

No. 627,308.

Patented June 20, 1899.

C. POHLIT.

BREECH CLOSING MECHANISM OF THE WEDGE SYSTEM FOR ORDNANCE.

(Application filed Nov. 2, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 3.

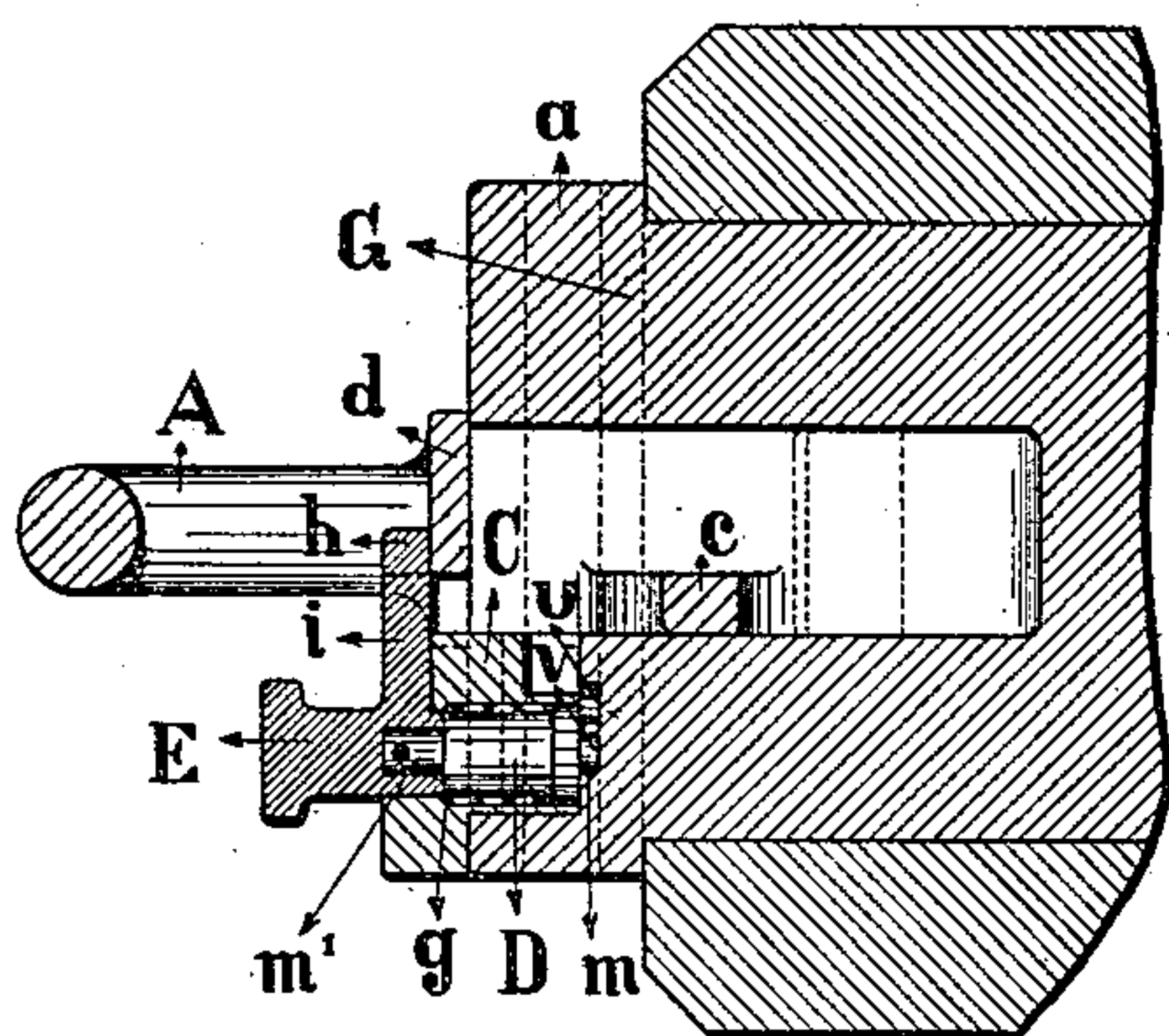


Fig. 1.

