

Oct. 16, 1928.

1,688,005

C. B. DICKSEE

IGNITION DEVICE

Filed June 6, 1924

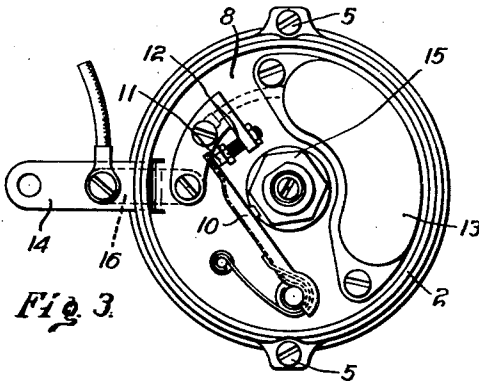


Fig. 3.

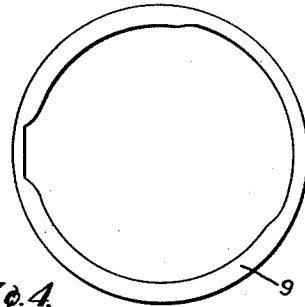


Fig. 4.



Fig. 5.

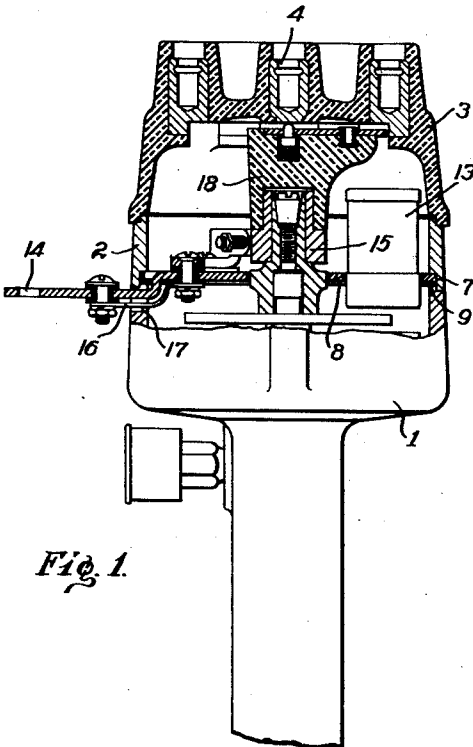


Fig. 1.

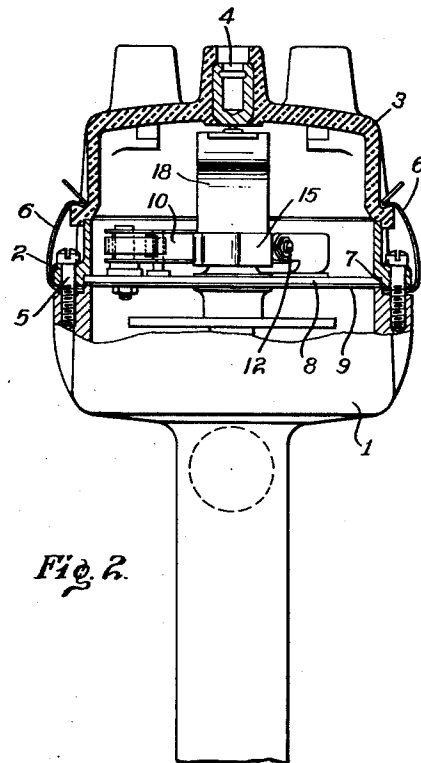


Fig. 2.

WITNESSES:

H. B. Funk
J. R. Langley

INVENTOR

Cedric B. Dicksee.

BY

Charles E. Barr
ATTORNEY

UNITED STATES PATENT OFFICE.

CEDRIC B. DICKSEE, OF WILKINSBURG, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ECLIPSE MACHINE COMPANY, OF ELMIRA HEIGHTS, NEW YORK, A CORPORATION OF NEW YORK.

IGNITION DEVICE.

Application filed June 6, 1924. Serial No. 718,256.

My invention relates to ignition devices, and it has particular relation to such devices as comprise means for adjusting the timing of the sparks in the cylinders of internal engines.

My invention has, for one of its objects, to provide an ignition device of few and simple parts that may be readily assembled or removed for inspection or repair.

A second object of my invention is to provide simple means whereby the interrupter carrier plate may be yieldingly retained in its axial position for angular adjustment.

A further object of my invention is to provide simple means whereby the electrical connections of the ignition mechanism may be effected through the enclosing casing.

In ignition devices as heretofore constructed, it has been somewhat difficult to suitably mount the angularly movable interrupter plate whereby it may be conveniently assembled or removed for inspection and repair. The securing devices of the prior art have comprised arcuate slots and clamping screws therethrough. The screws were often difficult of access and more or less trouble has been necessary in assembling or removing the plate.

In accordance with the present invention, I provide an external casing of a plurality of axially-alined parts. The interrupter plate is mounted between two of the annular casing parts in an annular groove therebetween. A spring disk washer yieldingly retains the plate in its axial position whereby no clamping screws or other securing devices are required. The electrical connection of the interrupter to the external portion of the ignition circuit is effected through a conductor that is supported by, and movable with, the usual lever that projects through a slot in the side of the casing.

