E 5 Replacing contact breaker points

Note: Equipment required for operation but in some cases not supplied in special tool kit as various items are universal garage equipment.

Fig. 1 Tools: Screwdriver 6 mm, socket spanner 17/22 mm, puller screw for blower wheel No. 527, scriber, 1 set of contact spanners.

Fig. 2 1. Remove blower wheel housing (screwdriver 6 mm). 2. Remove dynamo front end cap. (screwdriver 6 mm) 3. Unscrew blower wheel screw. (socket spanner 17 mm) 4. Remove blower wheel by means of puller screw No. 527. (puller screw No. 527, socket wrench 22 mm)

Fig. 3 5. Slacken screw securing contact breaker lead. (open ended spanner 5.5 mm)

Fig. 4 Caution: Spring for breaker arm is slotted so that this screw must not be removed entirely. 6. Remove spring lock washer retaining the arm. (scriber)

Fig. 5 Caution: Hold spring lock washer with the finger to avoid jumping away. 7. Remove breaker arm. 8. Detach contact support. (screwdriver 6mm) To fit the new breaker points proceed in exactly the reverse order.
Caution: Before fitting the breaker arm fill the bearing bushing with Bosch grease F t l v 22. Upon having fitted new breaker points it is indispensable to reset the ignition timing (see M 30 Figures 81-85)

E 6 Replacing springs of automatic advance unit, and greasing the cam

Note: Equipment required for operation but in some cases not supplied in special tool kit as various items are universal garage equipment.

Fig. 6 Tools: Screwdriver 6 mm, socket spanner 17/22 mm, puller screw for blower wheel No. 527, scriber.

Fig. 7 1. Remove blower wheel housing (screwdriver 6 mm) 2. Remove dynamo front end cap (screwdriver 6 mm). 3. Unscrew blower wheel fixing screw. (socket spanner 17 mm). 4. Remove blower wheel by means of puller screw. (puller screw No. 527, socket spanner). 5. Mark position of cam (coloured pencil or brass scriber)

Fig. 8 6. Unhook advance springs. (scriber). 7. Remove lock ring for breaker cam (screwdriver).

Fig. 9 8. Unhook advance springs on breaker cam.
Caution: The advance springs are calibrated and must not be modified by extending them.

Fig. 10 Caution: The breaker cam should be greased inside before being fitted. Fill groove machined in inner side of breaker cam with lubricating grease.
The reassembly is carried out in exactly the reverse order. Fit the breaker cam into its original position, determined by the colour marks.

E 7 Replacing carbon brushes

Note: Equipment required for operation but in some cases not supplied in special tool kit, as various items are universal garage equipment.

Fig. 11 Tools: Screwdriver 6mm, socket spanner 17/22 mm, puller screw for blower wheel No. 527.

Fig. 12 For jobs 1 to 4 see E 6. Further more: 5. Remove sheet-metal cover from dynamo (generator) housing. (screwdriver 6 mm)

Fig. 13 6. Withdraw brush springs from top of carbon brushes and release them laterally. (screwdriver)

Fig. 14 7. Slacken brush lead attaching screw. (screwdriver 6 mm)

Fig. 15 8. Lift off the carbon brushes and fit the new set.
Caution: Make certain positive and negative brush leads are not too close to each other.

The reassembly is carried out in exactly the reverse order.

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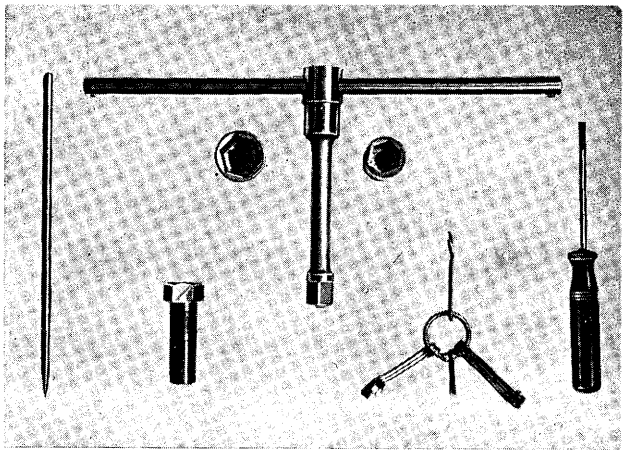

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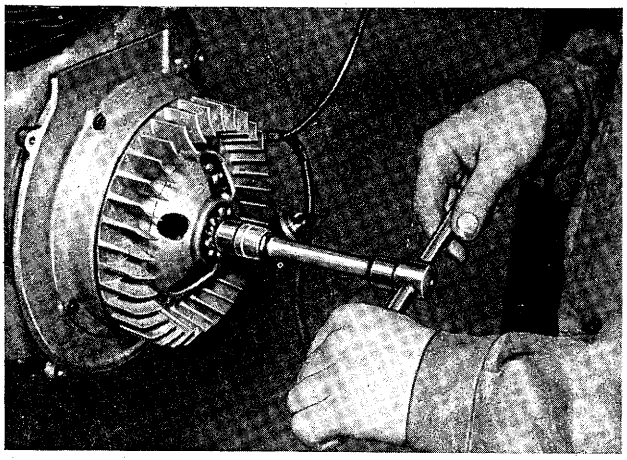

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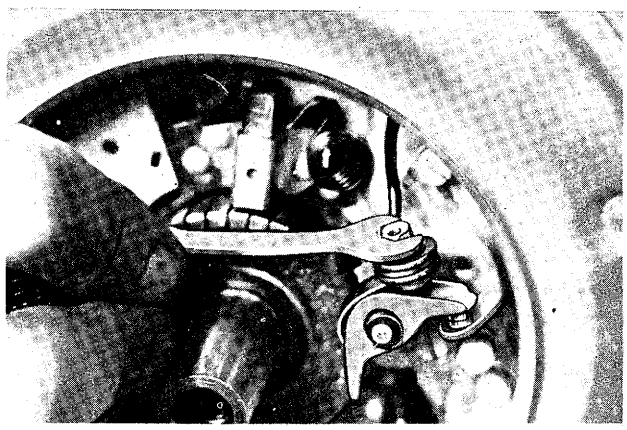

