MAINTAINING THE MOTOM

General servicing tips on this new Italian 4-stroke moped

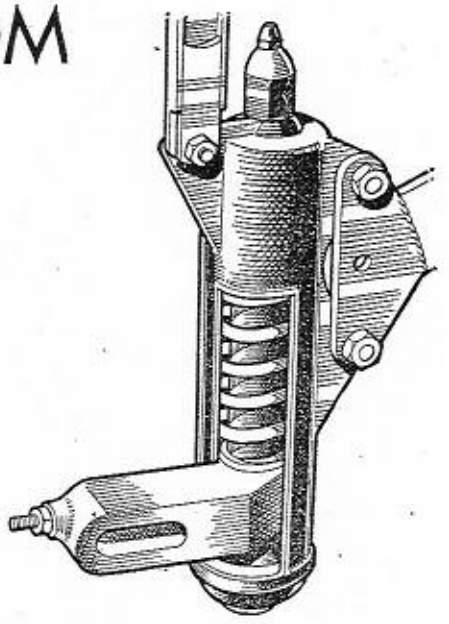
ALTHOUGH it has a 4-stroke engine, the Motom Super Sport requires much the same day-to-day maintenance as any other moped. The design of the 4-stroke engine is, of course, quite unlike that of the 2-stroke engine, but basic servicing such as decarbonizing and valve reseating is on the same lines.

The bicycle parts of the Super Sport are uncomplicated and require no more than regular lubrication and inspection. Both wheels have knock-out spindles and can be removed in a matter of seconds. A point to note is that both the domed lock nuts should be removed before the spindle is tapped out, or the light alloy domes will collapse.

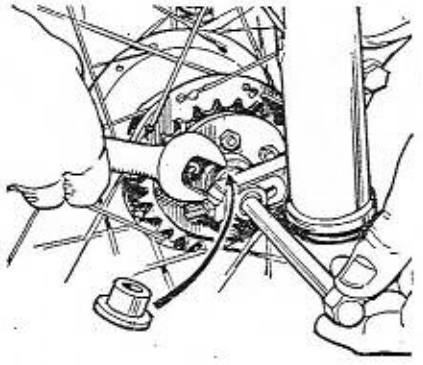
As the chain is in a fairly exposed position, it tends to collect dirt quickly, and needs frequent cleaning to prolong its life and prevent splashing. When really dirty, soak overnight in paraffin, and steep in warmed grease, wiping off any surplus. Protection against dirt entering the carburetter is provided by a filter fitted to the fuel tap, and this should be withdrawn occasionally to remove any accumulated sludge. Wash the tank out with petrol, or with paraffin followed by petrol, and check the fibre washer for signs of wear; renew if necessary.

Unlike 2-stroke machines, the Motom does not use a petroil mixture, and it is necessary to keep the oil sump topped up to the correct level. The oil filler hole is located at the front of the engine, adjacent to the point where the valve oil feed pipe emerges from the crankcase. The filler cap has a dip stick attached with the correct oil level indicated on it. Top up with engine oil grade S.A.E. 20, and use the same brand of oil which is already in the sump if possible.

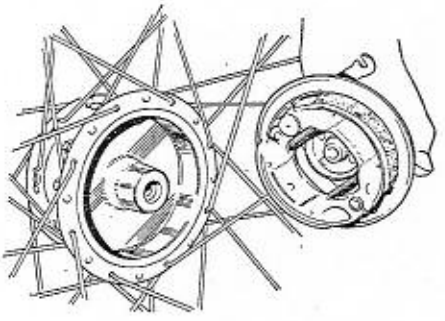
A final but most important point is to ensure that the correct pressures are maintained in the tyres. This is essential for road holding and comfort, and it also affects the machine's performance. The recommended pressures are: front 21.4 lbs. per sq. in., rear 35.6 lbs. sq. in. (these are for a rider of average weight; a heavier rider requires greater pressure in both tyres).



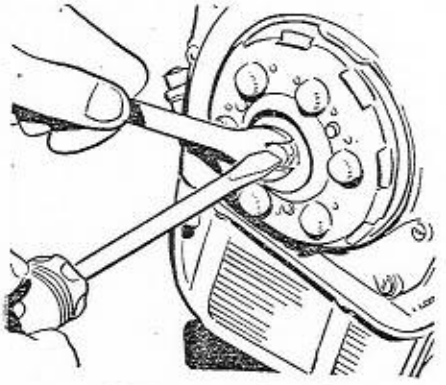
The rear plunger unit. The spindle fits into the aperture in the pivoted horizontal arm. The chain adjuster is seen at the end of this arm, where it is permanently fitted. At the top of the unit is located the grease nipple.



