HUBS

SERVICE INSTRUCTION LEAFLET

ISSUED BY

BENTLEY MOTORS (1931) LTD.

BM/V1.

SB/GS.1/IP.

Subject :

HUBS, REMOVAL, FRONT AND REAR.
$3\frac{1}{2}$ AND $4\frac{1}{4}$ LITRE.

Date of Issue 14th Jan, 1946.

IMPORTANT

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I. General Description.

The front hubs are carried on ball or roller bearings on the stub axles, the side thrust being taken by the outer ball bearing, which controls the location of the hub. The inner or larger bearing is a roller race and carries journal load only.

The rear axle is of the fully floating type, the hubs being mounted on extensions of the axle tubes, thus driving torque is the only load taken by the axle shafts. Torque is transmitted from the axle shafts to the hubs by means of detachable dogs. Axial load is taken by the inner ball bearing.

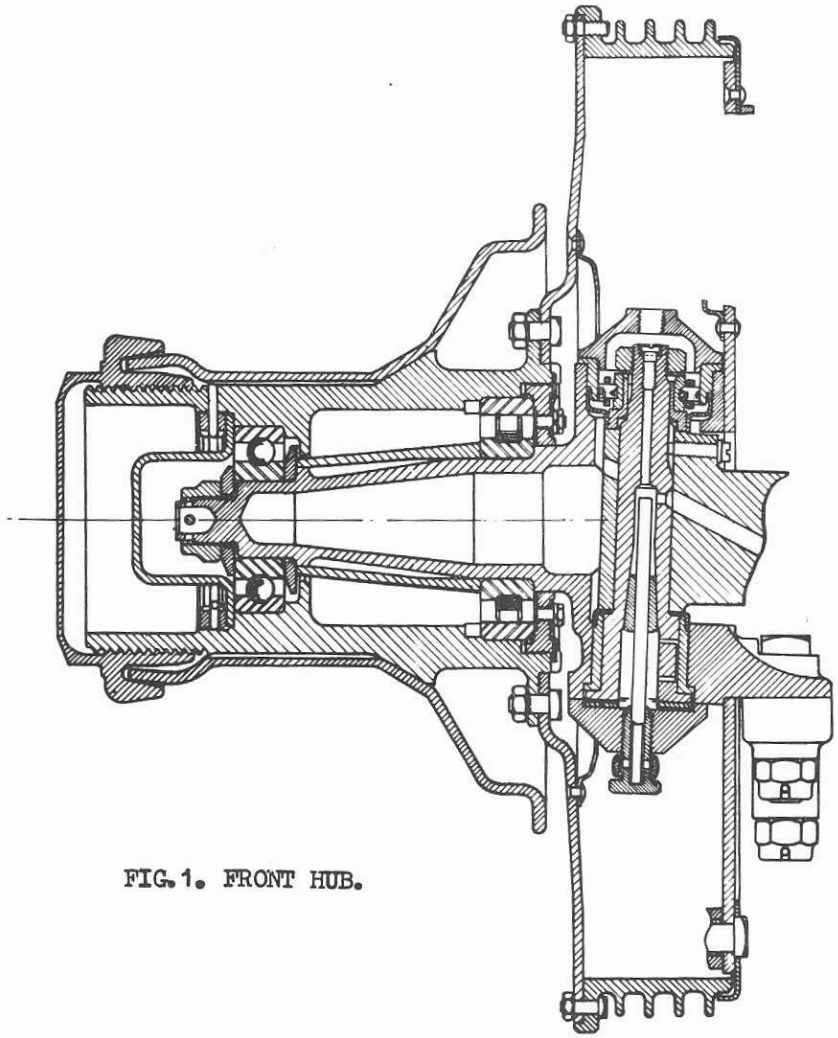

FIG.1. FRONT HUB.

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For the purpose of making clear the general construction of the hubs, sectional views of the front and rear hubs are shown in Figs. 1 and 2.

