

C. F. LINDSAY.
ELECTRIC PRIMER.
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Patented Jan. 20, 1914.

1,084,745.

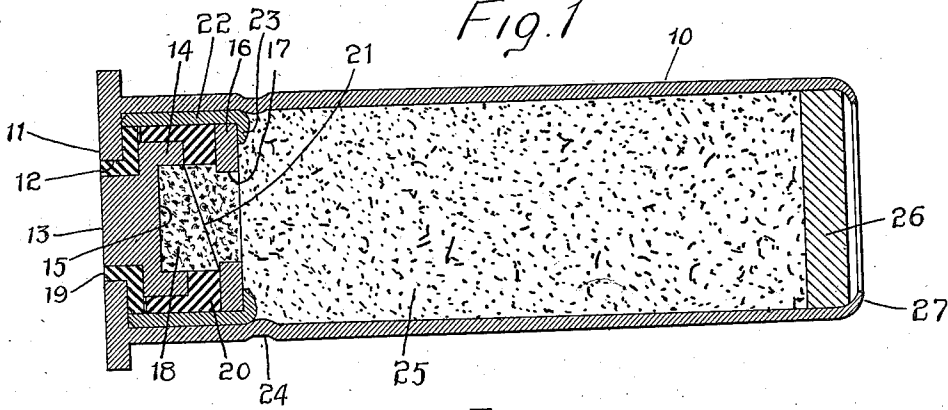
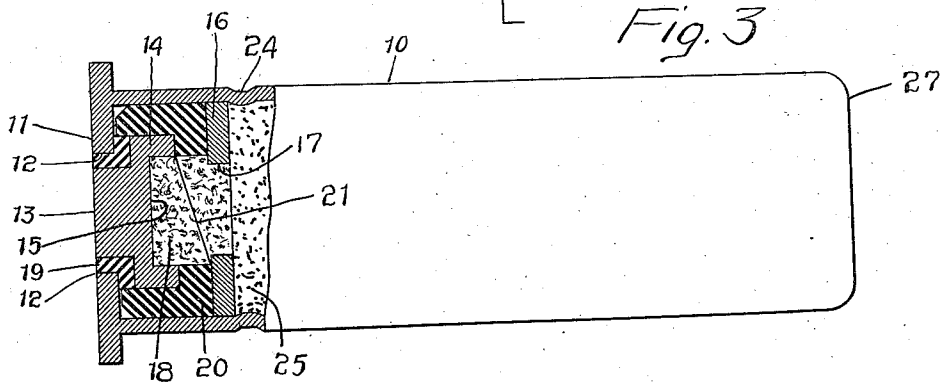


Fig. 2



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ELECTRIC PRIMER.

1,084,745.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES F. LINDSAY, a subject of the King of Great Britain, residing at Fairfield, county of Fairfield, State of Connecticut, have invented an Improvement in Electric Primers, of which the following is a specification.

This invention has for its object to provide an inexpensive and greatly improved electric primer so constructed that all pressures exerted in the primer tend to tighten up the parts making it absolutely gas tight, and impossible for any of the mechanism of the primer to be forced back into contact with the breech block of a gun, and the contents of the primer being effectually protected against the possibility of water or oil, that might accidentally or intentionally be placed on the head, seeping in and injuring the contents of the primer.

With these and other objects in view I have devised the novel electric primer which I will now describe referring to the accompanying drawing forming a part of this specification and using reference characters to indicate the several parts.

Figure 1 is a view of one form of my novel primer in longitudinal section; Fig. 2 a view of the connecting wire detached; and Fig. 3 is a view partly in elevation and partly in longitudinal section, illustrating a slightly variant form of the invention.

10 denotes the shell which is drawn from sheet metal and is provided with a head 11 having a central opening 12.

13 denotes the contact button which lies flush with the outer face of the head of the shell and the inner end of which is provided with a head 14 of greater diameter than the opening in the head of the shell and preferably, although not necessarily, provided with a recess 15, and 16 is a washer in electrical contact with the shell and having an opening 17. Between the contact button and the contact washer gun cotton or some other explosive, indicated by 18, is placed, the explosive being shown as filling the recess in the contact button and extending through the opening in the contact washer. The contact button is separated and insulated from the head and wall of the shell and also from the contact washer by means of insulating rings 19 and 20, said rings being formed to a suitable shape in cross sec-

tion to correspond with the shape of the contact button and to permit them to drop to place readily in assembling. Contact ring 19 fills the space between the contact button and the wall of opening 12 in the head of the shell and also separates the head of the contact button from the head of the shell, and insulating ring 20 separates the head of the contact button from the wall of the shell and also separates the head of the contact button from the contact washer. The electrical circuit is completed and the explosive is ignited by means of a wire 21 which passes diagonally through the explosive and lies in close contact with the contact button and the contact washer.

The forms illustrated in Figs. 1 and 3 differ only in the shape of the insulating rings and in the interposition between the insulating ring or rings and the wall of the shell of a metallic sleeve, indicated by 22, which extends forward from the head of the shell.

In assembling, when sleeve 22 is used, the insulating rings, contact button, sleeve, explosive, connecting wire and contact washer may be assembled in the shell and then the end of the sleeve may be crimped down on the contact washer as at 23, in Fig. 1, and then the parts are locked in place by indenting the shell or by rolling a circumferential groove 34 therein, or if preferred, sleeve 22 may first be crimped and the parts of the primer placed therein and then inserted in the shell, after which the shell is indented or the groove is rolled therein as before.

In the form illustrated in Fig. 3, the parts comprising the primer are assembled in the shell as first described, with the exception that the sleeve is omitted, after which the groove is rolled in the shell to lock the electrical parts of the primer in place. In either form, it should be noted that the electrical parts of the primer are securely locked in place, at the back by the head of the shell and at the front by indentations or the rolled in groove. The groove holds the electrical parts against forward movement when engaged by the electric firing pin of a gun and the head of the shell holds said parts against backward movement under the pressure of the gas generated within the primer and causes the insulating rings, and the metallic sleeve if used, to make the

primer absolutely gas tight, which is a vitally important feature of the invention.

The primer is completed by nearly filling the shell with rifle powder or some other explosive, indicated by 25, placing over the rifle powder a wad 26 and then crimping the end of the shell as at 27. In firing, the current passes from the firing mechanism of the gun to the contact button, thence through the wire to the contact washer and ignites the gun cotton, the flame of which passes through the opening in the contact washer and ignites the rifle powder, which in turn ignites the explosive of the shell in which the primer is used, which is not illustrated as it forms no portion of the present invention.

Having thus described my invention I claim:

1. In a structure of the character described, the combination with a shell having a head with a central opening, of a contact button seated in said opening and having a head of greater diameter than the opening, an insulating ring lying between the head of the contact button and the head of the shell and between the button and the

wall of the opening, a contact washer, an explosive between said button and washer, a bridge wire passing through the explosive and connecting said button and washer, and an indentation in the shell whereby the parts are locked between said indentation and the head of the shell.

2. In a structure of the character described, the combination with a shell having a head with a central opening, of an insulated contact button seated in said opening and having a head of greater diameter than the opening, a contact washer, a sleeve abutting against the head of the shell and crimped over the washer, for the purpose set forth, an explosive between said button and washer, a bridge wire passing through the explosive and connecting said button and washer, and an indentation in the shell whereby the parts are locked between said indentation and the head of the shell.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. LINDSAY.

Witnesses:

WM. H. SKINNER,
GEO. T. WURM.