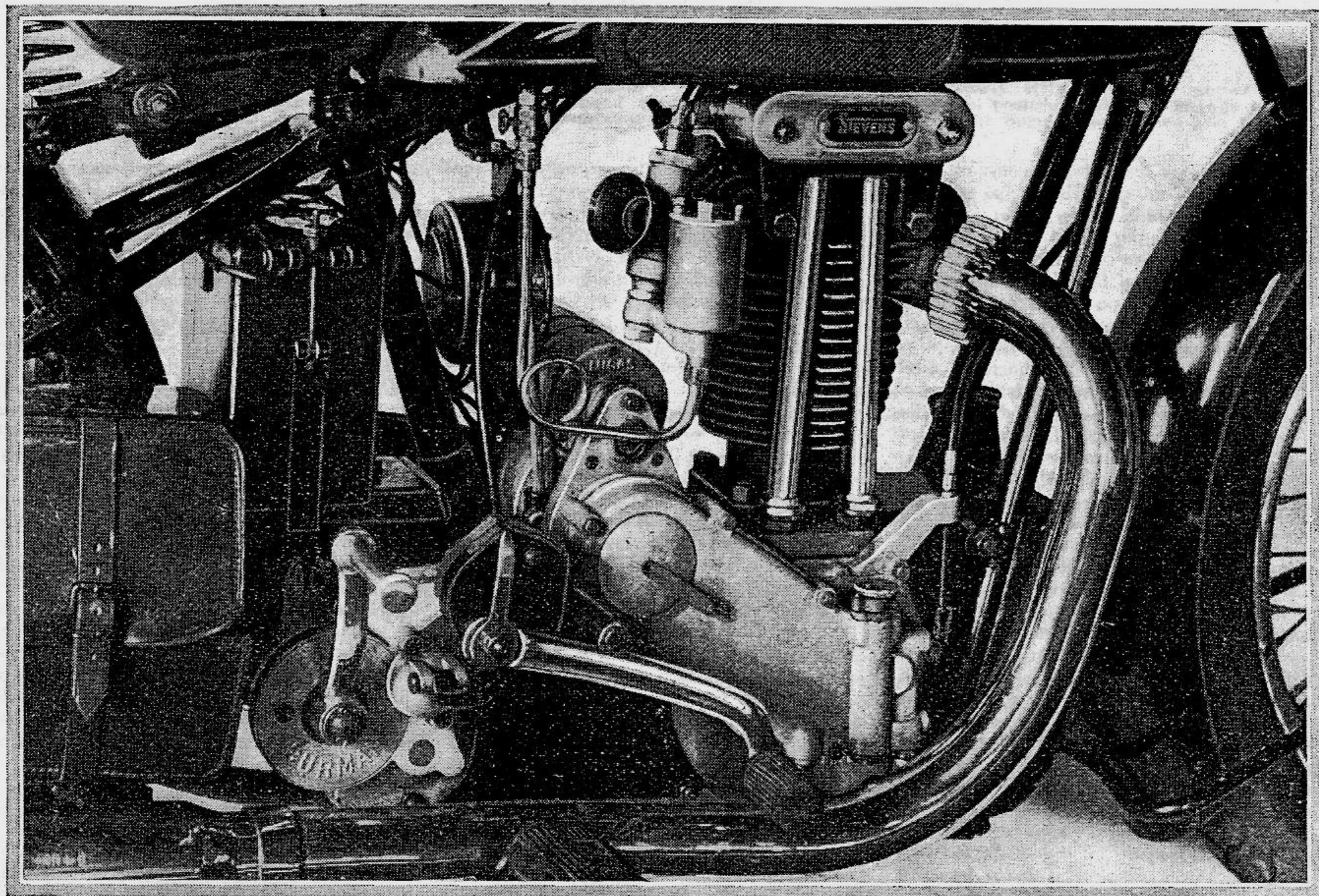


# A New Machine with Old Associations

A Full Description of the Up-to-date 250 c.c. Model With Which the Stevens Brothers are Re-entering the Motor Cycle Market

