

(No Model.)

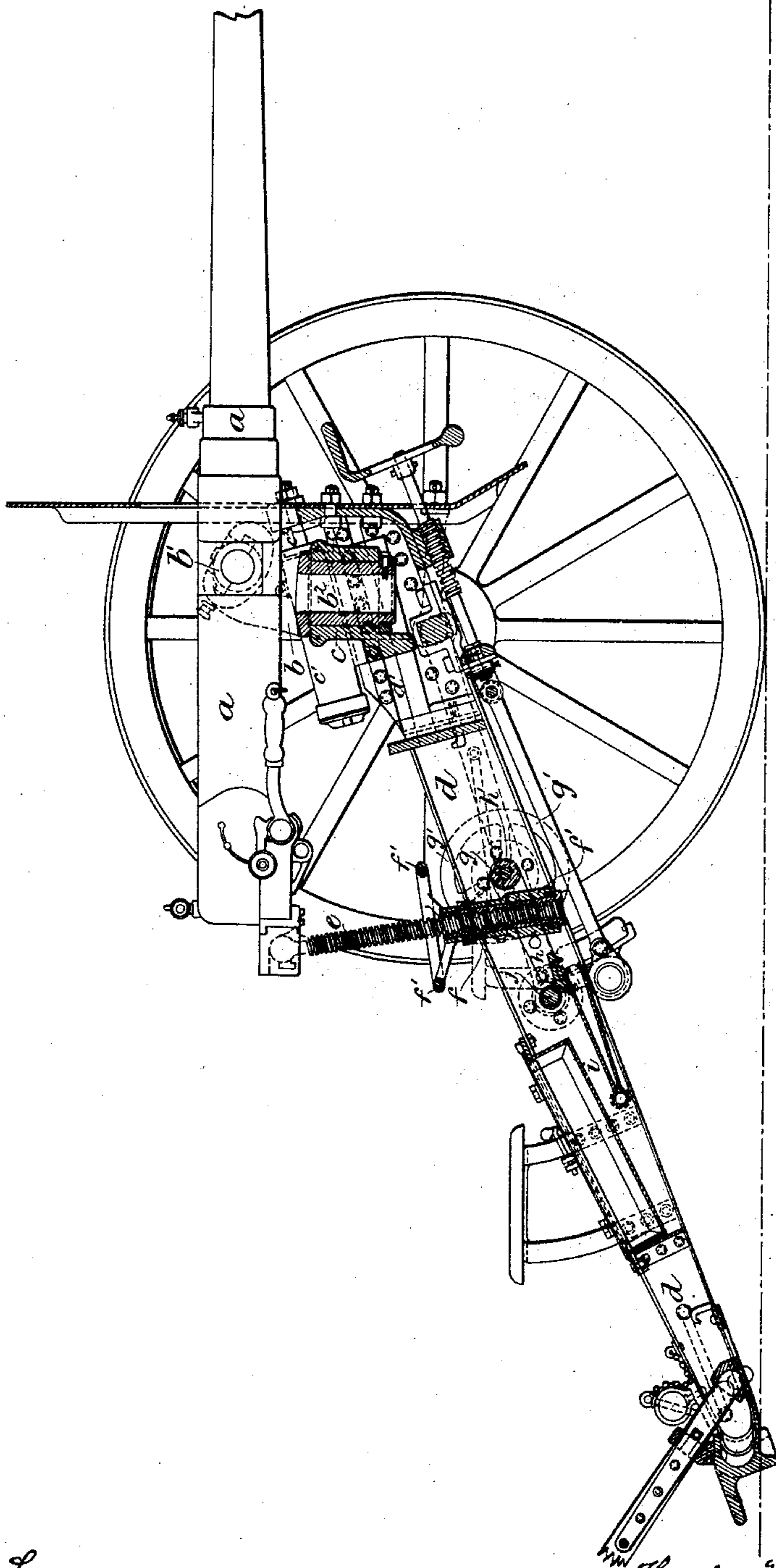
3 Sheets—Sheet 1.

T. NORDENFELT.  
MOUNTING FOR FIELD ARTILLERY.

No. 424,496.

Patented Apr. 1, 1890.

Fig. 1.



Witnesses  
Baltus D. Lory.  
C. M. Burke.

