

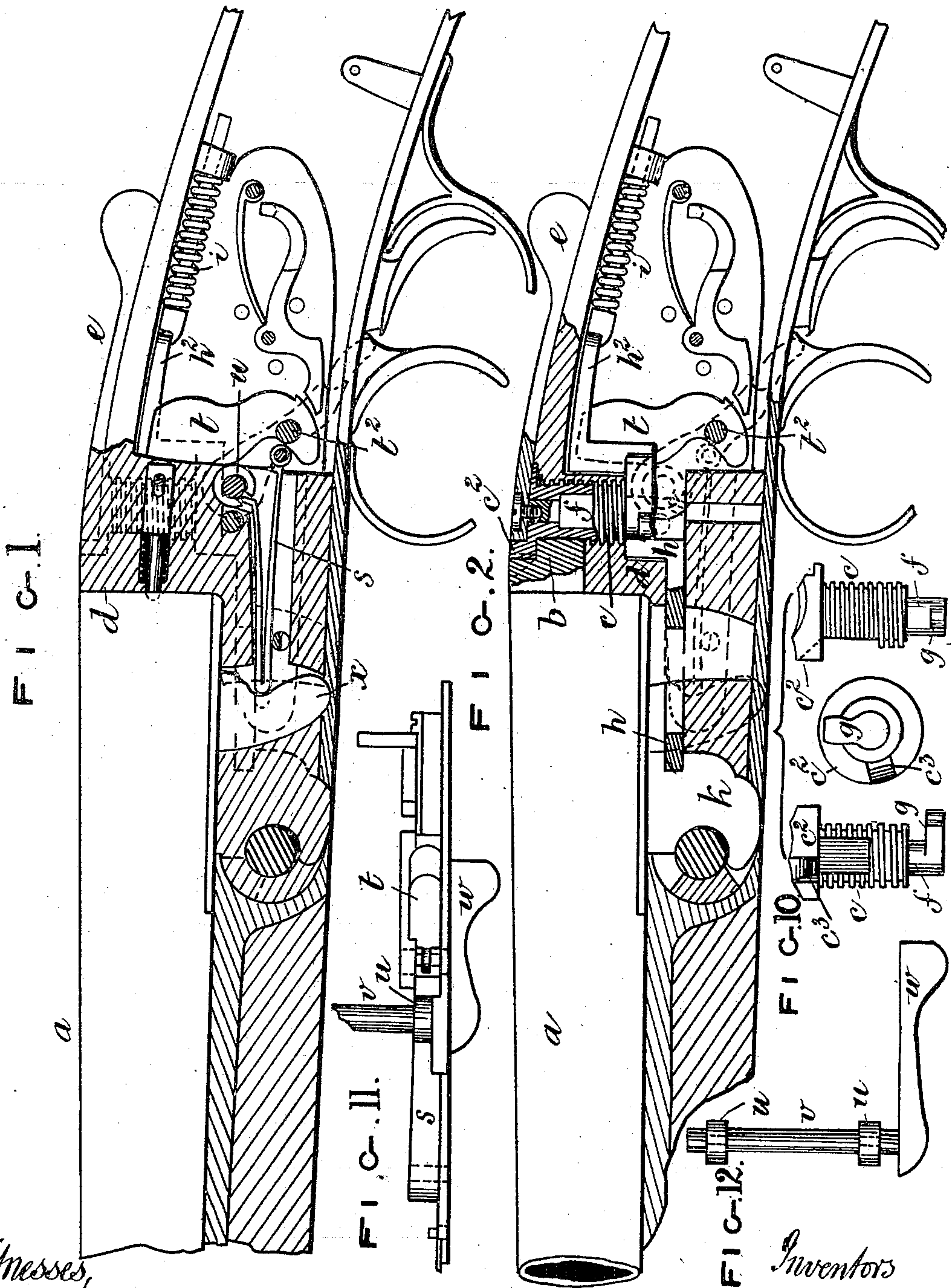
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3 Sheets—Sheet 1.

T. W. WEBLEY & T. BRAIN.
BREECH LOADER.

No. 275,737.

