

A NEW MAKE ENTERS

Stevens Brothers, Manufacturers of Long Experience
Introduce the 250 c.c. o.h.v. Stevens

IN the forefront of motorcycling pioneers in this country, and indeed in the world, stand the Stevens Brothers. Way back in the dark ages of the industry they were building engines and complete machines. For many years under the A.J.S. trade mark they built motorcycles which made history in the Isle of Man and elsewhere.

Now, after a period spent in experiment and development, they reappear on the scene with an attractive little o.h.v. "250," to be built in small quantities under their personal supervision in the very Wolverhampton factory in which the original A.J.S. motorcycles were made. There, in Retreat Street, may now be seen the nameplate of Stevens Brothers (Wolverhampton), Ltd.

This machine is compact and sturdily built, but completely equipped it weighs only 285 lb. It has a 54-in. wheelbase, a saddle height of 27½ ins. and 5 ins. of ground clearance. And now for the details.

So far as the engine is concerned, there is nothing at all unusual in the design, except that it bears the indefinable stamp of a Stevens's product. Bore and stroke dimensions are 63 mm. and 80 mm., giving a capacity of 249 c.c., and the compression ratio is 7¼ to 1.

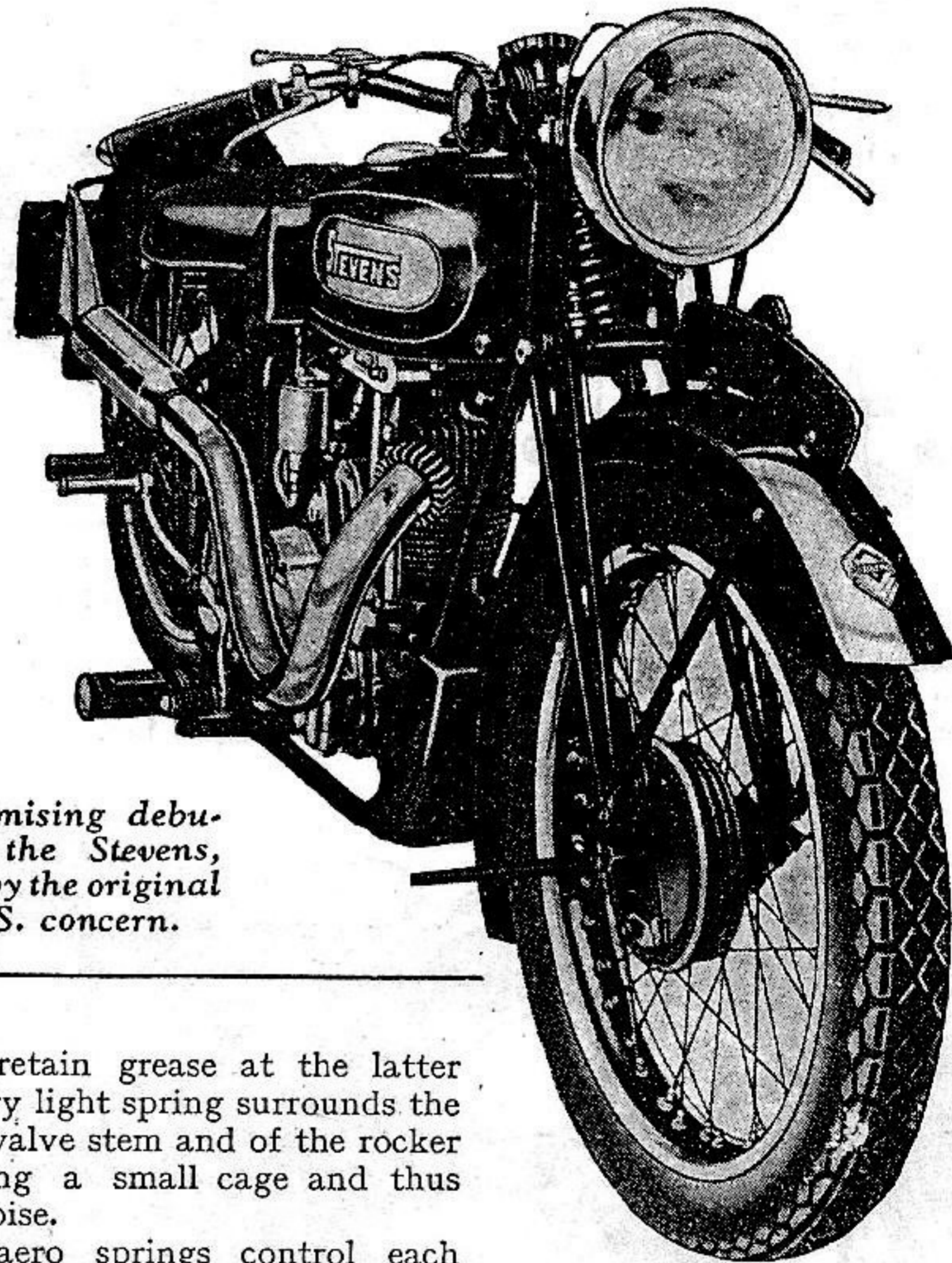
The Timing Gear.

