Sept. 3, 1929. L. F. CURTIS ET AL 1,726,543

IGNITION CONDENSER

Filed Feb. 13, 1928

Fig. 1.

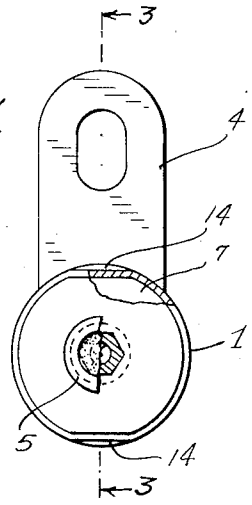


Fig. 2.

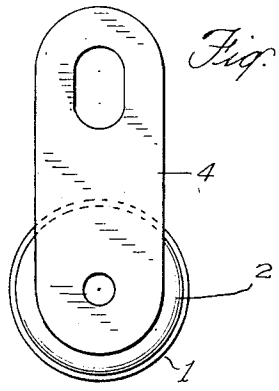
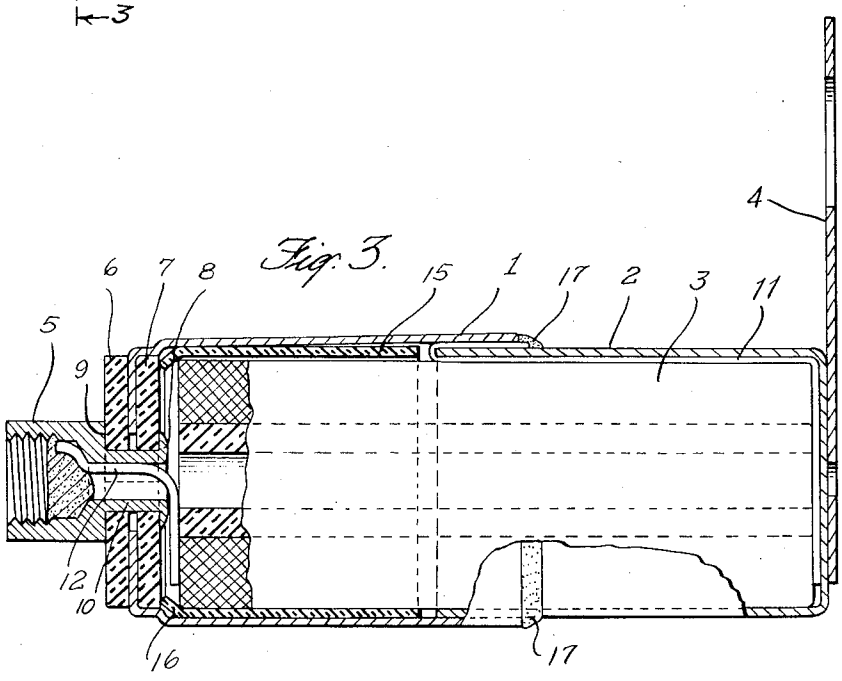


Fig. 3.



Leslie F. Curtis & John F. Martin INVENTOR

BY

Dan A. Rosenthal ATTORNEY

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UNITED STATES PATENT OFFICE.

LESLIE F. CURTIS AND JOHN F. MARTIN, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNORS TO AMERICAN BOSCH MAGNETO CORPORATION, OF SPRINGFIELD, MASSACHUSETTS, A CORPORATION OF NEW YORK.

IGNITION CONDENSER.

Application filed February 13, 1928. Serial No. 253,991.

This invention relates to condensers, and more particularly to ignition condensers for use in timers for combustion engines.

The object of this invention is to provide a condenser which is completely enclosed and sealed, and in which the terminals are incapable of rotation.

Our invention consists in providing a cylindrical condenser having flexible leads which are connected respectively to the shell in which the condenser is placed, and a terminal insulatively mounted on said shell.

One of the principal features of this invention is the construction of a seat for one of the terminals of the condenser so as to provide a water-tight joint without the use of solder.

Heretofore, it has been the practice to enclose the condenser in a shell, but instead of the terminal being mounted on said shell, it was mounted on one end of the condenser, and the termial was exposed through an opening in said shell. It was therefore sometimes possible to rotate the condenser in said shell by turning the terminal with the result that the flexible leads were broken and the condenser in other ways damaged. Further, the opening in the shell permitted air, dust and moisture to get into the shell to affect adversely the integrity of the condenser. In some cases the terminal was also turned independently of the condenser, making a proper external connection by means of a screw difficult.