Inventor  
Thorsten Nordenfelt,  
By his Atty.  
Baldwin Davidson & Wright

(No Model.)

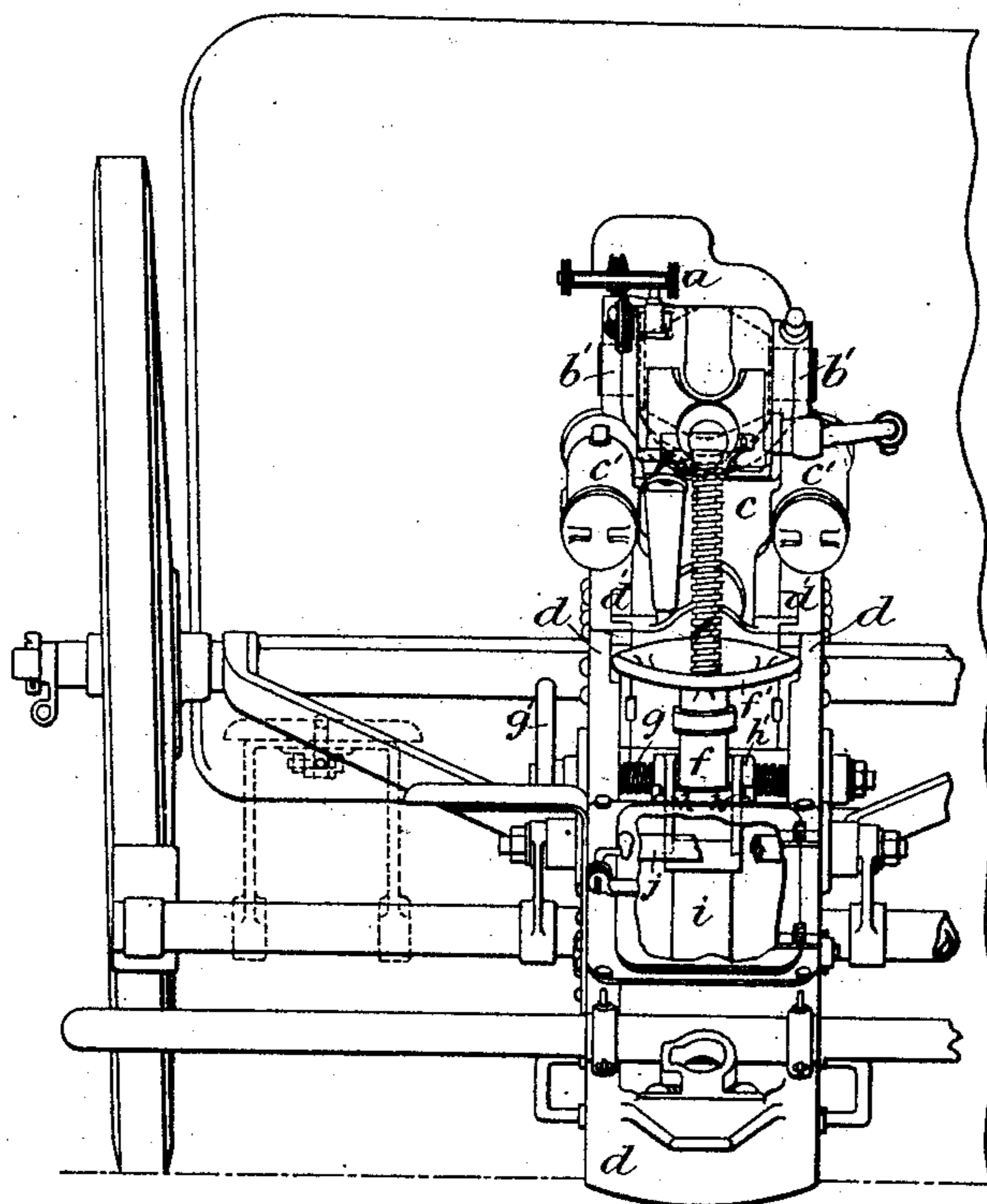
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T. NORDENFELT.  
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Patented Apr. 1, 1890.

*Fig. 2.*



Witnesses  
Baltus D. Long,  
C. M. Brooke.

Inventor  
Thorsten Nordenfelt,  
By his Atty.

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(No Model.)

