

(No Model.)

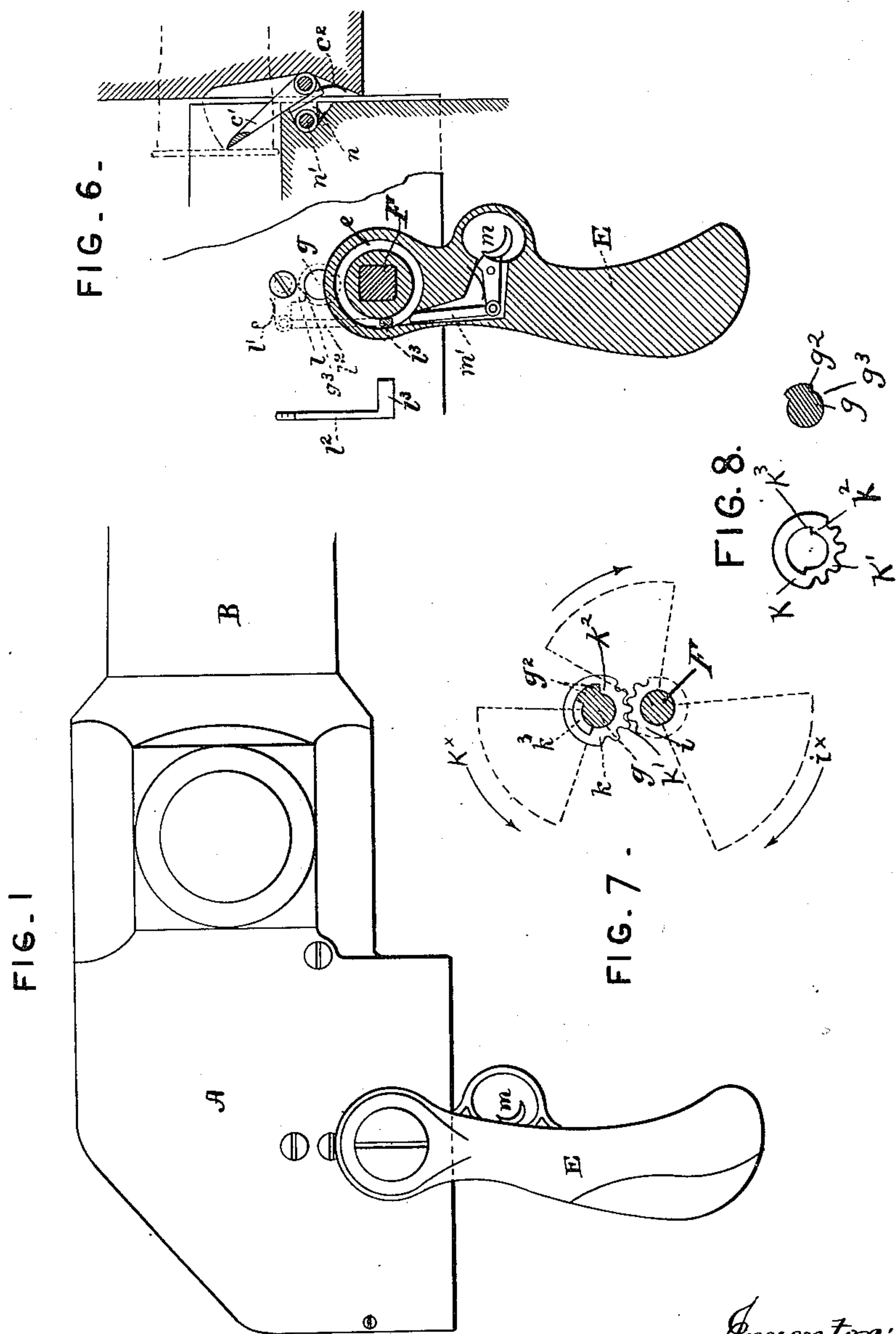
2 Sheets—Sheet 1.

C. RÖSTEL.

BREECH LOADING GUN.

No. 369,964.

Patented Sept. 13, 1887.



Attest:
Geo. T. Smallwood.
F. A. Hopman

Inventor:
Carl Röstel.
By Knights Bros
attys

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2 Sheets—Sheet 2.

