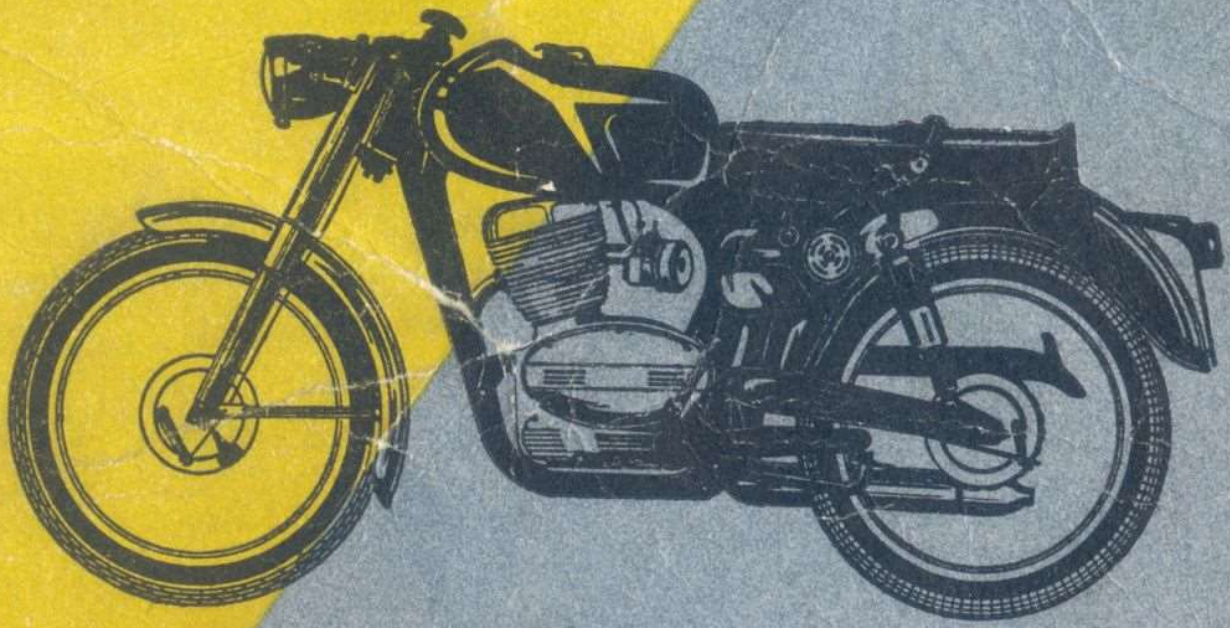
Capriolo

WORKSHOP MANUAL



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CAPRIOLO WORKSHOP MANUAL.

This manual is primarily designed with the « Capriolo » dealer in mind, but in view of the extremely simple and efficient design of the machine, this book will be of great assistance to the owner who takes pride in keeping his motorcycle in tip top condition.
The manufactures point out that, although it may be possible to do work to the machines without recourse to special tools, they can supply either the tool or drawings and measurements to anyone applying for them. It is sincerely hoped that agents will avail themselves of this offer.
The manufacturers are always ready to give help and advice on any problem which may arise.
This manual covers all 75c.c., 98c.c. and 125c.c. models, and in the absence of anything to the contrary, it may be assumed that the machines are identical.

Much of the work on the engine may be carried out without removing it from the frame. However since it is only a few minutes work to remove it we recommend this be carried out. It is not necessary to remove the tank.

1) Disconnect petrol pipe.
2) Loosen carburettor securing clamp.
3) Remove carburettor and tie it out of harms way.
4) Loosen exhaust manifold with special tool and note Copper and Asbestos Gasket.

5) Remove silencer retaining nut and washer and remove exhaust pipe and silencer.

6) Remove gear lever.

7) Remove flywheel magneto cover.

8) Pull out the rubber junction box from behind flywheel and disconnect 3 wires. Slide wires out through rubber grommett.

9) Remove rear chain.

10) Remove 5 engine bolts and front engine plates.

11) Lift the front of the engine, free the crankcase breather pipe which is located inside the frame, at the rear of the engine, and engine can now be removed.

Replacing the engine in the frame is merely a matter of reversing the above. The exhaust manifold, copper and asbestos gasket (part no. 10021 75c.c. part no. 10021 125c.c. part n. 11021) should be renewed.

Decarbonising.

In keeping with modern trends the manufacturers are not prepared to lay down a set mileage at which decarbonising and valve grinding should be carried out. If the machine is performing well and shows no signs of « pinking » or difficult starting the engine should not be disturbed. However, if work is necessary proceed as follows:

1) Remove rocker box cover.

2) Remove rocker locating wire and gently drift out rocker spindles.

3) Lift out rocker arms and note hardened steel washers at either end of rockers.

4) Remove rear near side cylinder head nut and lift out cam oil feed pipe. FIG. 1.

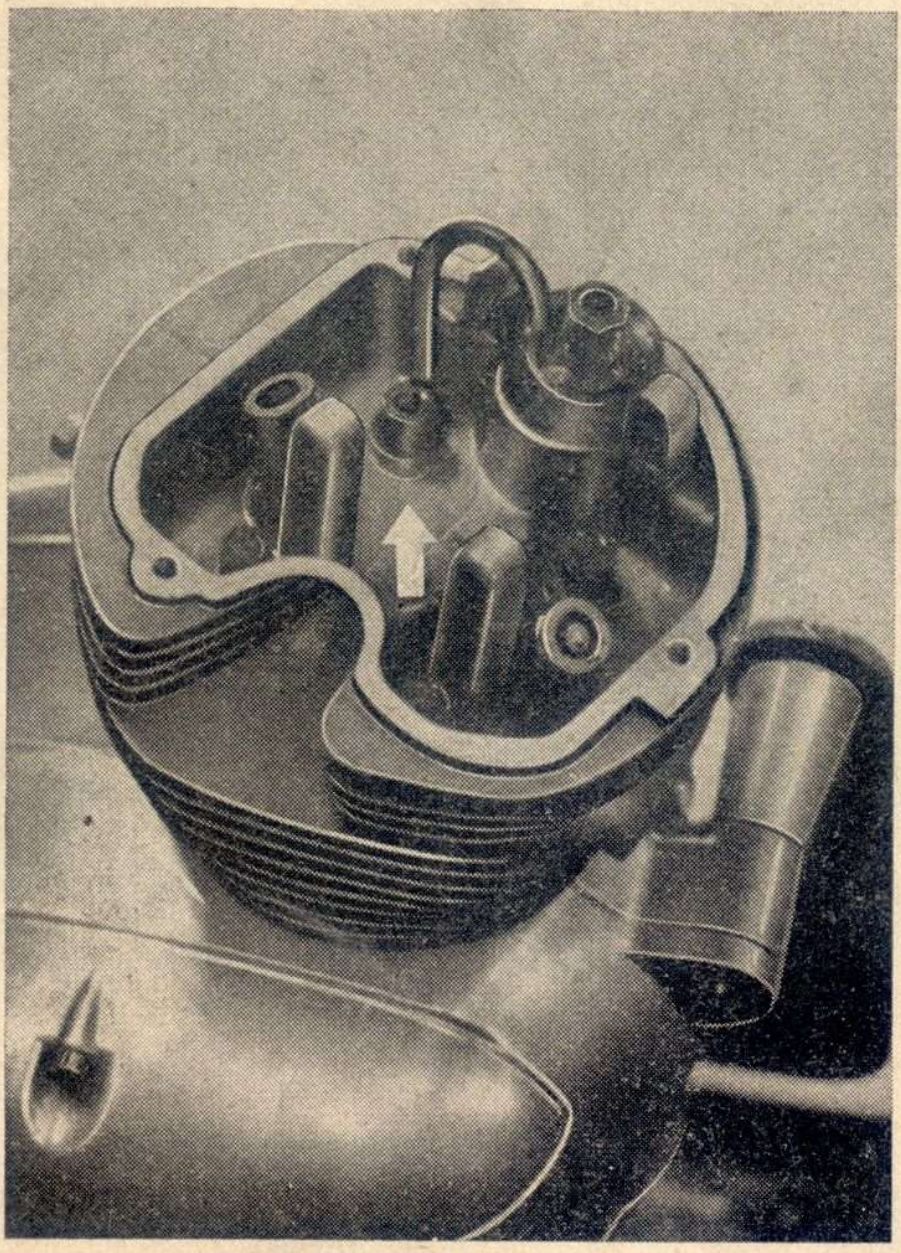

FIG. 1

5) Remove cam locking nut. A well fitting ring spanner is required, and a sharp blow on the end of it is usually sufficient to jar the nut loose. Before using the cam extractor, it is advisable to mark the cam in some way, otherwise

it will be necessary to retime the cam when re-assembling. The cam is a taper fit onto the cam shaft. FIG. 2.

6) Remove the 3 remaining cylinder head nuts and lift off cylinder head.

