

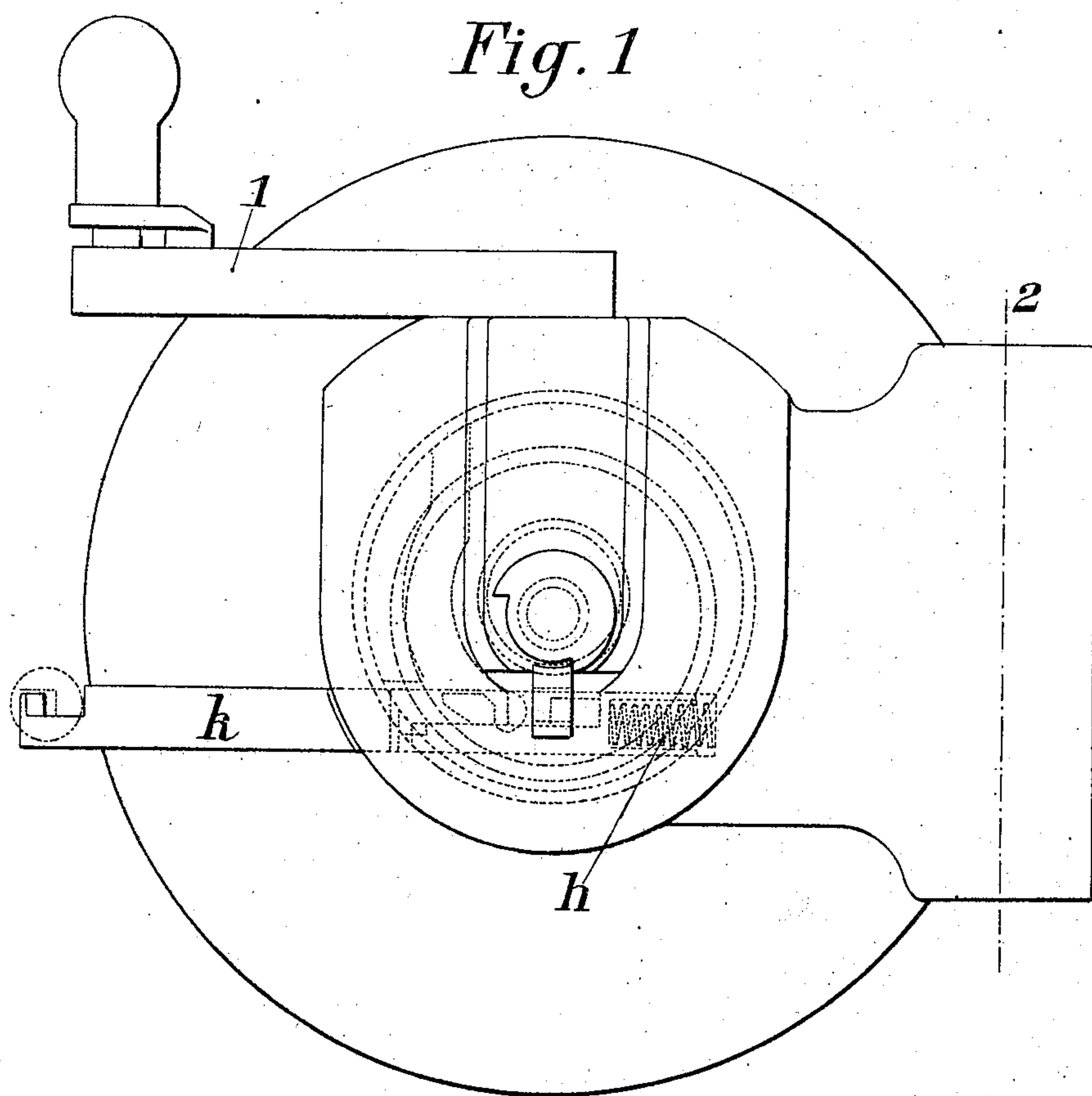
No. 788,432.

PATENTED APR. 25, 1905.

C. P. E. SCHNEIDER.
FIRING MECHANISM FOR BREECH LOADING GUNS.

APPLICATION FILED APR. 30, 1903.

2 SHEETS—SHEET 1.



Witnesses:
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Gustave R. Thompson.

Inventor:
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by
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2 SHEETS—SHEET 2.

Fig. 2.