By our construction, we have so enclosed the condenser in the shell that no air, dust or moisture can penetrate the shell, and secondly, fixed the terminal on the shell so that no rotation is possible.

The preferred embodiment of our invention is illustrated in the accompanying drawings, in which

Fig. 1 is a top view of the shell;

Fig. 2 is a bottom view of the shell; and

Fig. 3 is a longitudinal cross section through the complete condenser.

Throughout the drawing like reference characters indicate like parts.

The shell is composed of two telescoping sections 1 and 2 into which the condenser 3 is snugly enclosed. The bottom of the shell 2 has soldered to it a perforated attaching plate 4 and the shell 1 has passing through it a tubular, internally threaded terminal 5 which is insulatively separated from said shell by suitable insulating washers 6, 7 disposed on both sides of the top of said shell. The bottom of the terminal 5 is peened over at 8 upon the washer 7 and cooperates with shoulders 9 on said terminal to secure the latter firmly to said shell. The opening in the top of the washers through which the terminal 5 passes is preferably of hexagonal construction.

The edge of the top of the shell 1 is flattened, 14, 14, and between the flattened portions of the shell is placed the washer 7 having, as does washer 6, a similar conformation to the flattened area of the top of the shell. This construction prevents the washer 7 from rotating with respect to the shell and, hence, also, the terminal 5.

In order to prevent rotation of the terminal, the neck 10 of the terminal is forced into the hexagonal opening in the washers 6, 7, as by spinning.

The condenser is provided with a flexible lead 11 which is soldered to the bottom of the condenser and is brought up along the side of the condenser and over the edge of the shell 2, when it is finally soldered between the overlapping portions of the shells, or the inner shell alone.

Another flexible lead 12 is soldered to the upper end of the condenser and the lead passed through the opening in the terminal 5. A lead plug is then rammed down or otherwise disposed in said opening so that a firm electrical contact shall be had between the lead 12 and the terminal 5.

The end of the lead 12 should be completely covered by the lead seal or plug. The plug may be put in place by forcing into the threads a smooth ended steel screw which expands the lead plug over the end of the wire, hermetically closing the joint.

Wrapped around the upper portion of the condenser and disposed between it and the shell 1 is a sheet of paper 15 having a margin 16 which extends beyond the condenser and folds over it.

It will be observed that due to the polygonal construction of the opening in the top of the shell 1 and the peening over of the bottom of the screw, the terminal is incapable of rotation or movement in and out, and secondly, that due to the cooperation of

the shoulders on the terminal, the insulating washers and the peen, a seal is effected which prevents the entry of vapor, dust and other foreign matter.

After the assembly is complete, the joint 17 between the shells 1 and 2 is soldered.

Having described our invention, what we claim is:

1. A condenser casing comprising a shell, a flattened peripheral area on said shell, insulating washers coinciding with and mounted on the flattened section, and a terminal mounted thereon.

2. A condenser casing comprising a shell, a flattened peripheral area on said shell, insulating washers coinciding with and mounted on the flattened section, and a terminal between which the washers and flattened area are securely held.

3. A condenser casing comprising a shell, a flattened peripheral area on said shell, polygonally apertured insulating washers coinciding with and disposed on either side of the flattened section, and a terminal insulatively mounted on said shell securing the washers to the flattened area.

4. A condenser casing comprising a shell, a flattened peripheral area on said shell, polygonally apertured insulating washers coinciding with and disposed on either side of the flattened sections, and a tubular terminal insulatively mounted on said shell securing the washers to the flattened area.

5. In combination, a cylindrical condenser, a casing therefor comprising a shell, a flattened peripheral area on said shell, polygonally apertured insulating washers coinciding with and disposed on either side of the flattened section, a tubular terminal insulatively mounted on said shell, securing the washers to the flattened area, and a lead plug inserted into said terminal ensealing a lead wire from the condenser and hermetically sealing the condenser.

6. In combination, a cylindrical condenser, a casing therefor comprising a shell, a flattened peripheral area on said shell, polygonally apertured insulating washers coinciding with and disposed on either side of the flattened section, a tubular terminal, insulatively mounted on said shell, securing the washers to the flattened area by peening over the lower end of the terminal, the terminal being also provided with an opposing shoulder, and a lead plug inserted into said terminal ensealing a lead wire from the condenser and hermetically sealing the condenser.

In testimony whereof I affix my signature.

LESLIE F. CURTIS.

In testimony whereof I affix my signature.

JOHN F. MARTIN.