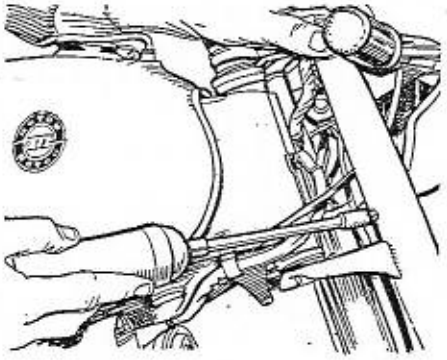
Removing the rear wheel: slacken off the chain adjusters and disconnect the chain; disconnect the brake cable. Remove the two spindle lock nuts and tap the spindle out, using a piece of wood, if necessary. The wheel will drop out easily. There is a single spacer on the chain side which should be put aside carefully.



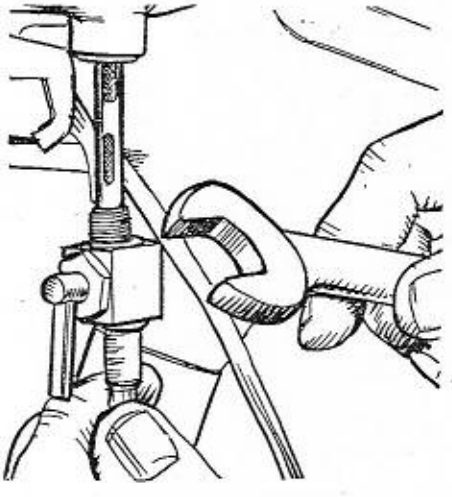
Wash out the drums with petrol, and apply high melting point grease sparingly to the bearings and the brake operating cam. On no account — — should grease touch the linings.



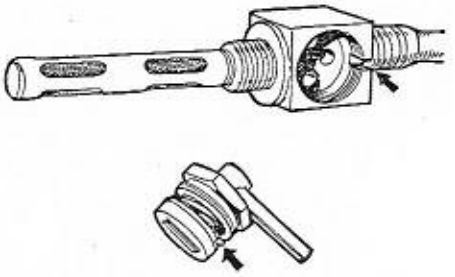
Any play in the clutch can be eliminated by means of the adjusting screw in the clutch centre. Loosen the lock nut, and turn the adjusting screw in or out as necessary.



Greasing nipples are situated on the front forks and on the rear suspension units, and these should be used regularly to ensure efficient suspension. A pressure gun filled with the appropriate grease is necessary for this; avoid over-greasing.



Empty out all but a small amount of petrol from the tank prior to removing the tap and filter; the remaining fuel will serve to swill out the sludge in the tank, requiring only a small amount of clean petrol to complete the job. When unscrewing the tap, the lever should point downwards.



The tap is dismantled by unscrewing the hexagonal nut behind the lever. Sludge may accumulate behind the spring, and this should be cleaned accordingly. When the valve is replaced, the two points arrowed should coincide.

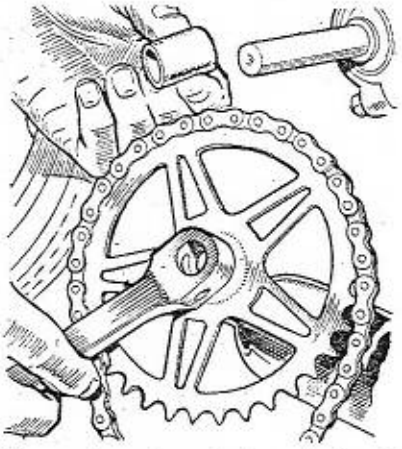
REMOVING THE MOTOM ENGINE

The first step to a major overhaul is the removal of the engine unit in its entirety. Here the sequence is described in our easy-to-follow pictorial series

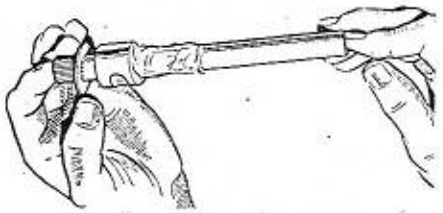
A MAJOR overhaul is facilitated greatly by the removal of the engine in the case of almost every moped; freedom of movement, and accessibility are essential if servicing is to be thorough and efficient. In the case of the Motom four-stroke moped (road tested in CYCLING AND MOPEDS, February 29, 1961), it is a particularly straightforward undertaking, although may not seem to be at first glance.