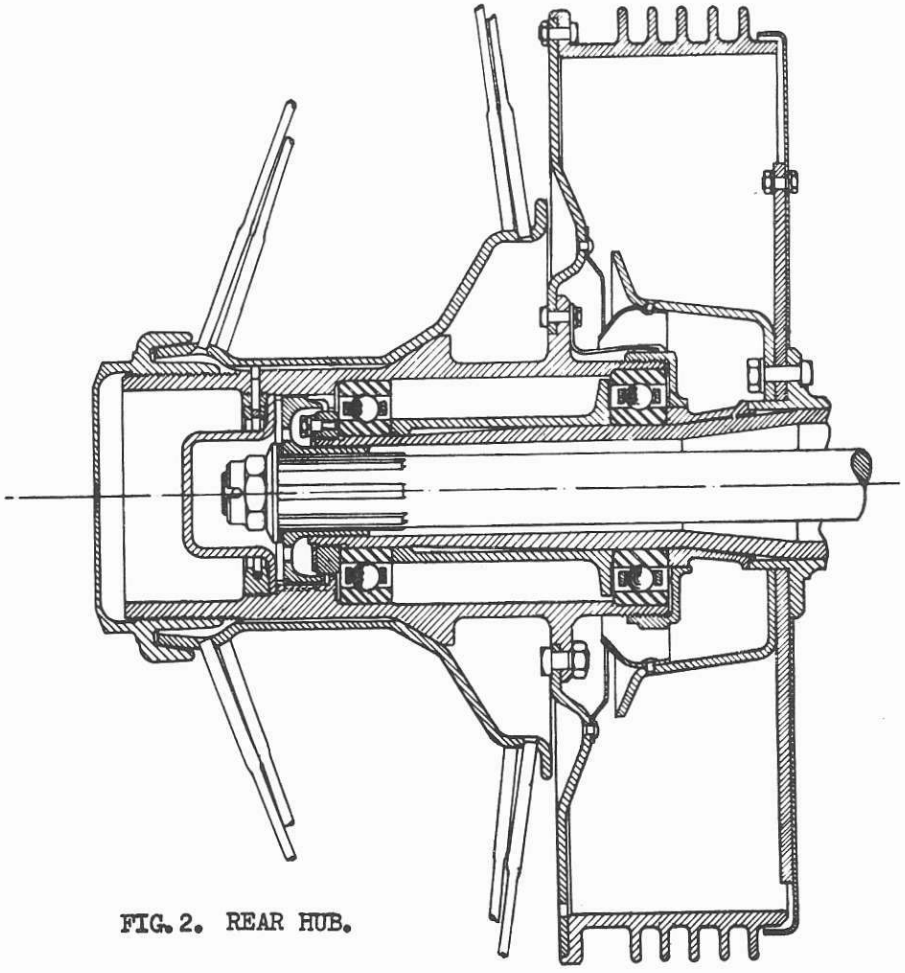

FIG. 2. REAR HUB.

With the exception of the nut securing the rear wheel driving dogs, all the various hub retaining nuts are provided with right and left hand threads according to the direction of rotation. To avoid damage, it is important to note the correct handing of the thread, also it is most important to ensure that the hubs are not transposed after removal.

II. Special Tools.

Special tools are necessary to unscrew or extract the various hub retaining parts. A chart of the hub removal tools is shown in Fig. 3, and it is recommended that one or more sets of tools be made available in each Service Station.

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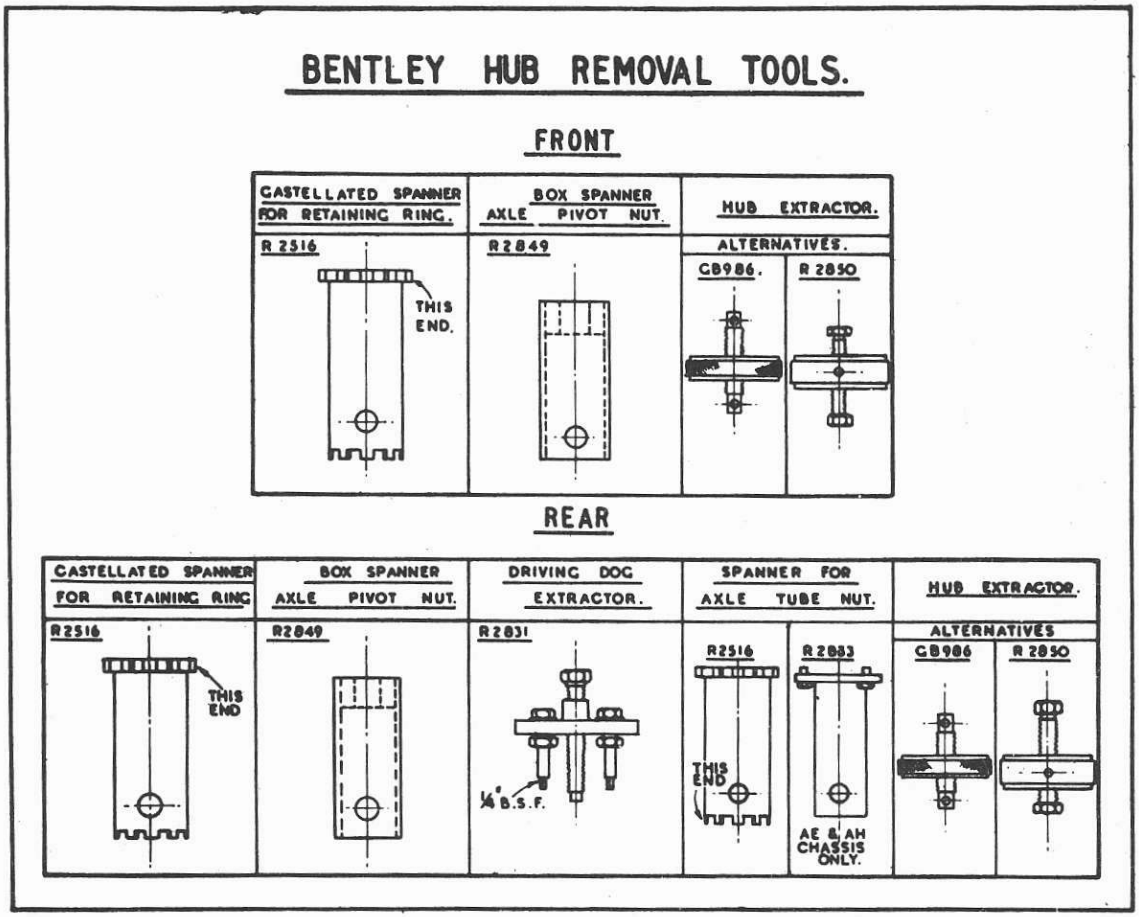

