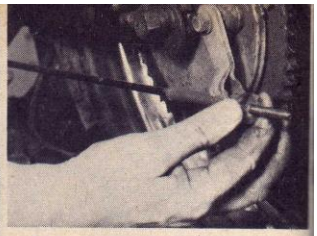
SWINGING ARM STRIP—No. 3

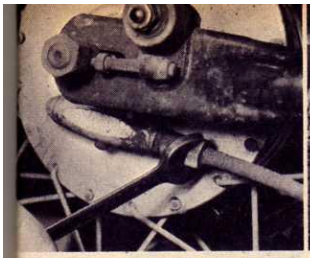
GIVE YOUR LIGHTWEIGHT AJS HAIRLINE HANDLING WITH KEN PARRY'S GUIDE FOR A

SPINDLE STRIP

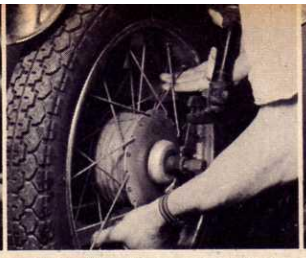


If the engine/gearbox is in position, the chain must be taken off by undoing split link. Next item is the brake rod, which must be detached to allow wheel removal

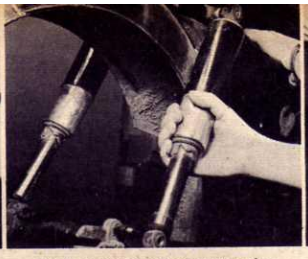
With the cotter pin removed, the nearside fork arm will slide off spindle. The felt washer shown acts as a grease seal around the spindle. Fit with new washer



The speedometer drive is taken from the rear wheel and the cable has to be undone as shown. Note position of drive-box so that it is replaced the same on reassembly

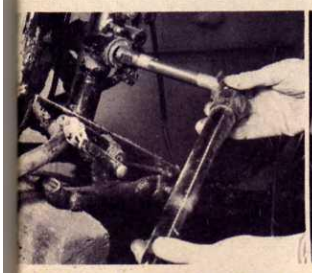


With all auxiliaries detached, all that remains is to loosen the wheel spindle nuts and slide the rear wheel from forks. Top chain-guard will now also lift away



By disconnecting both suspension legs on the forks, it is simply a matter of pivoting the forks downwards to expose cotter pin, which holds the two arms together

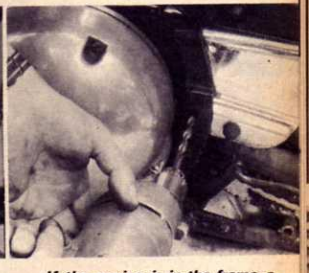
With the bike frame turned on its side to expose the cotter pin, the locknut is removed and then a hammer and drift employed to knock out the pin



The other half of fork slides out of bushes complete with spindle. If spindle is worn, complete fork unit is required. See that washer is set as seal on bush this side

The bronze swinging arm bushes are easily drifted from the frame from inside of the housing. Note grease nipple. If lubricated regularly, very little wear takes place

A new bush is gently drifted into frame. It should not need reaming. Reassemble the forks in reverse order. Shims are available to take up any sideways fork movement



If the engine is in the frame, a hole can be drilled through sprocket guard plate to allow drift through to knock out bush. The rear wheel must be removed

"While you're doing the motor, could you have a look at the steering for me, only the handling doesn't seem too good!" These were the instructions given when the Ajay 250 was handed into Deeprose Bros. for a bottom end overhaul.

We arrived after the motor had been lifted out of the frame and work was just beginning on the swinging arm to "sort out" the road holding. It wasn't surprising that the owner had been having steering problems, there was almost an eighth-inch of sideplay on the swinging arm pivot!

Wear had taken place on the bronze bushes and it was obvious that the complete unit would have to be stripped for renewal of the worn parts. Luckily, the engine had been removed making the task more easy. However, it is possible to renew the bushes without removing the engine. Ken Perry showed us one of his workshop wrinkles for making the job easier.

After removing the chainguard, chain and rear wheel, etc., all that stops the offside bush from being drifted from its housing, without first dismantling the primary drive, is a small sprocket guard, situated behind the primary chaincase.

Therefore, if a quarter-inch hole is drilled through the thin guard, a drift can be passed through to tap out the worn offside bush. When fitting the new bushes, the offside one is gently drifted into place, while the nearside unit, behind the chaincase, is pulled into its seating by using a nut and bolt with two steel crosspieces as a puller.

Providing care is taken in fitting new bushes, they will not need reaming before refitting the swinging arm unit. This unit, as can be seen, has "split" forks which are held together by a cotter pin.