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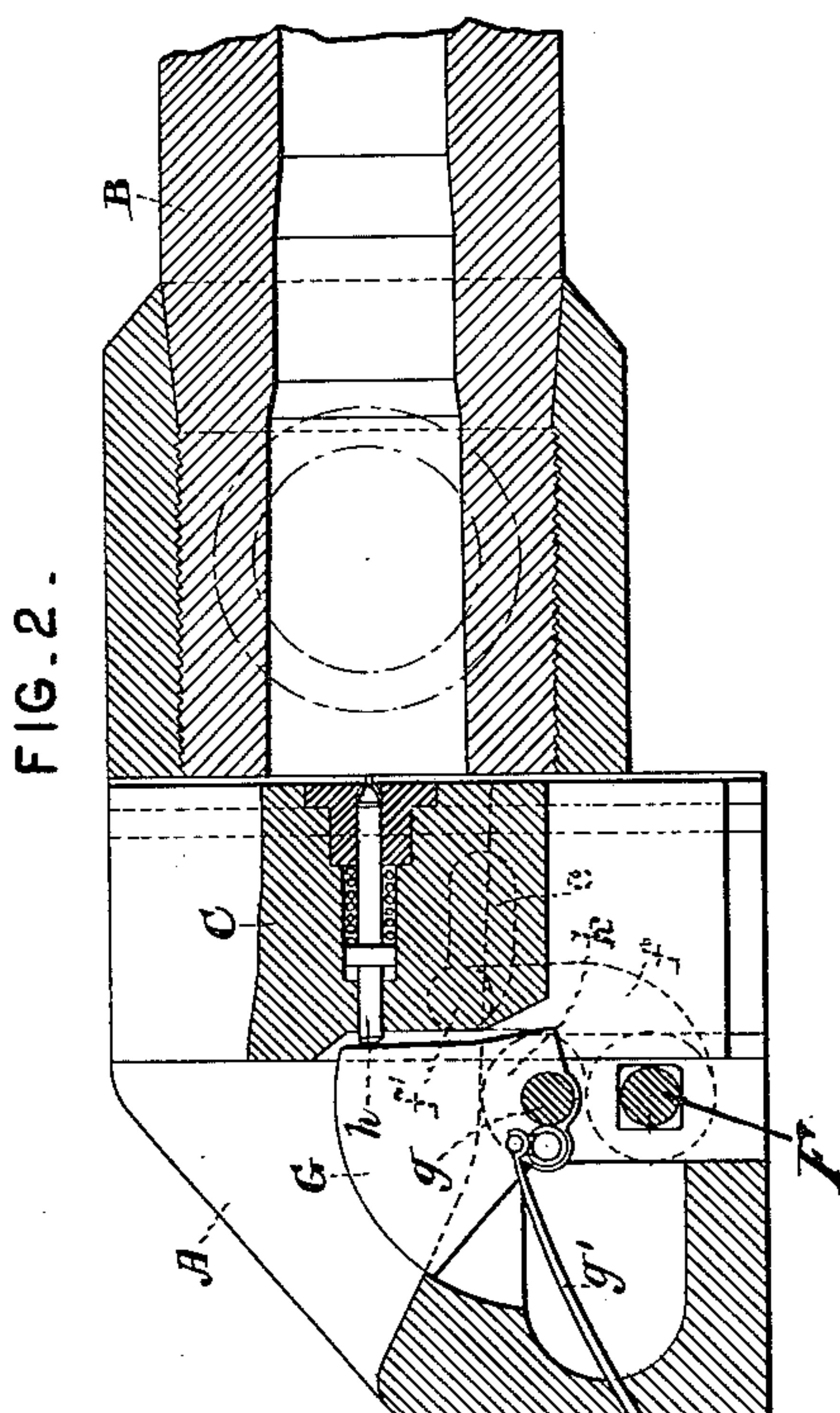


Fig. 2.