Be sure before attempting to dismantle any part of the machine that the necessary tools are handy, and that plenty of bench space is available. Small tins and boxes are ideal for storing the various parts, especially nuts and bolts which otherwise may be lost easily.

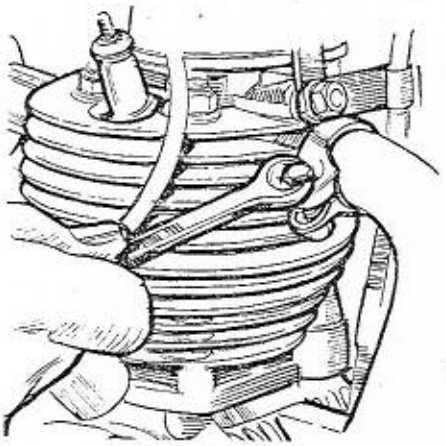
The first move is to remove the off-side engine cover which is held in place by three nuts and washers. Disconnect the chain by removing the spring link, and if necessary put the chain to soak in a bath of paraffin. Leave so overnight, and then dry thoroughly before immersing in a tin of heated grease, allowing complete penetration. When replacing, ensure that the closed end of the spring clip faces the direction in which the chain travels.



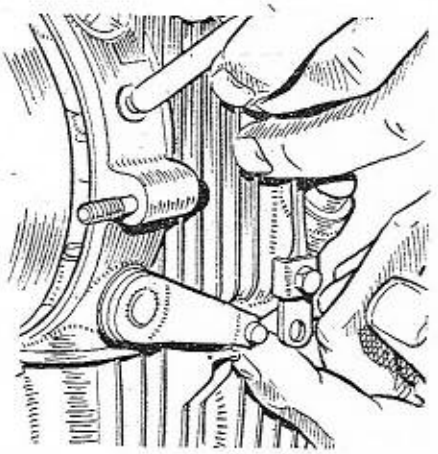
1 Remove the cotter pins from both pedal cranks and slide the chainwheel off the spindle, slipping the pedalling chain from the sprocket at the same time.



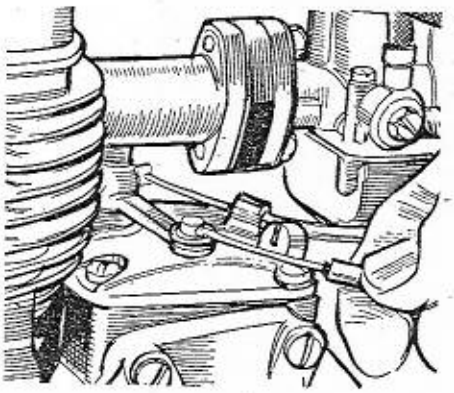
2 The spindle can be withdrawn. Note that the thin washer goes on the near side, and the wide spacer washer on the chainwheel side. Coat well with medium grease before replacing.



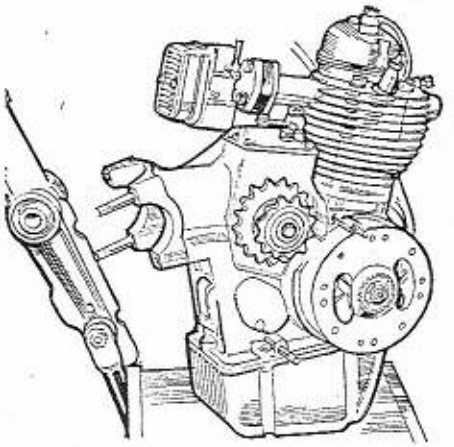
3 Next disconnect the exhaust pipe at the cylinder by loosening the clamp. The silencer is also secured by a bracket at the bottom of the crankcase.



