Aug. 9, 1960 O. H. THOMAS 2,948,785

IGNITION TIMER

Filed June 11, 1959

Fig-1

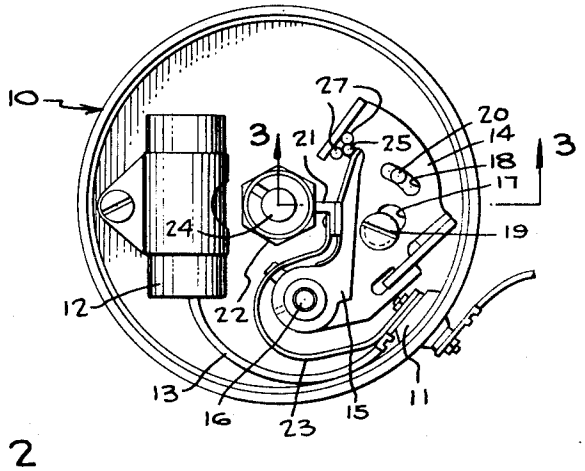
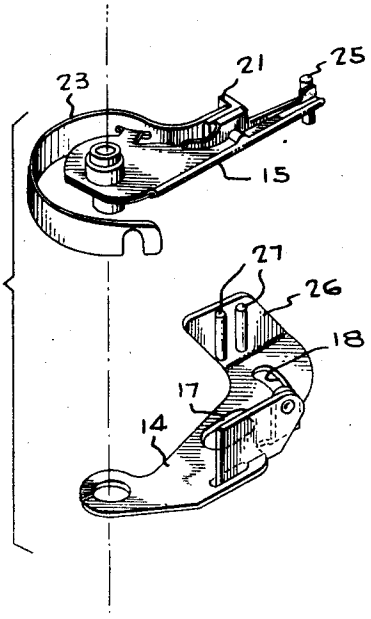


Fig-2



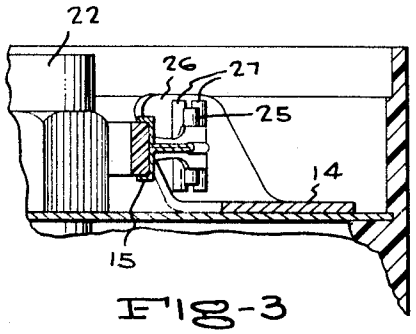


Fig-3

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IGNITION TIMER

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1 Claim. (Cl. 200—30)

This invention relates to ignition timers for internal combustion engines and it consists in the constructions, arrangements and combinations herein described and claimed.

The present day ignition timers consist of a breaker point assembly wherein a flat contact mounted on a swinging arm engages a similar contact mounted on a stationary arm and when an actuating cam is rotated, the swinging arm moves away from the stationary arm to break the circuit to the ignition coil. The provision of flat contacts presents a source of motor inefficiency which finally ends in motor failure, due mainly to the fact that the flat tungsten contacts, after a period of use become unevenly worn and pitted, due to inherent play between the contacts and therefore do not provide sufficient contact surfaces and thus fail to provide the proper current transmission during the closing period between the contacts, to adequately saturate the ignition coil. Also, in the present construction of breaker point assembly, due to the inherent play between the contacts, a point flutter or point fly back exists which causes a "miss" in the motor, particularly at high speeds.

It is therefore an object of the invention to provide a breaker point assembly which definitely overcomes the above objections in the provision of a pair of spaced elongated contacts which are intermittently engaged by a similar elongated contact, thereby providing a greater surface area of contact, which is important, since the present day trend is toward high compression engines which require high coil saturation.

More specifically, it is an object of the invention to provide a contact assembly wherein an upright flange is employed for support of a pair of spaced, vertically disposed elongated cylindrical contacts, there being a cam actuated arm having a vertically disposed elongated cylindrical tungsten contact adapted to intermittently move into and out of electrical contacting engagement with the opposed pair of contacts thereby affording greater and more stable contact area than has been possible heretofore and due to such greater contact surface, a more stable engagement between the contacts is provided and thus point flutter or fly back between the contacts is prevented with the assurance of full coil saturation.

It is also an object of the invention to provide a breaker point assembly which may be readily installed in present day construction of ignition systems by mere substitution of the assemblies.

Additional objects, advantages and features of invention will be apparent from the following description, considered in conjunction with the accompanying drawing, wherein,

Figure 1 is a top plan view of a distributor housing with the cover cap removed, illustrating the invention.

Figure 2 is a perspective view of the breaker assembly in a separated state, and

Figure 3 is a cross section on the line 3—3 of Figure 1.

Attention is first invited to Figure 1 of the drawing,

wherein a distributor **10** of conventional construction is shown, the cover cap having been removed.

As is well understood, the distributor has a binding post **11** in circuit with a condenser **12** by means of an insulated cable **13**. An assembly plate **14** is provided and pivotally mounts a breaker arm **15** as at **16**. The plate **14** is formed with slots **17** and **18** for adjustment purposes and is maintained in such positions by a binding screw **19**, the slot **18** receiving a guide pin **20**. The breaker arm **15** includes a rubbing block **21** positioned to engage a cam **22** urged into contact therewith by a spring **23**. All of the above structure is conventional and is well understood by those versed in the art, as well as the fact that the cover cap (not shown) will include spaced contacts to be successively engaged by a rotor (not shown) and driven by the rotor shaft **24** which also mounts the cam **22**.

The breaker arm **15** is provided with an elongated cylindrical contact **25** extending transversely thereof and so positioned as to pass between and into contacting engagement with a pair of opposed spaced contacts as will now be described.

The assembly plate **14** has an upright flange **26** upon which there is suitably mounted in a vertical position, a pair of elongated cylindrical contacts **27** so positioned as to receive the contact **25** partially therebetween and by virtue of the elongated formation of the three contacts and the peripheral engagement therebetween, a contacting engagement throughout the length of the contacts is obtained reducing resistance to passage of current to the ignition coil and thus insure a high coil saturation. By providing the greater elongated contact surfaces, the life of the breaker assembly is greatly increased and also shock or bounce when the contacts engage is eliminated preventing point fly-back or fluttering between the contacts.

While I have shown and described a preferred form of the breaker assembly, this is by way of illustration only and I consider as my own all such modifications in construction as fairly fall within the scope of the appended claim.

I claim:

In an ignition timer for internal combustion engines, an assembly plate, a spring tensioned arm oscillatably mounted on said assembly plate, said assembly plate having a flange in the path of the free end of said spring tensioned arm, a pair of elongated cylindrical contacts secured to said flange, said pair of contacts being arranged in spaced parallel relation with respect to each other, said contacts being secured to said flange throughout the entire longitudinal junction between the contacts and flange, said spring tensioned arm having a single elongated cylindrical contact secured thereto and said single contact being adapted to pass into and partially between said pair of contacts to provide peripheral contacting engagement with the pair of contacts, the longitudinal axis of said single contact being parallel to the longitudinal axes of the pair of contacts, said single contact having its longitudinal axis perpendicular to the longitudinal axis of the adjacent portion of the arm, all three of said contacts being of elongated cylindrical formation and all of said contacts being of the same diameter, the distance between said pair of contacts being slightly less than the diameter of said single contact.

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