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C. A. HENRY

1,721,116

ELECTRICAL PLATE UNIT

Filed March 31, 1927

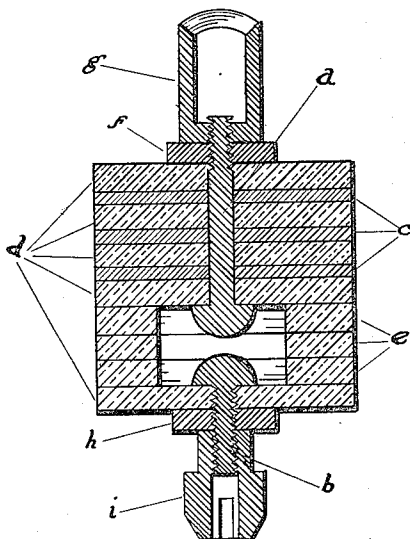


Fig 1

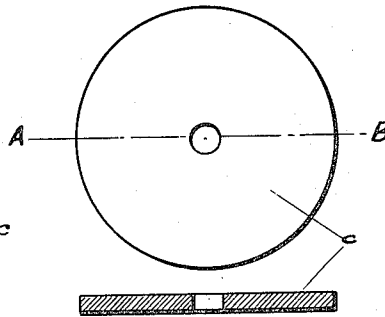


Fig 3

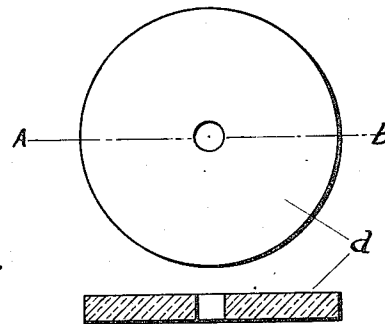


Fig 4

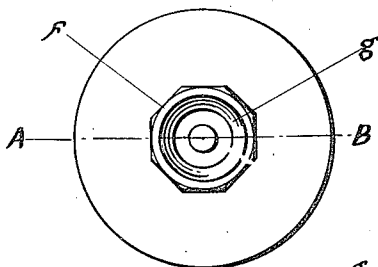


Fig 2

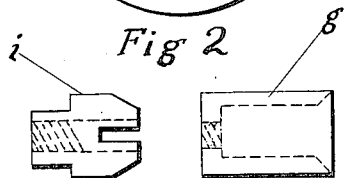


Fig 6

Fig 7

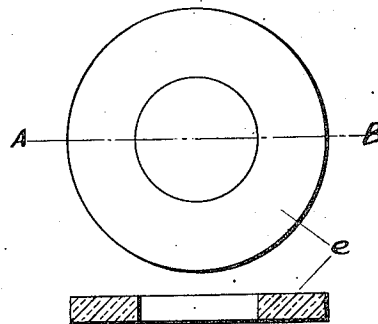


Fig 5

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UNITED STATES PATENT OFFICE.

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ELECTRICAL-PLATE UNIT.

Application filed March 31, 1927. Serial No. 179,853.

My invention relates to improvements in electrical plate units for high tension ignition circuits as employed in internal combustion engines.

5 It is the principal object of my invention to provide an electrical plate unit which may be placed in a high tension or secondary circuit to amplify the spark produced between the electrodes of a spark plug.

10 In the accompanying drawings illustrating my invention, Figure 1 is a vertical sectional view taken through my plate unit. Figure 2 is a top plan view of the same. Figure 3 is a plan view of, and a cross sectional view taken through, one of the metal plates. Figure 4 is a plan view of, and a cross sectional view taken through, one of the insulators employed between the metal plates. Figure 5 is a plan view of, and a cross sectional view taken through, one of the separators surrounding the heads of the bolts. Figure 6 is a detail view of a connector carried by the plate unit. And Figure 7 is a side view of a receptacle also carried by said unit.

25 Referring to the accompanying drawings for a detailed description of my electrical unit, the numeral *c* designates a plurality of metal plates which are separated by insulating plates *d*.

30 These plates *c* and insulators *d* have registering axial holes and are joined together by a bolt *a*, lock nut *f* and receptacle *g*.

Surrounding the head of the bolt *a* and projecting a short distance below it to provide a space for the reception of the head of a bolt *b*, is a series of separating plates *e* joined together by a suitable cement or adhesive and formed with large axial holes.

40 The head of the bolt *b* rests upon an insulator *d*, while the head of the bolt *a* bears against another insulator *d*. Between these last two insulators the separators *e* are mounted, and cemented or otherwise secured to them to complete the enclosure of the bolt heads.

45 The bolt *b* is secured to the insulator *d* from which it depends, by a lock nut *h* and a connector *i*.

50 It will be seen that between the bolt heads there is formed a gap to which a high tension current may pass along the bolt *a*. The resistance of this gap between the bolts *a* and *b* will cause the current to flow into the

metal plates *c* to charge them. When the potential becomes great enough, the gap between the bolt heads will be bridged by it to 55 carry the charge from the plates *c* to amplify the spark at a spark plug (not shown) that may be included in series with the plate unit just described by electrical circuit means not shown.

I claim:

1. A device of the type described, comprising a series of metal plates, insulation between said plates, a conducting element passing through said plates, a second conducting 65 element between which and the first element a gap is formed, apertured plates surrounding the spaced ends of said conducting elements, and an insulating plate through which the second conducting element passes, said 70 insulating plate, apertured plates, and the first-named plates and insulation forming an electrical unit, for the purpose specified.

2. A device of the type described, comprising a plurality of metal plates, insulation 75 separating said plates, a bolt for joining said plates together, passing through them, a second series of plates formed with center holes to receive the head of said bolt, an insulating member secured to the second series of plates, a bolt having a head projecting into the center 80 holes within the second series of plates, the shank portion of said bolt projecting through said insulating member, a receptacle secured to the outer end of the first bolt, and 85 a connector secured to the outer end of the second bolt.

3. A device of the type described, comprising a plurality of metal plates, insulation separating said plates, a bolt passing through 90 said plates to join them together, a lock nut and a receptacle on the threaded end of said bolt, apertured plates connected to the first plates, and surrounding the head of said bolt, a second bolt whose head is also surrounded 95 by said second plates, said bolt heads being spaced apart to form a gap, an insulating plate secured against the second plates, the shank of the second bolt passing through said insulating plate and a lock nut and a connector on the threaded end of the second bolt 100 beyond the insulating plate.

CASHLY A. HENRY.