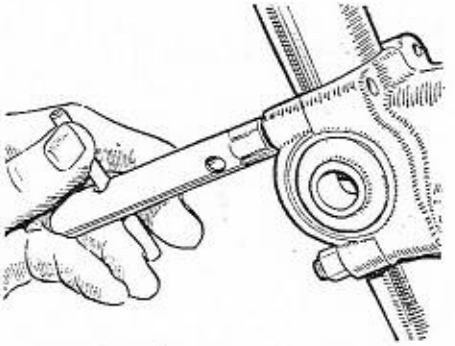
4 Disconnect the clutch cable by lifting the clutch operating lever and slipping the cable end from the nipple here. The length of the clutch cable can be adjusted at this point.



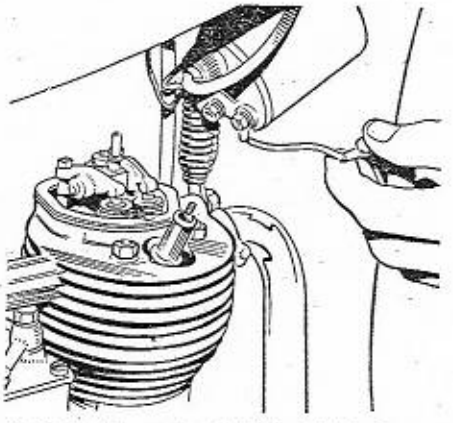
5 Before the gear-change cables can be disconnected, it is necessary to loosen the adjusters at the handlebar twist-grip. This done, slip the two cable nipples from their respective arms on the gear box cover.



6 Remove the throttle cable, throttle slide, etc., from the carburetter and disconnect the earthing wire which is anchored by the offside valve cover screw. Finally disconnect the upper spring suspension which joins the cylinder in front of the valve cover (the valve cover has been removed in our drawing.



7 Supporting the engine with one hand under the crankcase, loosen the engine mounting brackets. These are secured by four bolts, which should be loosened in a uniform manner to relieve the stress evenly.



8 Lower the engine carefully on to a box or other support, taking care to avoid strain on the electric cables which lead from the engine up to the headlamp. There is no real need to disconnect these cables, but if necessary, this can be done at the joints. When replacing the engine, the same procedure, in reverse, should be followed. A point to note is that the spring tensioner should be connected before the engine mounting brackets are secured.

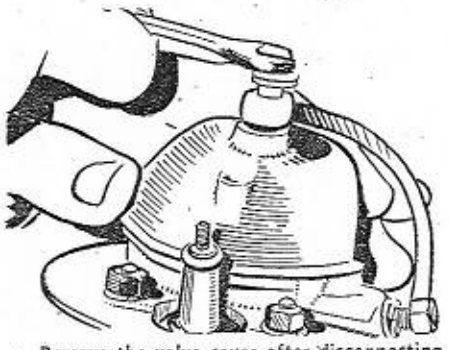
VALVE CHECK FOR THE MOTOM

A vital overhaul for this Italian 4-stroke moped described in our easy-to-follow series

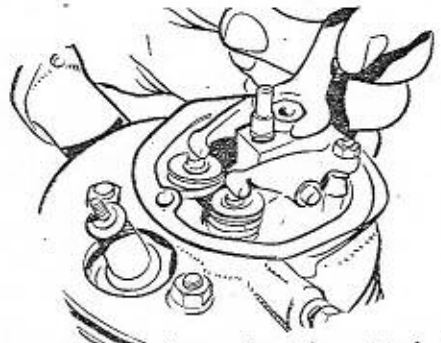
IN an engine as small as that of the Motom, it is essential that every component should work at peak efficiency, or output will quickly be affected. A small margin of error which might be permissible in a larger engine cannot be tolerated. Fortunately, a valve overhaul is necessary no more frequently than approximately every 5,000 miles. Tappet adjustment may be required more often—this is usually indicated by excessive chatter in the rocker case.

The psychological factor is important in maintenance. If things go smoothly, the work is more likely to be done well. This calls for pre-planning. Before commencing the dismantling, make sure that all the necessary parts are at hand. A clean workbench or similar space should be used, preferably covered with clean brown paper or newspaper. Tools should be laid out neatly and kept so, to prevent annoying delays. The tool kit which is supplied with the Motom is comprehensive and needs no additions. A valve extractor is required, and if this cannot be purchased, it should be possible to have one made locally. It should be G-shaped and have approximately these dimensions: width 3in., distance between the jaws 3in., length of screw 2¼in. The price should be no more than 7s. 6d.

