

Sept. 12, 1950

A. K. WIHANTO

2,521,887

TIMING DEVICE FOR INTERNAL-COMBUSTION ENGINES

Filed Jan. 13, 1948

Fig. 1.

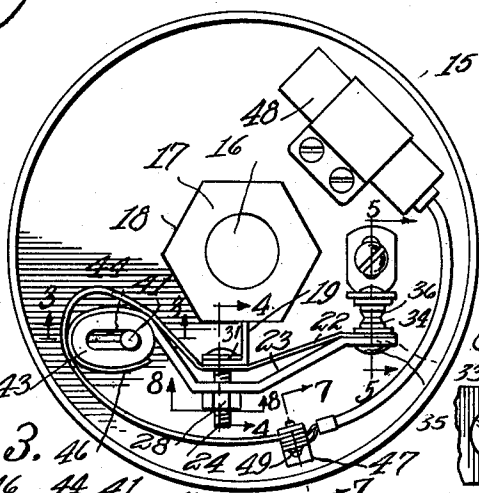


Fig. 9.

Fig. 7.

Fig. 8.

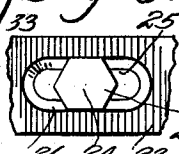
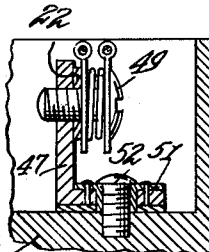
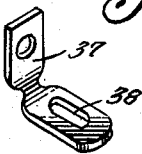


Fig. 3.

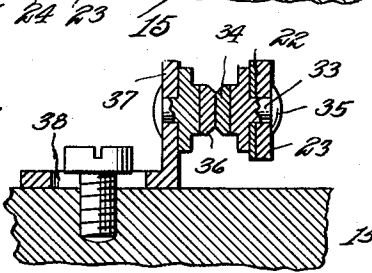
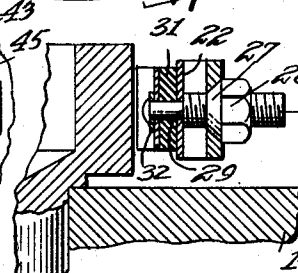
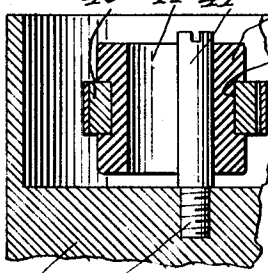


Fig. 4.

Fig. 5.

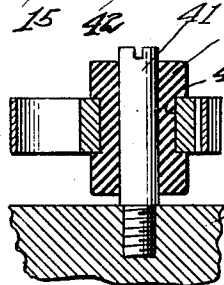
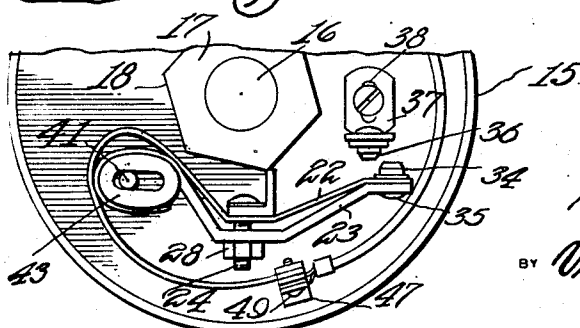


Fig. 6.

Fig. 2.



INVENTOR.
Adolph K. Wihanto.

BY Victor J. Evans & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE

2,521,887

TIMING DEVICE FOR INTERNAL-COMBUSTION ENGINES

Adolph K. Wihanto, Malden, Mass.

Application January 13, 1948, Serial No. 2,014

4 Claims. (Cl. 200—30)

1

This invention relates to timing devices for internal combustion engines.

It is an object of the present invention to provide a timing device wherein the contacts as they are engaged with one another will have a wiping action so as to at all times provide clean contact faces.

Other objects of the present invention are to provide a wiping type of contact arrangement for timing devices which is of simple construction, easy to adjust, inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a top plan view of the timing device with the contacts in engagement with one another,

Fig. 2 is a similar view to Fig. 1 but with the contacts out of engagement with one another and the contact arm being extended by the cam,

Fig. 3 is an enlarged cross-sectional view, in elevation, taken through the connection of the arm with the vertical post and as viewed on line 3—3 of Fig. 1,

Fig. 4 is a fragmentary cross-sectional view, in elevation, taken through the arm and spring and on line 4—4 of Fig. 1,

Fig. 5 is a transverse sectional view taken through the contacts when in engagement with one another and on line 5—5 of Fig. 1,

Fig. 6 is a fragmentary sectional view taken through the pivot connection of the contact arm with the vertical post and on line 6—6 of Fig. 2,

Fig. 7 is an enlarged sectional view of an angle support for spring and wires, the view being taken on line 7—7 of Fig. 1,

Fig. 8 is a fragmentary front elevational view of the portion of the contact arm to which the follower is attached,

Fig. 9 is a perspective view of the contact support for the fixed contact.

Referring now to the figures, 15 represents a base through which extends a shaft 16 carrying a six sided cam 17. This cam thus has faces 18 with which a cam follower 19 will engage. This cam follower is secured to a flat spring 22 and to an arm 23 outside of the spring and made secure thereto by a bolt 24. The follower 19 is thus brought flush against the front face of the spring 22. The bolt 24 extends through an elongated slot 25 in the arm 23, which has a beveled face 26 adapted to receive a tapered portion 27 of a nut 28 on the bolt 24. The bolt 24 has a shoulder

2

29 against which the spring 22 is fixed. The follower 19 is formed preferably of insulating material as indicated at 31, Fig. 4, and an insulating washer 32 may be provided on the head of the bolt 24.