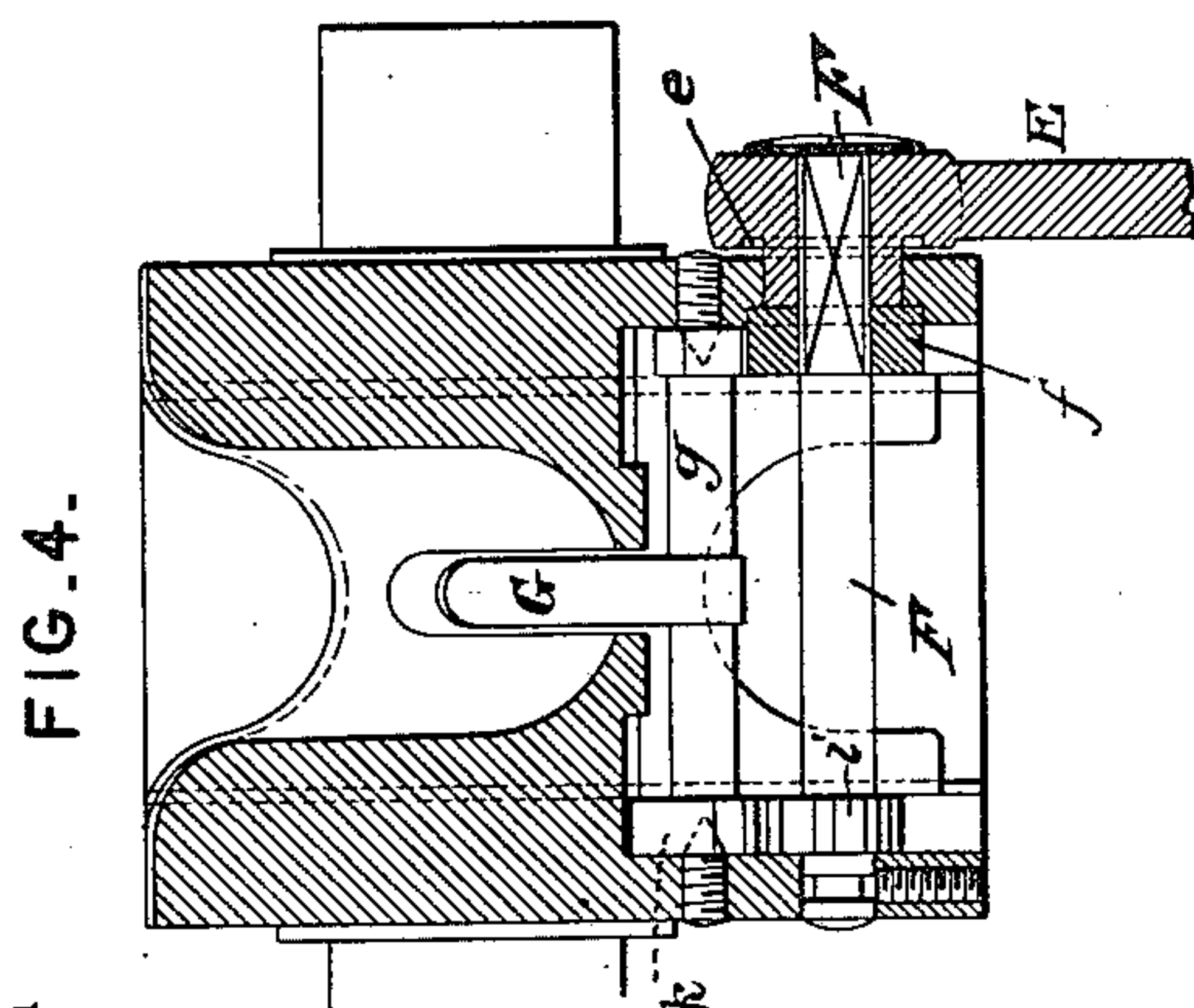


FIG. 4.

Attest:
Geo. T. Smallwood,
F. A. No. 11, Rine.

