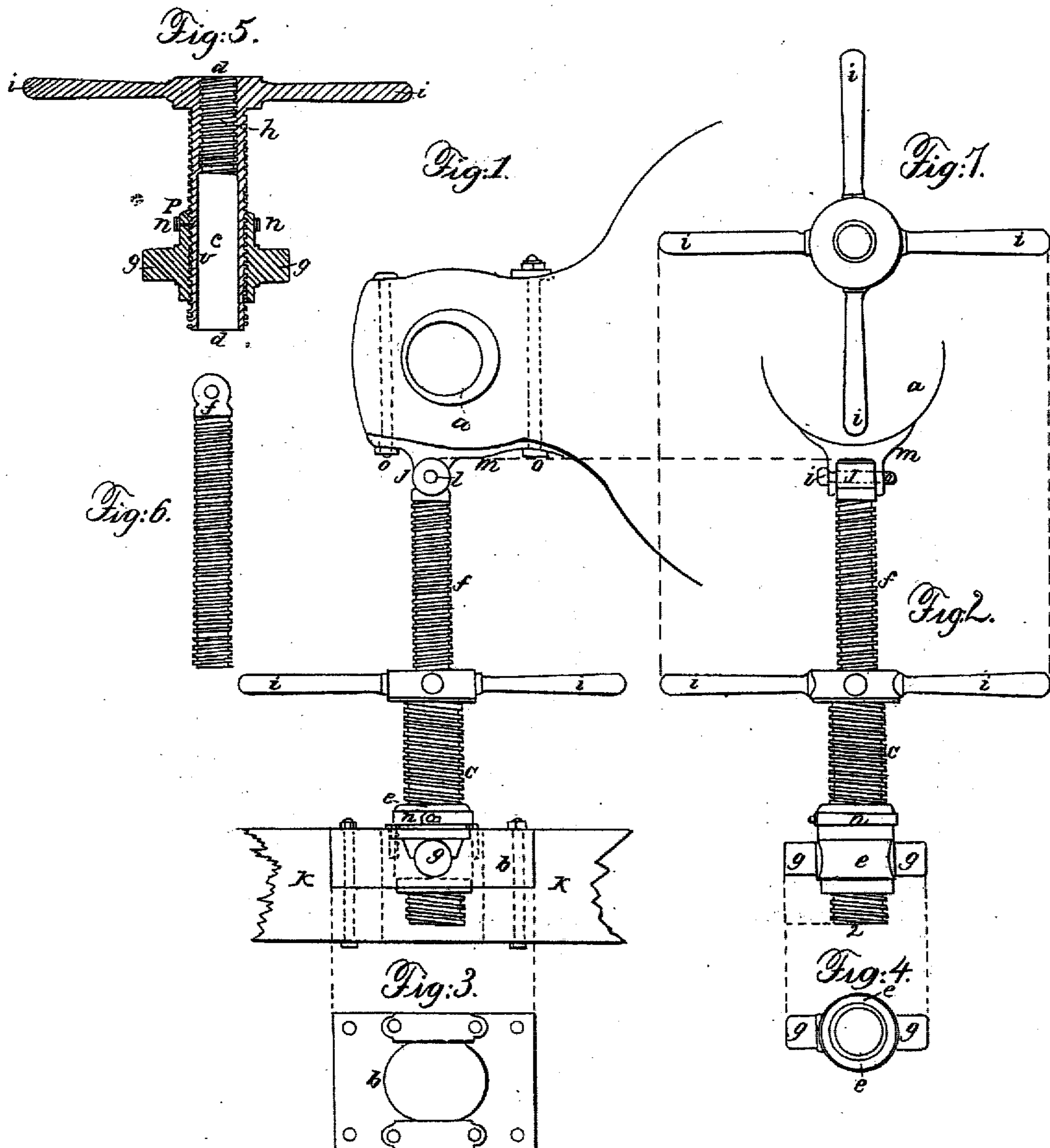


G. M. RANSOM.  
Mounting Ordnance.

No 26,124.

Patented Nov. 15, 1859.



Witnesses  
J. P. Hale  
Arthur Lee

Inventor.  
G. M. Ransom

# UNITED STATES PATENT OFFICE.

GEORGE M. RANSOM, OF THE UNITED STATES NAVY.

