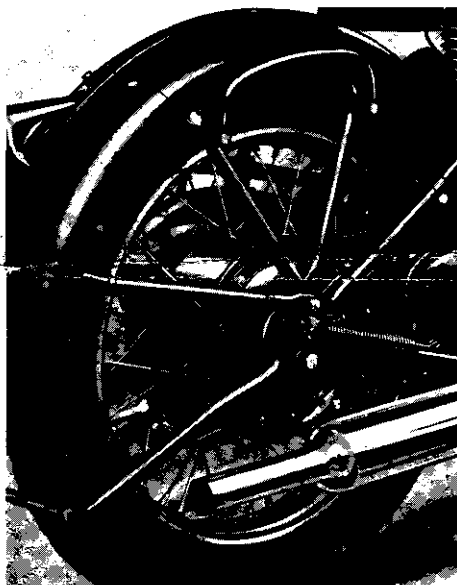




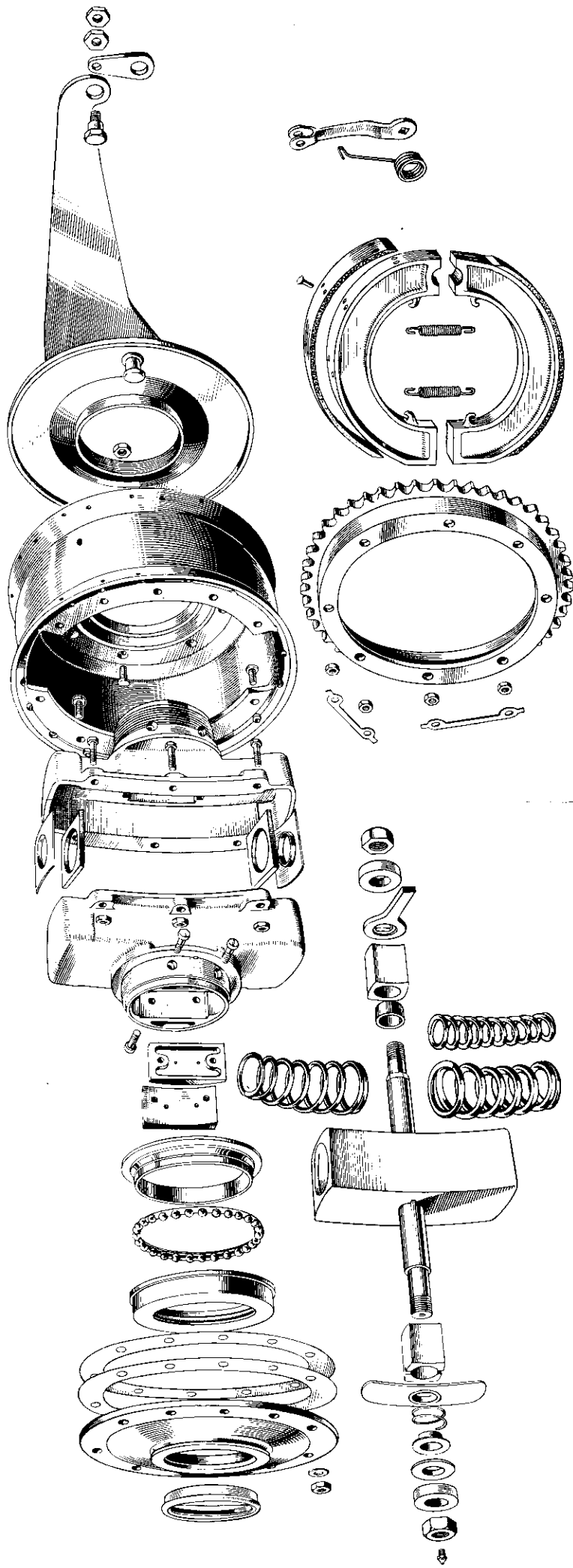
SERVICE BULLETIN No. 20

THE SPRING WHEEL

(Patent No. 524885)



MAINTENANCE. This wheel is designed to give a very great mileage before overhauling. Greasing should be carried out every 1,000 miles. Rubber gaiters, where fitted, require inspection at intervals, as any deterioration of these rubbers will allow the grease to seep through. Bearing wear is practically negligible, any excessive shake in the wheel can be rectified by removing one of the shim washers, (see page 2). When the wheel is again assembled ensure that the movement is just perceptible, as if the wheel is built up without this movement the bearing will rapidly fail. In no circumstances should the plunger box be dismantled without the use of the special tool described on page 4, or the fitter may be very badly hurt when the box is parted.



