

No. 720,768.

PATENTED FEB. 17, 1903.

R. S. WIESENFELD.  
DETONATING TOY.

APPLICATION FILED MAR. 6, 1901.

NO MODEL.

Fig. 1.

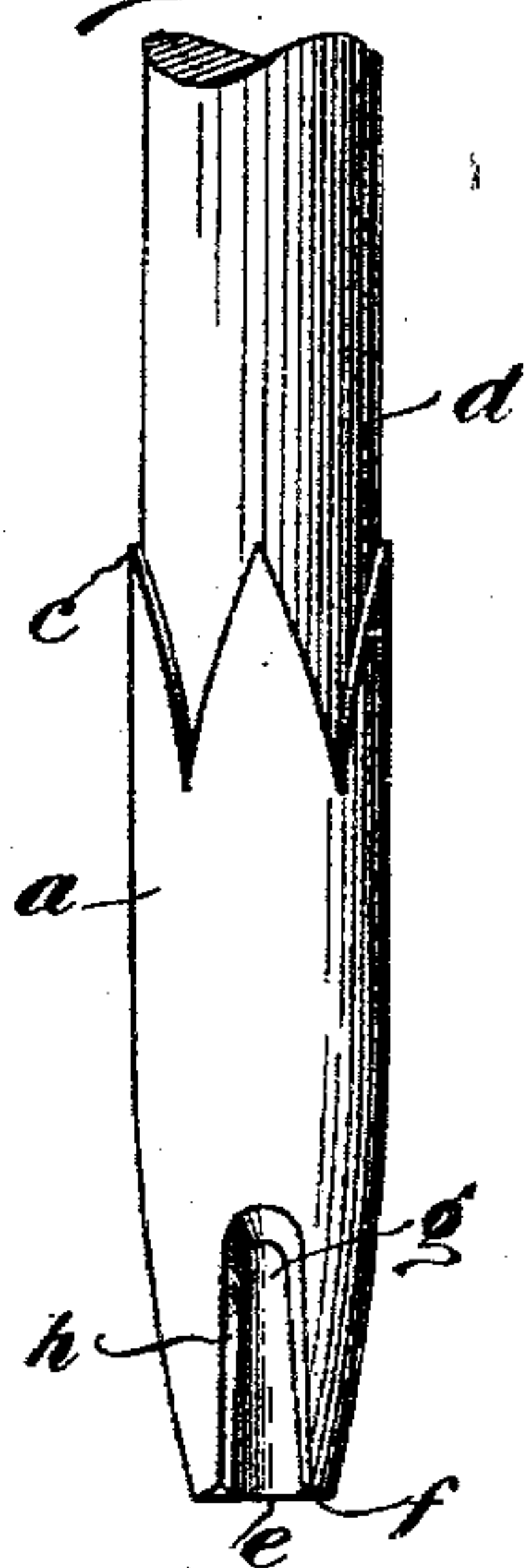


Fig. 8.



Fig. 9.



Fig. 2.

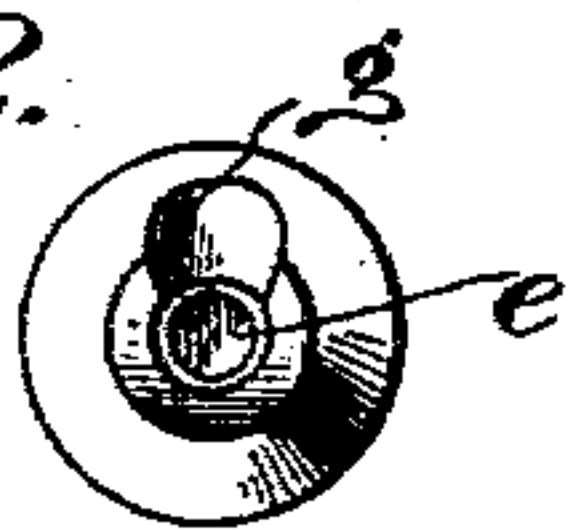


Fig. 3.

