it discloses both sides of the bulkhead, dashboard, and



Window mechanism and arm-rest on the door of the Magna coupé.

also the back of the instrument board, besides the pedals and part of the gear box. There is room, therefore, not only to get at the engine, but many of the other important parts of the chassis as well.

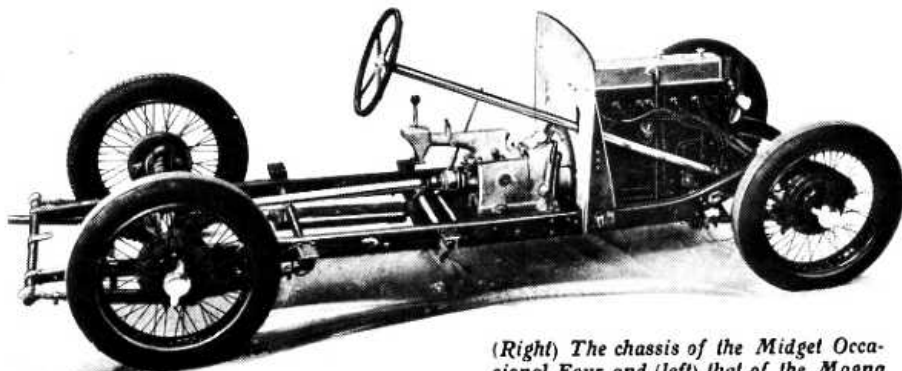
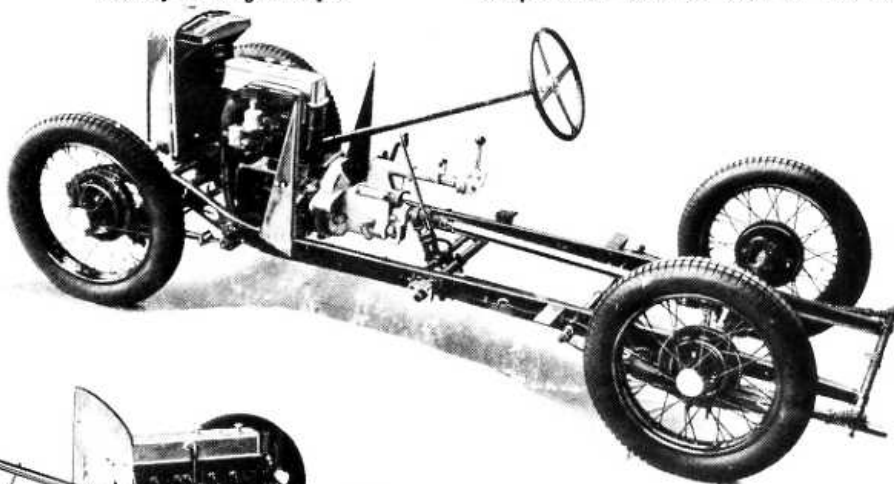
Before turning to the coachwork, the following details of the chassis will be of interest. The Treasury rating of the engine is 12.08 h.p., and the tax £12; the track of the car is 3ft. 6in. and the wheelbase 7ft. 10in.; the wheels are shod with 27in. by 4in. tyres, and the chassis weighs approximately 9½ cwt. The over-



Redesigned front engine mounting and radiator support on the Midget Occasional Four.

all width is 4ft. 2in. and the overall length 10ft. 6½in., whilst the overall height of the close-coupled saloon is only 4ft. 5in. One other chassis point demands mention: the petrol tank contains six gallons, and is carried at the rear of the frame, and is provided with a conveniently placed two-way tap which retains two gallons in reserve.