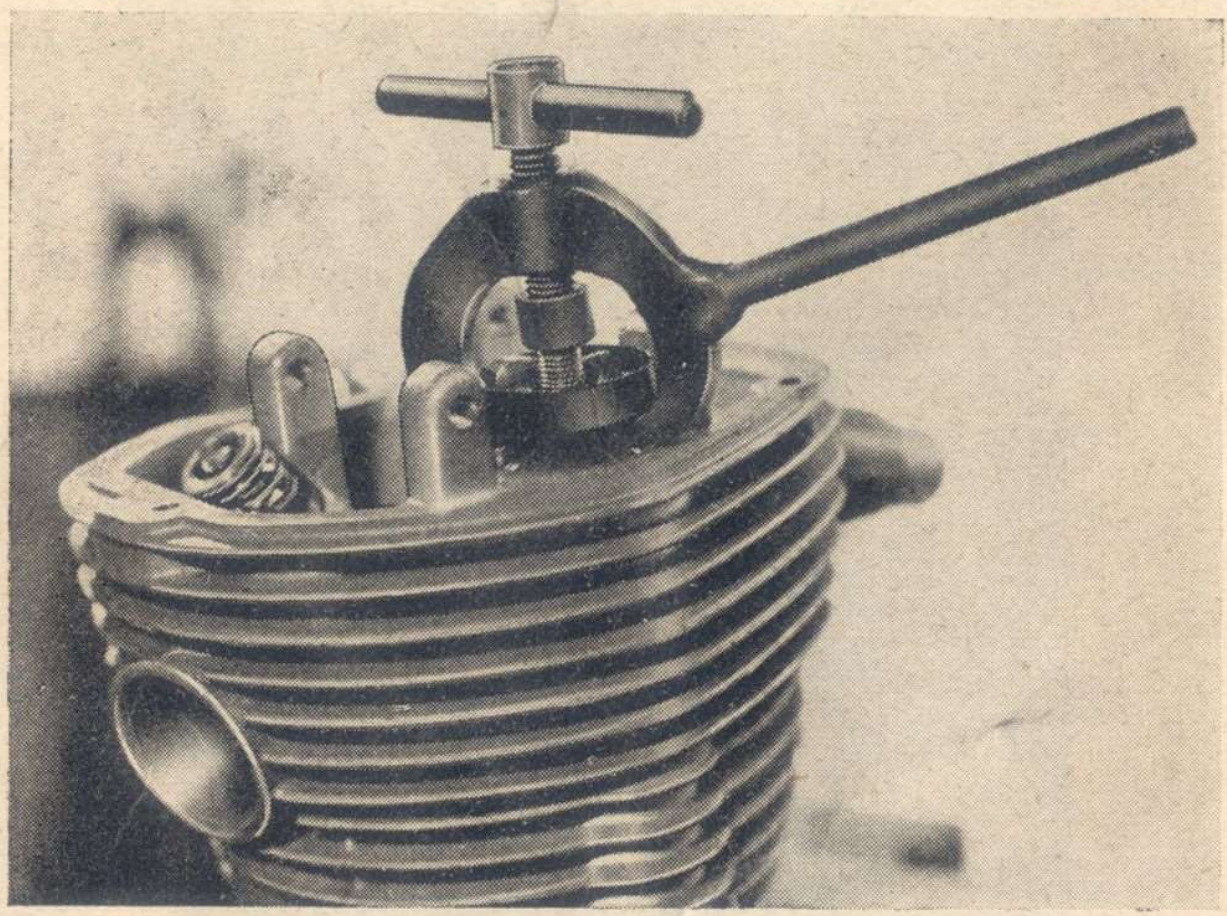

FIG. 2

Since the cylinder head is alloy care should be taken when scraping off the carbon not to score the head. Do not, under any circumstances, use caustic soda.

To remove the valves, a proprietory valve spring compressor may be used but FIG. 3 & 4 show the factory tools in use. The valves are held in position with split collets and when the springs are compressed these collets can be prised out from the

collar. This will permit the valve to be removed. It should be noted that use of the factory tools enable valve springs to be changed without removing the cylinder head from the barrel.

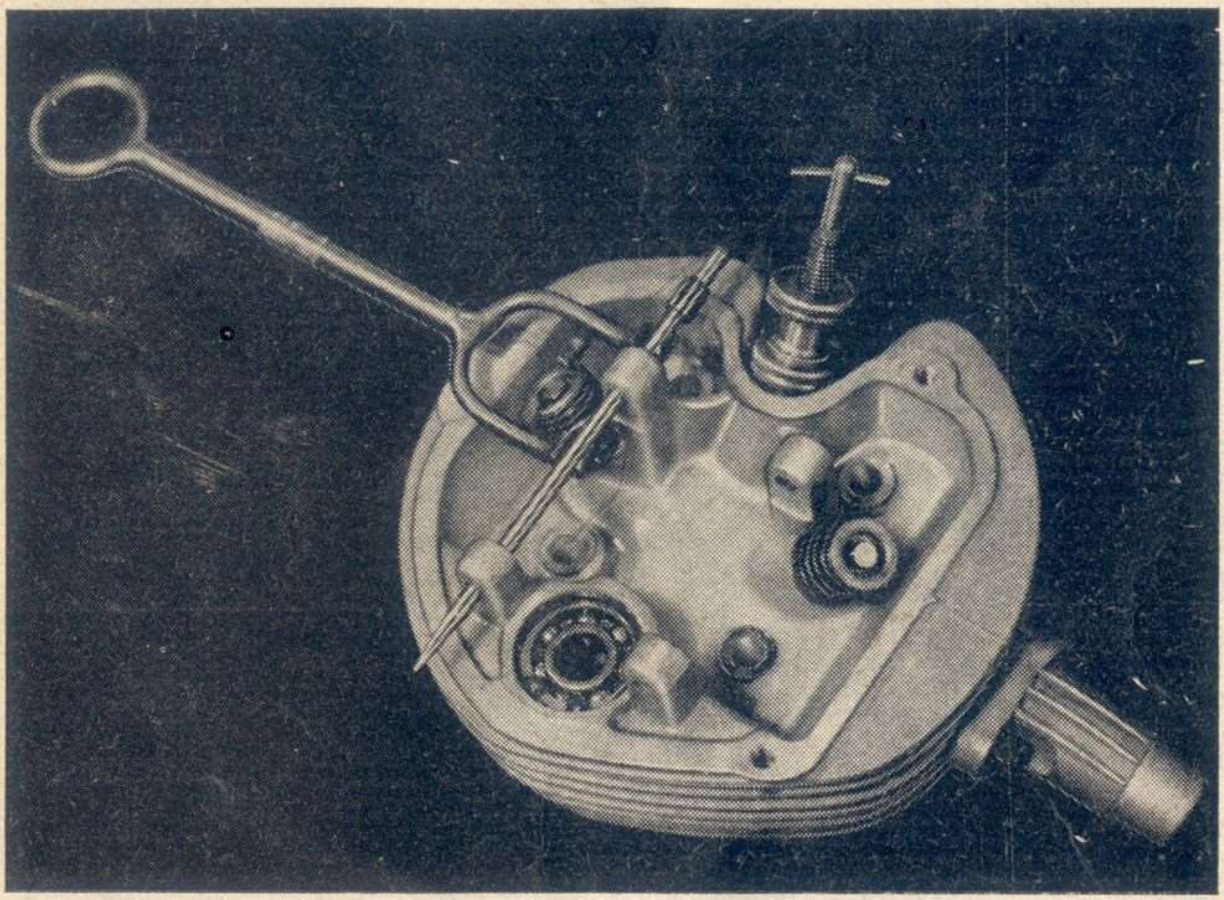

FIG. 3

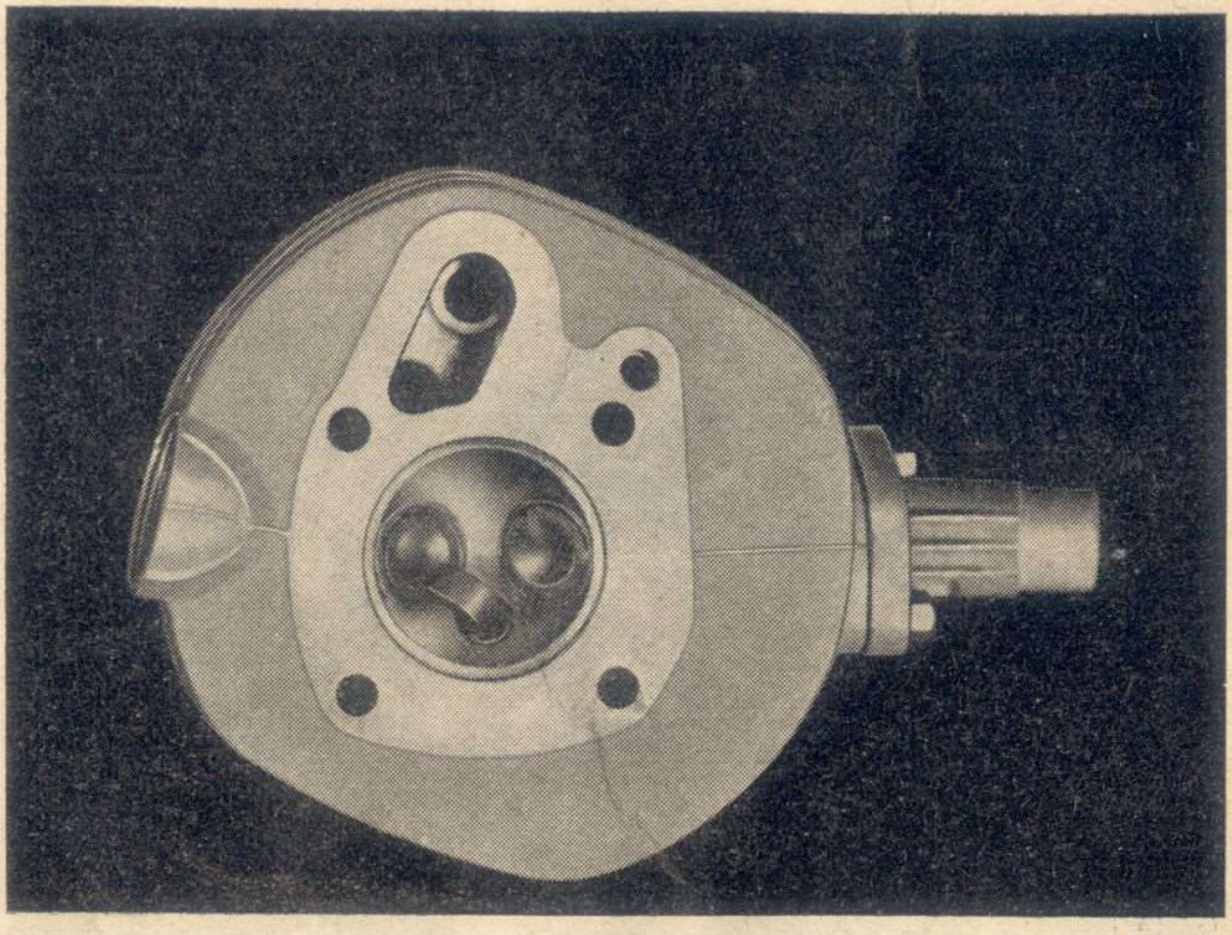

FIG. 4

Valves should be lightly ground using a fine grinding paste. If the valve seats are pitted, it may be necessary to recut the seats. This can be done at the factory for a nominal charge. It is recommended that the valve springs are changed at every decarbonising of the engine.

Unlesse it is felt necessary to change the rings, the cylinder barrel should not be disturbed. Merely clean the carbon from the top of the piston taking care not to score the piston.

