

(No Model.)

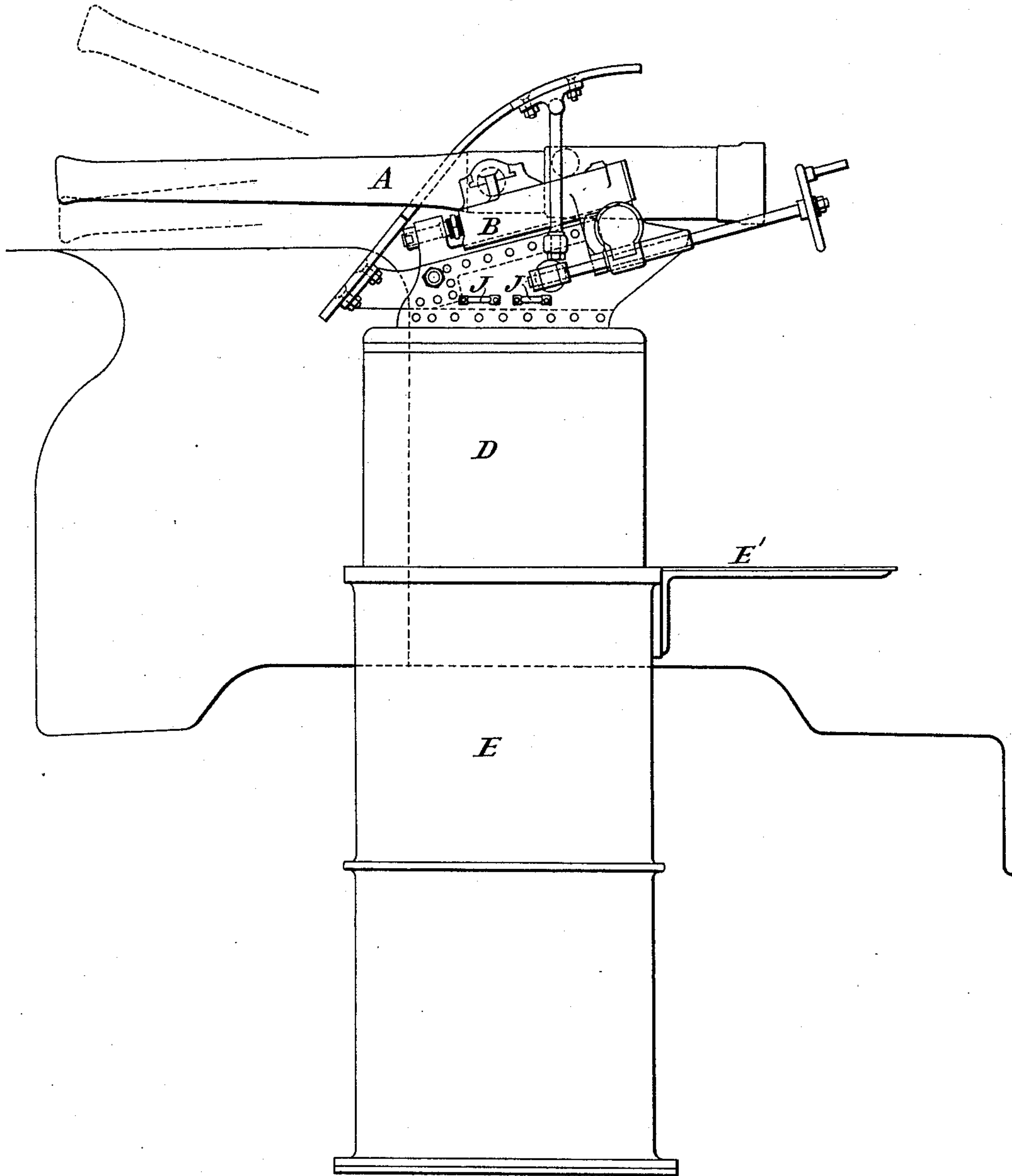
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A. NOBLE.
OPERATING ORDNANCE.

No. 377,954.

Patented Feb. 14, 1888.

Fig. 1.



Witnesses,
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Goldwin, Hopkins & Peyton.

(No Model.)