Patented Apr. 10, 1883.



Witnesses,
Richard Merritt
Arthur John Powell

Inventors
Thomas William Webley
Thomas Brain

(No Model.)

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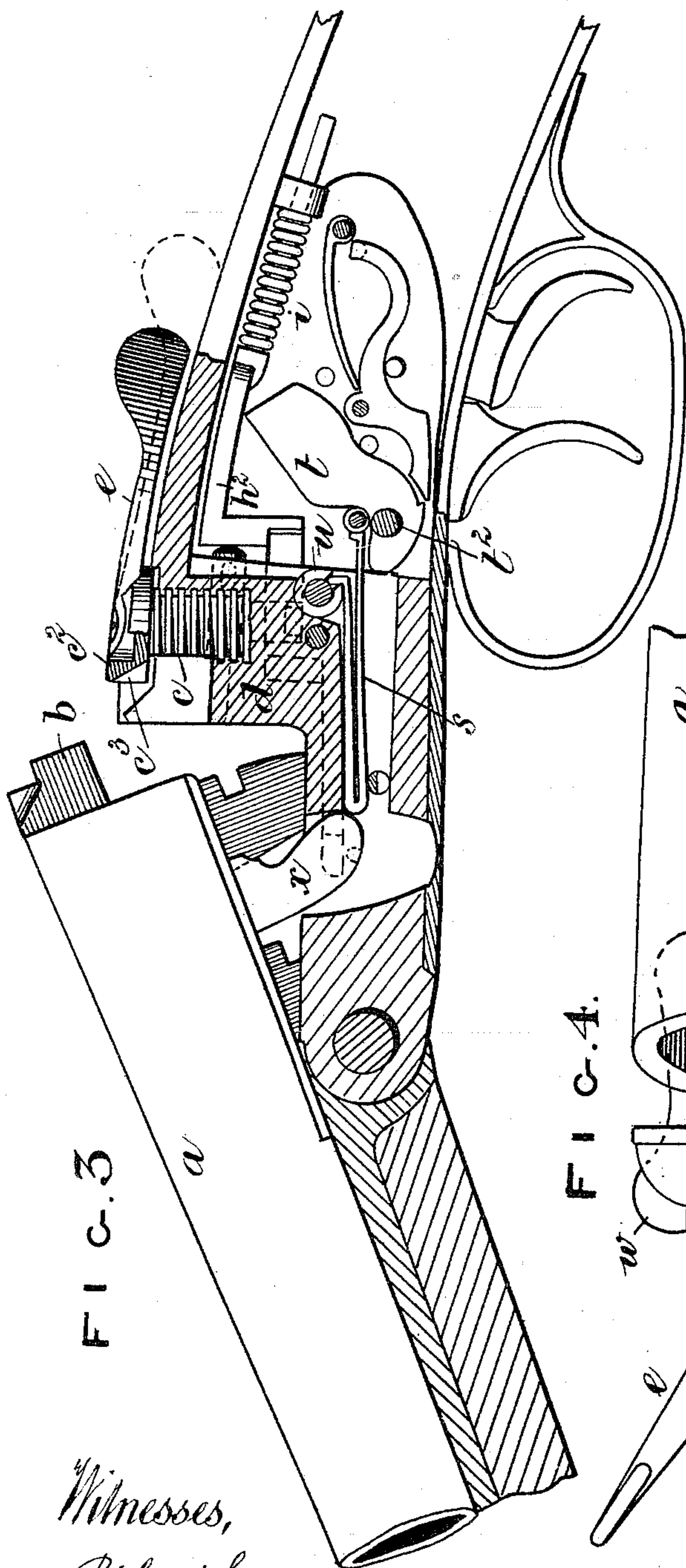