On reassembly, with the cotter pin set loosely in place, check the swinging arm spindle for side play. If any slackness is apparent, shims are available to take up the play. The forks should move freely up and down, but show no obvious sideways movement.

Providing shimming adjustments have been correctly made, reassembly begins with the cotter pin being hammered firmly home and secured with washer and nut.

When working with the engine/gearbox in the frame, with the sprocket guard covering the nearside swinging arm bush, all removal of s/a forks and reassembly of the unit will have to take place from the offside of the machine. For example: when the cotter pin is removed during dismantling, the offside fork and spindle will have to be pulled out to allow the nearside fork to drop down from inside the small sprocket guard.

In order to expose the cotter pin on the nearside of the Ajay, it is best if the bike is laid on its side. Then, with the suspension legs disconnected from the forks, the forks can be pivoted down fully to allow the cotter pin to be reached with a drift and heavy hammer. In this case, one hefty belt is worth ten light taps with the hammer!

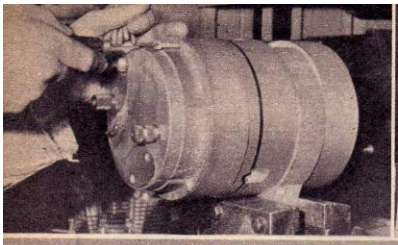
Although in eight cases out of ten it is the bronze bushes on the swinging arm unit which wear, sometimes it is the spindle itself which becomes grooved. Unfortunately, it is then a matter of replacing the entire forks as the spindle is welded to the offside arm.

However, the most common cause of wear in these units is lack of lubrication and as a grease nipple is set just above the fork pivot point, there is really no excuse for not maintaining the unit properly. A couple of shots with a grease gun every 1,000 miles should stop wear at this critical point, where good roadholding can be maintained or lost!

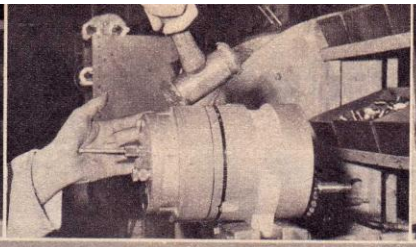
When the bushes are renewed, it is important to fit a new cotter pin. The old one will probably be damaged when it is removed and if you try to fit it back, it is unlikely that the threads will be in good enough condition to hold the nut correctly.

With all the bikes in this series, wear in the swinging arm spindle can be kept to a minimum by regular greasing. The area around the pivot should always be kept free from the usual mess of grease and dirt.

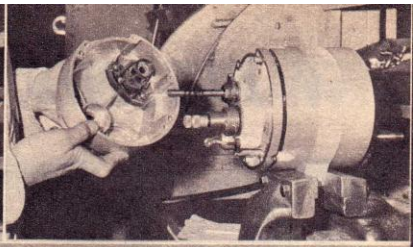
Doing this will enable you to check if everything is all right and it will remind you to give the pivot nipple that essential shot of grease. Even if the nipple is difficult to reach, don't be put off—you could save yourself a lot of cash.



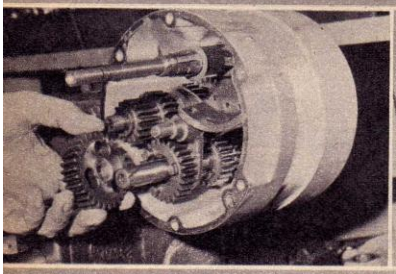
1 With the kick-start and gearchange levers and indicator removed, unscrew the six cheesehead screws. Leave the small cover plate intact



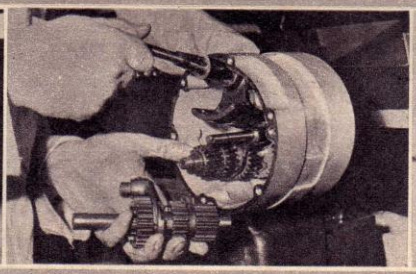
2 The best method of removing outer cover is to insert a screw into the indicator hole, apply pressure with palm of hand and use mallet as shown



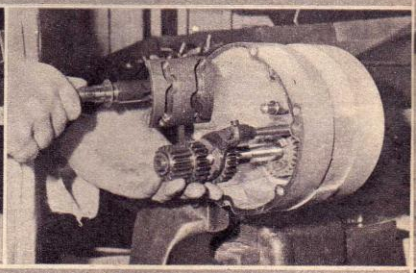
3 The gearchange selector mechanism can be seen set in the outer cover. For renewal of the kick-start spring only the cover need be taken off



