

## TRANSMISSION

### General Design

The transmission is of the quick synchronizing type incorporating helical gears to give a silent second speed. By throwing the reverse idler gear out of mesh for all forward speeds, further quietness is obtained.

All gears are made of alloy steel, heat treated and hardened. The alloying metals used are nickel, chromium and molybdenum. Through the use of these strong, durable alloys, the weight of the rotating parts is minimized contributing greatly to the ease and rapidity with which gear shifts are made.

### Main Shaft and Bearings

The main drive gear and main shaft are supported on two heavy duty annular thrust ball bearings (8 and 14) in the case, an annular ball bearing (7) in the crankshaft and a needle roller bearing (12) between the shafts. The end thrust between the shafts is taken by seven ball bearings running in races machined in the ends of the shafts.

End play in the main drive gear and main shaft is adjusted by selection of the shim pack located between the front face of the transmission case and the main drive gear bearing retainer (4).

The companion flange screw must be kept tight as it is depended upon to hold the mainshaft low and reverse gear, main shaft bearing and speedometer drive gear in the correct position on the shaft. If this cap screw is loose, end play can not be checked accurately and the speedometer drive gear may slip, giving a slow speedometer reading.

### Counter Shaft

The counter shaft is carried on two steel backed babbitt bearings (22 and 23) while the thrust is taken on a bronze and steel thrust bearing (26 and 28) against the rear of the case. End play is adjusted by selection of the shim pack between the rear face of the transmission case and the rear bearing cap (24).

### Shifting Rails and Forks

The shifting rails (52 and 53) and shifting forks (49 and 50) are built into the transmission case so that the control cover carries only the shifting lever, except with Electric Hand equipped cars. The details of this control cover are given in Group 11 under Electric Hand.

### Shifting Rail Locks

A positive locking device is fitted to both transmission shifting rails and operated by the clutch

linkage (Figure 1002). When the clutch is engaged the balls (54 and 77) are locked in the shifting rail notches. When the clutch pedal is depressed the lock rods (78) move up so that the notch is in line with the end of the lock plunger (79) and the ball (77) is held in the rail notch by the pressure of the spring

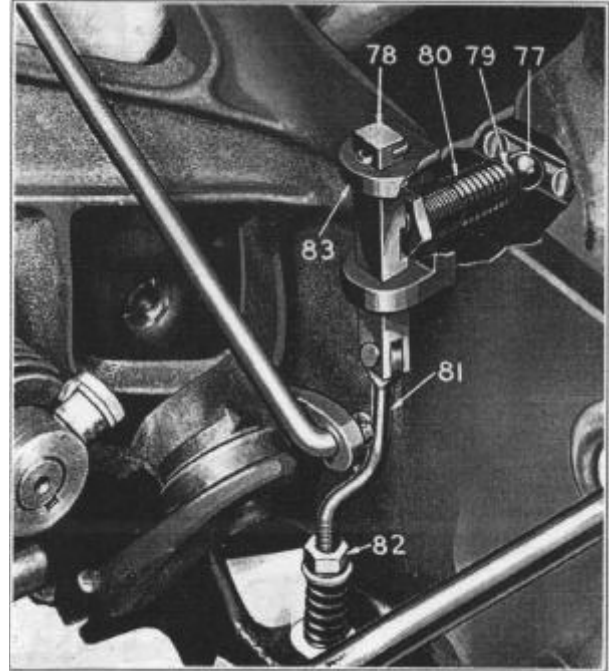


Figure 1002—Transmission Interlocking Device

(55 and 80) only. The links (81) should be adjusted so that the notch in the rod is below the plunger (79) when the clutch is engaged. When the clutch pedal is depressed half way, the rod should have moved upward far enough to bring the notch in line with the plunger so that the shift can be made.

The illustration (Figure 1002) shows the Interlocking Device as used on late 1935, 1936 and 1937 transmissions. The parts shown comprise Part No. 48855 Interlocking Device Kit which should be used as a replacement on 1934 and early 1935 models. The superseded lock can readily be distinguished as the lock rod was a stamping instead of bar stock as used in this kit. For additional usage of the kit on earlier models see the Numerical Parts Price List or Master Parts Book.

See Group 11 for adjustment of Interlocking Device on cars equipped with Electric Hand.