FIG. 3

FIG. 4

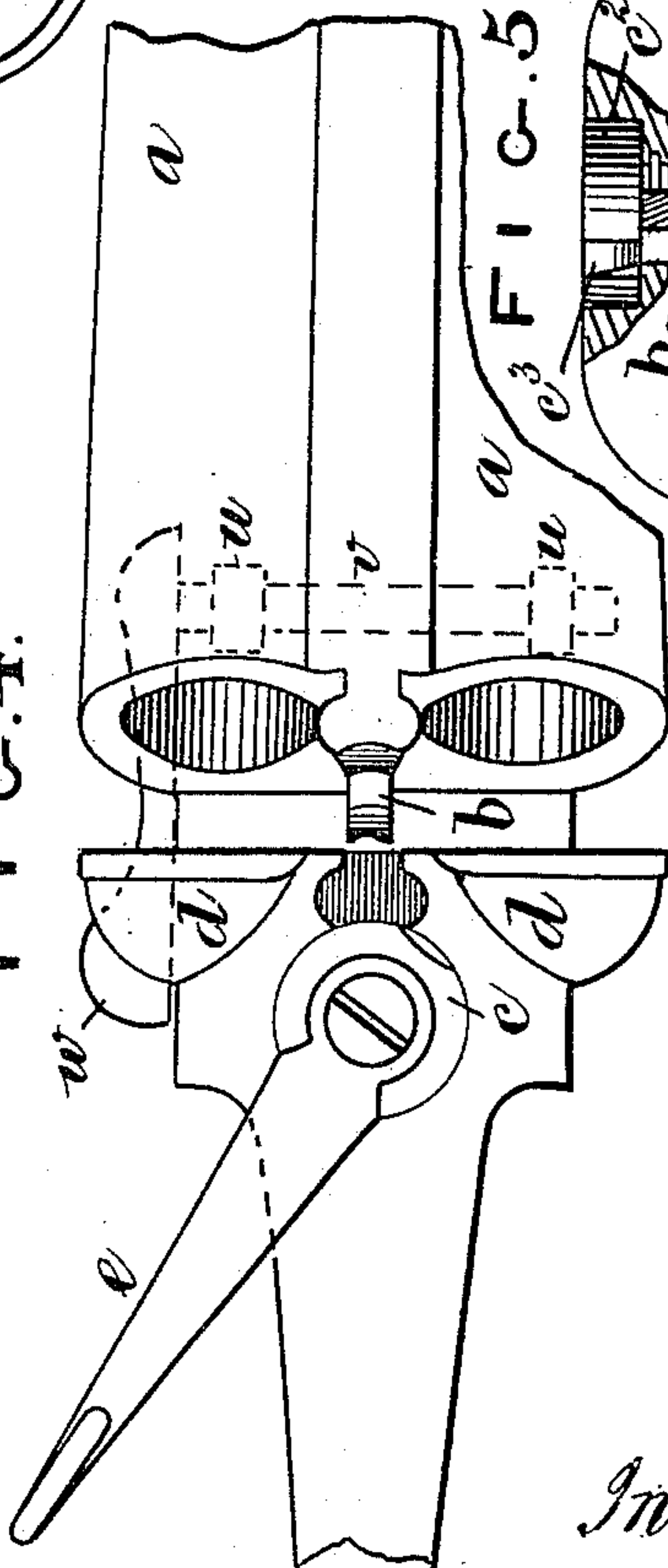
