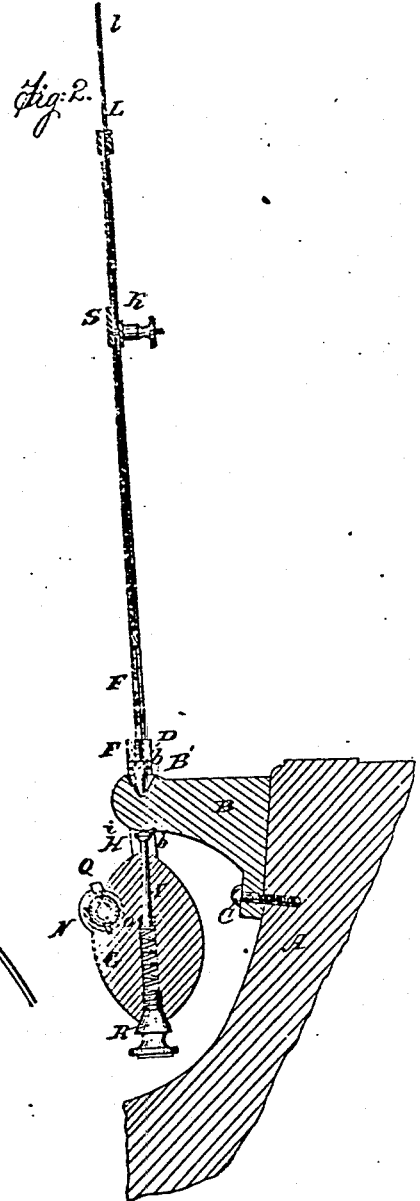
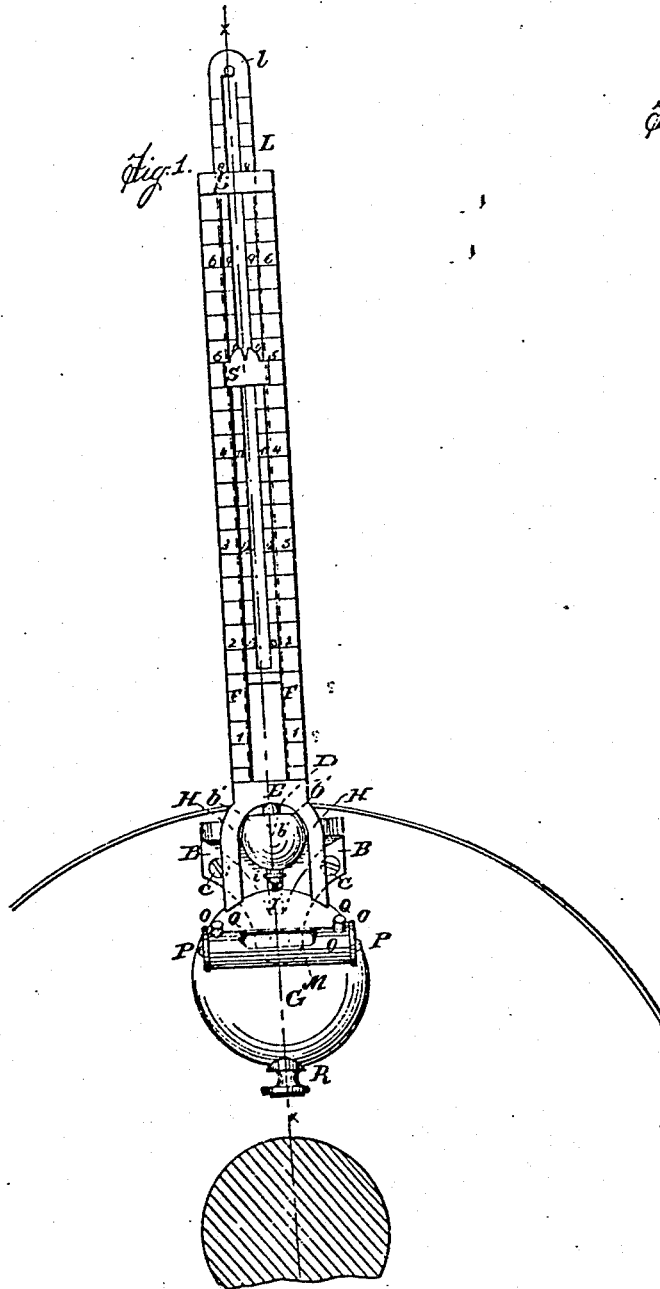


W. F. GOODWIN.  
Sight for Ordnance.

No. 44,947.

Patented Nov. 8, 1864.



Witnesses:

C. Smith  
D. Smith

Inventor:

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By *[Signature]*  
Attorneys.

# UNITED STATES PATENT OFFICE.

WM. F. GOODWIN, OF NEW YORK, N. Y.