At the outer end of the arm 23, the spring 22 is attached to a shank 33 of a contact 34. The shank 33 is headed as indicated at 35. Current is extended to the contact through spring 22.

Beside the contact 34 is a contact 36 which is fixed to an angle support 37 having an elongated slot 38 to permit the adjustment of the contact 36 on the base 15. Extending upwardly from the base 15 is a vertical pivot post 41 which is threaded into the base as indicated at 42. About the pivot post is an insulating sleeve or hub 43 having an elongated opening 44 to permit the hub and arm 23 attached to it to be tilted or twisted as it is operated by the cam 17. This action causes the terminal 34 to wipe outwardly over the contact 36. The sleeve 43 has a groove 45 in its external surface for receiving a loop end 46 of the arm 23. The spring 22 extends over the loop end of the arm 23 and is anchored to an angle support 47 connected to the base 15. A condenser 48 is wired to angle support 47 for connection with the spring. A fastening screw 49 secures the spring 22 and the terminal wires of the condenser to the angle support 47.

As the cam 17 is rotated, the follower 19 will be caused to follow the faces 18 of the cam and as contact 34 is moved away from contact 36, it will be done with a wiping action. The contact 34 will slide by to a position as shown in Fig. 2 as the corners complete the opening action. When the contact 34 is returned for engagement with the fixed contact 36, a similar wiping action of the contact 34 with the contact 36 is effected.

In Fig. 7, it will be noted that the support 47 is attached to the base through the medium of an insulating sleeve 51 and a screw 52.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

I claim:

1. In a distributor for internal combustion engines, the combination which comprises a distributor casing, a cam positioned in the casing, a stationary contact point in the casing spaced from the cam, a contact arm mounting pin positioned in the casing and also spaced from the cam, a contact arm having a hub with an elongated slot therein positioned in the casing with

the slot of the hub positioned over the said mounting pin said mounting pin providing a pivot point of the contact arm, a movable contact point carried by the outer end of the contact arm, a spring extended from the said movable contact point around the hub of the contact arm and to a fixed point in the casing where the spring is anchored, said fixed point positioned to so tension the spring that both rotary and sliding motion opposite to the cam drag is produced in the arm, a cam follower on the spring of the contact arm positioned to engage the cam whereby rotation of the cam actuates the movable contact point away from the stationary contact point with a wiping action, said contact arm having an off-set section therein and said cam follower positioned in said off-set section the major axis of the said elongated slot of the hub of the contact arm being extended substantially coincident to a radius line between the pivot point thereof and the point of contact of the cam on the cam follower, and means adjusting the position of the said cam follower in relation to the contact arm.

2. In a distributor for internal combustion engines, the combination which comprises a distributor casing, a cam positioned in the casing, a stationary contact point in the casing spaced from the cam, a contact arm mounting pin positioned in the casing and also spaced from the cam, a contact arm having a hub with an elongated slot therein positioned in the casing with the slot of the hub positioned over the said mounting pin said mounting pin providing a pivot point of the contact arm, a movable contact point carried by the outer end of the contact arm, a spring extended from the said movable contact point around the hub of the contact arm and to a fixed point in the casing where the spring is anchored, said fixed point positioned to so tension the spring that both rotary and sliding motion opposite to the cam drag is produced in the arm, a cam follower on the spring of the contact arm positioned to engage the cam whereby rotation of the cam actuates the movable contact point away from the stationary contact point with a wiping action, said contact arm having an off-set section therein and said cam follower positioned in said off-set section the major axis of the said elongated slot of the hub of the contact arm being extended substantially coincident to a radius line between the pivot point thereof and the point of contact of the cam on the cam follower, a screw extended from the cam follower through the spring and also through the said contact arm, and a nut on the outer end of the screw for adjusting the position of the said cam follower in relation to the contact arm.

3. In a distributor for internal combustion engines, the combination which comprises a dis-

tributor casing, a cam positioned in the casing, a stationary contact point in the casing spaced from the cam, a contact arm mounting pin positioned in the casing and also spaced from the cam, a contact arm having a hub with an elongated slot therein positioned in the casing with the slot of the hub positioned over the said mounting pin said mounting pin providing a pivot point of the contact arm, a movable contact point carried by the outer end of the contact arm, a spring extended from the said movable contact point around the hub of the contact arm and anchored to a stationary part of the casing, a cam follower on the spring of the contact arm positioned to engage the cam whereby rotation of the cam actuates the movable contact point away from the stationary contact point with a wiping action the major axis of the said elongated slot of the hub of the contact arm being extended substantially coincident to a radius line between the pivot point and the point of contact of the cam on the cam follower, said contact arm having an off-set section therein and said cam follower positioned in said off-set section, and means adjusting the position of the said cam follower in relation to the contact arm.

4. A movable contact point carrier for distributors of internal combustion engines comprising an arm having an off-set section in the intermediate part thereof with a hub having an elongated slot therein at one end and with a movable contact point on the other, a flat spring element extended from the said movable contact point along one side of the arm, around the hub and back on the other side of the arm to a point beyond the midway point thereof where the spring is anchored in the casing, a cam follower positioned against the flat spring element and positioned in the off-set section of the arm whereby with the major axis of the said elongated slot of the hub of the contact arm extended substantially coincident to a radius line between the pivot point and the point of contact of the cam on the cam follower the spring biases the arm to slide in the slot when the cam follower drag is relieved, a screw extended from the cam follower through the spring and through the arm, and a nut on the outer end of the screw for adjusting the position of the cam follower in relation to the arm.

ADOLPH K. WIHANTO.

REFERENCES CITED

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

FOREIGN PATENTS

Number	Country	Date
447,011	Great Britain	May 11, 1936