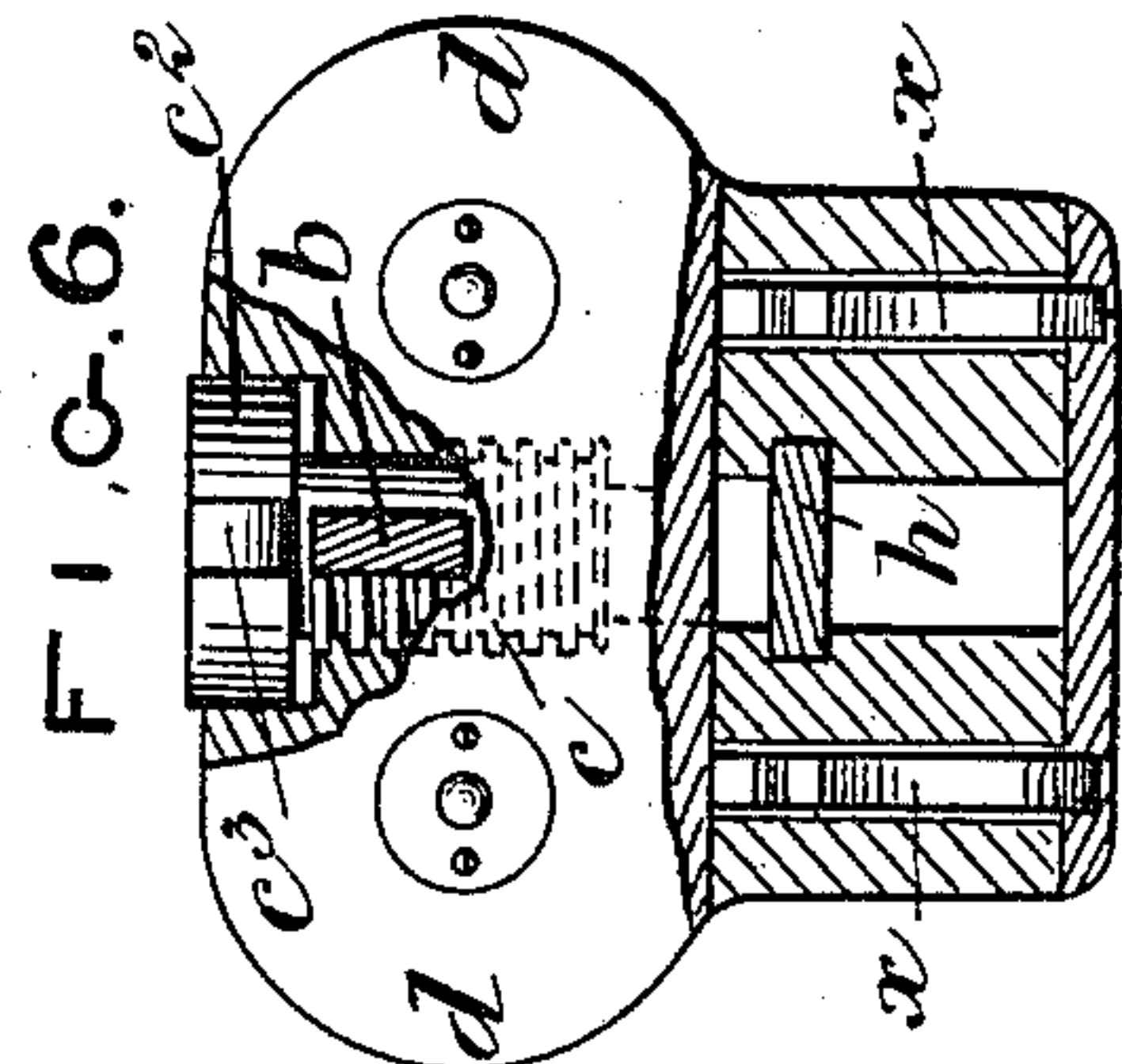


