

**WATCH ROY OLIVER OVERHAUL THIS A.M.C.**

# GEARBOX

**T**HIS gearbox is known as the AMC heavyweight. It is fitted to all Matchless and AJS 350 and 500 singles (except the new lightweights) and twins built after September 1956. The internals are identical to the Norton gearbox, though the outer case is slightly different.

Stripping the box is not a difficult job, provided you do it in a methodical manner. Drain the oil, disconnect the cable, and remove the kickstarter. Remember that the kickstart lever bolt must be pulled right out, not just slackened.

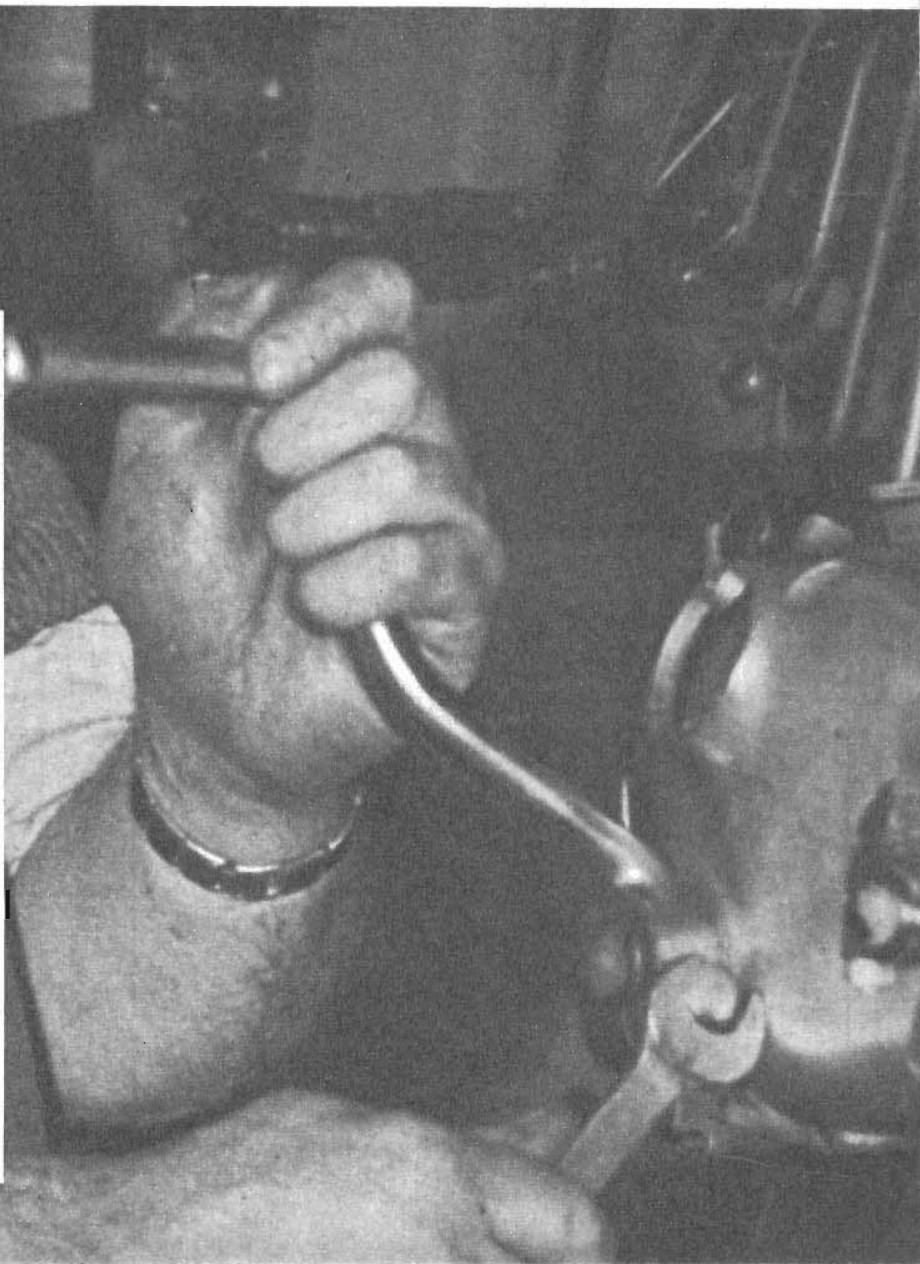
Before removing the outer cover pencil an arrow on the inner case directly opposite where the cable emerges. This will help during reassembly.