FIG. 3.

III. Method of Hub Removal.

(A) Front Hubs.

Refer to Fig. 4.

★ 1. By means of a screwdriver remove the wire locking ring (G) from inside the grease cap retainihg nut (H) and unscrew the nut with the special spanner. Remove the grease cap (J). Note:- The nut is left hand thread on the off side and right hand on the near side.

2. Remove the split pin and unscrew the stub axle nut (K). Note:- Left hand thread on the near side and right hand on the off side.

3. Withdraw the hub with the special extractor.

★ On the MR and MX series of the 4¼ Litre models the grease retaining cap screws into the hub. It has no locking piece and can be removed with a box spanner on its hexagon head. Note:- The thread is left hand on the off side and right hand on the near side.

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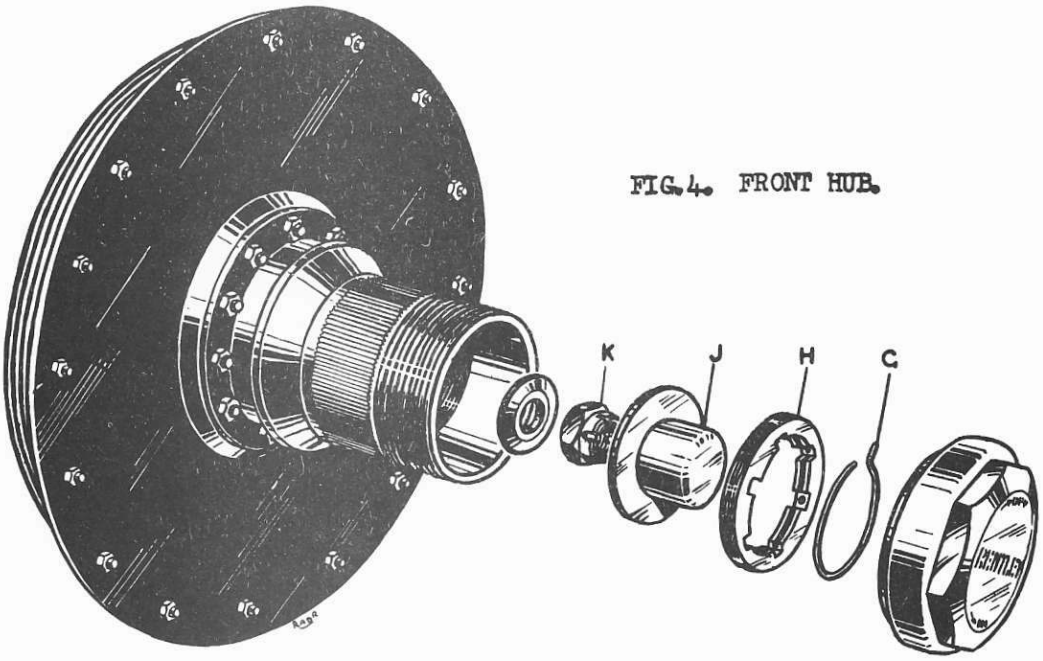

FIG.4. FRONT HUB.

(A) Rear Hubs.

Refer. to Fig. 5.

