June 12, 1923.

1,458,548

R. ROSNER

IGNITER

Original Filed April 24, 1918

Fig. 1.

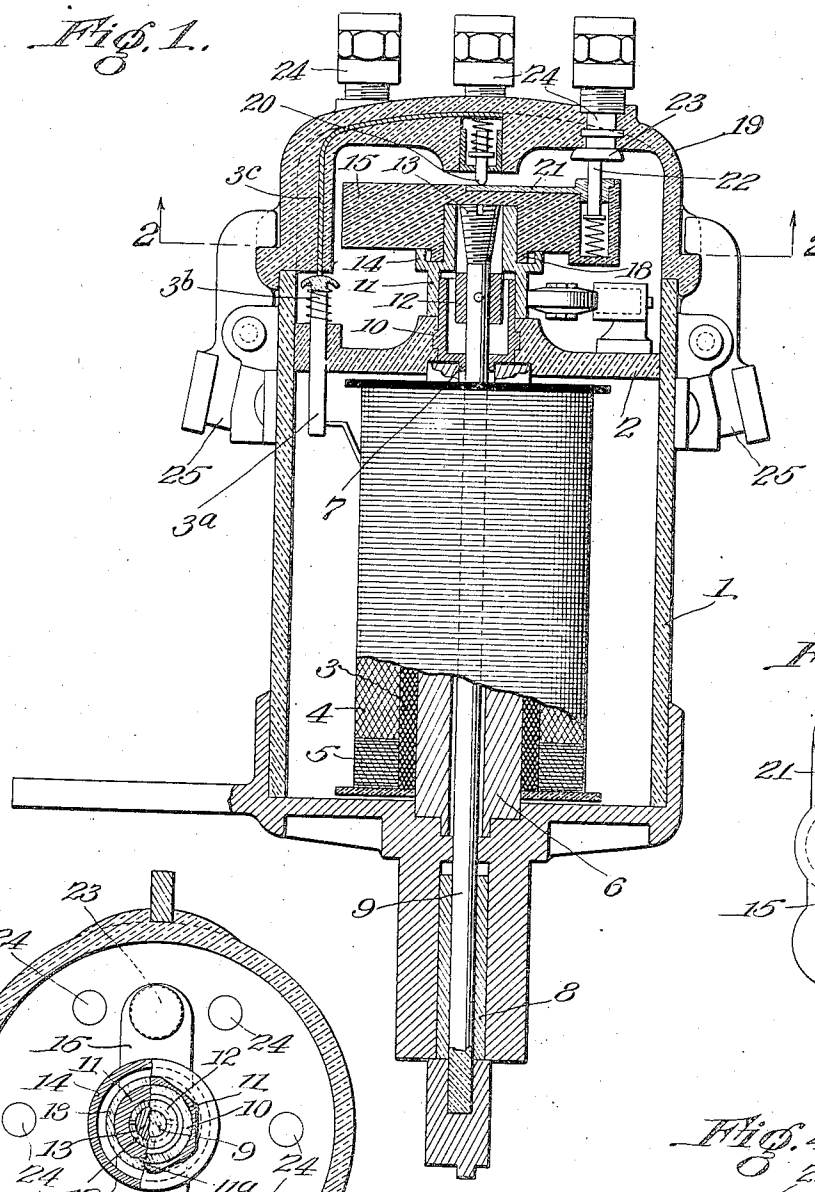


Fig. 3.

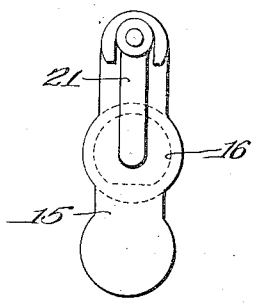
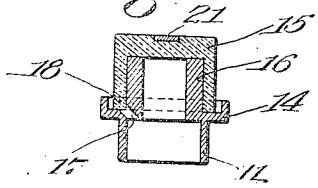


Fig. 2.

Fig. 4.



WITNESSES:

P. J. Gathmann

INVENTOR

Rudolf Rosner.

BY Burton & Burton

HIS ATTORNEYS

Patented June 12, 1923. 1,458,548

UNITED STATES PATENT OFFICE.

RUDOLF ROSNER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SIMPLEX IGNITION CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

IGNITER.

Continuation filed after grant of patent of application Serial No. 230,429, filed April 24, 1918. Patent No. 1,332,758, dated March 2, 1920. This application filed May 1, 1920. Serial No. 378,338.

To all whom it may concern:

Be it known that I, RUDOLF ROSNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Igniters, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This application is directed to certain features shown but not claimed in my Patent No. 1,332,758, granted March 2nd, 1920. The purpose of this invention is to provide an improved construction of igniter or spark producer for an internal combustion engine. It consists principally in the improvement in the construction of the parts constituting the distributer as associated with the interrupter shown and described as set out in the claims.

In the drawings:

Figure 1 is an axial section of an igniter embodying this invention.

Figure 2 is a section at the line, 2—2, on Figure 1.

Figure 3 is a top plan view of the distributer.

Figure 4 is a cross-section through the distributer and the supports for same.