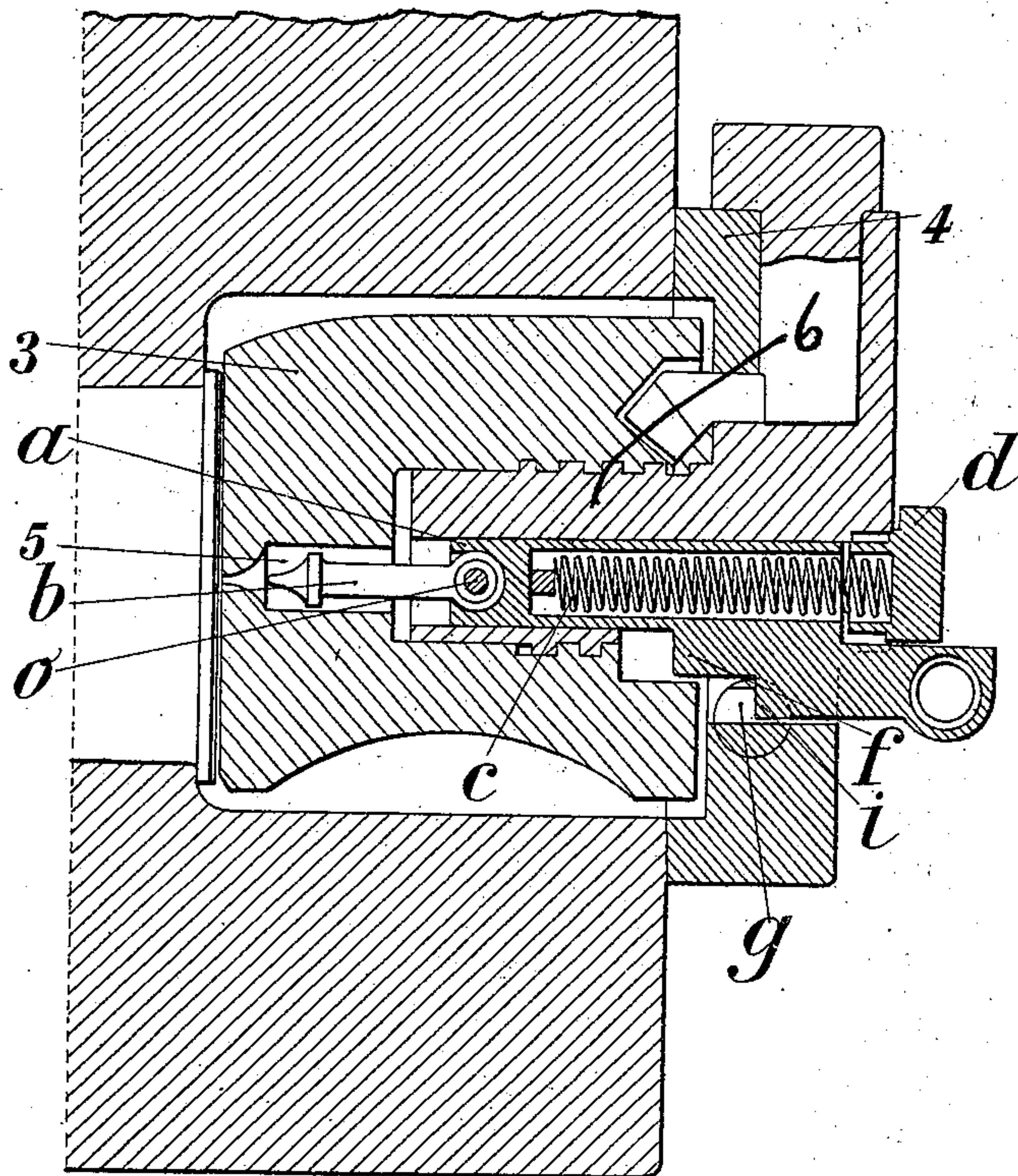
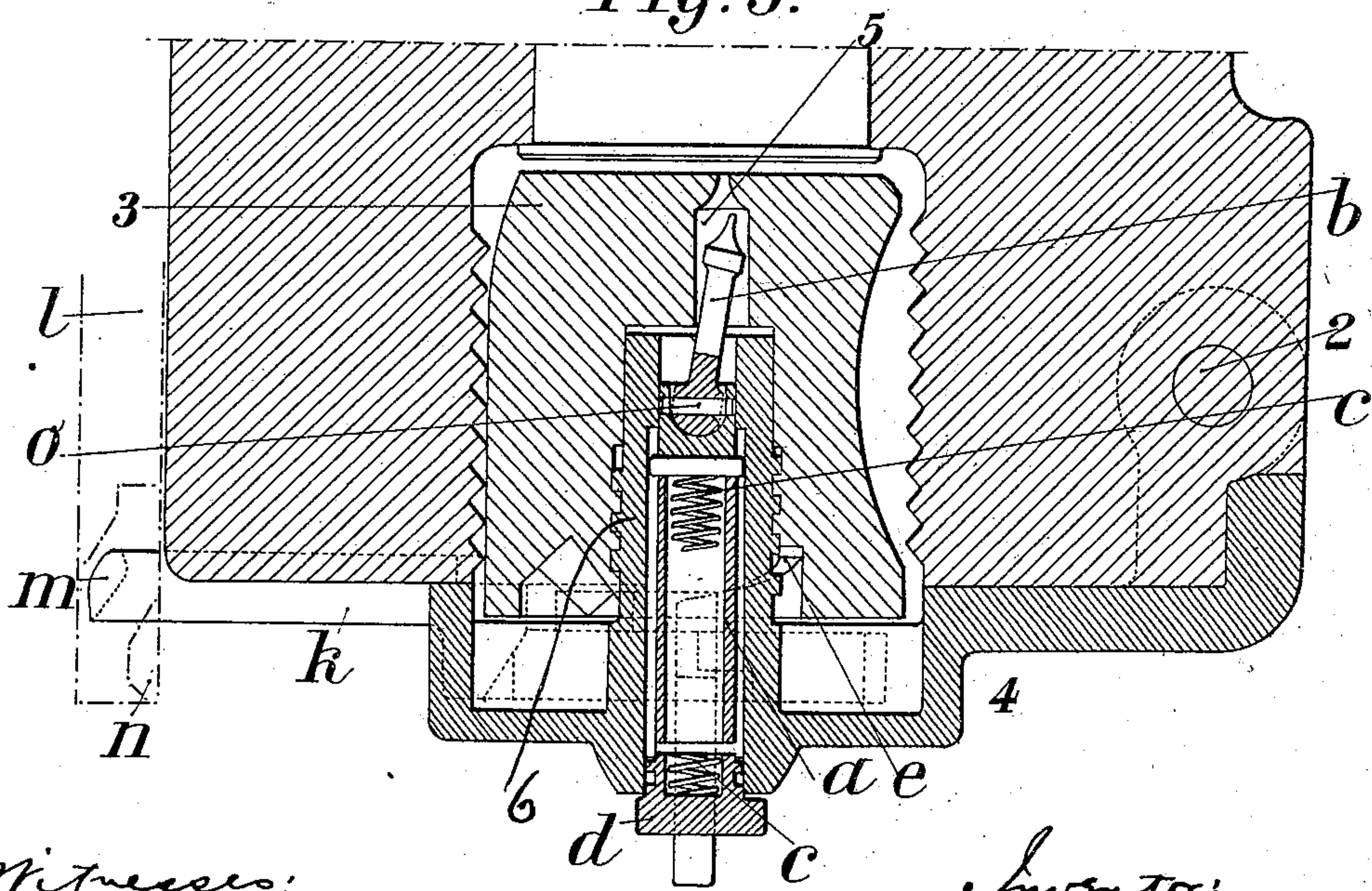


