

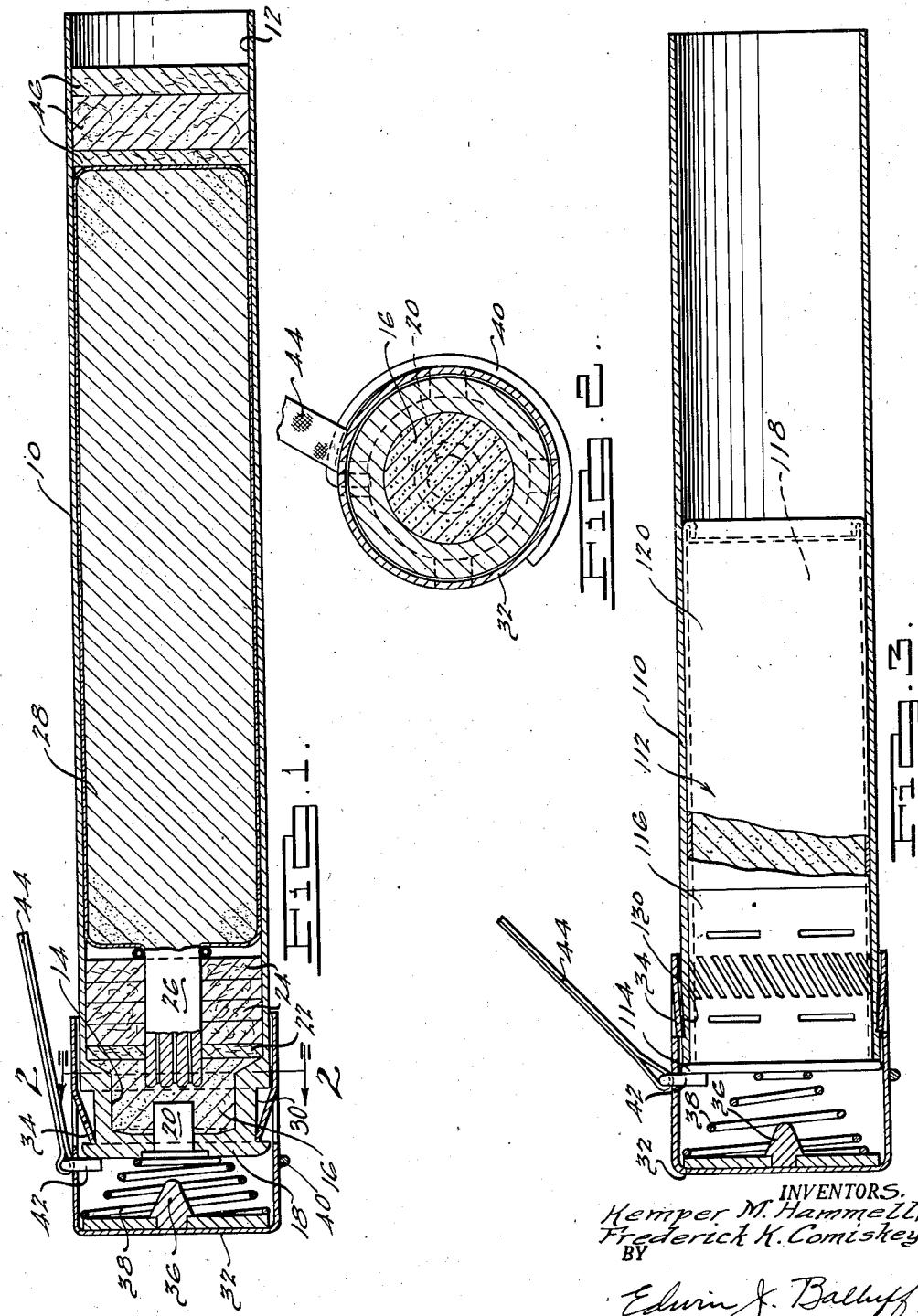
Feb. 24, 1948.

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2,436,751

DISCHARGER

Filed Feb. 19, 1945



## UNITED STATES PATENT OFFICE

2,436,751

## DISCHARGER

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Application February 19, 1945, Serial No. 578,716

2 Claims. (Cl. 102—37.6)

1

This invention relates to dischargers and particularly to an expendable, self-contained signal discharger and flare.

Principal objects of the invention are to provide:

A new and improved form of signal discharger;  
A new and improved form of expendable, self-contained signal discharger and flare;  
A simple and inexpensive, but efficient, construction for a self-contained signal discharger and flare.

Other and further objects of the invention will be apparent from the following description and claims and will be understood by reference to the accompanying drawings, of which there is one sheet, which, by way of illustration, show preferred embodiments and the principles thereof and what we now consider to be the best mode in which we have contemplated applying those principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims. We also contemplate that of the several different features of our invention, certain ones thereof may be advantageously employed in some applications separately and apart from the remainder of the features.