Removal of the cylinder barrel will present no difficulties, out as the barrel is lifted, the rod should be held to avoid the possiblility of the piston or

con rod swinging down and cracking the crank case.

REMOVAL OF FLYWHEEL MAGNETO

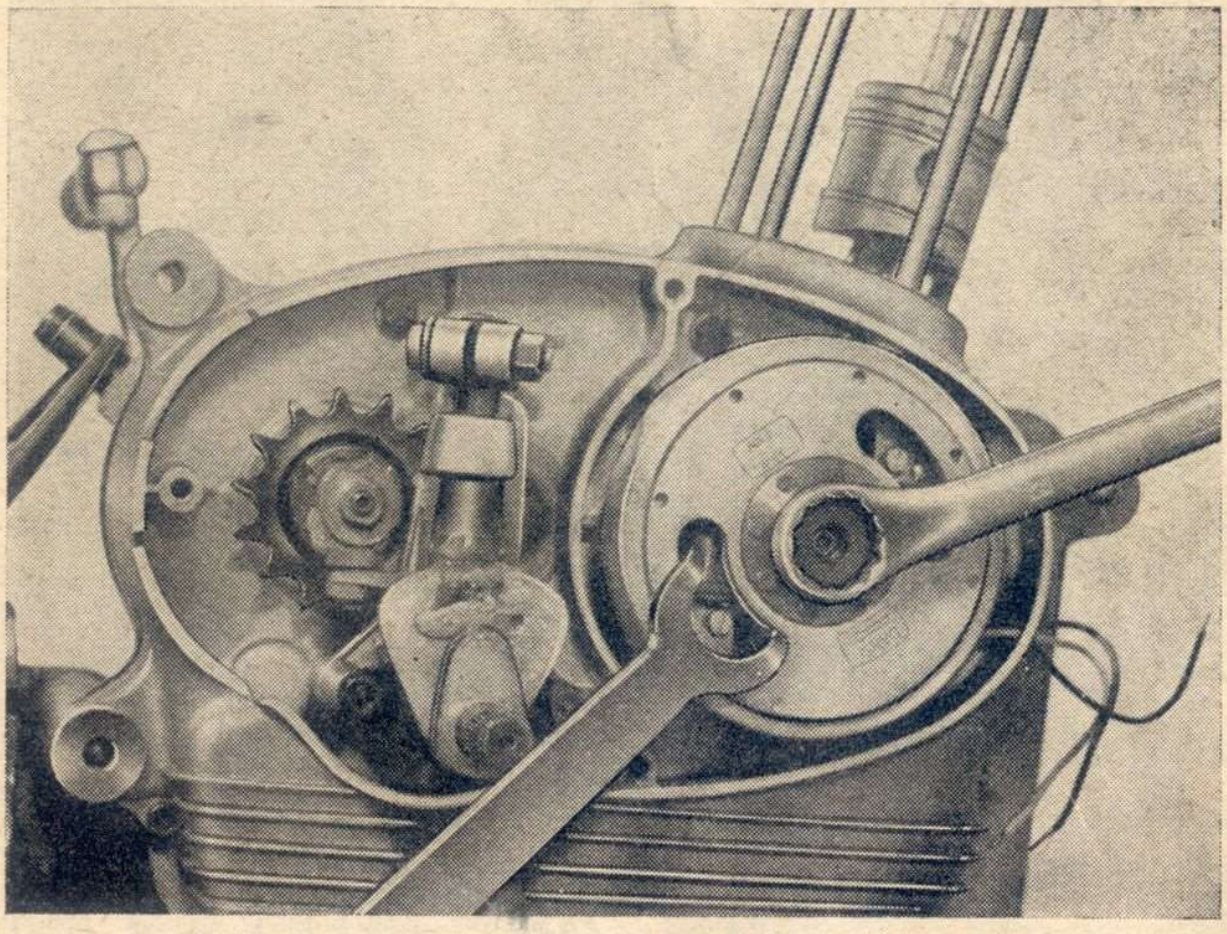

FIG. 5

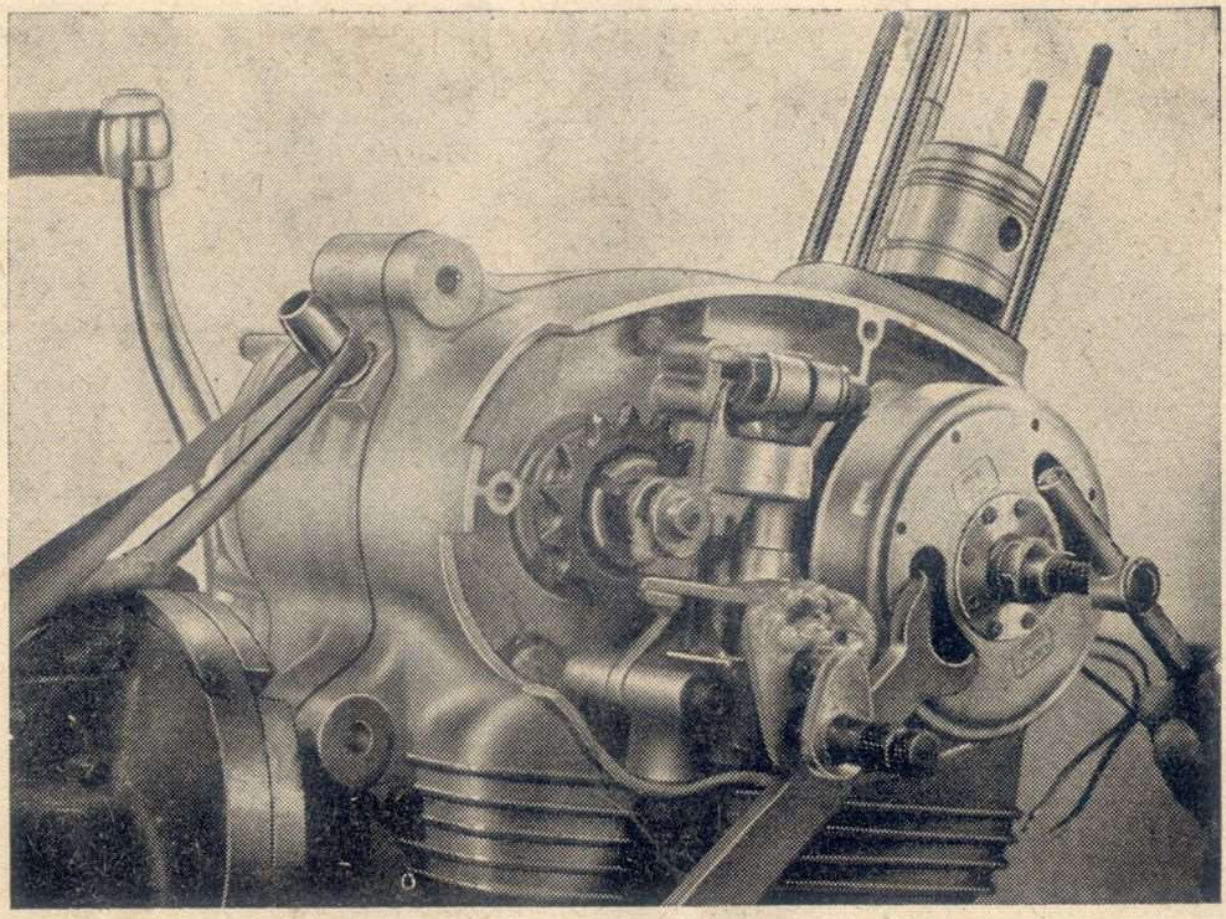

FIG. 6

Removal of the flywheel magneto will present no difficulties. It should, however, be noted that the locking nut has a LEFT HAND THREAD, and that the use of the extractor is essential, and that use of the holding tool is advised. Figs 5 and 6 clearly show the correct use of the tools. When the flywheel has been removed note the Woodruff key.

REMOVAL OF BACK PLATE

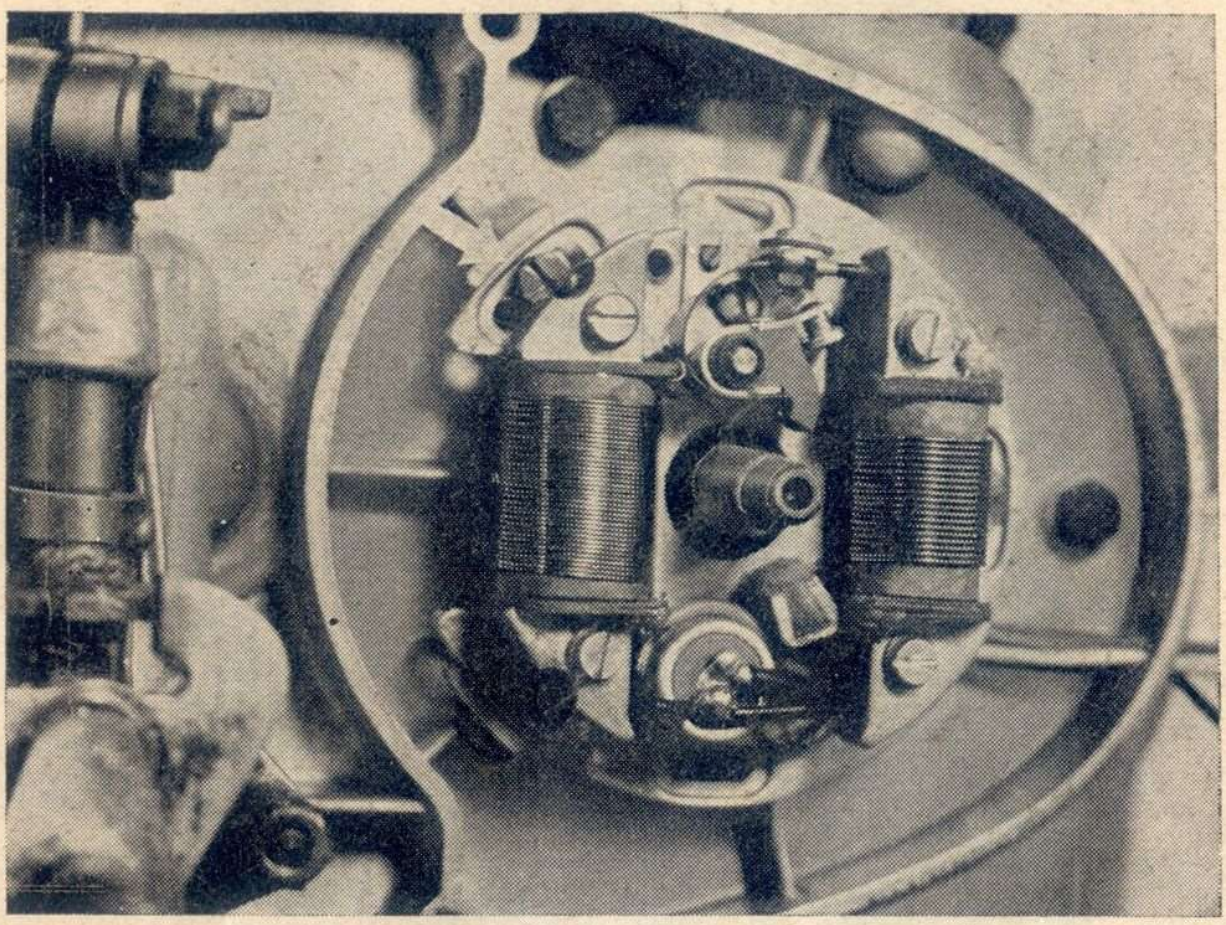

FIG. 7

Fig. 7 shows the back plate and one of the three retaining screws is arrowed. Simply remove theses-crews, and the plate will be free. It is advisable to mark the plate prior to removal since failure to do so will necessitate retiming the ignition.