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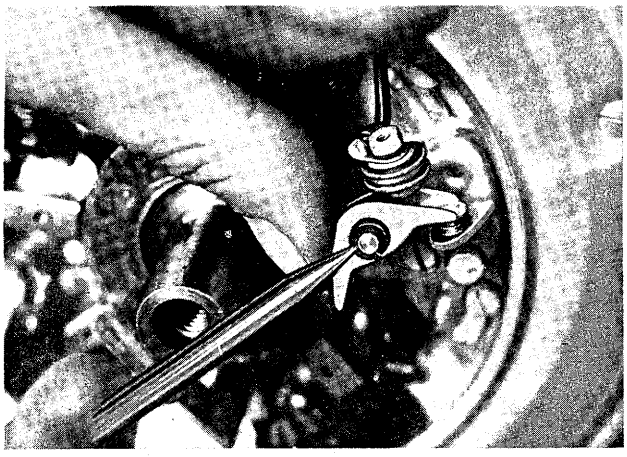

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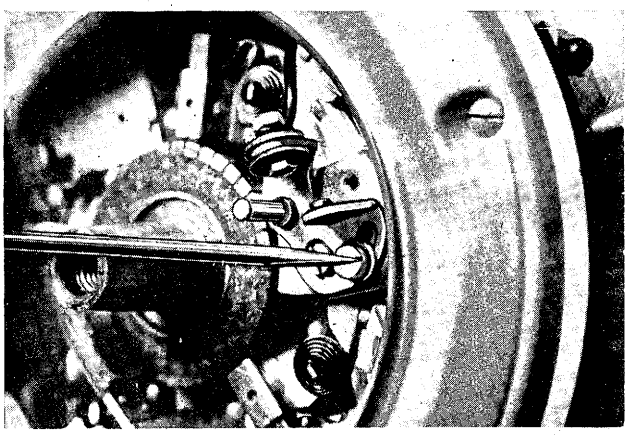

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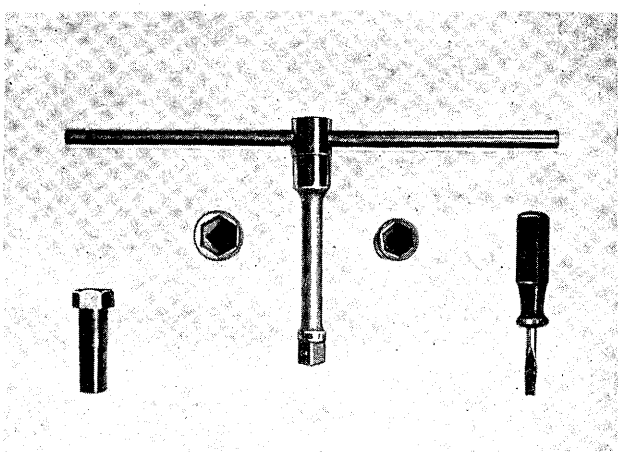

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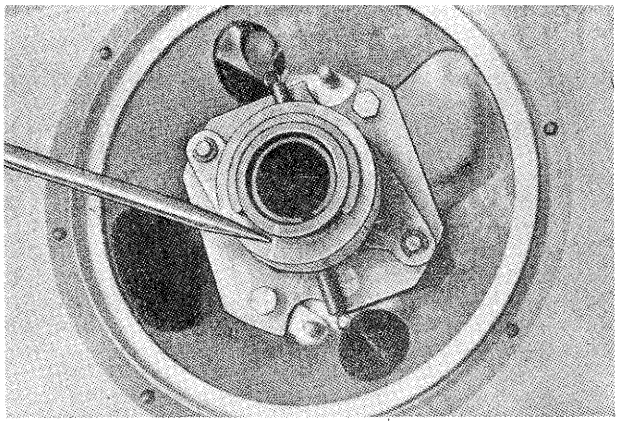

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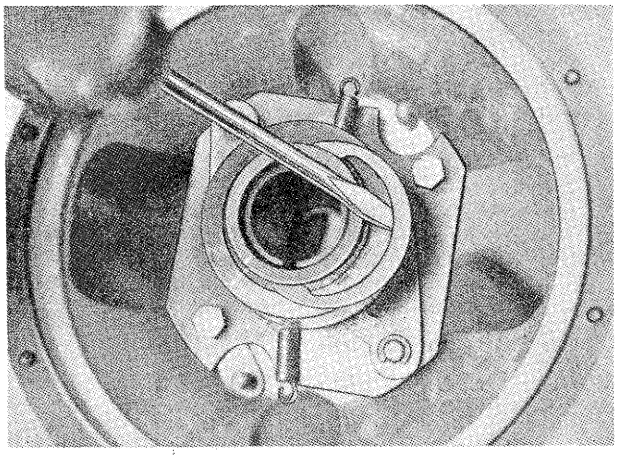

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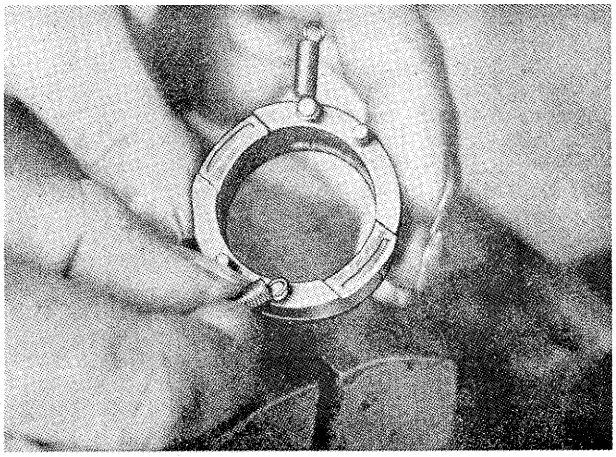