Two separate camshafts are used, each being driven directly from the mainshaft. There are no rockers in the timing case, the tappets being operated directly by the cams. Both ends of the push rods are cupped and the top of the tappet is rounded to fit into one cup while the o.h. rocker arm carries a similarly rounded peg which mates with the top of the push rod.

A special point here is that the cup is made of hardened steel, and sits on the end of the duralumin tube which constitutes the main part of the rod. Around the steel cup and the end of the tube is a sleeve which is held to the tube by a pin passing through both. It is therefore an easy matter to renew the steel cup should it become worn.

Duralumin is used also for the rockers, which are mounted on long stationary spindles supported at each end by steel plates. A long bearing is thus obtained and lubrication is effected by grease gun. An ingenious feature is the drilling of the rockers so that grease is fed not only to the bearings but also to the push rod cup and the steel pad which bears on the valve

A promising debutant — the Stevens, made by the original A.J.S. concern.



tip. To retain grease at the latter point, a very light spring surrounds the end of the valve stem and of the rocker arm, forming a small cage and thus reducing noise.

Duplex aero springs control each valve. The spherical combustion chamber is machined and polished. Its single exhaust port leads to a 2-in. pipe which may be either upswept or downswept, to order.

Reciprocating Parts.

The three-ring alloy piston has a fully floating gudgeon pin and is connected by a steel rod to the double-row roller big-end. Three heavy-duty ball races carry the steel flywheel assembly, two being on the driving side and one on the timing side.

Situated behind the cylinder, the magneto is driven by chain, and the oil-pump is built into the front of the chaincase casting. Three pints of oil are carried in a separate tank mounted in front of the crankcase and two short pipes communicate with the pump. This has an adjustable by-pass so that any oil not required is returned by way of one of these pipes to the tank. The remainder of the output of the pump is fed to the big-end bearing, from which it is thrown out to lubricate the cylinder wall, piston and timing gear. It may be emphasized that this is not a dry sump system, but that fresh oil is continually fed into the engine in proportion to its needs.

A Burman four-speed gearbox with multiple-plate clutch is pivotally mounted in the ordinary way behind the engine, and is controlled either by hand or foot, as may be ordered. The foot control lever is specially shaped so as to bring the pedal conveniently close to the footrest and a neutral indicator is fitted. The ratios are 6.06, 7.76, 9.93 and 16.58 to 1.

Oil-bath Chaincase.

Connecting the engine and the gearbox is a Renolds chain with a shock absorber on the engine shaft. This, together with the chain and clutch, is enclosed in an oil-bath case of interesting design. The joint between the two halves of the case is vertical, in the usual way, but instead of a number of small screws holding the two parts together there is a lip running right round the edge of both. These two lips are surrounded by a rubber moulding which, in turn, is held in place by a metal beading. The latter runs right round the chaincase, and its two ends are fastened together by a single screw. The rubber, which is of a special composition, ensures an

THE LISTS

oil-tight joint and by undoing the one screw the chain and clutch can be completely exposed in less than a minute.