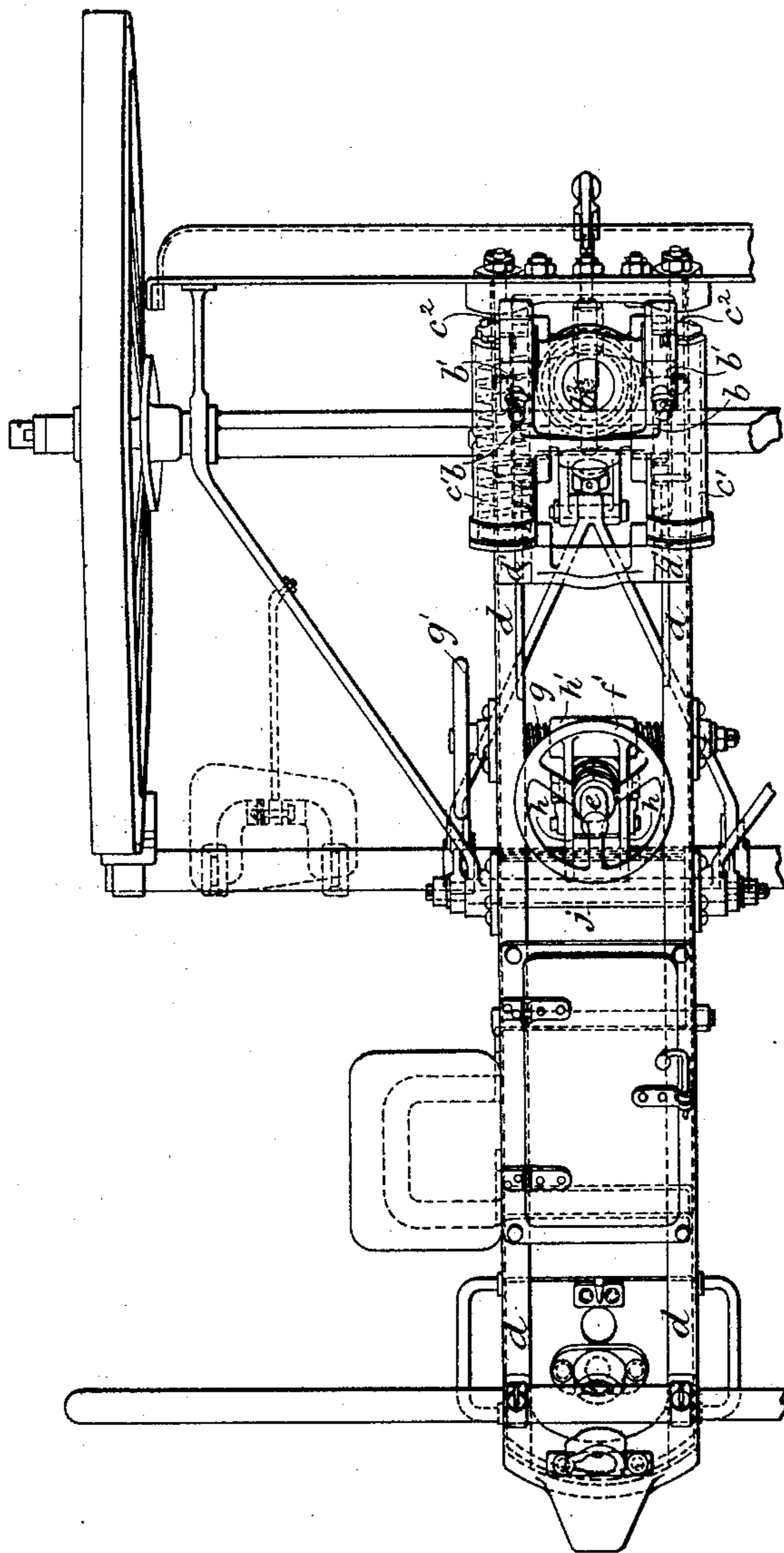
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Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

THORSTEN NORDENFELT, OF WESTMINSTER, ENGLAND, ASSIGNOR TO THE  
MAXIM-NORDENFELT GUNS AND AMMUNITION COMPANY, (LIMITED,) OF  
SAME PLACE.

## MOUNTING FOR FIELD-ARTILLERY.

SPECIFICATION forming part of Letters Patent No. 424,496, dated April 1, 1890.

