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2,646,750

GRENAD FUSE

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Fig. 1.

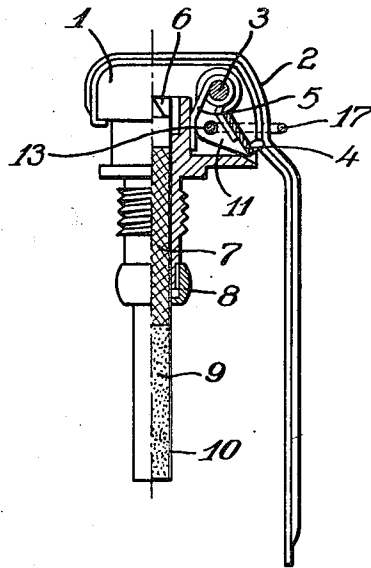


Fig. 2.

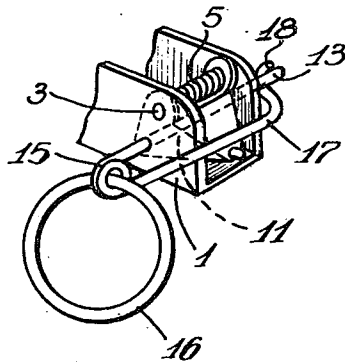
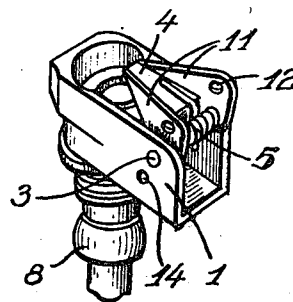


Fig. 3.



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GRENADE FUSE

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5 Claims. (Cl. 102—85.6)

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My present invention relates to a detonator assembly for grenades and other similar devices comprising a striker plate.

Detonator assemblies of this kind at present in use present the disadvantage that they provide no guarantee of safety in the case when the body of the detonator assembly is broken.

This disadvantage arises mainly from the fact that the apertures for the passage of the safety pin or bolt provided in the cheeks or flanges of the body of the detonator assembly are located more or less in the immediate vicinity of the edges of these cheeks or flanges.

The object of the present invention is to obviate this defect and also to permit the possibility of using material such as Bakelite for the manufacture of the body of the assembly and consequently to diminish the cost of manufacture, to decrease the weight, and to permit the assembly to be reduced to powder in the case when it is applied to an offensive weapon.

With the above object in view the detonator assembly according to the invention is characterised by the feature that the rotatable striker plate is provided with means which prevent its rotation and subsequent percussion in the case when the body of the assembly is broken.

In the practical application of the invention, this plate comprises one or more folds, flanges, vanes, ribs, or brackets in which are provided apertures for the passage of the safety pin or bolt which thus traverses not only the cheeks or flanges of the body of the assembly, but also these folds, flanges, vanes, ribs or brackets, etc., in order to prevent the rotation of the plate and subsequent percussion in the case when the body of the detonator assembly is broken.

In order to enable the invention to be better understood one form of embodiment is hereunder described, this form being given solely by way of illustration and being in no way limitative.

In the drawings:

Figure 1 is a view in elevation and partly in section showing the detonator assembly;

Figure 2 is a perspective view showing the striker plate and a part of the assembly before percussion; and

Figure 3 is a perspective view showing the body of the detonator assembly and the striker plate after percussion.

In the drawings, reference numeral 1 denotes the body of the detonator assembly, 2 is the striker lever, 3 is the spindle for rotation of the striker plate 4 and is under the action of a spring 5 which is wound around the spindle 3.

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Reference numeral 6 denotes the percussion cap, 7 the fuse, 8 the casing nut, 9 the detonator proper and 10 the casing proper.

In accordance with the invention the striker plate 4 is provided with vanes 11 which are pierced by holes 12 through which in the locked or safety position passes the safety pin 13 which also passes through holes 14 pierced in the cheeks or flanges of the body 1.

The pin 13 forms in known manner a buckle or loop 15 around a ring 16 and is extended by a rectilinear limb 17 substantially parallel to the pin 13 and bent over so as to form a hook 18 engaging under the end of the pin 13. The pin 13 can thus be withdrawn by a twist imparted to the ring 16.

After withdrawing this pin, the lever 2 is easily freed when the grenade is thrown and the striker plate then performs its rotary movement around the spindle 3 under the action of spring 5 while moving from the position shown in Figure 2 to that shown in Figure 3 in such a way as to produce the explosion of the detonator through the fuse.

The principle of the invention consists in the feature that in the locked position (Figure 2) the pin 13 traverses the flanges of the body of the detonator assembly by means of the holes 14 and also passes through one or more elements forming a part of the striker plate thus considerably increasing the degree of safety since when the body of the detonator assembly becomes broken there is no danger of percussion, this being prevented by the pin 13.

Another important feature of the invention is that the holes 14 are provided in the cheeks or flanges of the body of the detonator assembly at a location such that they are substantially removed from the edges of said cheeks or flanges, thereby eliminating the well known danger that the pin 13 might be removed by being pulled off in the pouch of the soldier. This danger exists in known devices due to the fact that these holes are located near the edges of the cheeks or flanges.

As is shown by the drawings, the holes 14 are provided in the cheeks or flanges of the body at a location lower than the spindle 3 and at a position which is offset in the direction of the casing 10.

It is to be understood that the vanes 11 with which the striker plate is provided may be replaced by a single vane and that the invention includes any form of striker plate which permits the plate to be traversed by the pin 13 and to be

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held in the locked position even if the body of the detonator assembly is broken.