SPRING WHEEL REMOVAL.

- (1) Disconnect tailguard and place at side of machine. The tail-lamp wire need not be removed, as there is sufficient slack when the tail-guard is removed.
- (2) Remove spring link from rear chain. Engage a gear to avoid chain rolling off the gearbox sprocket.
- (3) Unscrew the brake-pedal adjuster.
- (4) Remove locknuts and extract bolt from anchor plate link.
- (5) Slacken off wheel nuts and withdraw wheel from frame.

REFITTING THE SPRING WHEEL.

Procedure is exactly the reverse of removal, but the fitter should ensure that the anchorage lever fits into the channel on the near side chain-stay lug.

DISMANTLING SPRING WHEEL.

- (1) Remove spindle to frame locator. To remove the dust excluder, withdraw the distance collars, then centre sleeve, spring and dust plate. To extract the dust cover from the hub, gently prise away. On early models a rubber gaiter is fitted; this can be removed in exactly the same manner as the dust cover mentioned above.
- (2) Place the wheel spindle in the vice, having the back plate uppermost, and remove the

ten nuts. The back plate can now be removed and the shims carefully eased off the studs.

- (3) Turn the wheel over and unscrew the brake anchor plate in an anti-clockwise direction. When unscrewing, either remove the brake lever spring or hold the lever in such a position as to prevent the brake shoes binding on the brake drum.
- (4) Remove the spring box assembly from the hub.

(5) To remove the outer race from the drive side, a suitable piece of hard wood should be employed. The race is removed by driving from the outside of the hub.

(6) The offside outer race which is situated in the back plate, should be removed by a special tool, or the plate heated sufficiently to allow the race to drop out. Great care must be taken if the latter operation is carried out, as excessive heat will destroy the hardening of the race.

- (7) To dismantle the spring box assembly, remove the six nuts and bolts and tap the cases about $\frac{3}{8}$ in. apart. Now place the assembly in the special jig (see back page), with the curvature of the box towards the jig and the long spindle on the left-hand side. Screw down the jig until the springs are sufficiently tensioned to remove the cases.
- (8) Unscrew the jig until all spring tension

has been removed and withdraw the springs from the shoe. Note that the bottom of the shoe has two springs fitted, one heavy and one light gauge, the upper part being fitted with one only of medium gauge.

ASSEMBLY OF SPRING WHEEL.

- (1) Place the shoe on the left and the convex side uppermost. Insert the heavy and light springs into the bottom hole with the curvature conforming to the shoe. Place the other spring into the top hole in a likewise manner. Now fit the rubber buffers and spring plates to the springs, plate curve conforming to the shoe, the plate with the smaller hole fitting over the secondary spring.

(2) Fit the assembly to the jig, the two springs being at the bottom. Screw down the jig until the springs have been compressed sufficiently to enable the spring box casing to be fitted. Fit the casing, and unscrew the jig to remove assembly.

- (4) Through the gap between the cases, fill with lubricant and tap the cases together with a hide hammer. Fit and tighten up the six nuts and bolts.
- (4) Replace the drive side outer race to the hub and ensure that it is fully home.

- (5) Fit the inner race to the spring box and grease before assembly. Note the balls and