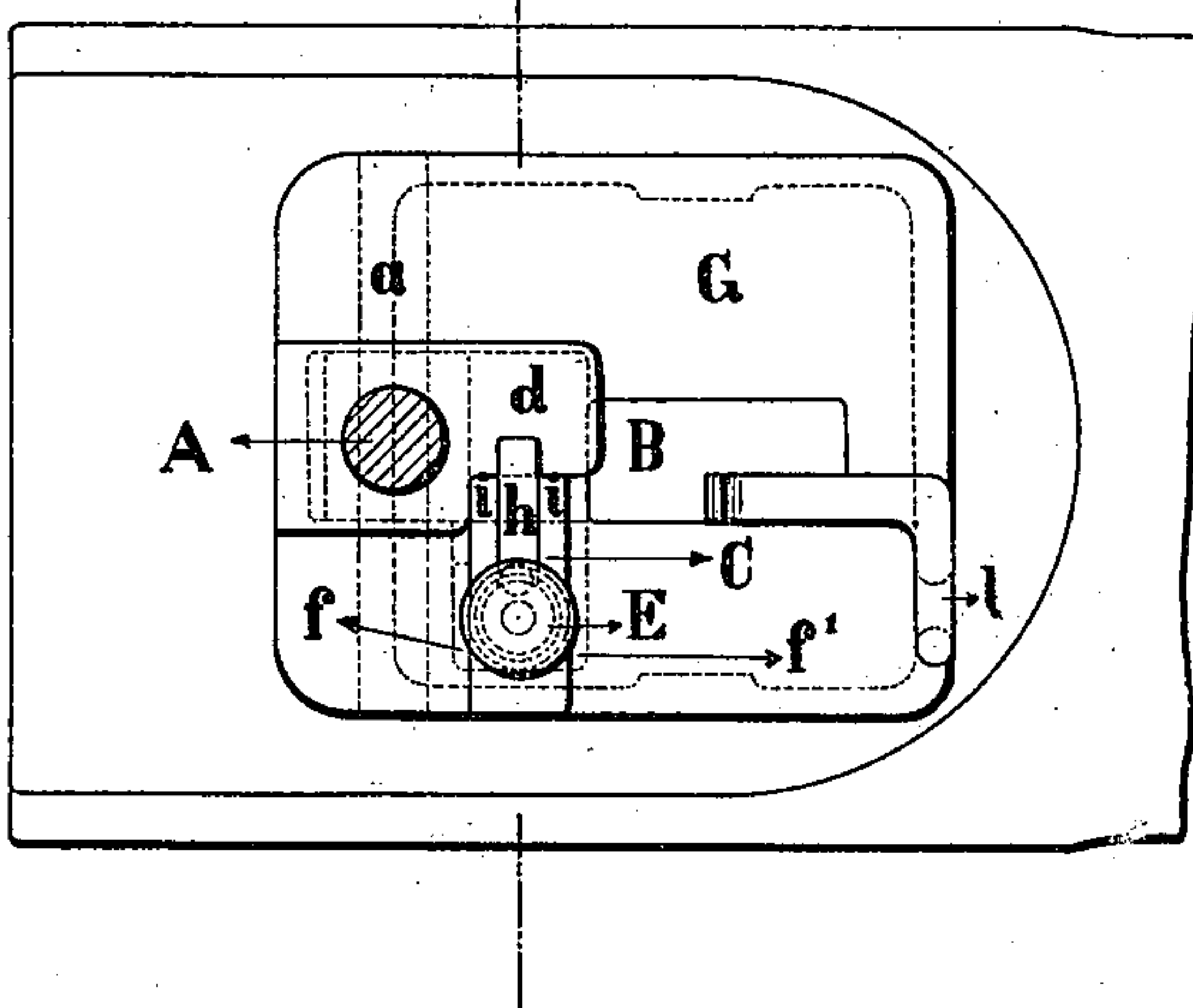


Fig. 4.