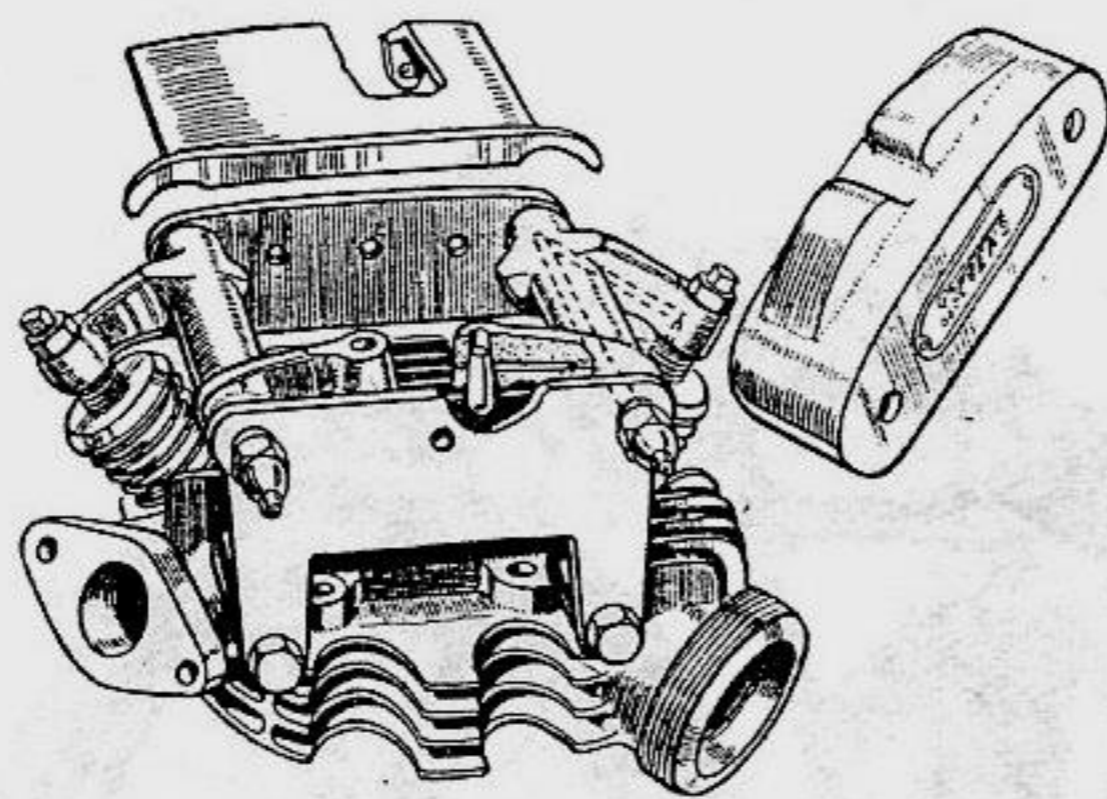


Details that will be noticed in this view of the 249 c.c. engine include the regulator of the oil pump, which draws its supply from a three-pint tank in front of the crank case; the inspection door on the magneto chain case; the inclined carburettor; and the unusual mounting of the electric horn.

NEARLY thirty-two years ago the brothers Stevens began to manufacture motor cycle engines. Since that time many things have happened, and much knowledge has been gained.

Founders of A.J.S. (1914), Ltd., and late managing directors of that company, the four brothers two years ago turned their attention to the development of light commercial three-wheelers, but never lost sight of, or touch with, the possibilities of the motor cycle market.

Now, after an interval, and as announced last week in *The Motor Cycle*, the name Stevens is to appear once more on a high-class and up-to-date 250 c.c. motor cycle. The machine is being built in the original Retreat Street, Wolverhampton, works, which have been en-