In the drawings

Fig. 1 is a longitudinal sectional view of a device embodying one form of the invention;

Fig. 2 is a cross section taken along the line 2—2 of Fig. 1; and

Fig. 3 is a longitudinal sectional view of a modified form of the invention.

As illustrated in Figs. 1 and 2, the device comprises a tubular member 10 having an internal bore 12 and forming the case of the flare projectile as well as the barrel of the discharger therefor. One end of the member 10 is closed by relatively heavy integral walls to define a chamber 14 for accommodating an expelling charge of explosive 16, the rear wall 18 of the chamber being apertured to receive and retain a primer or detonator 20 for the charge 16. The front of the powder chamber is closed by paper and felt washers 22 and 24 respectively, through which a fuse 26 extends from the powder charge 16 to the flare projectile 28, the fuse 26 being connected to the projectile 28 and related thereto so as to ignite the flare projectile after the same has been expelled from the discharger by the explosion of the charge 16.

2

The outer periphery of the wall defining the powder chamber 14 is formed to provide a continuous groove 30. A cup-shaped metal stamping 32 is formed to telescopically receive the closed end of the member 10 and is provided with a plurality of inwardly and rearwardly extending prongs 34 projecting into the groove 30 and co-operable with the rear wall thereof for securing the cup-shaped member 32 to the member 10. The resilience of the material of which the cup-shaped member 32 is formed makes it possible to slip the cup-shaped member on over the end of the member 10, at which time the prongs will yield and thereafter snap into the groove 30 for securing the member 32 relative to the member 10.

The cup-shaped member 32 has a firing pin 36 suitably mounted therein and positioned to engage the exposed end of the detonator 20 when a sharp blow is imparted to the member 32 in a direction toward the member 10 for firing the charge 16. A spring 38 is operatively positioned between the bottom of the member 32 and the outer face of the end wall 18 of the member 10 for yieldingly maintaining the same separated. A safety comprising an interrupted spring coil 40 having one end 42 projecting inwardly through an opening in the member 32 and bearing against the end wall 18 normally functions to prevent accidental firing of the device. A tape 44 carried by the spring 40 is provided for conveniently removing the end 42 from its obstructing position as illustrated so as to permit the firing of the discharger.

The projectile 28 is positioned in the bore 12 of the member 10 in such a way as to be expelled therefrom upon firing of the charge 16. Suitable disks 46 of paper, cork or other suitable material frictionally fitted in the open end of the bore 12 are provided for holding the projectile 28 in the bore 12 of the member 10 until the firing of the charge 16.

In the embodiment illustrated in Fig. 3, the construction is much the same as that illustrated in Figs. 1 and 2 except that the tubular member 110 is formed by a piece of tubing in the rear end of which is positioned a standard 10-gauge shell 112, the rim 114 of which seats on the end of the tubular member 110. The cap 116 of the shell 112 is pressed into the tube so as to be secured therein. The projectile 118 in this case is confined within the paper shell 120 of the shell 112. The tubular member 110 is provided with a groove 130 similar to the groove 30 in which the tabs 55 or prongs 34 of the cup-shaped shell 32 project

for securing the same relative to the tubular member 110.

While we have illustrated and described a preferred embodiment of our invention, it is understood that this is capable of modification and we therefore do not wish to be limited to the precise details set forth but desire to avail ourselves of such changes and alterations which fall within the purview of the following claims.

We claim:

1. A discharger for signals and the like comprising a tubular member having a bore closed at one end thereof, said tubular member having an exterior peripheral groove at the closed end thereof, a cup-shaped stamped metal member telescopically and slidably associated with the grooved end of said tubular member and having integral inwardly extending springs in the form of prongs projecting into said groove for securing said members against sliding movement in one direction while permitting sliding movement in the other direction relative to one another and with the closed end of said tubular member spaced from the bottom of said cup-shaped member, said cup-shaped member mounting a firing pin and said tubular member having an explosive charge and a detonator therefor positioned to be struck by said firing pin upon actuation thereof occasioned by rapid movement of said cup-shaped member in said other direction relative to said tubular member.

2. A discharger for signals and the like comprising a tubular member having a bore closed at one end thereof, said tubular member having

an external shoulder means at the closed end thereof, a cup-shaped stamped metal member telescopically and slidably associated with the closed end of said tubular member and having integral inwardly extending prongs engageable with said shoulder means for securing said members against sliding movement in one direction while permitting sliding movement in the other direction relative to one another and with the closed end of said tubular member spaced from the bottom of said cup-shaped member, said cup-shaped member mounting a firing pin and said tubular member having an explosive charge and a detonator therefor positioned to be struck by said firing pin upon actuation thereof occasioned by rapid movement of said cup-shaped member in said other direction relative to said tubular member.

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