E. C. HANCOCK.

Improvement in Projectiles.

No. 114,807. Patented May 16, 1871.

Fig. 1.

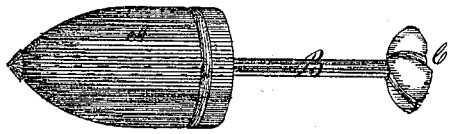


Fig. 2.

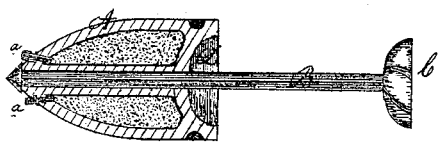
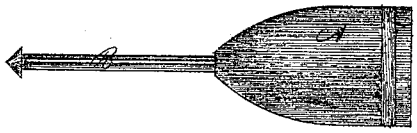


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWARD CLINTON HANCOCK, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN PROJECTILES.

Specification forming part of Letters Patent No. **114,807**, dated May 16, 1871.

I, EDWARD CLINTON HANCOCK, of the city of New Orleans and State of Louisiana, have invented the herein-described Improvement in Projectiles for Fire-Arms; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the drawing annexed, constituting a part of the said description and specification.

My invention consists of an elongated cylindrical projectile, having its forward exterior end beveled off, so as to present a conical point to the object of resistance in its flight from the gun, and in the opposite end of which there is bored a recess for the reception of a rotating propelling-screw, which is attached to the rear end of a sliding shaft that passes entirely through the longitudinal axis of the projectile, and terminating at its forward end by a pointed bolt-head, as hereinafter more fully described.

The objects sought to be accomplished by my invention are, first, to develop a power by means of a shaft-and-screw attachment of revolving or of rotating the projectile from the very instant at which it leaves the gun, thereby superseding the necessity for the employment of rifled ordnance; second, to secure the maintenance of the rotating power imparted to the projectile, not only undiminished, but with an increasing accelerated motion during its flight from the gun; third, to secure greater continuous range and precision; and, finally, to especially adapt it to submarine firing.

All of the above-enumerated desirable results are accomplished with a device which, for its simplicity of construction, economy in its use, effectiveness, and adaptation to the end in view, is unrivaled and unsurpassed by any projectile with which I am familiar.

But my improvement will be more clearly understood by reference to the drawing, whereon Figure 1 represents a perspective view of the projectile as when complete and ready for use. Fig. 2 is a longitudinal section of the same, showing also the recess at its base for the reception of the rotary propelling-screw, as likewise the interior chamber for the reception of the powder or other explosive material when the said projectile may be used as a shell. Fig. 3 is a side view of my device, showing the rotary propelling-shaft thrown forward so as to place the screw attachment thereto within the recess at the base of the projectile, the position which it occupies when placed within the gun, and in direct contact with the powder.

All the parts of my projectile may be made of cast-iron; but I believe it will be desirable to make the screw-shaft of wrought-iron or of steel.

On the drawing, A represents the elongated cylindrical shell or projectile proper. B is the sliding shaft, which may be made square, hexagonal, octagon, or in any form of cross-section that will insure by its annular impingement against the projectile the rotation thereof simultaneously with that of the said shaft. C is the rotating screw attachment, rigidly fixed to the rear end of the sliding shaft, which is designed to operate as a guide to direct the projectile in its proper course during its flight from the gun, and by which its rotary or spiral motion is secured as it advances forward, thereby the more effectually overcoming the objects of resistance interposed by the air or water, as the case may be. D is the recess at the base of the projectile for the reception of the screw C, which, when placed therein, presents, with the shell, an almost unbroken solid surface to the action of the powder or other explosive material used.

At the discharge of the gun the great disparity in weight between the heavy projectile and lighter shaft insures the more rapid projection of the former than the latter, to the head of which it is instantly driven, thereby throwing the screw to the rear of the said projectile on leaving the gun to the point at which the air, when rushing in to fill the vacuum caused by its rapid flight, will impinge against the outer perimeter of the blades of the screw and produce the desired rotary motion before mentioned.

It will thus be readily perceived that my projectile may be fired from a smooth-bore gun with all the accuracy of aim that is practically attainable in rifled guns; but the great merit of my invention consists in its effectiveness as a submarine shot.

My invention may be used in connection with any sized ordnance or fire-arm, and its proportions may be varied to a considerable

extent without in the least degree diminishing its effectiveness.

Upon the forward exterior end of the ball may be placed one, two, three, or more cap-nipples, *a*, to insure the ignition of the powder within the shell when used as such, and its consequent explosion when it strikes the object against which it is directed.

It will be observed, by reason of the recess D, in which the screw button-shaped head C fits, that the ball may be placed within the gun, and in direct and close connection with the cartridge, by means of a ramrod provided at one of its ends with a hollow or cylindrical socket of sufficient circumferential diameter to avoid contact with the shaft, and likewise with the cap-nipples when placed upon the projectile when used as a shell.

Having described my invention, what I claim, and desire to secure by Letters Patent, is the following:

The perforated projectile A, provided with the recess D, in combination with the sliding spindle or shaft B and rotating screw-button C, as set forth.

EDW. C. HANCOCK.

Witnesses:
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