June 11, 1963 L. B. HARRIS ETAL 3,093,077

HYPODERMIC PROJECTILE

Filed March 20, 1962

Fig. 1.

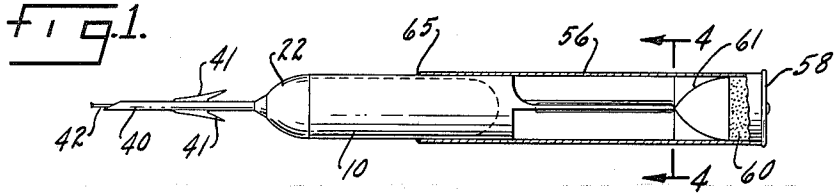


Fig. 2.

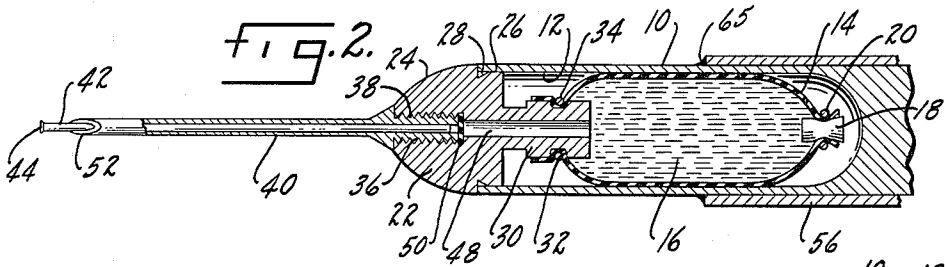


Fig. 3.

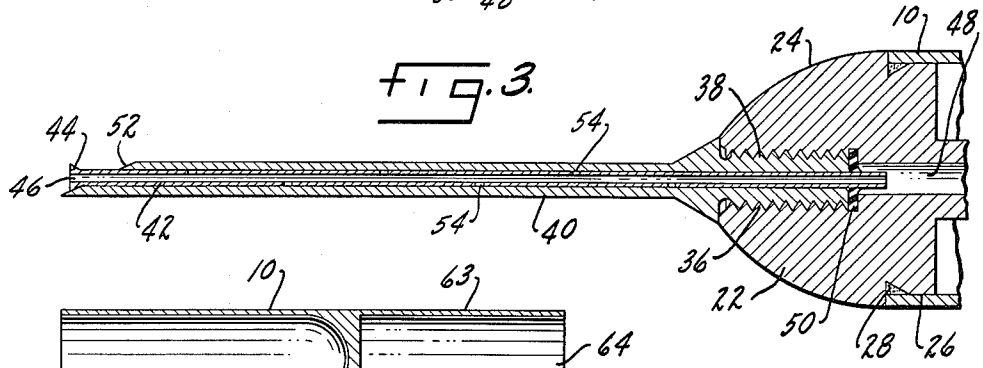


Fig. 5.

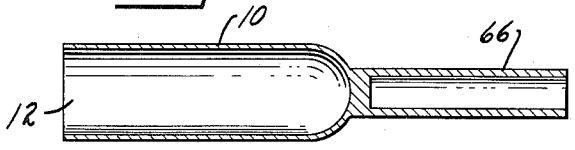


Fig. 6.

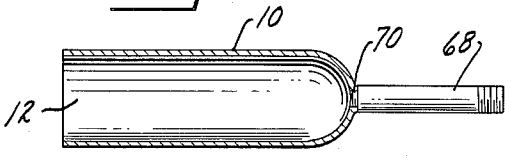


Fig. 7.

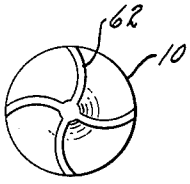


Fig. 4.

INVENTORS.
LUCILE B. HARRIS
JOHN A. MEASE, JR.
BY Parker & Carter
Attorneys.