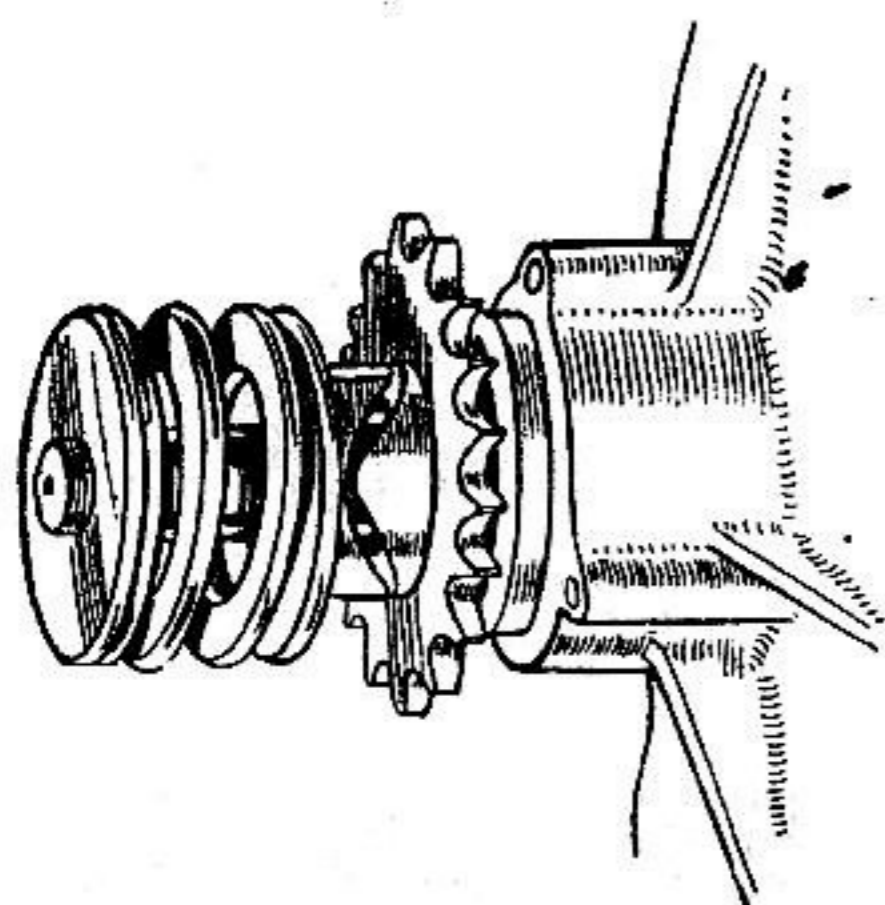
The rocker gear, partly dismantled and sectioned. Grease from the nipples passes along drillways in the spindles and rockers to lubricate each point of contact. Small springs, to secure silence, are interposed between the rocker ends and the spring cups.

larged and modernised to meet existing conditions.

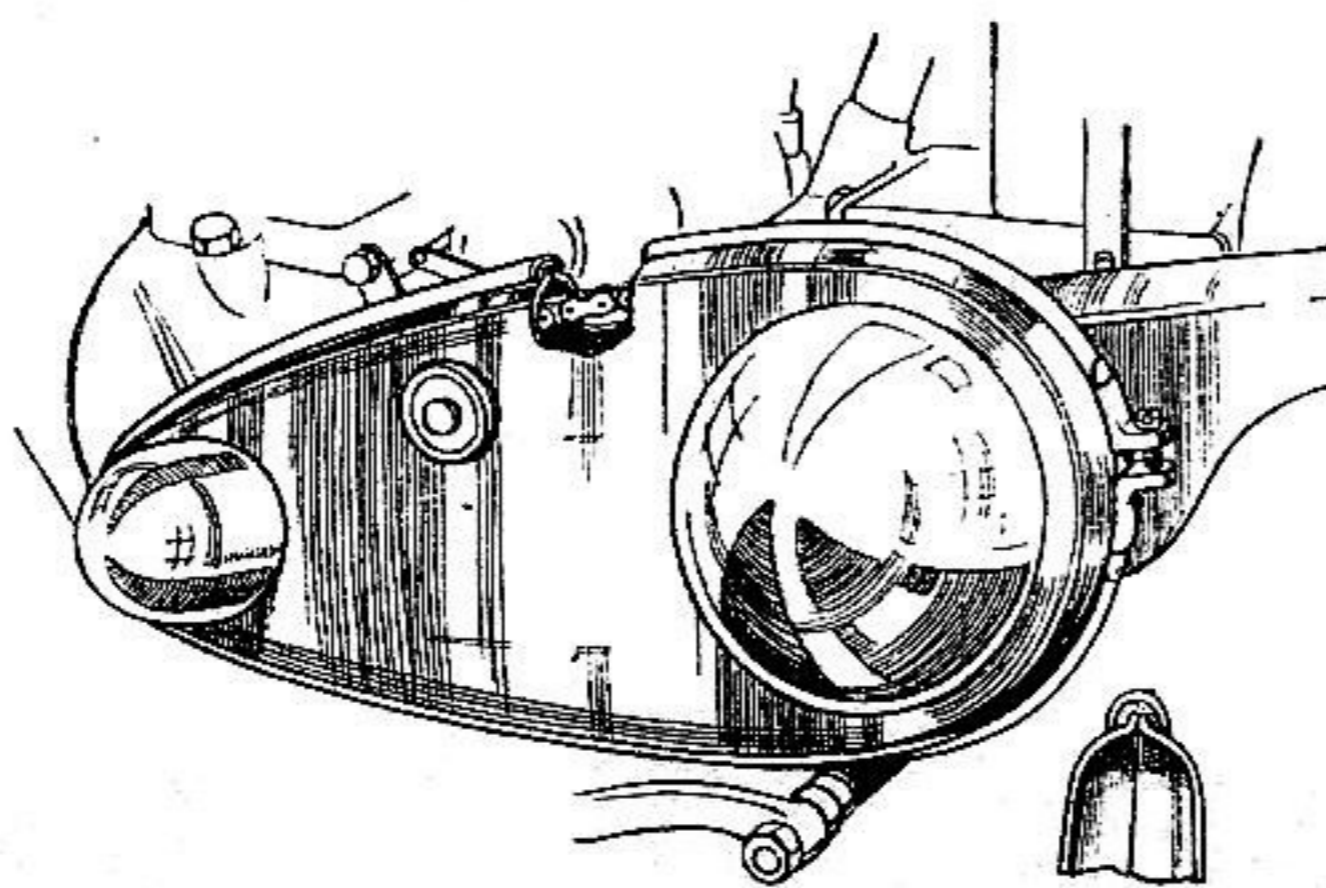
Though conventional in appearance, the new machine is up to date, and no effort has been spared to make every detail right. Though quality has been considered before price, the value offered at the figure of £51, which includes full electrical equipment, is extremely good.

