

947,600.

E. SCHNEIDER.
RAMMING APPARATUS FOR GUNS.
APPLICATION FILED APR. 20, 1909.

Patented Jan. 25, 1910.
4 SHEETS—SHEET 1.

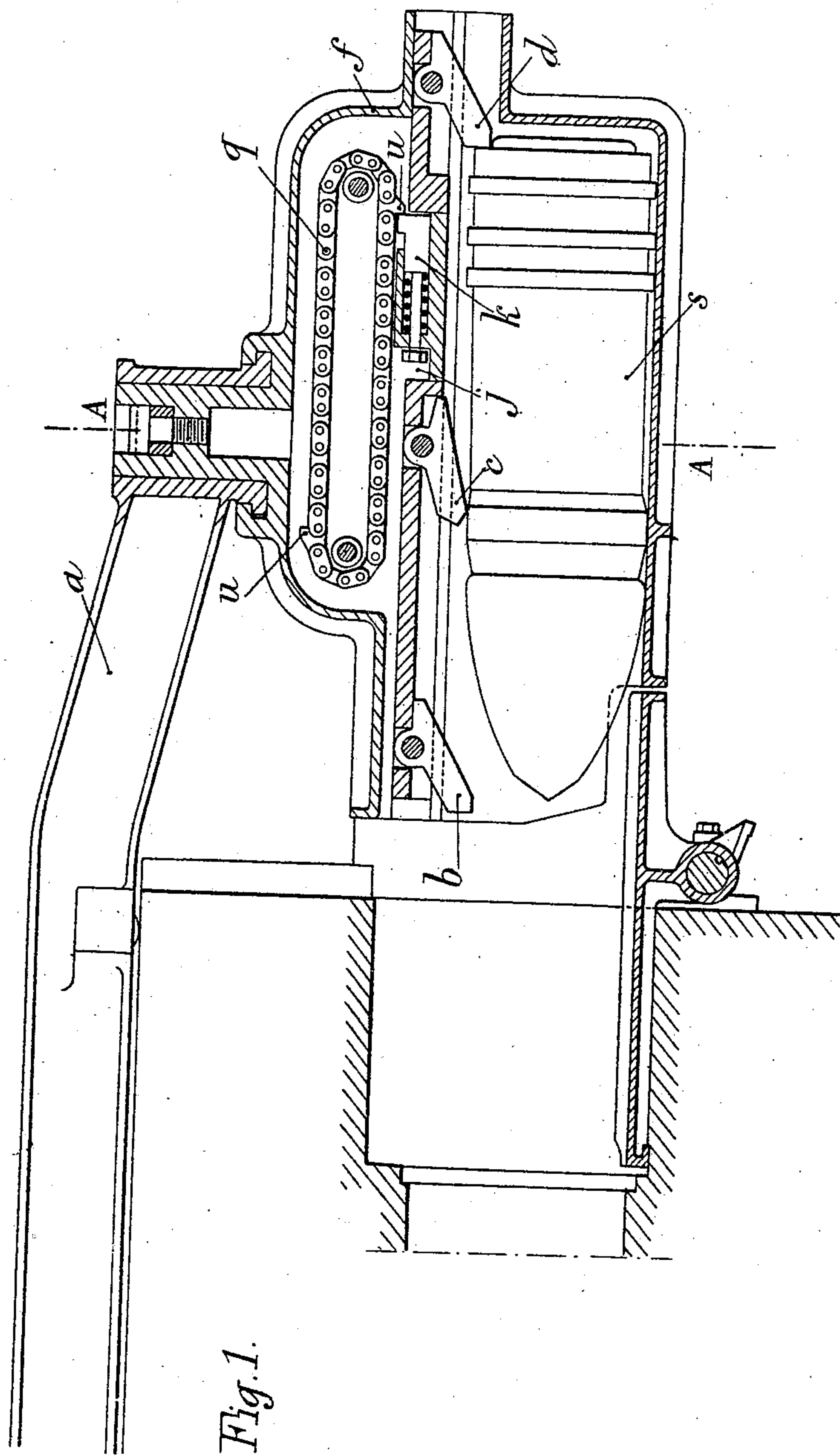


Fig. 1.

Witnesses:
Gustave R. Thompson
Ruth C. Fitzhugh.