FIG. 5



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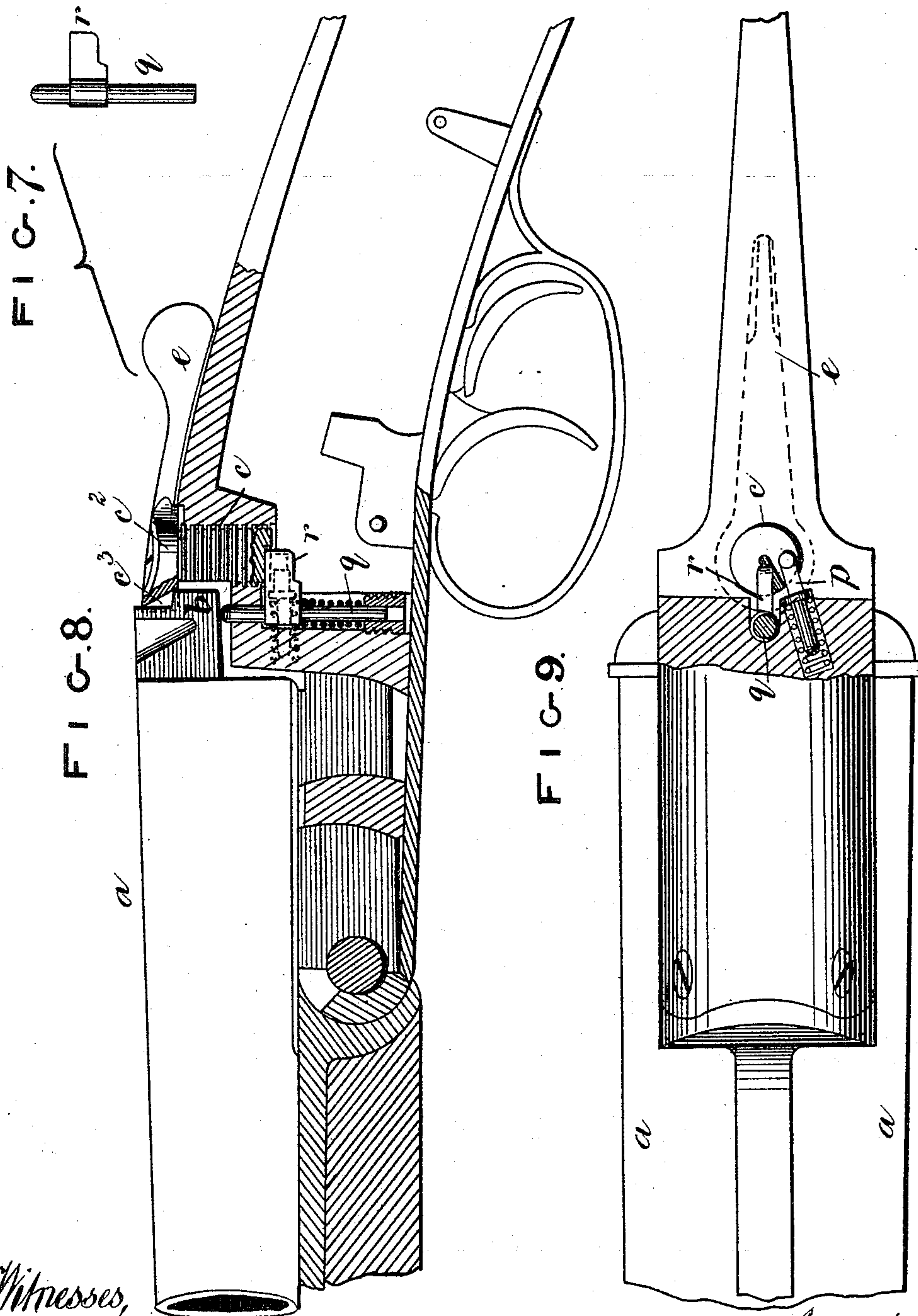
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UNITED STATES PATENT OFFICE.

THOMAS W. WEBLEY AND THOMAS BRAIN, OF BIRMINGHAM, COUNTY OF WARWICK, ENGLAND, ASSIGNORS TO P. WEBLEY & SON, OF SAME PLACE.

BREECH-LOADER.

SPECIFICATION forming part of Letters Patent No. 275,737, dated April 10, 1883.

Application filed January 15, 1883. (No model.) Patented in England June 28, 1882, No. 3,053.

To all whom it may concern:

Be it known that we, THOMAS WILLIAM WEBLEY (of the firm of P. Webley & Son) and THOMAS BRAIN, subjects of the Queen of Great Britain, residing at Birmingham, in the county of Warwick, England, have invented certain new and useful Improvements in Breech-Loading Drop-Down Small-Arms, (for which we have received Letters Patent in Great Britain, No. 3,053, dated June 28, 1882,) of which the following is a specification.

Our invention consists, first, in fastening down the barrels of drop-down small-arms at the prolonged rib by means of a screwed and shouldered pillar working in a screwed hole in the break-off, and worked by a lever on the tang of the break-off, as hereinafter particularly explained, and illustrated in the accompanying drawings.