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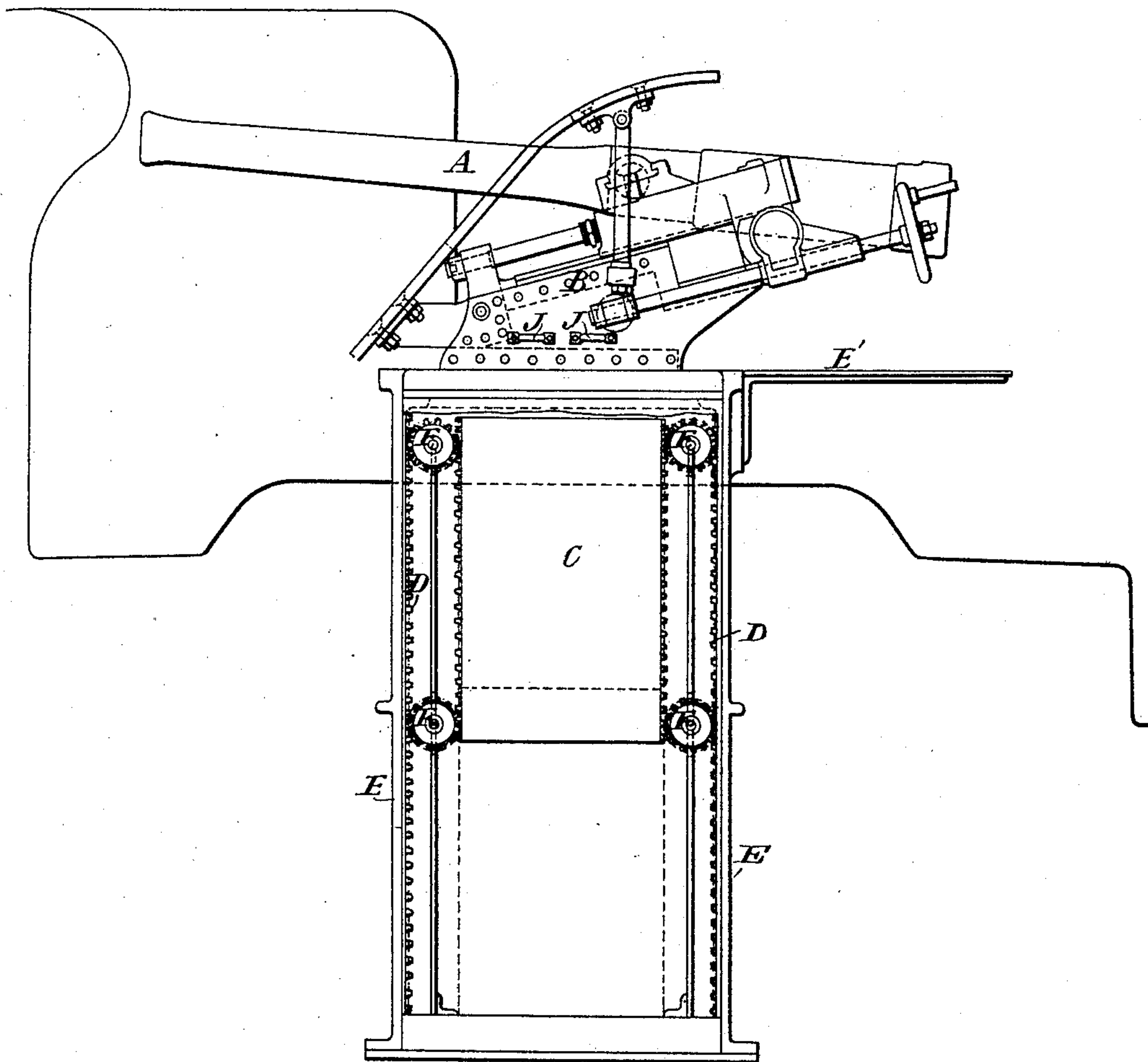
A. NOBLE.

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No. 377,954.

Patented Feb. 14, 1888.

Fig. 2.



Witnesses

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(No Model.)