Inventor:
Eugene Schneider
by
Mauro, Cameron, Lewis & Massie
Attys.

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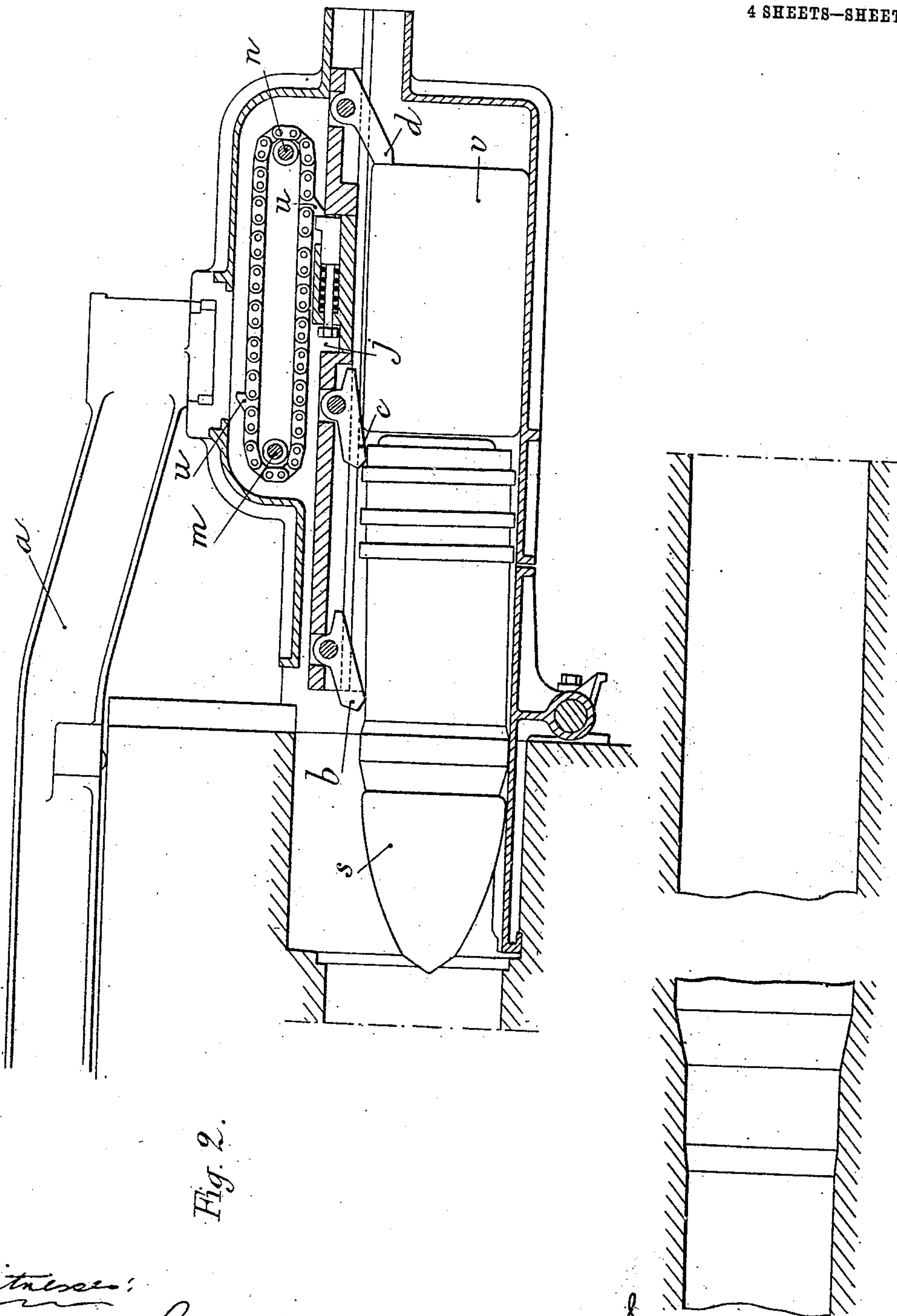


Fig. 2.

Witnesses:

Gustave R. Thompson

Ruth C. Fitzhugh

Inventor:

Eugene Schneider

by
Mauro, Cameron Lewis & Massie
Attys.