Our invention consists, secondly, of the improvements hereinafter described, and illustrated in the accompanying drawings, in cocking the internal hammers of drop-down small-arms, and in the lock mechanism of the said small-arms. This part of our invention has reference to sliding mainsprings; and it consists, essentially, in so arranging them and the parts by which they are actuated that the opening of the guns cocks the hammers and puts them in a position of safety, which safety position is retained after the gun has been closed, the sliding mainsprings being moved back into their operative or acting positions for the discharge of the gun by means of a hand-lever operating through suitable mechanism upon the said sliding mainsprings.

Figures 1, 2, and 3 represent longitudinal vertical sections, and Fig. 4 a plan, of the breech end of a drop-down gun containing our improvements, the barrels being represented fastened down and the hammers discharged in Figs. 1 and 2, and the barrels raised from the break-off and the hammers cocked and in a position of safety in Figs. 3 and 4. The sections, Figs. 1 and 2, are taken in different planes, Fig. 1 being taken through the lock mechanism at the side of the gun, and Fig. 2 being taken through the fastening-down mechanism at the middle of the gun. Figs. 5 and 6 represent cross-sections of the gun. Figs. 7, 8, and 9 represent a modification of the fast-

ening mechanism, and Figs. 10, 11, and 12 are parts of the gun separately.

We will first describe the fastening-down mechanism.

a a are the barrels, and b is the prolonged rib between the barrels, which rib takes into a recess in the break-off d , as usual.

c is the screwed hollow pillar, (shown separately in Fig. 10,) working in a hollow screw in the break-off d . The head of the screwed pillar is expanded, as represented, and forms a strong shoulder, c^2 , which, seating itself upon the lip of the prolonged rib b , fastens down the barrels at the said rib. In the edge of the shoulder or expanded head c^2 of the screwed pillar c is a recess, c^3 , into which the lip part of the prolonged rib b may enter on closing the gun, or through which it may rise on opening the gun.

e is the top hand-lever, connected with the screwed pillar c . By turning the hand-lever e in one or other direction, the screwed pillar c is partly rotated and slightly rises or falls in the screwed hole in the break-off d , in which it works. The boss of the top hand-lever, e , is not connected directly to the screwed pillar c , but through the vertical axis f in the pillar. This vertical axis f has a square part at top, which takes into a square recess in the screwed pillar c , the screw-pin at the boss of the hand-lever e being screwed into the square part of the axis f , as seen in Fig. 2. The central axis, f , works the under bolt, h , a short crank-arm, g , on the bottom of the axis f working in a recess in the bolt h . The return or snapping motion of the lower bolt, h , and the screwed pillar c is effected by means of the coiled spring i , acting upon the cranked connecting-piece h^2 of the said bolt h . This connecting-piece h^2 slides in a guide under the tang. We do not limit ourselves to this arrangement of parts for giving the return motion to the bolt h , as a spring may be arranged in a variety of ways to suit the gun-action to which the screwed pillar is applied; or a rod-spring may be used to act directly on the side of the screwed pillar to give the return motion.

The action of the parts is as follows: When the barrels are shut down and fastened, as illustrated in Figs. 1, 2, and 5, the expanded head or shoulder c^2 of the screwed pillar c is

situated over and firmly bears upon the lip of the prolonged rib *b*, and the barrels are fastened down at the said rib, the bottom bolt, *h*, being also engaged with the lumps on the under side of the barrels. For opening the gun for charging, the top hand-lever, *e*, is turned aside. The screwed pillar *c* is thereby partly rotated in the break-off, and its expanded head or shoulder, *c*², made slightly to rise from the lip of the rib *b*, and the recess *c*³ in the expanded head brought over the said lip of the rib, as seen in Fig. 6. The barrels are thereby unfastened at the prolonged rib, and the rib can now rise through the recess *c*³ in the shoulder of the screwed pillar. Simultaneously with the unfastening of the barrels at the rib they are unfastened at their under side by the action of the arm *g* of the central axis, *f*, upon the bottom bolt, *h*, the withdrawal of the said bottom bolt *h* compressing the coiled spring *i*, the back lump on the open barrels holding the bolt *h* in its withdrawn position, and the said bolt holding the screwed collar in its back position. On shutting down the barrels, after loading them, the bottom bolt, *h*, makes its return motion by the action of the spring *i*, which may be assisted by the front lump, *k*, and on the complete shutting down of the barrels the bottom bolt, *h*, snaps by the action of the spring *i* into its lumps, and the screwed pillar *c* and parts connected with it return to their normal positions. As the said screwed pillar *c* takes its normal position its head *c*² is brought over the lip of the prolonged rib *b*, and the latter is held down very firmly in its recess in the break-off, the return motion of the screwed pillar causing it to descend slightly and its head to take a close bearing upon the lip of the rib.