## IMPROVEMENT IN PENDULUM-SIGHTS FOR ORDNANCE.

Specification forming part of Letters Patent No. 44,947, dated November 8, 1834.

*To all whom it may concern:*

Be it known that I, WILLIAM F. GOODWIN, of the city, county, and State of New York, have invented a new and Improved Sight for Ordnance; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of my invention as applied to the breech of a cannon. Fig. 2 is a vertical section of the same at *x x*.

Similar letters of reference indicate corresponding parts in both views.

My invention relates to gravitating or pendulum sights in which a plumb-bob or weight is employed to keep the graduated sight in vertical position while the gun may be inclined in any manner from resting on uneven ground, change of elevation or any other cause.

The present improvements consist, first, in a novel device for supporting a pendulum or gravitating sight; second, in a novel manner of connecting the weight or plumb-bob with the sight-standards; third, in an extension-sight of novel construction and arrangement for use in great elevations; fourth, in a device for steadying a gravitating sight; fifth, in a peculiar manner of applying a spirit-level to a gravitating sight.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

A may represent the butt or breech of a cannon, and B a bracket projecting horizontally therefrom and attached thereto by screws C C C, or in any other suitable manner. The spherical outer end, B', of the bracket B is provided with a conical cavity, *b*, extending down to its center for the reception of a supporting point or cone, D, which projects downward from the base E of the standards F F.

G represents a plumb-bob or weight attached to rigid arms H H projecting downward from the base E. The said plumb-bob by its weight supports or retains the standard F F in vertical position upon the point D, however the gun may be inclined or moved.

I is a rod adapted to slide within the bob G and pressed upward by a spring, J, so that its head *i* bears against the under surface of the

spherical end of the bracket B. The head *i* being slightly concave to fit the convex surface of the bracket causes sufficient friction to steady the standards and prevent their deflection by wind. The spring J is supported from below by a screw plug or cap, R, which closes the chamber containing the spring and permits the insertion or removal of the latter. The rod I tapers downward, so that when it is not required to steady the sight it may be pressed down into its socket and there held out of contact with the bracket B. The standards F F are graduated, as shown at 1 2 3 4 5 6 in Fig. 1, to indicate the degree of elevation of the piece by the adjustable sliding sight S.

K represents a clamp-nut by which the sight S is secured at any position in which it may be placed.

L is a graduated extension-bar adapted to slide vertically between the standards F F, and provided at *l* with an aperture for sighting above the said standards.

M represents a spirit-level employed to prove the perpendicularity of the standards F F. The said level is fixed in a tube, N, Fig. 2, which is passed into an outer casing, O, the said casing being permanently attached to the plumb-bob G and closed at its ends by heads *o o*, both the tube N and casing O having, of course, the customary slot to expose that air-bubble to view. The heads *o o* are furnished with annular flanges fitting within the casing, and the parts are all held together by screws P P passing through the casing O and secured by screws Q Q.

The operation is as follows: According to the present illustration of my invention all sights for distances requiring an elevation of less than seven degrees may be taken with the shifting sight S by adjusting it to the degree or fractional mark upon the standards F F. For seven degrees elevation the sight is taken through the aperture *l* when the sliding bar L is at its lowest point; so as to bring the said aperture directly above the cross-bar *f* at top of the standards. For eight degrees the bar L is slid up to the position shown in the drawings, bringing the "8" line even with the top of the cross-bar *f*, and the sight is taken through the aperture *l*, as before, and so on for any greater elevation.

The end B' of the bracket is rounded to a sufficient extent to permit the necessary mo-

tion of the apparatus, but the arms coming in contact with the shoulders *b' b'* of the bracket limit the motion, so as to maintain a proper presentation of the graduated standards.

The pressure of the head of the rod *I* against the bracket *B* prevents any sudden or undue oscillation of the apparatus from wind or other causes. At other times the weight may be left more free to control the upper parts by pressing the rod *I* down into its socket, as before stated.

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

1. A pendulum-sight consisting of graduated standards *F F*, supported upon a point, *D*, resting in a cavity, *b*, in a bracket, *B*, projecting from the rear of the gun, as herein set forth.

2. The combination of the arms *H H* with the standards *F F*, weight *G*, and bracket *B*, all constructed, arranged, and operating substantially as and for the purposes specified.

3. In combination with the graduated standards *F F* and notched slide *S*, the additional graduated extension-bar *L*, provided with a sighting notch or aperture, *l*, at its upper end, as described.

4. The pressure-rod *I*, adapted to operate substantially as and for the purposes described.

5. In combination with a gravitating or pendulum sight and spirit-level, *M*, the tube *N* and outer casing, *O*, arranged and applied as described.

WM. F. GOODWIN.

Witnesses:

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