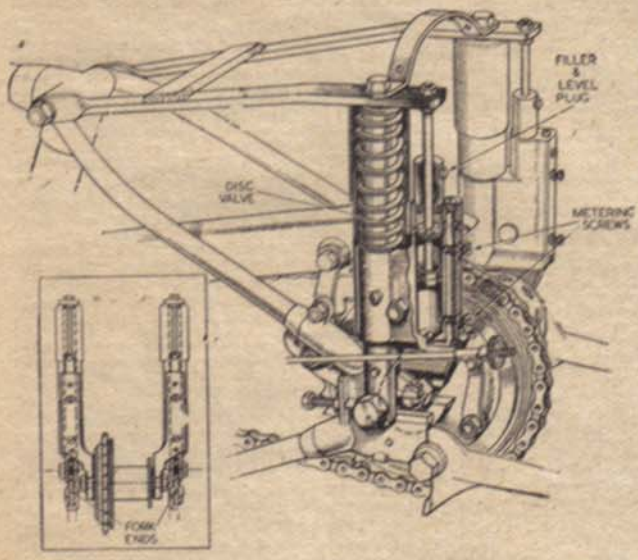
Rear-wheel Springing

Hydraulically Damped Spring Heel Conversion Set Designed for A.J.S. and Matchless Owners

SIMPLICITY of operation and ease of fitting are features of an hydraulically damped spring heel for post-war A.J.S. and Matchless machines designed and provisionally patented by Mr. Geoffrey Siddaway, proprietor of the Grantham Motor Cycle Depot, 5, Chapel Street, Grantham, who proposes to market the device forthwith. Attachment of the springing does not entail any alteration of the existing frame. In fact, it is claimed that the conversion can be carried out with the aid of a few spanners and a couple of extra links in the rear chain.

With the exception of the brake anchorage, the arrangement is identical on both sides of the machine; hence brief description of the device on one side only will, of course, suffice.



(Above) The wheel spindle is supported by aluminium castings which slide on stout steel bearing posts clamped to the frame. Inset diagram is a rear end elevation

Essence of the suspension is an aluminium casting, to which the wheel spindle is attached, sliding up and down a steel rod or bearing post which is anchored to the frame.

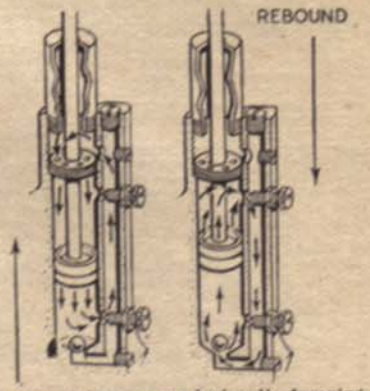
Simple Attachment

Of 1¼in diameter, the bearing post is slotted at the bottom to fit over the frame fork-end, to which latter it is clamped by a screw passing through the fork-end slot; the post is cross-drilled and one side is tapped to receive the clamping screw. At its top end, the post is vertically drilled and tapped to receive a screw which attaches it to a 1 × ⅜in steel stay; the latter is secured at its forward end to the frame bolt which attaches the seat stays to the main frame under the saddle.

Over the bearing post slides an aluminium casting which provides a bearing surface 4in high × 1¼in diameter. Above the casting is a three-rate compression spring which has characteristics similar to those of the springs in the Teledraulic front fork. The spring is enclosed by telescopic covers.

A rearward extension of the aluminium casting contains the hydraulic damping arrangement and carries one end of the rear-wheel spindle; the latter is located in a horizontal slot in the casting similar to a normal fork-end slot.

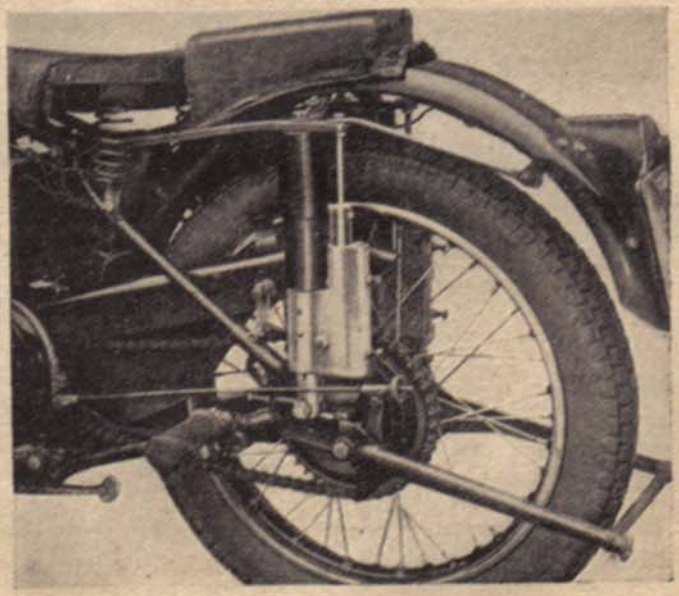
As the diagram shows, adjustable two-way damping is achieved very simply. Upon upward deflection of the rear wheel the cylinder moves upwards about the piston. The ball valve is closed, and the only escape for oil below the piston is past the lower metering screw; at the same time, oil is drawn from the reservoir through the holes of the disc valve into the space above the piston. On rebound, oil pressure above the piston closes the disc valve, so that the only escape for oil is past the upper metering screw, while oil is drawn past the ball valve into the space below the piston.



Action of the two-way hydraulic damping shown diagrammatically. Adjustment of the metering screws regulates the damping

Total movement of the springing is three inches. There is a virtual hydraulic cut-off, caused by the piston covering the metered holes, near the extremes of movement.

In a brief run "round-the-houses" carried out in drizzle on city roads, the A.J.S. handled well. The price of the Siddaway Spring Heel Conversion Set, as it is called, is £15.



(Right) General view of the spring heel conversion set on Mr. Siddaway's 350 c.c. A.J.S. Part of the top run of the frame fork-end was cut away in connection with an earlier experiment