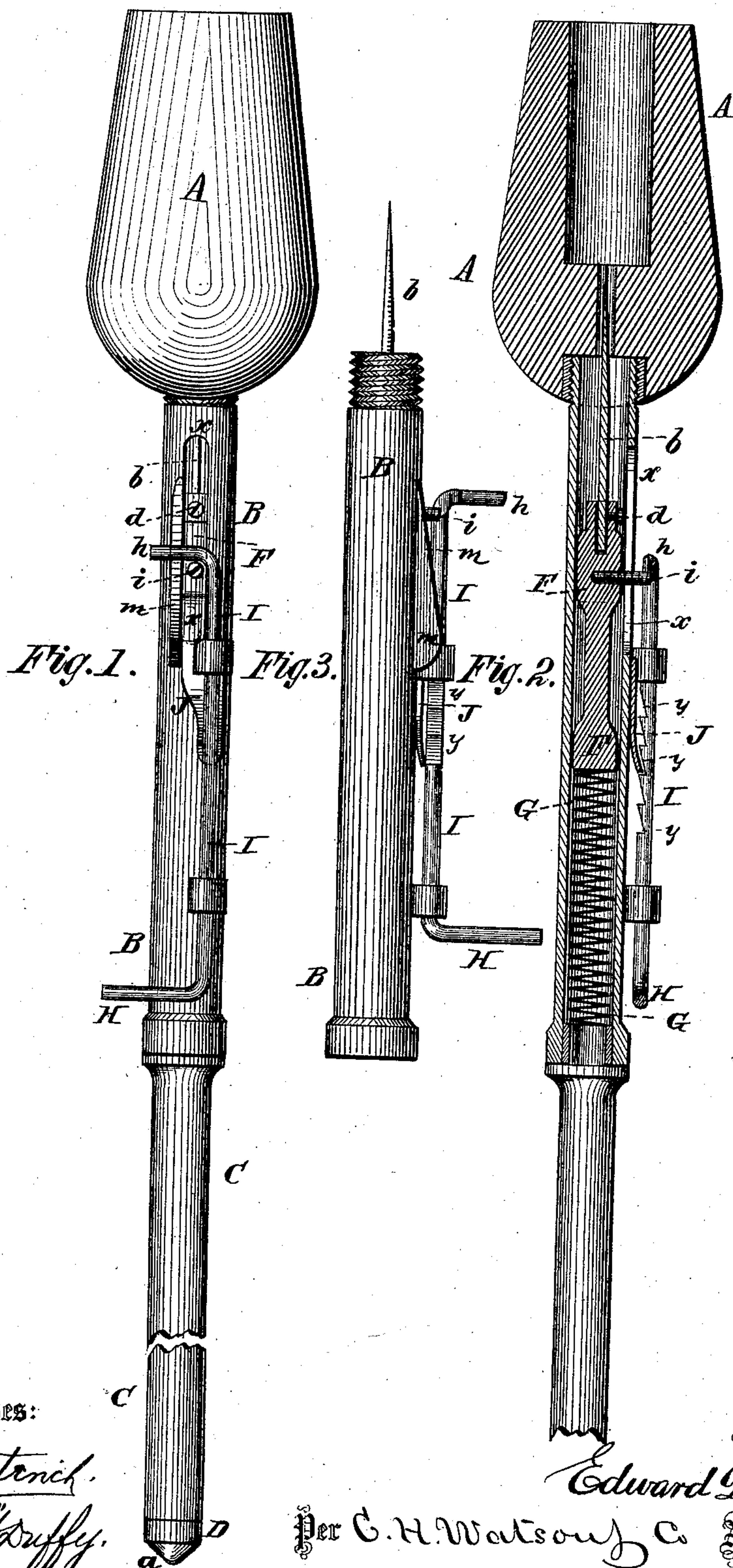


E. D. KENDALL.
Gun for Firing Signal-Cartridges.

No. 217,116.

Patented July 1, 1879.



Witnesses:
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UNITED STATES PATENT OFFICE

EDWARD D. KENDALL, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN GUNS FOR FIRING SIGNAL-CARTRIDGES.

Specification forming part of Letters Patent No. **217,116**, dated July 1, 1879; application filed May 10, 1879.