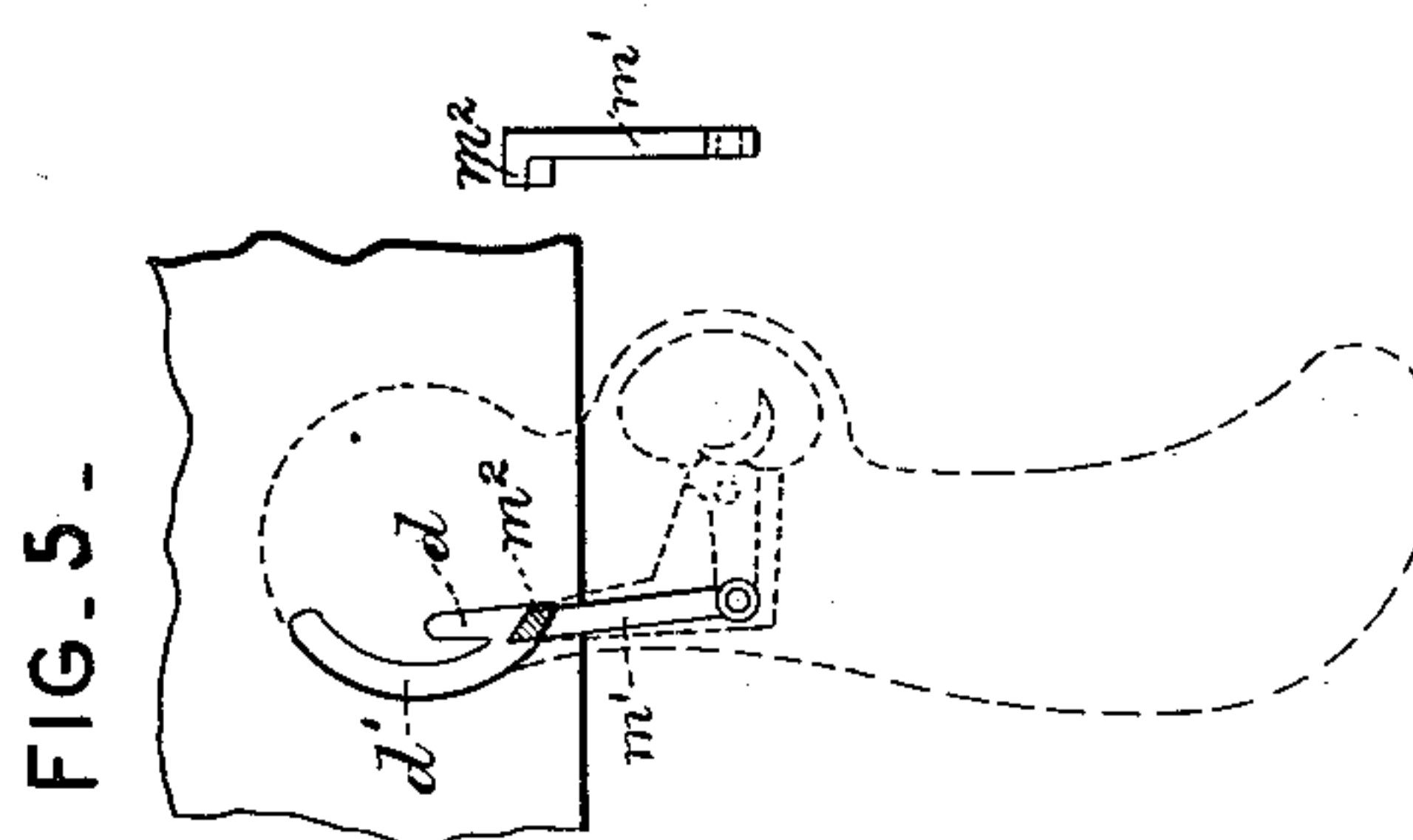


Fig. 5.