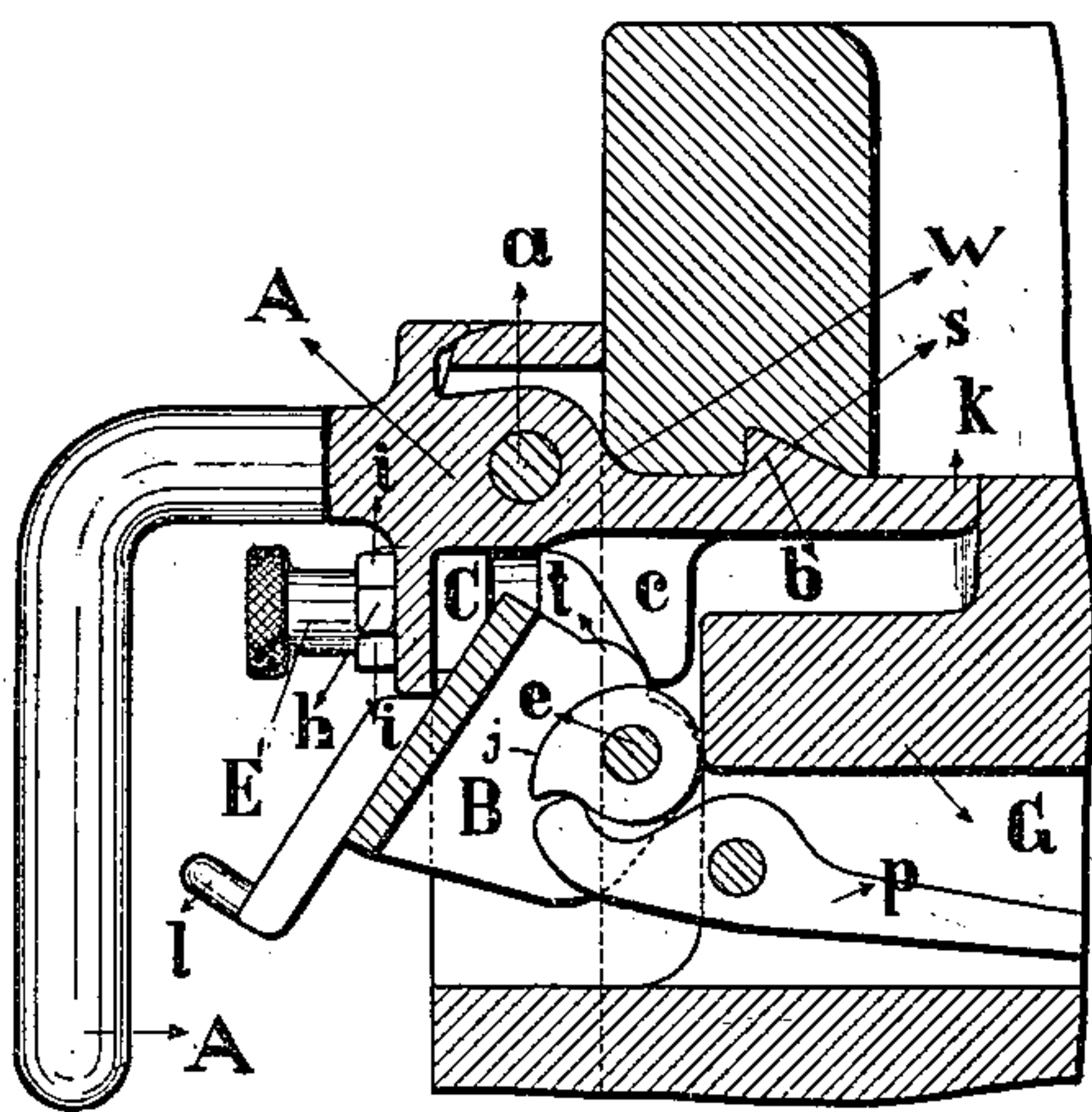
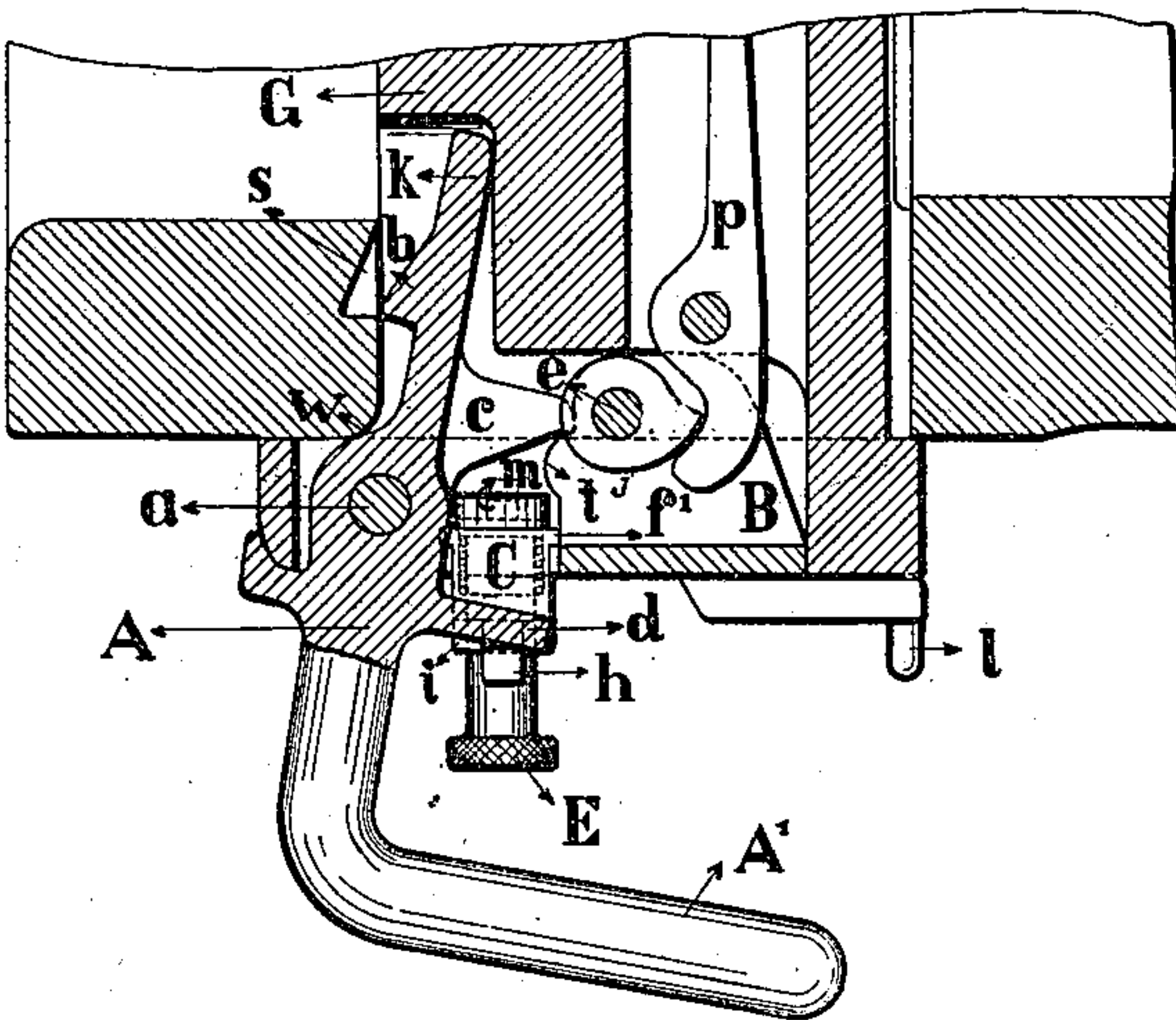


Fig. 2.



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Fig. 5.