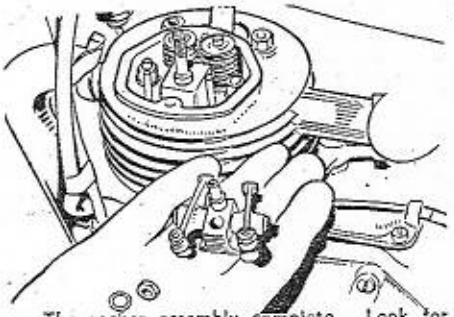
Have a pint or two of clean petrol handy, and a small stiff brush. It is a good idea to wash down the outside of the rocker case *before* starting work. Wash each component in petrol and apply a thin film of light lubricating oil before replacing, particularly valve stems. The valve lubrication system should also be inspected for blockages and cleaned.



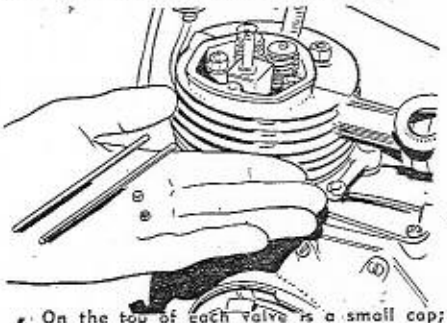
1 Remove the valve cover after disconnecting the oil feed pipe at both ends to avoid straining. Washers, screws and oil seal should be put aside carefully.



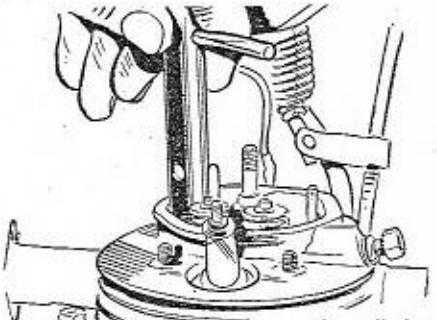
2 Unscrew the hexagonal securing nut to free the rocker assembly. Take care not to misplace the small brass sleeve on the oil feed stub.



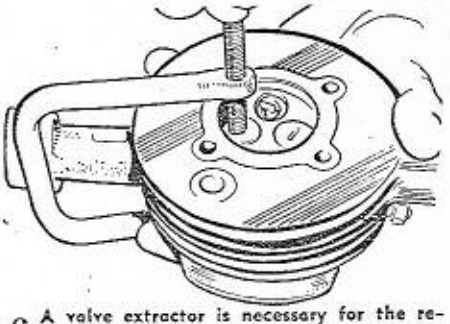
3 The rocker assembly complete. Look for signs of wear in the tappets and the rocker caps. Tappets can be replaced cheaply, but damaged rocker caps mean new rockers.



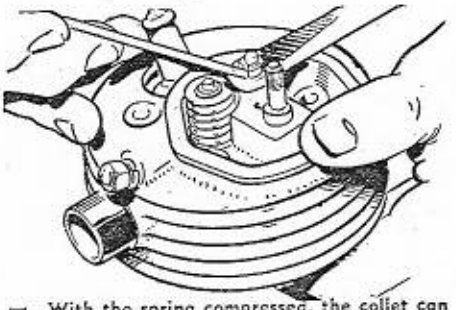
4 On the top of each valve is a small cap; place these, together with the push rods, in a box or tin, marking each either left or right, to ensure that they are replaced in the correct order.



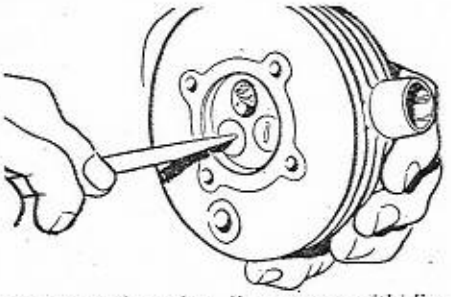
5 It is now possible to remove the cylinder head. Use a tubular spanner, loosening the nuts gradually in diagonal order to relieve the stress uniformly. When the head is off, check the gasket on the lip of the barrel for signs of gas leak. A new gasket costs a matter of pence. Remove also the rubber oil seals from the push rod guides.



