

No. 658,704

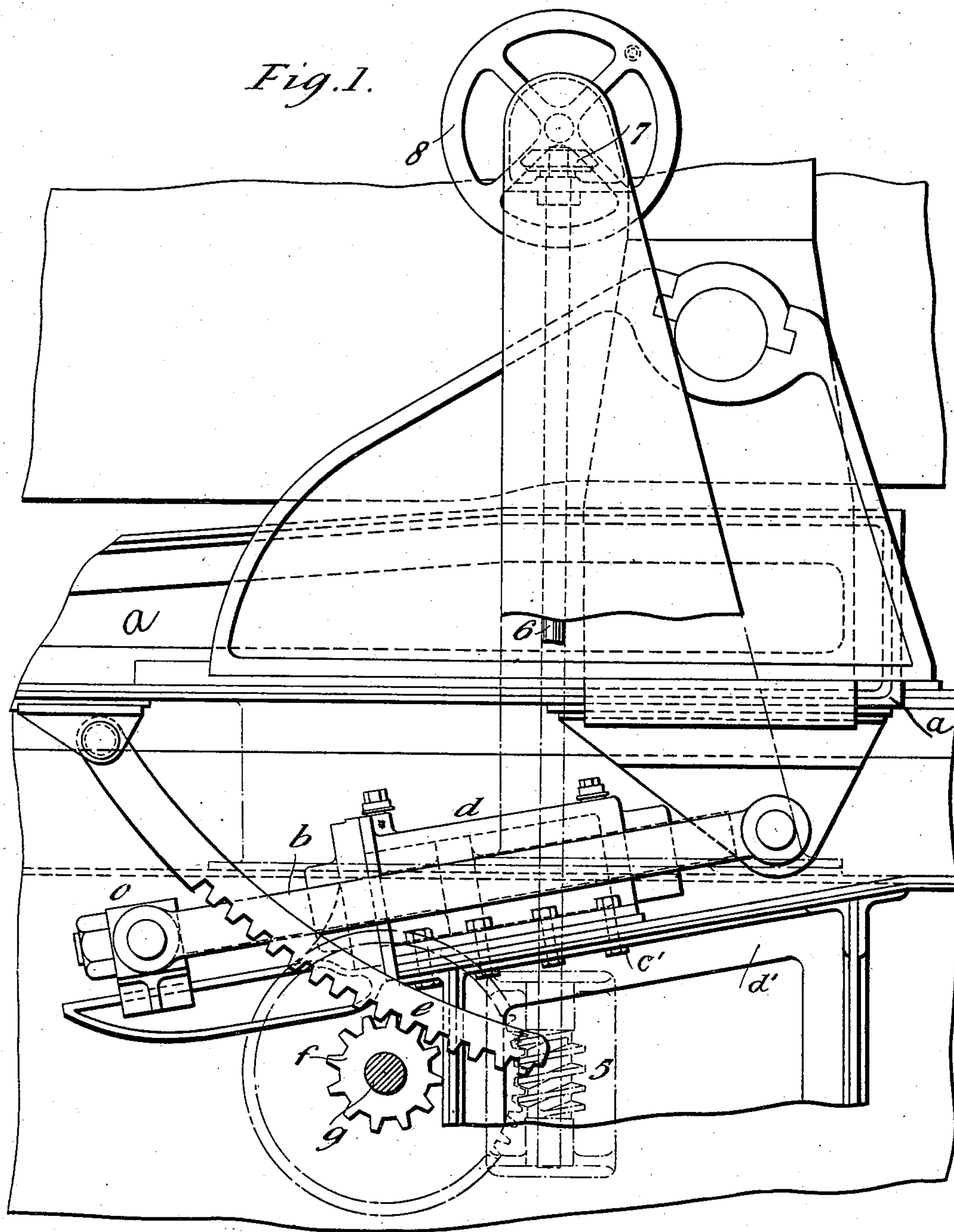
Patented Sept. 25, 1900.

