

No. 670,717.

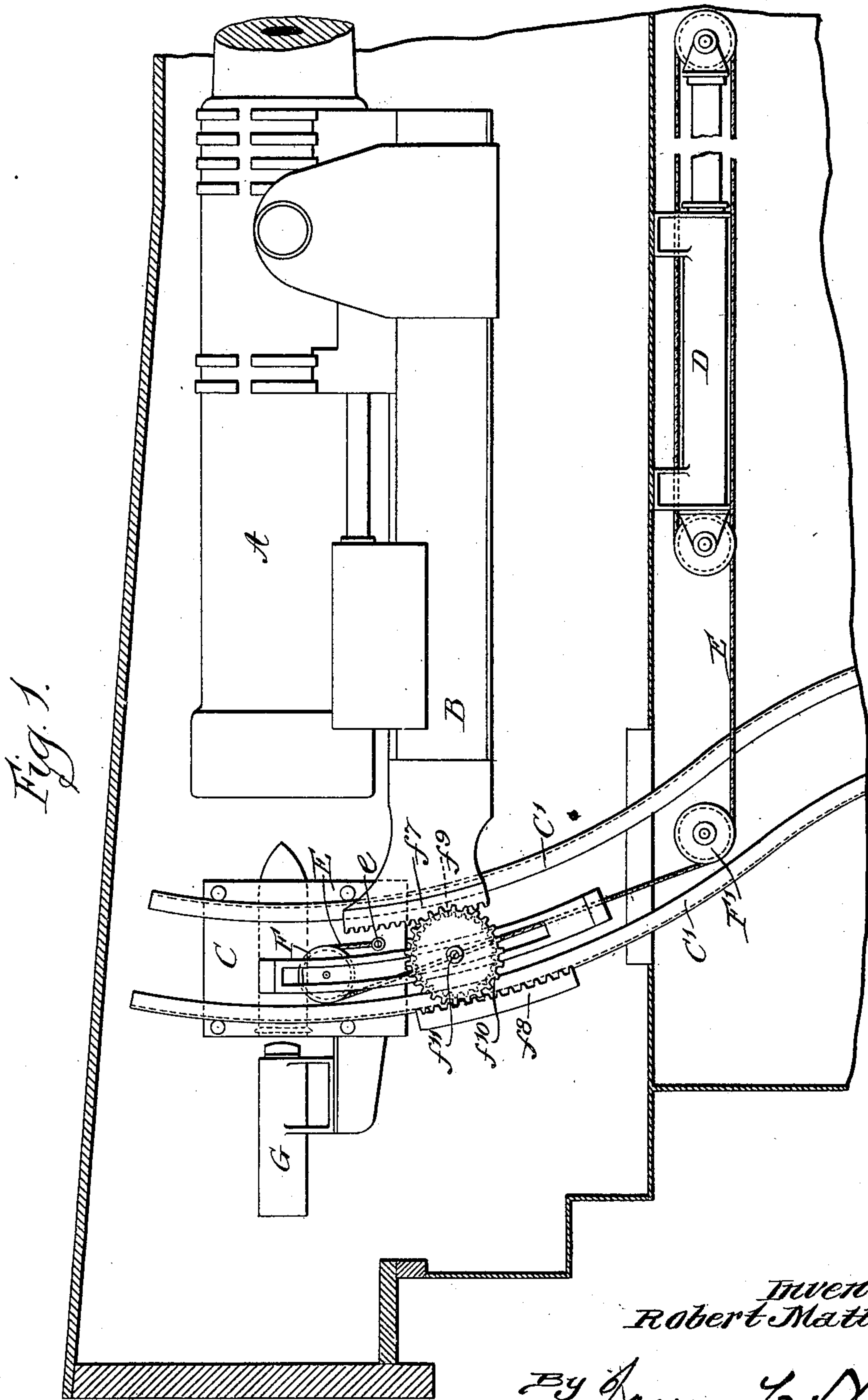
Patented Mar. 26, 1901.