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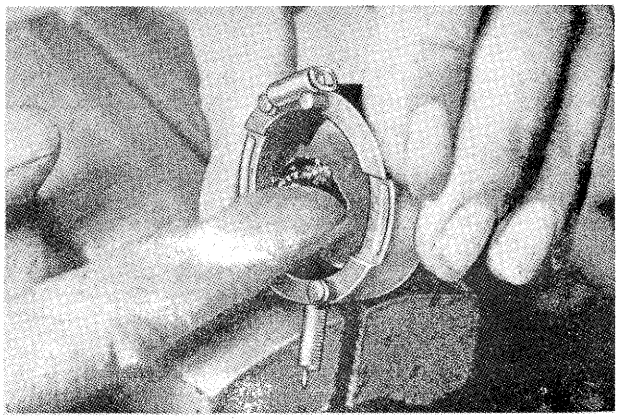

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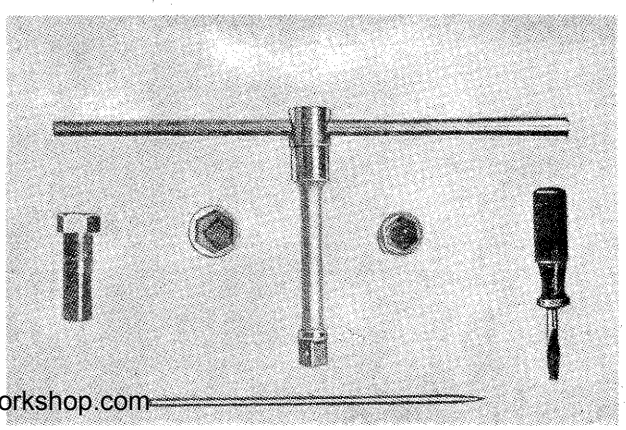

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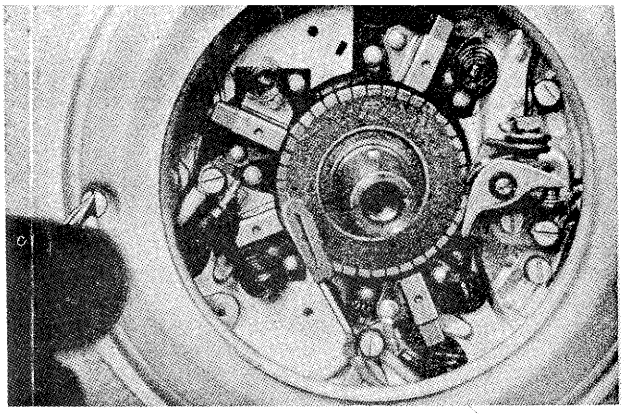

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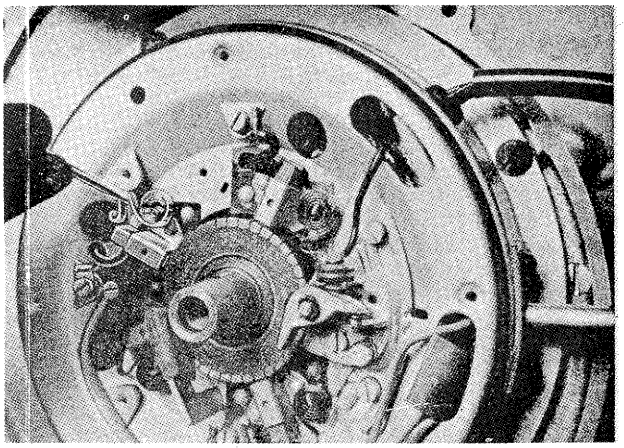

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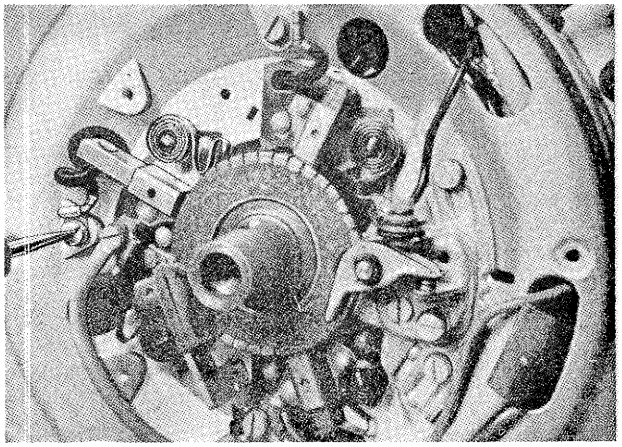

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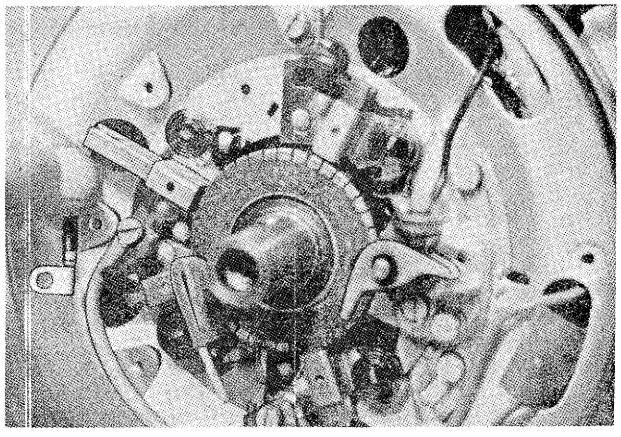

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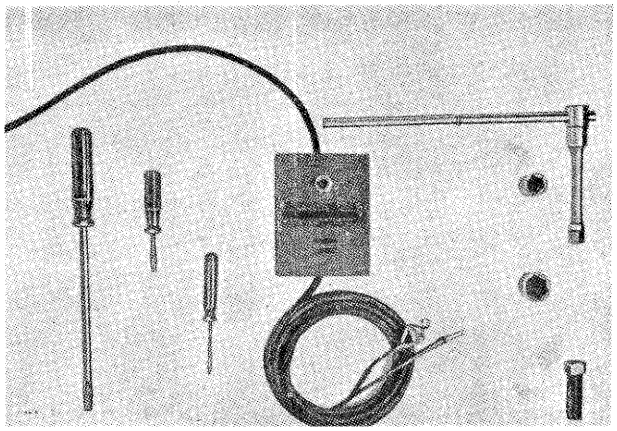

