Jan. 6, 1953 O. A. DIETSCHE 2,624,810

DOUBLE POINT IGNITION DISTRIBUTOR

Filed Dec. 20, 1951

Fig. 1.

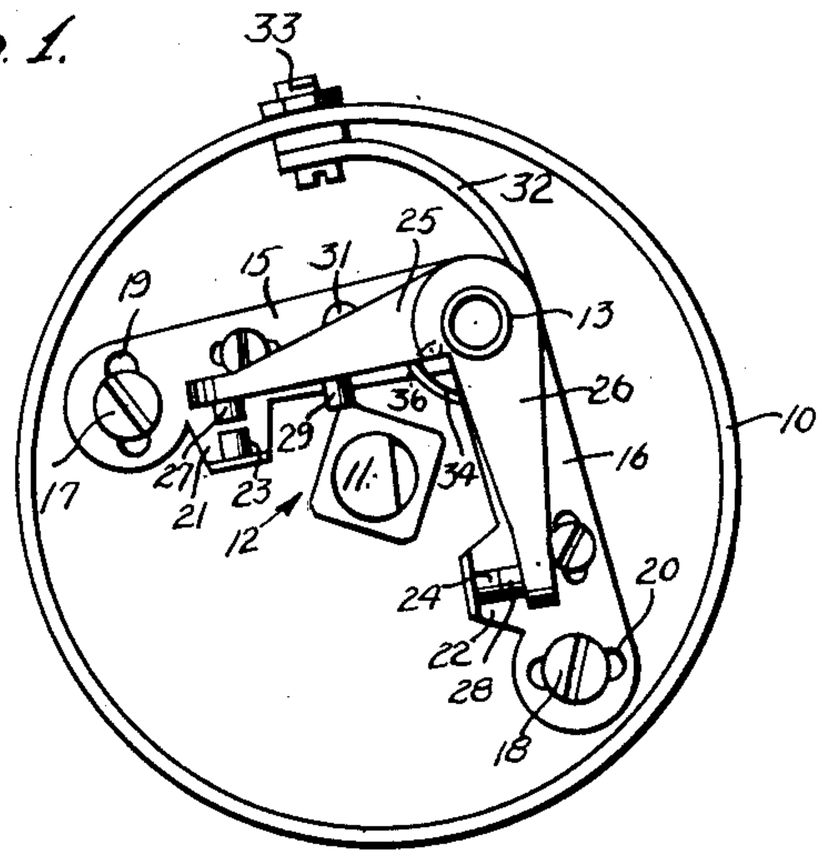


Fig. 2.

