



Supplement to

THE HANDBOOK OF THE

BENTLEY

“R” TYPE

FOR THE

Transmission

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CHAPTER VII

**Clutch, Gearbox, Propeller Shaft and
Rear Axle**

*The Clutch—Clutch Pedal Mechanism—Clutch Pedal Adjustment—
Gearbox—Universal Joints—Rear Axle.*

The Clutch.

The clutch is of the single dry-plate type and requires no special attention.

The clutch shaft is spigoted at its forward end in the crankshaft on a ball bearing. This bearing is filled with grease during erection, and requires no attention between overhauls of the chassis.

The withdrawal thrust ball race, and its associated moving parts, are lubricated from the centralised chassis lubrication system.

Clutch Pedal Mechanism.

It is important that the various joints should be lubricated with the oil-can every 5,000 miles.

The fulcrum of the pedal lever is fitted with self-lubricating bearing bushes, and requires no external lubrication.

Clutch Pedal Adjustment.

The only point where any adjustment is provided, or is ever likely to be necessary, is at the coupling (see Fig. 19), connecting the clutch pedal intermediate lever with the clutch external operating lever.

There must always be $1\frac{1}{4}$ " to $1\frac{1}{2}$ " of "free" or idle movement of the pedal before the withdrawal sleeve is felt to be in contact with the toggle levers, as is easily tested by pressing the pedal lightly.

The coupling comprises a jaw (1), and a jaw (2), united by a turnbuckle (3), having a left-hand and a right-hand threaded end, and locked with locknuts (4).

To effect an adjustment, release the two locknuts (4) and rotate the turnbuckle (3) with a spanner, to obtain the correct free movement, the locknuts being subsequently re-tightened.

When testing and setting this adjustment, the aluminium pedal plate must be in position, because it is this part which acts as a stop, limiting upward movement of the pedal under the action of its external spring (5).

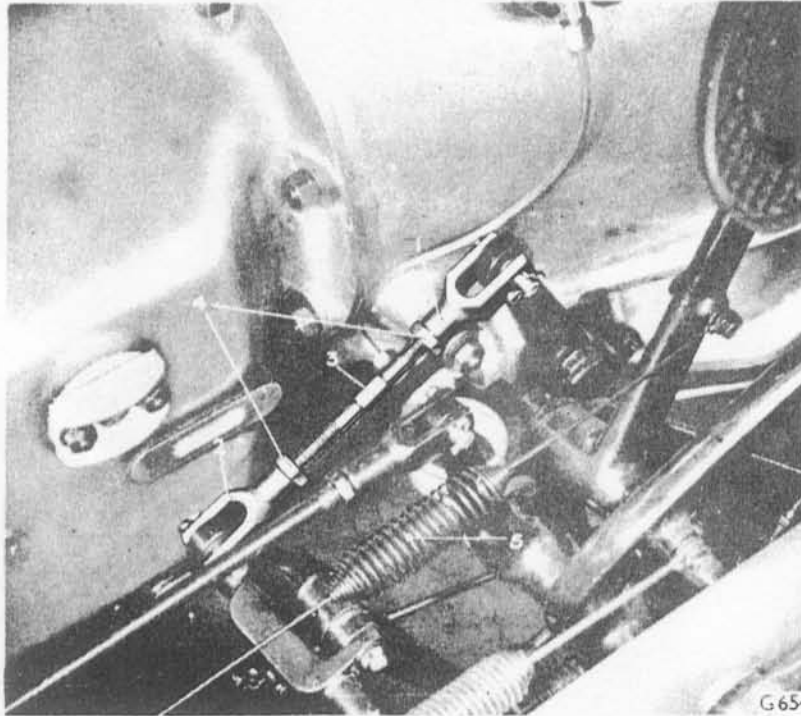


Fig. 19.—ADJUSTMENT CLUTCH PEDAL.

- | | |
|---------|-------------------|
| 1. Jaw. | 3. Turnbuckle. |
| 2. Jaw. | 4. Locknuts. |
| | 5. Return spring. |

Gearbox.

Synchromesh of the "positive" type is provided to facilitate engagement of second, third and fourth speeds.

The first and third motion shafts of the gearbox are supported in three bearings, thus contributing to the permanent silence of the gears, and in the case of the third motion shaft, relieving the spigot bearing of much of its load.

Oil is inserted into the gearbox by removing the dipstick shown at (2, Fig. 20).

Oil should be poured in until the level reaches the mark on the dipstick, taking care that the box is not over-filled.

The oil level should be inspected every 5,000 miles as directed on page 30.

