(No Model.)

S. H. EMMENS.

PROJECTILE.

No. 414,387. Patented Nov. 5, 1889.

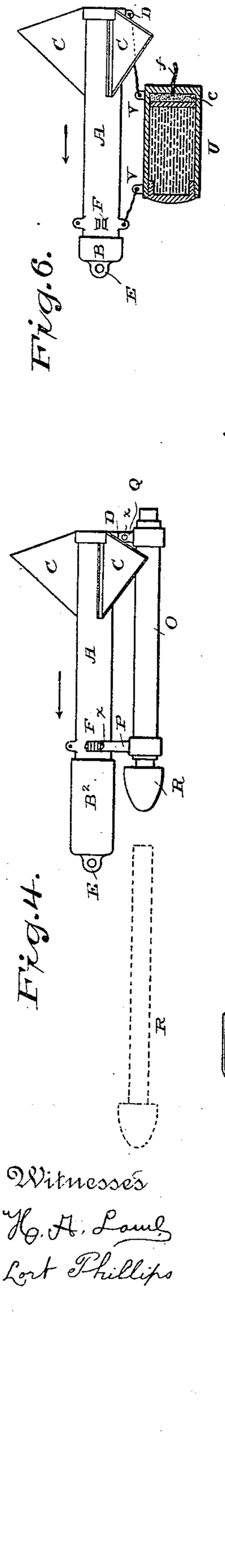

Fig. 6.

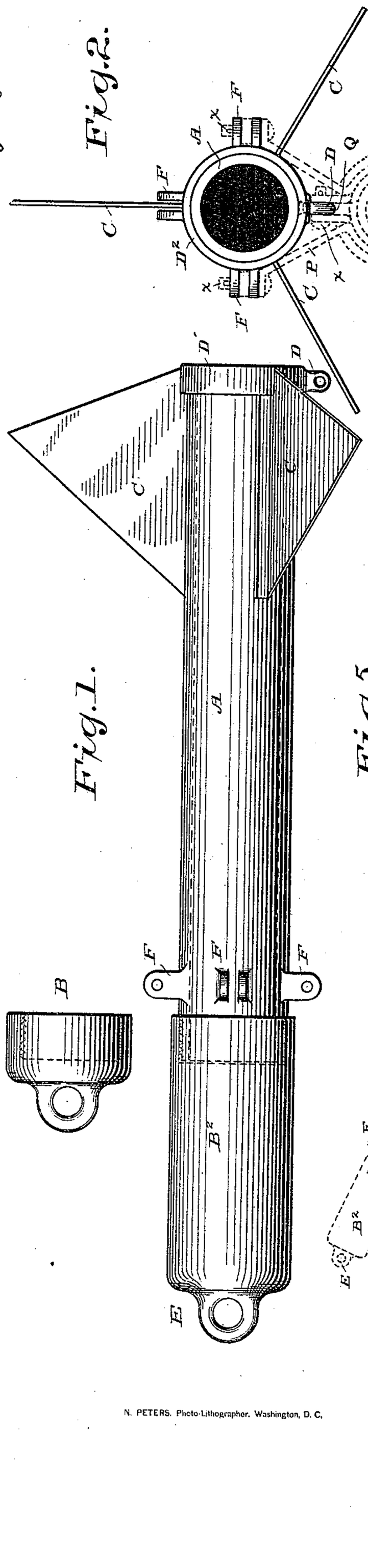

Fig. 2.

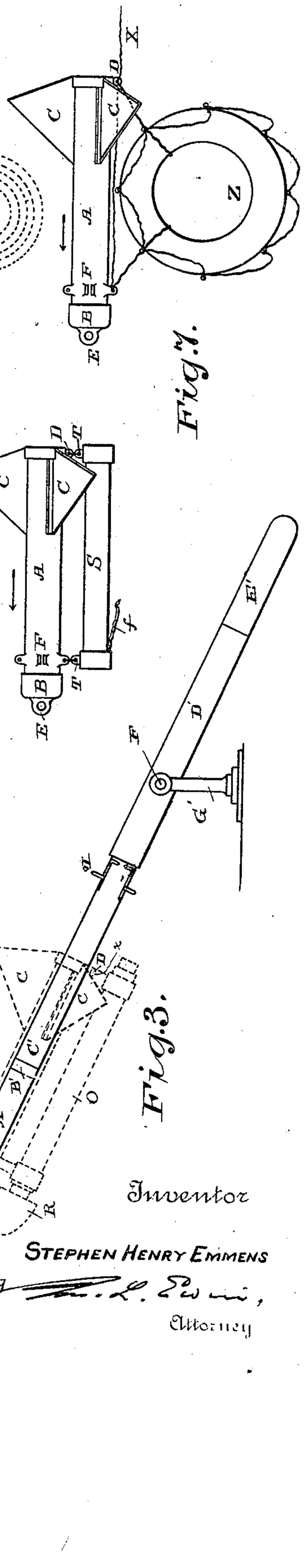

Fig. 7.

Fig. 4.

Fig. 1.

Fig. 5.

Fig. 3.

Witnesses
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STEPHEN H. EMMENS, OF LONDON, ENGLAND.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 414,387, dated November 5, 1889.

Application filed October 22, 1888. Serial No. 288,766. (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, in England, temporarily residing at Harrison, in the State of New York, have invented a new and useful Improvement in Projectiles, of which the following is a specification.

This invention relates to externally-applied thimble-shaped projectiles for guns.