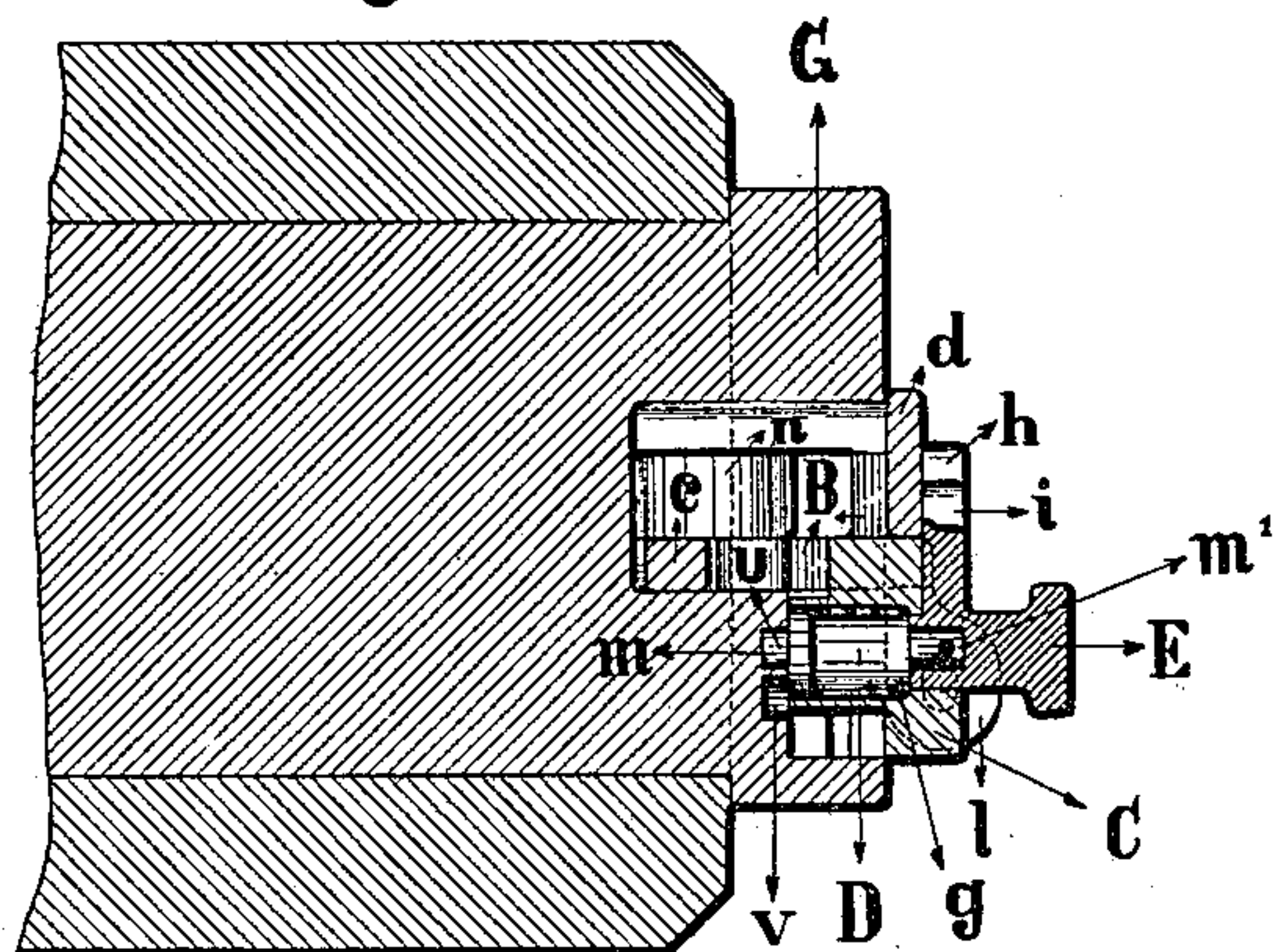


Fig. 7.

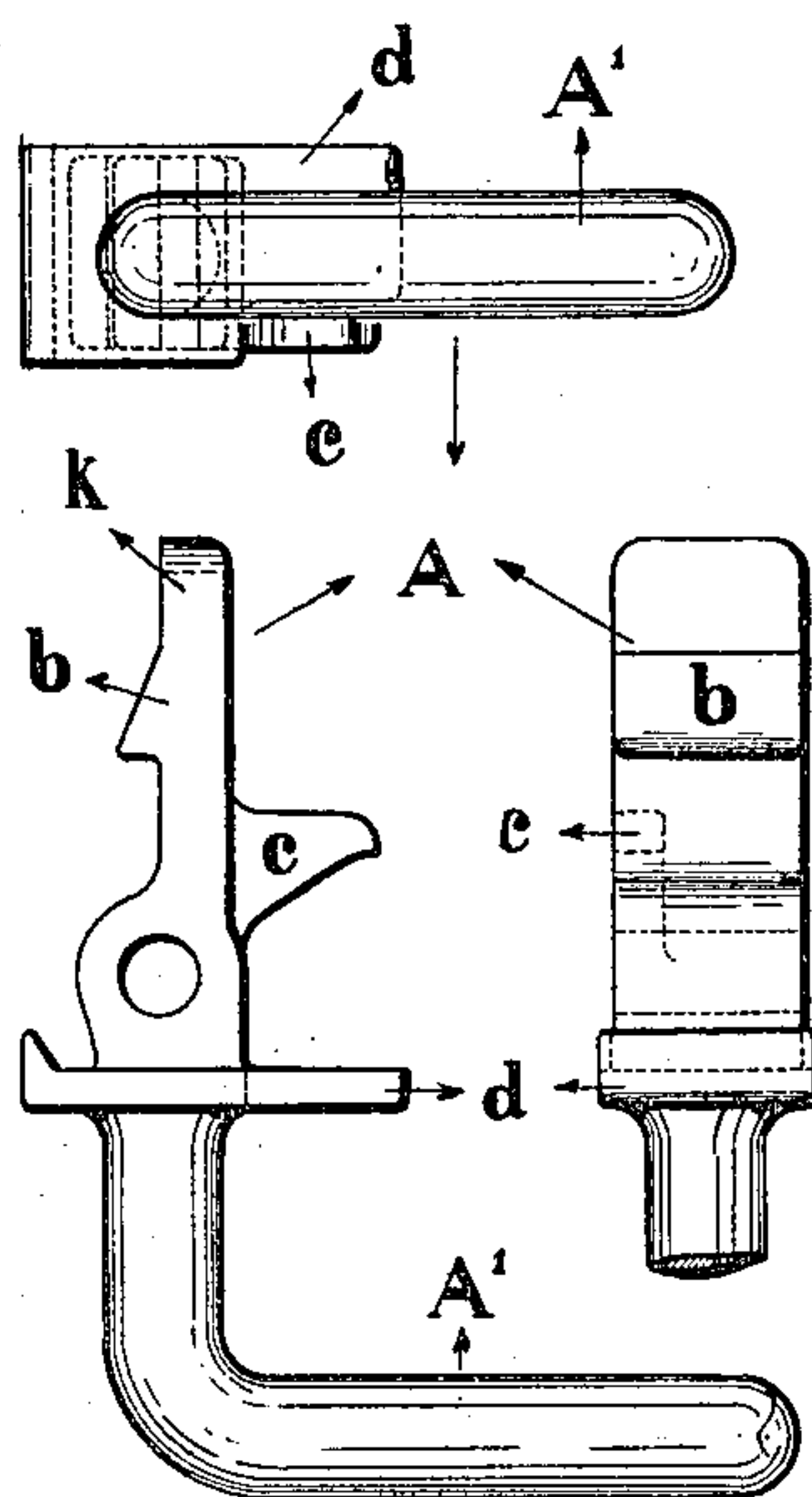


Fig. 6.