Every 20,000 miles, all oil should be drained from the gearbox, by removing the drain plug, with the special spanner provided, and fresh oil inserted

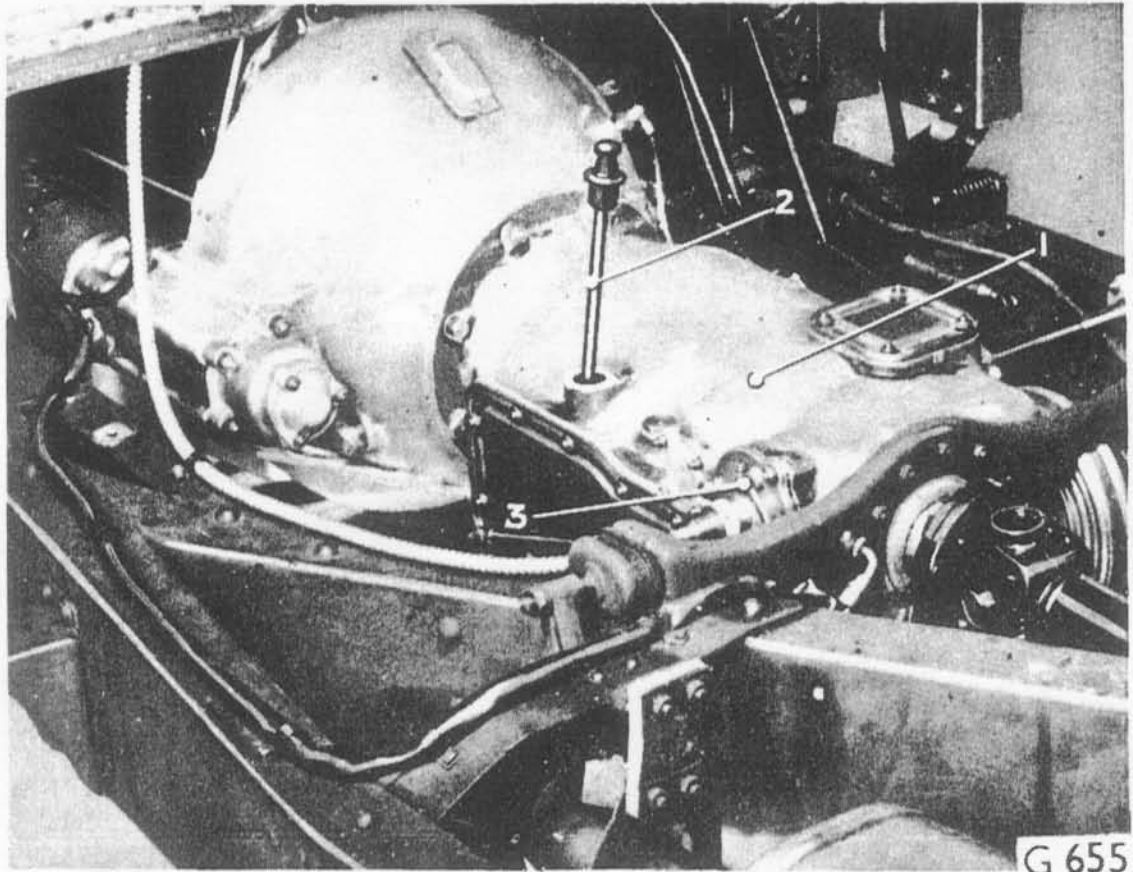


Fig. 20.—GEARBOX.

1. Gearbox. 2. Dipstick. 3. Speedometer connection.

A worm-driven connection is provided on the gearbox for the speedometer, the drive ratio being suitable for the speedometer which is supplied.

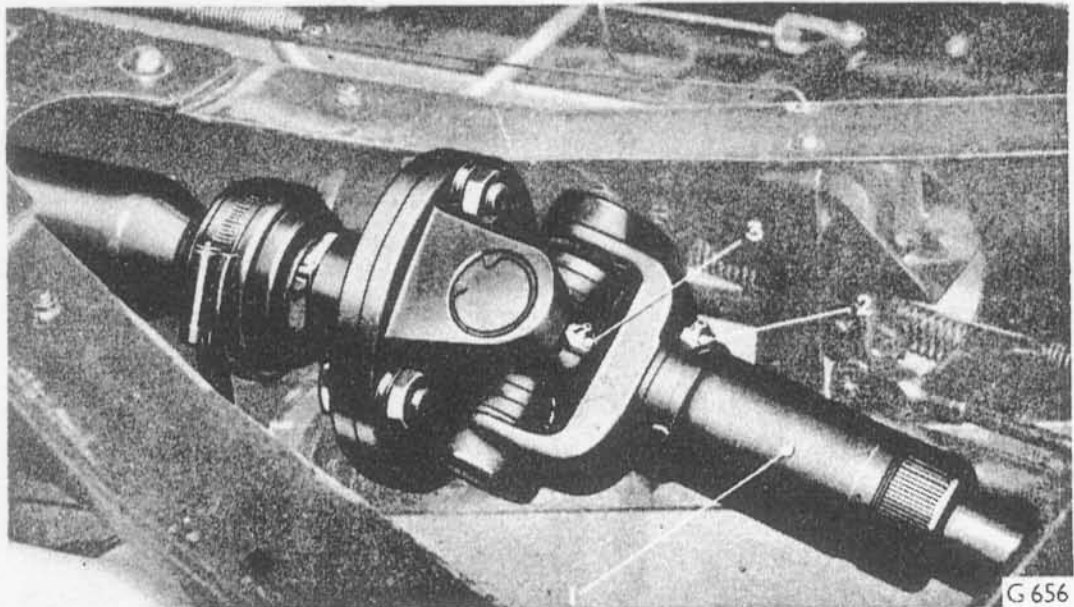


Fig. 21.—PROPELLER SHAFT.