GEAR CHANGE MECHANISM

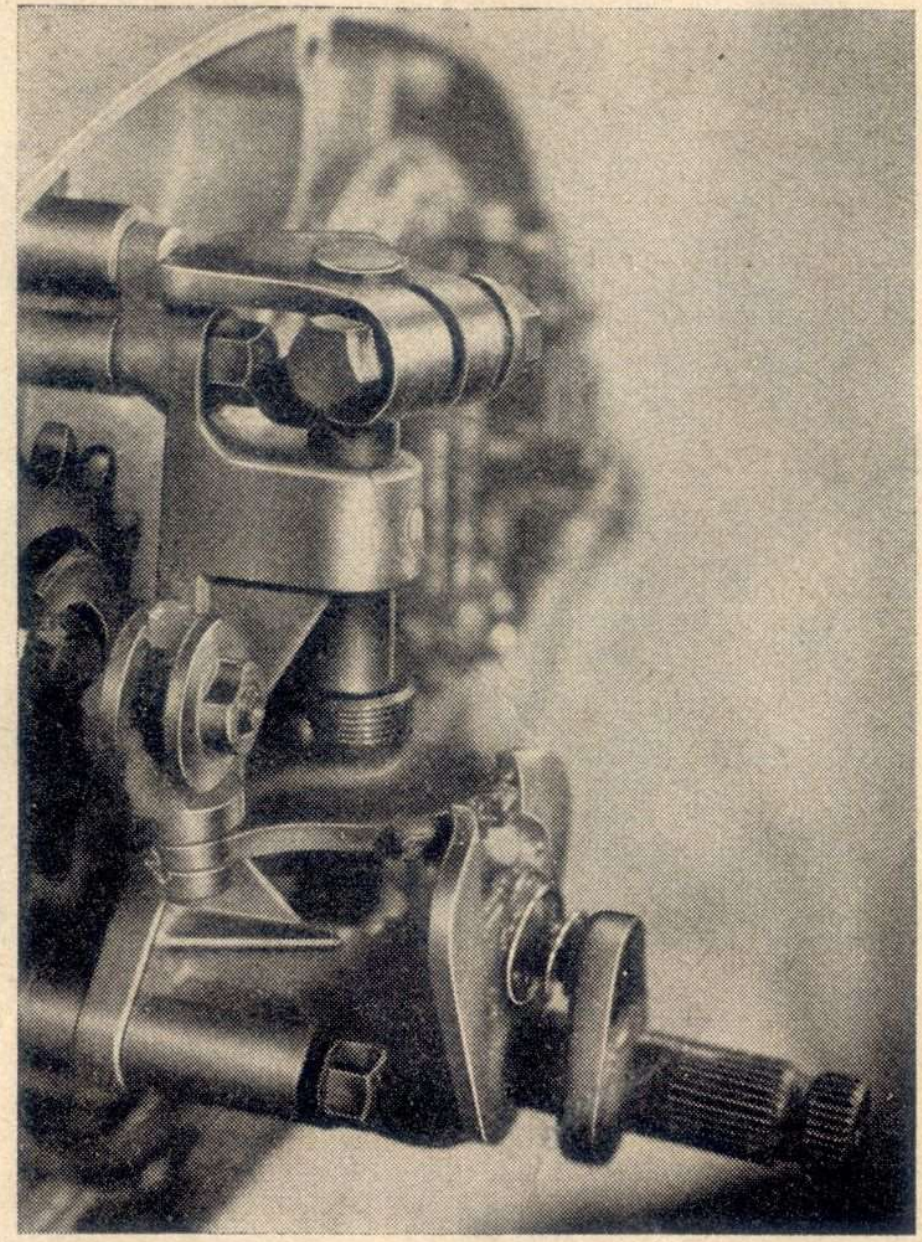

FIG. 8

To Dismantle.

Clean off all traces of grease.
Pull out gear shaft and spring. Note position of spring.
Remove selector pivot plate.

Remove two nuts and spring holding plate. Take care when doing this as the gear lever return spring may fly off.
Loosen clamp bolt on top of vertical gear shaft and prise off the selector plate.
It is now possible to remove nut from behind vertical gear shaft when the rest of the gear change mechanism can be removed « en bloc ».

N.B. The plunger and plunger spring which engages with the selector plate may remain in the crankcase. It is best to remove them to a safe place.

This will now reveal a plastic cover for the clutch thrust rod and operating arm. This should be packed with fresh grease when reassembling.

To Reassemble.

Replace plunger and plunger spring in crank case and replace selector support and vertical gear shaft taking care to locate the lower notched locator plate in the selector shahft adjuster nuts.
A litle difficuly may be experienced in replacing the gear lever spring.
Proced as follows:
Hold the spring holding plate in the left hand, place the legs of the spring on either side of the tongue at the top of the spring holding plate, and twist the spring horizontally through 180 degrees with the right hand. This will place the loop of the spring flat against the holding plate and then the gear shaft can be slid into position in order to help hold the spring. Place the assembly onto the studs and tighten the nuts. The Gear shaft may now be remo-

ved and the pivot plate, pivot plate spring and gear shaft assembled and replaced.
Place the top selector plate loosely on the vertical shaft and engage top gear by pulling out the horizontal selector shaft as far as it will go. Turn selector plate anti clockwise to last notch and tighten up clamp bolt. Check action of gear selection.

REMOVAL OF CLUTCH

First remove dipstick.
Remove pinch bolt on kick starter and remove it from the shaft.
Remove 6 Allen screws, and the outer casing will come off.
Remove oil impurity cup from main shaft. This is held on by a single nut.

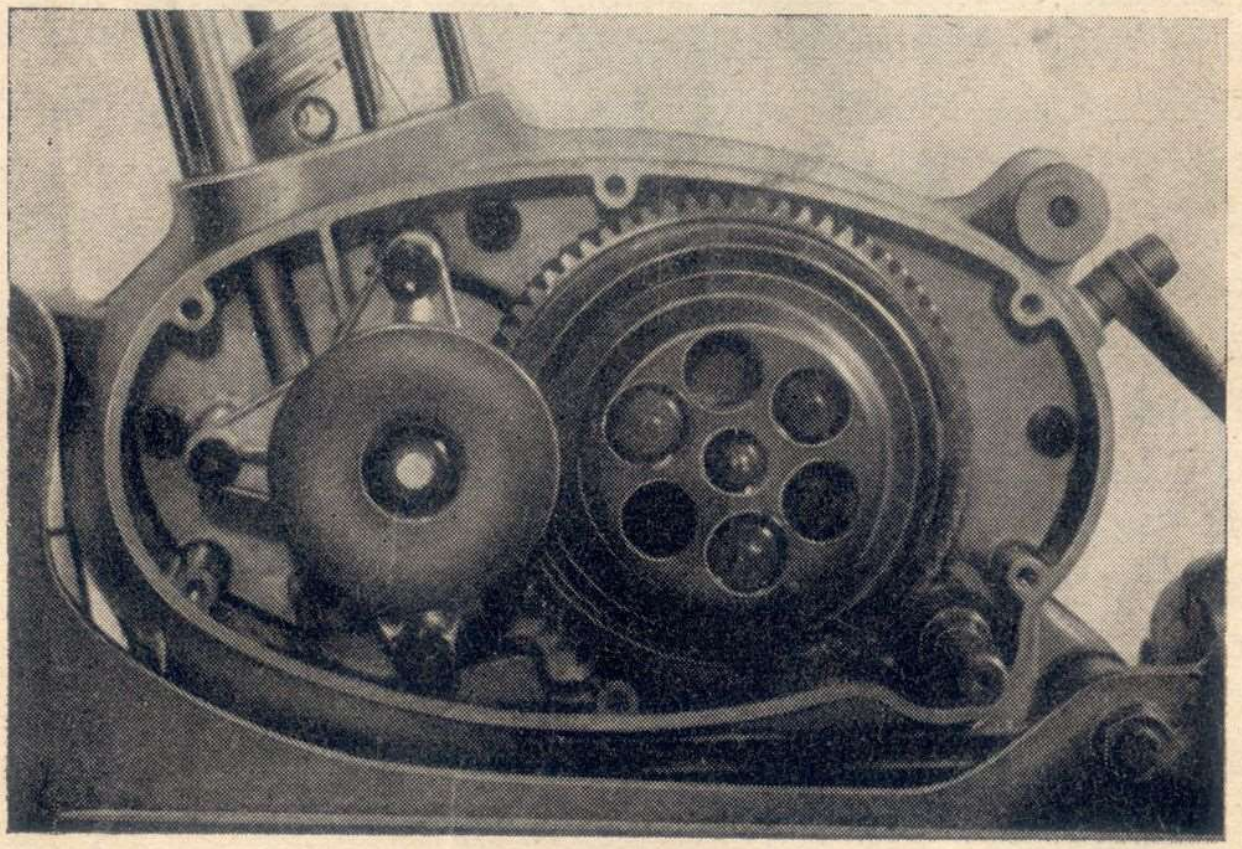

FIG. 9

Remove two bearing support bolts and one bearing support nut and washer. Then slide bearing support off. This may be a bit tight, and care should be used.