R. MATTHEWS.
AMMUNITION HOIST.

(Application filed Nov. 20, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:
Geo. W. Rea,
Geo. Sullivan.

Inventor
Robert Matthews

By James L. Norris
Atty

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Fig. 2.

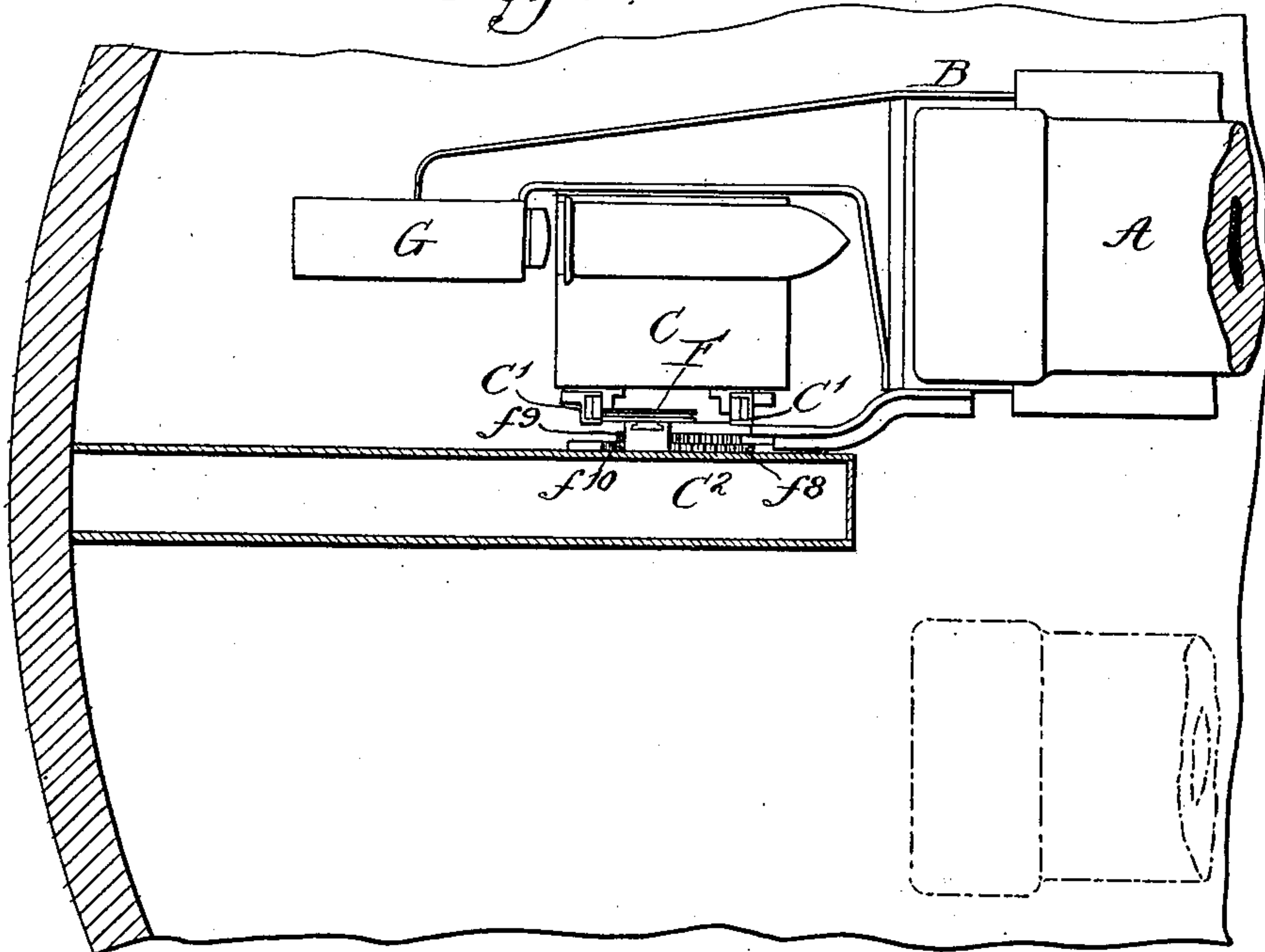
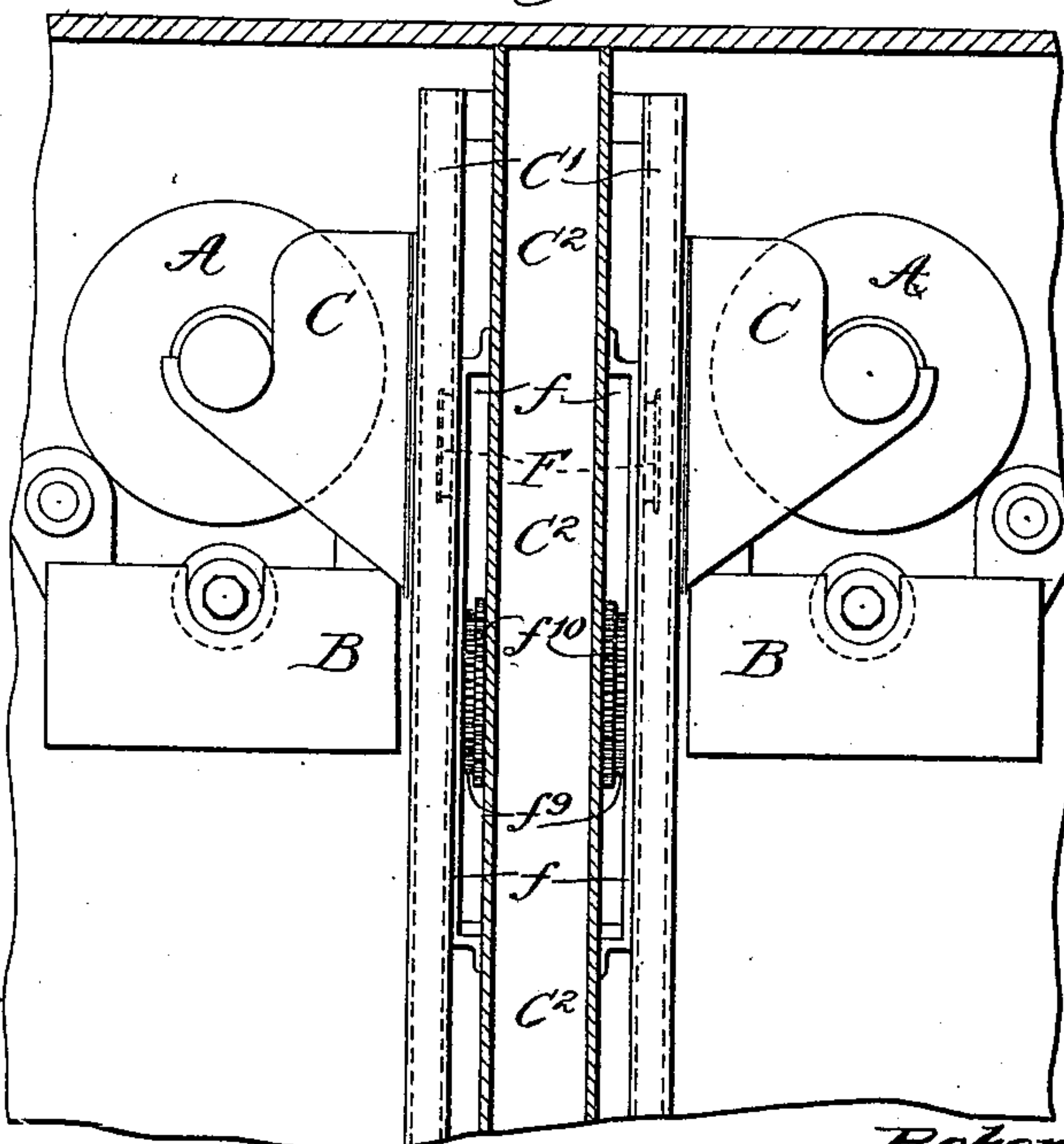


Fig. 3.