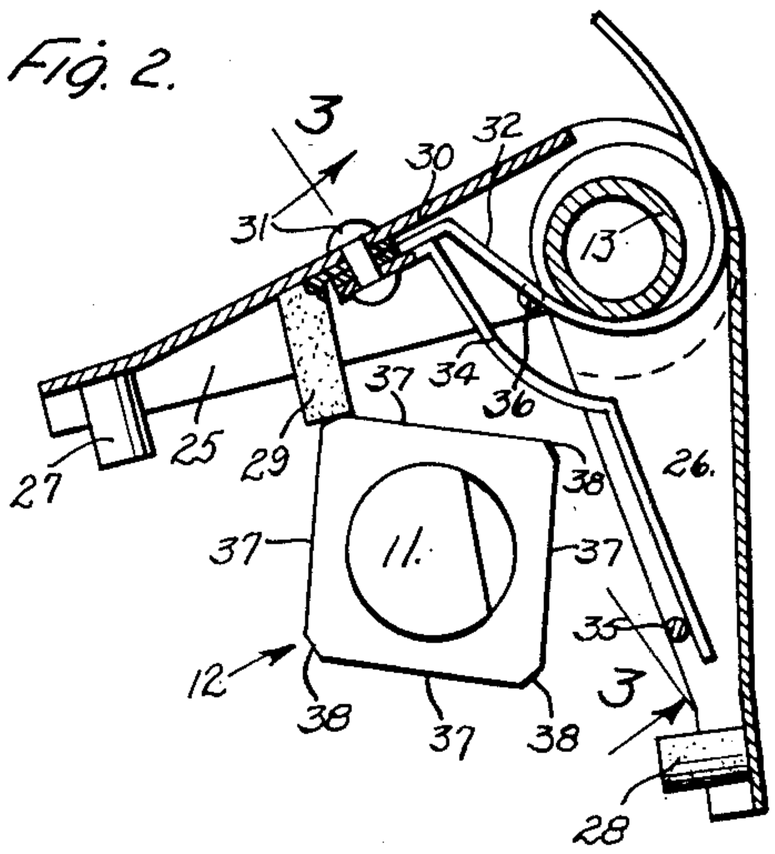
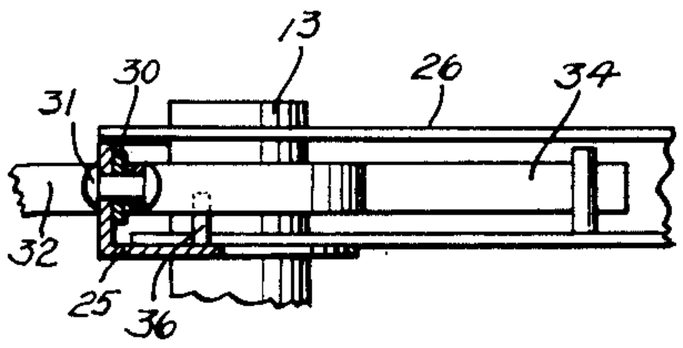


Fig. 3.



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DOUBLE POINT IGNITION DISTRIBUTOR

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2 Claims. (Cl. 200—30)

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The present invention relates to a double point ignition distributor and it consists in the combinations, constructions and arrangements of parts herein described and claimed.

The present invention relates to a double point ignition distributor for internal combustion engines, the use of which makes it possible to eliminate the overlapping of contacts, which overlapping feature has caused some automobile manufacturers to use two distributors to correct this trouble. A novel four-lobe cam is provided as a part of the invention and there is also provided two pairs of contact points one of which is closed during the time that a fiber guide member is in contact with the lower sides of the four-lobe cam while the other is closed when the fiber member is in contact with the higher points upon the cam. The use of the device is such that there will be the same period of time between contact on an eight cylinder motor that is customarily had with a four cylinder motor.

It is accordingly an object of the invention to provide a novel double point ignition distributor for internal combustion engines.

Another object of the invention is to provide a device of the character set forth which is simple in construction, inexpensive to manufacture and yet effective and effcient in use.

A further object of the invention is the provision, in a device of the character set forth, of a novel arrangement of springs forming a part of the invention.

A still further object of the invention is the provision, in a device of the character set forth, of a novel four-lobe cam forming a part of the invention.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawing, in which:

Figure 1 is a plan view of an embodiment of the invention,

Figure 2 is an enlarged sectional view, partly in elevation, of the device illustrated in Figure 1, and

Figure 3 is a fragmentary sectional view taken substantially along line 3—3 of Figure 2.

Referring more particularly to the drawing, there is shown therein a double point ignition distributor having a circular casing 10 through which extends centrally a revoluble shaft 11 upon which is mounted a four-lobe cam generally indicated at 12.

Eccentrically positioned with respect to the shaft 11 is a stationary shaft 13 which extends through the inner portions of a pair of plates 15 and 16 which extend substantially at right angles to each other and which are adjustably connected by means of screws 17 and 18, respectively, which extend through arcuate slots 19 and 20, respectively, in the outer portions thereof and which screws engage the inner wall of the casing 10.

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Adjacent the outer end of each of the plates 15 and 16 there is provided an integrally formed extension arm 21 and 22, respectively, to each of which is affixed a fixed contact member 23 and 24, respectively.

