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PRACTICE GRENADE

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Fig. 1.

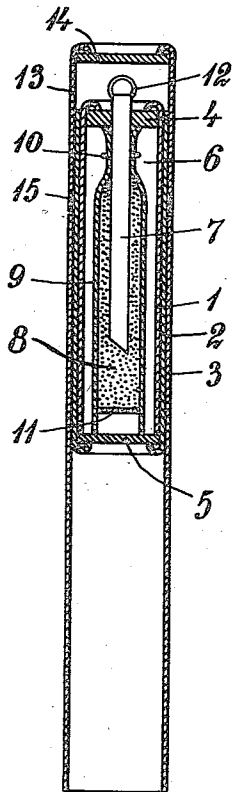
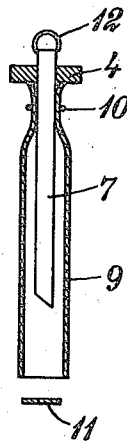


Fig. 2.



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PRACTICE GRENADE

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2 Claims. (Cl. 102—33)

The present invention is directed to practice hand grenades principally for training purposes.

For imitating the explosion of hand grenades and other ammunition during field maneuvers there is a large demand for practice grenades, that is, substantially safe explosives simulating grenades and which create a cracking sound when exploding. Such practice grenades ought to satisfy several requirements which in part are contradictory. On the one hand the cracker must involve the least possible danger to personnel when used. Thus, it must be capable of being held by hand in the normal manner even during the explosion without the hand being hurt, and even in the case of an irregular holding thereof the possibility of injury should be minimized. Likewise, such grenades which do not properly explode and are likely to cause accidents must not be produced, and yet the ignition must be so conspicuous that there can be no doubt as to when the practice grenade has been ignited. Further, the practice grenade must not cause fire even under conditions favorable to ignition, nor must a hand grenade which explodes cause explosion of other practice grenades in the same packing. On the other hand it is important that the practice grenade has a cracking effect, plainly simulating an explosion of an actual hand grenade or the like. Finally it should have a handy shape and be capable of being produced by machines at moderate costs.

The invention has for an object to provide a practice grenade satisfying the requirements outlined above, and primarily consists in that the charge is surrounded by an air space confined by an enclosure which is stronger than the enclosure of the charge proper and comprises a pair of telescopic tubes each having a closure in one end, one of which closures carries a fuse extending therethrough.

Thus, according to the invention the fact that an air space having a relatively strong enclosure and surrounding a charge permits a weaker charge to be used for a given cracking effect, is made use of for reducing the danger in the use of the grenade. For providing the necessary strong enclosure there is made use of tubes telescoping into each other and provided with end closures, i. e. cylinder-like units which can be produced cheaply with apparatus similar to that commonly used for producing round boxes of cardboard or pasteboard and at the same time result in a handy shape for the simulated grenade.

Further features of the invention will appear from the following specification which describes a suitable embodiment thereof as illustrated in the drawings, in which

Fig. 1 is a longitudinal section of the practice grenade, and

Fig. 2 is a corresponding sectional view of a part of the grenade during production.

In Fig. 1, reference characters 1, 2 and 3 designate three tubes which fit tightly into each other and for example may consist of kraft paper coated with adhesive and spirally wound to desired thickness. The innermost

tube 1 is at its upper end flanged inwards over an end closure 4, for example of semi-hard fibrous plate, whereas the tube 2, which fits into the tube 1, is flanged in a similar manner over an end closure 5 at its lower extremity. When the tube 1 is pushed into the cylinder formed by the tube 2 and the closure 5, the tube 2 extends substantially to the level of the top of the closure 4, so that the tubes 1 and 2 together form a double wall around an internal air space 6. Through the closure 4 there extends a fuse 7, which projects downwards into a charge 8 confined by a comparatively weak paper sleeve 9, the outer circumference of which is smaller than the internal circumference of the tube 1. The sleeve 9 is tied to the fuse 7 at the top as indicated at 10, and is closed at the bottom at a short distance above its lower end by a partition 11 of cardboard or the like glued thereto. In order that the sleeve 9 shall remain safely in position its lower extremity engages the bottom closure 5.

On its upper extremity above the closure 4 the fuse 7 has a priming 12 of sulphur or the like suitable for ignition by rubbing. The free end of the fuse 7 is covered by a cylindrical cap formed by a short tube 13, which may be produced in a similar manner as the tubes 1 to 3, and which at the top is flanged over a closure 14. The tube 13 fits tightly onto the uppermost portion of the intermediate tube 2 and engages at its lower extremity the top face of the outer tube 3, which at the bottom is continued downwards below the tube 2 in a length suitable for forming a handle.

For igniting the fuse one may for example use the rubbing surface of a match-box, or the tube 13 may be provided with an internal rubbing surface, indicated at 15, near its bottom edge. The tubes 2 and 3 may be interconnected by some adhesive in order to prevent accidental relative displacement, especially when removing the cap 13, 14. Further, the outer casing comprising the tubes 3 and 13 may be provided with printed directions for use, specifying where to hold, how the cap is removed and the fuse ignited, fuse delay, prescribed distance from personnel etc.

In production the cylinder consisting of tube 1 and closure 4 with insert, the cylinder consisting of tube 2 and closure 5, the tube 3 and the cap 13, 14 are manufactured as separate units. For the production of the first mentioned unit the fuse 7 with priming 12 is at first inserted through the closure 4, and the sleeve 9 is tied thereto, so that a unit of the form shown in Fig. 2 is obtained before this insert is placed in the tube 1 and the sleeve 9 is charged and closed with the partition 11. After all the parts have been assembled the whole practice grenade is waxed, for example by dipping in paraffin, in order to be moistureproof.

With the practice grenade described it is possible, as mentioned above, to obtain a strong cracking effect with a comparatively weak charge, since the charge 8 when exploding will at first burst its own enclosure consisting of the sleeve 9, and then compress and heat the air contained in the space 6, so that the latter contributes in developing the expansion pressure, which then in its turn creates a strong crack by bursting the comparatively strong enclosure composed of the triple tube wall around the air space. Due to the comparatively weak charge and also to the more temperate action caused by the delay between the ignition of the charge and the bursting of the outer enclosure, and further by the fact that the charge does not contact the latter in any point, the danger of injury to personnel and of fire or propagation of the explosion is minimized, and in addition the hand is not exposed directly to the effect of the explosion when gripping the handle properly, even if the practice grenade should explode before one has managed to throw it.

Good keeping qualities are ensured, not only by the

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wax impregnation, but also due to the fact that any moisture that might enter the practice grenade in the case of an injury to the impregnated casing will have a long path to traverse before reaching the charge.

I claim:

1. A practice grenade capable of simulating exploding ammunition such as a hand grenade comprising a container having relatively weak walls, an explosive charge positioned in said container, a pair of tubes one of which extends into the other, a pair of closures each for one of said tubes at an end opposite to the other tube, a fuse extending through one of said closures into said container and positioning the same within but spaced from said pair of tubes with an air space surrounding said container, a third tube tightly surrounding a portion of said pair of tubes and extending therefrom to form a handle and a cap detachably mounted on the remainder of said pair of tubes covering said fuse.

2. A practice grenade capable of simulating exploding ammunition such as a hand grenade comprising a con-

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tainer having relatively weak walls, an explosive charge positioned in said container, a pair of tubes one of which extends into the other, a pair of closures each for one of said tubes at an end opposite to the other tube, a fuse extending through one of said closures into said container and positioning the same within but spaced from said pair of tubes with an air space surrounding said container, said container having an open end with said fuse extending therethrough and fastening means retaining said container mouth around said fuse.

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