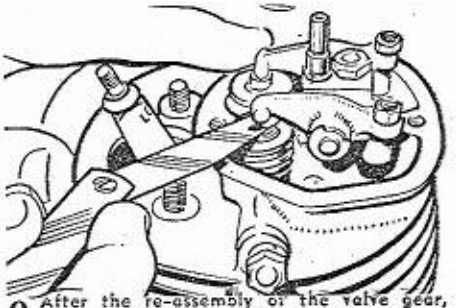
6 A valve extractor is necessary for the removal of the valves and springs. Place the open end of the extractor over the valve spring and the "driving" end on the valve crown. Avoid scratching the crown.



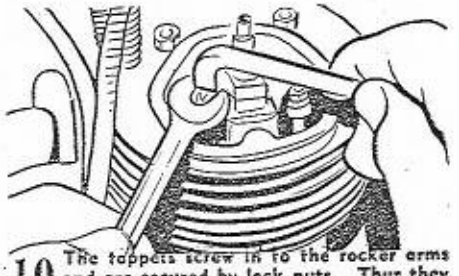
7 With the spring compressed, the collet can be pushed down the valve stem to expose the small circlip which fits into a groove near the upper end of the stem. Remove this circlip. When opened up slightly, the collet will slide off the stem. Release the spring and remove the valve.



8 Reseat the valves if necessary with fine grading paste, applying a steady rotary movement with a screwdriver fitted into the slots in the valve crowns. When both valve face and seat are shiny and unmarked, wash thoroughly with petrol to remove all traces of paste. Remove the carbon deposits from the cylinder head and piston with a soft metal implement in the normal way. The cleaner these surfaces, the better the engine's efficiency.



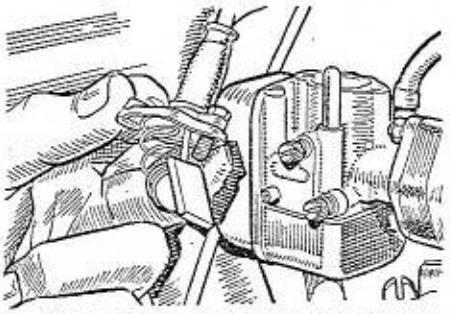
9 After the re-assembly of the valve gear, warm up the engine before checking the tappet clearance with a feeler gauge. The clearance should be 5 thou.



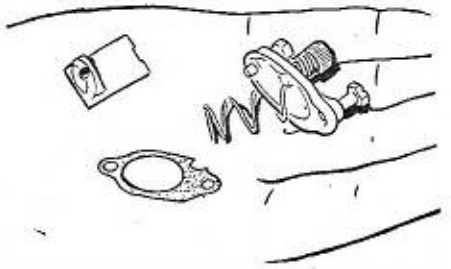
10 The tappets screw in to the rocker arms and are secured by lock nuts. Thus they can be screwed in or out to reduce or increase clearance. When adjustment is complete, tighten the lock nut securely.

Carburetter Spring Clean

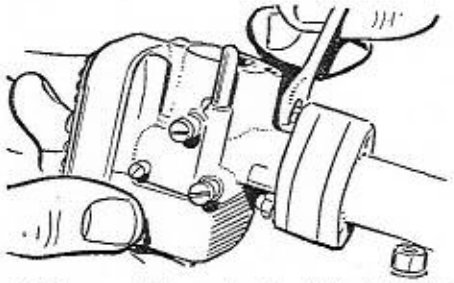
The carburetter is the nerve centre of a moped engine, its efficiency ensures smooth and easy running. Here the Dell' Orto carburetter, fitted to a Motom model, is dismantled in our easy-to-follow maintenance series



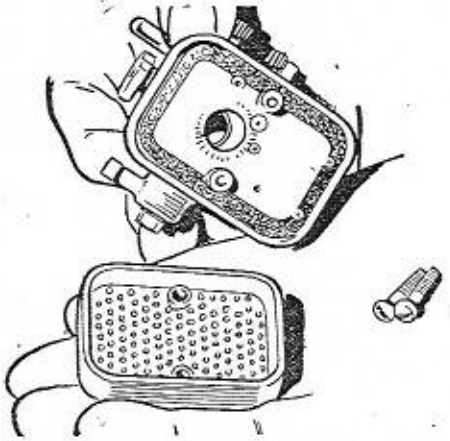
1 Before starting to dismantle the carburetter wash down the complete unit with petrol. Then remove the throttle slide and disconnect from the cable end. Disengage the throttle cable by pushing the nipple down and sideways.