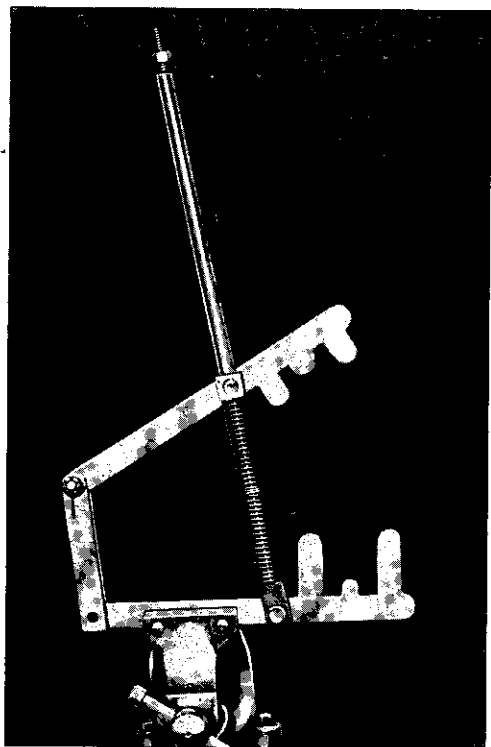
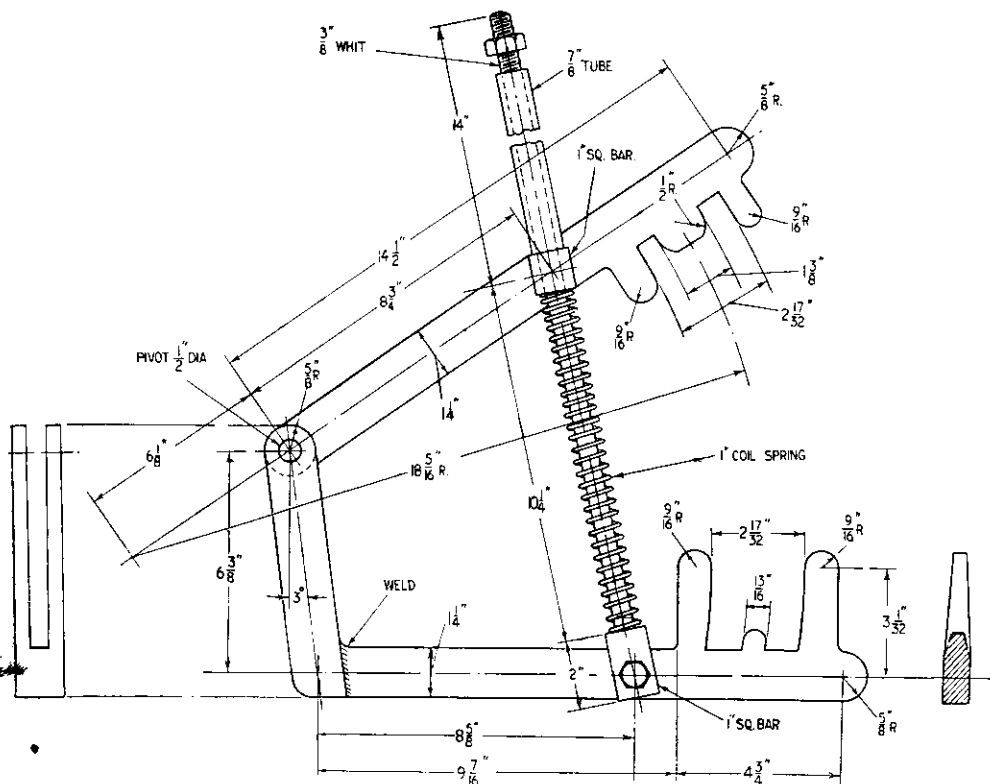
cage should be fitted to the outer race, balls first.

- (6) Insert the spring box into the hub.
- (7) Assemble the race to the off-side with balls facing towards the back plate.

(8) Fit the shims to the hub and assemble back plate. Screw up the nuts securing the back plate and test the rotation of the spring box for freedom during the tightening. Failure to do this after new parts have been fitted may result in indentation of the outer ball race or fracture of the hub parts. Any tightness can be obviated by fitting extra shims, allowing the spring box to rotate and at the same time showing no lateral movement.

- (9) Place the wheel in the vice, or a suitable jig, with the drive side uppermost and screw brake anchor plate. Turn back the anchor plate after fully tightening until the wheel turns freely. The brake cam lever bush should then be lined up with the wheel spindle for assembly purposes.

- (10) Fit the dust excluder and then locate the dust plate, ensuring the spigot is positioned. Place the spring over spindle and assemble centre sleeve. Fit the spindle to frame locator on the near side, and bevel washer to the off-side, bevel facing inwards. Where the rubber gaiter is fitted it is advisable to centralise the spindle. Here a rig will have to be made to overcome the spring tension.



SPRING WHEEL DISMANTLING JIG

This jig has been designed to make the complete dismantling of the Spring Wheel easy. Its method of operation is described earlier in this folder. The Jig can be constructed quite simply and all details and measurements are given on the working drawing above.

Any attempt to dismantle the Spring Box without this jig is liable to result in injury to the operator, as the springs are fitted under compression.

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