T. W. ROYS, dec'd,
P. B. Roys, Administrator.
Bomb-Lance.

No. 214,707. Patented April 22, 1879.

Fig. 1

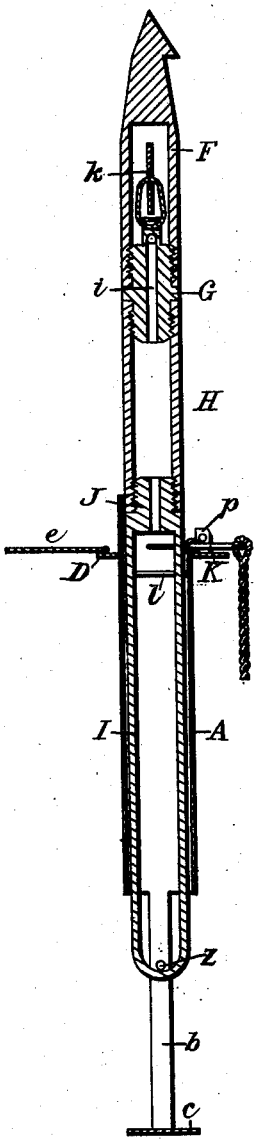


Fig. 2

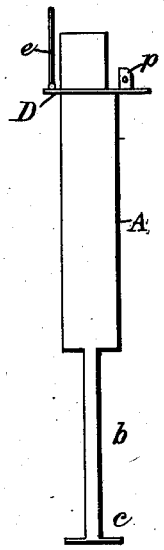
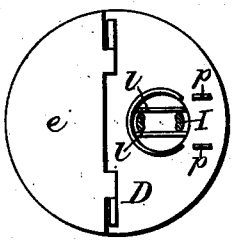


Fig. 3

Fig. 4



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UNITED STATES PATENT OFFICE.

PHILANDER B. ROYS, OF PULTNEYVILLE, NEW YORK, ADMINISTRATOR OF THOMAS W. ROYS, DECEASED.

IMPROVEMENT IN BOMB-LANCES.

Specification forming part of Letters Patent No. **214,707**, dated April 22, 1879; application filed March 4, 1879.

To all whom it may concern:

Be it known that THOMAS W. ROYS, deceased, formerly of the State of New York, invented during his life-time certain Improvements in Rocket-Harpoons for Killing Whales, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The invention of the said THOMAS W. ROYS relates to the explosive rocket-harpoon for killing whales, in experimenting upon which the said ROYS spent the last seventeen (17) years of his life, and for which he had secured several United States Letters Patents—to wit, Letters Patent No. 35,474, issued June 3, 1862, and Letters Patent No. 54,211, dated April 24, 1866.

These last improvements made by ROYS are intended to remedy the defects in the implement as formerly constructed, and which actually rendered it to a great extent impracticable. These improvements relate both to the harpoon-projectile and the gun from which it is fired.

Referring to the accompanying drawings, Figure 1 is a section of the rocket and the gun. Fig. 2 is a side view of the gun. Fig. 3 shows details of the rocket. Fig. 4 is a top view of the gun.

Let A represent the gun or barrel from which the harpoon-rocket is fired. It is simply a tube of the desired length, with its rear end open, and having an extension, *b*, projecting backward from each side of its rear end. The rear ends of these extensions are connected by a cross-head, *c*.

D is the shield, which is secured near the forward end of the gun or barrel, the object of which is to protect the face and eyes of the gunner or person who sights the gun from being injured by the burning powder as the rocket leaves the barrel. Heretofore this shield was made of a single stationary piece, which had simple eye-holes or eye-pieces in it, through which the sight was taken; but the improvement made by said ROYS consists in making the portion *e*, that projects above the barrel, in a separate piece, and hinging it to the stationary part, so that it can be turned down upon and beyond the forward end of the barrel, and thus give a clear field or range of vision for the gunner while taking sight. As the rocket leaves the gun the force of the burning powder will force this hinged shield to a vertical position in front of the face of the gunner, and protect it from the burning powder.