Figs. 8 and 9 represent a longitudinal section and a plan of under side (partly in horizontal section) of a gun, showing modified details of the fastening mechanism. In this arrangement the under bolt is dispensed with, the barrels being locked down at the prolonged rib only. The screwed and shouldered pillar *c* is constructed and acts as last described, excepting that the central axis for working the under bolt is omitted. *e* is the top hand-lever for working the said screwed pillar. The return motion of the screwed pillar is effected by the oblique spring-bolt *p* pressing on an eccentric pin at the bottom of the screwed pillar *c*. For the purpose of starting or slightly lifting the breech ends of the barrels when the slot *c*³ in the head of the screwed pillar *c* has been brought over the lip of the prolonged rib *b* we use a spring starting-rod, *q*, (shown separately in the detached view, Fig. 7,) the upper end of which bears against the under face of the prolonged rib *b*. On the said spring starting-rod *q* is a retaining-bolt, *r*, for taking into a cross-slot in the bottom of the screwed pillar *c* and retaining the said pillar in its back or unfastening position. The unfastening of the barrels at the rib is effected by turning aside the hand-lever *e*, as before

described; but as soon as the slot in the head *c*² of the screwed pillar *c* has been brought over the lip of the rib *b*, the spring starting-rod *q* is pressed upward, and, acting upon the said rib *b*, slightly lifts or starts the breech ends of the barrels, the lip of the said rib *b* entering the slot *c*³ and preventing the back or return motion of the screwed pillar, as represented in Fig. 8. By the rising of the starting-rod *q*, the retaining-bolt *r* snaps into the cross-slot in the bottom of the screwed pillar *c*, and thereby holds the said pillar in its unfastening position after the breech ends of the barrels have been lifted from the break-off. On closing the barrels the starting-rod *q* is pressed down and its spring compressed, and the retaining-bolt *r* at the same time removed from the slot in the pillar *c*. The said pillar being thus released, it makes its back or return motion by the action of the spring-bolt *p*, and the head or shoulder *c*² of the pillar snaps over the lip of the rib *b* and fastens down the barrels, as before described.

We will now describe the cocking mechanism.

s is the sliding mainspring, carried by the lock-plate and working in a recess in the body of the gun, and *t* is one of the internal hammers of the gun, turning on the center *t*². The free end of the sliding mainspring *s* carries an anti-friction roller, which bears against the crane of the hammer. The end of the stand side of the mainspring *s* is turned up, and is connected to a boss or collar, *u*, on the axis *v* of the external hand-lever, *w*. This axis *v* passes across the body of the gun, and has a boss or collar, *u*, upon it for working each of the sliding mainsprings. The forward motion of the sliding mainsprings *s*, when the breech ends of the barrels are raised for loading, is effected by the lumps or projections or cams *x* on the under side of the barrels, (or by equivalents of the said lumps or cams,) acting upon the doubled or bent ends of the mainsprings, (see Fig. 3;) and the back or return motion of the said mainsprings is effected by the hand-lever *w* at the side of the gun, operating through the bosses or collars *u u* upon the stand sides of the said springs. When the mainsprings *s* are in the forward position represented in Fig. 3, their free ends are so situated with respect to the centers of the hammers *t* that they tend to hold the hammers in a position of safety, the mainsprings when in this position being inoperative to discharge the hammers, this inoperative position of the mainsprings being maintained after the closing of the gun. When the mainsprings *s* are in the back or returned position represented in Figs. 1 and 2, their free ends are brought to the opposite sides of the centers of the hammers, and the pressure of the said springs upon the cranes of the hammers tends to discharge them.