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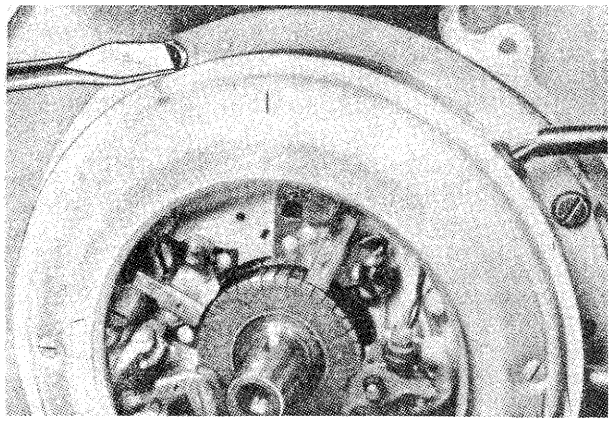

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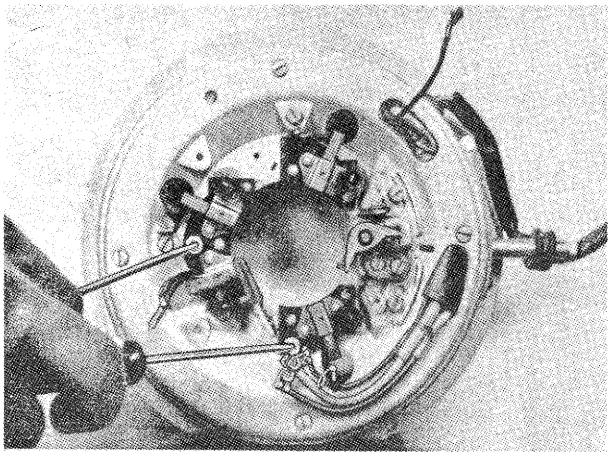

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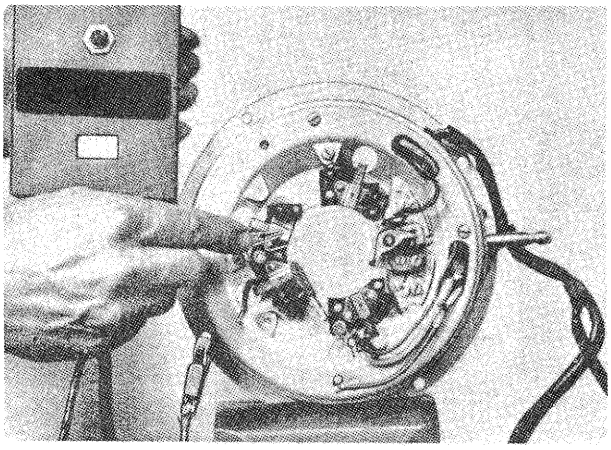

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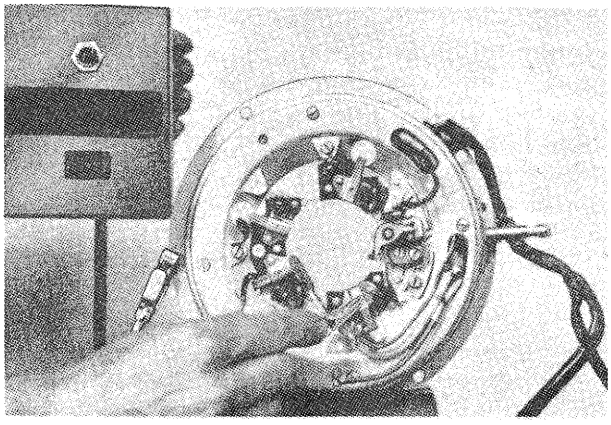

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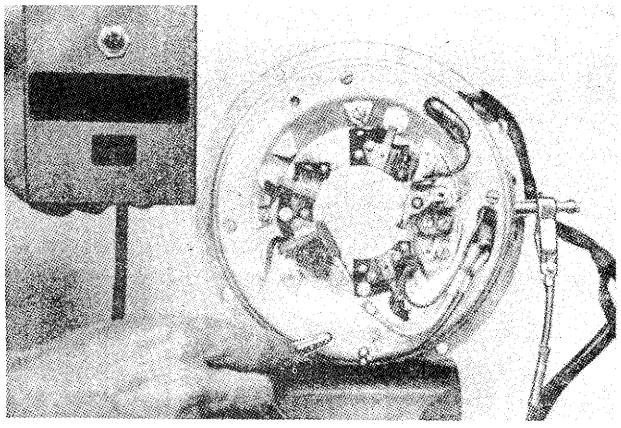

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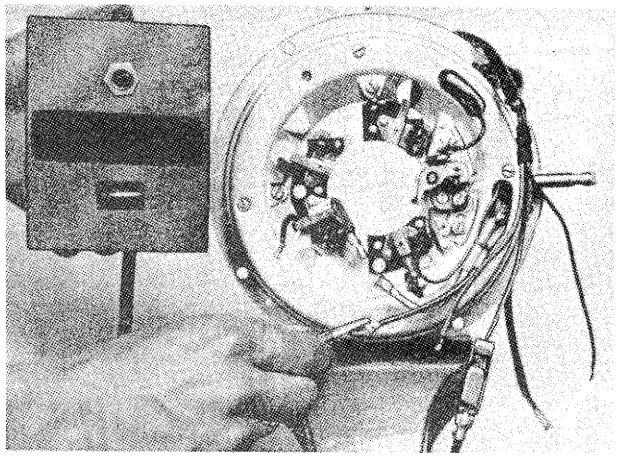