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES PROSPER EUGENE SCHNEIDER, OF LE CREUZOT, FRANCE.

FIRING MECHANISM FOR BREECH-LOADING GUNS.

SPECIFICATION forming part of Letters Patent No. 788,432, dated April 25, 1905.

Application filed April 30, 1903. Serial No. 155,083.

To all whom it may concern:

Be it known that I, CHARLES PROSPER EUGENE SCHNEIDER, of Le Creuzot, Saône-et-Loire, in the Republic of France, have invented certain new and useful Improvements Relating to the Firing Mechanism of Breech-Loading Guns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to firing mechanism for breech-loading guns of the kind that are provided with a breech-screw rotatably mounted on a swinging carrier pivoted to the gun, and has for its object to provide a safety firing mechanism which cannot be operated to discharge the gun unless the breech-block is closed and so turned as to fully lock it in the breech.

The improvements are illustrated in the accompanying drawings, in which—

Figure 1 is a rear elevation, and Fig. 2 a vertical section, of the breech end of a gun with the breech closed and the parts in firing position. Fig. 3 is a horizontal section with the breech-screw unscrewed and ready to be withdrawn from the gun.

Referring to the drawings, 1 is a suitable hand-lever, the single movement of which effects the turning of the breech-block 3 to unlock it from the gun and the swinging of the carrier 4 around its pivot 2 to open the breech. The breech-block 3 is slightly eccentric to the bore of the gun and is provided with a firing-pin opening 5, which when the block is locked in firing position is concentric with the gun's bore, as shown in Fig. 2, but which when the block is unscrewed and ready to be withdrawn from the breech, as shown in Fig. 3, is slightly eccentric to the bore of the gun. The breech-block may be mounted in any suitable way upon the carrier, and as here shown it is supported upon an inwardly-projecting hub or boss 6, secured to the inner face of the carrier 4, and which, if desired, may be formed integrally with the carrier. Within this hub 6 is formed an axial bore which when the breech-block is closed is concentric with the bore of the gun, and within the axial