United States Patent Office

3,093,077
Patented June 11, 1963

3,093,077

HYPODERMIC PROJECTILE

Lucile B. Harris, 1487 Franklin St., Clearwater, Fla., and John A. Mease, Jr., Mease Hospital, Dunedin, Fla.

Filed Mar. 20, 1962, Ser. No. 181,095
1 Claim. (Cl. 102—92)

This invention relates to improvements in hypodermic projectiles of the type used in hunting large animals, or large fish underwater.

A primary purpose of the invention is an improved hypodermic projectile which may be shot from a gun, bow, speargun or other weapon.

Another purpose is a projectile of the type described having improved means for discharging the hypodermic charge into the target.

Other purposes will appear in the ensuing specification, drawings and claims.

The invention is illustrated diagrammatically in the following drawings wherein:

FIGURE 1 is a side view of our improved projectile, with portions broken away,

FIGURE 2 is an enlarged axial section through a portion of the projectile shown in FIGURE 1,

FIGURE 3 is an enlarged axial section illustrating the needle and the attaching means for it,

FIGURE 4 is a vertical section along plane 4—4 of FIGURE 1, and

FIGURES 5, 6 and 7 illustrate various means for attaching the projectile body to a weapon.

The present invention is an improvement on the hypodermic bullet illustrated in U.S. Patent 1,819,415. Bullets or projectiles of this type are primarily used to drug, paralyze or kill large animals or fish. The invention has particular use in spearfishing as a means for protection against or as a means for hunting sharks or other large fish.

A generally cylindrical body **10** which may be hollow defines a generally cylindrical chamber **12** within which is positioned a flexible container or the like **14** holding a hypodermic charge **16**. The container **14** may be rubber, plastic or some other similar material which can hold the charge **16** under pressure. A plug or the like **18** may close one end of the container **14**. A ring **20** which may be metal or rubber holds the container **14** on the plug **18**.

One end of the body **10**, which as illustrated herein is the left end, may be closed by a suitable cap **22**. The cap is generally cylindrical in form and has a generally rounded nose **24**. The cap may have an annular shoulder **26** slightly smaller in diameter than the major diameter of the cap for mounting the body **10**. Wax or some other suitable sealing substance may be placed in an annular opening **28** between the body **10** and the shoulder **26** to secure the body.

The cap **22** may include an inwardly directed extension **30** which has an annular groove **32** for mounting the container **14**. A ring **34**, which may be rubber or metal, may fit in the groove **32** and hold the container **14** to the cap.

The cap **22** may have a threaded bore **36** which mounts the threaded end **38** of a needle **40**. The needle **40** may have a plurality of barbs **41** and may be hollow. A slideable plunger **42** which has an enlarged end **44** and an axial passage **46** may be mounted within the hollow needle in a fairly close fit. The bore **36** in the cap is in alignment with a passage **48**, also in the cap, which opens into the container **14**. A suitable plug or disc **50** may be mounted at the junction of the passage **48** and the threaded bore **36** to block the flow of the hypodermic charge **16** to the needle. In operation, once the projectile has struck a target, the plunger **42** will slide inwardly, pierce the plug **50** and thereby open the way for the hypodermic charge to flow through the plunger and into the target.

The needle **40** may have a generally slanted outer end **52**. The enlargement **44** on the plunger may be generally conical in shape such that it fits against the slanted surface **52** of the needle when it is in the fully "in" position of FIGURE 3. In other words, when the projectile is shot toward a target, first the plunger will strike the target and will be driven inwardly to pierce the plug **50**. Next the needle will strike the target and pierce it. As the needle pierces the target, so will the plunger. The hypodermic charge will be shot through the hollow plunger into the target. In this connection, it may be advantageous to have a number of radially extending holes **54** spaced about the body of the plunger to permit the fluid to flow along the outside of it toward the opening in the needle. Although the plunger fits closely within the passage in the needle, some fluid may flow about the outside of the plunger.