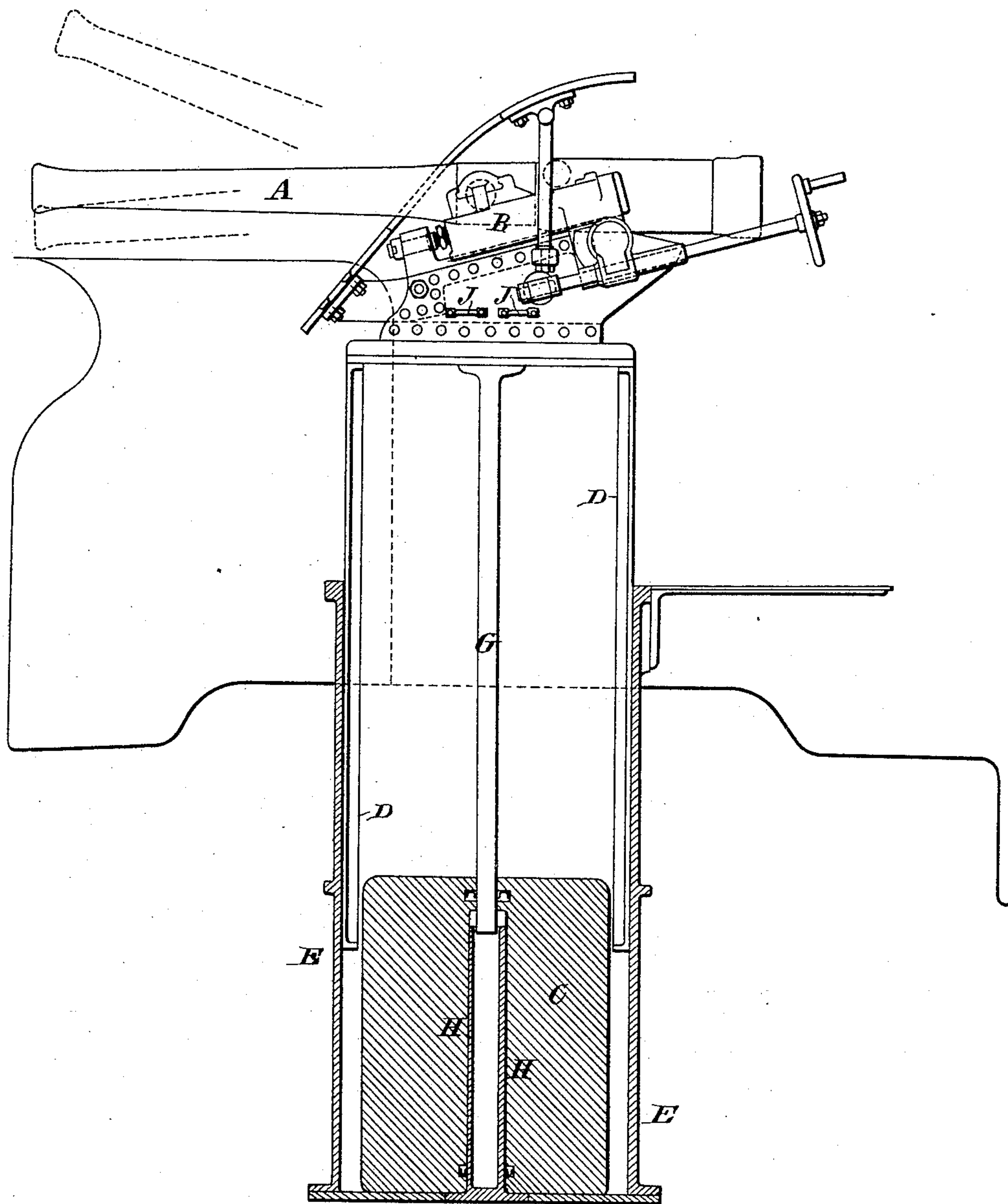
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Patented Feb. 14, 1888.

Fig. 3.



Witnesses.

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(No Model.)

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Fig. 5.