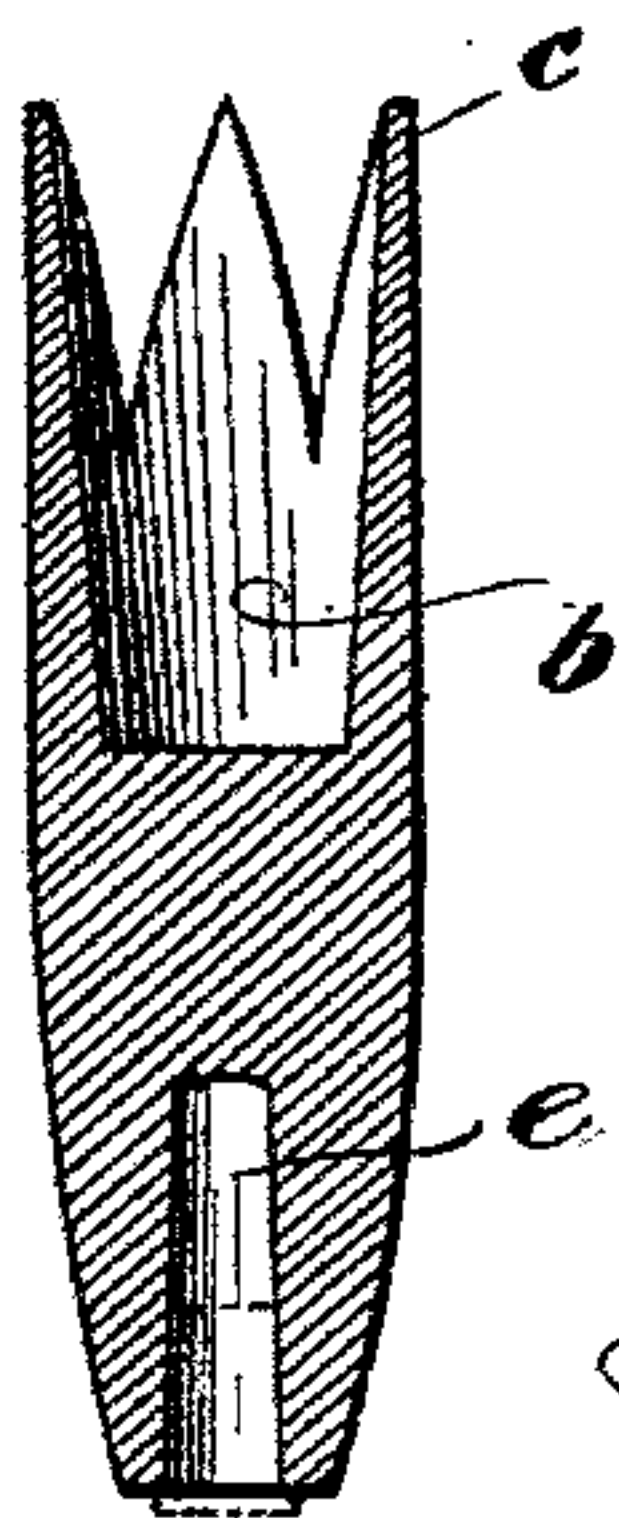


Fig. 4.