A pair of breaker arms 25 and 26 are each pivotally mounted at their inner ends upon the shaft 13 and each is provided with a movable contact member 27 and 28, respectively, which movable contact members are adapted to respectively contact the fixed contact members 23 and 24.

A fiber guide finger 29 is provided with a base 30 which is affixed to the arm 25 by means of a rivet 31 and the free end of the finger 29 is urged into contact with the cam 12 by means of a flat spring 32 one end of which is locked to the arm 25 by means of the rivet 31 and the other end of which is affixed to the side of the casing 10 by means of a bolt 33 or the like. A second flat spring 34 is likewise locked to the arm 25 by means of the rivet 31 and is adapted to bear against a pin 35 carried by the arm 26. The spring 34, it will be seen, is adapted to urge the arm 26 in a clockwise direction with respect to the shaft 13. A detent pin 36 is carried by the arm 15 and forms a stop member against which the arm 26 abuts and which limits the clockwise movement of the arm 26.

The cam 12 is substantially square in shape and is provided with four elongated sides 37 and four flattened corners 38.

In operation, it will be apparent that as the shaft 11 turns, it will carry with it the four-lobe cam 12 and that while the finger 29 is in contact with the corner portions 38 thereof (which are the high points upon the cam 12) that the arm 25 will be moved in a clockwise direction upon the shaft 13 against the action of the spring 32 thus lifting the movable contact member 27 out of engagement with the contact member 33 while at the same time the pin 36 is moved in a clockwise direction also since it is attached to the arm 25. This allows the movable contact 28 to come into contact with the fixed contact 24. When, however, the cam 12 rotates further

so that the finger 29 comes into contact with the side 37 of the cam 12 (the sides 37 being the lower parts of the cam) the arm 25 will move in a counterclockwise direction as viewed in Figure 2, for example, and the pin 36 will likewise move in a counterclockwise direction thus moving the arm 26 also in a counterclockwise direction. This action will allow the movable contact member 27 to come into contact with the fixed contact member 23 while at the same time moving the contact member 28 away from the contact member 24. Thus it will be seen that the pair of contacts 27—23 will at all times be closed while the other pair of contacts 28—24 is opened and that the reverse is also true. Since only one finger 29 is used and only one cam 12 is necessary, no adjustment is needed as in the case of the conventional distributors.

While but one form of the invention has been shown and described herein, it will be readily apparent to those skilled in the art that many minor modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. A device of the character described comprising a casing, a revoluble shaft extending centrally therethrough, a stationary shaft eccentrically mounted in said casing, a pair of breaker arms each pivotally mounted at one of its ends upon said stationary shaft, means for urging said arms toward each other, means for limiting the movement of said arms toward each other to approximately a right angle, a square cam having flattened corners affixed to the revoluble shaft, a fiber finger carried by one of said arms and having its outer end in contact with the sides of said cam, a pair of fixed contact members mounted in said casing each adjacent the outer end of one of said arms, and a movable contact member carried by each of said arms and each adapted to contact one of said fixed contact members, said means for urging the arms toward each other includes a spring interconnecting one of said arms with the walls of said casing, a pin affixed to the other arm, and a second spring affixed to the first-mentioned arm and bearing against said pin at its outer end.

2. A device of the character described comprising a casing, a revoluble shaft extending centrally therethrough, a stationary shaft eccentrically mounted in said casing, a pair of breaker arms each pivotally mounted at one of its ends upon said stationary shaft, means for urging said arms toward each other, means for limiting the movement of said arms toward each other to approximately a right angle, a square cam having flattened corners affixed to the revoluble shaft, a fiber finger carried by one of said arms and having its outer end in contact with the sides of said cam, a pair of fixed contact members mounted in said casing each adjacent the outer end of one of said arms, and a movable contact member carried by each of said arms and each adapted to contact one of said fixed contact members, said means for limiting the movement of the arms toward each other comprises a detent pin carried by one of said arms adjacent its pivoted end and abutting the other of said arms.

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The following references are of record in the file of this patent:

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