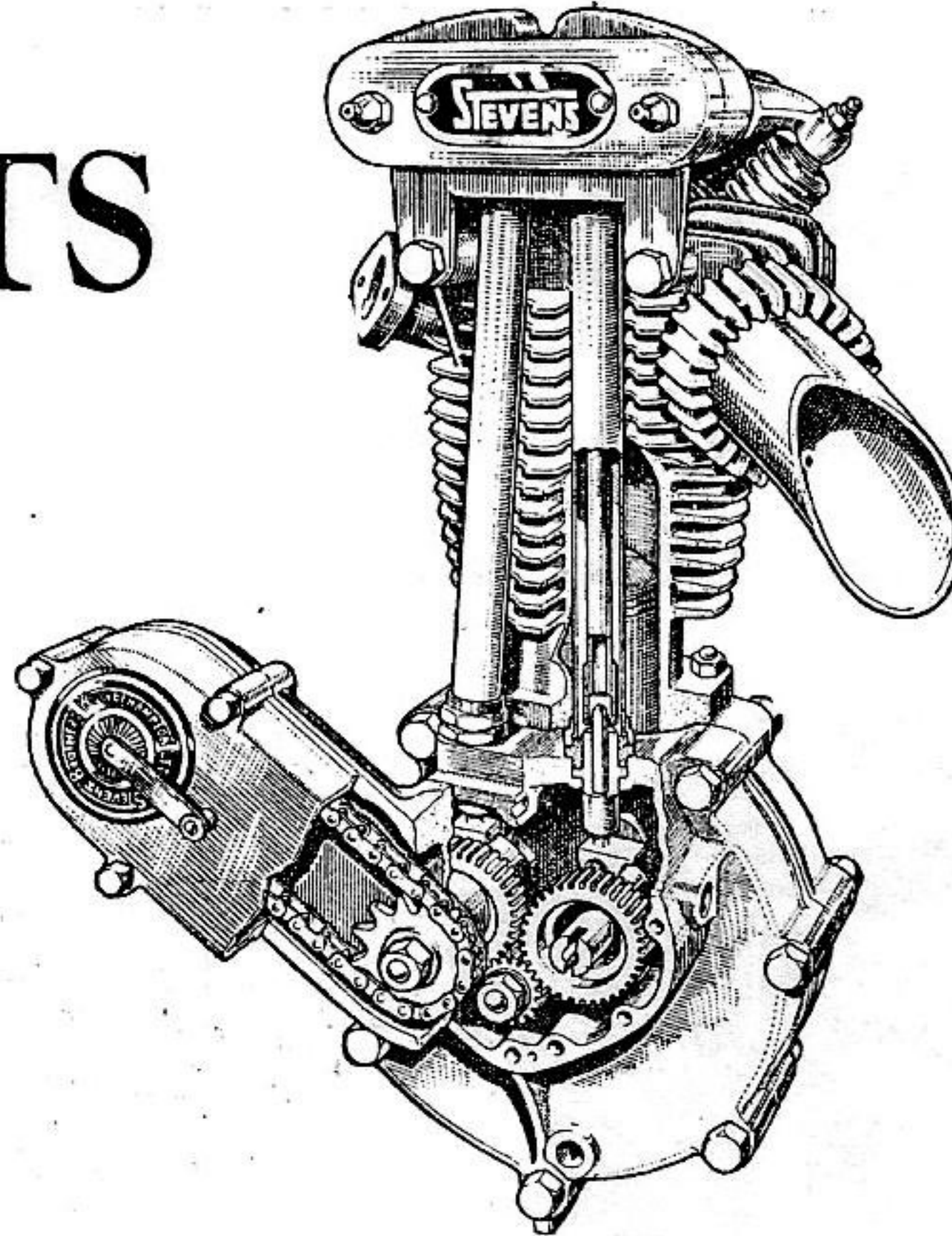
Over the top run of the rear chain there is a guard; an unusual feature of this is that at the front it is lightly gripped by a spring, so that it is free to slide back and forth. At the rear it is attached rigidly to the brake anchor plate and thus when the back wheel is moved for chain adjustment, the chain-guard moves with it and is therefore always the same distance from the chain-wheel.