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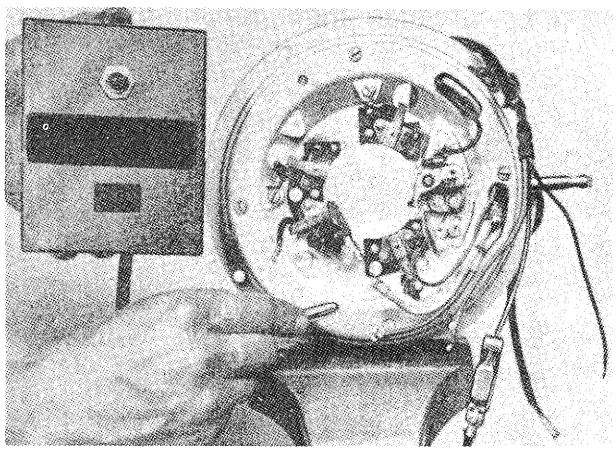

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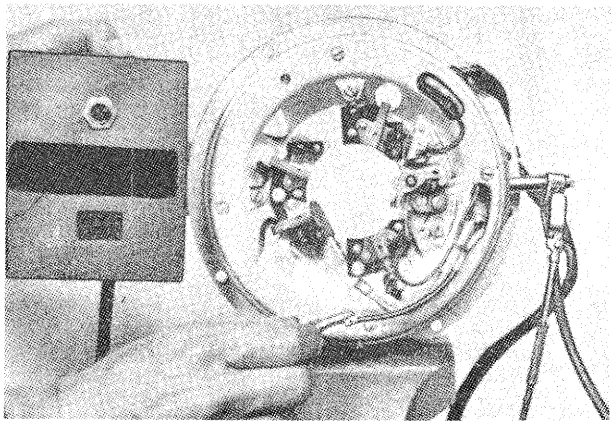

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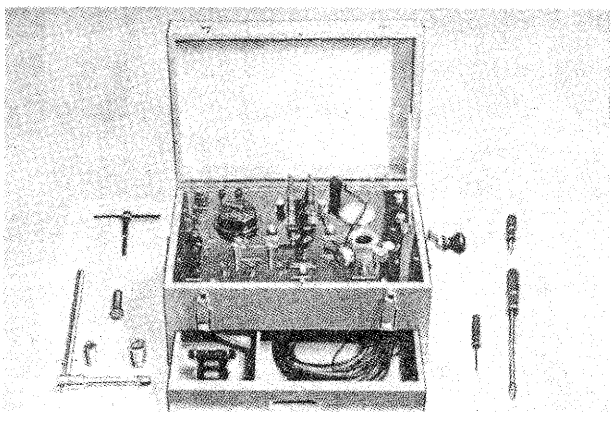

E 9 Testing carbon brushes for Circuit and ground (earth)

Note: Equipment required for operation but in some cases not supplied in special tool kit, as various items are universal garage equipment.

Fig. 16 Tools: Screwdriver 6/8 mm, electric screwdriver, socket spanner 17/22 mm, puller screw formblower wheel No. 527, test lamp.

Fig. 17 Jobs 1 to 5 as outlined in E 7. Furthermore:

6. Lift off all springs from carbon brushes, withdraw the brushes. (screwdriver). 7. Disconnect leads 15 and 1 from ignition coil. 8. Disconnect battery lead from starter connection. (screwdriver) 9. Disconnect leads green, blue and black/red from cable connector unit in the vehicle and draw them out. (see Group A 1 Figure 4) (electric screwdriver) 10. Detach dynamo (generator housing. (screwdriver 8 mm)

Fig. 18 Caution: When testing hold in mind that 2 brush holders have ground (earth) connection, 2 brush holders are insulated. 11. Disconnect positive connections from the two insulated brush holders. (screwdriver 6 mm)

Fig. 19 12. Test the grounded (earthed) brush holders (negative), by connecting one test lamp probe to the housing and the other probe to the brush holder. The test lamp must light.

Fig. 20 13. Test the insulated brush holders (positive), by connecting one test lamp probe to the housing and the other probe to the brush holder. The test lamp must not light.
The reassembly is carried out in exactly the reverse order.

E 10 Testing field coils for circuit and ground (earth)

Tools: Same set as for E 9. Jobs 1 to 10 as outlined in E 9. Furthermore:

Fig. 21 11. Disconnect field coil leads from brush holders. 12. Test starter field coils for circuit by connecting one test lamp probe to the field coil terminal lead and the other probe to starter lead terminal stud. The test lamp must light.

Fig. 22 13. Test starter field coils for ground (earth) by connecting one test lamp probe to starter lead terminal stud and the other probe to the dynamo cover.
The test lamp must not light.

Fig. 23 14. Test dynamo (generator) field coils for circuit by connecting one test lamp probe to field coil terminal lead and the other probe to brush lead of field coil.
The test lamp must light.

Fig. 24 15. Test dynamo (generator) field coils for ground by connecting one test lamp probe to field coil terminal lead and the other probe to the dynamo cover plate. The test lamp must not light.

Fig. 25 16. Test field coils of starter and dynamo for mutual ground by connecting one test lamp probe to terminal lead of starter coil and the other probe to brush lead of dynamo coil.
The test lamp must not light.

E 12 Testing armature of dynamo starter

Note: Equipment required for operation but in some cases not supplied in special tool kit, as various items are universal garage equipment.

Fig. 26 Tools: Screwdriver 6/8 mm, socket spanner 17/22 mm, puller screw for blower wheel No. 527, puller spindle for armature of dynamo starter No. 528, testing equipment Prufrex for electric sets (item shown in figure is type K 15).

Fig. 27 Jobs 1 to 6 as outlined in E 9. Furthermore:
7. Detach dynamo housing. (screwdriver 8 mm) 8. Remove dynamo housing (with the aid of 2 screwdrivers applied behind the flange of dynamo housing). 9. Remove armature from crankshaft extension by means of puller spindle No. 528.

Fig. 28 10. Locate armature assembly upon the testing equipment (Prufrex K 15)
a) Place detector magnet upon laminated iron core, switch on the equipment and rotate armature slowly.

Fig. 29 A defective armature wiring is indicated by the glowing of an incandescent glass tube on the testing equipment. (shorted armature). b) Short-circuit the commutator by surrounding it with a wire. Check laminated iron core with the detector magnet by turning armature slowly.