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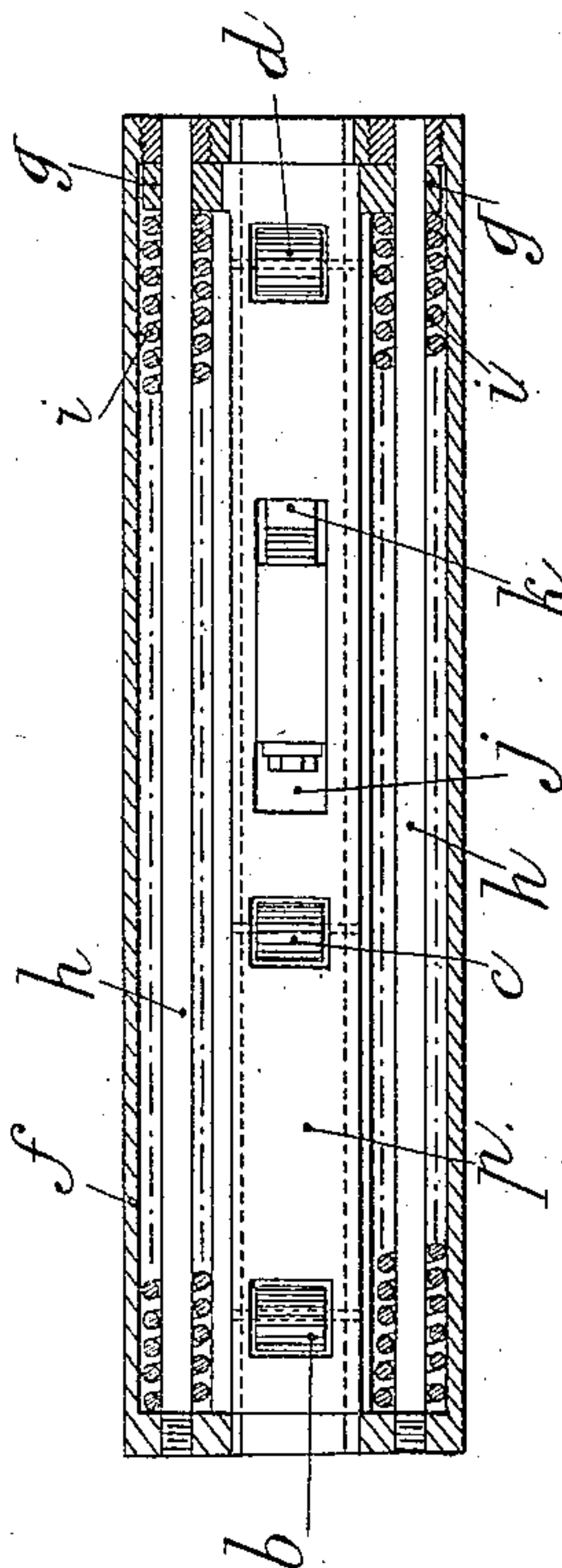
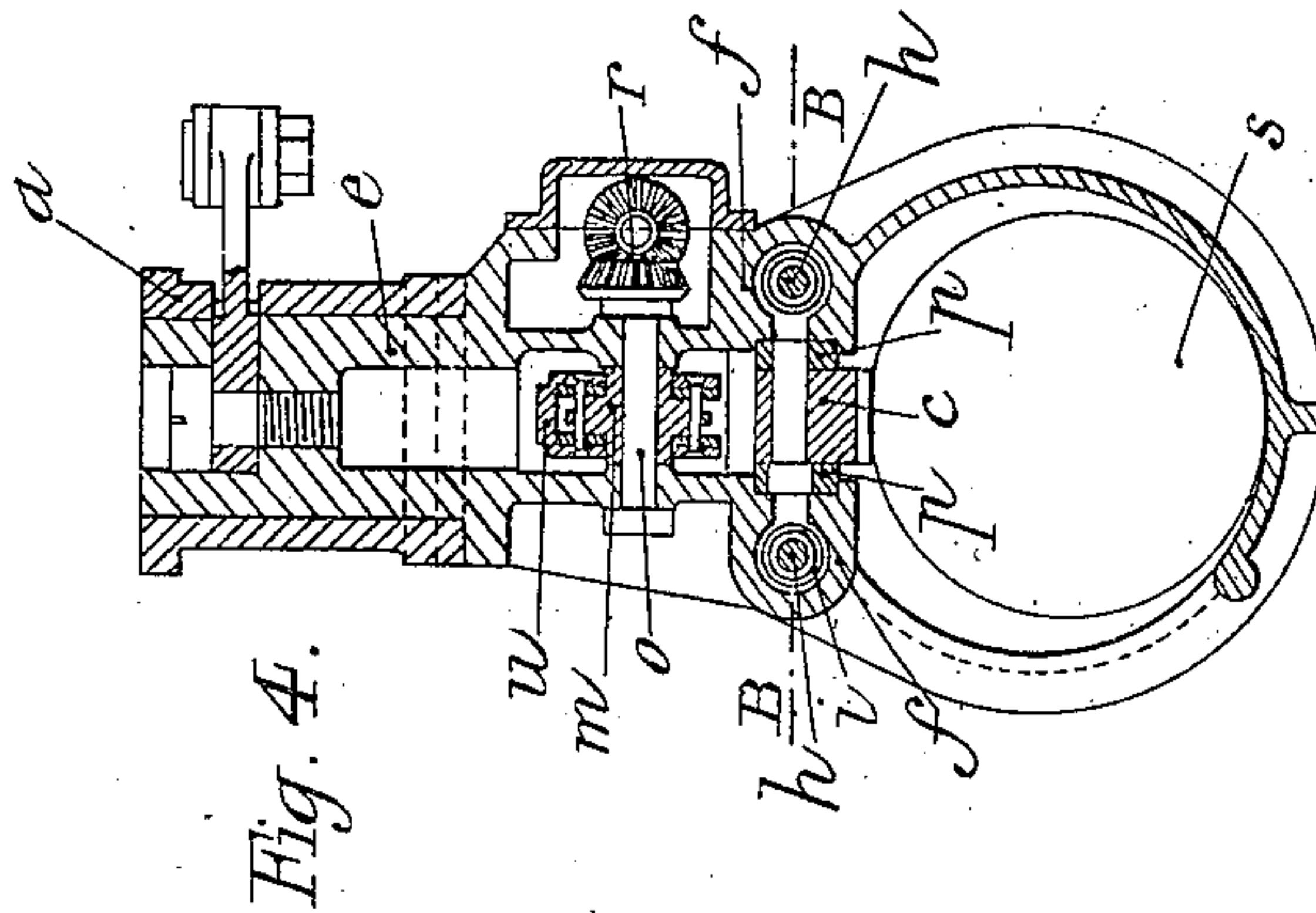
4 SHEETS--SHEET 3.