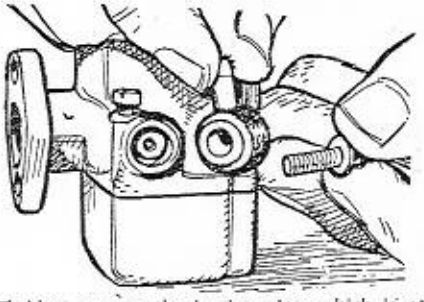
2 The top of the carburetter comprises: throttle slide, spring, and shaped fibre washer.



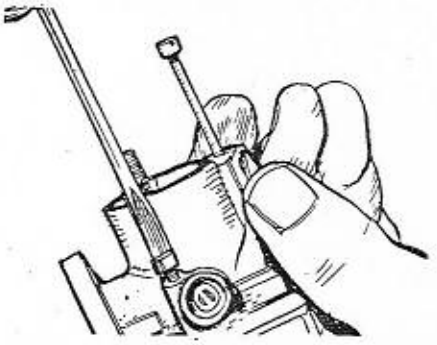
3 Disconnect the carburetter body from the flange fitting, and replace the securing nuts and spring washers on the flange to avoid losing them.



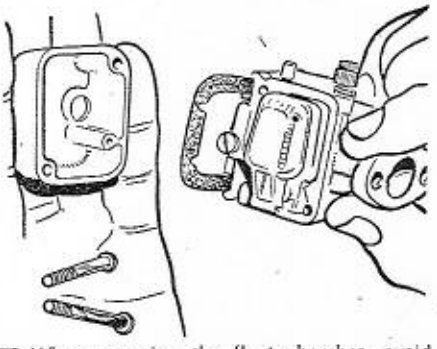
4 Remove the air filter (two screws) and soak it in petrol. Carefully remove the cork seal from the carburetter body.



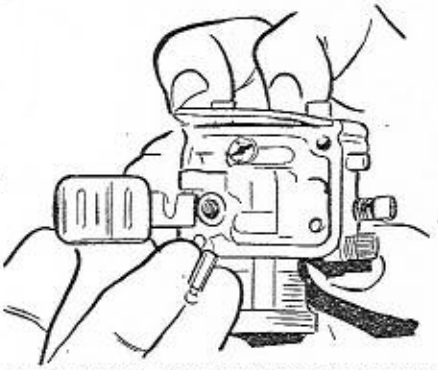
5 Next remove the banjo union, which is at the point where the fuel enters the float chamber. Soak this also.



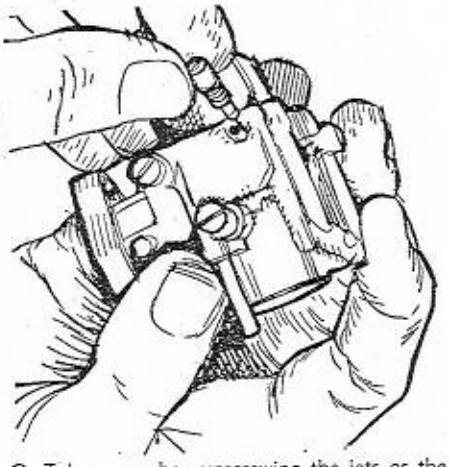
6 The float chamber is slung neatly below the carburetter body itself, and is removed by unscrewing these two long screws.



7 When removing the float chamber, avoid damaging the paper washer beneath. Clean out the chamber with petrol.

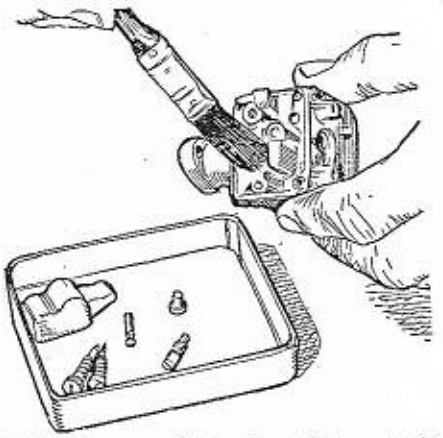


8 The plastic float is hinged on an open-ended spigot and will slide off, disengaging the float needle at the same time. The needle is triangular and is grooved at the top to fit into the float.