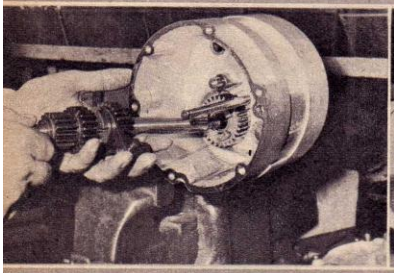
7 The job of removing the main gear cluster can now begin. Start by withdrawing the sliding bottom gear first, noting the positions



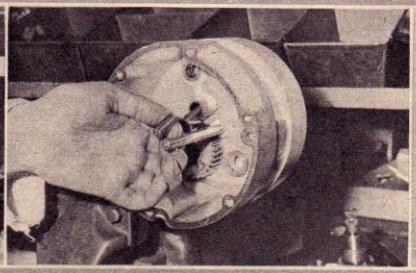
8 Next comes the lay-shaft cluster comprising 2nd, 3rd and 4th gears. Tilt cam segment as shown to give selector fork on lay shaft clearance



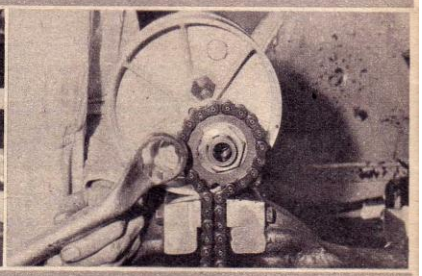
9 Now partially withdraw the main shaft in order that the cam segments can free themselves from the selector fork on the gearbox main shaft



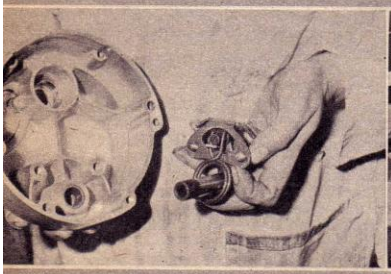
10 Withdraw the main shaft with its cluster of 1st, 2nd and 3rd gears. Note how clean the inside of the box is—oil was changed regularly!



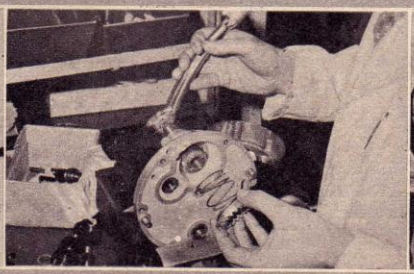
11 Cam segment spring and plunger can now be withdrawn. If the gearbox is over three years old, this plunger must be renewed. Note oilway



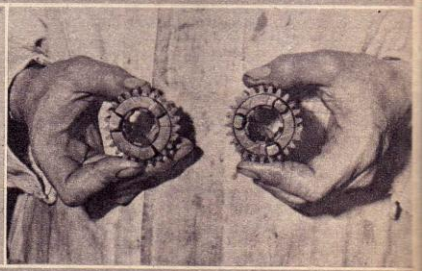
12 To remove sleeve gear, bend back tab and undo sprocket nut. Use a length of chain to hold nut secure and remember it's left hand thread



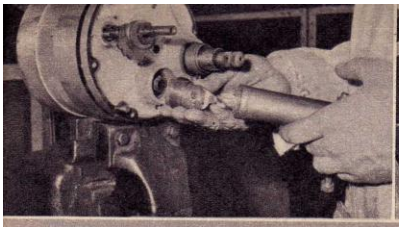
13 To replace the gear lever return spring, remove the pawl spring and cup, and undo the two 3/16th bolts so that assembly can be withdrawn



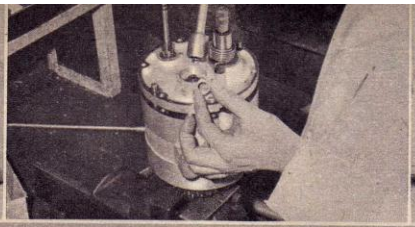
14 To replace kick-start spring, release rachet by turning shaft anti-clockwise. Fit new spring and reassemble ratchet pre-loading spring by half a turn



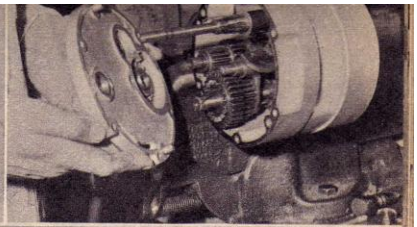
15 Don't get the lay shaft 2nd gear and the main shaft 3rd gear mixed up. The former has rounded engagement dogs and the latter square ones (on left)



4 *The foot change ratchet and clutch operating body are the next units to be removed. You will need a lock-ring spanner to free the clutch unit*