Clean of appearance, the engine has single inlet and exhaust valves in the polished hemispherical head, the exhaust port leading to a 2in. pipe, and thence through a cylindrical silencer to a fish-tail. The valve gear has been very carefully studied, with a view to securing long life and a minimum of noise.

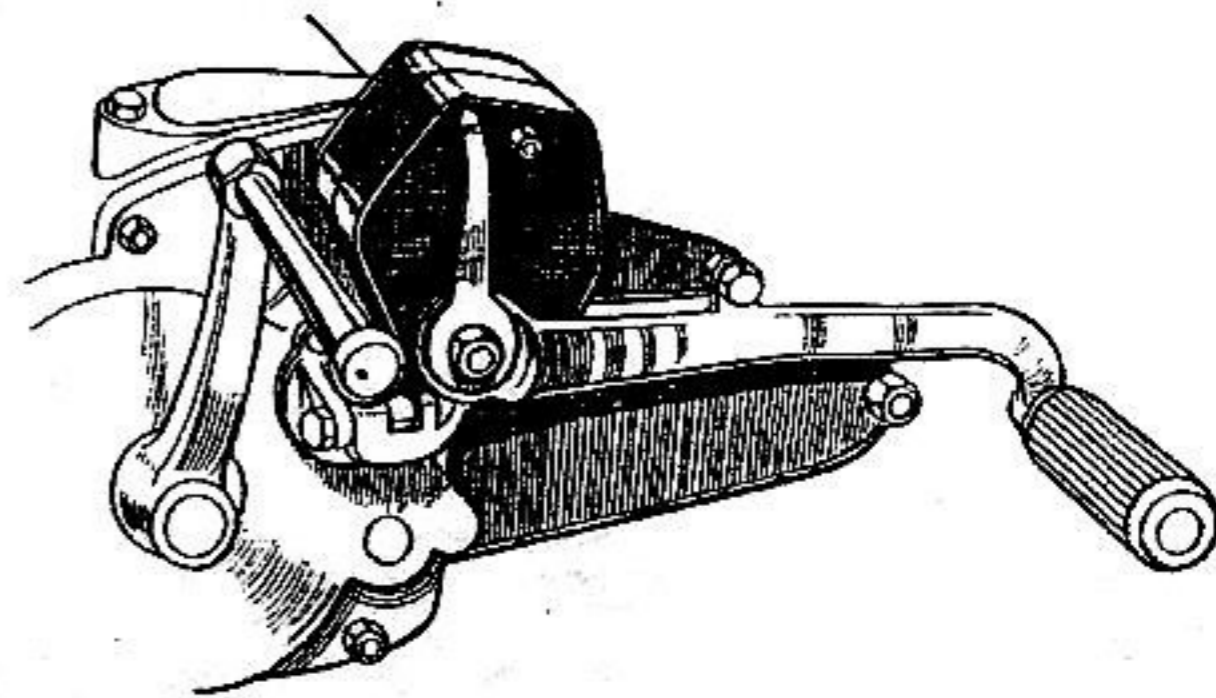
Bushed Duralumin rockers extend right across the head, and are supported on steel



The unusual contour of its cams makes the engine-shaft shock-absorber sensitive to quite light shocks, and gives a "progressive" damping action.