Mauro, Cameron, Lewis & Mason
Atty's.

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4 SHEETS--SHEET 4.



Witnesses:
Gustave R. Thompson
 Ruth C. Fitzhugh

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Inventor:
Eugene Schneider.
by
Mauro, Cameron, Lewis & Chassee
Atty.

UNITED STATES PATENT OFFICE.

EUGÈNE SCHNEIDER, OF LE CREUZOT, FRANCE.

RAMMING APPARATUS FOR GUNS.

947,600.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed April 20, 1909. Serial No. 491,042.

To all whom it may concern:

Be it known that I, EUGÈNE SCHNEIDER, residing at Le Creuzot, Saône et Loire, France, have invented a new and useful Improvement in and Relating to Ramming Apparatus for Ordnance, which is fully set forth in the following specification.

This invention relates to ramming apparatus for ordnance and has for its object the construction of a ramming apparatus which shall be of such dimensions as to be capable of being lodged in the loading tray or cradle and will not therefore interfere with other operations at the breech of the gun.

According to my invention, a rod or the like is guided in the walls of the loading tray or the like, and is provided with a series of hinged tappets and a resilient buffer with which a series of driving projections on an endless chain are adapted to engage, thus moving the said rod forward until contact between the projection and the resilient buffer ceases. The rod is then returned by the springs controlling the same, when the cycle is again repeated by another projection on the endless chain engaging with the buffer. By means of this reciprocating movement of the rod, the tappets pivoted thereon displace first the projectile and then each of the requisite number of cartridges and in this manner ram the whole into the correct position in the gun for firing.