Witnesses:

Geo. W. Rea.

Wm. Sullivan.

Inventor
Robert Matthews

By James L. Norris
Atty

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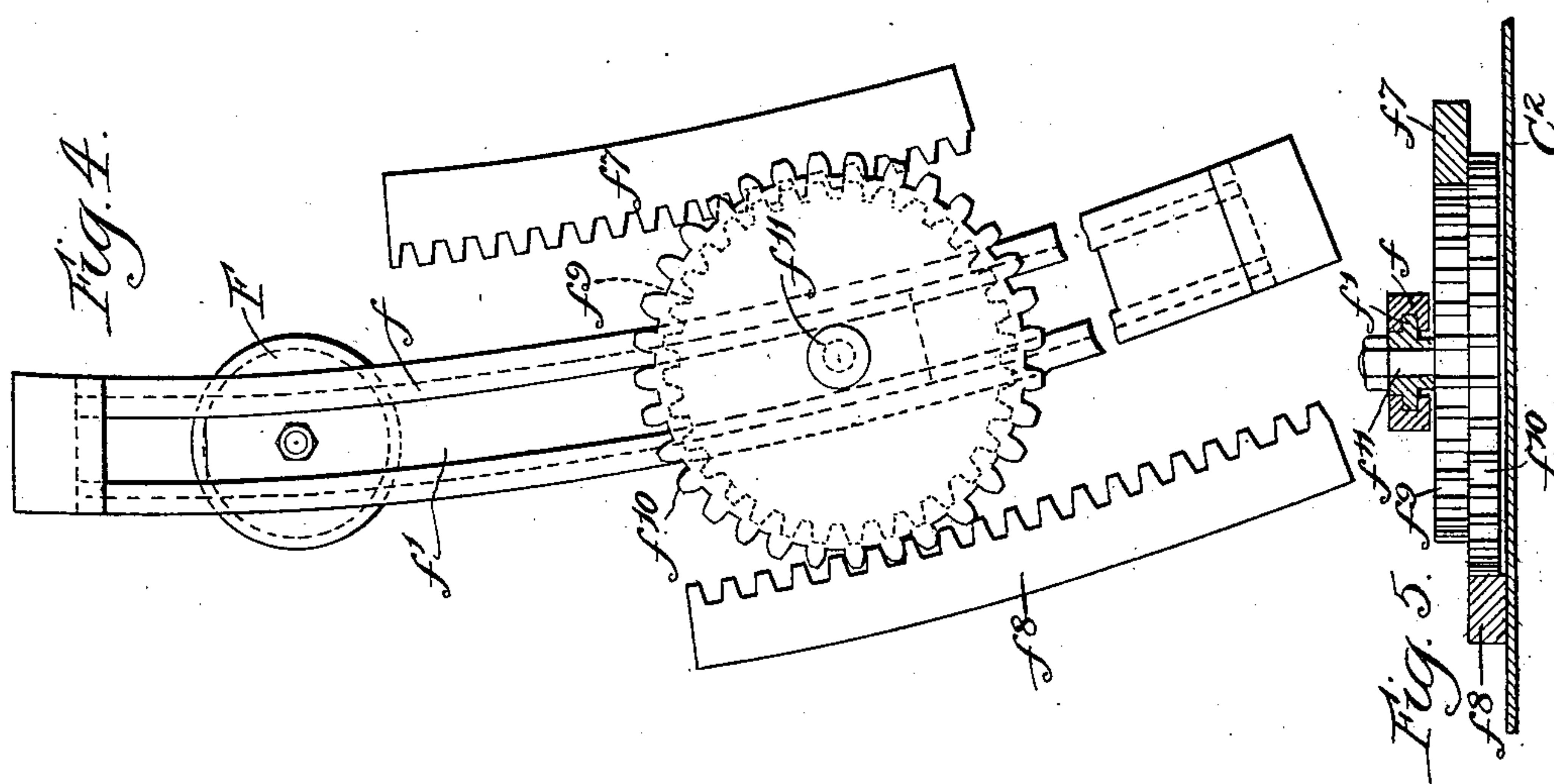
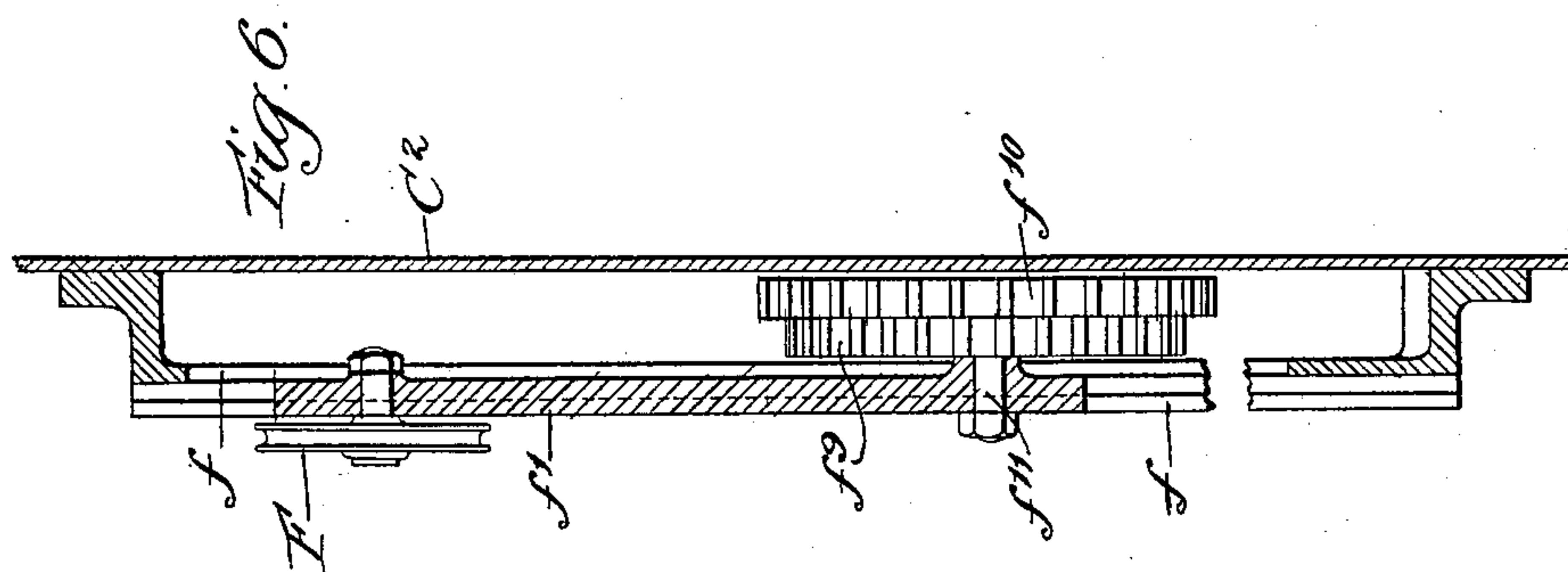
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J. W. Rea.
W. O. Sullivan.

Inventor
Roberts Matthews

By James L. Norris.
Atty

UNITED STATES PATENT OFFICE.

ROBERT MATTHEWS, OF MANCHESTER, ENGLAND.

AMMUNITION-HOIST.

SPECIFICATION forming part of Letters Patent No. 670,717, dated March 26, 1901.