Now as regards coachwork. There are two bodies available; the first is a sports four-seater, priced at £250. This is a low-built, two-door, close-coupled design with plenty of room in the front seats, but with rear seats intended for occasional use. Alternatively the rear compartment can be used for the con-



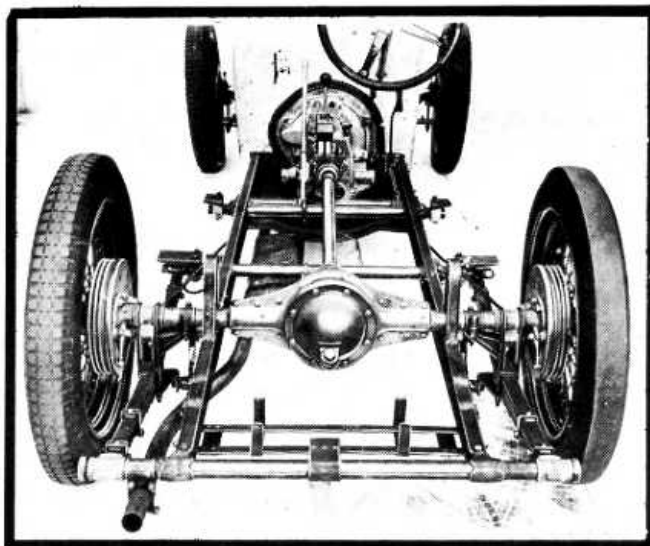
(Right) The chassis of the Midget Occasional Four and (left) that of the Magna coupé compared.

veyance of a good deal of luggage. This is a metal-panelled body of very attractive lines, and has at the front a single-panel windscreen which can, when desired, be folded flat forwards out of the way. Packed flat and partially in a recess at the back of the body, is a hood which will cover the whole of the interior of the car. All-weather side-panels are included in the equipment. Leather upholstery is used, and the front seats are of the adjustable bucket

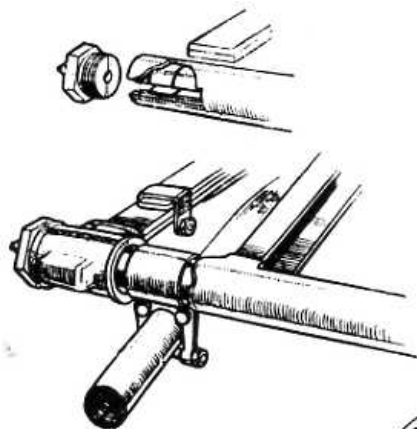
type. Being low-built, the body has no running boards, whilst the wings are of the close-fitting, deep-sided type.

In appearance the closed edition of the Magna is particularly striking. The body is a close-coupled coupé with a sliding roof, and has been christened the Foursome. It has two wide doors to give access to the interior, and the pneumatically upholstered back seats are reached when the backs of the front seats are tilted forwards. Wells in the rear floorboards give increased room. Although the car as a whole cannot be described as a large one, every possible inch has been utilised in the width of the body, which swells out nearly to the full width of the rear wheels. Additional elbow room is given to the front seats by recesses in the doors in which are arm-rests, whilst below each arm-rest is a deep pocket for occasional packages.

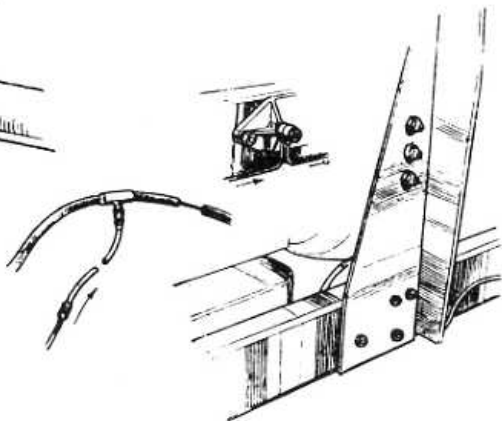
Pleated leather upholstery of extra fine finish helps to render the interior very attractive, and another feature is that in the sliding portion of the roof is a series of celluloid windows which not only allow vision upwards, but also make the interior of the car bright. The price of this model is £289. For both cars the stock finish is ebony black with apple green, tudor brown, deep red, or Cearulean blue or suede grey leather upholstery. Other colours that can be obtained if desired at an extra charge of £2 10s. are biscuit, British racing green, russet brown, Nile blue or rich red and white. Any other colours



The dropped frame from the rear showing the method of attachment of the rear springs.



(Above) Roller attachment of the rear springs on the new Midget.

