(No Model.) 3 Sheets—Sheet 1.

M. DREGER.

TRANSPORTABLE OR FIELD GUN.

No. 411,329. Patented Sept. 17, 1889.

FIG _ I _

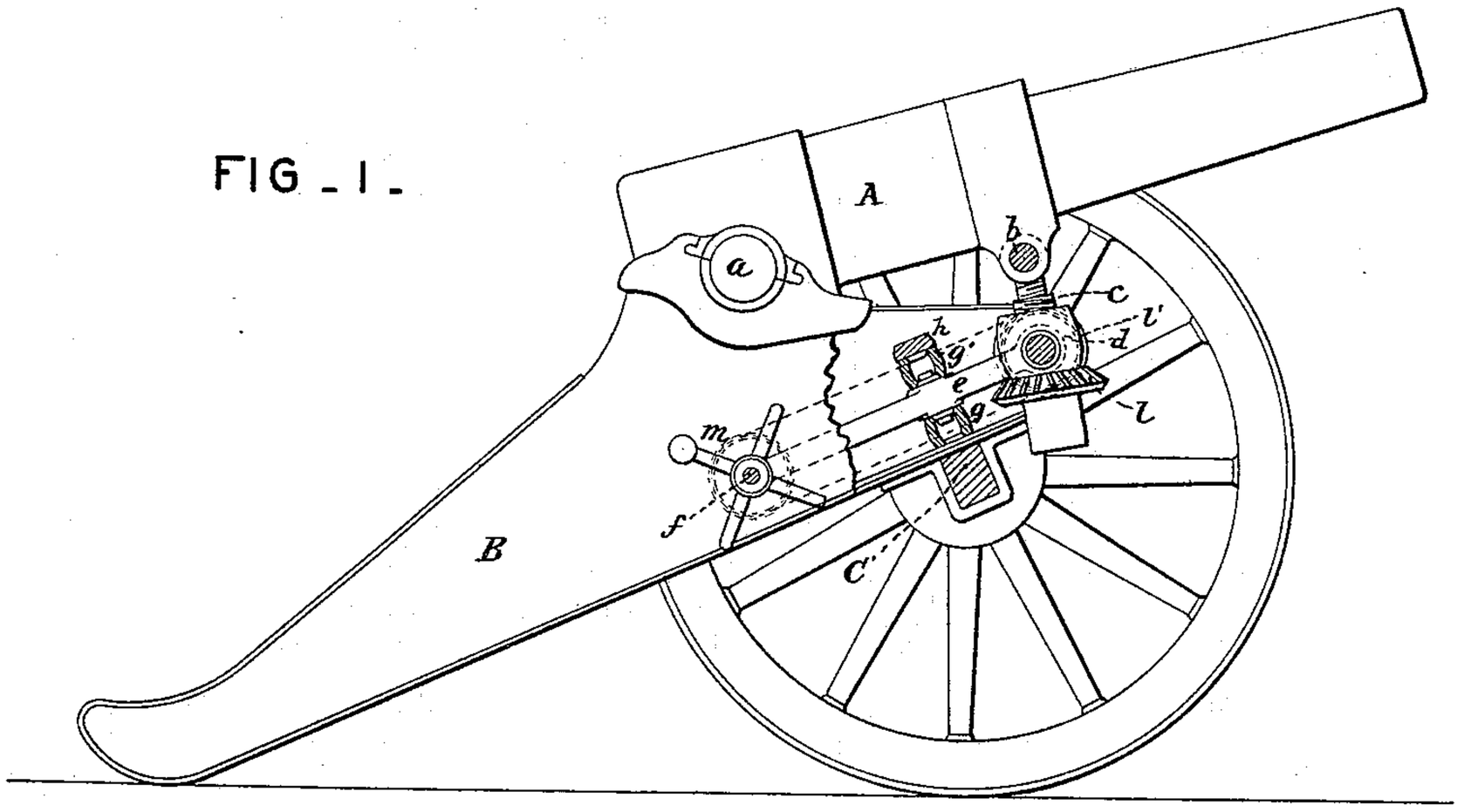
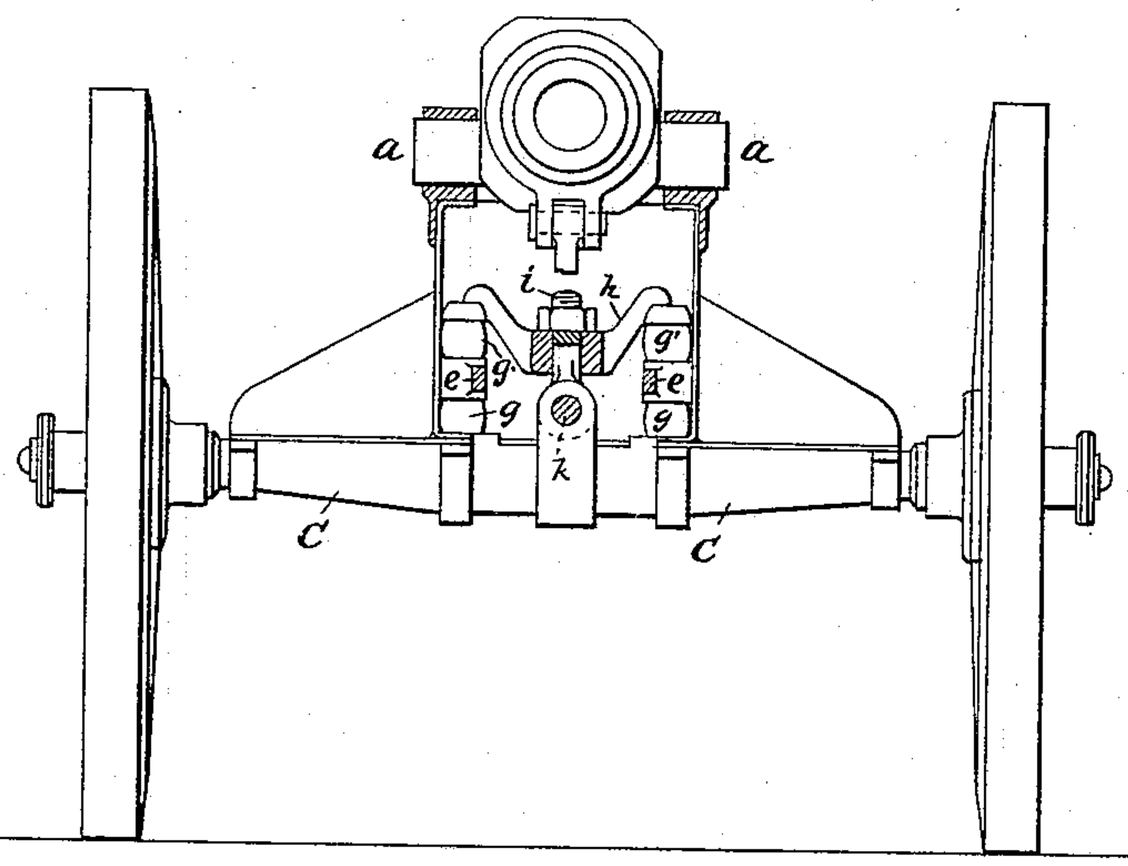