Fig. 30 If there is a break in the wiring the incandescent glass tube does not light. c) Check commutator bars and armature core (shaft) with the aid of test points.
A grounded armature is indicated by a humming noise produced by the testing equipment. (grounded armature)

E 13 Testing ignition coil

Tools: Socket spanner 10 mm, open ended spanner 9 mm, Prufrex testing equipment.

Fig. 31 1. Remove high-tension lead from ignition coil. 2. Detach connections S.W. and C.B from ignition coil. (open ended spanner 2 BA. 3. Detach ignition coil with holding bracket. (socket spanner 14 mm)

Fig. 32 4. Locate ignition coil upon the testing equipment and check it by means of spark discharge over the provided gap.

E 15 Testing condenser

Tools: Open ended spanner 2 BA - 14 mm open ended

Fig. 33 1. Detach connection to ignition coil. (open ended spanner 2 BA) 2. Detach condenser from holding clip on ignition coil. 14 mm.

Fig. 34 3. Fit condenser upon testing equipment and switch on the tester set.
4. Charge condenser.

Fig. 35 5. Discharge condenser.

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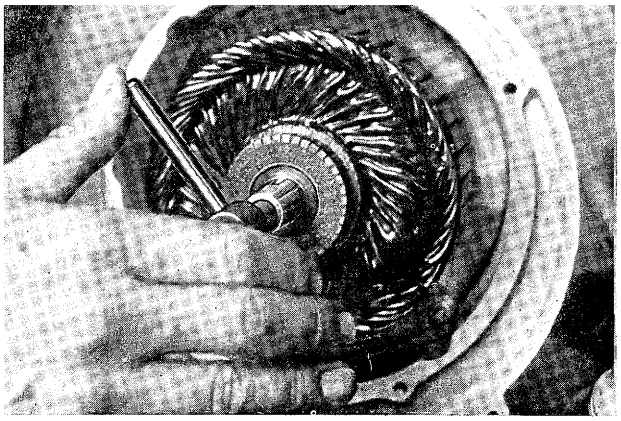

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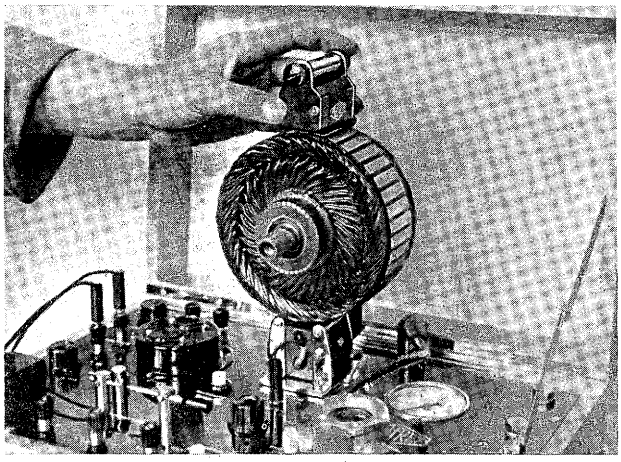

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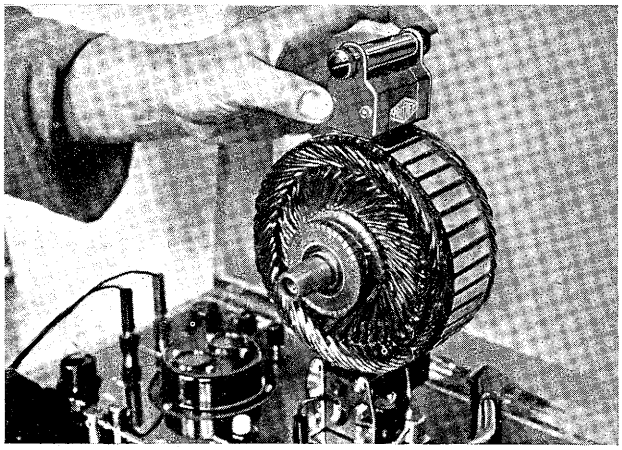

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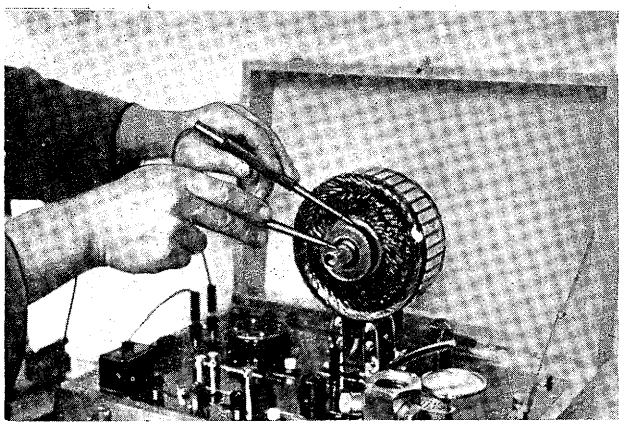

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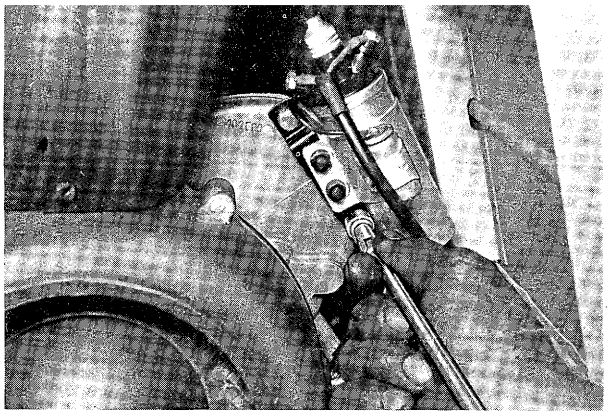