The projectile consists, as described in the former patent issued to the said ROYS, of a pointed cast-iron shell, F, a fuse or breech-piece, G, a rocket-shell, H, and a loop-extension projecting from the rear of the rocket-shell. The breech-piece G serves to connect the explosive shell and rocket-shell, and consists of a short piece of metal cylindrical in form, and corresponding in diameter with the diameter of the explosive shell and rocket-shell. This piece of metal has a screw-extension, *j*, projecting from each end, one of which screws into the butt-end of the explosive shell, and the other into the forward end of the rocket-shell.

In the former construction of this projectile the toggles or barbs *k*, which fixed the implement in the body of the whale, were attached to this connecting-piece or breech G, so as to lie outside of the projectile; but by the new construction they are attached to the extremity of the screw-piece that enters the butt of the shell, and a sufficient space is left in the butt of the shell to admit them, so that they are entirely inclosed in the body of the projectile. This is an important improvement, as it leaves the exterior of the projectile perfectly smooth without obstructions to prevent its readily entering the body of the whale.

A hole, *i*, is made through the center of the breech-piece and its extensions, through which fire from the rocket communicates with the powder in the shell after the powder in the rocket has burned out, and after the projectile has been lodged in the body of the whale. This explodes and shatters the shell, freeing the toggles or barbs, so that they grapple the tough blubber and prevent the implement from drawing out.

Instead of making the loop I double, as described in ROYS'S former patent, it is now made single—that is, the piece *j*, to which the forward end of the loop is attached, and which I shall call the "loop-piece," screws into the

rear end of the rocket-shell, and the single loop projects from it, as shown. A hole through the center of the loop-piece serves to communicate fire to the powder in the rocket-shell.

The only object in making the loop double heretofore was to prevent the projectile from wabbling in the barrel. To prevent this with the single loop, two rods, *l l*, are secured vertically through the barrel near its forward end. These rods are just far enough apart to admit the width of the loop-irons, thus preventing any shifting or turning of the projectile in the barrel.

K is the sliding ring, to which one end of the line or cable is attached. This ring slides upon one side of the loop, and is made in two parts, as follows: A piece of steel rod or wire is bent to the form of a U, and the extremities are bent outward, so as to form arms or bearings *o*. Another piece is bent to the form of a U, and its extremities are bent around the arms *o*, close to the angle, thus forming a flexible or hinged ring with arms on opposite sides. The line or cable is attached to the part which has the arms, while the other part slides on the loop.

The portion of the gun or barrel which projects in front of the shield has a slot on its lower side, and two lugs, *p p*, are secured to the shield directly under the slot, so as to project outward.

The loop of the projectile only enters the barrel back of the shield, leaving the rocket-shell, fuse-piece, and explosive pointed shell projecting in front of it.

In introducing the loop into the barrel it is inserted between the rods *l l* and pushed back, the cable-ring being at the front end of the loop. The arms on the lower part of the ring are then placed upon the lugs *p p*, where it is supported, while the upper part of the ring is carried back as far as it will reach into the barrel. A slight wooden peg, *z*, is then introduced through the sides of the extension *b* of the barrel, so that it passes just inside of the bend at the rear end of the loop I. A similar wooden peg is also inserted through the lugs *p p* in front of the cable-ring. These pegs serve to retain the projectile in the gun until it is fired, so that the rolling of the vessel will not displace or move it.

A hole is made in the barrel just behind the shield, to which the muzzle of a pistol is placed, and the projectile is fired by firing the pistol into the barrel. When the gun is fired the wooden pegs are broken by the first impulse of the projectile as it leaves the gun.

The explosive shell and rocket-shell are charged as described in ROYS's former patent.

Having thus described this invention of the said THOMAS W. ROYS, deceased, what is claimed, and desired to be secured by Letters Patent, is—

1. The fuse or breech-piece G, constructed as described, and having the toggles or barbs K attached to the end of its forward extension, *j*, in combination with the chambered explosive shell F, substantially as and for the purpose described.

2. A harpoon-projectile having the toggles or barbs inclosed in the body of the implement, substantially as and for the purpose described.

3. The single-loop extension I, in combination with the parallel rods *l l*, secured across the interior of the barrel, substantially as and for the purpose described.

4. The flexible cable-ring K, provided with the arms *o o*, in combination with the lugs *p p* on the front of the shield, substantially as and for the purpose described.

PHILANDER B. ROYS,
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