April 6, 1937. J. M. KING 2,075,813

FIRING MECHANISM

Filed Sept. 30, 1935

Fig. 1.

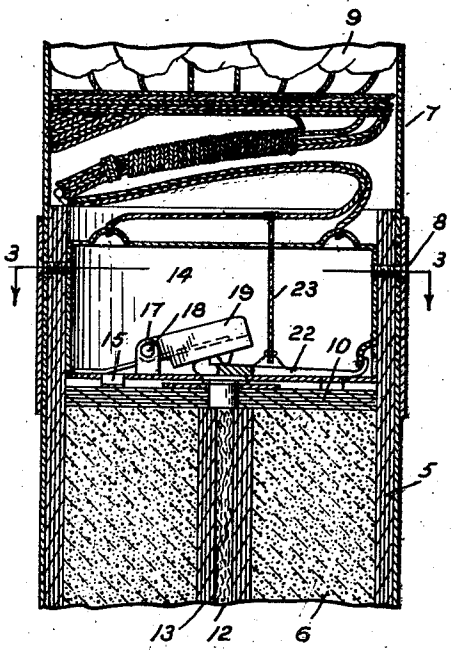


Fig. 2.

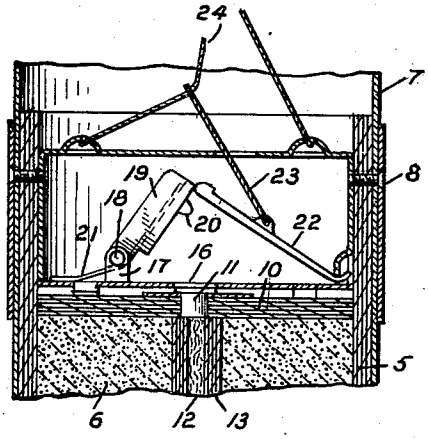


Fig. 4.

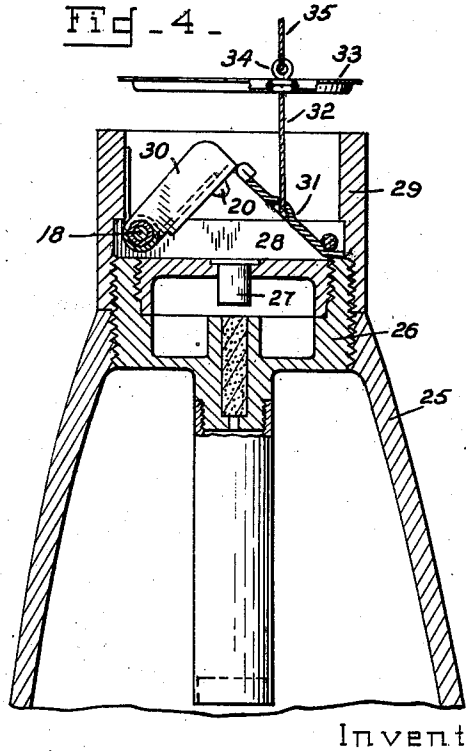
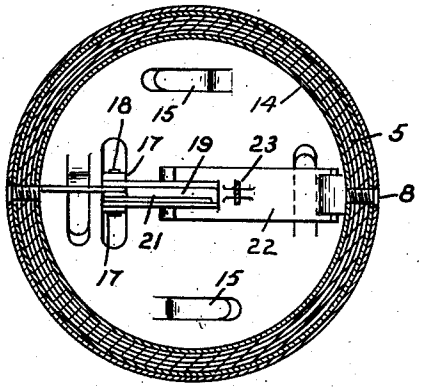


Fig. 3.



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2,075,813

FIRING MECHANISM

John M. King, Dover, N. J.

Application September 30, 1935, Serial No. 42,865

1 Claim. (Cl. 102—36)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a firing mechanism for flares, bombs, and the like.

The purpose of the invention is to provide a firing mechanism in which the primer is protected against accidental firing during storage and transportation. This is accomplished by interposing a sear between the primer and hammer and arranging it to cock and then release the hammer at the time of firing.

To these and other ends, the invention consists in the construction, arrangement and combination of elements described hereinafter and pointed out in the claim forming a part of this specification.

A practical embodiment of the invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a longitudinal sectional view of a parachute flare provided with the improved firing mechanism and showing the parts in the safe position.

Fig. 2 is a similar view showing the parts in firing position.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1 and

Fig. 4 is a longitudinal sectional view showing the invention applied to a bomb.

Referring to Figs. 1 and 3 there is shown a flare including a case 5 for an illuminant 6 and a case 7 which is attached to the case 5 by screws 8 and houses a parachute 9. The parachute is adapted to be withdrawn from its case in a well known manner when the flare is launched from an aircraft.

A disc 10 fitted in the case 5 and spaced from the upper end thereof carries a primer 11 which is in line with a relay charge 12 in a central tube 13 that passes through the illuminant.

A container 14 is inserted in the case 5 and is secured in place by the screws 8. The floor of the container is formed with punched-out feet 15 engaging the disc 10 and has a central opening 16 to expose the primer. A pair of upstanding spaced ears 17—17 are also punched out of the floor and carry a pin 18 on which a hammer 19 is pivotally mounted. The under side of the hammer is provided with a firing pin 20 which is adapted to strike the primer. A torsion spring 21 mounted on the pin 18 and bearing on the floor of the container and on the hammer is arranged so that it is not fully compressed until the hammer is moved to cocked position as shown in Fig. 2.

A sear 22 is pivotally mounted on the wall of the container and is arranged to cover the primer when resting on the floor of the container as shown in Fig. 1. A cord or wire 23 connects the sear with one of the suspension cords 24 of the parachute. The cords 24 are fastened to the top of the container 14 and serve to support the flare when the parachute has been withdrawn and becomes distended.

The sear and hammer are in normal safe position when as shown in Fig. 1 the sear is interposed between the hammer and the primer. The distension of the parachute causes the cord 24 to be drawn taut and the cords act through the wire 23 to rotate the sear as shown in Fig. 2. The sear on being raised moves the hammer to cocked position, and thereby compresses the torsion spring. As soon as the sear becomes disengaged from the hammer, the latter is actuated by the spring to fire the primer.

In the modification shown in Fig. 4 the firing mechanism is applied to a bomb 25. An adapter 26 threaded to the interior of the bomb carries the primer 27 and a frame 28 resting on the adapter and retained by a tube 29 threaded to the exterior of the bomb, carries the hammer 30 and sear 31. A wire 32 connects the sear and a cover 33 and has its upper end terminating in a loop 34 for attachment of the suspension cord 35 of the parachute (not shown). When the parachute opens, the cover is removed and the sear actuated in the manner previously described.

I claim:

In a projectile, a case, a disc in the case and spaced from the upper end thereof, a primer carried by the disc, a container secured in the upper end of the case above the disc and having an opening in its floor to expose the primer, a pivotally mounted hammer within the container and arranged to strike the primer, a spring for actuating the hammer, a pivotally mounted sear within the container and normally resting on the floor of the container between the primer and hammer and covering the primer, and means for rotating the sear to cock and then release the hammer.

JOHN M. KING.