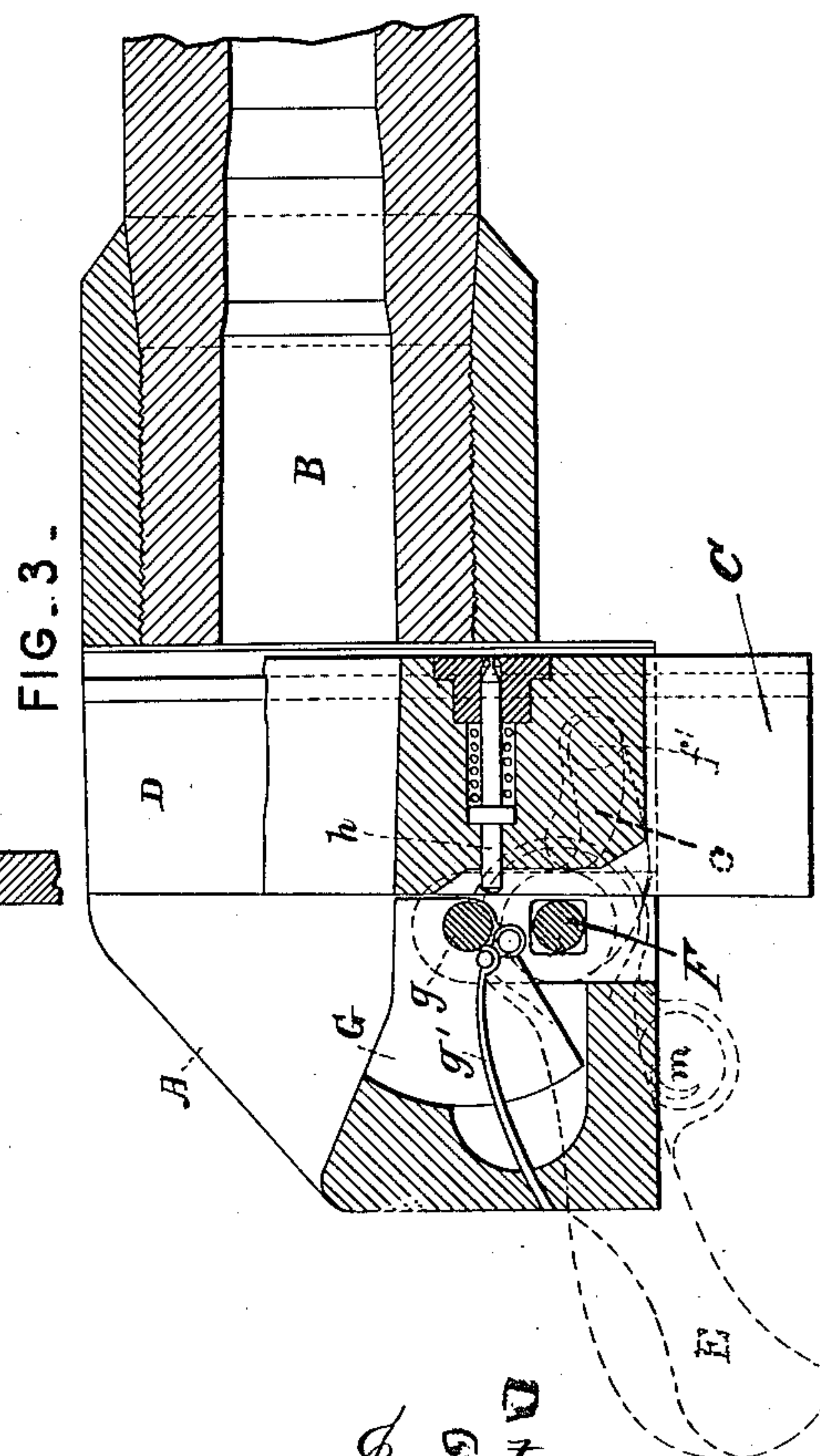


FIG 3

Inventor:
Carl Röstel.

Rey Knight Pro
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UNITED STATES PATENT OFFICE.

CARL RÖSTEL, OF BUCKAU, NEAR MAGDEBURG, PRUSSIA, GERMANY,
ASSIGNOR TO GRUSONWERK, OF SAME PLACE.

BREECH-LOADING GUN.

SPECIFICATION forming part of Letters Patent No. 369,964, dated September 13, 1887.

Application filed January 13, 1887. Serial No. 224,273. (No model.) Patented in Germany July 21, 1885, No. 34,266; in France September 4, 1885, No. 171,010; in Belgium June 4, 1886, No. 73,354; in Italy June 30, 1886, XX, 20,056, XL, 48, and in Austria-Hungary September 30, 1886, No. 22,273 and No. 50,365.

To all whom it may concern:

Be it known that I, CARL RÖSTEL, a subject of the King of Prussia, and a resident of Buckau, near Magdeburg, Prussia, German Empire, have invented certain new and useful Improvements in Breech-Loading Fire-Arms, (for which I have obtained patents in the following countries, to wit: Germany, No. 34,266, dated July 21, 1885; France, No. 171,010, dated September 4, 1885; Belgium, No. 73,354, dated June 4, 1886; Italy, XX, 20,056, XL, 48, dated June 30, 1886; Austria-Hungary, No. 22,273 and No. 50,365, dated September 30, 1886,) of which the following is a specification.

This invention relates to breech-loading guns of that kind or class wherein the breech-block is fitted to slide up and down in a chamber at the rear of the barrel and is arranged to be raised and lowered by means of a lever operated by hand.

The object of the said invention is to so construct guns of this class that the opening and closing of the breech, the firing, and the extracting can be performed by one hand without removing the same from the operating-lever. For this purpose I arrange the trigger in or upon the said lever and provide suitable means for connecting the said trigger with the sear.

