SECTION B-3 PART A
ISSUE 1, AUGUST 1950

LUCAS

Quality

EQUIPMENT

VOLUME 2

WORKSHOP INSTRUCTIONS

STARTER DRIVE

"S" PATTERN

JOSEPH LUCAS LTD · BIRMINGHAM 19 · ENGLAND

Printed in England

STARTER DRIVE

"S" PATTERN

1. GENERAL

The pinion is mounted on a threaded sleeve which is carried on splines on the armature shaft, the sleeve being arranged so that it can move along the shaft against a compression spring so as to reduce the shock loading at the moment engagement takes place.

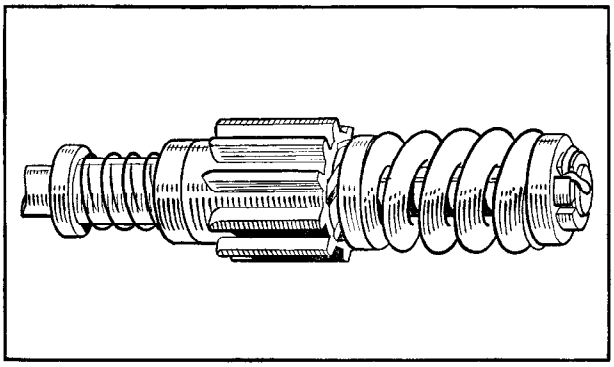

Fig. 1.
Inboard Pattern

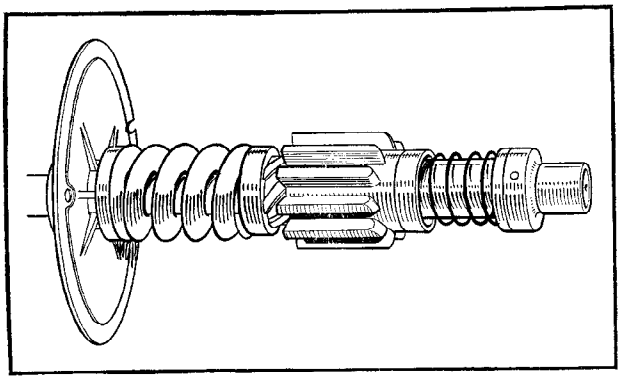

Fig. 2.
Outboard Pattern

When the starter switch is operated, the shaft and screwed sleeve rotate and, owing to the inertia of the pinion, the screwed sleeve turns inside the pinion causing the latter to move along the sleeve into engagement with the flywheel ring. The starter will then turn the engine.

As soon as the engine fires and commences to run under its own power, the flywheel will be driven faster by the engine than by the starter. This will cause the pinion to be screwed back along the sleeve and so thrown out of mesh with the flywheel teeth. In this manner the drive safeguards the starter against damage due to being driven at high speeds by the engine.

On many drives of this type, a pinion restraining spring is fitted over the starter shaft to prevent the pinion being vibrated into contact with the flywheel when the engine is running.

2. ROUTINE MAINTENANCE

If any difficulty is experienced with the starting motor not meshing correctly with the flywheel, it may be that the drive requires cleaning. The pinion should move freely on the screwed sleeve ; if there is any dirt or other foreign matter on the sleeve it must be washed off with paraffin.

In the event of the pinion becoming jammed in mesh with the flywheel, it can usually be freed by turning the starter motor armature by means of a spanner applied to the shaft extension at the commutator end.

This is accessible by removing the cap which is either a push fit or is secured by two screws.

3. DISMANTLING AND REASSEMBLY

Having removed the armature as described in the section dealing with starting motors the drive can be dismantled as follows :—

(a) DISMANTLING. INBOARD PATTERNS

Remove the cotter pin (A) from the shaft nut (B) at the end of the starter drive. Hold the squared starter shaft extension at the commutator end by means of a spanner and unscrew the square shaft nut (B). Lift off the main spring (C), washer (D), screwed sleeve with pinion (E), collar (F), pinion restraining spring (G) and spring restraining sleeve (H).

OUTBOARD PATTERNS

Remove the peg (A) from the bearing collar (B) at the end of the starter drive. Hold the squared starter shaft

extension at the commutator end by means of a spanner and unscrew the bearing collar (B). Remove the restraining spring sleeve (C) and then withdraw the restraining spring (D) and collar (E). Lift off the screwed sleeve with pinion (F), washer (G), main spring (H) washer (G) and intermediate Bracket (J).

NOTE.—If either the screwed sleeve or pinion are worn or damaged they must be replaced as a pair, not separately.

(b) REASSEMBLY

The reassembly of the drive is a reversal of the dismantling procedure.