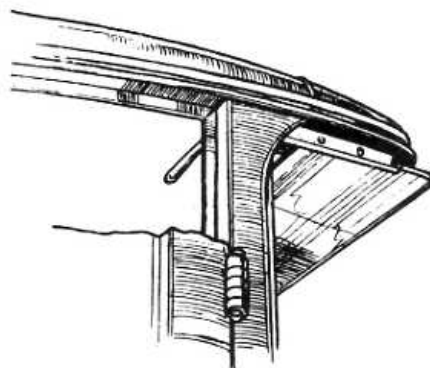


(Right) Centralised greasing "stations" on the new M.G. models. Note how provision is made for the proper lubrication of the brake cables.

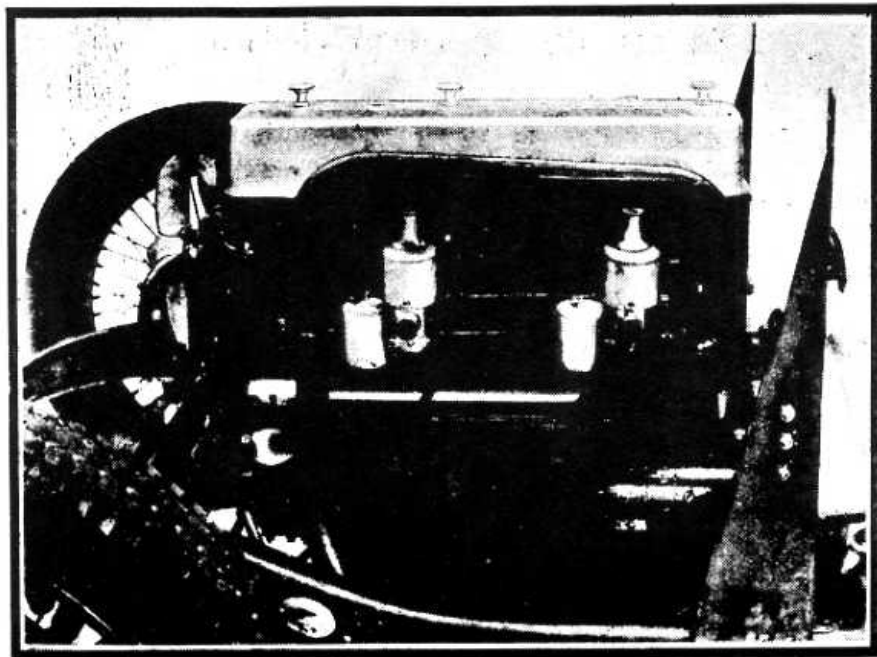
than these may be had at an extra charge of £4 10s., whilst a deviation from the five leathers that have been standardised costs an additional five guineas.

The Midget Occasional Four

Finally a few notes may be added to the information already published about the 8-33 h.p. M.G. Midget Occasional Four. This is a new addition to the Midget range, and has an open four-seater body very similar to that of the



The sun visor on the Magna coupé can be conveniently operated from the interior of the car.



The M.G. Magna has twin carburettors.