The oil-bath chain case is made in two halves, clamped together by a metal band containing a rubber fillet.



A clearly visible indicator shows the neutral position of the foot change lever on the Burman four-speed gear box.

pins, carried by steel end plates. There is a protecting cover plate above the rockers, and a detachable cover over the inner rocker arms. This cover is held in place by two combined nuts and grease nipples; a grease gun applied to either nipple feeds not only the rocker bearings but also the upper ball and cup of the push-rod.

Duralumin is also used for the tubular push-rods and the valve spring cups. Adjusters for valve clearance are mounted on the outer end of the rocker arms, and between the rocker ends and the valve cups are light coil springs which help to silence the mechanism; they also retain a certain amount of lubricant. Even the valve guides are bushed with a special metallic lining to ensure long life.

The push-rods are encased in tubular covers, fixed at the base, and registering in holes in the upper rocker case. A separate camshaft is used for each push-rod, and the cams actuate curved-base followers which are solid with the ball-head tappets. The carburetter is inclined downwards at 15 degrees, and the exhaust pipe is secured by a ribbed nut.

**Bore and Stroke**

A capacity of 249 c.c. is obtained from a bore of 63 mm. and a stroke of 80 mm., and the domed piston, with its three narrow rings, provides a compression ratio of 6.5 to 1. The gudgeon pin, retained by circlips, floats in the bushed small end and the piston bosses, while a double-row roller bearing is housed in the lower end of the steel connecting-rod.

Two ball bearings support the drive side of the crankshaft, and a single ball bearing the timing side. The crankshaft is built up with steel flywheels.

A Lucas Magdyno, mounted behind the cylinder, is chain-driven from the inlet camshaft, and from the exhaust camshaft a drive is taken to a rotary plunger oil pump housed in the magneto chain case. This pump draws oil through a very short pipe from a three-pint tank placed in front of the crank case. Oil is delivered to the big-end through the crankshaft, and, in proportion to the setting of the regulator, the excess capacity of the pump is by-passed back to the tank through a pipe within the neck of the tank filler.

On the crankshaft is a face-cam shock-absorber of somewhat unusual formation. There are only two cam lobes on each member, and these are formed in such a

manner as to provide a very gradual angle of attack. In consequence, they are sensitive to comparatively small shocks, yet the progressive steepening of the faces ensures a positive though flexible drive.

The front chain is entirely enclosed in an oil-bath case consisting of two steel pressings flanged at the edges. The flanges of the pressings match up around the periphery, and are surrounded by a rubber fillet. This, in turn, is enclosed in a grooved metallic strip pinched up by a single bolt at the back of the case. It is therefore a matter of moments only to slack off the pinch bolt and to remove the outer half of the case.

A four-speed Burman close-ratio gear box is employed, with a foot control designed to lie conveniently to the toe. There is a neutral indicator of sensible proportions. Standard ratios are 6.06, 7.76, 9.93, and 16.58 to 1.

Both brakes (6in. front and 7in. rear) have integral cooling ribs and quick-action hand-adjusters. To the rear anchor plate is attached the rear chain guard, which is provided with a slot at the front end and a spring-loaded fixing, so that chain adjustment causes no change in the protection afforded, and involves a minimum of trouble.

Goodyear heavy-duty tyres of 26 x 3.25in. section are fitted, and the rear guard has a completely detachable section at the end.

As regards the frame, duplex cradles extend from the head to the rear spindle: there is a single straight top tube. The Druid forks have a built-in shock-absorber on the top link, and a steering damper is

also provided. A large Lucas lamp (7in. glass) is carried directly on the fork.

In the tank, which holds three gallons of fuel, is a small panel carrying the switch and ammeter, and the black and gold finish is relieved by detachable chromium-plated panels on either side. These panels, which are screwed into position on rubber fillets, bear the name Stevens in bold lettering.

