

J. SCHIRRA.
 PROTECTING DEVICE FOR AMMUNITION.
 APPLICATION FILED NOV. 29, 1915.

1,201,643.

Patented Oct. 17, 1916.

FIG. 1.

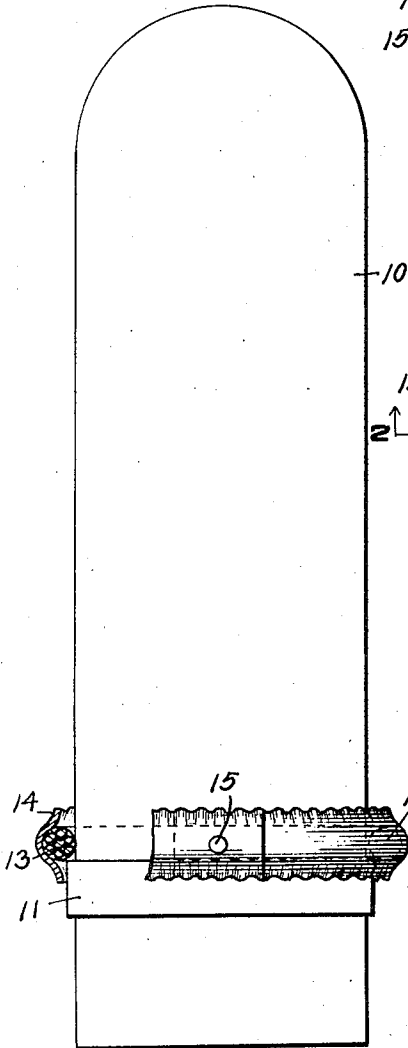


FIG. 2.

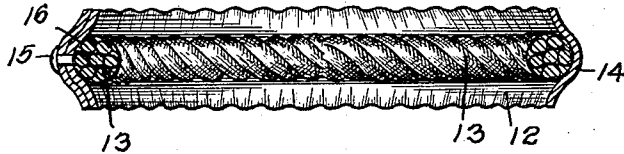


FIG. 3.

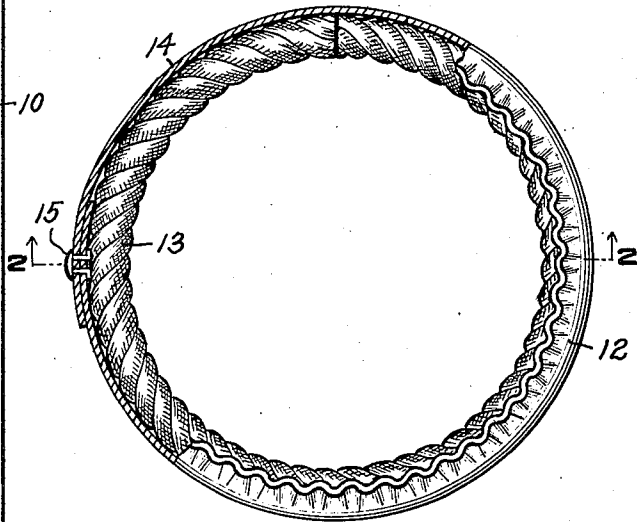


FIG. 4.

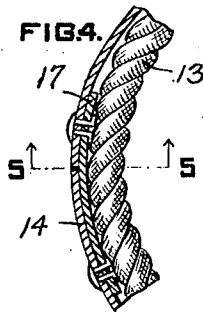


FIG. 5.

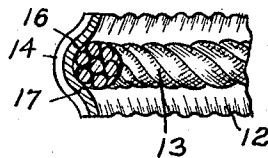
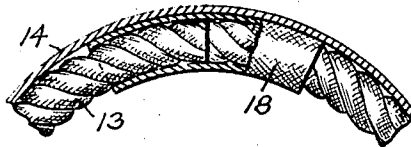


FIG. 6.



WITNESSES

J. Herbert Bradley
Horace E. Seitz

INVENTOR

Julius Schirra
 by *V. H. Wolittle*
 his Attorney

UNITED STATES PATENT OFFICE.

JULIUS SCHIRRA, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO PROJECTILE PROTECTOR COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

PROTECTING DEVICE FOR AMMUNITION.

1,201,643.

Specification of Letters Patent.

Patented Oct. 17, 1916.

Application filed November 29, 1915. Serial No. 64,016.

To all whom it may concern:

Be it known that I, JULIUS SCHIRRA, a citizen of the United States, and resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Protecting Devices for Ammunition, of which the following is a specification.

My present invention relates to protective devices for ammunition, and particularly to the type of ammunition of relatively large caliber, and which is generally provided with a rifling band or ring formed of material readily damaged.

Various means have heretofore been employed in connection with the protection of ammunition of this type and of the rifling band. One form of such means heretofore employed for this purpose has been the use of rope or similar material, generally in the form of a net work, but at times, in the form of a ring, the ends of the strand forming the ring being spliced together in order that the ring may have the desired strength. Structures of this type have a reasonably low cost of manufacture, a factor of importance where conditions are such as to place a large and imperative demand on the supply of ammunition. For this reason, and for the want of a more efficient structure capable of manufacture at low cost, this type of structure has been used for the purpose to a considerable extent. However, either type possesses disadvantages in use.