Application filed November 20, 1900. Serial No. 37,173. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MATTHEWS, engineer, a subject of the Queen of Great Britain, residing at Openshaw, Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Ammunition - Hoists for Loading Ordnance, of which the following is a specification.

This invention relates to apparatus for loading ordnance, and has reference particularly to the hoists by which the ammunition is conveyed to the gun from the magazine.

In my prior application for United States Patent, filed July 24, 1900, Serial No. 24,684, I described means whereby the bearing of the pulley at the top of the hoist was made movable and so connected to the gun-mounting or some other suitable part that the alteration in the position of the cage, which takes place when the elevation of the gun is altered after the cage has been raised, would only affect the comparatively short portion of the rope adjacent to the said pulley, instead of affecting the entire length of the rope.

It is the object of my present invention to modify the means set forth in said prior specification by substituting for the lever mechanism therein described toothed gearing, as hereinafter explained.

In order that my said invention may be clearly understood and readily carried into practice, I will describe the same more fully with reference to the accompanying drawings, in which—

Figures 1, 2, and 3 are respectively a side elevation, a plan, and a rear elevation of a pair of guns mounted in a rotating turret and provided with my improved apparatus, only so much of the guns and their mountings being shown as is required for a proper understanding of my apparatus. Fig. 4 is an elevation, Fig. 5 a sectional plan, and Fig. 6 a vertical section on the line 1 1 of Fig. 4, showing the improved apparatus separately and on a larger scale.

Like letters of reference indicate similar parts in all the figures.

A A are the guns, and B B the frames in which they recoil.

B^x is the rotary turret.

C is one of the ammunition-hoisting cages

or carriers, and C' C' are the rails along which such carrier travels.

D is one of the hydraulic cylinders for actuating said cage or carrier, and E is the chain or rope which is acted upon by the ram of the cylinder and connected with the cage or carrier at c after passing around guide-pulleys F F'. The opposite end of said chain or rope is connected to the cylinder D.

G is the rammer.

f is a segmental slotted guide carried by the vertical framing C², to which the rails C' are connected. f' is a bearing-block which is capable of sliding in said segmental slotted guide and is provided with a lateral axle or stud upon which the uppermost pulley F is rotatably mounted.

A segmental toothed rack f⁷ is fixed to the frame B of the gun, and another segmental toothed rack f⁸ is fixed to the framing C². Situated between these two racks and gearing therewith are two toothed wheels f⁹ and f¹⁰, mounted to revolve together on a stud f¹¹, carried by the sliding block f'. By these means when the gun, with its frame B, changes its elevation the rack f⁷ will be correspondingly shifted and by actuating the pinion f⁹ will cause the pinion f¹⁰ to travel along the fixed rack f⁸ and the block f' to slide in the guide f. The position of the axle of the pulley F will consequently be likewise changed to the extent required for keeping the cage in alinement with the gun in an analogous manner to that set forth with regard to the arrangement already described in my aforesaid prior specification.

What I claim, and desire to secure by Letters Patent of the United States, is—

In an ammunition-hoist, the combination with an ammunition cage or carrier, a chain or rope passing around guide-pulleys and connected at one end with the cage or carrier, and at the other end to a fixed point, and a hydraulic cylinder and ram for actuating the chain or rope; of a sliding block to which the axle of the uppermost pulley is connected, of a segmental slotted guide disposed approximately concentric with relation to the gun-trunnions and carried by a part which does not participate in the movement of elevation or depression of the gun, of a rotary axle to

which the said block is connected, of toothed
wheels carried by said axle, and of racks gear-
ing with said toothed wheels, one of said racks
being carried by the gun-mounting and the
5 other fixed to the turret of the gun, substan-
tially as and for the purpose specified.

In testimony whereof I have hereunto set

my hand, in presence of two subscribing wit-
nesses, this 6th day of November, 1900.

ROBERT MATTHEWS.

Witnesses:

ALBERT EDW. KAY,
SAMUEL GUEST.