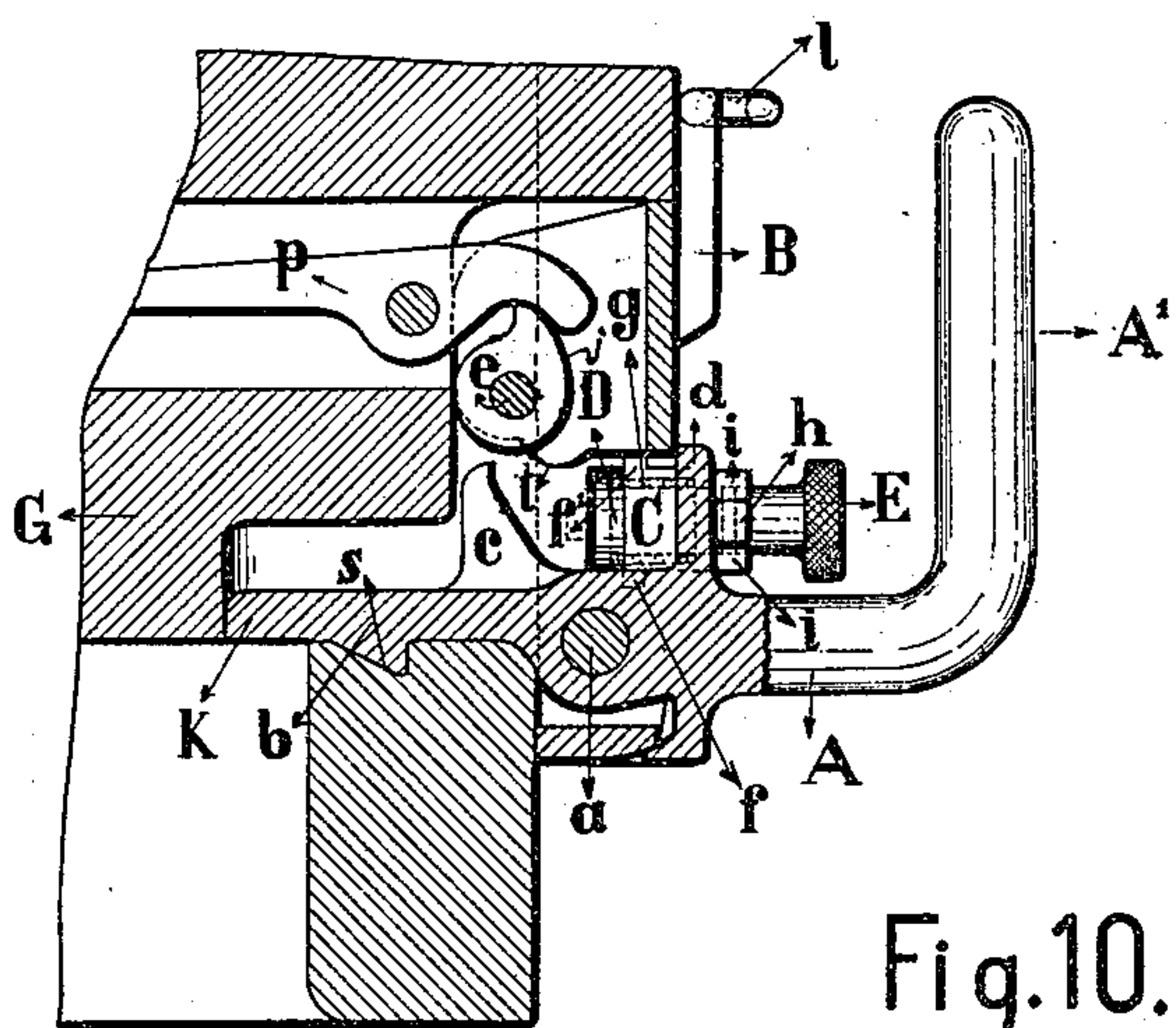


Fig. 8.