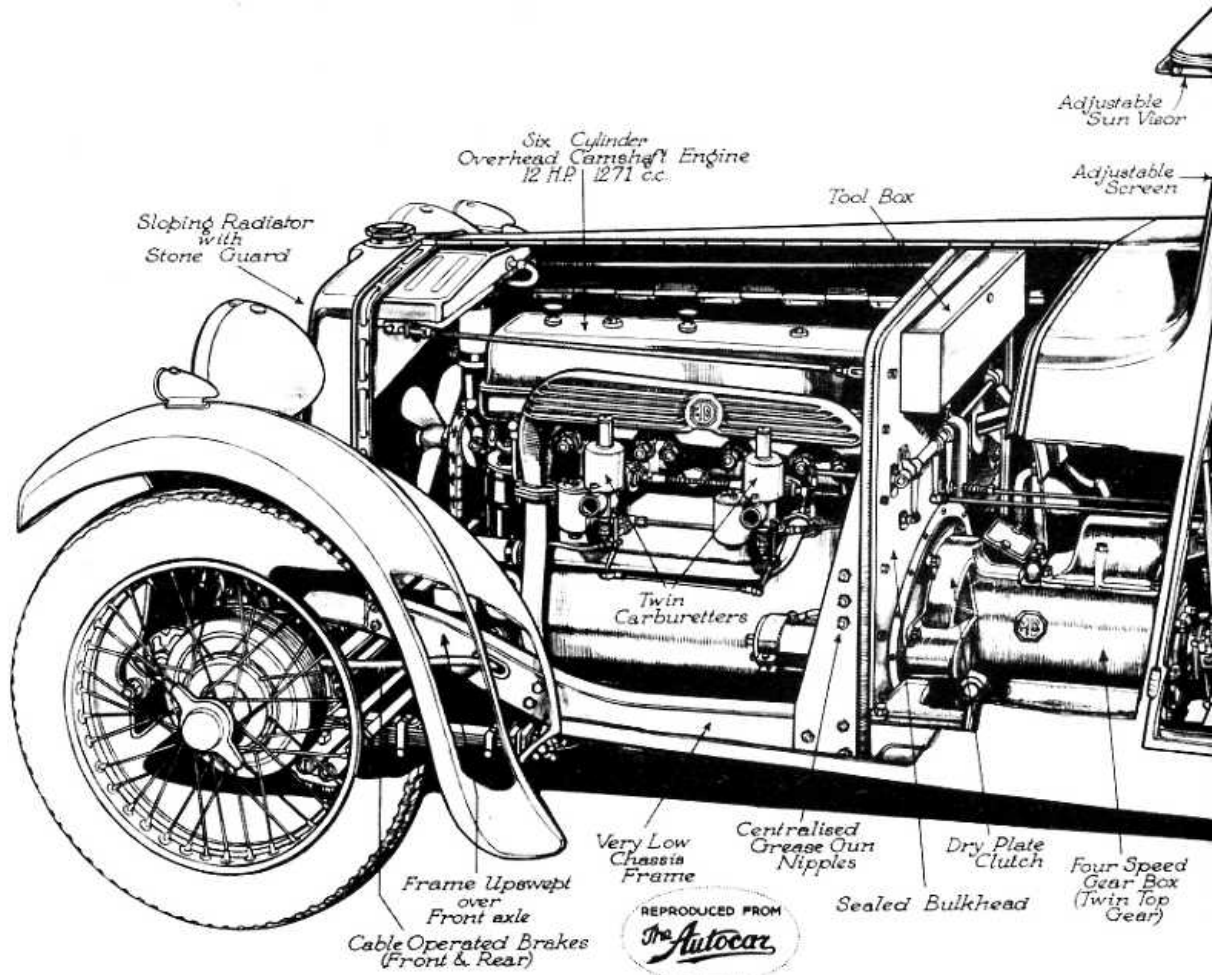
Magna. The chassis is also of the under-slung frame type, with flat springs and slides instead of shackles. Most of the detail can be seen in the accompanying illustrations.

Special points of the model are that the gear lever is mounted at the end of a rearwardly projecting bracket on the top of the gear box, a grouped nipple system of chassis lubrication is provided, and the use of a long bonnet makes it possible to secure immediate access to the scuttle as well.

It is possible, additionally, to obtain this model with a four-speed box instead of three speeds. The chassis is very similar to the Montlhéry type, but the engine is the normal four-cylinder 847 c.c. type. This car has the petrol tank situated at the back, and Rudge-Whitworth racing type wire wheels are fitted. It is priced at £210.

THE M.G. MAGNA.