The action of the cocking mechanism is as follows: The gun having been discharged, the parts occupy the respective positions represented in Figs. 1 and 2. On unfastening and

raising the barrels the inclined faces of the projections or cams xx on the said barrels, operating upon the sliding mainsprings s , force them into the position represented in Fig. 3, the said mainsprings as they advance cocking the hammers, which are held in a position of safety—that is, the hammers cannot be discharged so long as the mainsprings are in their advanced position. After loading the gun the barrels are shut down. As the barrels are closed the acting faces of the projections or cams xx do not operate upon the mainsprings, but leave them in their advanced position and the hammers in their cocked and safety positions, Fig. 3.

In order to discharge the gun it is necessary to give a back or return motion to the mainsprings s to bring them into their acting positions. This is effected by depressing the hand-lever w through the required angle. By the partial rotation of the axis v of the hand-lever w its bosses or collars uu carry back the mainsprings s into the position represented in Figs. 1 and 2, in which position they can effect the discharge of the hammers, as hereinbefore described. On the mainsprings reaching their operative positions the sears fall into their bents and hold the hammers at full-cock, ready to be discharged. The hand-lever w , axis v , and bosses uu also serve to cock the hammers by hand after the barrels have been removed from the body.

Having now described the nature of our invention and the manner in which the same is to be performed, we wish it to be understood that we claim as our invention—

1. In a drop-down gun, and in combination with the barrels having a prolonged rib, the screwed and shouldered pillar for fastening the barrels in their closed position, said pillar having a slight rising and falling motion in the break-off, and being provided with a hand-lever, substantially as described.

2. The combination of the barrels having a prolonged rib, and the screwed and shouldered pillar for securing the barrels by engagement with said rib, said pillar being provided with a recess to permit the passage of said rib, substantially as described.

3. The combination, with the screwed and shouldered pillar for fastening down the barrels by engagement with the prolonged rib thereof, of a spring for effecting the snapping or return motion of said pillar, substantially as described.

4. The combination, with the pillar screwed and shouldered, having an enlarged head for engagement with the prolonged rib of the barrels, of the lower bolt adapted to fasten the barrels at the lump when the gun is closed,

and the crank arm or projection on said pillar for operating said bolt, substantially as described.

5. The combination of the screwed and shouldered pillar provided with a hand-lever, the lower bolt operated by a crank-arm on the axis of said pillar, and the spring tending to press said bolt and pillar into position to fasten the barrels, substantially as described.

6. The combination, with the barrels having a prolonged rib, the screwed and shouldered pillar for fastening the barrels in their closed position, and the spring for effecting the return of said pillar to its locking position, of the starting-rod bearing against the under side of said rib, and the retaining-bolt connected with said rod, which, when the rod rises on the lifting of the barrels, takes into a cross-slot in said pillar and prevents its return until said rod is again depressed by the closing of the barrels, substantially as described.

7. The combination of the hammers, the sliding mainsprings, the cams or projections which press against the bent ends of said springs when the barrels are tilted, causing the free ends of said springs to press backward against said hammers between their centers and acting faces, thereby raising said hammers and leaving said springs in a position of safety, and a special device—such as a hand-lever and collars or bosses—connected with one end of said springs for returning them to an operating position when it is desired to discharge the gun, substantially as described.

8. The combination, with the mainsprings and devices which act upon the tilting of the barrels to throw said springs into a position of safety and permit the barrels to be closed without changing the position of said springs, of the hand-lever connected through mechanism, as specified, with said springs for returning them to an acting position, substantially as described.

9. The combination of the sliding mainsprings, the cams or projections for acting on the bent ends of said springs and raising the hammers by transferring the pressure of the free ends of the springs to the other side of the centers of the hammers, the bosses or collars with which the stand ends of said springs are connected, and the external hand-lever on the axis of which said collars or bosses are mounted for returning the springs to their acting position, substantially as described.

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