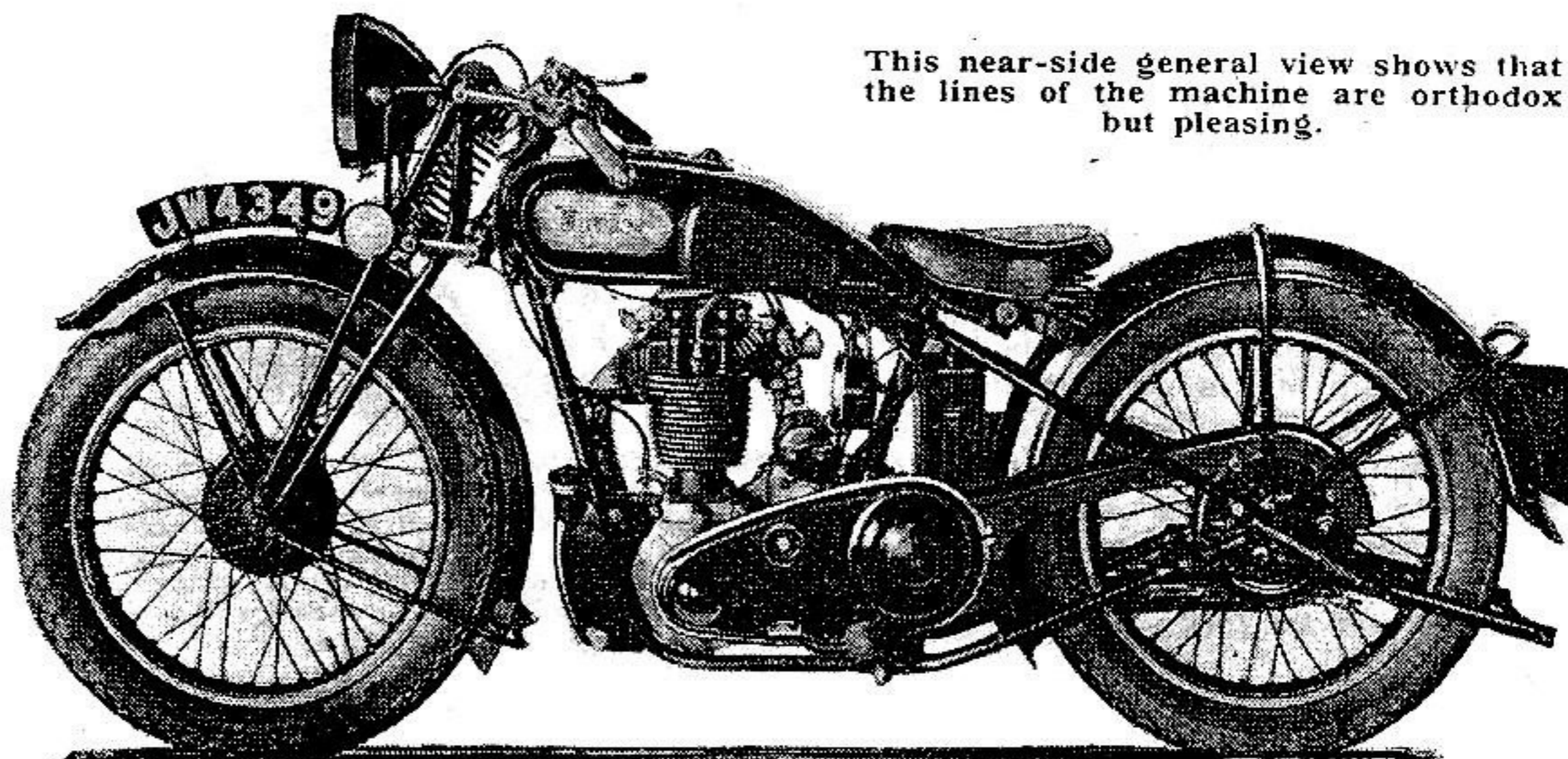
As an instance of the care and quality with which this machine is produced, it may be stated that the new "Bowdenex" cable is employed for all controls, and this should eliminate fraying or any tendency for the controls to vary in action when the handlebars are turned.

The handlebars, by the way, are fully adjustable, as are all the control levers, and a further point of interest lies in the mounting of the Dunlop saddle, which is carried on a conventional saddle pillar, and is therefore adjustable in every direction. Many practical riders will welcome this return to a practice which has almost disappeared.

Though the accumulator, placed as it is behind the seat-post, may appear to be inaccessible, this is not the case; by slacking one nut the whole fixing bolt on one side can be removed, and the battery can be taken out for inspection with the greatest ease.

The machine is available with hand or foot change, Amal or Bowden carburetter and upswept or normal exhaust pipe without change in price.

Altogether, a practical machine worthy of its makers' experience.



This near-side general view shows that the lines of the machine are orthodox but pleasing.