

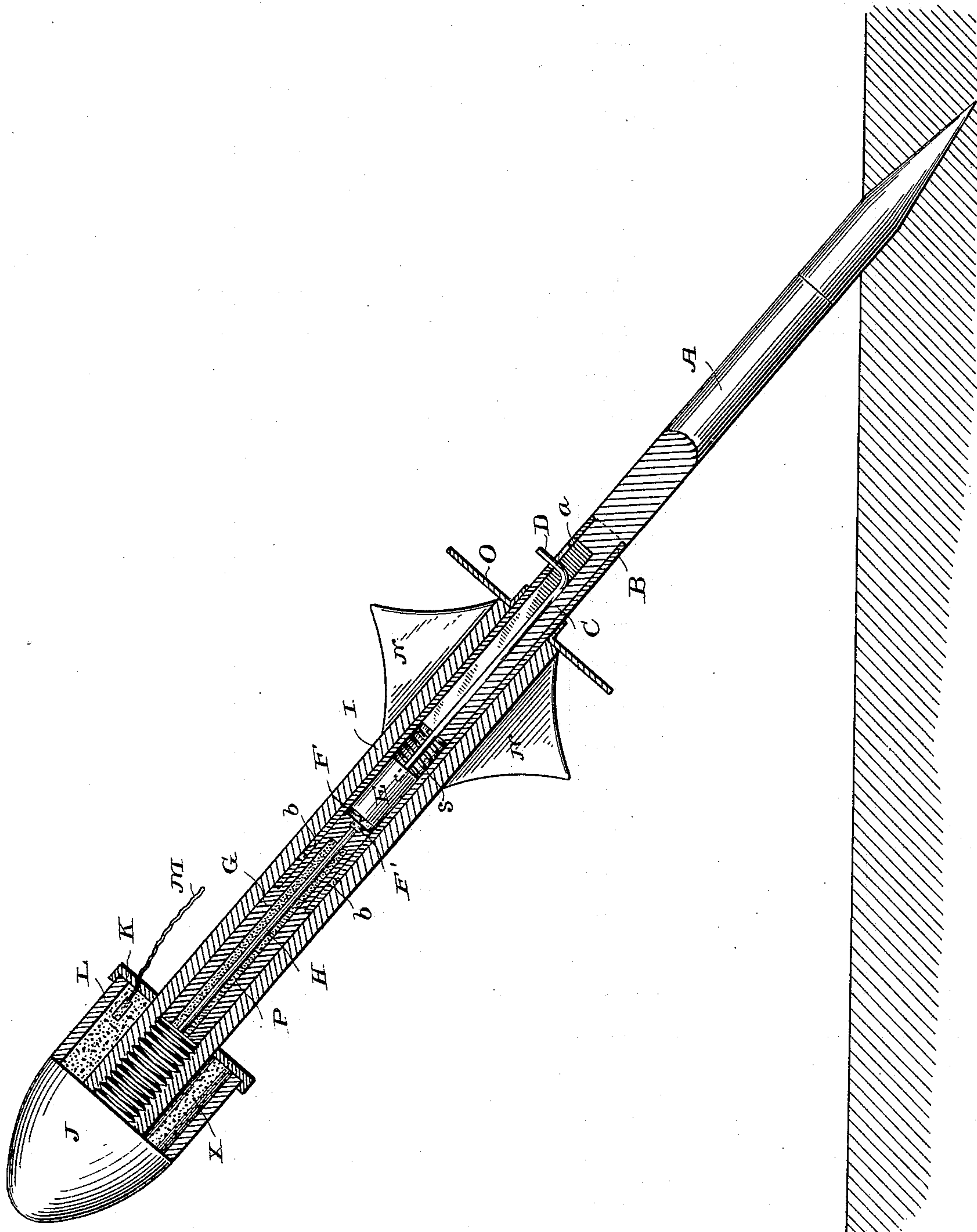
(No Model.)

S. H. EMMENS.

GUN AND PROJECTILE FOR HIGH EXPLOSIVES.

No. 409,943.

Patented Aug. 27, 1889.



Witnesses

H. A. Lamb
Fort. Phillips.

Inventor

STEPHEN HENRY EMMENS

per Th. L. Emme
Attorney.

UNITED STATES PATENT OFFICE,

STEPHEN H. EMMENS, OF LONDON, ENGLAND.

GUN AND PROJECTILE FOR HIGH EXPLOSIVES.

SPECIFICATION forming part of Letters Patent No. 409,943, dated August 27, 1889.

Application filed June 14, 1888. Serial No. 277,098. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN HENRY EMMENS, a subject of the Queen of Great Britain and Ireland, and a resident of London, England, temporarily at Harrison, in the State of New York, have invented a new and useful Improvement in Apparatus for Utilizing High Explosives in Warfare, (No. 2,) of which the following is a specification.