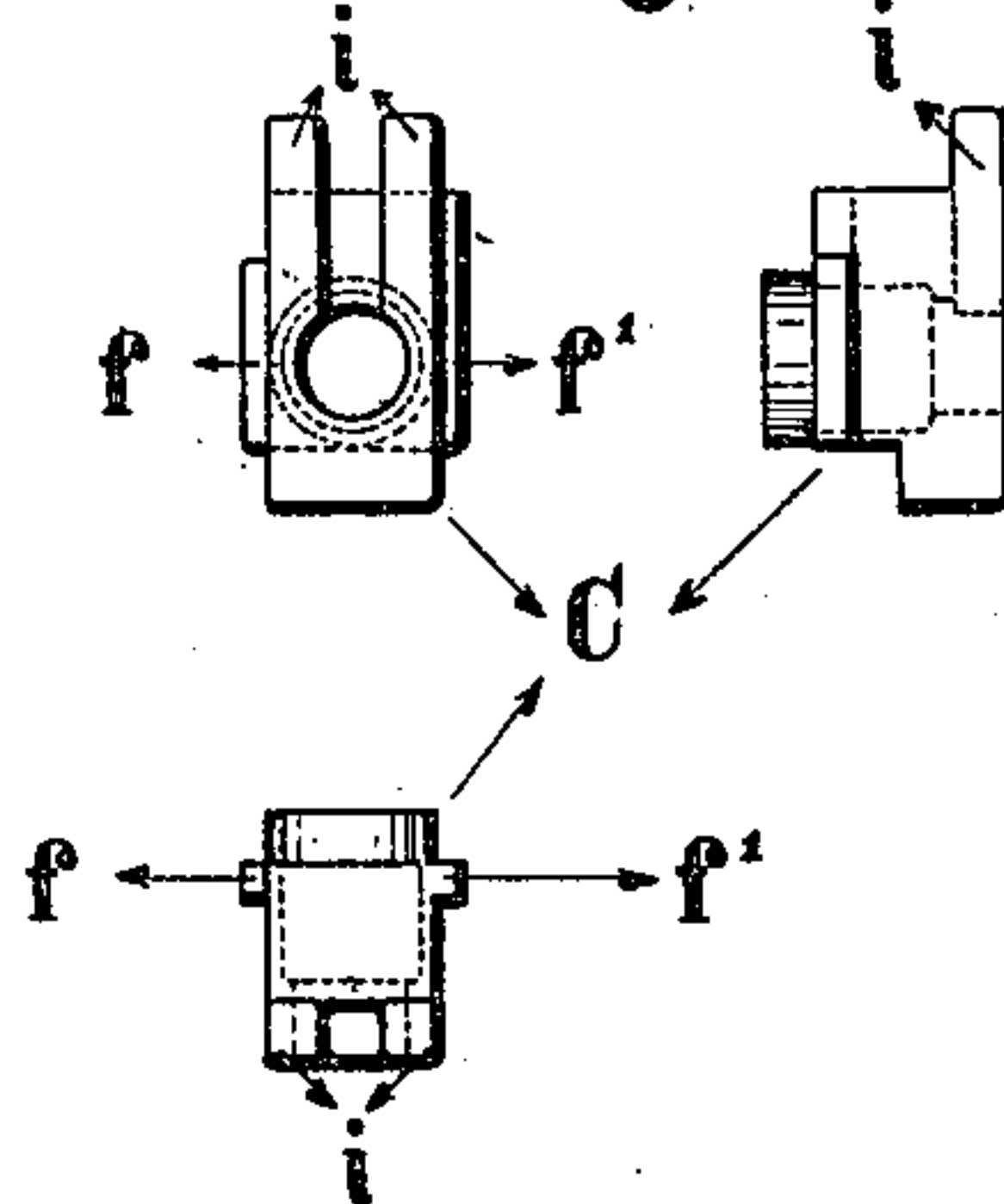


Fig. 10.

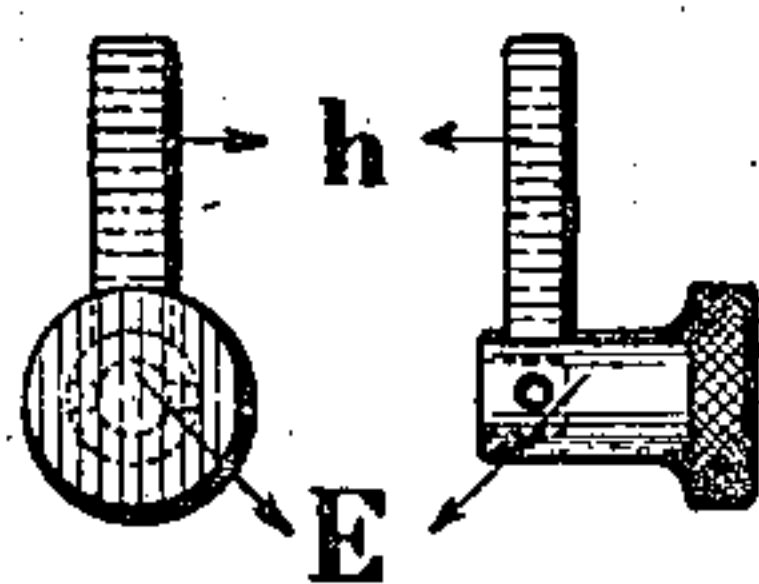
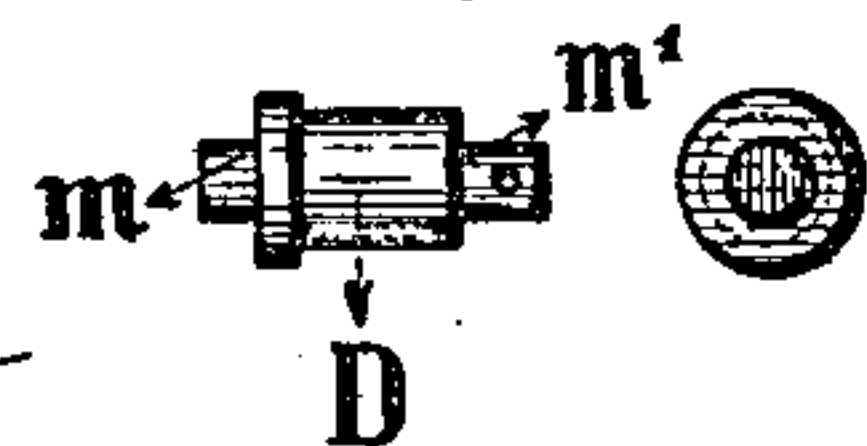


Fig. 9.



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Fig.12.

