April 3, 1956 F. W. HARTMAN, JR 2,740,853

CIRCUIT BREAKER ARM

Filed Nov. 8, 1951

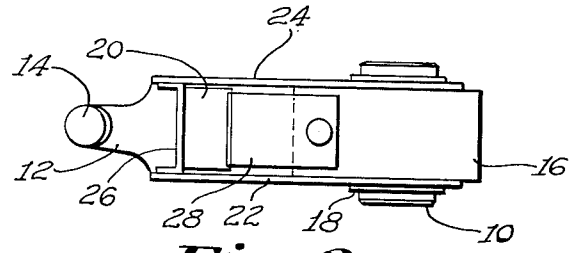


Fig. 2

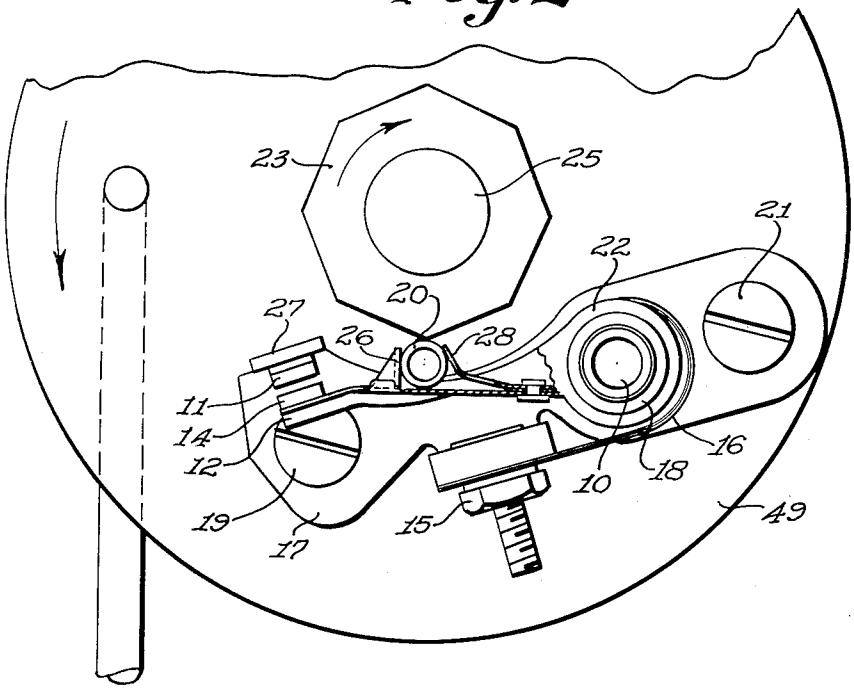


Fig. 1

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CIRCUIT BREAKER ARM

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1 Claim. (Cl. 200—30)

The object of this invention is to facilitate the service on a circuit breaker arm for an ignition system now in universal use on automobiles. At the moment, whenever a circuit breaker lever is badly worn, even though its tungsten point is intact, the whole lever is thrown away. If the insulated rubbing block could be detached and replaced, a considerable saving could be made. This is not commercially possible with present construction. I have discovered that a rotatable, detachable roller of nylon is the answer, and a spring carried by the circuit breaker arm permits the worn rubbing block to be removed and to be replaced.

Figure 1 is a plan view of the preferred form of my invention. Figure 2 is a partial view in elevation.

In the figure, **10** is the pivot on which the circuit breaker arm **12** oscillates. This arm is made of a stamping. **14** is the movable tungsten contact. **11** is the stationary contact (ground) carried on an ear **27** from the plate **17** which forms the support for the pivot **10**. **16** is the spring which holds the contact **14** so that it engages with its corresponding stationary contact **11** when the circuit is made. This spring **16** is also the conductor leading the current from the connection **15** to the contact **14**. **18** is the insulation surrounding the pin **10**. **20** is a hollow nylon roller which is retained by two ribs **22** and **24** stamped integral with the arm **12** so that the roller cannot escape sideways. An abutment **26** acts as a backstop and a flat spring **28** holds the roller **20** in place. Obviously, the roller will slowly rotate as the device operates. As the roller rotates, wear is spread over its entire circumference. The plate **17** is secured to the circuit breaker plate **49** by two screws **19** and **21**, which are loosened and tightened to adjust the timing, but these parts are no part of this invention, which is specifically directed to the circuit breaker arm **12** and its insulated nylon roller **20** as a separate service part installed in the distributors as a replaceable element in servicing a car.

Operation

The nylon roller **20** is engaged by the cam **23** driven by the shaft **25** which is driven at one-half engine speed The wear of the rotating roller **20** is sufficiently slow so that the life of the unit is determined by the burning of the tungsten contact points **14—11**. If the rubbing block **20** wears faster than the contacts **11—14** burn, eventually the contacts fail to open and the engine ceases to run. It is true that by loosening the screws **19** and **21**, the contacts can be readjusted; however, meanwhile an embarrassing situation has developed. The less the wear, the longer the life; as if the tungsten points **11—14** do burn slightly faster than the roller **20** wears, the result is not particularly objectionable—it merely reduces the period during which the coil and the condenser are charged.

What I claim is:

In a device of the character described having a stationary contact and a movable contact and a lever supporting the movable contact, a support therefor, a spring engaging said lever, a movable contact carried on the end of the lever, the novel feature which includes a detachable rotating cylindrical rubbing block adapted to be pressed against the lever by said spring, an abutment located on the lever adapted to locate the rubbing block, a second spring mounted on the lever and adapted to press the rubbing block against said abutment, and to permit said cylindrical block to rotate and in which the lever is made in the form of a channel and the cylindrical rubbing block is laterally restrained by the arms of said channel.

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