Both brake drums are generously ribbed, and this ribbing is integral with the rest of the drum, which is a special alloy casting. Improved cool-

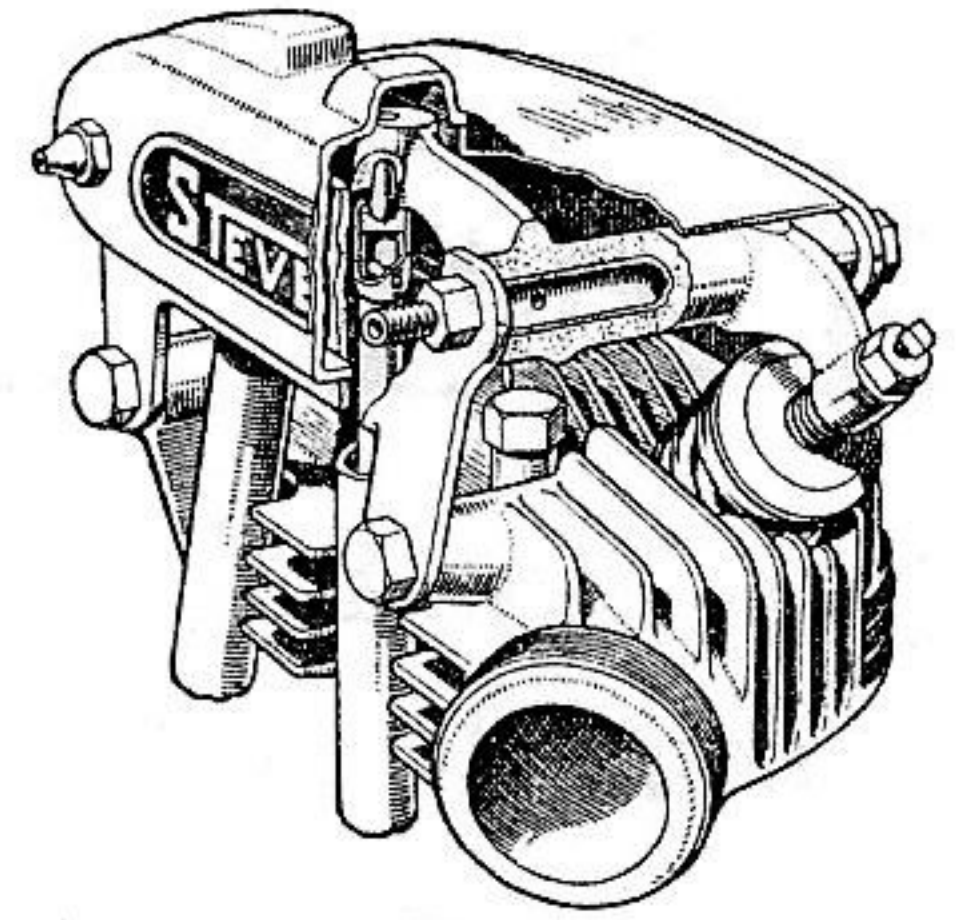
ing and greater rigidity are obtained by this construction. The front brake diameter is 6 ins. and the rear is 7 ins. The tyres are 26 ins. by 3.25 ins. Good-years.

One of the most important components of a motorcycle undoubtedly is the frame. In the new Stevens this is of the duplex cradle type and is based on more than 30 years' experience. The forks have a central barrel spring and the spindles are adjustable. Shock-absorbers and a steering damper are fitted, although experience with the machine on the road suggests that the latter is scarcely necessary.