Application filed October 1, 1889. Serial No. 325,636. (No model.) Patented in England December 13, 1887, No. 17,170.

*To all whom it may concern:*

Be it known that I, THORSTEN NORDENFELT, civil engineer, a subject of the King of Sweden, residing at 53 Parliament Street, in the city of Westminster, England, have invented certain new and useful Improvements in the Mounting of Guns for Field-Artillery, specially adapted for quick-firing guns, (for which I have received Letters Patent in Great Britain, No. 17,170, dated December 13, 1887,) of which the following is a specification.

This invention relates to a field-artillery mounting and aiming gear, by which the gun can be trained within certain limits without moving the trail.

In the annexed drawings, Figure 1 is an elevation, partly in section, of a gun-mounting arranged in accordance with my invention and with my aiming-gear. Fig. 2 is part of a rear elevation of the same. Fig. 3 is a plan of the mounting with the gun removed.

The gun *a*, I mount by its trunnions in the trunnion-bearings *b'* of a fork or cross-head *b* with a pivot *b<sup>2</sup>*, which fits in a socket *c*, provided with compressors *c'* (hydraulic or otherwise) for checking the recoil, and springs *c<sup>3</sup>* for again running the gun forward when the recoil ceases. The top of the trail *d* is provided with guide-planes *d'*, which control the movement of the socket *c*, and compressors which partake in the recoil of the gun. The piston-rods *c<sup>3</sup>* are fixed to the top of the trail, which is fastened to the axle. The other end of the trail *d* rests, as usual, on the ground when the shot is fired. The guide-planes at the top of the trail are placed so that the gun, cross-head, socket, and compressors will recoil in an inclined direction toward the ground. The springs which surround the piston-rods are strong enough to bring the gun up and forward into firing position ready for the discharge of the next round.

The gun *a* can be trained both laterally and vertically. At the breech of the gun an elevating-screw *e* is provided, which can be raised or lowered by turning a nut *f*, actuated by a hand-wheel *f'*. This nut is placed between the two trail sides and can be moved transversely by means of screw *g* with hand-wheel

*g'*. By moving the elevating-nut sidewise the gun gets lateral training. The connection between the elevating-nut and the traversing-screw is arranged in the following way. Between the trail sides and on each side of the elevating-nut are two checks *h*, which at one end are connected and form a nut *h'*, which is worked sidewise by the traversing-screw. The other ends are by a spring *i* pressed against a guide-bolt *j*, which keeps the sides of the trail together, and which, also, generally takes the brake-hinges and one end of the stays connecting the trail and the axle.

The spring *i*, I generally make of V shape and of the same width as the trail.

The elevating-nut *f* is contained in a jacket which is held between the checks *h* by means of trunnions or screws, round which it can pivot. The springs fit quite loosely in the holes in the check-piece *h*. When the gun recoils, the end of the elevating-screw follows the gun and the nut pivots on its centers. The end of the elevating-screw would then describe a circle; but as the gun recoils in a straight line the elevating-screw will be pressed down with its nut, which will, through the checks, compress the V-spring. In order to still more soften the blow, I sometimes place some india-rubber buffers in the nut. The position of the trunnions of the elevating-nut *f* are so chosen that in the recoil of the gun their movement will be the smallest possible, even when the gun is fired in different elevations.

The rest of the carriage is of ordinary description.

What I claim is—

1. The combination of the gun, the trail, the cross-head, the trunnions connecting the gun and the cross-head and moving with the gun during recoil, the socket-piece, in which a vertical pivot-piece of the cross-head is seated, and the compressors connected with the socket-piece and sliding on the trail, substantially as set forth.

2. The combination of the gun, the trail, the cross-head, to which the gun is connected, the backwardly-moving socket-piece, in which the cross-head is pivoted vertically, and the

compressors connected with the socket-piece and controlling the recoil thereof, substantially as set forth.

3. The combination, in a traveling carriage,  
5 of aiming-gear, consisting of the screw supporting the breech of the gun, a trunnion-nut with hand-wheel, a transverse screw with hand-wheel, and checks or arms carrying the

trunnion-nut and pivoting round the transverse screw, and a spring that keeps the said checks or arms pressed against a bearing, but yields to pressure on the elevating-screw.

THORSTEN NORDENFELT.

Witnesses:

HERBERT E. RICH,

F. N. NOEL.