To remove the main shaft nut it is essential to use the special main shaft locking tool and Fig. 10 clearly shows the tool in position.

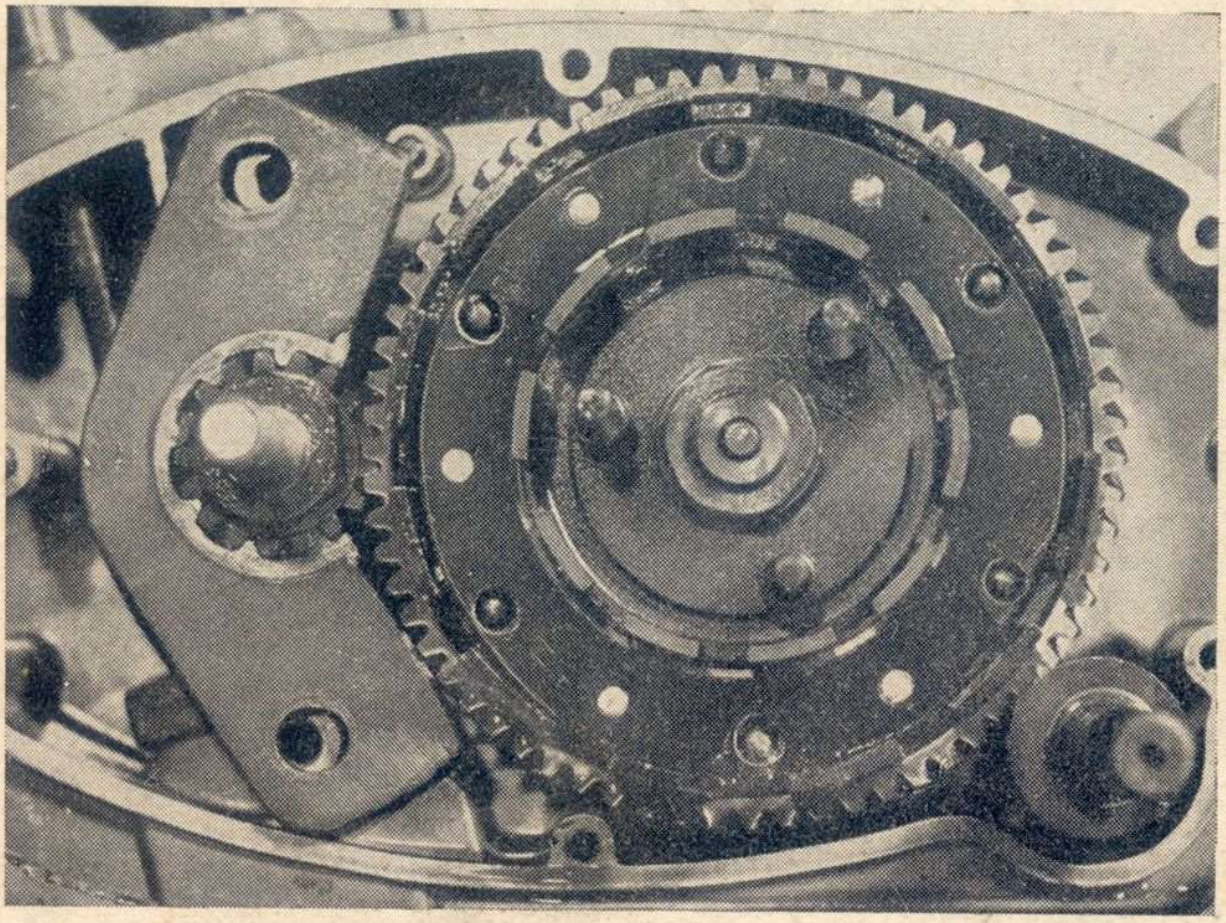

FIG. 10

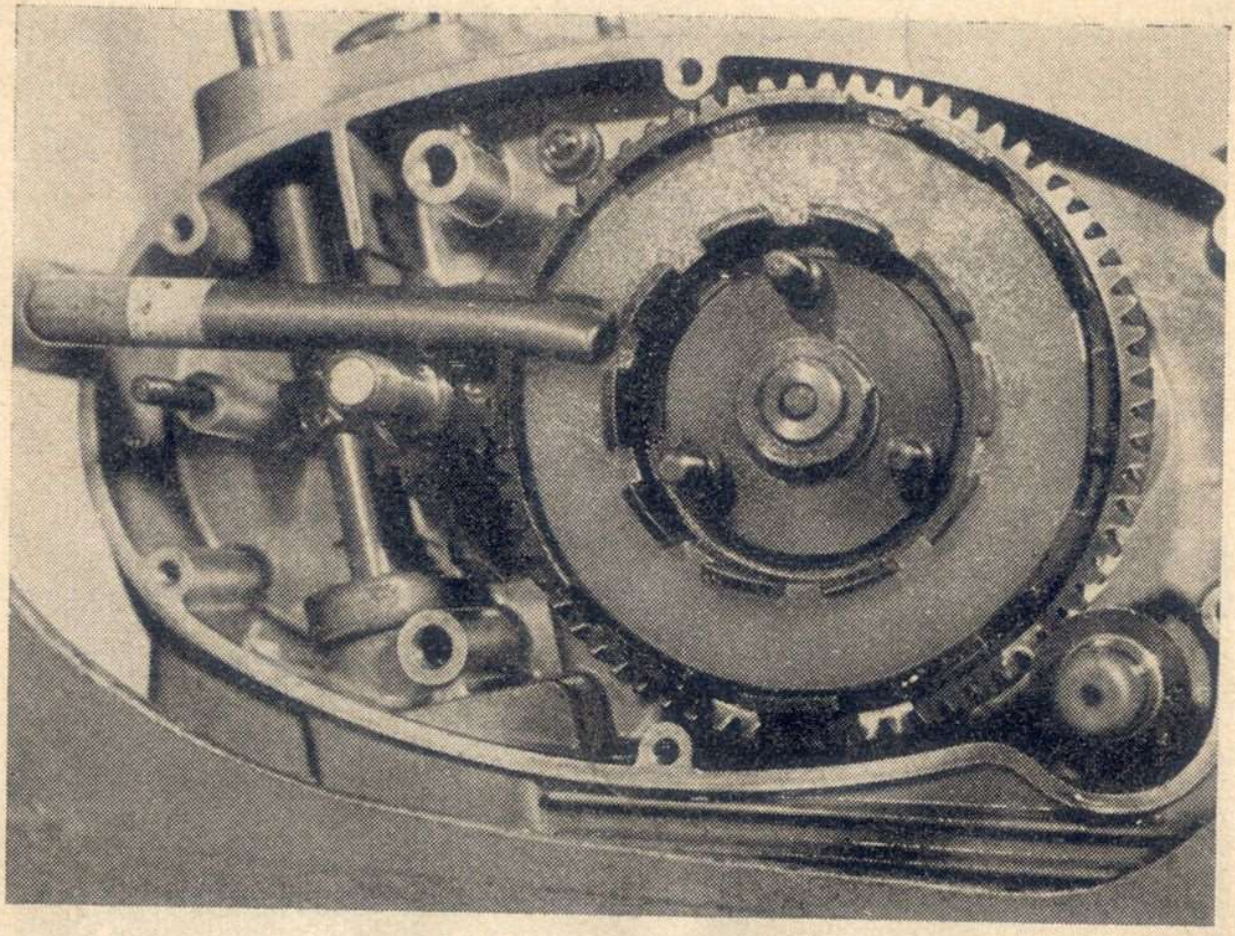

FIG. 11

N.B. Position of spring washer hebind nut.

Removal of the clutch plates will present no difficulty. Simply undo the locking nuts when the springs, spring housings and all the plates will slide off the shaft.

To remove clutch centre a tool as illustrated in Fig. 11 should be made from an old clutch plate. The tool will hold the centre firmly while a well fitting box spanner is used on the nut. Note the washer behind the nut.

Before any further dismantling can be carried out, it is essential to removere the kick start return spring.