bore of the hub 6 is mounted the firing-pin, consisting of the body portion *a* and the nose or striking part *b*, suitably articulated thereto, preferably by means of a spherical joint *c*. The body portion *a* is hollow, and the firing-pin spring *c* is mounted within the hollow body *a* and reacts between said body and an abutment *d*, secured in the carrier. The breech-block is provided on its interior rear surface with a helical or cam surface *e*, and the firing-pin body *a* is provided with a shoulder *f*, projecting to the rear of the helical surface *e* of the breech-block. When the gun has been fired, the shoulder *f* on the firing-pin body rests against the helical surface *e* upon the breech-block, and in the act of unscrewing the block to open the breech the surface *e* acts to force back the firing-pin against the tension of its spring *c*. Mounted in the carrier is a transverse sear *g*, provided with a sear-spring *h*, which normally forces the sear into position to engage a shoulder *i* on the body of the firing-pin just as the breech-block has been unscrewed. The sear may be actuated by hand to free the firing-pin or may be operated through the medium of a push-rod *k*, actuated by the aid of a transmission or firing rod *l* under the control of the gunner.

From the foregoing it will be seen that the firing-pin is always supported by the carrier in the axis of the gun when the breech-block is inserted within the breech, but that owing to the eccentric mounting of the breech-block the firing-pin cannot be actuated to discharge the gun unless the breech-block is turned to its fully-locked position, at which time the recess or opening 5 in the block also comes into line with the axis of the gun and the firing-pin supported by the carrier.

Assuming the gun to have been fired, in the operation of opening the breech the breech-block is turned on its axis by the first movement of the handle 1, and this turning movement of the breech-block acts to simultaneously withdraw the firing-pin and to shift the firing-pin opening or recess 5 out of the axial line of the gun, so that by the time the breech-block has reached its fully unlocked or unscrewed position, as shown in Fig. 3, it is held

in this position by the engagement of the sear *g* with the shoulder *i* on the firing-pin, even though the breech-block be again turned to locking position, at which time the firing-pin opening 5 will again come into alinement with the firing-pin. Should the sear, however, become disengaged from the sear-shoulder *i* on the firing-pin at any time when the breech-block was not fully locked the helical surface 10 *e* of the breech-block would be engaged by the shoulder *f* on the firing-pin and prevent the latter from moving forward far enough to strike the primer of the cartridge, which latter action would also be rendered impossible by reason of the fact that the firing-pin 15 opening or recess 5 would be out of alinement with the firing-pin. The safety of the firing mechanism is therefore doubly assured by reason of the fact that the block is never in 20 position to permit the firing-pin to move forward unless the block is fully locked, and if by any accident the shoulder *f* on the firing-pin should break or otherwise fail to act and permit the firing-pin to reach its foremost position 25 before the breech-block was fully screwed home the cartridge would not be discharged, because the firing-pin recess 5 would not be over the primer.

Having thus described the invention, what 30 is claimed is—

1. In a breech-loading gun, the combination of a breech-block revoluble eccentrically in the gun-breech, a carrier supporting said block, and a jointed firing-pin supported by 35 the carrier in the gun's axis.

2. In a breech-loading gun, the combination of a revoluble breech-block having an opening therethrough eccentric to the axis of said block and in the gun's axis when the block

is locked, a carrier also having an opening in 40 the line of the gun's axis when the block is inserted in the breech, and a jointed firing-pin moving in said openings to discharge the gun.

3. In a breech-loading gun, the combination of an eccentrically-revoluble breech-block 45 having an opening therethrough in the gun's axis when the block is locked, a carrier also having an opening in the line of the gun's axis when the block is inserted in the breech, and a jointed firing-pin supported in the opening 50 in the carrier and having its nose projecting into the opening in the block.

4. In a breech-loading gun, the combination of a swinging breech-block carrier having an opening concentric with the gun's bore 55 when the carrier is closed against the breech, a breech-block rotatably mounted on the carrier eccentrically to the breech and provided with a helical rearwardly-inclined surface, and a jointed firing-pin mounted in the opening in 60 the carrier and provided with a shoulder projecting to the rear of the said helical surface.

5. In a breech-loading gun, the combination of a breech-block revoluble eccentrically in the gun-breech, a carrier supporting said 65 block, a firing-pin supported by the carrier in the gun's axis, said breech-block being provided with a helical rearwardly-inclined surface, a shoulder on said firing-pin for engaging said inclined surface whereby the firing- 70 pin may be cocked and a nose-piece articulated to said firing-pin.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHARLES PROSPER EUGENE SCHNEIDER.

Witnesses:

EDMOND BLAISE,

JEAN GAMET.