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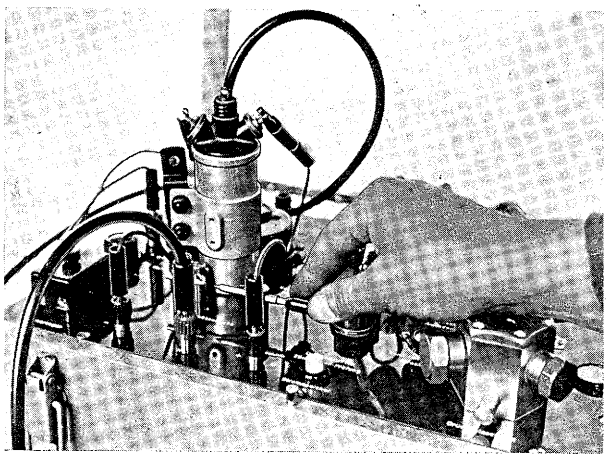

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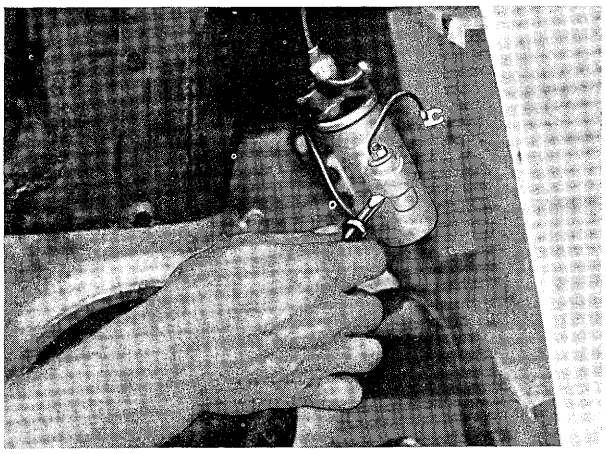

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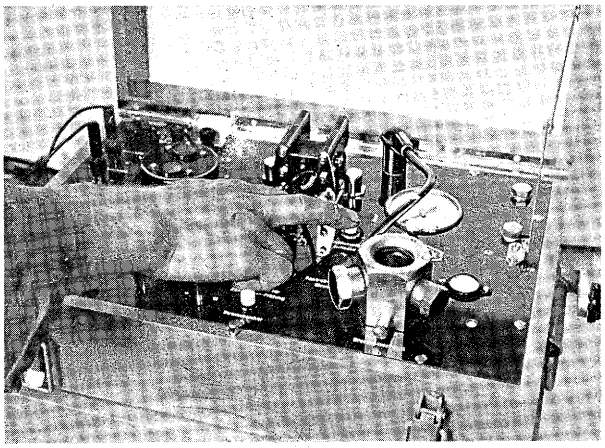

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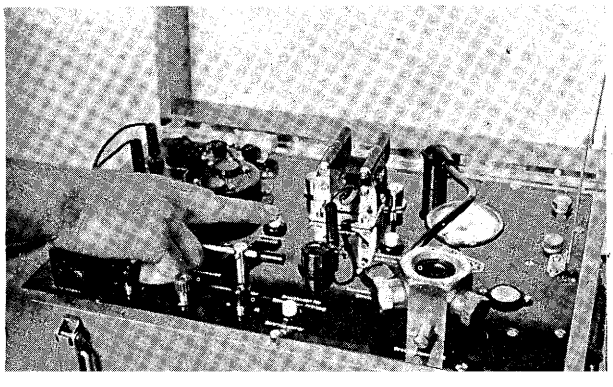


E 19 Replacing a Lucas lamp

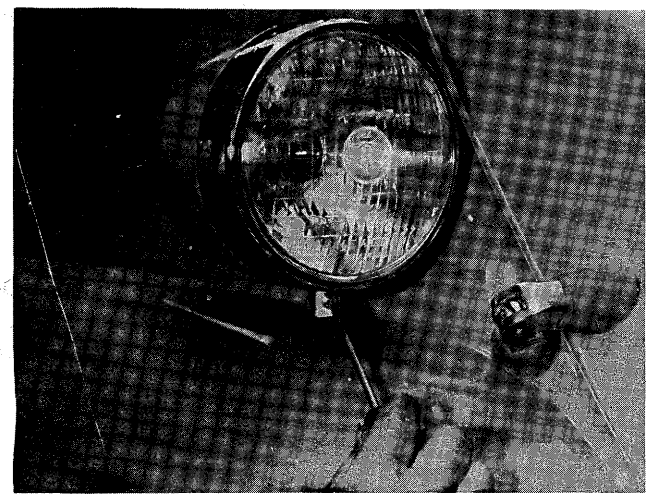
Fig. 36 Tools: Screwdriver 6mm.

1. Loosen the headlamp by removing the screw in centre of bottom and tilt headlamp upwards.

Fig. 37 2. Remove retaining clip for lamp holder.

Fig. 38 3. Turn lamp out of socket.

CAUTION A Lucas lamp should only be touched with a clean cloth or paper, as otherwise the sweat and oil on the hand might dim the reflector.



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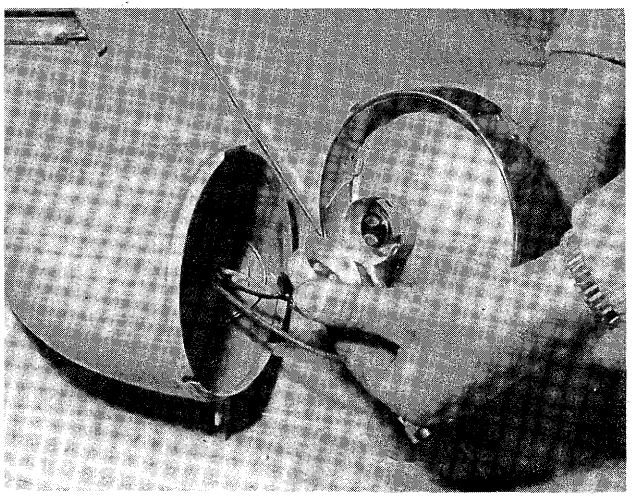