FIG _ II _



Attest:

Geo. T. Smallwood,
Hervey S. Knight.

Inventor:

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By Knight Bros.
attys.

(No Model.) 3 Sheets—Sheet 2.

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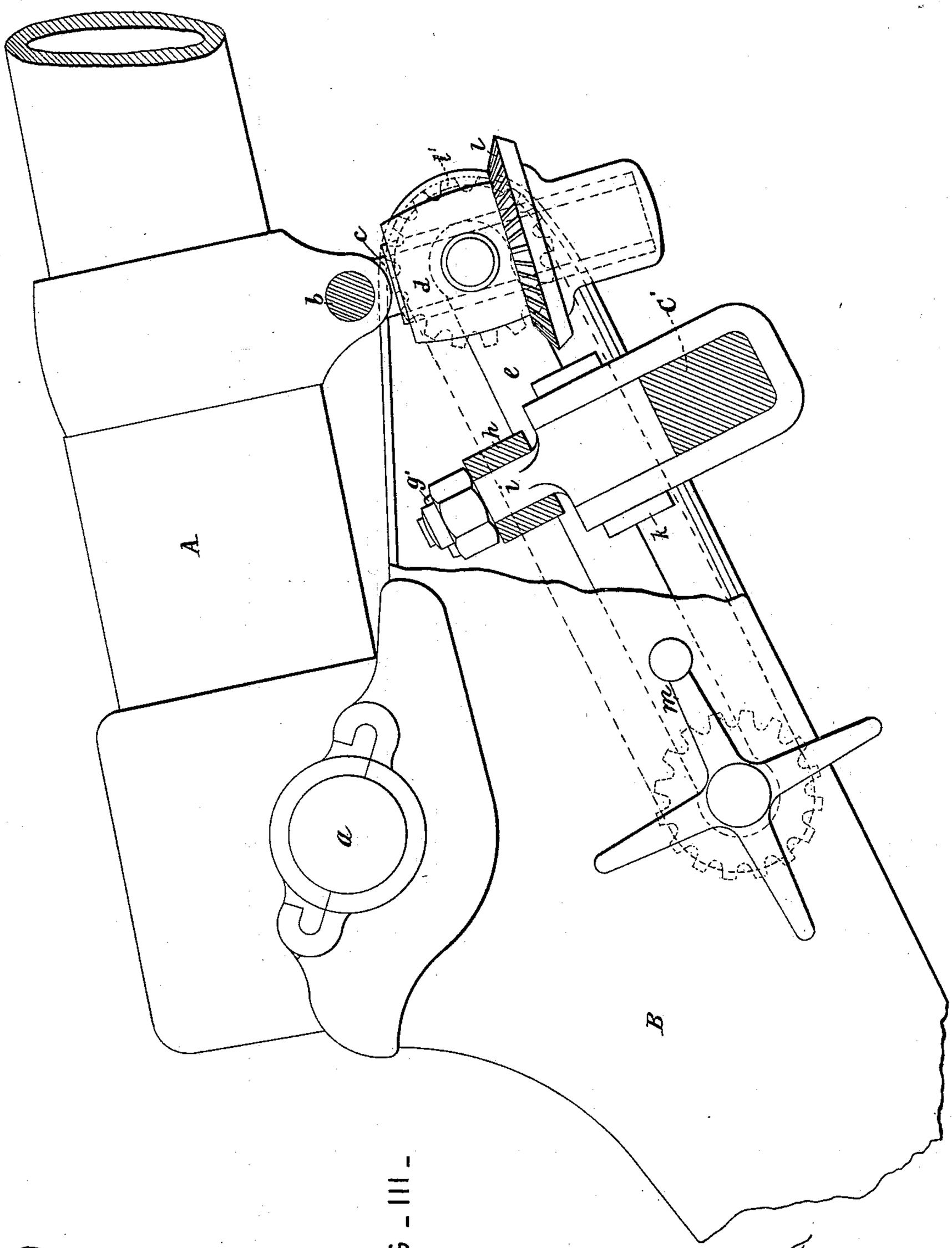

FIG - III -

Attest:

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(No Model.) 3 Sheets—Sheet 3.

M. DREGER.

TRANSPORTABLE OR FIELD GUN.