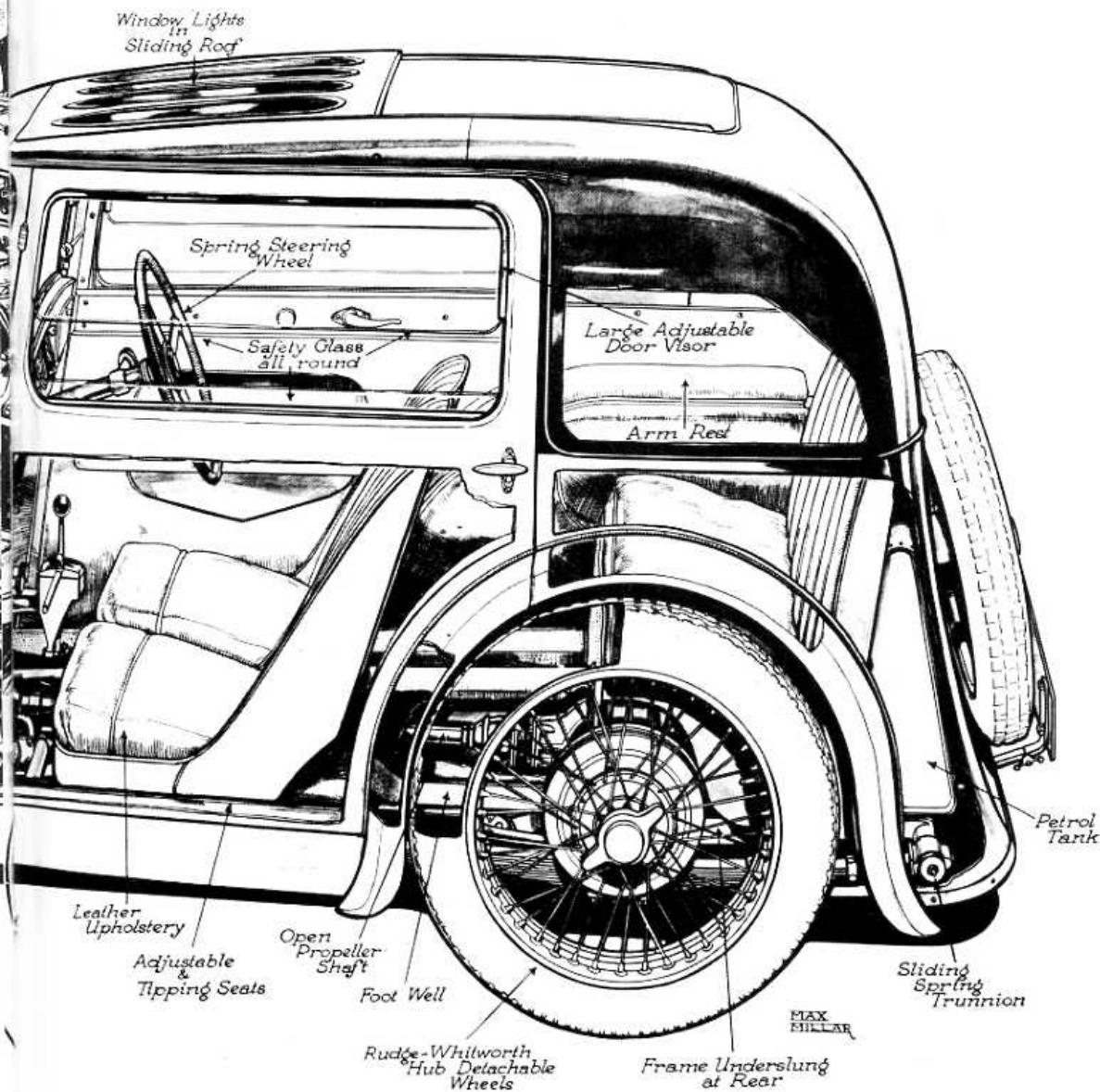
A NEW SMALL SIX-CYLINDER SPORTS CAR.



SALIENT FEATURES.

1271 c.c., o.h. camshaft engine, four-speed gear box with silent third. Frame underslung at rear. The engine is entirely separated from the passenger accommodation by an aluminium bulkhead and undershield.

Tax £12. Wheelbase, 7 ft. 8 in. Track, 3 ft. 6 in.
Overall length, 10 ft. 4½ in. Overall width, 4 ft. 2 in.



This little car is based on the design of the racing M.G. Midget, which has been so successful this year at Brooklands and in the two big Irish events.