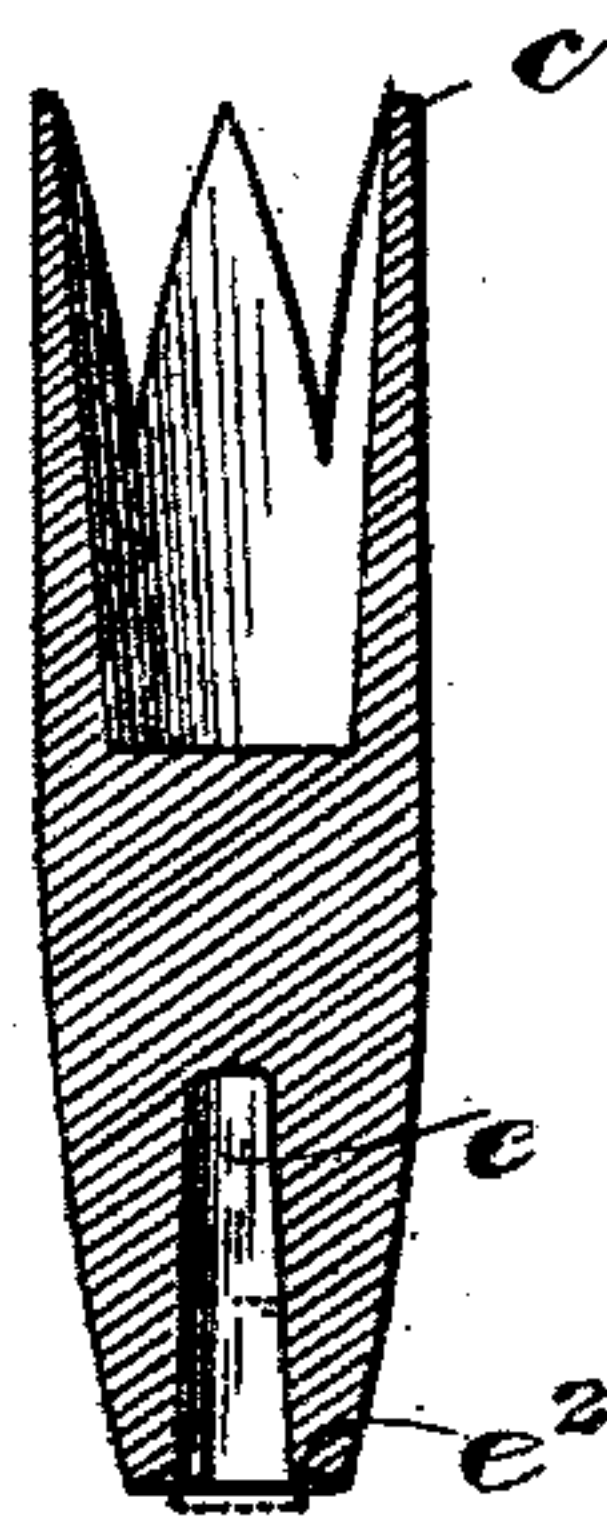


Fig. 5.

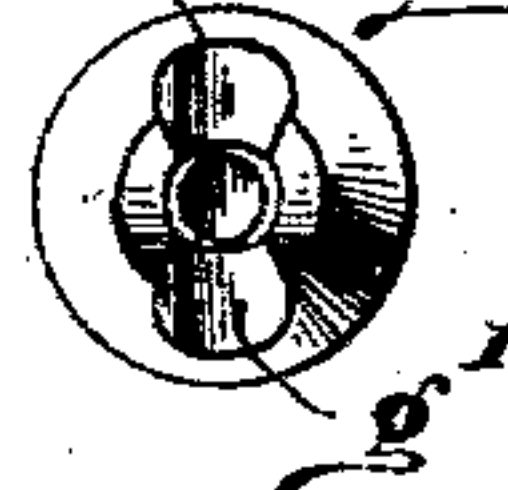


Fig. 7.

