

Oct. 13, 1925.

1,556,901

C. E. BERKDOLL

IGNITION DEVICE

Filed July 8, 1921

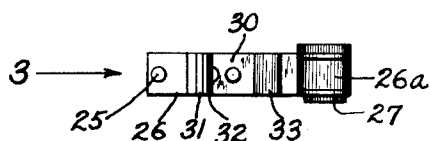


Fig. 2

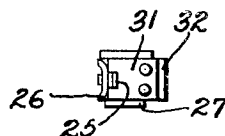


Fig. 3

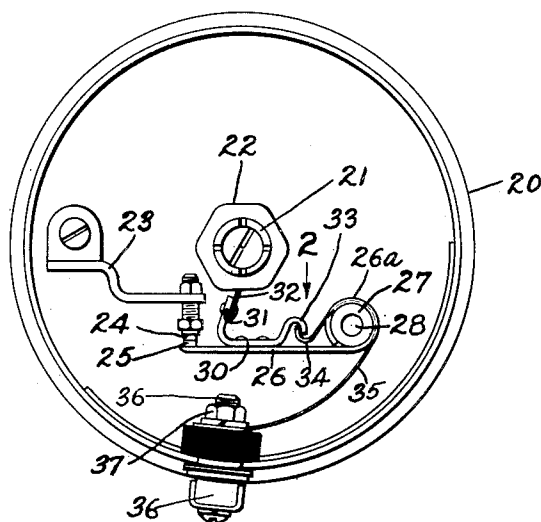


Fig. 1

Witnesses
Irvin A. Greenwald
Geo. E. Pasco.

By

Inventor
Charles Edward Berkdoll
Forrest B. Mac Nab
Attorney

UNITED STATES PATENT OFFICE.

CHARLES EDWARD BERKDOLL, OF DAYTON, OHIO, ASSIGNOR TO THE DAYTON ENGINEERING LABORATORIES COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

IGNITION DEVICE.

Application filed July 8, 1921. Serial No. 483,330.

To all whom it may concern:

Be it known that I, CHARLES EDWARD BERKDOLL, a citizen of the United States of America, residing at Dayton, county of Montgomery, State of Ohio, have invented certain new and useful Improvements in Ignition Devices, of which the following is a full, clear, and exact description.

This invention relates to ignition apparatus for internal-combustion engines and more particularly to the contact breaker or timer for periodically interrupting the primary ignition circuit.

It is one of the objects of the invention to improve the construction of the timer and particularly the breaker arm or lever carrying one of the timer contacts, whereby the construction is much simplified by the reduction of the number of parts required, thereby tending to lessen the cost of manufacture.

Other and further objects of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred embodiment of the present invention is clearly shown.

In the drawings:

Fig. 1 is a plan view of a timer embodying the invention;

Fig. 2 is a side view of the breaker lever looking in the direction of the arrow 2 of Fig. 1; and

Fig. 3 is an end view of the breaker lever looking in the direction of the arrow 3 of Fig. 2.

In the drawings, 20 designates the timer base, supporting for rotation a timer shaft 21, carrying a cam 22. The base 20 supports a bracket 23 upon which is adjustably mounted a stationary contact 24 which co-operates with a contact 25 mounted upon the free end of the breaker lever 26. This lever 26 is made preferably from a strip of material having a channel shaped cross section as shown in Fig. 3. These strips of material for forming the breaker lever 26 are preferably cut from longer strips of stock previously formed in this manner. After a strip of this material has been cut off to the right length, one end 26^a is bent around in the fashion of a hinge joint in order to receive a hub 27 by means of which

the breaker arm is pivoted upon a stud 28 supported by the timer 20.

Intermediate the ends thereof, lever 26 carries a clip 30 having one end somewhat obliquely disposed with respect to the plane of lever 26 as shown at 31. This end portion 31 supports a cam rubbing block 32 of fiber or other suitable material. The other end of clip 30 is formed into a hook 33 for engaging the hook end 34 of a spring 35 which is bent around the portion 26^a of lever 26 and is attached to a terminal bolt 36 by means of a nut 37. Bolt 36 provides one terminal of the timer and current may flow from this terminal through spring 35 to the lever 26 thence to contacts 25, 24 and to bracket 23 which is grounded upon the timer base 20. It is understood that the stud 28 is insulated from the timer base 20. The spring 35 rests in the channel shaped cylindrical portion provided by the end portion 26^a of lever 26. In this manner the portion 26^a cooperates with spring 35 to maintain the latter in position.

When the timer cam 22 is operated by the engine, the contacts 24 and 25 will be periodically separated by the cam and periodically closed due to the action of spring 35 in the well known manner of ignition timers of the closed circuit type.

From the foregoing it is apparent that a timer breaker lever of extremely simple construction has been provided. The breaker lever is formed of a strip of material cut from a longer length of material for the desired cross section, such material having a channel shaped cross section which can be very conveniently manufactured. This strip of material can be very conveniently and readily formed to support a hub providing the fulcrumed point of the lever. A single member, a clip, attached to the breaker lever intermediate its ends, serves a twofold purpose, that is, it supports the cam rubbing block and serves as a point of attachment for the breaker lever spring. Since the breaker lever 26 is channel shaped in cross section it is very rigid considering the amount of material involved and because it is this shape, it is adapted to assist in maintaining the breaker lever spring in position. While the form of mechanism herein shown and described constitutes a preferred

form of embodiment of the invention, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

5 What I claim is as follows:

1. In a breaker arm for periodic circuit breakers, the combination with an apertured hub adapting it for pivotal mounting; of a strip of material having one end bent
10 around the hub sufficiently to secure the strip to the hub; and a member attached to said strip and carrying a cam rubbing block and having a portion for engaging a spring.

2. In a breaker arm for periodic circuit
15 breakers, the combination with an apertured hub adapting it for pivotal mounting; of a strip of material having one end bent around the hub sufficiently to secure the strip to the hub; and a member secured intermediate its ends to said strip and carrying
20 a cam rubbing block at one end and having a hook portion at the other end adapted to be engaged by a spring.

3. In a breaker arm for periodic circuit
25 breakers, the combination with an apertured hub; of a strip of material having one end bent around said hub; a contact mounted adjacent the other end of said strip; and a member supported by said strip,
30 having one end obliquely disposed with respect to the plane of said strip and carrying

a cam rubbing block, and having a hook portion at the other end adapted to be engaged by a spring.

4. In a breaker arm for periodic circuit
35 breakers, the combination with an apertured hub; of a strip of material having one end bent around said hub; a contact mounted adjacent the other end of said strip; and a member secured to said strip
40 and carrying a cam rubbing block at one end and having a hook portion at the other end adapted to be engaged by the hooked end of a leaf spring.

5. In a periodic circuit breaker, the combination with a base and an apertured hub pivoted thereon; of a strip of material having a channel shaped section, one end of said strip being bent around said hub and forming a channel shaped cylindrical portion;
50 a contact mounted adjacent the other end of said strip; a member secured to said strip and carrying a cam rubbing block at one end and having a hook portion at the other end; and a leaf spring resting in said
55 channel shaped cylindrical portion, one end of the spring engaging said hook portion, and the other end fastened to the base.

In testimony whereof I hereto affix my signature.

CHARLES EDWARD BERKDOLL.