1. Sliding joint. 2. Grease nipple sliding joint. 3. Grease nipple universal joint.

Universal Joints.

The propeller shaft universal joints are fitted with needle roller bearings, and each joint is provided with a grease-gun lubricator (3, Fig. 21), located at the centre of the cross-piece.

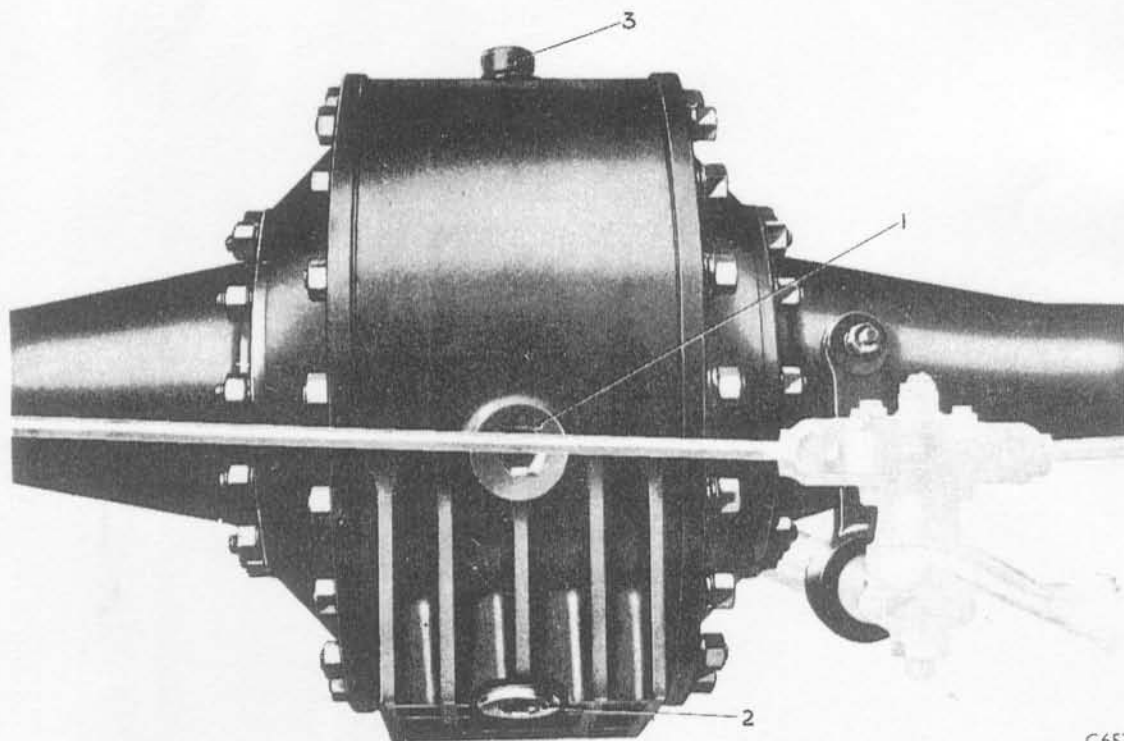
The driven portion of the centre joint is provided with serrations which engage similar serrations within the propeller shaft to permit the necessary degree of telescoping movement.

This sliding joint is also lubricated by means of a grease-gun lubricator, shown at (2, Fig. 21). Every 10,000 miles, as directed on page 32, the correct grease should be injected by means of the grease-gun into all the four lubricators.

Rear Axle.

The rear axle is of the semi-floating type.

The final drive is by offset hypoid bevel gears, which possess the advantages of being silent in running, and, owing to the offset disposition of the pinion, of enabling a lower body position to be obtained without decreasing the ground clearance.



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Fig. 22.—REAR AXLE CASING.

- | | |
|---------------------------|--------------|
| 1. Filler and level plug. | 3. Breather. |
| 2. Drain plug. | |

It is important that no other oil than that recommended should be used in the rear axle.

Every 5,000 miles, as directed on page 30, the level of the oil should be inspected, and topped-up if necessary.

Every 20,000 miles, as directed on page 33, the casing must be drained, and refilled with fresh oil to the correct level.

The drain plug (2, Fig. 22) should be removed, with the special spanner provided, preferably when the casing is warm; and all the oil allowed to drain out.

Plug (1) may then be removed for filling purposes. One-and-three-quarter ($1\frac{3}{4}$) pints of fresh oil should be inserted, using a syringe. This quantity should just cause oil to overflow from the filling orifice.

Care must be taken to see that the washer is in position when replacing the plug.