A. T. DAWSON & J. HORNE.
MOUNTING FOR TURRET OR BARBETTE GUNS.

(Application filed Oct. 24, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
W. B. Steffen
W. Lee Helms

Inventors
Arthur T. Dawson
James Horne
James L. Norris
att'y

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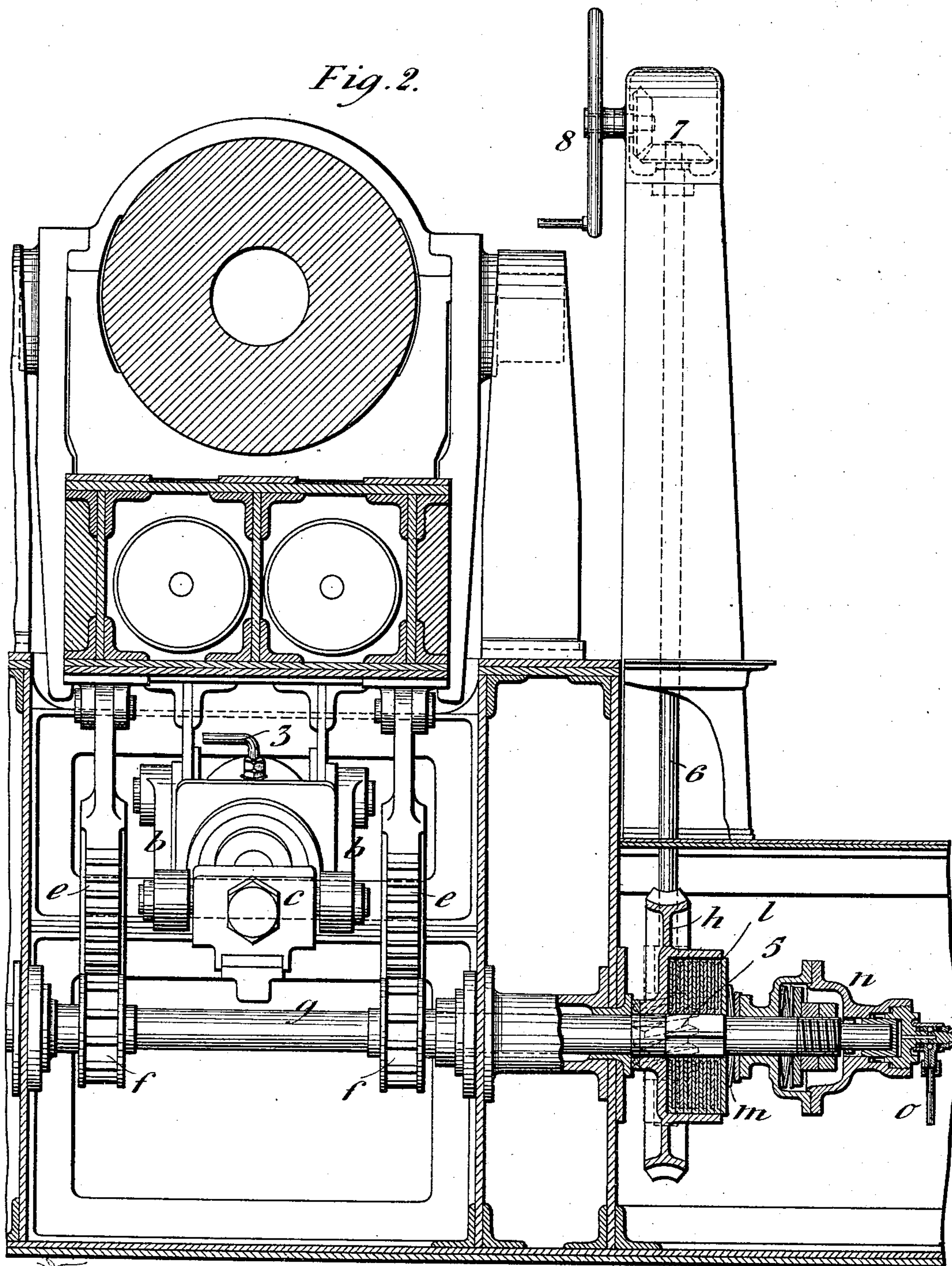
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Witnesses
Subscribed
W. L. Stearns