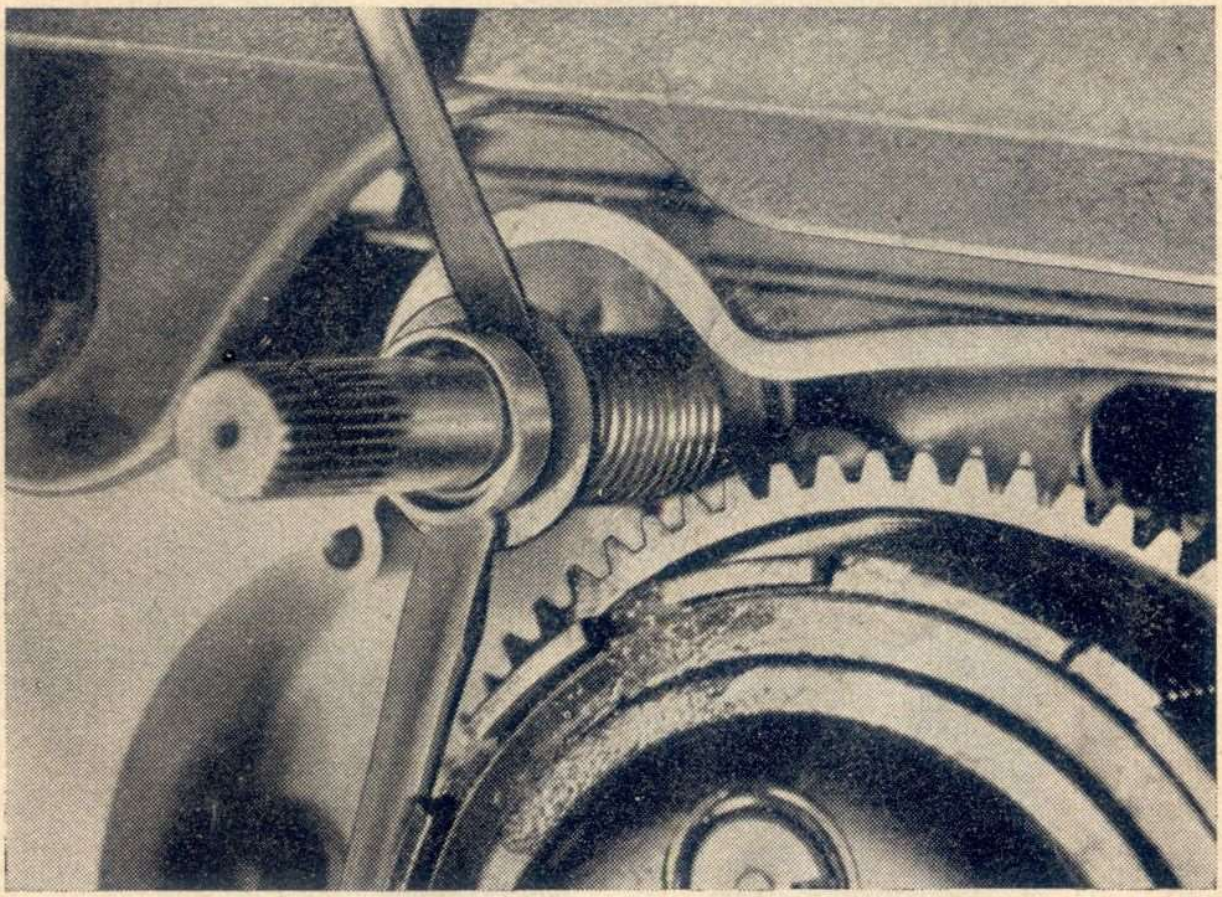

FIG. 12

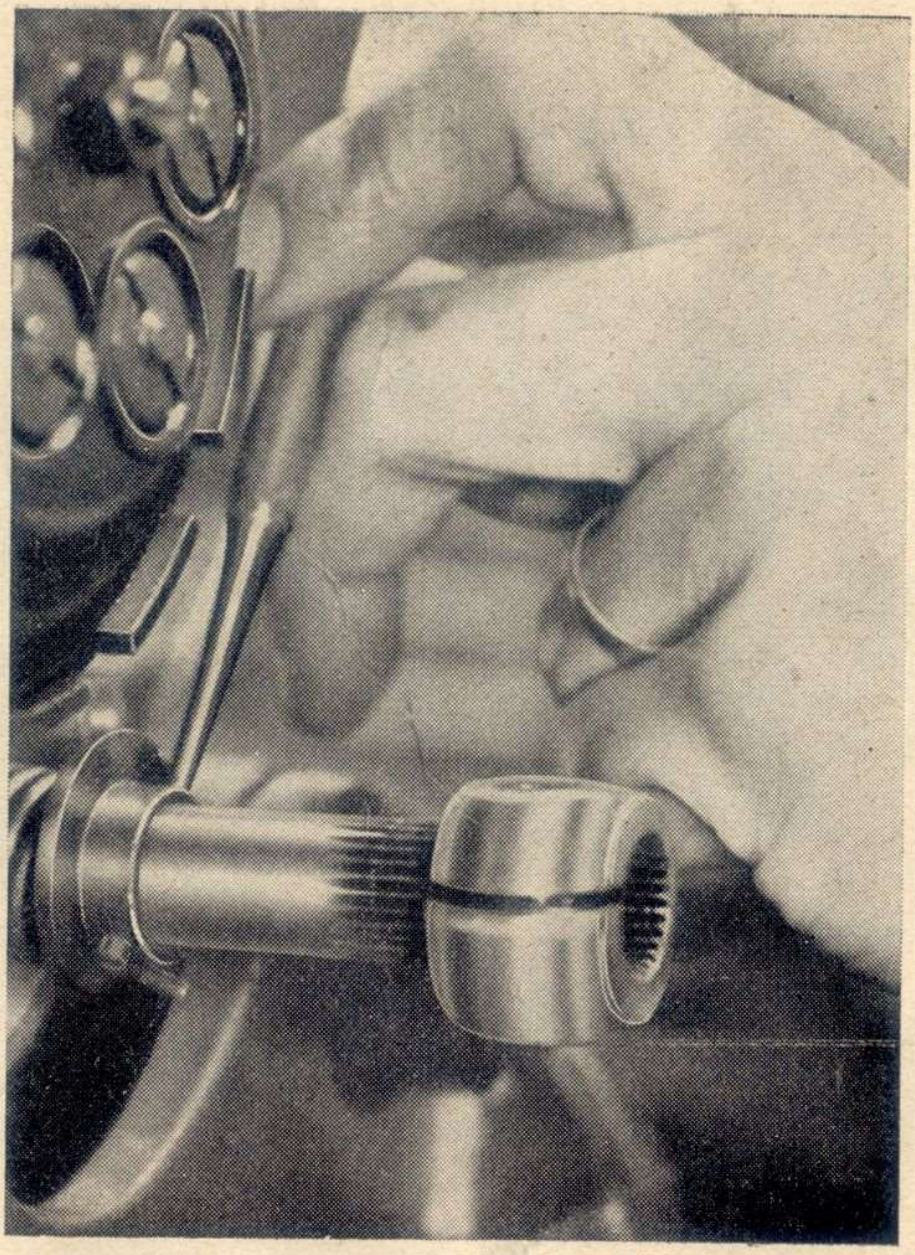

FIG. 13

First prise off return spring locking bush with the aid of two screwdrivers. Replace kick starter on the shaft, and turn the shaft approx. ¼ of a turn i. e. to the three o'clock position. Drift out the return spring locking pin. when the return spring bush and the spring will be free. Figs. 12 and 13.

Now the clutch pinion will slide off its shaft. Note steel washer behind clutch.

Removal of primary drive pinion.

For this, a standard three legged sprocket puller is necessary. Note Woodruff Key.

Removal of timimg gear pinion.

This will also be easier if a three legged puller is used, and is also located by a Woodruff Key. There is a distance piece situated behind the pinion.

Removal of cam shaft.

This will simply lift out. The oil baffle is a push fit, and will present no difficulties.

To split the crankcase.

Remove 4 nuts from the near side, and 5 Allen screws from the off side. Gently tap the crankcase with a hide mallet and the halves will come apart. Do not, in any circumstances, try levering the halves apart with a screwdriver or similar tool since this may result in damage to the faces. The Gear clusters and Flywheel Assembly will stay in off side half. Fig. 14.

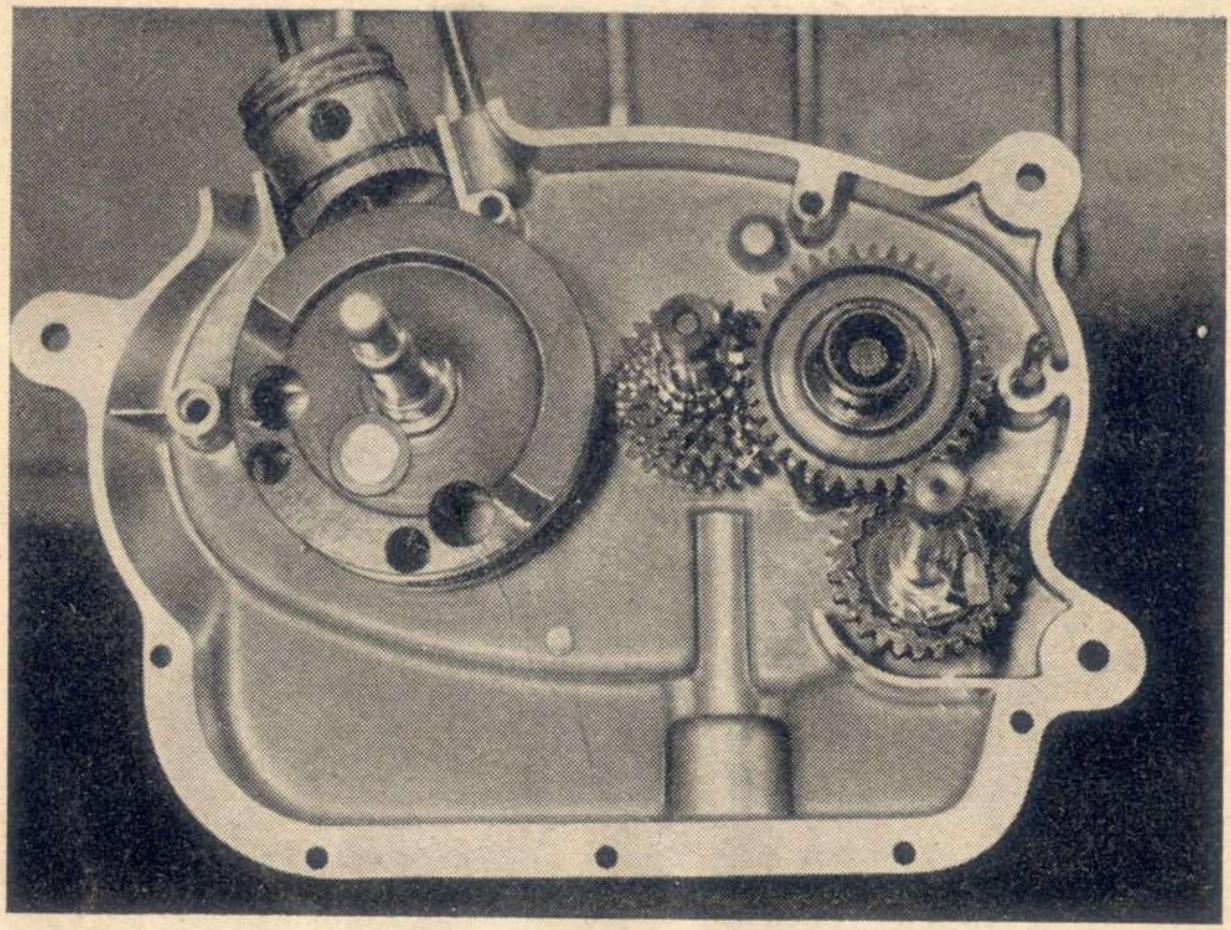

FIG. 14

Removal of final drive sprocket.