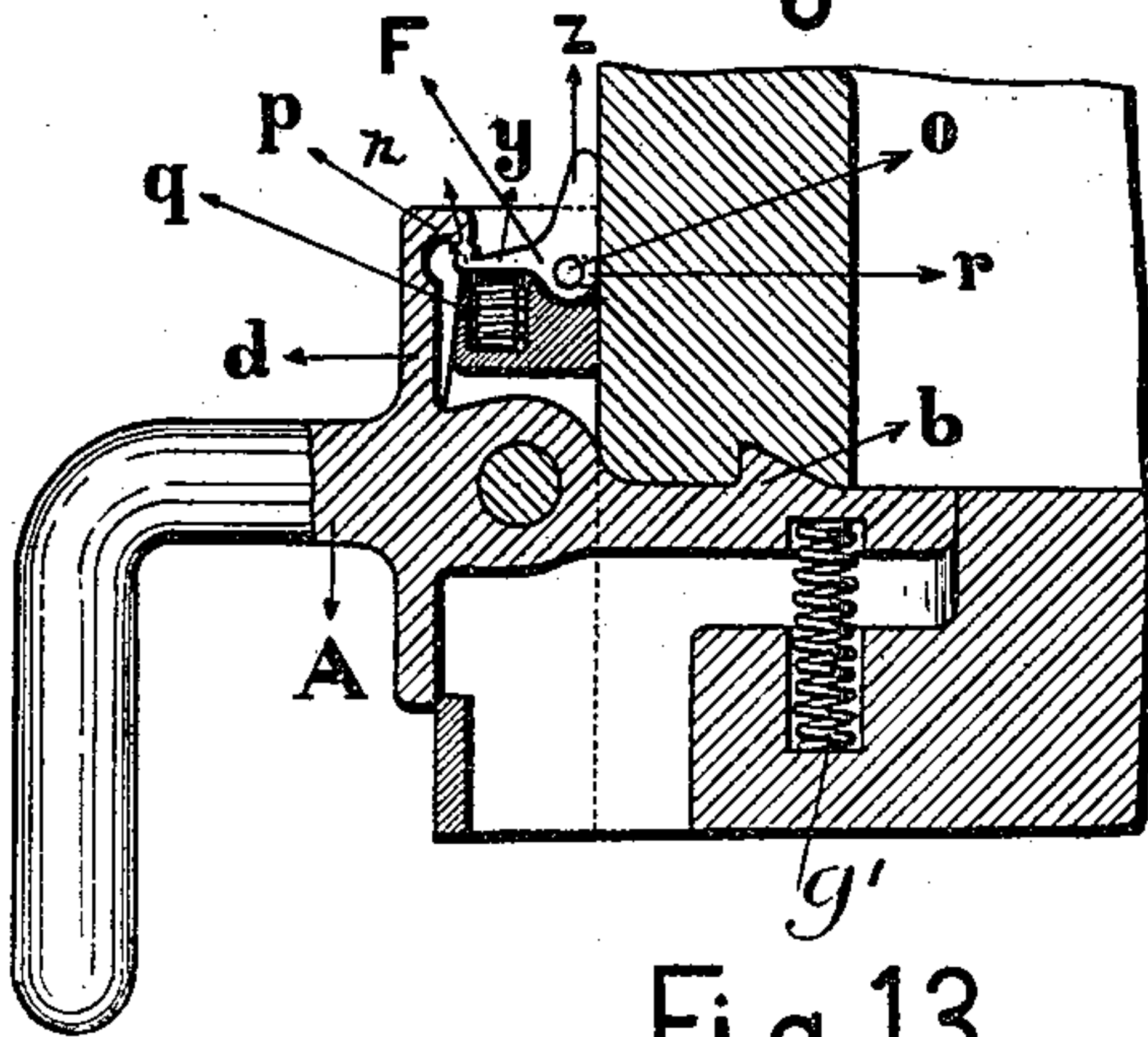


Fig.11.