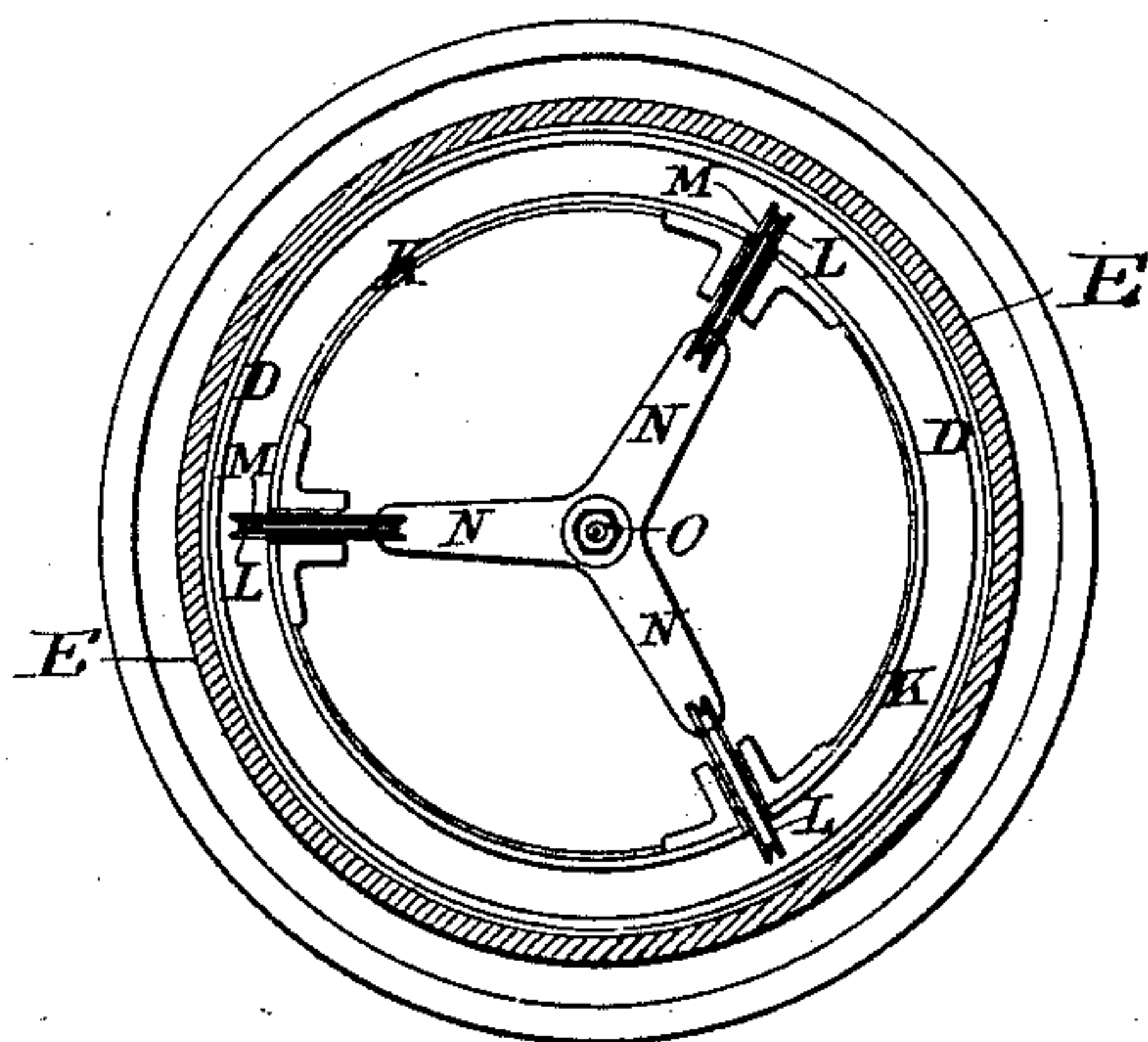
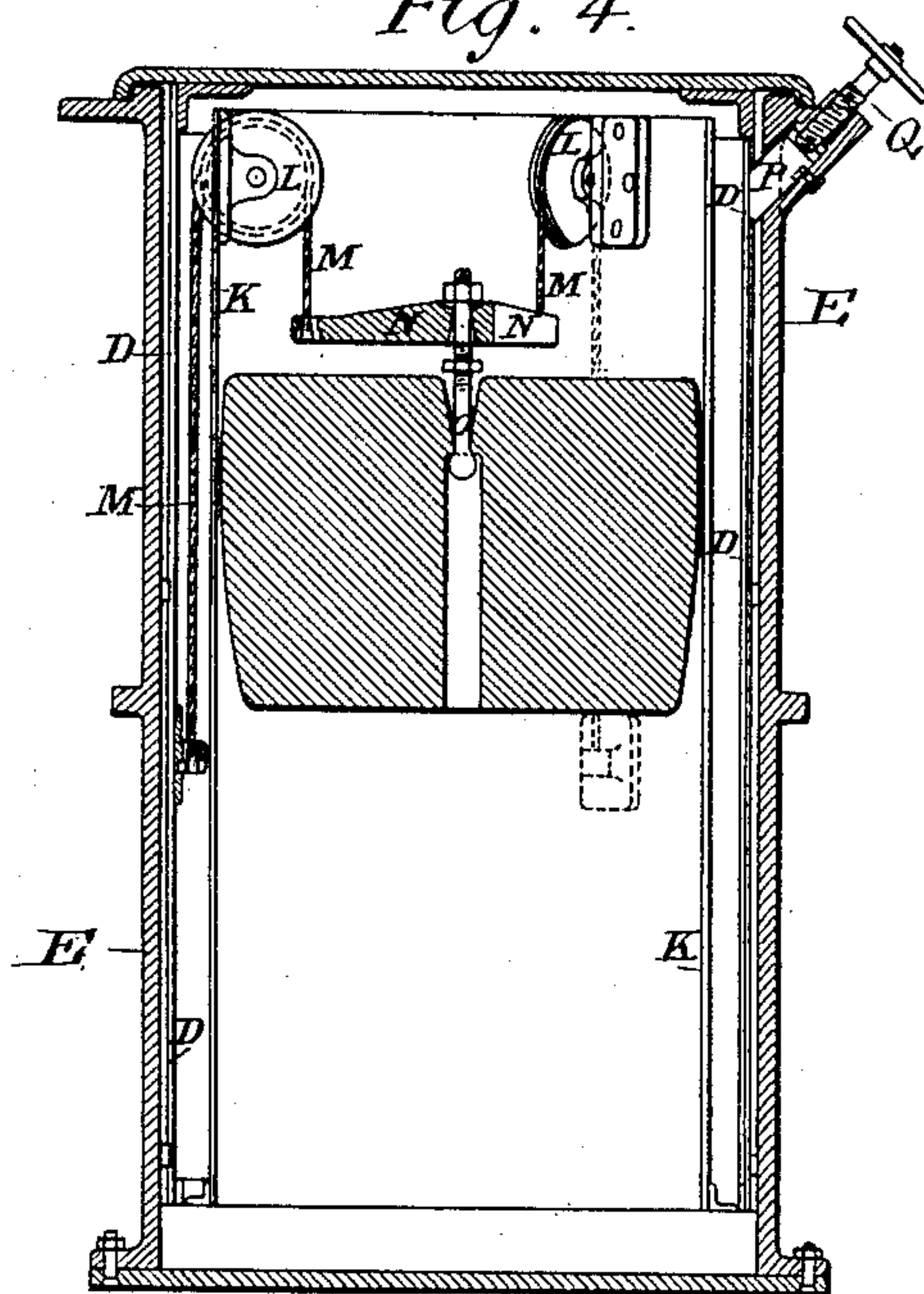