An advantage of the invention is that due to the higher degree of safety provided by the construction, the body of the detonator assembly may be made of a plastic material thus reducing the cost of manufacture.

What I claim is:

1. In a grenade fuse, in combination, a body containing an explosive charge, mutually parallel integral flanges forming a portion of said body and having therein opposingly located holes, a short shaft rotatably supported by and between said flanges, a striker plate rotatably mounted on said short shaft, a spring wound under tension around said shaft so as to cause said striker plate to rotate, at least one vane provided on said striker plate and pierced by one hole, said vane extending in a plane perpendicular to the body of said striker plate, a safety pin having a portion passing through said hole in said striker plate vane and through said opposing holes of said body flanges, a finger ring, said safety pin forming a loop around a peripheral portion of said ring, a rectilinear limb forming one side of and being substantially parallel to the first-described portion of said safety pin so as to constitute an extension thereof, said limb being bent over at the free extremity thereof so as to form a hook engaging under the free end of the first-described portion of said pin, so that the hook can be disengaged and the first-described portion of said pin can be withdrawn through all said holes by a twist imparted to said ring.

2. In a grenade fuse, in combination, a body containing an explosive charge, mutually parallel integral flanges forming a portion of said body and having therein opposingly located holes, a short shaft rotatably supported by and between said flanges, a striker plate rotatably mounted on said short shaft, a spring wound under tension around said shaft so as to cause said striker plate to rotate, two substantially parallel vanes formed integrally with said striker plate and both lying in planes perpendicular to the body of said striker plate, both said vanes being pierced with oppositely disposed holes, a safety pin having a portion thereof passing through both said holes in said striker plate and through said opposing holes of said body flanges, a finger ring, said safety pin forming a loop around a peripheral portion of said ring, a rectilinear limb forming one side of and being substantially parallel to the first-described portion of said safety pin so as to constitute an extension thereof, said limb being bent over at the free extremity thereof so as to form a hook engaging under the free end of the first-described portion of said pin, so that the hook can be disengaged and the first-described portion of said pin can be withdrawn through all said holes by a twist imparted to said ring.

3. In a grenade fuse, in combination, a body containing an explosive charge, mutually parallel integral flanges forming a portion of said body and having therein opposingly located holes, a short shaft rotatably supported by and between said flanges, a striker plate rotatably mounted on said short shaft, a spring wound under tension around said shaft so as to cause said striker plate to rotate, at least one vane provided on said striker plate and pierced by one hole, said vane extending in a plane perpendicular to the body of said striker plate, a safety pin having a portion passing through said hole in said striker plate vane and through said opposing holes of said body

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flanges, a finger ring, said safety pin forming a loop around a peripheral portion of said ring, a rectilinear limb forming one side of and being substantially parallel to the first-described portion of said safety pin so as to constitute an extension thereof, said limb being bent over at the free extremity thereof so as to form a hook engaging under the free end of the first-described portion of said pin, so that the hook can be disengaged and the first-described portion of said pin can be withdrawn through all said holes by a twist imparted to said ring, said holes opposingly located in said body flanges being situated at respective distances from all free edges of said body flanges, of the same order of magnitude as the distance between said body flanges, whereby to minimize the possibility of accidental and unintentional wrenching away of said safety pin.

4. In a grenade fuse, in combination, a body containing an explosive charge, mutually parallel integral flanges forming a portion of said body and having therein opposingly located holes, a short shaft rotatably supported by and between said flanges, a striker plate rotatably mounted on said short shaft, a spring wound under tension around said shaft so as to cause said striker plate to rotate, two substantially parallel vanes formed integrally with said striker plate and both lying in planes perpendicular to the body of said striker plate, both said vanes being pierced with oppositely disposed holes, a safety pin having a portion thereof passing through both said holes in said striker plate and through said opposing holes of said body flanges, a finger ring, said safety pin forming a loop around a peripheral portion of said ring, a rectilinear limb forming one side of and being substantially parallel to the first-described portion of said safety pin so as to constitute an extension thereof, said limb being bent over at the free extremity thereof so as to form a hook engaging under the free end of the first-described portion of said pin, so that the hook can be disengaged and the first-described portion of said pin can be withdrawn through all said holes by a twist imparted to said ring, said vanes formed integrally with said striker being positioned in respective planes substantially parallel to the respective planes in which said body flanges lie.

5. In a grenade fuse, in combination, a body containing an explosive charge, mutually parallel integral flanges forming a portion of said body and having therein opposingly located holes, a short shaft rotatably supported by and between said flanges, a striker plate rotatably mounted on said short shaft, a spring wound under tension around said shaft so as to cause said striker plate to rotate, two substantially parallel vanes formed integrally with said striker plate and both lying in planes perpendicular to the body of said striker plate, both said vanes being pierced with oppositely disposed holes, a safety pin having a portion thereof passing through both said holes in said striker plate and through said opposing holes of said body flanges, a finger ring, said safety pin forming a loop around a peripheral portion of said ring, a rectilinear limb forming one side of and being substantially parallel to the first-described portion of said safety pin so as to constitute an extension thereof, said limb being bent over at the free extremity thereof so as to form a hook engaging under the free end of the first-described portion of said pin, so that the hook can be disengaged and the first-described portion of said pin can be withdrawn through all

said holes by a twist imparted to said ring, said vanes formed integrally with said striker being positioned in respective planes substantially parallel to the respective planes in which said body flanges lie, said holes opposingly located in said body flanges being situated at respective distances from all free edges of said body flanges of the same order of magnitude as the distance between said body flanges, whereby to minimize the possibility of accidental and unintentional wrenching away of said safety pin.

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