In the accompanying drawing,

Figure 1 is a view, partially in elevation and partially in section, of an ignition unit constructed in accordance with my invention;

Fig. 2 is a view similar to that of Fig. 1, but taken at right angles thereto;

Fig. 3 is a plan view of the interrupter mechanism and associated parts;

Fig. 4 is a plan view of a spring washer for yieldingly retaining the interrupter plate in position; and

Fig. 5 is a side elevational view of the spring washer.

An ignition unit constructed in accordance with my invention comprises a casing which consists of a base member 1, an intermediate annular member 2 and a cover member 3 which comprises the usual distributor contact terminals 4. As best shown in Fig. 2, the annular member 2 is secured to the base member 1 by means of two screws 5. The cover member 3 is retained in position by the usual spring clips 6 that are loosely secured to the screws 5.

As shown in Figs. 1 and 2, the annular member 2 is provided with an annular groove 7 to receive an interrupter plate 8 and a corrugated spring disk washer 9 of annular form. The interrupter plate 8 supports the usual interrupter mechanism comprising a lever 10, which carries the movable contact member 11, a coating stationary contact member 12 and a condenser 13.

The plate 8 is provided with a laterally extending lever 14 by means of which the position of the plate and the interrupter mechanism may be adjusted angularly with respect to a rotatable cam 15 that is operatively connected to an engine in any suitable manner. The electrical connections of the interrupter are brought through the casing by means of a strap conductor 16 that is supported by, but insulated from, the lever 14, the lever 14 and conductor 16 extending through a slot 17 in the side wall of the base member 1.

The ignition device comprises a rotatable distributor arm or brush 18, which coacts with the distributor terminals in the usual well-known manner. Inasmuch as the distributor mechanism constitutes no part of the present invention, further description is omitted as unnecessary.

To assemble the ignition mechanism, it is only necessary to place the interrupter plate 8 and the parts supported by it in the positions illustrated with the spring washer 9 between it and the base member 1. The annular member 2 is then placed in position and the screws 5 adjusted to secure the members 1 and 2 in rigid relation, with the clips 6 held in place thereby. The distributor brush 18 and the cover member 3 are placed in position in the usual manner and the device is ready for operation.

Inasmuch as a standard space is provided for the plate 8 and the resilient washer 9, the force exerted upon the plate by the washer is regulated in advance and no adjustments are necessary. The pressure exerted by the washer is preferably that necessary to maintain the carrier plate in engagement with the annular member 2, while permitting its free angular movement.

10 If it be desired to remove the interrupter mechanism for adjustment or repair, it is only necessary to remove the cover member 3 by loosening the clips 6 and to remove the screws 5, whereupon the annular member 2
15 and the plate member 8, with its associated interrupter mechanism, may be removed as a whole from the ignition device.

If desired, the cover member and the intermediate member may be unitary and the
20 usual spring clips employed as the only fastening means.

It will be appreciated that I have provided an extremely simple and convenient means for retaining the interrupter parts in position and for permitting their easy assembly
25 and removal.

I claim as my invention:—

1. In an ignition device, the combination with a casing comprising a base member and
30 an upwardly extending annular wall having an annular recess on the inner side thereof, of a plate member rotatably mounted in said recess and dividing the space within said wall into two chambers, and a spring disk washer
35 mounted in said recess for yieldingly retaining said plate member in position.

2. In an ignition device, the combination with a base member having an upwardly extending annular wall member, of a second
40 annular wall member detachably mounted on said first named wall member, a plate member rotatably mounted between said wall members, and means for securing said wall members together.

45 3. In an ignition device, the combination with a base member having an annular portion and an annular member in alinement therewith and secured thereto, one of said members having an annular recess adjacent
50 to their engaging portions, of a plate member movably mounted in said recess, means for yieldingly retaining said plate member in its axial position and a lever member operatively connected to said plate member and
55 extending without said base member.

4. In an ignition device, the combination

with a base member having an upwardly extending annular wall member, of a second annular wall member detachably mounted on said first named wall member, a plate member rotatably mounted between said wall members, means for securing said wall members together, and a spring disk washer mounted adjacent said plate between said wall members for yieldingly holding said plate in
65 position.

5. In an ignition device, the combination with a casing member having a plurality of portions, and a carrier plate movably mounted between two of said casing portions, of a
70 spring disk washer for yieldingly retaining said plate in axial position, a plurality of relatively movable contact members on said plate, means for actuating one of said contact members, and a lever for said plate projecting through said casing, said casing having an opening at the juncture of two of said casing portions to permit said lever to pass
75 therethrough.

6. In an ignition device, the combination
80 with a casing member having a plurality of portions, and a carrier plate movably mounted between two of said casing portions, of a spring disk washer for yieldingly retaining said plate in axial position, a plurality of relatively movable contact members on said
85 plate, means for actuating one of said contact members, a lever for said plate projecting through said casing, and a conductor supported by said lever and connected to one of
90 said contact members.

7. In an ignition device, the combination with a casing having a casing member provided with an upwardly extending annular wall, of an intermediate annular wall adapted
95 to seat on said first named annular wall, a distributor cap adapted to seat on said intermediate annular wall, a plate detachably and rotatably mounted with its outer edges extending between said first named annular wall and said intermediate wall, thereby dividing the space within said walls into chambers, contact apparatus mounted on said
100 plate, means for securing said intermediate annular wall to said first named annular wall, and clips held in place by said securing means for retaining said distributor cap on said intermediate wall.
105

In testimony whereof, I have hereunto subscribed my name this 21st day of May 1924.

CEDRIC B. DICKSEE.