For instance, such structures have the surface of the net or ring exposed at a point where contact therewith is had in transportation or other forms of handling and where it is necessary to place the projectiles in close proximity. When so exposed, the individual strands forming the rope or net are extremely liable to be cut or damaged, thus damaging the device and tending to reduce its usefulness if it does not render it entirely worthless.

Another disadvantage lies in the fact that such netting or ring, being of fibrous material, will readily expand when subjected to moisture or rain.

Another disadvantage lies in the difficulty had in removing the netting or ring when it is desired to put the projectile to use, it

being practically necessary that the netting or ring be cut before it can be removed, and where the rope is of the diameter generally employed, the time required in cutting the rope is considerable, especially in view of the fact that the rope is in close proximity to the rifling band, and the cutting must be provided without damaging the band; in addition, the loss of time required in cutting the rope increases the amount of time required to place the projectile into service, a factor which is of material importance since the band must be protected as long as possible.

In the present invention, the use of the rope material is retained, but instead of securing the ends of the strand together, as by splicing, these ends of the strand remain free, thus dispensing with any necessity of severing or cutting the rope, and consequently decreasing the loss of time heretofore required in severing or cutting the rope. Since the ends of the rope are not secured together, I provide the ring-like form by the use of a rope retaining member, this member having an annular pocket-like structure within which the rope is loosely mounted, and which acts as a protector for the outer surface of the rope, this member preferably having a width greater than the diameter of the rope strand, thus not only protecting the outer surface, but additionally protecting the upper and lower surfaces, although out of actual contact with such surfaces. The member may be in the form of a single strip of material having its ends secured together, or it may be in the form of such strip in connection with a connecting strip of similar or other suitable material. In either case, the ring-shape of the device is maintained, the rope portion of the device being practically mounted at a constant internal diameter, in addition to which, the member is readily cut or severed and without any requirement for particular care, it being spaced from the rifling band. Since the strand ends are not connected, the cutting of the member releases the entire device, rendering the projectile ready for use.

The invention also contemplates the use of a structure for protecting the ends of the

strand from raveling, this being provided by the use of some suitable fabric or other material, which, in acting to retain the ends together, does not prevent their separation when the outer retaining member is severed.

To these and other ends, the nature of which will be readily understood as the invention is hereinafter disclosed, said invention consists in the improved construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

5 In the accompanying drawings, Figure 1 is a diagrammatic side elevation of a projectile having a rifling band, with my invention in position thereon, parts being broken away for clearness. Fig. 2 is a sectional view of the device taken on line 2—2 of Fig. 3. Fig. 3 is a top plan view, partly in section, of one form of the device. Fig. 4 is a detailed sectional view showing a modified form of completing the protecting member. Fig. 5 is a sectional view taken on line 5—5 of Fig. 4. Fig. 6 is a detailed view partly in section showing one way in which raveling of the strand ends may be prevented.

10 In the drawing, 10 designates a projectile, and 11 a rifling band thereon, this band being generally of a material readily damaged, being generally formed of copper or some similar material.

15 The projecting device is indicated generally at 12, being in the form of a strand of rope 13 of the proper length, the ends of the strand, when the latter is in its ring form, opposing each other but without a spliced or other physical connection.

14 designates the protecting member formed of suitable material, a preferred material used for this purpose being what is known as commercial fiber, a material having the necessary strength and yet capable of being shaped.

In the form shown in Figs. 2 and 3, member 14 is made of a single strip of material, the length of the strip being such as to provide overlapping ends, the ends being joined together by a suitable rivet 15. As shown in Fig. 2, the interior of the member is formed with an annular depression 16 intermediate its side edges, and preferably approximately midway of its width, this depression having a cross sectional curvature conforming approximately to the exterior shape of the strand, thus forming what may be termed a pocket within which the strand is received.

30 The member is of greater width than the diameter of the strand so that the side edges of the member project on opposite sides of the strand when the latter is in position, this being clearly shown in Fig. 2. To readily

form this pocket, I prefer to crimp the side edges, so that the portions of the member which project above and below the rope tend to extend over the rope surface, thus affording protection to the rope not only at its outer surface, but also at its upper and lower surfaces, this protection being provided by a member not readily damaged, so that the integrity of the rope strands will be practically maintained.

When it is desired to remove the device, it is necessary only to cut through the member 14, whereupon, the entire device is released.

In the form shown in Figs. 4 and 5, the ends of the member instead of overlapping are preferably adapted to abut, an additional member, indicated at 17, underlying the joint made by the opposing ends. This member 17 may be of any desired material. For instance, it may be of the same material as member 14, or it may be formed of leather, or even of fabric, the member being of a length sufficient to extend some distance beyond the joint and being riveted to the two ends of member 14. The particular points at which the rivets are mounted may be varied, as for instance, by spacing them equal distances from the ends of member 16, or the rivet at one end may be close to such end while the rivet for the other end may be spaced a considerable distance from the joint, the purpose being to provide a free portion at one or both ends of member 14 which can be readily raised and thus expose the underlying member 17, such exposure enabling this latter member to be cut or severed, an action which releases the device. This particular form possesses some advantages in that the underlying member 17 may be of a material more easily severed and positioned in a manner readily accessible, yet without placing it at a point where such severing would be likely under transportation or handling difficulties. In addition, the exterior of the member is rendered more uniform in contour, the raised portion provided by the overlapping edges of Figs. 2 and 3 being absent.

