Grip the mounting flange of the overdrive unit in a vice, so that the unit is upright, and insert a dummy shaft 18G 185 or a spare mainshaft if the dummy shaft is not available, so that the sun wheel and thrust washers, planet carrier and roller clutch line up with each other; a long thin screwdriver should be used to line by eye the

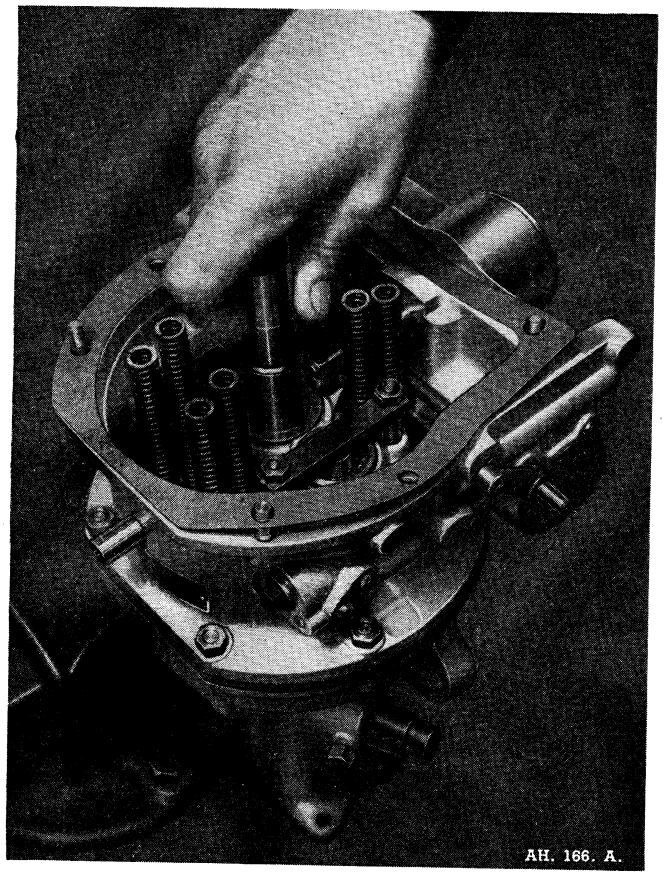

Fig. G.11. Centralising the gears with dummy mainshaft.

splines in the planet carrier and the roller clutch before inserting the dummy shaft. Gently turn the coupling flange to and fro while holding the dummy shaft, to assist in feeling the shaft into the splines of the planet carrier and roller clutch. Make sure that the dummy shaft has gone right in by holding the coupling flange in one hand and turning the shaft to and fro to feel the free-wheel action of the roller clutch.

Make quite sure that the clutch springs are in their correct positions—the 4¼ in. (10·8 cm.) long springs are the inner ones, and the 4½ in. (11·5 cm.) ones are the outer. This is most important because if any of the springs are in the wrong position they will become "coil bound" when the adaptor plate is in place and restrict the movement of the sliding clutch so that overdrive will not engage.

Place the oil pump operating cam in position on top of the centre bushing with the lowest part of the cam in contact with the oil pump plunger and also place the paper joint washer in position.

The gearbox, with top gear engaged, should now be lifted by hand on to the overdrive unit, carefully threading the mainshaft through the oil pump cam and into the centre bushing in the body of the overdrive unit. Gently turn the first motion shaft to and fro to assist in "feeling" the mainshaft into the splines of the planet carrier. When the mainshaft is sufficiently entered for the gearbox to come to rest against the clutch springs with the two long studs just protruding through the holes in the overdrive body, put the spring washers and nuts on to the end of the studs. Before commencing to tighten the nuts, use a long thin screwdriver to guide the ends of the clutch springs on to the short locating pegs which are cast into the face of the adaptor plate—this is very important because if the springs are not properly located they may become "coil bound" and prevent overdrive engaging. Now commence simultaneously to tighten the nuts on the two long studs, compressing the clutch springs and drawing the gearbox and overdrive together evenly. As the gearbox and overdrive come together watch carefully to see the splines on the mainshaft enter the oil pump operating cam and that the cam remains properly engaged with the oil pump plunger. If the two units do not pull together easily with only the resistance of the clutch springs being felt as the two nuts are tightened, stop tightening immediately. Gently rotate the gearbox first motion shaft in a clockwise direction whilst holding the overdrive coupling flange stationary until the mainshaft is felt to enter the roller clutch. The tightening of the nuts on the two long studs can then be completed, and the nuts fitted and tightened on to the four short studs.

NOTE: The gearbox mainshaft should enter the overdrive easily, provided that the lining-up procedure previously described is carried out and the unit is not disturbed. If any difficulty is experienced it is probable that one of the components has become misaligned, and the gearbox should be removed and the overdrive re-aligned with the dummy shaft.

Section G.11

OVERDRIVE RELAY SYSTEM

Description

Engagement of overdrive is controlled electrically through a manually operated toggle switch. The circuit shown in Fig. G.11 includes the following components :

(i) Relay, model SB40. An electro-magnetic switch used with item (ii) to enable an interlocking