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ELECTRICAL PRIMER

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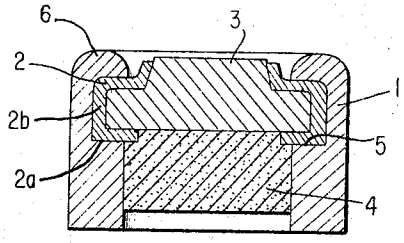


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# ELECTRICAL PRIMER

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7 Claims. (Cl. 102—70.2)

The present invention relates to an electrical primer, and more particularly to a considerably simplified construction of an electrical fuse or primer operable according to the gap-ignition-principle for the ignition of cartridges, shells, propelling charge containers or the like.

The present invention essentially consists in that the primer is composed, without the primer composition, at the most of three parts, namely of the case, the insulation of the pole piece and the pole piece.

Electrical primers that are constructed according to the gap-principle consists of a larger number of individual parts. In most cases five parts are required, namely a casing, a pole piece, an insulating cup, an insulating disk which determines the gap and a metallic ring piece or cup which receives the primer composition and serves for the increase of the rigidity. The manufacture of electrical primers according to this principle is therefore relatively costly and expensive because the dimensions of the individual parts have to be maintained with small tolerances.

The present invention now essentially consists in that the primer, without the primer composition, consists at the most of three parts, namely of the casing, the insulation of the pole piece and the pole piece.

It is proposed in accordance with the present invention to make the insulating disk and the insulating cup in one piece. The same is true for the spacer ring and the case that are also made in one piece.

Accordingly, it is an object of the present invention to provide an electrical primer which is simple in construction, relatively inexpensive in manufacture and consists of relatively fewer parts than necessary heretofore.

It is another object of the present invention to provide an electrical primer which consists, without primer composition, of only three parts and which can be easily manufactured and assembled.

A further object of the present invention resides in the provision of an electrical primer assembly obviating the need for a relatively large number of individual parts that have to be manufactured with small tolerances.

Another object of the present invention resides in the provision of an electrical primer which reduces in a far-reaching manner the several individual parts necessitated in the prior art devices by combining the same into internal structures.

These and other objects, features and advantages of the present invention will become more obvious from the following description, when taken in connection with the accompanying drawing which shows in the single figure thereof, for the purposes of illustration only, one embodiment in accordance with the present invention.

Referring now to the single figure of the drawing which is a cross sectional view through one embodiment



of an electrical primer in accordance with the present invention, reference numeral **1** designates therein the case made of any suitable material which is provided on one side thereof with a larger inner diameter than the bore serving for the accommodation of the primer composition **4**. An offset or ledge **5** is produced thereby on which rests the insulating disk portion **2***a*. The insulating cup portion **2***b* is constructed in one piere with the insulating disk portion **2***a* and forms as a whole the insulation generally designated by reference numeral **2**. The insulation **2** contains the pole piece **3** of conventional construction. The flanged portion **6** serves for securing the pole piece **3** together with the insulation **2** in the case **1**.

The assembly of the primer in accordance with the present invention takes place in the following manner:

At first the pole piece **3** is inserted into the insulation **2**. The insulating cup **2***b* is at that time still of cylindrical shape. The flanging or beading operation producing the flange **6** only takes place after the installation of the insulation **2** together with the pole piece **3** into the case **1**. The primer composition **4** is subsequently pressed into the assembled completed primer.

While we have shown and described one embodiment in accordance with the present invention, it is understood that the same is not limited thereto but is susceptible of numerous changes and modifications as known to a person skilled in the art, and we therefore do not wish to be limited to the details shown and described herein but intend to cover all such changes and modifications as are encompassed by the scope of the appended claims.

We claim:

**1**. An electrical primer operable according to the gap-ignition principle for igniting cartridges, shells, propellant charge containers and the like, consisting essentially of: a tubular case haveing an internally extending annular case flange at one end, an internal ledge facing said case flange, and a portion of enlarged internal diameter between said case flange and said ledge; said flange, ledge and portion of reduced internal diameter defining an internally opening first annular groove within said case; an insulation member within said first annular groove; said insulation member having an insulating disc portion abutting said ledge, an integral insulating tubular portion abutting said portion of reduced internal diameter, and an integral insulating flange portion abutting said case flange; said insulating disc portion, insulating tubular portion and insulating flange portion defining an internally opening second annular groove within said insulating member; a disc shaped electrically conductive pole piece having an outer portion securely mounted within said second annular groove; said pole piece and said insulation member closing the said one end of said tubular case; and a primer composition mounted within said tubular case.

**2**. The electrical primer according to claim **1**, wherein said primer composition abuts said insulating disc portion, one end of said pole piece and the interior surface of said tubular case.

**3**. The electrical primer according to claim **1** wherein said pole piece has an outwardly projecting frusto-conical projection on the end adjacent to said case flange.

**4**. The electrical primer according to claim **3**, wherein said insulation member has an integral frusto-conical tubular portion surrounding and engaging said projection;

and said frusto-conical tubular portion is an integral extension of said insulating flange portion.

5. The electrical primer according to claim **1**, wherein said insulating tubular portion is contained entirely within said first annular groove and said outer portion of said pole piece extends within said first annular groove.

6. The electrical primer according to claim **4**, wherein said insulating tubular portion is contained entirely within said first annular groove and said outer portion of said pole piece extends within said first annular groove.

7. The electrical primer according to claim **6**, wherein said primer composition abuts said insulating disc portion, one end of said pole piece and the interior surface of said tubular case.



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