To all whom it may concern:

Be it known that I, EDWARD D. KENDALL, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Nautical Signal-Light Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a nautical signal-light apparatus, as will be hereinafter more fully set forth.

In the annexed drawings, which fully illustrate my invention, Figure 1 is a front elevation. Fig. 2 is a central vertical section of the same; and Fig. 3 is a side elevation of the tube B.

A represents a small mortar, cannon, or gun, from which the signal-light is to be discharged. Into the breech of this mortar is screwed or otherwise rigidly attached a tube, B, of any suitable length, for containing the firing-off mechanism. In the other end of this tube is attached a rod or staff, C, the end of which is surmounted by a metal cap, D, constructed to form a central point, *a*, as shown. This rod or staff C supports the mortar, cannon, or gun A, with the firing mechanism, and transmits the force of the recoil when explosive discharge takes place to the earth or the deck of the vessel. By the point *a* of the cap on the end of the staff the device may be easily turned in any direction desired.

b represents a firing pin or needle, which is fastened by a set-screw, *d*, in a plunger, F, placed in the tube B, said firing pin or needle being intended for exploding a fulminate by percussion, the fulminate being contained in or attached to a cartridge for projecting and producing signal-lights.

The plunger F rests upon a spiral spring, G, placed in the tube B, said spring and plunger being arranged in such a manner that the plunger will have a certain amount of play independent of the spring, for the purpose of allowing the firing pin or needle *b* to be withdrawn

entirely from the interior of the mortar or gun A. The plunger F is provided with a lug or projection, *i*, which extends through a vertical slot, *x*, in the tube B.

In suitable guides on the outside of the tube is placed a sliding rod, I, having a handle, H, at its lower end, and at its upper end said rod forms a crank, *h*, to take over the projection, *i*.

In one side of the rod I is a series of notches, *y y*, into which a spring, J, secured to the tube B, will engage when the rod is drawn down, so as to hold said rod and the plunger in proper position for firing. Along one side of the slot *x* in the tube B is an inclined flange, *m*, against which the crank *h* on the rod I will bear.

By turning the rod I in its bearings so that the teeth or notches *y* will clear the spring J, the rod can then be moved upward, and in this position the rod is turned back again so that the crank *h* will pass over and catch on the lug *i* of the plunger. By now pulling down the rod the plunger is also pulled down and the spring G compressed, the rod being held by the spring J in the teeth or notches *y* until the rod is pulled so far that the crank *h*, sliding over the incline *m*, will be turned out of the way from off the lug *i*, and the spring G then suddenly and forcibly throws the plunger and firing-pin upward, exploding the fulminate and discharging the signal-light.

The purpose of the teeth or notches on the sliding rod is to prevent the firing pin or needle being pushed into the mortar when the sliding rod is returned, after firing, to its first position, the object being to provide against the risk of premature explosion. Without the arrangement of notches (and spring engaging therein) the firing-pin might be inadvertently pushed back into the mortar by careless manipulation of the sliding rod at the moment when a cartridge was being dropped into the mortar. The results would be, perhaps, harmful to the operator and to the reputation of Kendall's nautical signal-light. The arrangement described (the mechanism being properly constructed) renders accident from the source mentioned simply impossible.

In the manufacture of my invention minor changes in the details of construction may be made without departing from the spirit of my invention. For instance, the lug or projection

i on the plunger may simply consist of a screw or pin inserted and fastened in the plunger. The springs may be of any desired form, size, or material.

With my invention the signal-light apparatus may be manipulated in any direction and in any manner desired. The firing mechanism is simple, cheap, and durable, and not liable to get out of order.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the plunger *F*, with lug *i*, the sliding rod *I*, with crank *h*, and the inclined flange *m*, substantially as and for the purposes herein set forth.

2. The sliding and turning rod *I*, provided

with teeth or notches *y* and crank *h*, in combination with the plunger *F*, spring *J*, and inclined flange *m*, substantially as and for the purposes herein set forth.

3. The combination of the plunger *F*, provided with the firing-needle *b*, with lug *i*, the sliding rod *I*, with crank *h*, and the inclined flange *m*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDWARD D. KENDALL.

Witnesses:

W. M. WALTON,
J. EDGAR CORLIES.