★ 1. By means of a screwdriver remove the wire locking ring (L) from inside the grease cap retaining nut (M) and unscrew the nut with the special spanner. Remove the grease cap (N). Note:- The thread is right hand on both off side and near side.

2. Remove the split pin and unscrew the axle shaft nut (O). In addition to the plain washer (P) there may be a packing washer (P_1) fitted behind the nut and special note must be made of this in order that it is not forgotten when reassembling. Note:- The nut is right hand thread on both off side and near side.

3. Withdraw the driving dog (Q) with the special extractor.

4. Remove the three 2BA nuts and spring washers that hold the locking plate (R) to the axle tube nut (S) and remove the locking plate. Note:- On the MR and MX series of the $4\frac{1}{4}$ Litre models the locking plate is secured by three 2BA setscrews in place of the nuts.

5. Unscrew the axle tube nut with the special spanner. Note:- The thread is left hand on the near side and right hand on the off side.

6. Withdraw the hub with the special extractor.

★ On the MR and MX series of the $4\frac{1}{4}$ Litre models the grease retaining cap screws into the hub. It has no locking piece and may be unscrewed with a box spanner on its hexagon head. Note:- The thread is right hand on both sides.

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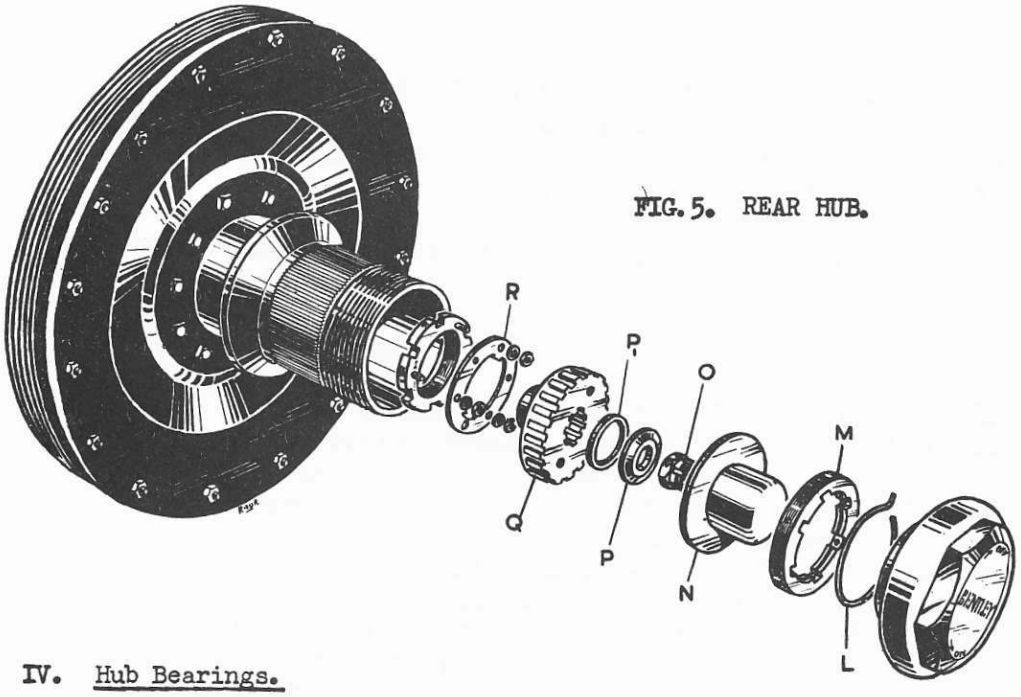

FIG. 5. REAR HUB.

IV. Hub Bearings.

(A) Removal of Bearings.

If necessary the hub bearings may be removed from the hub shells in the following manner:-

Front Hubs.

Pass a hardwood drift through the inner bearing and knock out the outer race. Remove the locking plate and unscrew the retaining nut* of the inner race, which can now be knocked out.

Rear Hubs.

Remove the locking plate and unscrew the retaining nut* of the inner race, which can then be knocked out. Remove the distance piece between the bearings and knock out the outer race.

* Note:- The retaining nut thread is left hand on both front and rear hubs.

(B) Ball bearings may require replacement or inspection due to noise or wear. The only method of inspection, apart from obvious damage, is to test for side play and noise. In regard to side play, it must be borne in mind that as the ball bearings have to take considerable side thrust, special Hoffman bearings are used, having greater diametric clearance for the balls than is normal in order that the resolved line of force is brought round to a more favourable angle. For this reason, bearings should not be condemned merely because the side play appears to be excessive, judge for noise as well, and if O.K. pass the bearings unless the side play denotes obvious wear.