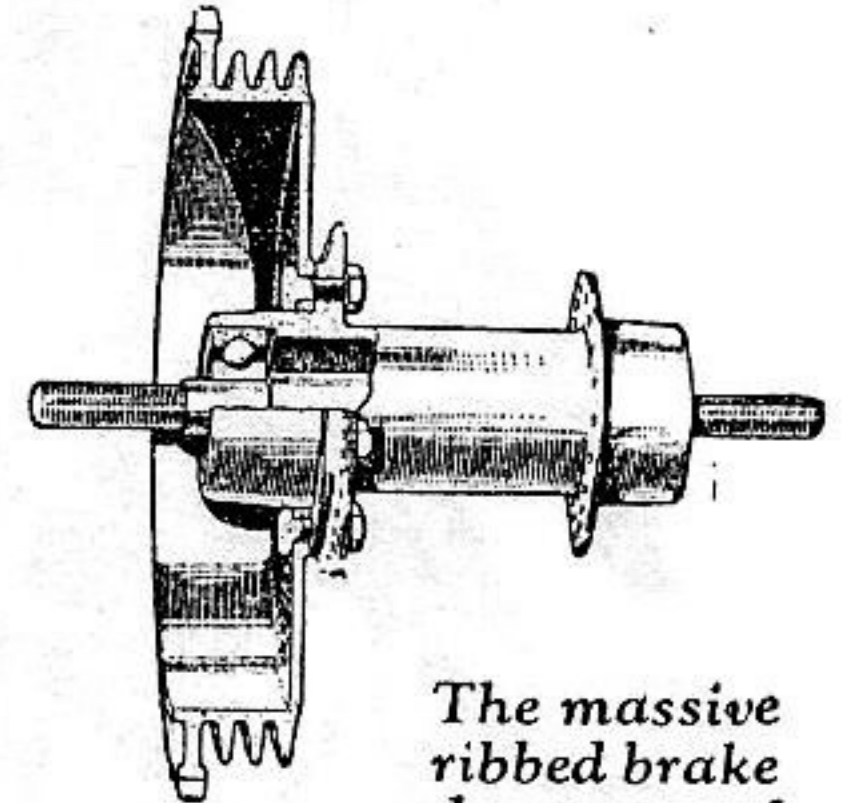
Mounted on three rubber cushions, the tank has a capacity of three gallons and carries a simple instrument panel in which are the ammeter and lighting switch. On each side at the back is a large knee grip and in front