It consists in certain novel features of construction and combinations of parts, hereinafter set forth and claimed, whereby such projectiles are rendered convertible for carrying various loads attached externally thereto, and are so utilized, especially with reference to throwing rockets with greater range and precision.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of the drawings is a side view of a projectile with interchangeable heads, illustrating the present invention. Fig. 2 is a rear view thereof, showing in dotted lines a rocket-carrying attachment. Fig. 3 is a small-scale side view of a suitable gun for throwing such projectiles, showing in dotted lines a rocket-carrying projectile in position thereon. Fig. 4 is a small-scale side view representing said rocket-carrying projectile in flight. Fig. 5 is a like view of the same projectile carrying an explosive shell. Fig. 6 is a like view, partly in section, showing the same projectile as an oil-distributer; and Fig. 7 is a small-scale side view of the same projectile carrying a life-buoy.

Like letters of reference indicate corresponding parts in the several figures.

The projectile proper comprises a metallic guide-tube A, closed in front by a head B or B^2 and open at the rear to admit the barrel or powder-tube A′, Fig. 3, of the gun from which it is fired. It is provided at or near its rear end with three (or more) outwardly-projecting vanes or "wings" C, for regulating its flight, and with a swiveled eye or loop D at its bottom, which may conveniently be attached by means of a collar D^2, fitted to the rear end of the tube A, as shown.

At its head end the projectile is provided with an eye or loop E in front, and with one or more side eyes or loops F. The latter are preferably double and four in number, as shown, so as to adapt the projectile to be converted into other forms, as set forth in my specification forming part of a companion case, Serial No. 288,768, filed October 22, 1888.

The gun represented by Fig. 3 comprises a short powder-tube A′, a breech-block B′, a firing-device tube C′, a stock-tube D′, and a stock E′, and is represented as provided with horizontal trunnions F′ and pivoted in a vertical swivel G′, to facilitate holding and aiming it with a load-carrying projectile thereon. This gun constitutes in part the subject-matter of another companion case, Serial No. 288,767, filed October 22, 1888, and forms no part of my present invention. Another suitable gun for throwing my load-carrying projectile is set forth in a previous specification forming part of my allowed application for United States Patent filed June 14, 1888, Serial No. 277,098.

For carrying rockets an open-ended tube O is attached to said projectile proper, parallel with its tube A, by means of stirrups P Q, coupled, respectively, to a pair of said loops F and to said loop D. The rocket R is fitted to said tube O, with its head in front, and when fired by its time-fuse is thrown forward in the direction in which the projectile is flying, as illustrated by the dotted outline thereof in Fig. 4. The rocket is thus carried with the requisite speed for precision to a given point, and thence discharged in the same direction, so as to secure a double range and a flight wholly among the enemy. The rocket may be an ordinary war-rocket, with a shoulder or projecting pin to prevent its escape rearward.

A tubular shell S, Fig. 5, for carrying explosives and having a time-fuse *f*, need simply be provided at top with a pair of eyes or loops T on collars or bands at or near its ends, through which cord or wire may be conveniently passed to tie the shell to said loop D and to the loop F in line therewith at the bottom of the head B.

For carrying oil to distribute it upon the sea in storms, a suitable vessel U, Fig. 6, is provided at top with loops V, at or near its

ends, and these are connected by cord or wire with said loop D and the loop F in line therewith, to attach the vessel U, which is further provided with a bursting-charge *c*, of some explosive, and a time-fuse *f*, for firing the latter. A life-buoy Z, Fig. 7, may be simply attached by a cord or cords to said loop D and the loop F in line therewith, and the line X, connecting the same with the ship, may be attached to said loop D. Other articles may be attached to the projectile proper in like manner. The location of the loops F and D fore and aft enables the loads to be so attached that they shall not swing backward against the gun or projectile, as they tend to, owing to inertia, when the gun is fired.

The attaching devices apart from said rocket-tube O and its appurtenances may be of any approved description. The particular couplings represented at *x*, Figs. 2 and 4, between the stirrups P Q and said loops F and D, are slip-bolts provided with spring-keys, so as to be quickly applied; but this form of coupling is not considered essential.

In the rocket-carrying projectile, Figs. 1 to 4, it is desirable to have a long form with the suspending-loops well in rear of the front of the head, so that the rocket may act as a weight toward the rear, and thus keep the projectile pointing upward when the rocket is fired. Otherwise the rocket would strike the ground but little in advance of the projectile. I consequently provide the long head B^2 for the projectile so employed. With other loads the short head B is preferable. The heads are interchangeably screwed on the front end of the tube A, and one can be quickly substituted for the other at will.

Having thus described my said improvement in projectiles, I claim as my invention and desire to patent under this specification—

1. A thimble-shaped projectile comprising a guide-tube open at the rear, having a head which closes its bore in front and provided externally with wings for regulating its flight and with loops to which interchangeable attachments may be coupled, substantially as hereinbefore specified.

2. A thimble-shaped projectile comprising a guide-tube open at the rear, having a head which closes its bore in front and provided externally with wings for regulating its flight and with loops arranged fore and aft, in combination with a suspended load attached to such loops, substantially as hereinbefore specified.

3. A thimble-shaped projectile provided externally with wings for regulating its flight and with loops arranged fore and aft, in combination with stirrups coupled to such loops, and an open-ended tube supported by said stirrups below and parallel with the projectile proper for carrying rockets and directing their flight, substantially as hereinbefore specified.

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Witnesses:
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