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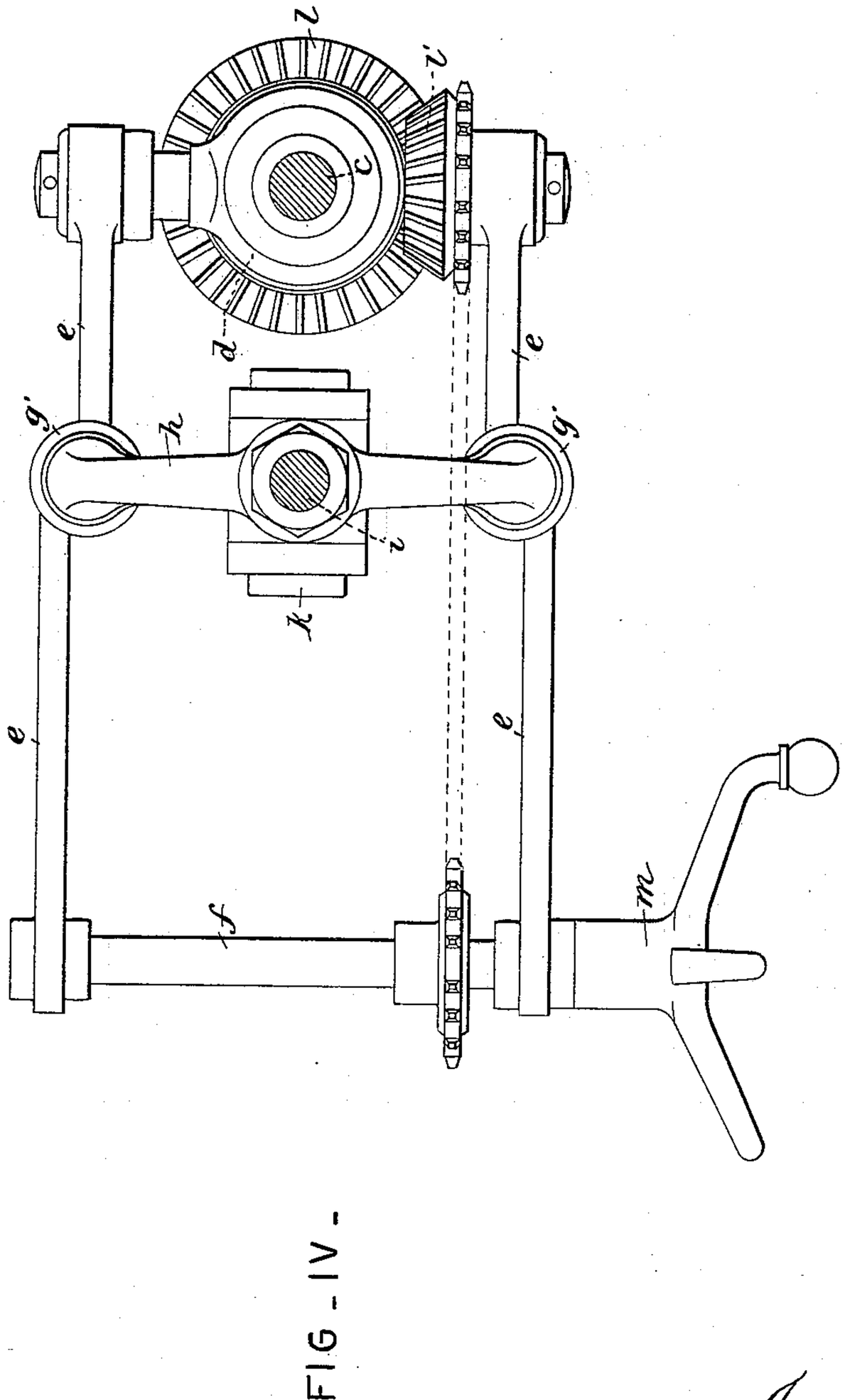

FIG. IV.

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UNITED STATES PATENT OFFICE.

MAX DREGER, OF MAGDEBURG, PRUSSIA, GERMANY, ASSIGNOR TO THE GRUSONWERK, OF SAME PLACE.

TRANSPORTABLE OR FIELD GUN.

SPECIFICATION forming part of Letters Patent No. 411,329, dated September 17, 1889.

Application filed October 4, 1888. Serial No. 287,130. (No model.)

To all whom it may concern:

Be it known that I, MAX DREGER, captain, a subject of the King of Prussia, residing at Magdeburg, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Transportable or Field Guns, of which the following is a specification.

My invention consists in the combination, with a transportable gun-carriage, of a gun whose trunnions are located on the first re-enforce and have their bearings on the rear of the axle, for the following reasons: First, by the changed direction of force only such a small component of the recoil is transmitted to the axle that a heavy gun can be mounted upon a transportable gun-carriage without exposing the axle to the risk of breakage; second, by the changed pivot of the gun the charge-orifice in the various positions of elevation remains at the same height. A return movement of the gun to a special position for charging is therefore unnecessary and the rapidity of the firing is increased.