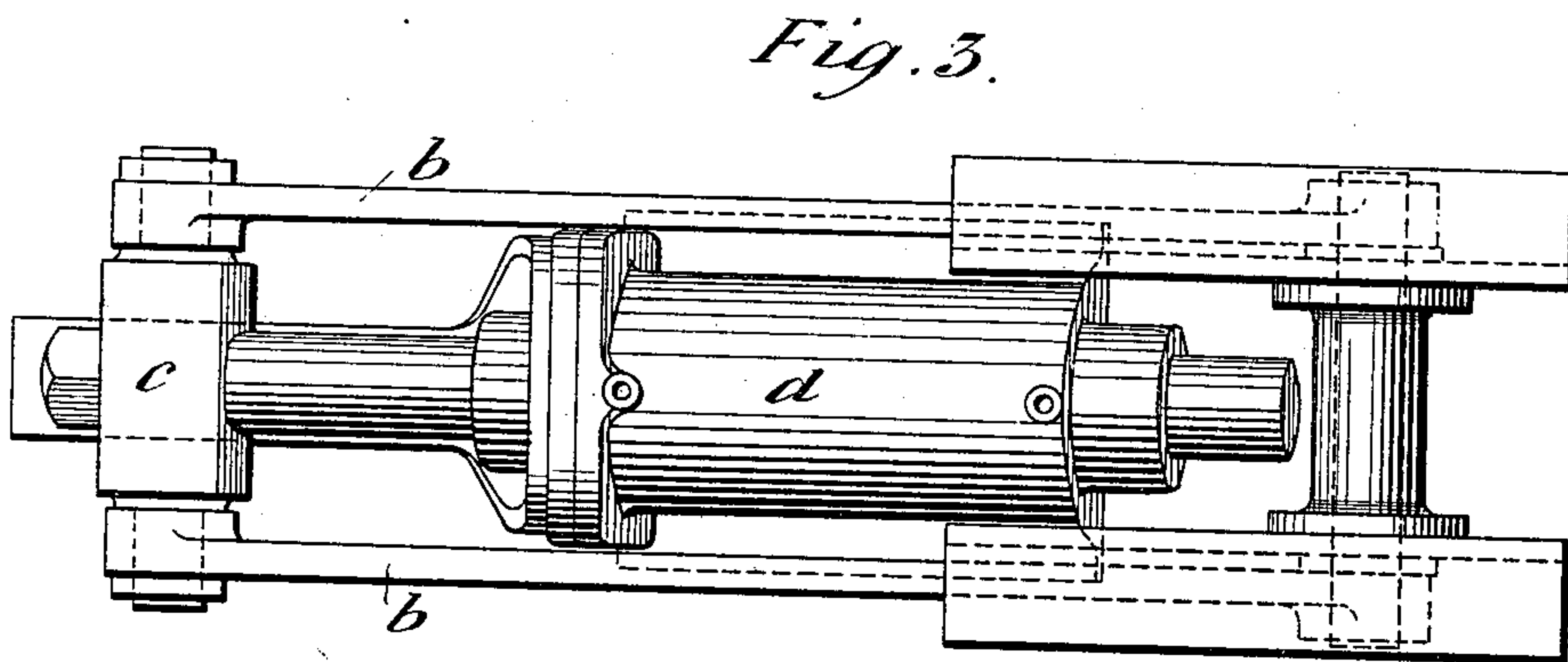
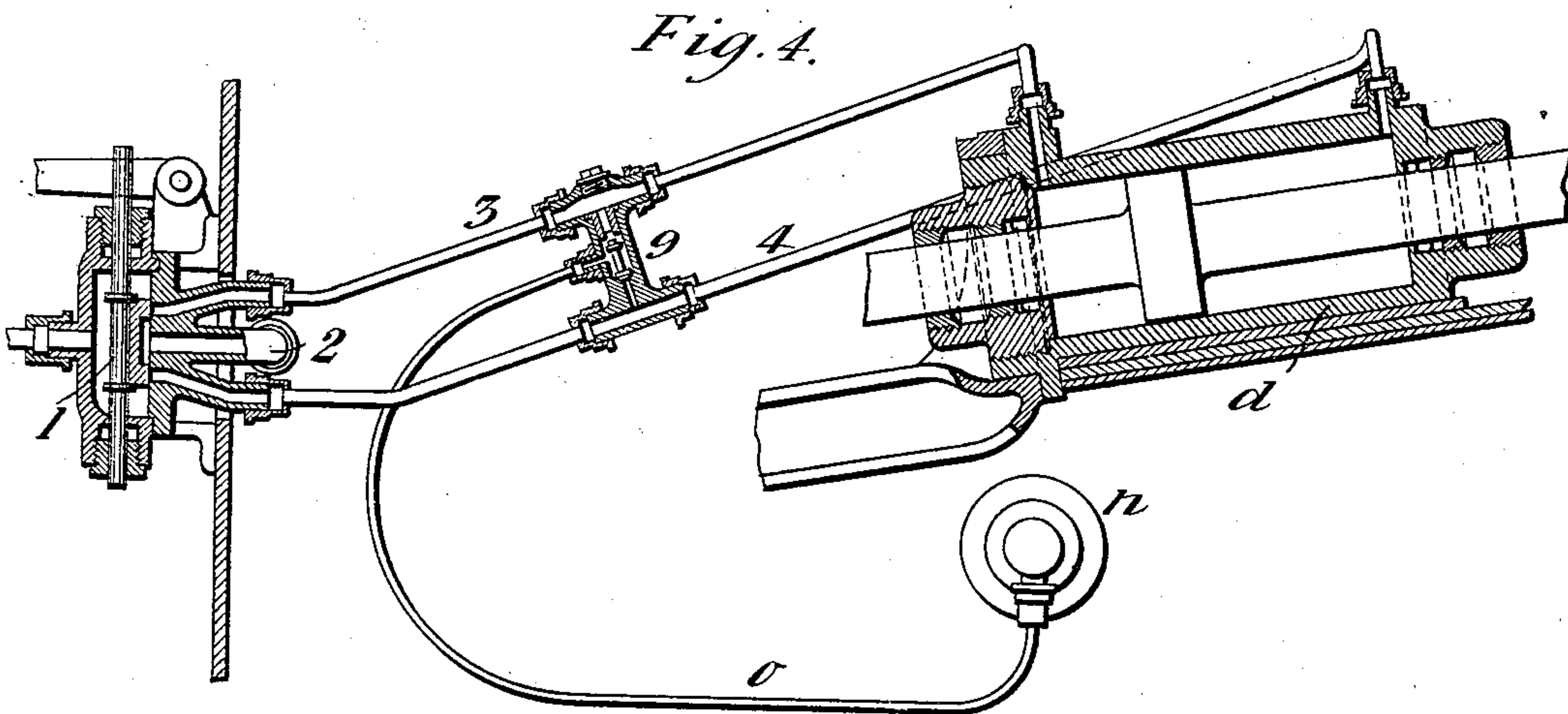
Inventors
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James Horne
James L. Norris
attys

