SPECIFICATION

Dummy hand grenade

The invention relates to a dummy hand grenade comprising a releasable lever connected to the fuse head by a hinge, a pivoted striking hammer resting against said lever under spring tension and a tube-shaped charge carrier screwed into said fuse head, said charge carrier containing a delay charge to be detonated by a primer and a fulminating charge to be detonated by said delay charge.

Such dummy hand grenades shall imitate the function of the fuse of a shotted hand grenade as far as possible but without ejecting dangerous splinters or any fragments at all over a distance exceeding 1 to 1.5 m when detonating the fulminating charge. The essential differences between the dummy hand grenade and the shotted hand grenade are that the charge carrier has only a fulminating charge instead of the detonator and the booster charge and that the fragment carrier is replaced by a cast member being open on the bottom side otherwise having the same shape and weight as the carrier.

In the case of dummy hand grenades of the above-mentioned kind (cf. Austrian Patent 323.608) the fulminating charge is disposed in a tube-shaped charge carrier and blocked by a cup-shaped plastic member whose cylindrical edge rests on the charge carrier on a flange or the like. This way of fixing the fulminating charge not only involves high cost of production but does not achieve the desired degree of security in that it does not prevent the entire cup-shaped plastic member from being torn off its anchorage and from being ejected even if predetermined breaking points are provided in its bottom.

It is, therefore, an object of the present invention to prevent bigger parts of the carrier for the fulminating charge from being ejected from the hand grenade when detonating the fulminating charge.

A further object is a simple and cheap method of producing the charge carrier according to the invention. According to the invention this is achieved if that part of the charge carrier which carries the fulminating charge is a plastic tube with a closing membrane directly moved thereto and wherein that part of the charge carrier which carries the delay charge is a metal tube, the upper rim of the plastic tube surrounding the metal tube and said plastic tube and metal tube being fastened to each other by a metal sheath enclosing said plastic tube.

On the one hand the invention provides for making the container for the fulminating charge together with its bottom in one piece so that the edge of the bottom can almost not be torn off during explosion. This tearing off if entirely eliminated if the closing membrane is made like the tip of a blank cartridge, i.e. if it converges conically. The bursting of the cone-shaped membrane can be further facilitated by disposing predetermined breaking lines.

On the other hand the measures taken according to the invention ensure that the charge carrier containing the fulminating charge is not ejected from the hand grenade as a whole, and this is achieved by fastening the upper part of the plastic tube containing the fulminating charge to that part of the charge carrier which is screwed into the fuse head by means of a simple, but extremely safe joint. The integrity of this joint is due to the fact that the burning down of the delay charge, which lasts about 4 seconds, causes an intense heating-up of the metal tube surrounding the delay charge so that slipped-on plastic tube is melted thereto and forcefully pressed together. If ring grooves or similar recesses are provided in the inner metal tube, the joint with the originally smooth plastic tube produced during heating up also becomes firmly locked, as the plastic tube adapts itself to the lowered and raised areas in the inner metal tube.

The outer metal sheath for fixing the plastic tube in place can be made of cheap material, e.g. aluminium. If this sheath is of the same length as the plastic tube itself, it is guaranteed that the discharge can only be effected through that end of the plastic tube which is closed by the plastic membrane.

By disposing the plastic membrane very near to the end of the plastic tube, additional blocking of the fulminating charge is prevented, which would cause an undesirable increase in the explosive power.

The structure of a dummy hand grenade according to the invention not only guarantees that the throwing and the explosion of the hand grenade are realistic but also that the explosion of the fulminating charge does not involve any danger.

In the following an embodiment of the invention will be described in more detail by means of the figures of the drawing.

Figure 1 shows a longitudinal section of a dummy hand grenade,

Figures 2 and *3* are enlarged views, in detail, showing the portion of the charge carrier containing the fulminating charge before and after explosion.

The dummy hand grenade according to Fig. 1 comprises a non-splintering body 1 and a dummy fuse. Said fuse has a head 2 with a lever 4 against which a striking hammer 6 is pressed by a spring 3. A protecting cap 5 prevents the lever 4 from turning round before the pin 7 is pulled by means of a hook and thus releasing the striking hammer 6.

The charge carrier screwed into the head 2 by means of a thread 12 comprises a fuse pellet 11 followed by several delay charges 13 disposed in a metal tube 10, which is

provided with ring grooves 9. The fulminating charge 14, consisting of a powder charge, for example of 0.3g, is disposed in a plastic tube 15, which is made in one piece with the closing membrane 16, e.g. by injection molding. The plastic tube 15 is fastened to the other parts of the charge carrier by clamping to the metal tube 10 by means of an aluminium metal sheath 17.

Fig. 2 illustrates in more detail the structure of the plastic tube 15 together with the closing membrane 16 and its way of being fastened to the metal tube 10. It is surprising that placing the tubes 10, 15 and 17 inside one another can of its own produce a joint resisting the explosive pressure. As can be seen in Fig. 3 this is due to the fact that the plastic tube 15 has during the burning of the delay charges 13 been softened to such an extent that it enters into the ring grooves 9 under the pressure of the metal sheath 17 which has only slightly been widened within this short time and is thus secured to an optimum extent.

When the closing membrane 16 bursts, which starts from the cone tip and can be facilitated particularly by star-shaped recesses, only the tip portion of the membrane is powderized and ejected, whereas the edge portion is permanently connected to the plastic tube 15 due to the method of production.

CLAIMS

1. A dummy hand grenade comprising a releasable lever connected to the fuse head by a hinge, a pivoted striking hammer resting against said lever under spring tension and a tube-shaped charge carrier screwed into said fuse head, said charge carrier containing a delay charge to be detonated by a primer and a fulminating charge to be detonated by said delay charge, wherein that part of the charge carrier which carries the fulminating charge is a plastic tube with a closing membrane directly molded thereto and wherein that part of the charge carrier which carries the delay charge is a metal tube, the upper rim of the plastic tube surrounding the metal tube and said plastic tube and metal tube being fastened to each other by a metal sheath enclosing said plastic tube.

2. A dummy hand grenade according to claim 1, wherein said metal tube containing said delay charge has ring grooves or the like in the portion covered by said plastic tube.

3. A dummy hand grenade according to claim 1 or 2, wherein said metal sheath is made of aluminium and of the same length as said plastic tube.

4. A dummy hand grenade according to one of claims 1 to 3, wherein said closing membrane converges conically like in the case of blank cartridges.

5. A dummy hand grenade according to one of claims 1 to 4, wherein said closing membrane is disposed at the end of said plastic tube.

6. A dummy hand grenade substantially as hereinbefore described and illustrated with reference to the accompanying drawings.

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