There should be no need to disturb the selector camplate. Worn bearings can be removed by heating the case, whereupon the bearings should drop straight out. On reassembling the drive sprocket note that the lock washer can be placed in one of two positions. It doesn't matter which so long as the nut is tight and the washer screw fits into one of the holes.


If the oil seal has to be removed, never use it again, but fit a new one.

Always fit new gaskets, and check that the box operates properly before refitting to the machine. Don't forget the oil—and finally set the kickstart lever on its splines about 20 degrees out of vertical.


*Now turn over and see how to do it.*



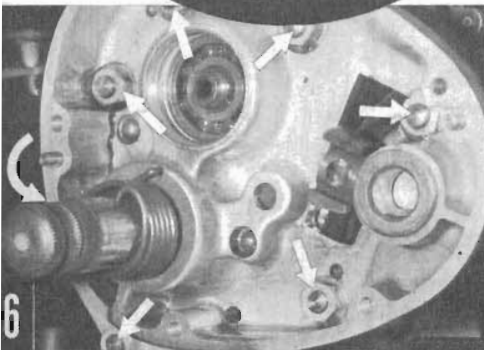
# STARTING THE STRIPDOWN



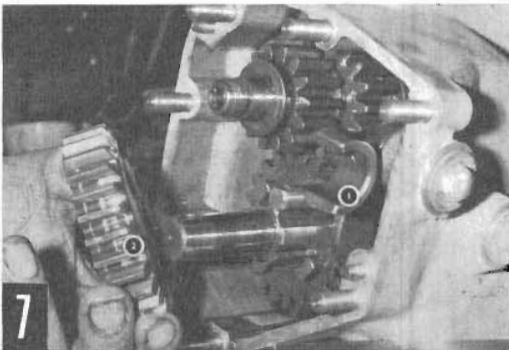
2  
After draining the oil and placing in vice, unscrew the gear indicator nut and remove. Leave gearchange lever in place but remove the kickstart lever



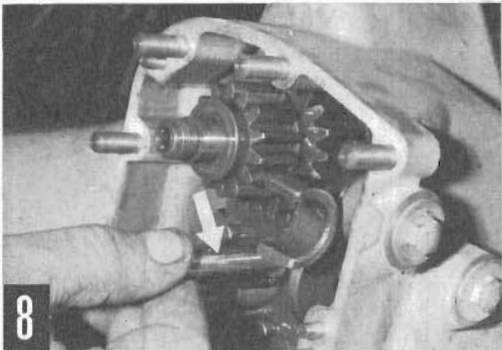
Before pulling out cover off pencil an arrow on inner case in line with cable outlet (see pic 21). Remove the outer cover (5 screws) and catch oil



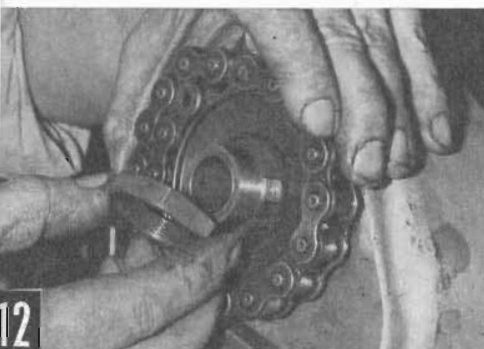
6  
The inner cover can now be taken off after undoing seven nuts and washers (all arrowed, one hidden behind kickstart axle). Axle comes off with case




7  
With inner cover off slide roller out of quadrant assembly (1). It may fall out anyway. Pull first layshaft gear off layshaft to give working room (2)



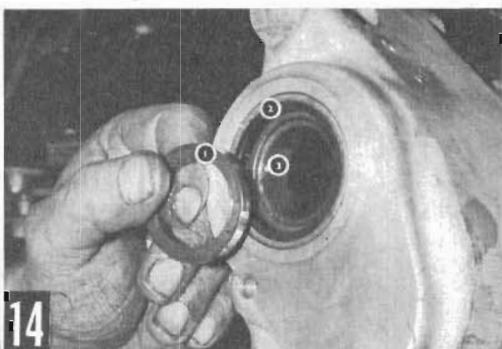
8  
The internals of the box are now held together by selector shaft (arrowed). This shaft has two flats on the end. Unscrew with spanner and pull it out.