Fig. 4.



Witnesses,

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By Atty - J. Allen, William Dayton.

UNITED STATES PATENT OFFICE.

ANDREW NOBLE, OF NEWCASTLE-UPON-TYNE, ENGLAND, ASSIGNOR TO W.
G. ARMSTRONG, MITCHELL & CO., (LIMITED,) OF SAME PLACE.

OPERATING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 377,954, dated February 14, 1888.

Application filed May 31, 1887. Serial No. 239,864. (No model.)

To all whom it may concern:

Be it known that I, ANDREW NOBLE, a subject of the Queen of Great Britain, late Captain in the Royal Artillery, residing at Jesmondene House, Newcastle-upon-Tyne, England, manufacturing engineer, have invented certain new and useful Improvements in Gun-Mountings for Disappearing Guns, of which the following is a specification.

10 This invention has for its object improvements in gun-mountings for disappearing guns.

The improved mounting consists of a cylindrical pedestal within which another cylinder is able to rise and fall, the one cylinder moving within the other telescopically. Upon the top of the moving cylinder the gun-carriage and gun are mounted. The Vavasseur pivoted carriage is very suitable for use in this way.
15 Centrally within the pedestal there is also a balance-weight which about counterpoises the gun and carriage and moving cylinder upon which it is supported, and the balance-weight and moving cylinder are so geared or adjustably connected that as one rises the other descends. On the gun being fired when in the raised position the recoil is sufficient to cause it to descend and the balance-weight to rise. The gun remains down within the loading-pit
20 until it is ready to fire again, and then by manual labor, which is sufficient to overcome the friction of the moving parts, the gun is run up again and fired.