In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 a vertical longitudinal central section, of parts of a gun constructed according to the present invention, showing the parts in the positions which they occupy immediately after the gun has been fired. Fig. 3 is a vertical longitudinal central section showing the parts in the positions which they occupy when the gun is ready for loading. Fig. 4 is a transverse section through the lock-case. Figs. 5 and 6 are different views, hereinafter referred to, showing details of construction. Fig. 7 is a diagram illustrating the manner in which the cocking of the hammer is effected. Fig. 8 shows in detail a cross-section of the pivot-shaft of the hammer and an elevation of the cocking-tumbler.

Like letters indicate corresponding parts throughout the drawings.

A is the breech; B, the barrel; C, the breech-block, which is fitted to slide up and down in a slot or chamber, D, at the rear of the barrel B.

E is the lever for operating the breech mechanism of the gun. This lever is fixed on a shaft, F, on which is also fixed a crank, *f*. The crank-pin *f'* is arranged to work in a curved slot, *c*, in the breech-block C, so that when the lever E is moved in one or the other direction the said block will be raised or lowered.

G is the hammer, which is pivoted at *g* and is acted upon by a spring, *g'*, whereby it is driven at the proper time against the firing-pin *h*. The hammer is drawn back or cocked by means of the operating-lever E in its upward and rearward movement through the instrumentality of the following parts: Rigid with the hammer formed on its shaft or pivot *g* is a shoulder, *g²*, adjoining which is clearance *g³*, for permitting the movement to and from said shoulder of a second shoulder, *k²*, formed on a part, *k*, which I prefer to call the "tumbler," similar clearance, *k³*, being adjacent the shoulder *k²*, for permitting the movement of the shoulder *g²*. The tumbler *k* is shown in Fig. 7 as of ring shape encircling the shaft *g*, on which it is capable of independent movement to the extent permitted by the clearances *g³* and *k³*. One side of the tumbler is provided on its exterior with teeth *k'*, which mesh with similar teeth formed on a collar or segment, *i*, fixed rigidly to the shaft F.

Fig. 7 shows the positions which the parts occupy when the hammer is down and the operating-lever E in normal position.

To raise the hammer the lever E is moved from the position shown in Figs. 1, 5, and 6 to that shown in Fig. 3. This moves the segment *i* in the direction of the arrow *i^x*, which in turn causes the tumbler *k* to be moved in the direction of the arrow *k^x*. The shoulders *g²* and *k²* being always in contact while the hammer is down, the latter impinging against the forward side of the former, will cause the shaft *g* to move in unison with tumbler *k*, thereby elevating the hammer until it arrives at cocked position, where it is held by the sear, in the manner hereinafter described. The operat-

ing lever may now be returned to its normal position, and in so doing the shoulders g^2 k^2 move through the clearances k^2 and g^2 , respectively. When the lever has arrived at its normal position and the hammer is left in cocked position, there will be a space between the shoulders g^2 and k^2 , through which the shoulder g^2 moves during the descent of the hammer. The said hammer is retained in its cocked position by a sear, l , which is acted upon by a spring, l' , whereby it is caused to engage with a shoulder or projection, g^2 , upon the shaft or pivot g as soon as this shoulder or projection has passed under the said sear.

Pivotaly connected to the sear l is a rod or pin, l' , (hereinafter called the "sear-pin,") at the lower extremity of which is a lug, l'' , projecting at right angles therefrom and entering a groove, e , formed in the side of the operating-lever E, concentrically with its center of motion. This groove being concentric with the shaft i' , the movement of the lever E will of course have no effect upon the sear, while the groove e will operate to maintain the lower end of the sear-pin normally in fixed relation to the other parts. The trigger m is carried by and pivoted to the operating-lever E, and is coupled to a push-pin, m' , which latter is provided at its free extremity with a projection, m^2 , working in a groove or slot formed in the wall of the chamber D. (See Fig. 5.) This groove or slot has two branches, d and d' , the latter of which is formed concentrically with the slot e , but of greater radius, while the former intersects the plane of the said slot e . The result is that when the trigger is in its normal or forward position and the operating-lever E in its normal or forward position, the projection m^2 on the free extremity of the push-pin m' will occupy a position opposite both branches d and d' of the groove. Now, if, without pressing upon the trigger, the lever E be moved to shift the breech-block c , the projection m^2 from the push-pin m' will be moved into the branch d' of the groove, and while it remains in this branch it is manifest that it cannot act upon the sear-pin l' , because the groove d' causes it to move in a plane outside of the plane of the projection l'' . Now, if the operating-lever E be returned to its normal or forward position, the projection m^2 again comes to the position shown in Fig. 5, opposite both branches d and d' of the slot. If while the operating-lever remains in this position the trigger is pressed, the push-pin m' will be moved endwise in its bearing, and the branch d of the slot being directly in line therewith, it is manifest that the projection m^2 will enter said branch and impinge against the lower extremity of the sear-pin l' , thereby shifting it, and consequently the sear l , freeing the hammer and permitting it to be impelled against the firing-pin by the spring g' .