In order that my invention may be more clearly understood and readily carried into effect the same will now be described with reference to the accompanying drawings, in which:—

Figures 1, 2 and 3 are longitudinal sectional elevations showing the mechanism in the initial, the intermediate and the final ramming positions respectively. Fig. 4 is a transverse section on a larger scale on the line A—A of Fig. 1. Fig. 5 is a longitudinal section also on a larger scale on the line B—B of Fig. 4.

As shown the ramming mechanism is attached to a loading tray or cradle *f*, which is suspended by a trunnion *e* from an arm *a* carried by the gun cradle, or said ramming mechanism may form part of the cage of a shell hoist. A movable rod *p* is guided laterally in grooves in the tray (Fig. 4), and has hinged to it a series of tappets *b*, *c*, *d*. At the rear of the rod, two collars *g*, each guided on a rod *h*, form an abutment for one extremity of a spring *i* the other extremity

of which bears on the bottom of a recess formed in the tray *f* or in the shell cage.

A resilient buffer is placed in a depression *j* formed in the rod *p*, the head *k* of which projects above the rod, while its rear extremity rests upon a spring *t*. The said rod is operated by driving mechanism composed of an endless chain *q*, mounted upon two pulleys *m*, *n*, and provided at intervals with projections *u* which engage with the projecting head *k* of the resilient buffer. The spindle *o* of one of the said pulleys carries a pinion *r*, which, by means of an appropriate gearing, is connected to a motor or a hand operated crank.

The projectile *s* and three or other suitable number of powder charges *v*, *w*, *x* are supplied in succession to the tray *f*. When the projectile *s* occupies the position shown in Fig. 1, the chain *q* is operated and one of the projections *u* of this chain comes into contact with the head *k* of the resilient buffer of the rod *p* and carries it forward until the projection is moved out of engagement owing to the passage of the chain around the pulley *m*. During this movement the rear tappets *d* of the rod *p* forces the projectile forward and when the buffer *k* is released by the projection *u* of the chain *q*, the said rod is drawn rearward by the springs *i* and resumes its original position as shown in Fig. 1. During the return movement of the rod *p*, the two front tappets *b* *c* rise in passing over the projectile and at the completion of this movement the rear tappet engages with one of the powder charges which has previously been placed in the loading tray. As the movement of the chain *q* is continuous, the rod *p* is again displaced by a second projection *u* on the chain, and the powder charge *v* is displaced by the rear tappets *d* the projectile *s* being thus forced farther into the gun. In a similar manner the third powder charge *x* is first of all rammed by the rear tappet *d* or the rod, then engaged by the middle tappet *c* and finally by the front tappet *b* which brings the entire charge into the firing position as illustrated in Fig. 3, the spring *t* of the buffer *k* being at this moment compressed to a greater or less extent according to the length of the charge to permit of the release of the projection *u* of the chain *q*. The complete ramming operation is thus effected by the continuous reciprocating of a ramming member which is short compared with the complete charge.

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

1. In a ramming apparatus for ordnance, the combination of a ramming rod provided
5 with tappets to engage successively with the projectile and a powder charge, and means for reciprocating said rammer rod.
2. In ramming apparatus for ordnance, the combination of a spring-pressed ramming
10 rod provided with tappets for engaging successively with the projectile and a powder charge, and an endless chain for advancing said rod into charging position against the tension of said spring.
- 15 3. In ramming apparatus for ordnance, the combination of a ramming rod, a spring device normally holding said rod out of charging position, an endless chain for advancing said rod into charging position, and a spring-
20 pressed buffer through which power is transmitted from said chain to said rod.
4. In ramming apparatus for ordnance, the combination of a ramming rod provided with
25 a spring-pressed buffer, a spring device for

position, an endless chain engaging said buffer and adapted to advance said rod into charging position.

5. In a ramming apparatus for ordnance, the combination of a ramming rod, a spring-
30 cushioned buffer on said rod, and an endless chain having projections engaging said buffer and adapted to advance said rod into charging position.

6. In ramming apparatus for ordnance, the
35 combination of a reciprocating rammer rod provided with a plurality of tappets for successively engaging an ordnance charge, a spring device normally holding said rod out
40 of charging position, a spring-cushioned buffer on said rod, and means for successively engaging said buffer for advancing said rod into charging position.

In testimony whereof I have signed this specification in the presence of two subscrib-
45 ing witnesses.

EUGÈNE SCHNEIDER.

Witnesses:

DEAN B. MASON,
J. DES PORTS.