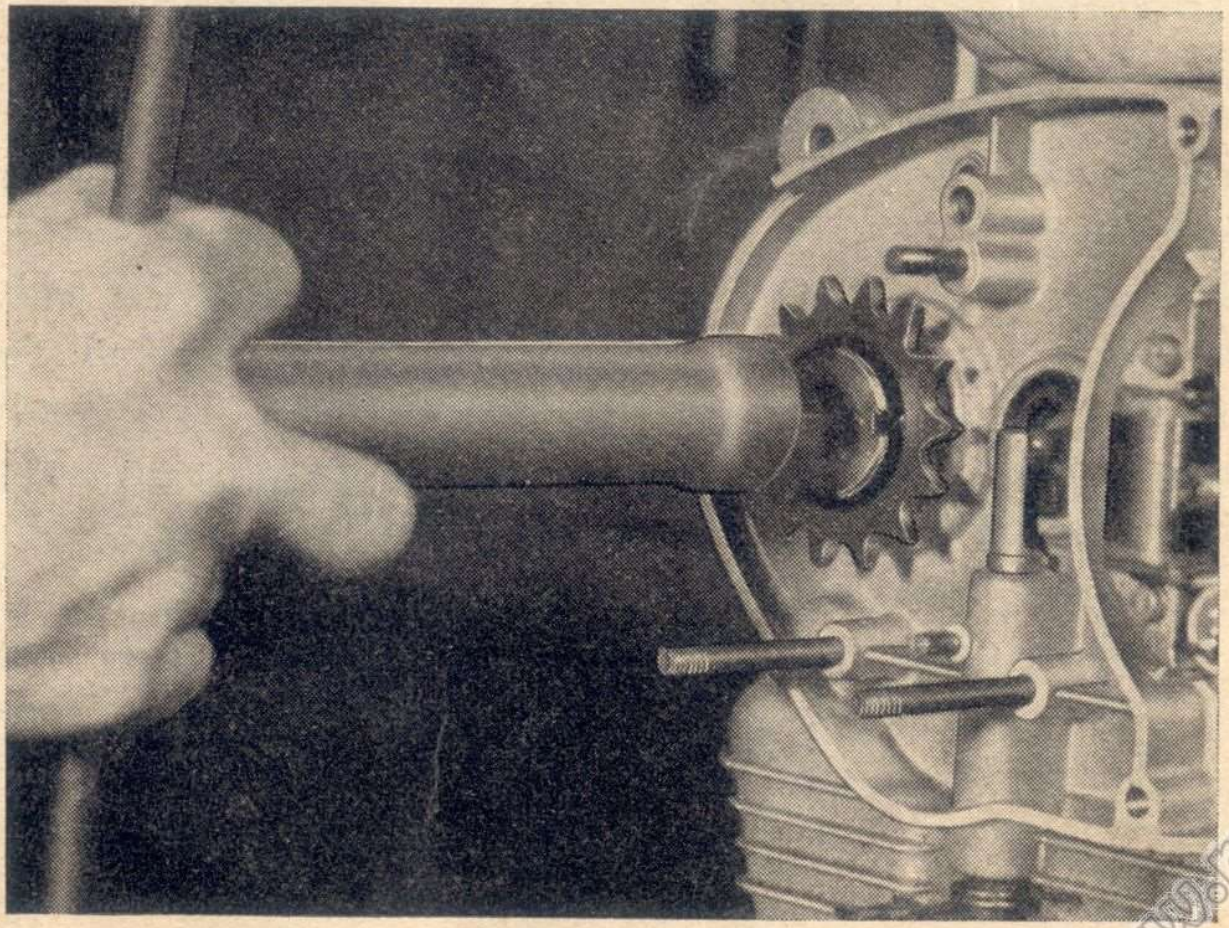

FIG. 15

Wrap a length of old chain round the sprocket and clamp the ends in a vice. Use the special tool to unlock the locking nut and retain the spring washer from behind the nut.

Removal of gear cluster from lay shaft.

Remove circlip and distance piece when gears will slide from shaft. The selector balls will drop out. If required, the lay shaft can now be tapped out from its bearing.

To remove kick start shaft and assembly.

It is not necessary to remove the whole of the gear cluster and Lay shaft in order to remove the kick start shaft etc. Proceed as in the preceeding paragraph but merely remove the bottom gear pinion when the kick start shaft can be pulled out. Note the position of the sprag, spring and plunger. See Fig. 14.

To remove oil pump.

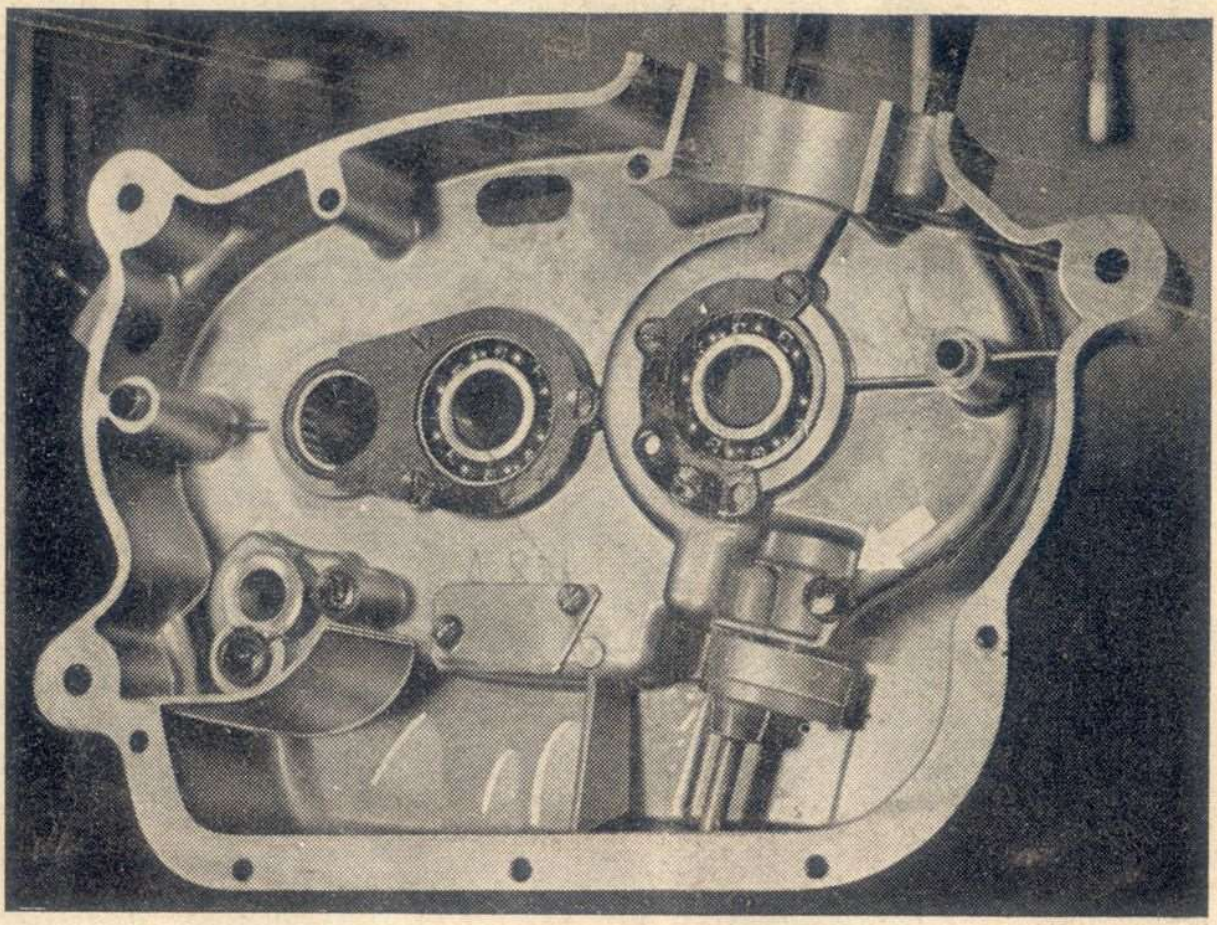

FIG. 16

The oil pump is located in the near side half of the crank case. Fig. 16 shows the oil pump locking bolt which, when removed, permits the pump to slide downwards.

Renewal of big end bearing.