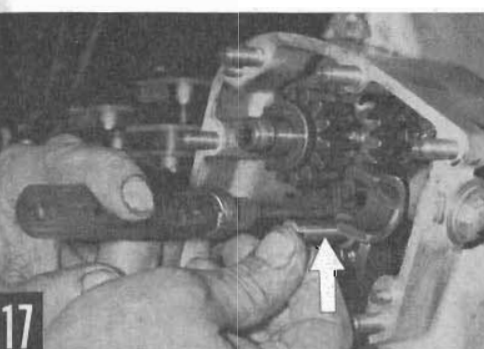
12  
The sprocket is now held in place by the nut. This should be very tight. Lock the sprocket again with a chain. This nut has a LEFT HAND THREAD




13  
With the nut removed slide off the sprocket. There is nothing holding the main driving gear in place, which can be pulled out from inside the box




14  
Remove distance piece (1) and lever out oil seal (2) if necessary. The bearing (3) can be removed by heating the case. Never use old seal twice



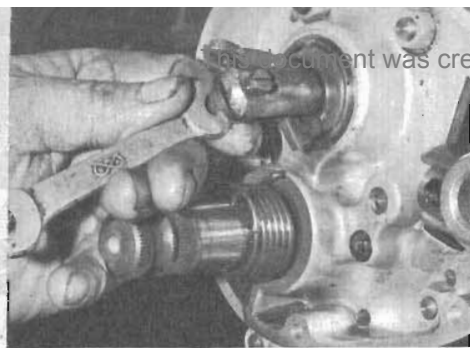
17  
Thread the selector shaft (arrowed) through the two forks and screw tight into case. In case of difficulty the forks can be lined up with screwdriver



18  
Examine the kickstart axle assembly for wear. Pull out the pin and look for wear on the pawl (1), or plunger (2). Replace a weak plunger spring



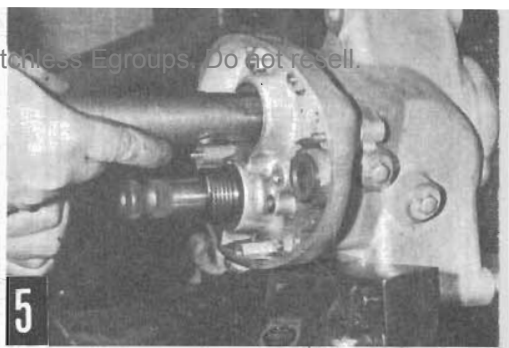
19  
Before replacing inner cover slip the roller back into its housing—it is easy to overlook this. Fit new gasket and then screw cover back on to case



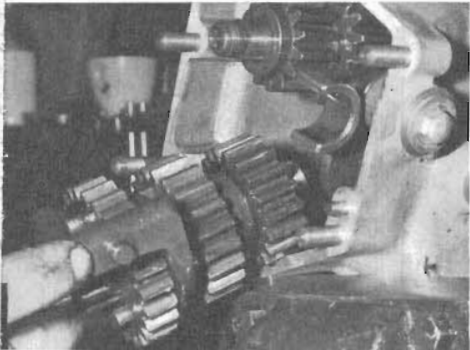
4 Removing the clutch operating lever. Undo locknut and screw then pull the roller out followed by the operating lever. Examine these parts for wear



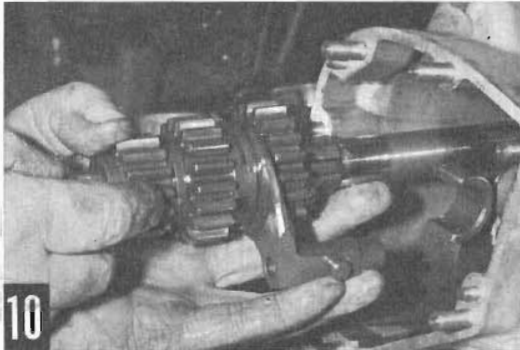
4 Now for the clutch operating body (1) You can make a special tool to undo the lock-ring (2), or just knock it undone with a hammer and a soft drift