The projectile shown and described may be shot from any suitable type of weapon. In FIGURE 1 the body **10** is mounted within the casing **56** which includes an end plate **58**. The body **10** may be spaced from the end plate **58** to define a chamber **60** which may contain a suitable explosive charge, as is conventional in bullets. Crossed wires or the like **61** may assist in holding the body within the casing, and wax may be used to seal the body to the casing, as at **65**. As shown in FIGURES 1 and 4 the end of the body **10** opposite the needle may have a plurality of fins or vanes **62**, which are somewhat spiral in cross section, so that the projectile may be shot from a smooth bore gun.

FIGURES 5 and 6 illustrate two different configurations for the mounting end of the projectile. The body **10** may include, in FIGURE 5, a concentric extension **63** which defines a generally cylindrical chamber or opening **64**. An arrow or spear may thus be attached to the projectile. FIGURE 6 is substantially similar to FIGURE 5 except that the cylindrical extension **66** is smaller in diameter than the projectile. The structure shown in FIGURE 6 may also be attached to a spear, arrow or the like.

FIGURE 7 illustrates yet a further form of projectile in which there is a threaded shaft **68** which is attached in a threaded opening **70** in the body **10**. The shaft **68** and the threaded end at the right can be screwed into a threaded ferrule on a shaft for security.

The use, operation and function of the invention are as follows:

This invention pertains particularly to improvements in hypodermic projectiles of the type used in killing or temporarily paralyzing large animals. The invention also has application to spearfishing or it may be used either in killing or capturing large fish, for example sharks, or other dangerous fish.

Of particular advantage in the invention is the means for discharging the hypodermic charge immediately upon contact with the target. A plunger is slideable within a pointed needle in such a way that initial contact is made with the target by the plunger. The plunger will be pushed inwardly so that it will pierce the seal holding the hypodermic charge. As the plunger is pushed inward the needle will be inserted into the target and the hypodermic charge will then flow through the plunger and into the target. Preferably the container holding the hypodermic charge is flexible, for example rubber, plastic or the like, and is under sufficient tension, or pressure, so that as soon as the seal holding the charge is removed, the charge will be immediately forced through the plunger into the target. If rubber

is used for the container it should be stretched to such a degree that upon release of the seal the rubber will quickly force the hypodermic charge into the target. The container may be formed of a stiff material and a suitable gas or the like utilized to discharge the drug. It is also possible to use the entire hollow portion of the body to hold the charge under pressure.

Whereas the preferred form of the invention has been shown and described herein, it should be realized that there are many modifications, substitutions and alterations thereto within the scope of the following claim.

We claim:

In a hypodermic projectile, a generally cylindrical hollow body, a flexible container positioned within the body and having a hypodermic charge under pressure, a cap closing one end of the body, means at the opposite end of the body for mounting the body to a weapon for projecting it, said cap including an inwardly directed extension mounting said container, a generally axial passage in the cap and extension opening into said container, a needle having a slanted outer end coming to a point for piercing a target mounted on said cap in alignment with said passage, said needle having a passage in communication with said cap passage, a hollow plunger slideable in said needle passage and extending outwardly from said needle, said plunger having an enlarged outside end which is adapted to fit against the slanted end of the needle when the needle and plunger contact a target, a plurality of radially extending holes in said plunger placing the interior of said plunger in communication with the space between the outer surface of the plunger and the inner surface of the needle to increase the flow of the hypodermic charge upon contact with a target, means, within the cap, blocking the passage in the cap, movement of said plunger in an inward direction upon contact with a target being effective to pierce the means blocking the passage in the cap and to release said hypodermic charge through the plunger.

References Cited in the file of this patent

UNITED STATES PATENTS

1,815,300	Harris	July 21, 1931
2,854,925	Crockford et al.	Oct. 7, 1958

FOREIGN PATENTS

241,795	Germany	Oct. 26, 1910