9 Take care when unscrewing the jets as the soft brass will damage easily. Obstructions in the jets should be cleared with bristle rather than wire, which may enlarge the apertures.

10 The mixture control screw and the slow-running adjustment screw. On replacing remember that the shorter screw is for slow running adjustment, and fits in the higher of the two holes.



11 When completely dismantled, soak the carburetter unit and the components in clean petrol and clean with a stiff bristle brush.

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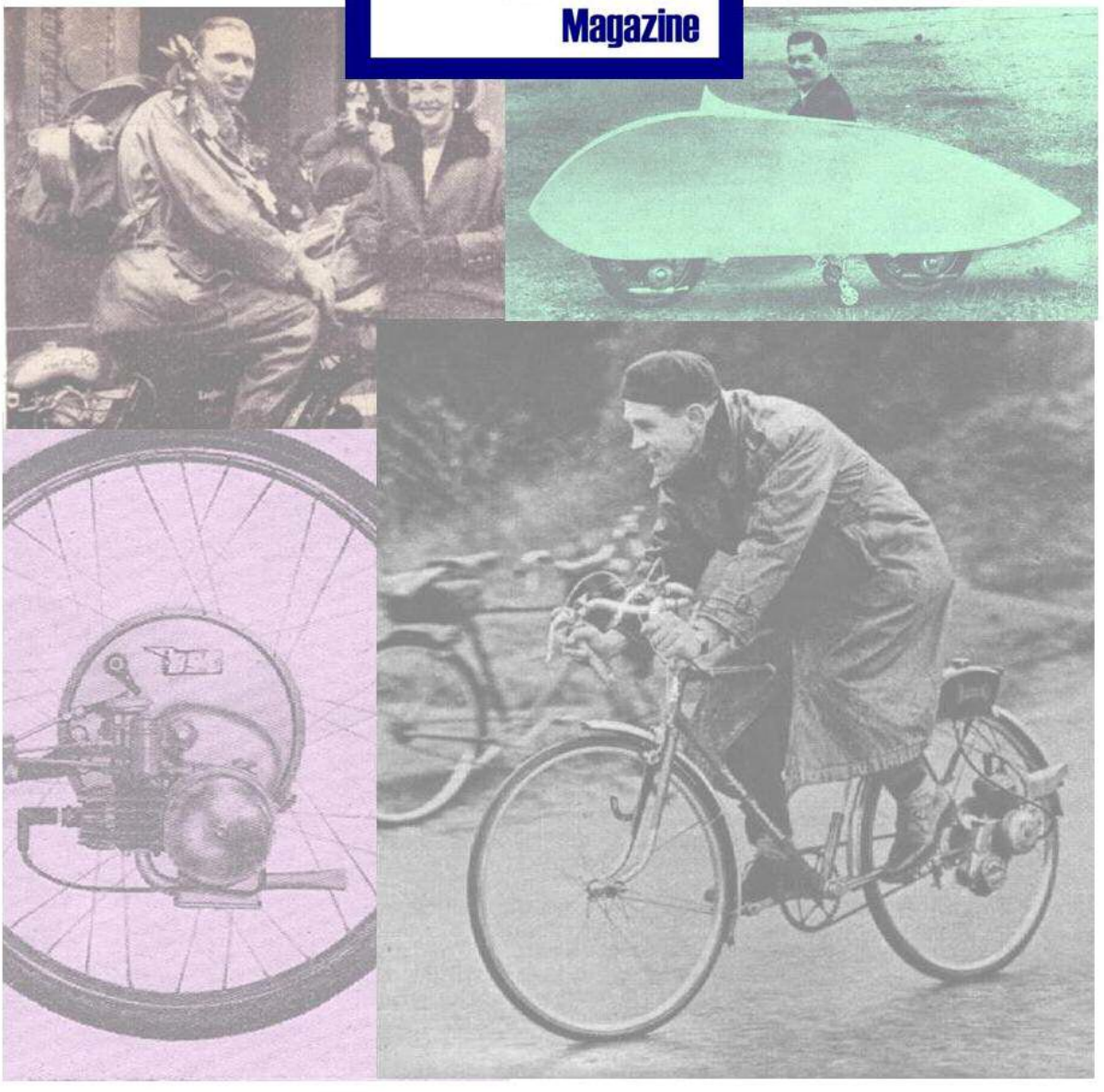

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