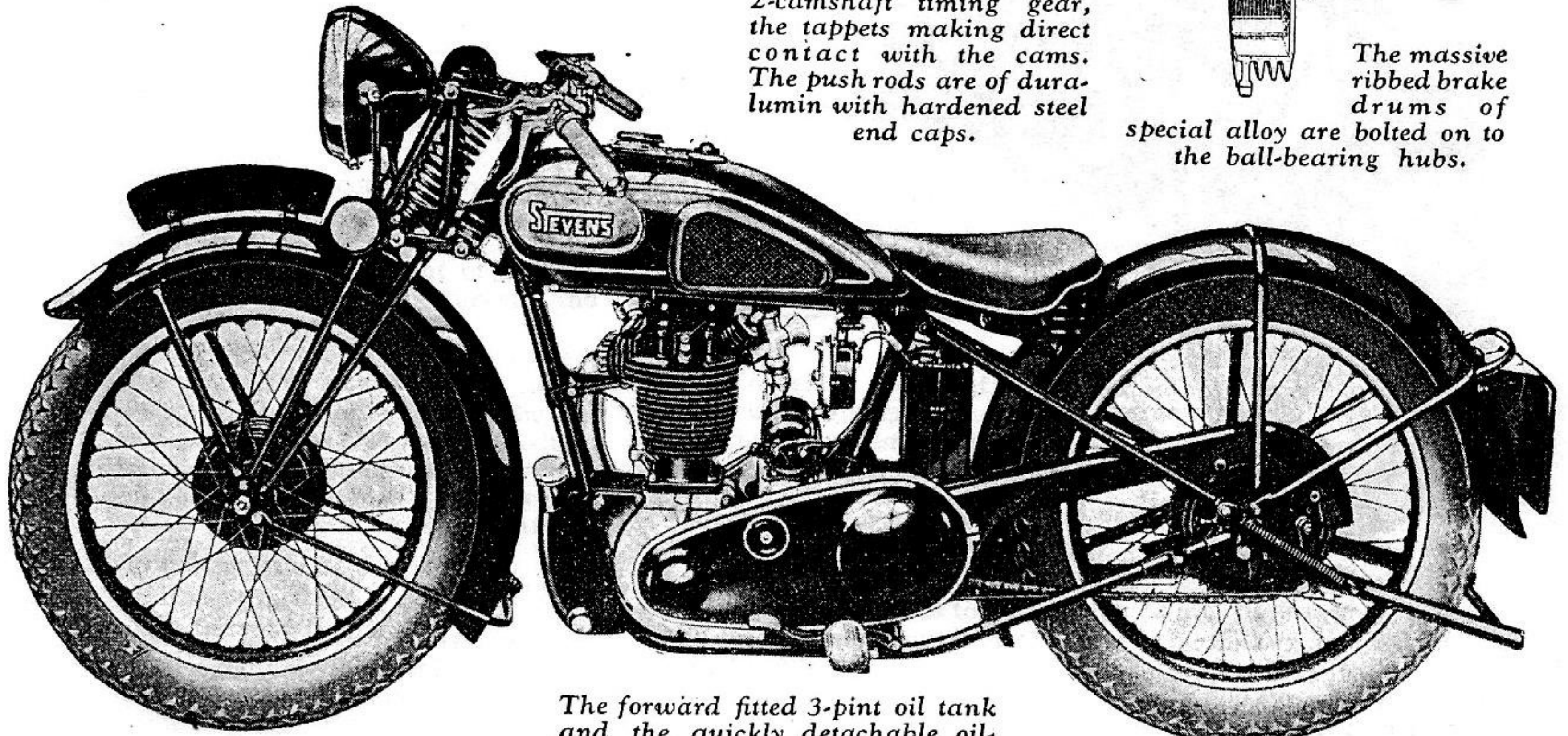
The Stevens engine, with 2-camshaft timing gear, the tappets making direct contact with the cams. The push rods are of duralumin with hardened steel end caps.



The duralumin rockers are mounted on stationary spindles and have oil ways for lubricating the push rod ends.



The massive ribbed brake drums of special alloy are bolted on to the ball-bearing hubs.



The forward fitted 3-pint oil tank and the quickly detachable oil-bath chaincase are features of the 250 Stevens. The compression ratio is the considerable one of $7\frac{1}{2}$ to 1, and either an upswept or normal exhaust system may be specified.

is a detachable chromium-plated name panel with a rubber beading between it and the tank. The latter is enamelled black with suitable lining, and the whole effect is distinctly smart, as will be seen from the two photographs appearing on these pages.

Stands and Wings.

Stands are fitted to both wheels, the one at the back being of the spring-up variety. Deep-section mudguards with flared tips are used, and the back portion of the rear guard is very quickly detachable, so that the wheel can be easily removed.

Included in the standard equipment

is a Lucas Magdyno lighting set with a large headlamp and high-frequency horn. An interesting point is that the Bowden controls are fitted with the new Bowdenex casing, which is not affected in any way by bends in the cable. The handlebars, incidentally, have the various levers attached to them in such a way that the position can be altered to suit individual tastes. A quick-action twist grip on the right controls the throttle.

Altogether, then, it will be seen that the new 250 c.c. Stevens is a machine which will appeal to the connoisseur. It is designed not only to have an excellent performance, but also to be sweet and pleasant to ride, and to be thoroughly reliable. For such a motorcycle there is undoubtedly a good market, and at its price of £51 the new Stevens will certainly be in brisk demand.