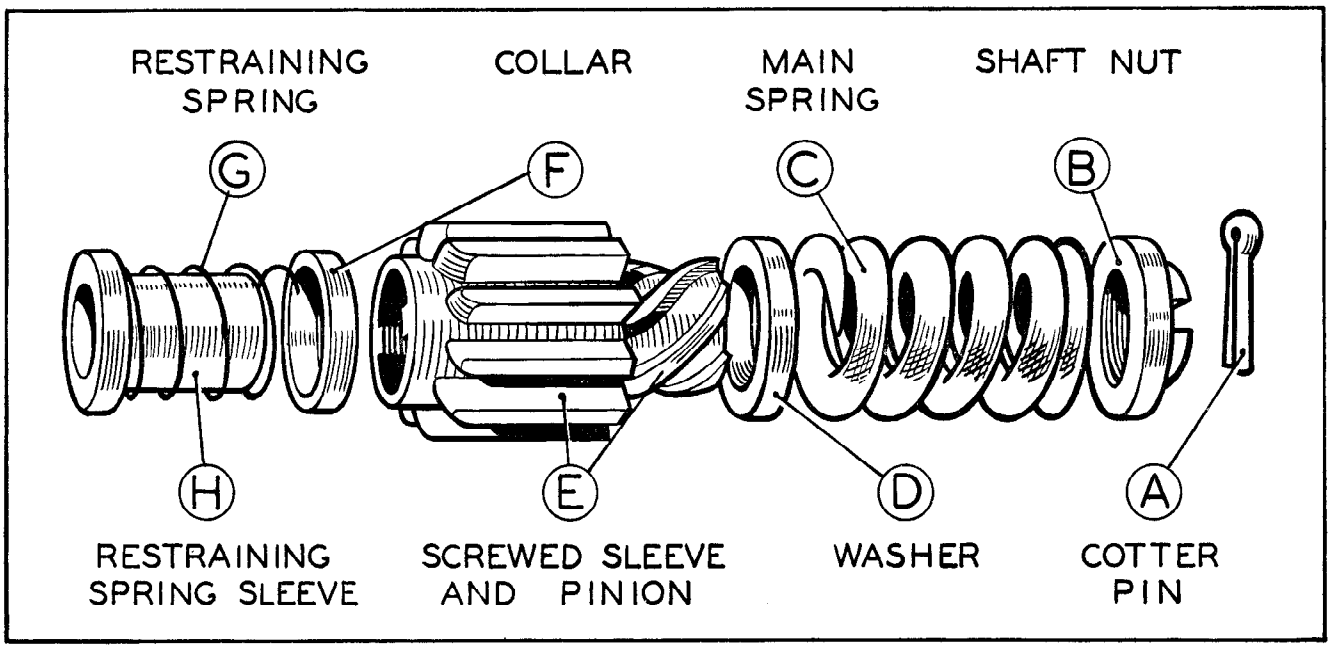

Fig. 3.
Inboard drive dismantled

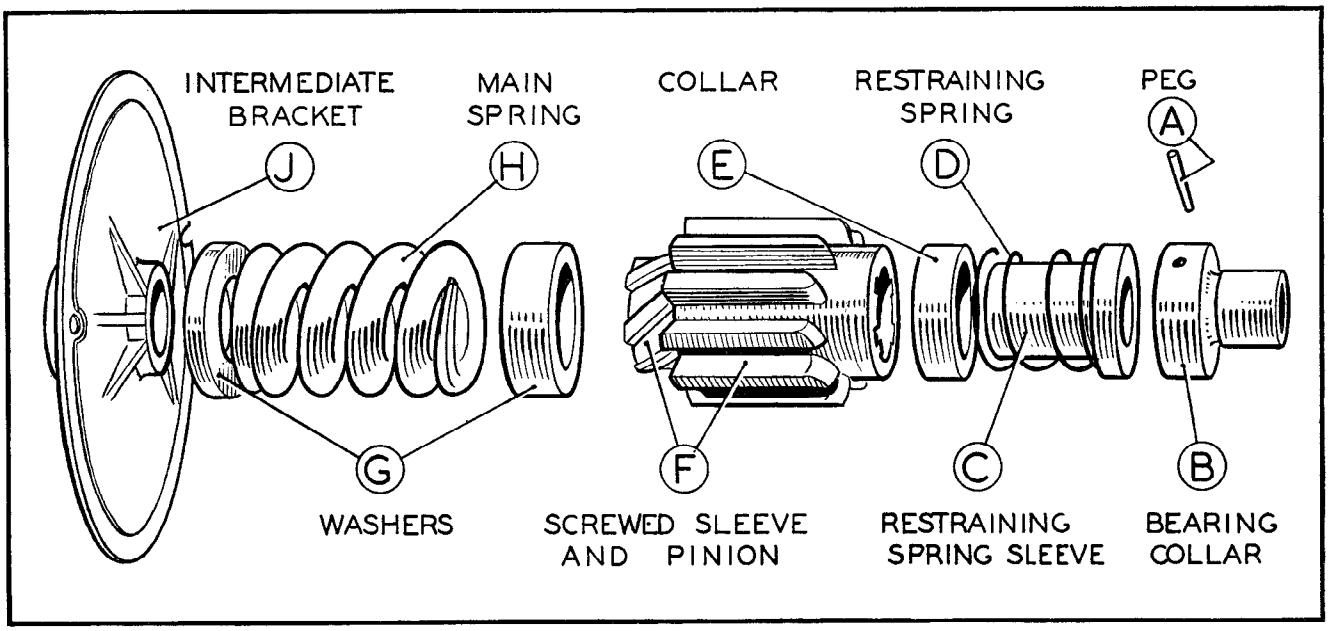

Fig. 4.
Outboard drive dismantled