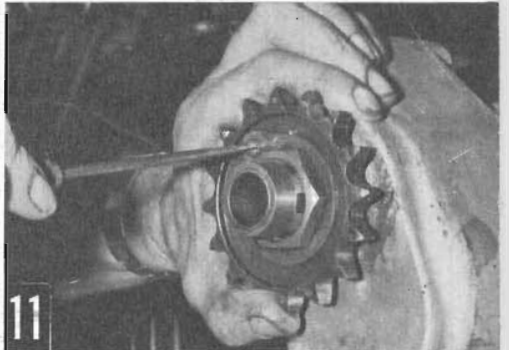
5 The mainshaft nut is likely to be a tight one, and you will have to lock the mainshaft with a chain wrapped round the sprocket. Use box spanner



10 Now pull the layshaft out of the case complete with its gears and selector fork undisturbed. If stiff wiggle it gently. Lay it carefully to one side

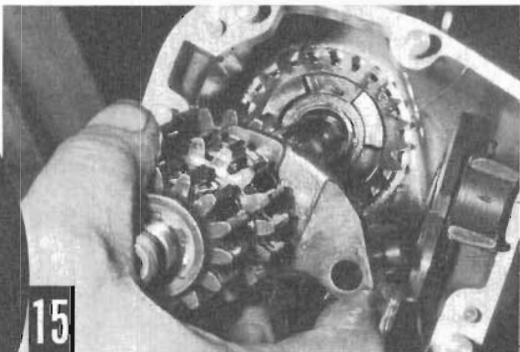


10 Do the same with the mainshaft and its gears, etc. In any case note very carefully the position of the various gears should they have to be removed

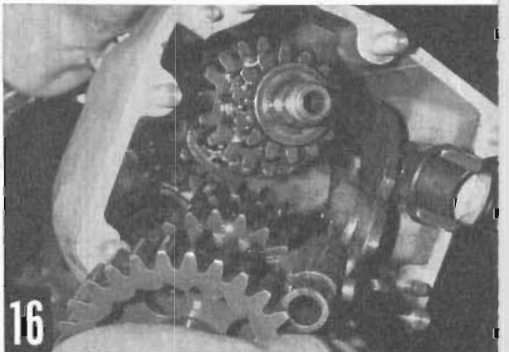


11 Round to the other side of the box and the gearbox sprocket. The lock-washer is held in place by a small screw. Undo this and remove washer

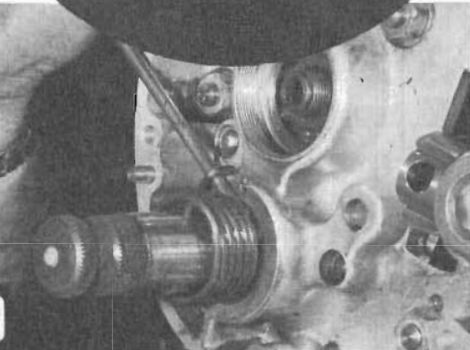
# PUTTING GEARBOX TOGETHER



15 Reassembling main gear and sprocket is straightforward. Slide mainshaft complete with gears and selector fork in place, locating peg in cam groove



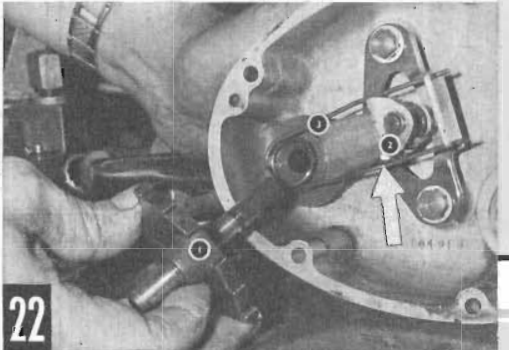
16 Repeat the process with the layshaft assembly. The peg in this case goes into the other groove on the camplate. Never use force when replacing these



20 If the kickstart spring has broken discard the damaged parts and fit a new one by winding it into position with a screwdriver to locate in hole



21 Do up mainshaft nut, replace clutch operating body and screw lock-ring in finger tight. Line up body with pencil mark on case and tighten ring



22 Pull out the ratchet assembly (1) and examine gearchange pawl (2) and the spring (3) for wear. When replacing fit bent leg (arrowed) at the bottom.