As shown in Fig. 6, the ends of the strand may be inclosed or covered by a suitable material, such as fabric, this cover, indicated at 18, being provided in any desired manner. For instance, it may be simply wrapped about the ends of the rope, or it may be secured to member 14, the former being preferred, since it requires no securing devices, and, additionally, does not need to be severed, the release of the rope strands by the severance of members 14 or 17 permitting the ends of the rope to readily separate.

As will be readily understood, a protecting device of the type shown herein not only possesses the advantages of the rope structure in the ability to produce the necessary

thickness and the ability to withstand weights where projectiles are piled on each other, but, in addition, can be manufactured at no material increase over the cost of the spliced structure. It also possesses the advantage of being readily removed by severing as well as affording a better resistance to damage than does the surface of the rope. Since the rope is generally of a type which tends to straighten out when released, it is readily retained within the pocket even though its ends be not connected, especially where the length of the rope strand is such as to bring the ends into close proximity with each other.

As will be seen from the drawings, the rope-like strand 13 provides a member having a surface projecting inwardly beyond the inner line of member 14 and opposite the surface of greatest diameter of member 14, thus producing a structure in which the inner surface may contact with the article being protected, while the outer surface will form a protecting bead-like conformation. While I prefer to employ this element 13 in the form of a rope-like strand, thus producing a solid filler for the major portion of the depression 16, it will be readily understood that the particular character of the material employed for this element may be greatly varied and need not be of the nature of a rope with its twisted members or strands; a somewhat similar result might be obtained by the use of a fiber strip rolled in the opposite direction from that of strip 14, the assembling of the two strips thus providing the relationship of the two surfaces referred to and giving the resistance to collapsing of both strips under pressure exerted on strip 14, by reason of the ability of the fiber material to retain its shape. It is to be understood that these various constructions are to be considered as falling within the term "rope-like strand", each of them possessing the features of producing an inner surface corresponding in position to that of the rope-like strand shown and at the same time has the ends free from direct engagement, thereby providing for the ready release contemplated by the strand structure.

It will also be understood that the depression 16 may be located substantially central of the width of member 14, or it may be located closer to the upper edge than the lower, in which case, the width of the member 14 may be increased an amount sufficient to cause the lower portion to form a skirt which would project over the band 11.

What I claim is:—

1. A protecting device comprising a member normally completing a permanent ring-like structure, and a rope-like strand mounted therein with its ends free to be separated,

said member receiving and serving to normally protect and shape the strand, severance of the member releasing the strand.

2. A protecting device comprising a member normally completing a permanent ring-like structure and having an annular pocket, and a rope-like strand mounted within said pocket with its ends free to be separated, said strand being exposed within the member from end to end, said member serving to normally protect and shape the strand, severance of the member releasing the strand.

3. A protecting device comprising a member normally completing a permanent ring-like structure, and a rope-like strand mounted therein with its ends free to be separated, said member receiving and serving to normally protect and shape the strand, severance of the member releasing the strand, and means for protecting the free ends of the strand against raveling.

4. A protecting device comprising a rope-like strand and a ring-like member having an annular pocket to receive the strand, said strand being unsecured to said member.

5. A protecting device comprising a rope-like strand and a strip having its ends fixedly secured relative to each other to form an annular member, said member having an annular pocket to receive the strand, said strand being unsecured to said member.

6. A protecting device comprising a rope-like strand, a strip depressed in the direction of its length, and means for securing the ends of the strip in opposed relation, said depressed portion forming a pocket to receive the strand.

7. A protecting device comprising a rope-like strand, a strip crimped at its side edges to form a depressed portion extending in the direction of strip length, and means for securing the ends of the strip in opposed relation, said depressed portion forming a pocket to receive the strand.

8. A protecting device comprising a rope-like strand, a strip crimped at its side edges to form a depressed portion extending in the direction of strip length, and means for securing the ends of the strip in opposed relation, said depressed portion forming a pocket to receive the strand, said crimped edges projecting on opposite sides of the strand.

9. A protecting device comprising a rope-like strand having its ends free from engagement, a ring-like member having an annular pocket to receive the strand, and means for protecting the free ends of the strand against raveling.

10. A protecting device comprising a member normally completing a permanent ring-like structure, and an element mounted therein with its ends free to be separated,

said member having a bead-like outer configuration to provide a projecting outer surface, said element providing an inner surface projecting beyond the inner line of said member, said projecting surfaces being approximately on the same plane, said plane intersecting the device axis at substantially right angles, severance of the member per-

mitting free removal of the element from the object being protected. 10

In testimony whereof, I affix my signature in presence of two witnesses.

JULIUS SCHIRRA.

Witnesses:

HORACE G. SEITZ,
LOIS WINEMAN.