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3 Sheets—Sheet 3.



Witnesses
J. B. Steyer
H. Lee Helms

Inventors
Arthur T. Dawson
James Horne
By *James L. Norris*

UNITED STATES PATENT OFFICE.

ARTHUR TREVOR DAWSON, OF LONDON, AND JAMES HORNE, OF BARROW-IN-FURNESS, ENGLAND, ASSIGNORS TO THE VICKERS, SONS & MAXIM, LIMITED, OF SHEFFIELD, ENGLAND.

MOUNTING FOR TURRET OR BARBETTE GUNS.

SPECIFICATION forming part of Letters Patent No. 658,704, dated September 25, 1900.

Application filed October 24, 1899. Serial No. 734,643. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR TREVOR DAWSON, residing at 28 Victoria street, Westminster, London, and JAMES HORNE, residing at Barrow-in-Furness, county of Lancaster, England, citizens of England, have invented certain new and useful Improvements in Mountings for Turret and Barbette Guns of Medium Caliber and Apparatus Connected Therewith, (for which we have applied for a patent in Great Britain, dated May 4, 1899, No. 9,417,) of which the following is a specification.

Our invention relates to apparatus for elevating turret or barbette guns, which we construct and operate as we shall describe, referring to the accompanying drawings.

Figure 1 is a side view with parts broken away. Fig. 2 is an end view, partly sectional. Fig. 3 is a part plan, and Fig. 4 is a longitudinal section, of the hydraulic elevating-gear for a single gun according to our invention.

For working by hydraulic pressure the lower front end of the gun-cradle *a* has an eye connected by a pair of links *b* to the guided cross-head *c*, fixed on the piston-rod of the hydraulic cylinder *d*, secured to a portion *d'* of the carriage by means of the bolts *c'*, and to either end of which fluid under pressure is admitted by moving a slide-valve 1, governing an exhaust-port 2, and two ports communicating by pipes 3 and 4 with the two ends of the cylinder *d*. For elevating by hand-gear the rear end of the cradle *a* has jointed to it the upper ends of a pair of toothed segments *e*, which gear with pinions *f* on a shaft *g*, having on it a worm-wheel *h*, engaged by a worm 5, which is connected by a shaft 6 and bevel-gear 7 to a hand-winch 8, which may be situated in any convenient part of the turret, preferably on the sighting-station. The worm-wheel *h* is clutched to the shaft *g* by friction-plates *l*, pressed together by spring *m*. This allows the gun to slip a little in elevation should the gearing be subjected to undue shock when the gun is fired. When the elevating is effected by hydraulic

pressure, the hand-gear is unclutched from the shaft *g* in the following manner:

On the end of the shaft is fitted with suitable packing a hydraulic cylinder *n*, which communicates by a pipe *o* with a valve-box 9, connecting the pipes 3 and 4 of the hydraulic cylinder *d*, so that when the valve 1 is moved to admit fluid under pressure to either end of the cylinder *d* the fluid acts also in the cylinder *n*, forcing it backward and thereby withdrawing the pressure of the springs *m* from the friction-plates *l*, so that they no longer by frictional pressure clutch the worm-wheel *h* to the shaft *g*, but allow the shaft and its pinions *f* to revolve freely while the worm-wheel *h* remains at rest. In the valve-box 9 there is a shuttle-valve which when fluid under pressure is admitted to either of the pipes 3 or 4 opens to the pipe *o*, but closes the other of the pipes 3 and 4.

When there are two guns side by side, these may be elevated separately in the manner described, or when both are mounted in one cradle one set of elevating apparatus of the kind described obviously will serve for both.

Having thus described the nature of this invention and the best means we know for carrying the same into practical effect, we claim—

1. An apparatus for elevating a gun or pair of guns mounted in a turret or barbette, comprising a hydraulic cylinder having a cross-head carried by its piston-rod and connected by a pair of links to an eye on the lower front portion of the gun-cradle, a pair of toothed segments jointed to the gun-cradle and gearing with pinions on a horizontal shaft carrying a worm-wheel driven by a worm connected by a suitable gear to hand-winch, a series of spring-pressed friction-plates adapted to clutch said worm-wheel to said horizontal shaft when said cylinder is not operated, and means for automatically disengaging said plates from their connection with said worm-wheel when said cylinder is operated, substantially as described.

2. In an apparatus for elevating a gun or

pair of guns, the combination with a pair of
toothed segments, pinions, a shaft and worm-
wheel, a spring-pressed friction-plate clutch
and a releasing-cylinder therefor, of a hy-
5 draulic cylinder adapted to elevate the gun
or pair of guns and in communication with a
source of pressure-supply, a suitable com-
munication between the two cylinders, and
means within said communication for direct-
10 ing the pressure of the elevating-cylinder into
the releasing-cylinder, whereby the clutch is
released.

In testimony whereof we have hereunto set
our hands in presence of two subscribing wit-
nesses.

ARTHUR TREVOR DAWSON.

JAMES HORNE.

Witnesses to the signature of Arthur Tre-
vor Dawson:

H. J. MORRISS,

HENRY KING.

Witnesses to the signature of James Horne:

WM. BERESFORD,

E. T. TALBOT.