Oct. 9, 1956 W. F. JAMIESON ET AL 2,766,338

DWELL ROTOR FOR A DISTRIBUTOR

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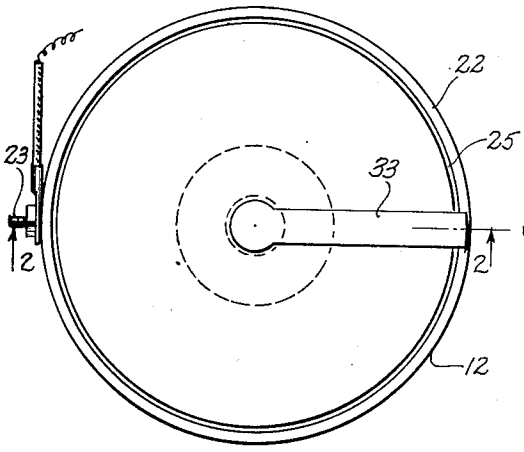


Fig. 1

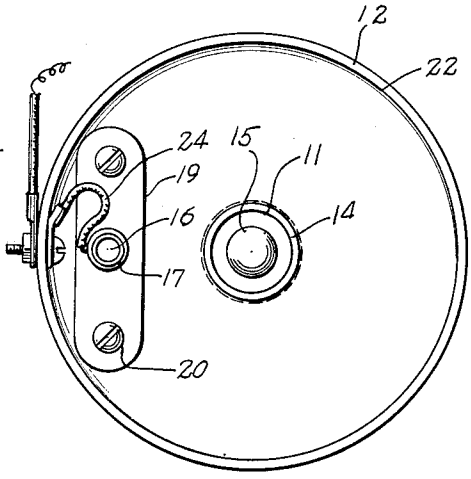


Fig. 3

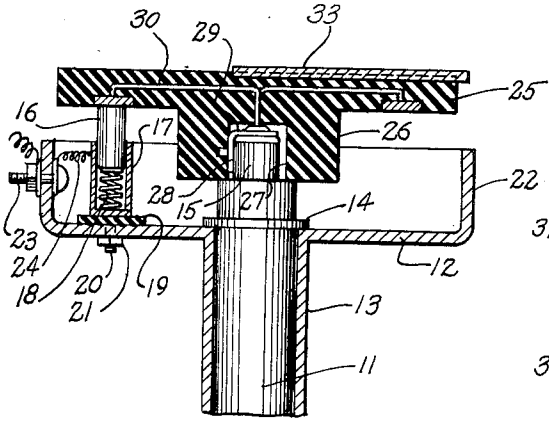


Fig. 2

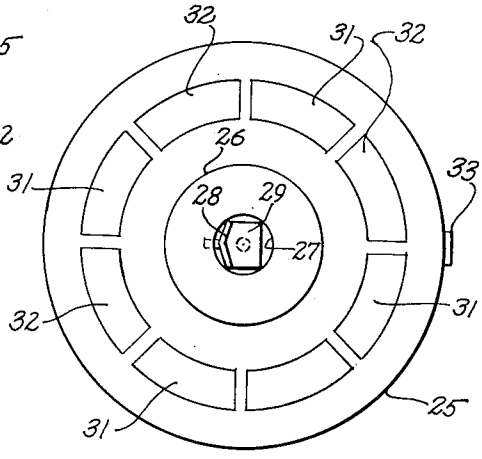


Fig. 4

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DWELL ROTOR FOR A DISTRIBUTOR

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2 Claims. (Cl. 200—24)

This invention relates to an improved dwell rotor distributor for the ignition system of an internal combustion engine.

A main object of the invention is to provide a novel and improved circuit breaking means for breaking the primary circuit of the distributor coil of an automobile ignition system, the improved circuit breaking means being simple in construction, being reliable in operation, and requiring no adjustment.

A further object of the invention is to provide an improved dwell rotor for use with the distributor of an internal combustion engine ignition system to intermittently make and break the primary circuit of the spark coil of the ignition system associated with the distributor, the improved rotor accomplishing the same result as the presently employed distributor points and cam of a conventional distributor, but being considerably less expensive to fabricate, easier to replace, being less affected by wear of the parts of the distributor than the conventional distributor points and cam, and requiring no adjustments, as well as being considerably lower in cost than the conventional distributor points and cam means for operating same presently employed.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a top view of an improved dwell rotor distributor according to the present invention, shown mounted on the top end portion of a distributor shaft.

Figure 2 is a vertical cross sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a top view, similar to Figure 1, with the improved dwell rotor removed.

Figure 4 is a bottom view of the dwell rotor illustrated in Figures 1 and 2.

