Feb. 1, 1944. J. M. KING 2,340,329

SMOKE TORCH

Filed Aug. 6, 1940

Fig. 1.

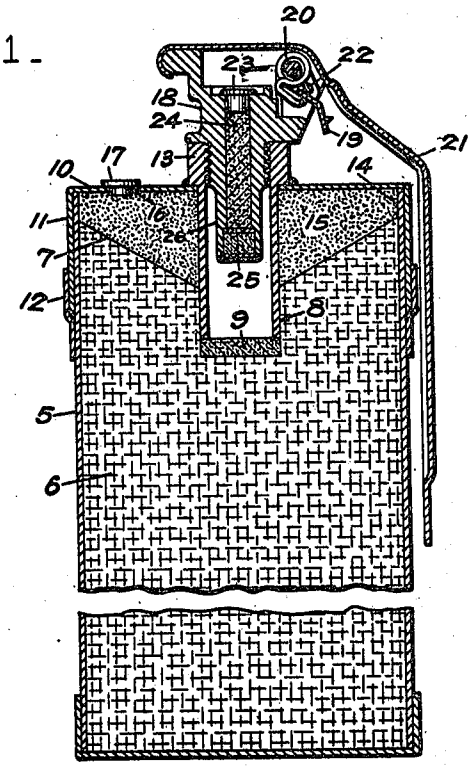


Fig. 2.

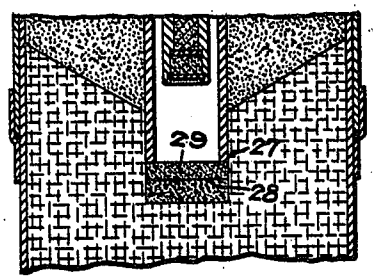
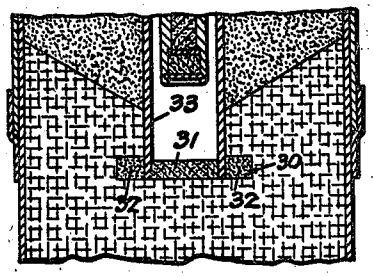


Fig. 3.



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SMOKE TORCH

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6 Claims. (Cl. 102—65)

(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 smoke torch.

A smoke torch is a pyrotechnic device which produces a dense cloud of smoke and is used as a distress signal, as a position indicator or as a screen to blind an enemy or conceal friendly troops.

The purpose of this invention is to provide a smoke torch which utilizes the conventional arrangement and firing mechanism of a grenade and which includes means for smothering the flame which initiates combustion of the smoke composition.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Fig. 1 is a longitudinal sectional view of a smoke torch constructed in accordance with the invention;

Figs. 2 and 3 are fragmentary longitudinal sectional views showing modifications thereof.

Referring to Fig. 1, the smoke torch of the invention comprises a container 5 in which is placed a composition 6 adapted, on combustion, to produce a dense cloud of smoke. The front face of the smoke composition is formed with a conical depression 7 whose rearwardly converged wall leads to a central recess 8. A first fire composition 9 is placed in the bottom of the recess.

A cover 10 mounted on the container with its skirt 11 on the outer side thereof is held in place by adhesive tape 12 which is removed before firing. The cover includes a tubular adapter 13 fixed thereto in any convenient manner, as by welding. The inner portion of the adapter extends into the recess 8 in the smoke composition and serves to provide for a chamber 14 between the cover and the conical front wall of the smoke composition, which chamber is out of communication with the recess 8. The chamber 14 is filled with a flame smothering agent 15 such as free flowing sand which may be admitted through an opening 16 that is subsequently closed by a stopper 17.

The outer portion of the adapter threadedly carries a fuse 18 which is similar to the conventional fuse employed with hand grenades and includes a pivotally mounted striker 19, a firing spring 20, a lever 21 for holding the striker in cocked position, and a safety pin 22 for retaining the lever in place on the fuse. When the safety pin is pulled out and the lever released from the hand of an operator, the firing spring at once throws off the lever and drives the striker against the primer 23. The primer ignites a relay or a delay charge 24 and a relay charge 25 which are disposed in a tubular extension 26 of the fuse.

In operation the gases from the igniting charges of the fuse and/or the first fire composition forcibly remove the cover 10 carrying the adapter 13. Upon withdrawal of the adapter from the recess 8 communication is established between the chamber 14 and the recess 8 and the flame smothering agent 15 flows into the recess and extinguishes the flame from the first fire composition after the smoke composition has been ignited.

In order to provide for smothering the flame when the grenade is thrown or when it is not upright the recess 27 may be deepened to receive a quantity of sand 28 underneath the first fire composition 29 as shown in Fig. 2 or an annular recess 30 (Fig. 3) may be provided at the side of the first fire composition 31 to receive sand 32 which is normally separated from the composition 31 by the removable adapter 33.

I claim:

1. In a smoke torch, a container, a smoke composition in the container, a first fire composition in said container adjacent said smoke composition for igniting the smoke composition, means carried by said container for igniting the first fire composition, and fluent solid material within said container for smothering the flame of the first fire composition after it has ignited the smoke composition.

2. In a smoke torch, a container, a smoke composition in the container, a first fire composition in said container adjacent said smoke composition for igniting the smoke composition, means carried by said container for igniting the first fire composition, and fluent solid material within said container for smothering the flame of the first fire composition after it has ignited the smoke composition, and means normally separating the said fluent material from the first fire composition, said last mentioned means being removable by gases of the ignited elements.

3. In a smoke torch, a container, a smoke composition in the container having a depression, and a central recess in its front end, a first fire composition in the central recess, a cover on the container having a tubular extension depending into the recess, a flame smothering material dis-

posed in the depression of the smoke composition and maintained out of communication with the central recess by the tubular extension of the cover, means carried by the cover for igniting the first fire composition, and said cover adapted to be forcibly removed on combustion of the first fire composition.

4. In a smoke torch, a container, a smoke composition in the container having a depression, and a central recess at its front end, a first fire composition in the central recess, a cover on the container having a tubular extension depending into the recess, a comminuted flame smothering material disposed in the depression of the smoke composition and maintained out of communication with the central recess by the tubular extension of the cover, means carried by the cover for igniting the first fire composition, and said cover adapted to be forcibly removed on combustion of the first fire composition.

5. In a smoke torch, a container, a smoke composition in the container having a depression, and a central recess in its front end, a finely divided flame smothering material in the base of the recess, a first fire composition in the central recess over said flame smothering material, a cover on the container having a tubular extension depending into the recess, a finely divided flame smothering material disposed in the depression of the smoke composition and maintained out of communication with the central recess by the tubular extension on the cover, means carried by the cover for igniting the first fire composition, and said cover adapted to be forcibly removed on combustion of the first fire composition.

6. In a smoke torch, a container, a smoke composition in the container having a depression, and a central recess at its front end, said central recess having a peripheral groove at its base, a first fire composition substantially in the middle of the central recess, a flame smothering material disposed in the peripheral groove, a cover on the container having a tubular extension depending into said recess, said tubular extension separating the first fire composition from the flame smothering material, a flame smothering material disposed in the depression of the smoke composition and maintained out of communication with the central recess by the tubular extension of the cover, means carried by the cover for igniting the first fire composition, and said cover adapted to be forcibly removed on combustion of the first fire composition.

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