The structure shown in the drawings includes a casing, 1, of insulating material having a diaphragm or partition, 2, of like material below which are mounted and contained within the casing the primary and secondary coils, 3, and 4, respectively, with the condenser, 5, and a core, 6, all of usual type. The partition 2, has mounted in it a bearing member, 7, which, together with the bushing, 8, journals a shaft, 9, provided for rotating a distributer for an ignition system.

Immediately above the diaphragm, 2, are located circuit interrupting devices which are shown and described in detail in my Patent No. 1,332,758, and therefore need no further mention here beyond drawing attention to the fact that such devices are preferably associated with the distributer devices hereinafter described.

The upper end of the member, 7, is of enlarged bore, as seen at 10, forming an oil-containing chamber to serve lubricant to the bearings, 7 and 8, said enlarged portion of the chamber extending above the diaphragm, 2, and adapted to receive exteriorly thereof the sleeve, 11, fitted loosely thereabout for rotation thereon.

A collar, 12, is pinned fast to the upper end of the shaft, 9. It is counterbored taperingly at its upper end portion which projects above the shaft, being split at that portion and interiorly threaded, and provided with an expanding screw, 13. The upper end portion of the sleeve, 11, has an inner diameter such as to adapt it to be passed on to the upper end of the collar, 12, before the same is expanded, and to be held tightly thereon by expanding of said upper end portion of the collar. The said sleeve, 11, has intermediate its ends, that is to say, in a horizontal plane at about the level of the top of the oil chamber, 10, an angle-shaped flange, 14, which forms an upwardly-open annular cup or channel encompassing the sleeve. The upper-end portion of the sleeve is rendered non-circular by cutting it away at one side as shown at 11^a, and the central aperture, 16, of the distributer rotor, 15, is shaped to interlock therewith, thus adapting the sleeve to turn the rotor. As will be observed, this dispenses with set screws or any other form of securement which might require the use of tools in removing it for any purpose, as for instance, to supply oil to the chamber, 10, through its oil duct, 17, leading from the inner corner of the channel formed by the angular flange, 14.

The rotor, 15, is provided at its under side with a depending flange, 18, which extends down to the bottom of the channel formed by the flange, 14, serving as a closure for the oil duct, 17.

One end of the wire of the secondary coil, 4, is connected to a contact pin, 3^a, slidably mounted in the partition, 2, and held yieldingly by a spring, 3^b, in engagement with a circuit wire, 3^c, which is embedded in the insulating material of the cover, 19, with one end exposed in a lateral portion for such engagement with the pin, 3^a, and with the other end terminating in the central part of the cover in electrical connection with a spring-pressed contact pin, 20, mounted therein. The pin, 20, is thus positioned for constant contact with a conducting piece, 21, mounted upon the rotor, 15, and extending from a point over the center of the shaft,

and therefore under the contact pin, 20, outward to one end of the rotor and having mounted in it at that end a spring-protruded contact button, 22, whose head, 23, is carried in contact with the inner or under surface of the top of the cover as the part, 15, is rotated by the shaft.

Mounted in the cover top are contact posts, 24, one for each spark plug which is to be connected with the igniter,—that is, one for each cylinder of the engine to be served, said contact posts being exteriorly constructed as binding posts for receiving the wires leading to the spark plugs, and interiorly having their ends flush with the inner surface of the cover which properly positions them for rubbing contact with the head, 23, of the contact button, 22, as the distributer revolves.

As described in my Patent No. 1,332,758, the cover, 20, is arranged to be secured in position by two snap catches, 25.

I claim:—

1. In an igniter, a distributer, an operating shaft therefor, a source of high potential current, a casing housing said source, distributer and shaft, a cover for said casing, a series of conducting plugs traversing said cover and arranged in a circle concentric with said shaft, a central contact on the interior of said cover in line with said shaft, said distributer having an arm driven by said shaft engaging said central contact and traveling over the interior ends of said plugs, a contact on the interior of said cover outside said circle, a terminal of said source mounted in said casing in position to engage said last-named contact, said terminal and contact being spring-pressed toward one another when said cover is in place, and a connection from said last-named contact to said central contact.

2. In an igniter, a distributer, an operating shaft therefor, a source of high potential current, a casing housing said source, distributer and shaft, a cover for said casing, a series of conducting plugs traversing said cover and arranged in a circle concentric with said shaft, a central contact on the interior of said cover in line with said shaft, said distributer having an arm driven by said shaft engaging said central contact and traveling over the interior ends of said plugs, a projection on the interior of said cover flush with the edge thereof, a connection embedded in the material of said projection adjacent the edge of the cover, a spring-pressed terminal connected to said source and engaging the end of said connection at said surface.

3. In an igniter, a distributer, an operating shaft therefor, a source of high potential current, a casing housing said source, distributer and shaft, a cover for said casing, a series of conducting plugs traversing said cover and arranged in a circle concentric with said shaft, a central contact on the interior of said cover in line with said shaft, said distributer having an arm driven by said shaft engaging said central contact and traveling over the interior ends of said plugs, a projection on the interior of said cover flush with the edge thereof, a connection embedded in the material of said projection adjacent the edge of the cover, a spring-pressed terminal connected to said source and engaging the end of said connection at the surface of said projection, and means for securing the cover to the housing in such position that said terminal and the end of said connection will be in engagement.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 23 day of April, 1920.

RUDOLF ROSNER.