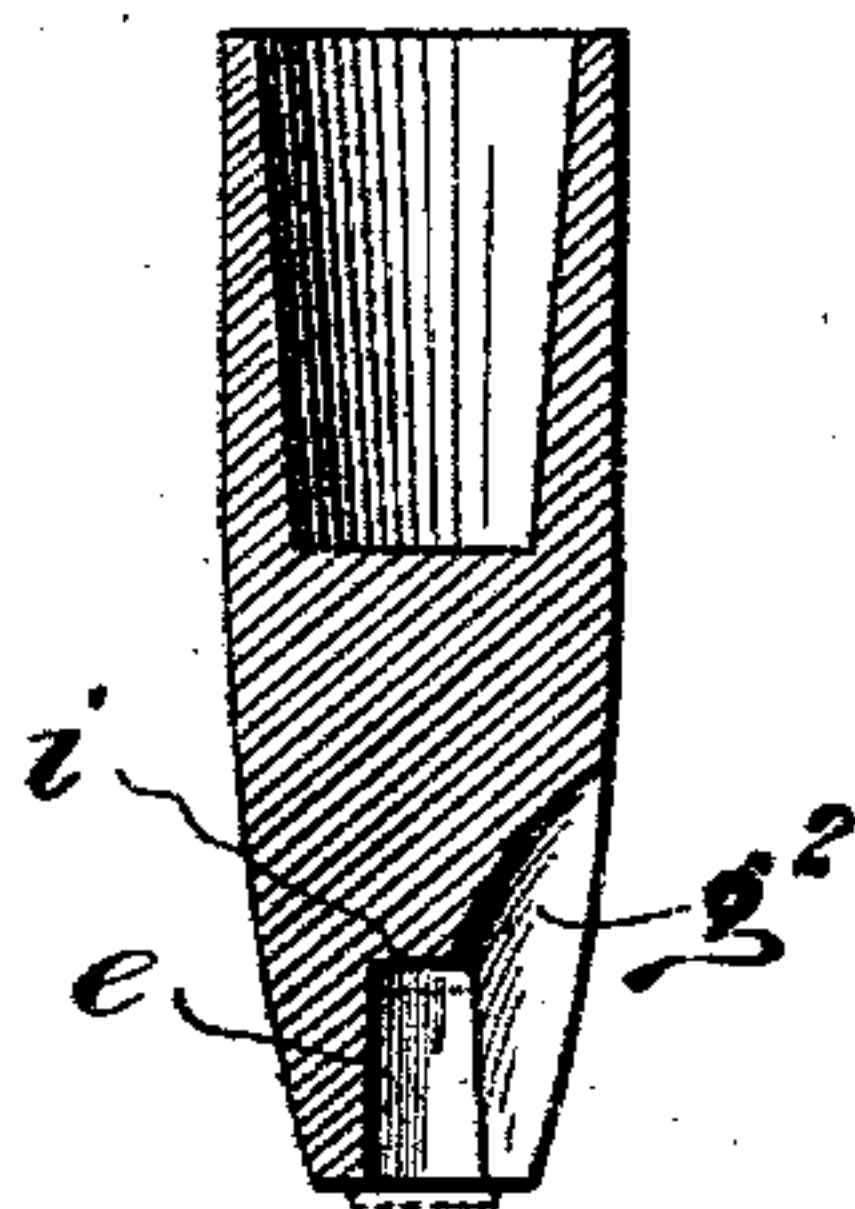
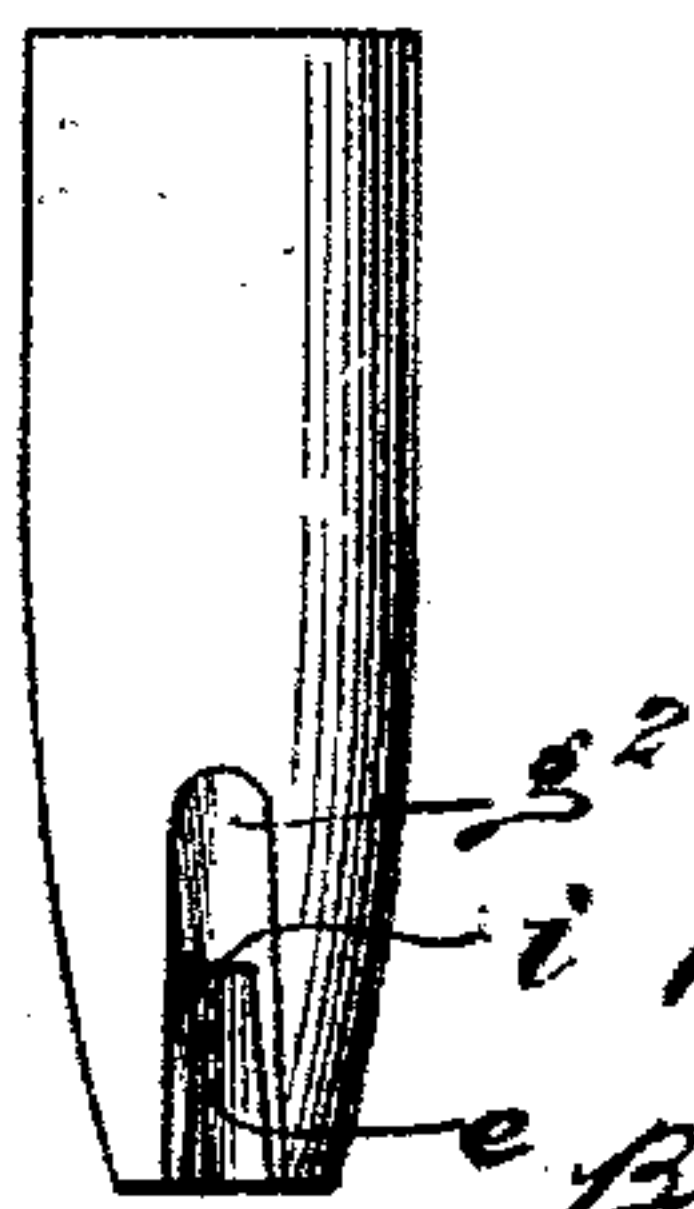