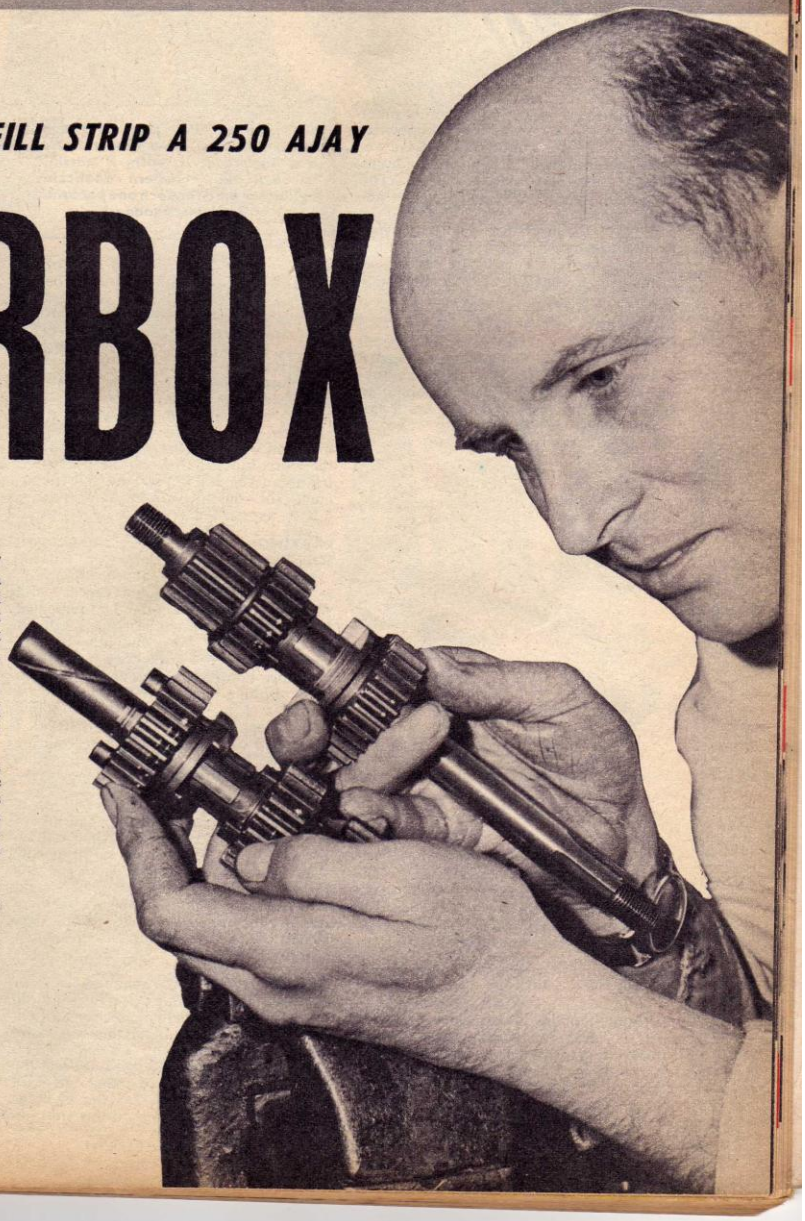
5 *Now hold the mainshaft in a vice as shown in the picture, and remove the mainshaft nut, ⅞-inch Whitworth. Replace gearbox in original vice hold*



6 *The gearbox inner cover can now be withdrawn from the two holding dowel pins. Use very gentle pressure to ease the plate away from main shell*

WATCH AMC's FRED NEILL STRIP A 250 AJAY

GEARBOX



THE majority of motorcyclists will willingly remove a cylinder head, carry out a decoke or even lift off the cylinder barrel and change the piston. Yet when it comes to dismantling a gearbox, they don't want to know. All those springs, washers, ratchets and pinions seem to put them off. Surprisingly, it is reasonably simple to dismantle and reassemble a gearbox, provided a careful note is made of the sequence in which the unit is dismantled.

Actually, unless the unit is allowed to run dry of oil, a gearbox should prove trouble free for the entire life of the machine. If there is trouble, it is normally only minor upsets such as a broken gearchange or kick-start return spring, or worn plunger mechanism which holds the pinions in gear.

The A.M.C. gearbox as fitted to the lightweight 250 and 350 c.c. Matchless and A.J.S. is fairly straightforward to dismantle, with only one special tool to remove the clutch push-rod operating unit. The rest of the work can be carried out with a reasonable set of spanners and a screwdriver.

The majority of maintenance work on the gearbox may be accomplished with the unit in the frame. However, if you wish to check the mainshaft bearing or remove the mainshaft, it will be necessary to dismantle all the primary drive, including clutch, to lift the gearbox out of the frame. A further extractor for the clutch will be needed to complete this task. ●