against the pressure of the springs, by means of a pad pushed by a rod passing through the gearbox mainshaft and operated by the lever in the outer cover through an adjusting screw and ball.

The clutch centre drum drives the mainshaft through a cush drive with six rubber blocks.

59. Description of the Gearbox

The operation of the gearbox is shown diagrammatically in Fig. 15.

The clutch sprocket A is mounted on the end of the mainshaft B which passes through the mainshaft sleeve C on the end of which is the final drive sprocket D.

At the other end of the mainshaft B is a pinion E which engages with a pinion F on the layshaft G. At the other end of the layshaft G is a pinion H engaging with a pinion J which runs free on the mainshaft sleeve C.

The mainshaft sleeve C has splines on which slides a double pinion KL. This double pinion KL engages with two pinions M and N which are free to rotate or slide on the layshaft G.

The double pinion KL has dogs at each end which can engage with dogs on the pinion E or on the pinion J.

The pinions M and N have internal dogs which can engage or slide over projecting dogs P and Q on the layshaft G.

The double pinion KL and the pinions M and N all slide together and are moved by the operator fork R and are located by a spring plunger S which engages with a notched plate which is part of the operator arm R.

The kickstart lever is connected to the pinion F on the layshaft by a ratchet mechanism which automatically disengages when the lever is released.

60. Removal of the Gearbox

This is described in Subsection 52.

The gearbox can, however, be completely dismantled with the engine in the frame except for the removal of the inside operator and the bearings in the gearbox shell.

61. To Dismantle the Gearbox

First remove the kickstart crank, the change-gear lever and the neutral finder and pointer.

Remove four screws and the gearbox outer cover can then be detached.

Remove the change-gear mechanism, by taking off the two nuts securing it.

Remove the mainshaft bearing cover which is attached by two screws.

Remove four cheese-headed screws and one hexagon bolt.

Remove the spring box locating plunger nut and washer.

Remove the mainshaft nut **(left-hand thread).**

The gearbox inner cover can then be removed.

The mainshaft can be drawn straight out if the clutch has been removed, which, however, should be done before taking off the gearbox inner cover. (See Subsection 45). The top gear pinion and dog will come away with the mainshaft.

The layshaft can then be removed and the 2nd and 3rd gears drawn off the final drive sleeve together with the operator fork.

To take out the final drive sleeve, the final drive sprocket must be removed and this is preferably done before removing the inner cover. (See Subsection 46).

62. Removal of the Ball Races

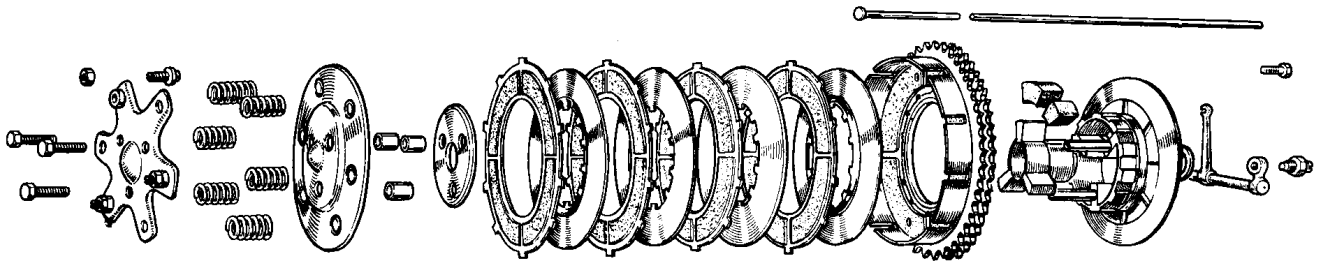
The mainshaft ball bearings can be removed by using a stepped drift $1\frac{7}{16}$—$1\frac{11}{64}$ in. diameter for the bearing in the box and $\frac{13}{16}$—$\frac{39}{64}$ in. diameter for the bearing in the cover.

When refitting the bearings stepped drifts of $2\frac{5}{16}$—$1\frac{11}{64}$ in. diameter and $1\frac{11}{16}$—$\frac{39}{64}$ in. diameter must be used for the bearings in the box and cover respectively.

Note the oil seal in the recess behind the larger mainshaft bearing.

63. Change-Gear Mechanism

If the two nuts securing the change-gear ratchet mechanism are slackened the adjuster plate



EXPLODED VIEW OF CLUTCH
Fig. 14