## IMPROVEMENT IN APPARATUS FOR ELEVATING CANNON.

Specification forming part of Letters Patent No. 26,124, dated November 15, 1859.

*To all whom it may concern:*

Be it known that I, GEORGE M. RANSOM, lieutenant in the United States Navy, have invented an Improved Apparatus for Elevating Guns or Ordnance; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 denotes a side view of my invention or cannon-elevator as applied to the cascabel of a gun. Fig. 2 is a rear elevation of the same, excepting the bearings of the nut-trunnions, to be hereinafter described. Fig. 3 is a top view of the bearing-block; Fig. 4, a top view of the nut and trunnions; Fig. 5, a sectional view of the major screw and nut; Fig. 6, a side view of the minor screw. Fig. 7 is a top view of the major screw.

The object of the said cannon-elevator is to determine the angle of elevation or depression of a gun preparatory to its being discharged.

It is not new to apply to the cascabel of a gun a screw to screw into the said cascabel and extend downward therefrom upon the after transom of the gun-carriage. In this case it has been customary to use a single screw.

My invention or improvement is particularly applicable to what may be termed a "double elevating" screw, or one composed of a tubular major screw, *c*, (see Figs. 1, 2, and 3,) and its nut *e*, employed in connection with a minor screw, *f*, adapted to the major screw, so as to work longitudinally into a female screw, *h*, formed within the bore of the major screw *c*, as shown in Fig. 5.

In Figs. 1 and 2 of the drawings, *a* represents the cascabel of a gun as supported within or attached to a composition plate or saddle, *m*, arranged directly underneath the cascabel, and affixed to it by bolts *o o*, as shown in the said figures.

In further carrying out my invention, I hinge or joint the minor screw *f* to such saddle-piece *m*, as shown in Figs. 1 and 2 at *j* and *l*. I also apply to the nut *e* two trunnions or journals, *g g*, arranged as shown in Figs. 1, 2, 4, and 5, and I support the said trunnions by means of bearings applied to a box or block, *b*, constructed as shown in Figs. 1 and 3. The common axis of the journals *g g* should be arranged at right angles to the axis of the gun, in order that the elevator may be moved

either backward or forward, as may be necessary during vertical movements of the cascabel. Four arms or levers, *i i i i*, are affixed to the upper end of the screw *c*, and are arranged at right angles to each other, as shown in the drawings. By laying hold of these handles or arms and rotating the major screw within its nut *e* such screw will not only be moved longitudinally in the nut, but at the same time will revolve on the minor screw *f* and impart to it a longitudinal movement. The threads of the two screws *c* and *f* should be so arranged upon them respectively that a rotary motion of the lowermost screw in one direction shall cause the said screw not only to rise on its nut, but to impart to the screw *f* a compound motion, or an increased velocity of elevation. Consequently, one rotation of the screw *c* will elevate or depress the cascabel double the distance, or a greater distance, than the screw *c* is moved vertically in the same time.

In order to arrest the upward motion of the screw *c*, or prevent it from being raised too far, a spring-stop, *n*, may be attached to the nut *e*, and have a projection, *p*, extend through the nut. Furthermore, a recess should be made within the screw, as shown at *r* in Fig. 5. On the screw being raised to its highest elevation, the projection *p* will be sprung into the recess *r* and arrest any further upward movement of the screw.

There are important advantages in my mode of connecting the screw-elevator with the cascabel and the transom of the gun-carriage, for by means of such we avoid the lateral friction and drag on the screw, which takes place when the single screw is employed. The gun while being fired or discharged is held firmly, and cannot change positions relatively to the carriage. The movements of the gun can be effected, generally speaking, with more ease, and, besides these, the screw does not extend upward through the cascabel, so as to be in the way of the gunner or artillerist while sighting the piece. Furthermore, the saddle *m*, independent of the cascabel, enables the elevator and its carriage to be used with another gun in case of bursting or accident to a gun.

I do not claim the invention of two male and two female screws arranged together, as specified; but

What I do claim is—

1. The application of trunnions and bearings (or equivalents) to the nut, in combination with jointing or hinging the upper end of the upper screw to the cascabel, or to a saddle attached to or supporting the cascabel.

2. The combination of the cascabel-saddle

with the elevating screw and cascabel of the gun.

GEO. M. RANSOM.

Witnesses:

R. H. EDDY,

J. P. HALE, Jr.