Fig. 6.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## DETONATING TOY.

SPECIFICATION forming part of Letters Patent No. 720,768, dated February 17, 1903.

Application filed March 6, 1901. Serial No. 50,024. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT S. WIESENFELD, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Detonating Toys, of which the following is a specification.

My invention relates to detonating toys, and particularly to canes whose ferrules are provided with means for holding a blank cartridge or simple detonating device which is fired by the impact of the cartridge upon a pavement or other hard object; and its purpose is to provide a ferrule of this character which is simple in construction and effective in operation and in which the cartridge-holding end of the ferrule is so constructed that the blank cartridge after being fired will readily drop from the ferrule.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation of my improved ferrule attached to the lower end of a cane. Fig. 2 is a lower end view of the ferrule. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a central vertical section of a ferrule with a slightly-modified lower end. Fig. 5 is a lower end view of a ferrule having two slots or side openings. Fig. 6 is a side view, and Fig. 7 a central sectional view through another form of ferrule. Fig. 8 is a view of one of the cartridge-shells before it has been inserted in the ferrule, and Fig. 9 is a view of said ferrule after it has been fired.

My improved ferrule comprises a cylindrical body *a*, preferably tapering from its upper to its lower end and having a central socket *b*, adapted to receive the end of the cane *d*. As shown in Figs. 1, 3, and 4, the upper end of the socket is surrounded by a plurality of upwardly-extending prongs *c*. These prongs may be bent inwardly to secure the ferrule to the cane. The upper portion of the ferrule may, however, be cut off squarely, as shown in Figs. 6 and 7, or otherwise formed and may be secured to the cane in any desired manner. As shown in Figs. 1 to 4, inclusive, the lower end of the ferrule is provided with a central vertically-extending bore *e*, which is tapered from its upper

end outwardly to its lower end. This bore is intended to receive the blank cartridge *m*, whose flanged primer-head *n* abuts against the lower extremity *f* of the ferrule, so that it may be brought into impact with a hard object to fire the cartridge. A vertical slot *g* is formed in the side of the ferrule at the lower end thereof and opens into the tapering bore *e*. Said vertical slot is also tapered outwardly from its upper to its lower end, and its side walls are outwardly beveled, as shown at *h*. Now when a blank cartridge seated within the tapering bore *e* of the ferrule is fired the shape of said bore and of the slot *e* opening into the same permits the metal of the cartridge-shell to readily expand outwardly through the slot, and at the same time the explosive action tends to force or automatically eject the spent shell out of the bore.