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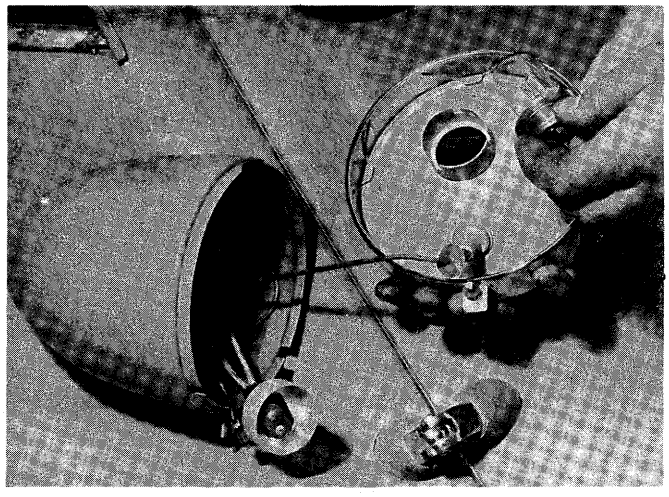

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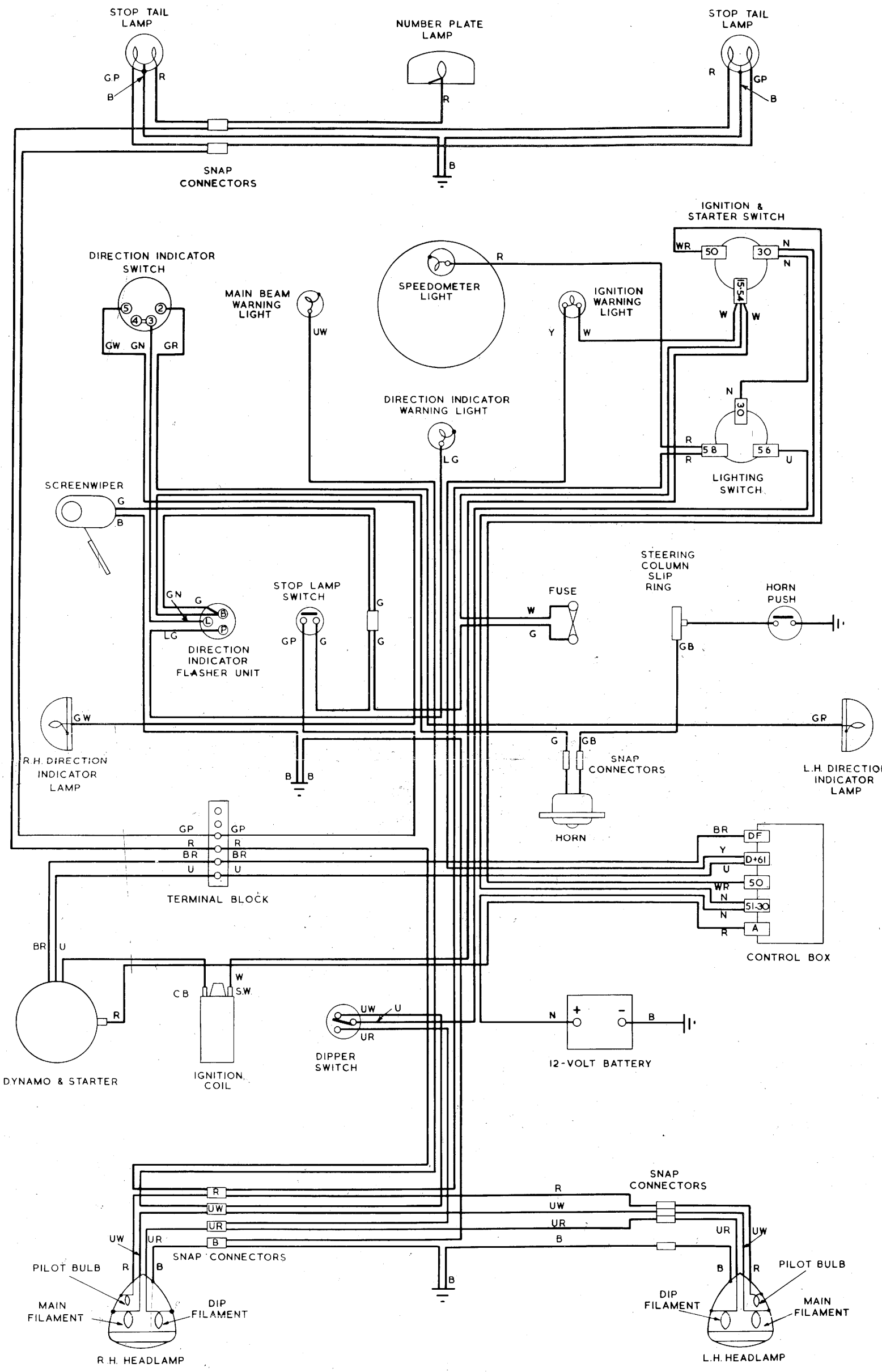

LUBRICATION AND MAINTENANCE CHART JOBS TO BE PERFORMED

The numerals indicate the lubrication points and correspond with the illustration on the margin.

1. Pedal shaft-lubricating grease.
2. Universal joint, steering-lubricating grease.
3. Steering arm shaft-lubricating grease.
4. Upper bearing steering knuckle king pin, left and right-lubricating grease.
5. Lower bearings steering knuckle king pin, left and right-lubricating grease.
6. Wheel bearings, left and right - lubricating grease.
7. Oil reservoir for fulcrum bearings of swing arm and torque arm, left and right-use Branded Oil SAE 40.
8. Brake master cylinder-Girling brake fluid crimson
9. Battery-distilled water.
10. Contact breaker-lubricating grease.
11. Engine-engine oil.
12. Rear suspension leaf spring-Esso Penetrating Oil.
13. Rear drive-engine oil.
14. Air-cleaner.
15. Transmission-engine oil
14.

MAKERS' RECOMMENDATIONS FOR LUBRICANTS AND MAINTENANCE PRODUCTS

- ◆ Engine Oil: Branded Oil S.A.E. 40 for Summer use and S.A.E.20 for Winter.
  Overseas: Multigrade IOW/30.
- ● Transmission: Branded Oil S.A.E. 40
- ▲ Lubricating grease: Multi-purpose grease.
- ■ Distilled water.
- \+ Brake fluid: Girling crimson Chassis Spray Oil.
- ✕ High-temperature bearing grease.