For extracting the empty cartridge-shells from the barrel a lever, n , is pivoted at n' , and is arranged to be operated in the down-

ward movement of the breech-block C by means of a pivoted piece, c' , carried by the said block. This piece c' is acted upon by a spring, c'' , which normally holds the said piece in position to engage with the lever n , but which yields to permit the said piece to pass over the lever in the upward movement of the breech-block. Any other suitable means may, however, be used for effecting the extraction of the empty cartridges.

The operation of the gun is extremely simple. The gunner keeps the forefinger of his right hand uninterruptedly upon the trigger. After firing the gun he turns the operating-lever E upward and thus opens the breech, extracts the empty cartridge from the barrel, and cocks the hammer; then, with his left hand, he pushes a fresh cartridge into the barrel. He then turns the said lever downward and thus closes the breech, so that the gun is again ready for firing and his finger is in position to pull the trigger.

I claim—

1. The combination, with the hammer, a shoulder rigid therewith, and clearance adjoining said shoulder, of a tumbler having a shoulder and clearance adjoining said shoulder, said shoulders being adapted to engage each other, each occupying the clearance adjoining the other, and means for moving said tumbler to and fro, whereby the hammer is cocked by its movement in one direction and the two shoulders moved asunder, each moving through the clearance adjoining the other when said tumbler is moved in the other direction, substantially as set forth.

2. The combination, with the hammer G, the pivot-shaft g , to which it is secured, having the shoulder g^2 , and the clearance g^2 , adjoining said shoulder, of the tumbler k , having shoulder k^2 and clearance k^2 , said shoulders being adapted to engage with each other, substantially as set forth, the spring for impelling the hammer, and means for oscillating the tumbler, for the purpose set forth.

3. The combination of the shaft g , having the shoulder g^2 , the hammer G, secured to said shaft, the spring for impelling the hammer, the tumbler k , having shoulder k^2 , engaging shoulder g^2 , the teeth k' , formed on the tumbler, the toothed segment i , engaging the teeth k' of the tumbler, and the lever E, for operating said segment, substantially as set forth.

4. The combination, with the hammer G and the spring for impelling it, of the tumbler k , perforated and having shoulder k^2 , clearance k^2 , adjoining said shoulder, and teeth k' on its periphery, the shaft g , passed loosely through said perforation, having the shoulder g^2 and clearance g^2 , adjoining said shoulder, the segment i , gearing with the teeth k' of the tumbler k , the shaft i' , to which the segment i is fixed, and the operating-lever E, fixed to the shaft i' , substantially as and for the purposes set forth.

5. In a gun-lock, the firing mechanism and

the breech-block, in combination with an operating-lever, a trigger pivoted thereto, a push-pin carried thereby, and a groove in the surface of the lock-case for engaging the push-pin when the operating-lever is moved from normal position to prevent the said push-pin from releasing the hammer, substantially in the manner and for the purpose set forth.

6. The combination, with the lock-case having the groove d' formed therein, the firing mechanism contained within said case, and the operating-lever, of the trigger carried by said lever, and the push-pin m' , having the projection m^2 , adapted to enter said groove d' when the operating-lever is moved from normal position, in order to prevent the push-pin from operating upon the firing mechanism, substantially as set forth.

7. The combination, with the lock-case having the groove d d' , the hammer, the sear for holding it elevated, and the sear-pin, of the operating-lever E, having a groove, e , formed therein concentrically with its center of motion, lug l^3 on the free extremity of the sear-pin, entering said groove, the trigger pivoted to the operating-lever E, and the push-pin m' , coupled to the trigger and having a projection, m^2 , adapted to enter one or the other branches d or d' of the groove in the lock-case, substantially as set forth.

CARL RÖSTEL.

Witnesses:

JULIUS VON SCHÜTZ,
EMIL KALLNECKER.