10 This invention is additional to my improvement in apparatus for utilizing high explosives in warfare set forth in my specification forming part of an application for United States Letters Patent filed January 27, 1888,
15 Serial No. 262,172.

The present apparatus is especially designed and adapted for use by infantry and on small boats; and the present invention consists in a novel combination of parts hereinafter set
20 forth and claimed, whereby I am enabled to lighten the apparatus to any required extent and to support a relatively short powder-tube for the propelling-charge within the guide-bore of the torpedo by means of a tube in line
25 therewith, which incloses the firing device, and is in turn supported by a simple stock in the form of a stake or the like.

A drawing accompanies this specification as part thereof.

30 The figure represents an elevation of a torpedo-gun and a bird-torpedo, partly in longitudinal section, illustrating this invention.

The "firing mechanism," as I term it, which especially distinguishes the present weapon,
35 comprises a wooden stock A, fitting into and supporting a metallic tube B, and axially perforated and slotted at its front end to accommodate within said tube a rod C, which is bent at right angles at its rear end to form a trigger D, that projects outward through a bayonet-joint slot *a* in the stock A and tube B. The front end of said rod C is fixed in a piston E, which carries a firing-pin F, and between said piston and the front end of the
40 stock A is a spiral spring *s*; hence when the trigger D is pulled back and turned into the holding-notch of the bayonet-joint slot *a* said spring *s* is compressed, and when the trigger is released the spring urges forward the piston E, with its firing-pin F, to explode the pro-

pellling-charge P. This is contained within a short "gun-cartridge shell" or powder-tube G, which fits into the front end of said tube B and is coupled thereto by a pair of bayonet-joints *b*. Preferably the "powder-tube," as
55 it is hereinafter termed, is provided with a primer-recess F' in its breech end and with an axial ignition-tube H, extending forward from said primer-recess to the front of the propelling-charge. The latter may be of any
60 suitable explosive. The ignition-tube is filled with gunpowder, and the recess F' is provided with a suitable percussion-primer. When the latter is exploded by the firing-pin F, a sheet of flame is produced within the tube H, which
65 ignites the propelling-charge P at its front end, so as to insure its perfect combustion and an effective discharge of the weapon.

The bird-torpedo comprises a tube I, fitting closely over said tubes G and B and plugged
70 at its forward end by the screw-stem of a conoidal torpedo-head J. In an external annular charge-space immediately behind the head and around said tube I cartridges of emment site or other high explosive are arranged
75 side by side to form the high-explosive charge X. By using cartridges of different lengths the size of the high-explosive charge may be varied to any required extent. These cartridges are held in position by a collar K and
80 a cylindrical jacket L, and they are fired by a time-fuse M. The rear end of the torpedo-tube I is provided with three equidistant wings N. An annular screen O is fitted to the tube B immediately in front of the trigger D
85 to protect the hand of the person discharging the weapon from any escape of heated gases between said tubes B and I.

The figure shows the weapon planted in the ground for firing; but it will be understood
90 that any other mode of mounting may be employed—as, for example, the stock may be clamped in a holding-tube on an ordinary swivel-stand or gunwale attachment.

I do not claim herein, broadly, the combination of a gun having a powder-tube which contains the propelling-charge, and an externally-applied thimble-shaped projectile having an
95 annular charge-space for high explosives, an axial guide-bore fitted to said tube, and a
100

head which masks both the guide-bore and the charge-space in front, substantially as hereinbefore specified, because the same are claimed in my previous specification forming part of
5 said application Serial No. 262,172, (Patent No. 397,052;) nor in combination with a thimble-shaped projectile having an axial guide-bore, a gun having a short cylindrical powder-tube, a firing device tube, and coupling
10 devices uniting said tubes end to end, all of which are externally fitted to said guide-bore, a suitable stock to which said firing device tube is attached, inclosed axial firing devices, and a suitable cocking and firing trigger, the
15 latter projecting near the stock end of said firing device tube, whereby the gun is adapted to carry an externally-applied projectile longer than the powder-tube, substantially as hereinbefore specified. This combination is
20 claimed by me in another application, Serial No. 288,767.

Having thus described my said improvement in apparatus for utilizing high explosives in warfare, (No. 2,) I claim as my invention and desire to patent under this specification— 25

In combination with a thimble-shaped projectile having an axial guide-tube open at its rear end and surrounded by an annular charge-space for high explosives, a short powder-tube and a tube inclosing a firing device 30 coupled together end to end and fitted to the interior of said guide-tube, and a stock fitted at its front end to the rear end of said firing device tube, substantially as hereinbefore specified.

STEPHEN H. EMMENS.

Witnesses:

SAMUEL B. HAMBURG,
HUGH HENRY.