In the accompanying drawings, Figure I is a side elevation of a field-gun embodying my improvements. Fig. II is a front view, partly in section, of the same. Fig. III is an enlarged detail side elevation of a portion of the gun and its carriage embodying my improvements, the axle being shown in section and the wheels removed. Fig. IV is a plan view of the elevating mechanism.

A indicates the gun; B, the cheeks or trail of the gun-carriage; C, the axle of the two wheels. The trunnions *a* of the gun are arranged not as in ordinary guns, approximately in a line extending through the center of gravity, but on the first re-enforce, while the gun is provided in the middle with an eye *b*, which is connected with a double screw *c* for pointing or aiming the gun. The nut *d* of the outer screw is supported by two journals in a forked lever *e*, which is pivoted at its other end upon a pin or stud *f*, secured in the cheeks of the carriage, and is supported between four buffers *g g'*. The buffers *g* rest upon the turned-in edges of the cheeks of the carriage, and the buffers *g'*, when the gun is jolted, bear against a cross-bar *h*, held by a screw-bolt *i* at a definite distance from the axle of the carriage. The screw-bolt is adapted to turn upon the pin or bolt *k*, so that the cross-bar *h* will yield to any differences of pressure upon the buffers at the ends of the said cross-bar. Bevel-wheels *l l'* are provided upon the nut *d* for turning the screw *c* to point or aim the gun. The said bevel-wheels *l l'* are operated by a hand-wheel *m* through the medium of chain gearing. The outer screw is guided by a square or other suitably shaped portion fitting in the box of the horizontal bevel-wheel, and it can therefore move vertically, but must turn with said wheel.

From the description it will be evident that when the gun is fired only a very small thrust or impact takes effect upon the axle, the main thrust or impact of the recoil being received directly by the trail of the gun-carriage. The upward movement of the gun when fired is limited by the india-rubber buffers. This arrangement, by reason of the favorable disposition of the directions of force, makes it practicable to mount a heavy gun upon a comparatively light and transportable carriage.

The second advantage derived from the arrangement of the trunnions on the first re-enforce consists, as above stated, in the charge-orifice remaining almost at the same height in the various angles of elevation. This circumstance greatly facilitates the charging and increases the rapidity of firing, inasmuch as the gun does not require to be placed in a special position for charging after each shot.

I claim—

1. In a transportable or field gun, the combination, with the gun-carriage, of a gun having trunnions located at or near the first re-enforce and having bearings on the carriage to the rear of the axle, and suitable elevating mechanism, whereby the force of explosion is not exerted on the axle and the rapidity of loading and firing is increased, substantially as herein shown and described.

2. In a transportable or field gun, the combination of the gun-carriage, a gun having trunnions located at or near the breech, bearings for said trunnions located on the carriage to the rear of the carriage-axle, and suitable elevating mechanism consisting of

the lever or frame *e*, having bearing at one end in the carriage, upper and lower buffers *g g'* at or near its middle, and the elevating-screw at the other end connecting with the gun, all substantially as and for the purposes set forth.

3. In a transportable or field gun, the combination, with the carriage of the gun having its trunnions seated in rear of the carriage-axle, and the elevating mechanism consisting of the screw located between the gun and the carriage, the nut into which the screw works, a hand-wheel, and chain-and-sprocket gearing between the hand-wheel and nut, substantially as and for the purposes set forth.

4. The combination, with the gun-carriage, of the gun mounted thereon, the frame *e*, having cushioned bearing on the carriage, the nut carried by the frame, the screw connected to the gun and bearing in said nut, the hand-wheel, and sprocket-and-chain gearing between the wheel and nut for turning the latter with the former, as explained.

5. In a transportable or field gun, the combination, with the gun-carriage, the gun, and elevating mechanism, of the forked lever *e*, having cross-bar *h*, buffers *g* under the extremities of said cross-bar and supported by the gun-carriage, and a pivoted bolt *i*, passing centrally through the cross-bar for holding it to the carriage, said forked lever carrying the elevating mechanism and wheel and shaft for operating the same, substantially in the manner and for the purpose set forth.

MAX DREGER.

Witnesses:
HERMANN LUBOWSKI,
EMIL KALLNECKER.