Various difficulties have heretofore been encountered in the use of ferrules for holding blank cartridges. For instance, such ferrules have heretofore been made with the walls of the cartridge-receiving bore entirely surrounding the cartridge. Then when the cartridge is exploded the metal of which its shell is composed is expanded and binds against the sides of the bore, and hence becomes jammed so tightly in the ferrule that much time and trouble is sometimes expended in ejecting the spent shell. With my device the metal of the shell is given an opportunity to expand out through the slot *g* without binding in the bore *e* of the ferrule, and I have found by experiment that the shell after it is fired will of itself drop from the ferrule.

It should be noted that the cartridge-shell *m*, Fig. 8, which is of uniformly cylindrical shape when it is inserted in the bore, is caused to assume the conical shape shown in Fig. 9, when it explodes by reason of the tapered shape of the bore, and thus is permitted to readily drop from the ferrule. The force of the explosion expands the metal out through the vertical slot *g*, usually forming an opening *o* at one side of the shell and preventing any binding by expansion of the metal in the bore *e*.

Fig. 4 illustrates a modification of the lower



end of the ferrule, in which the end of the bore  $e$  is flared outwardly or widened, as at  $e^2$ , so that a space is provided around the primer-head for the insertion of the finger-nails to  
 5 extract the shell should it fail to explode. Unexploded cartridges, may, however, be driven out by means of a rod or stick inserted within the upper end of the slot above the cartridge.

10 In Fig. 5 I have shown a ferrule provided with two vertically-extending slots  $g$  and  $g'$ , diametrically opposite one another.

In Figs. 6 and 7 I have shown another form of cartridge-exploder, in which the bore  $e$  is  
 15 shorter than in the previously-described figures, and the slot  $g^2$  preferably extends from the outer end of the bore to a point beyond its inner end or base  $i$ . The cartridge when in position is thus brought close to the base  
 20  $i$ , which forms a stop or abutment extending over the open end of the cartridge, against which when the latter is exploded the partially-confined gases react to force the cartridge out of the bore. Should the cartridge  
 25 fail to explode, it may be forced out by means of a stick or rod inserted through the upper end of the slot  $g^2$ .

It will be evident that instead of attaching the exploding device to a stick or cane the  
 30 cartridge may be exploded and ejected in like manner if the device be raised by other means, such as a string, and allowed to drop in a way to cause the head of the cartridge to strike a hard object. The upper portion of the ex-  
 35 ploder will therefore be formed to suit the object to which it is attached and need not necessarily be in the form of a ferrule.

Having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A cartridge-exploder of the character described having one end suitably formed for attachment to a cane, a bore at its opposite end to receive a cartridge and a slot or opening in the wall of the bore and extending to the  
 45 outer end thereof, for the purpose set forth.

2. A cartridge-exploder having one end suitably formed for attachment to a cane and having a bore in its opposite end to receive a cartridge, a stop or abutment at the base of  
 50 the bore, and a slot or opening in the side wall of the bore and extending from said stop or abutment to the outer end of said bore, for the purpose set forth.

3. A cartridge-exploder comprising a ferrule having its lower end provided with a vertical tapered bore to receive a cartridge, and also provided with a vertical tapered side slot opening into said bore and extending to the lower extremity of the ferrule, as set forth.  
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4. A cartridge-exploder comprising a ferrule having its lower end provided with a vertical bore to receive a cartridge, and also provided with a vertical tapered slot opening into  
 65 said bore at one side thereof and extending to the lower extremity of the ferrule, the side walls of said slot being outwardly beveled, as set forth.

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

ROBERT S. WIESENFELD.

Witnesses:

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