In order that my said invention may be fully understood and readily carried into effect, I
35 will proceed to describe the drawings hereunto annexed.

In the drawings, Figure 1 is an elevation of a disappearing gun-mounting with gun in the firing position. Fig. 2 is an elevation, partly
40 in section, of the same. The gun in this figure is in the loading position and under cover. In the gun-mounting shown in these figures the balance-weight and moving cylinder are coupled by racks and pinions. Fig. 3 is an elevation, partly in section, of a modification in which the balance-weight and moving cylinder are coupled by hydraulic mechanism. Fig. 4 is a vertical section, and Fig. 5 a horizontal section, of another modification, in which
50

the balance-weight and moving cylinder are coupled by chains passing over pulleys. In all of the arrangements the gun-carriage is mounted on a telescopic pedestal, which contains centrally within it a balance-weight so
55 connected with the movable upper part of the telescopic pedestal that it is raised when the gun descends and descends when the gun ascends, so that the moving parts, being approximately balanced, are readily operated by
60 manual labor.

A is the gun, and B is the gun-carriage. It is of the Vavasseur class, and the gun in recoiling mounts an upwardly-inclined slide. The recoil is controlled by hydraulic com-
65 pressors, and the gun after recoil is retained in the rearward position.

C is the balance-weight. It is contained within the movable part D of the telescopic pedestal. On the top of the part D the gun-
70 carriage B stands.

E is the stationary part of the pedestal. It carries a light platform, E', on which the gunner stands to lay the gun.

In Figs. 1 and 2 toothed wheels F F, the
75 axes of which are carried by a fixed frame within the pedestal, engage with corresponding teeth or racks on the balance-weight and on the interior of the part D, and so the simultaneous movement of these parts in oppo-
80 site directions is insured.

In Fig. 3 a ram, G, is fixed within the part D, and another ram, H, of double the sectional area, is fixed at the bottom of the pedestal. It has a cavity within it to receive the
85 ram G. Both these rams enter into a hydraulic cylinder within the counterpoise C.

When the gun is fired, the recoil, operating partly downward and against the rising incline of the slide, causes the gun to descend, together with the carriage and part D of the pedestal. The ram G, entering the cylinder in the weight C, displaces water, and so drives the weight C upward on the ram H, expelling the ram H from the cylinder an equal distance,
90 or to the extent necessary to provide accommodation for the water displaced by the ram G.

J J are handles upon the gun-carriage. By means of them the part D of the pedestal, with the gun upon it, can be drawn up by manual
100

labor to bring the gun to the firing position. The gun when thus raised is run out along the slide and fired.

In Figs. 4 and 5 a vertical cylinder, K, resting on the ground, is placed centrally within the interior of the moving cylinder D. At the top it carries pulleys L, over which pass ropes or chains M, each of which is at one end attached to the interior of the moving cylinder D and at the other to one of the arms N, which are coupled to the balance-weight by a bolt, O, as shown.

If desired, a spring may be interposed between the head of the bolt and the weight.

P is a friction-block, which can be pressed more or less against the cylinder D by means of a screw, Q.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The combination of a telescopic pedestal, a gun supported by its carriage and recoiling along a slide inclined upward from front to rear upon the top of the vertically-movable part of the pedestal, and a balance-weight within the pedestal and adjustably connected with the movable part thereof, whereby said part and weight move simultaneously in opposite directions and the gun is adapted to be

automatically lowered upon firing and to be readily raised, substantially as set forth.

2. In a gun-mounting, the combination of a telescopic pedestal, a gun-carriage upon the top of the vertically-movable part of the pedestal, a balance-weight within the pedestal and adjustably connected with the movable part thereof, and a friction-block adjustably supported by the fixed part of the pedestal and acting on the movable part thereof, substantially as and for the purpose set forth.

3. The combination of a telescopic pedestal, a gun supported by its carriage and recoiling along a slide inclined upward from front to rear upon the top of the vertically-movable part of the pedestal, a balance-weight within the pedestal, ropes or chains connected at their opposite ends with the weight and the movable part of the pedestal, and pulleys supported within the pedestal above the weight, over which pulleys the ropes or chains pass, whereby the gun is adapted to be automatically lowered upon firing and to be readily raised, substantially as set forth.

A. NOBLE.

Witnesses:

WM. JOHN GREY,
Notary Public.

T. PURVIS.