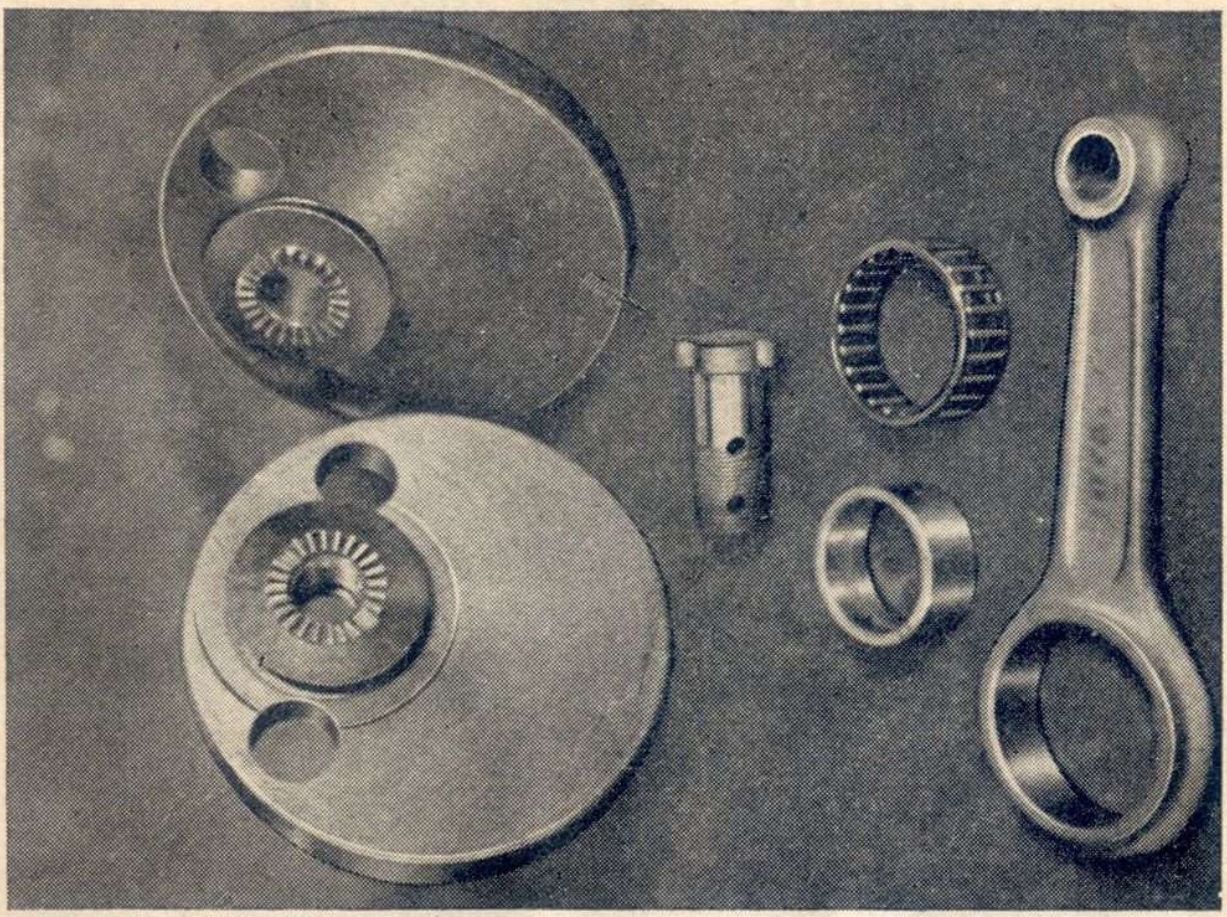

FIG. 17

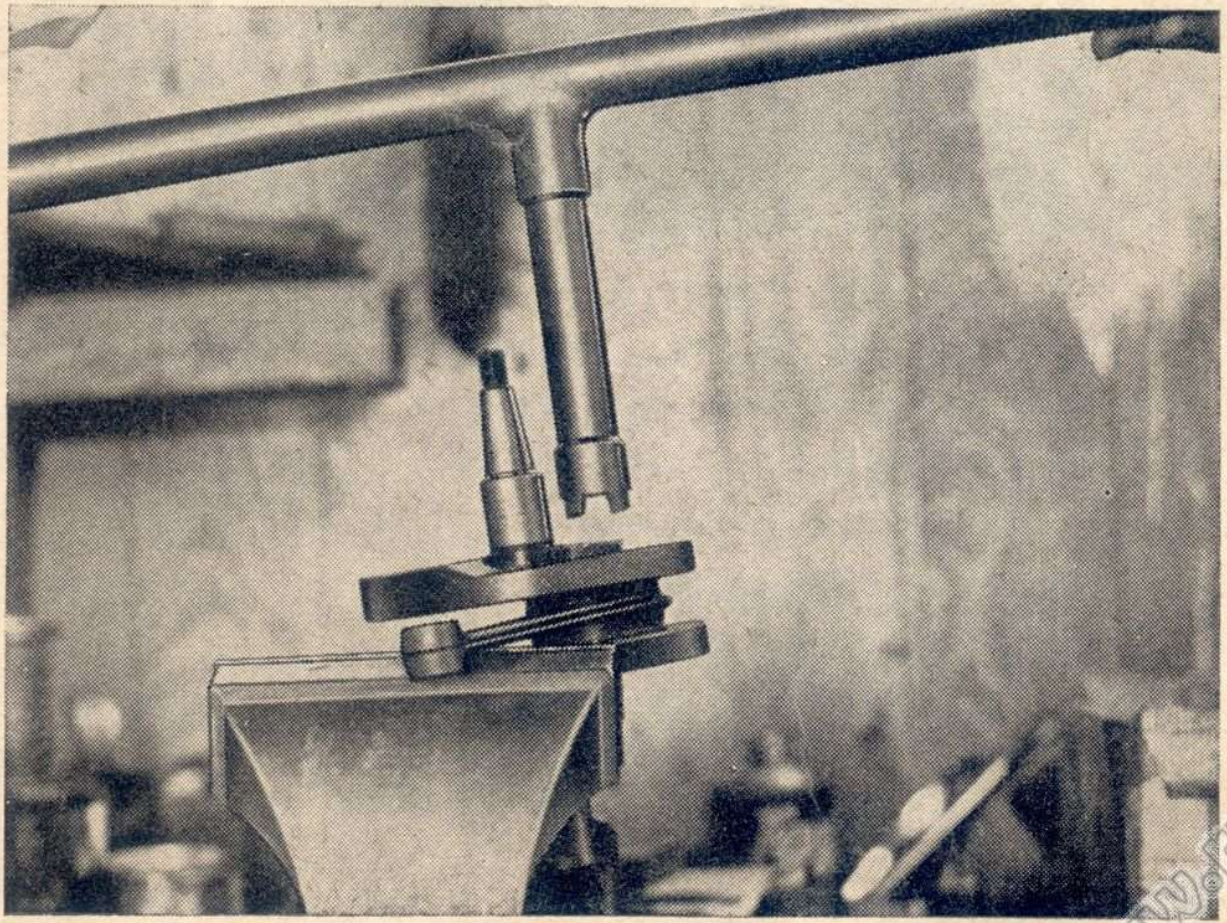

FIG. 18

Fig. 17 shows the component parts of the special Capriolo self aligning flywheel assembly. The crankpin is a high tensil steel bolt threading into one half of the flywheel. The inside edges have « V » shaped tongues and grooves which ensure correct re-assembly. The bearing itself is of the caged needle roller type and is of adequate size to give long and trouble free service.

Fig. 18 shows the special tool required to dismantle the assembly and a sharp blow on the top of the tool when in position will facilitate unscrewing the crankpin.

Ignition retiming.

If the magneto back plate has been disturbed without marking its position, it will be necessary to retime the ignition.

Fit the back plate loosely in position and then replace flywheel not forgetting the Woodruff Key. Place a timing disc into position (Fig. 19) and place the piston at Top Dead Centre. Turn the flywheel anti clockwise 32 degrees and at this position the Contact Breaker Points should just be opening. The back plate should be moved to accomplish this. Tighten up the three screws holding the back plate and check the timing with a piece of tissue paper pinched between the points. Maintain a gentle pull on the paper and at 32 degrees before top dead centre the points should start opening and release the grip on the paper.

Now set the points gap to .015 Fig. 7 shows the locking screw above the contact breaker pivot. Loosen this, and the small adjuster screw above the locking screw can be used to set the gap. Tighten up the locking screw and check that the gap is still correct.

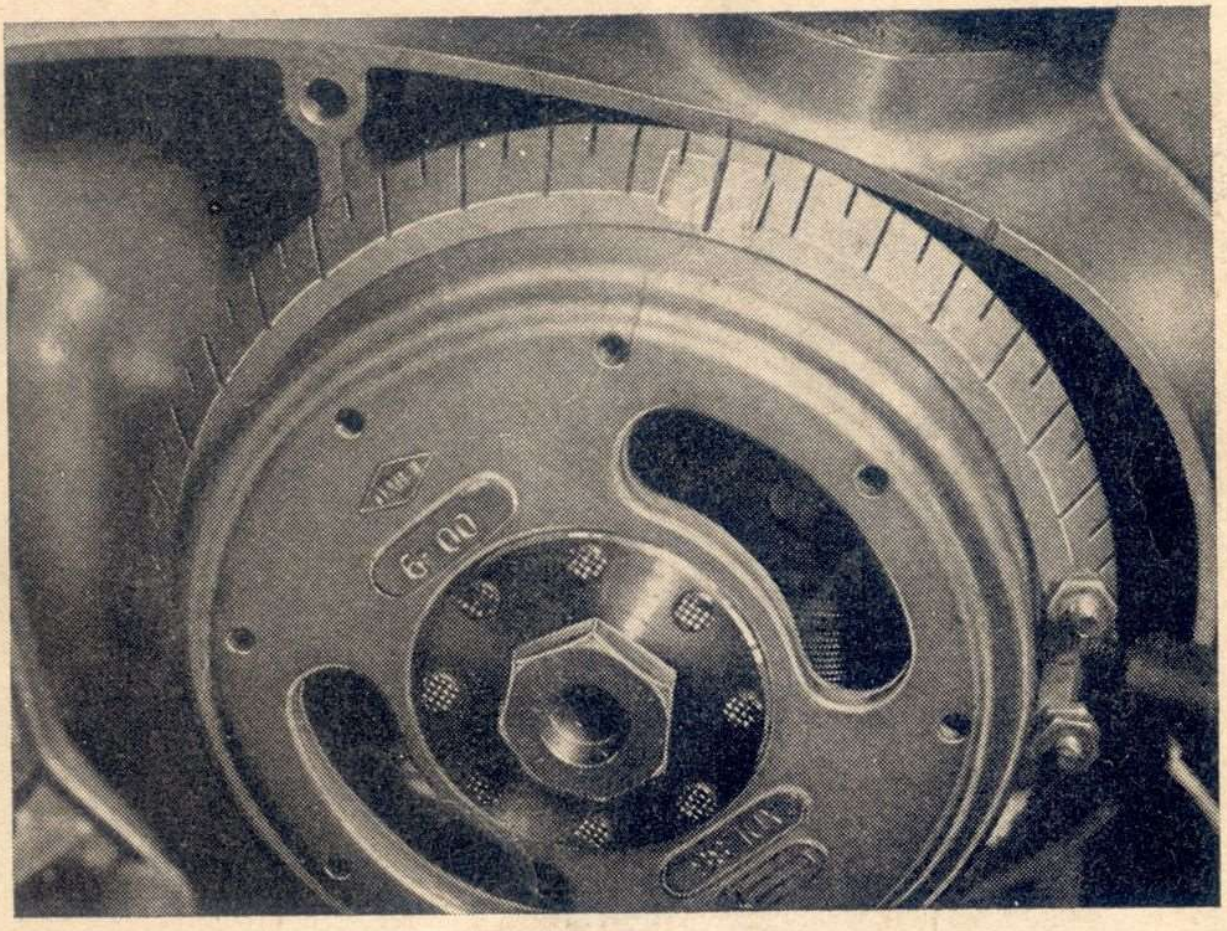

FIG. 19

Valve timimg.

If the cam has not been marked when dismantling it will be necessary to retime the valves.

Fit the camon the shaft loosly and put the timing disc in position. Place the piston at T. D. C. Turn

the flywheel in an anti clockwise direction to 34 degrees before top dead centre. (in the case of a 125 c.c. machine, turn to 38 degrees. Turn the cam in a clockwise direction until the inlet cam is just touching the cam. Lock the cam in this position. Recheck that neither the cam or the piston has moved.

STAMPA RAPIDA TIPOLITOGRAFIA-TRENTO