Referring to the drawings, **11** designates the shaft of a distributor which is operatively driven by an internal combustion engine in a conventional manner and which is conductively grounded to the frame of the engine. Designated at **12** is a generally circular housing having a sleeve portion **13** surrounding the distributor shaft **11**, the shaft being freely rotatable relative to the housing **12** and sleeve **13**, the shaft being formed with a collar element **14** which overlies the horizontal circular wall of the housing **12**. The shaft **11** is formed with a reduced top end portion **15**.

Designated at **16** is a contact brush which is slidably mounted in a cup member **17** of conductive material, said cup member being provided with a coiled spring **18** bearing between the bottom wall of the cup member and the bottom end of the contact brush **16** and biasing the brush upwardly, as is clearly shown in Figure 2. The cup member **17** is supported on an insulating plate **19** which is secured to the circular wall of housing **12** by bolts **20** and nuts **21** engaged on said bolts. As will be clearly apparent from Figure 2, the brush member **16** extends parallel to the top end portion **15** of the shaft **11** and is spaced outwardly therefrom. The housing **12**

is formed with an upstanding marginal flange **22**, and secured in said flange is a terminal **23** which is connected by a wire **24** to the conductive cup member **17** containing the brush **16**.

Designated at **25** is a disc rotor of insulating material which is formed with a depending central boss **26**, said boss being recessed centrally at **27** and fitting over the reduced top end portion **15** of the distributor shaft **11**, as shown in Figure 2. Secured in the recess **27** of the boss **26** is a resilient conductive spring **28** which is wedgingly engaged between the reduced top end portion **15** of shaft **11** and the wall of recess **27** and frictionally secures the rotor **25** to the shaft **11** for rotation therewith.

The resilient spring **28** is formed with the top flange **29** which is connected by a plurality of separate conductors **30** each to a plurality of spaced arcuate contact segments **31** molded in the rotor **25** and exposed at the bottom surface thereof, as shown in Figure 2. The spaced arcuate contact elements **31** are at the same radial distance from the axis of the recess **27** as the brush element **16**, whereby said brush element is intermittently engageable with the spaced arcuate contact segments **31** responsive to rotation of the distributor shaft **11**. Molded in the bottom surface portion of the rotor **25** between adjacent arcuate contact elements **31** are additional arcuate segments **32** which are not connected in any suitable way to the ignition circuit, being merely employed to define desired predetermined gaps between adjacent contact segments **31**.

The distributor shaft **11** is grounded, whenever the brush **16** engages one of the contact segments **31**, the terminal **23** is grounded. The terminal **23** is connected in the conventional manner to an ignition coil (not shown) to intermittently open and close the circuit of the low tension winding of the distributor coil in the same manner as is accomplished by the conventional breaker points.

Secured in the top surface portion of the rotor **25** is the radially extending conductive arm **33** which corresponds to the distributor arm employed on the rotor of a conventional distributor and which serves to distribute the high potential to the respective spark plug electrodes (not shown) as the distributor rotor rotates, as in the conventional distributor.

As will be apparent, the spacing between the successive conductive segments **31** is fixed, and therefore no adjustment of the distributor is necessary, thus avoiding the requirement of adjustment of the distributor points required in the presently employed distributors.

When the contact segments **31** become excessively worn or deteriorated, the rotor may be replaced by merely disengaging same from the reduced top end portion **15** of the distributor shaft and mounting a new rotor thereon.

While a specific embodiment of an improved dwell rotor for a distributor has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a distributor, a conductive cylindrical housing having a bottom wall and a sidewall, central means on said bottom wall for mounting said housing non-rotatably on a distributor shaft, a single fixed spring pressed contact rising from said bottom wall in radially spaced relation to said central means, said contact being insulated from said housing, a non-conductive disc rotor having means for mounting the same on a distributor shaft within said housing to rotate with the shaft, said rotor having an underside spaced above the housing bottom and overlying said single contact, circumferentially

spaced contact segments on the underside of the rotor engageable with said single contact, first conductive means for severally connecting said segments to the distributor shaft.

2. In a distributor, a conductive cylindrical housing having a bottom wall and a sidewall, central means on said bottom wall for mounting said housing non-rotatably on a distributor shaft, a single fixed spring pressed contact rising from said bottom wall in radially spaced relation to said central means, said contact being insulated from said housing, a non-conductive disc rotor having means for mounting the same on a distributor shaft within said housing to rotate with the shaft, said rotor having an underside spaced above the housing bottom and overlying said single contact, circumferentially spaced contact

segments on the underside of the rotor engageable with said single contact, first conductive means for severally connecting said segments to the distributor shaft, said rotor having an upper side, and a conductive arm mounted radially upon said upper side and having an outer end projecting radially beyond said rotor.

References Cited in the file of this patent

UNITED STATES PATENTS

2,510,067	Callander	June 6, 1950
2,574,616	Brown	Nov. 13, 1951

FOREIGN PATENTS

673,920	Great Britain	June 11, 1952