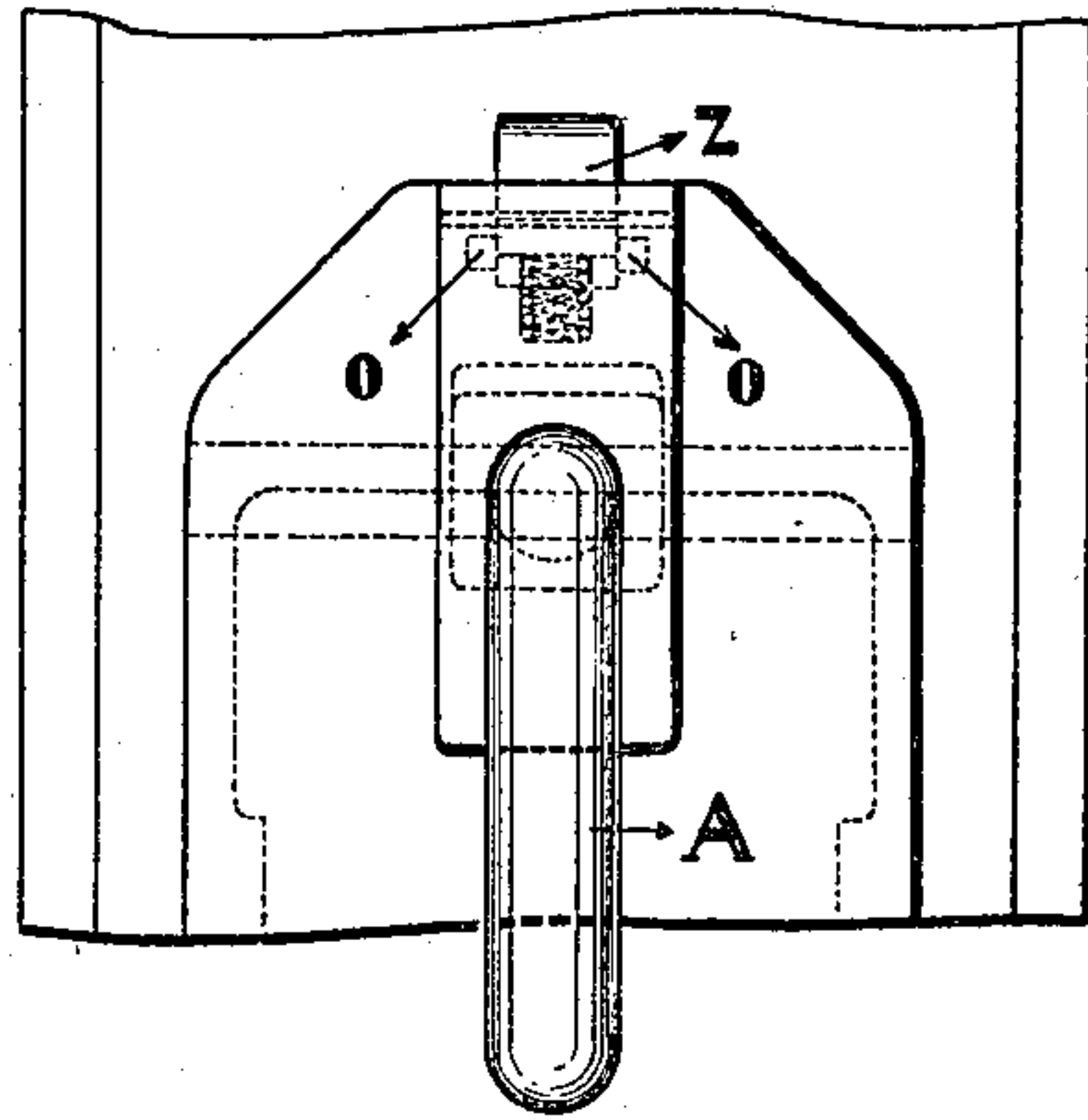


Fig.13.

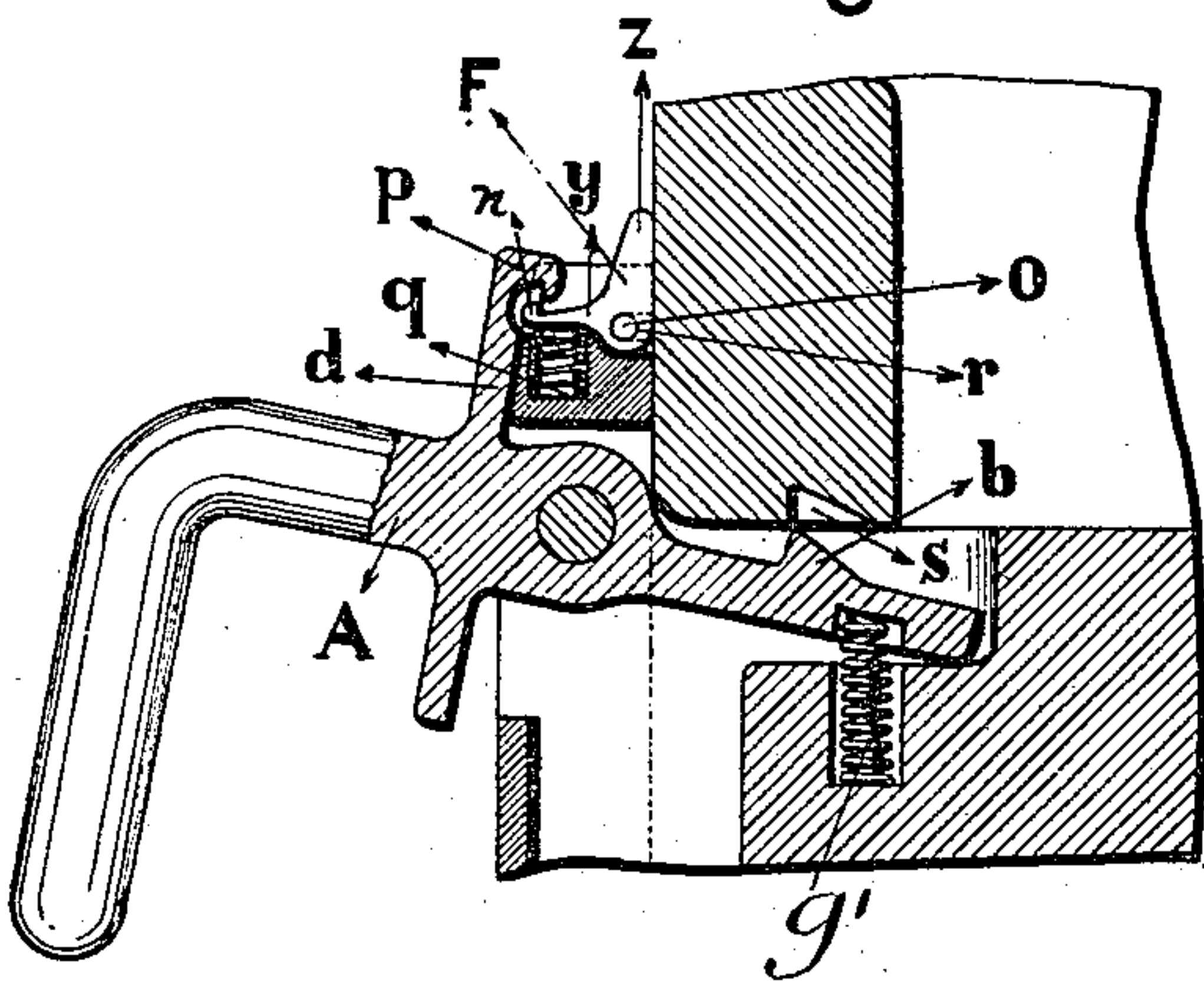


Fig.14.

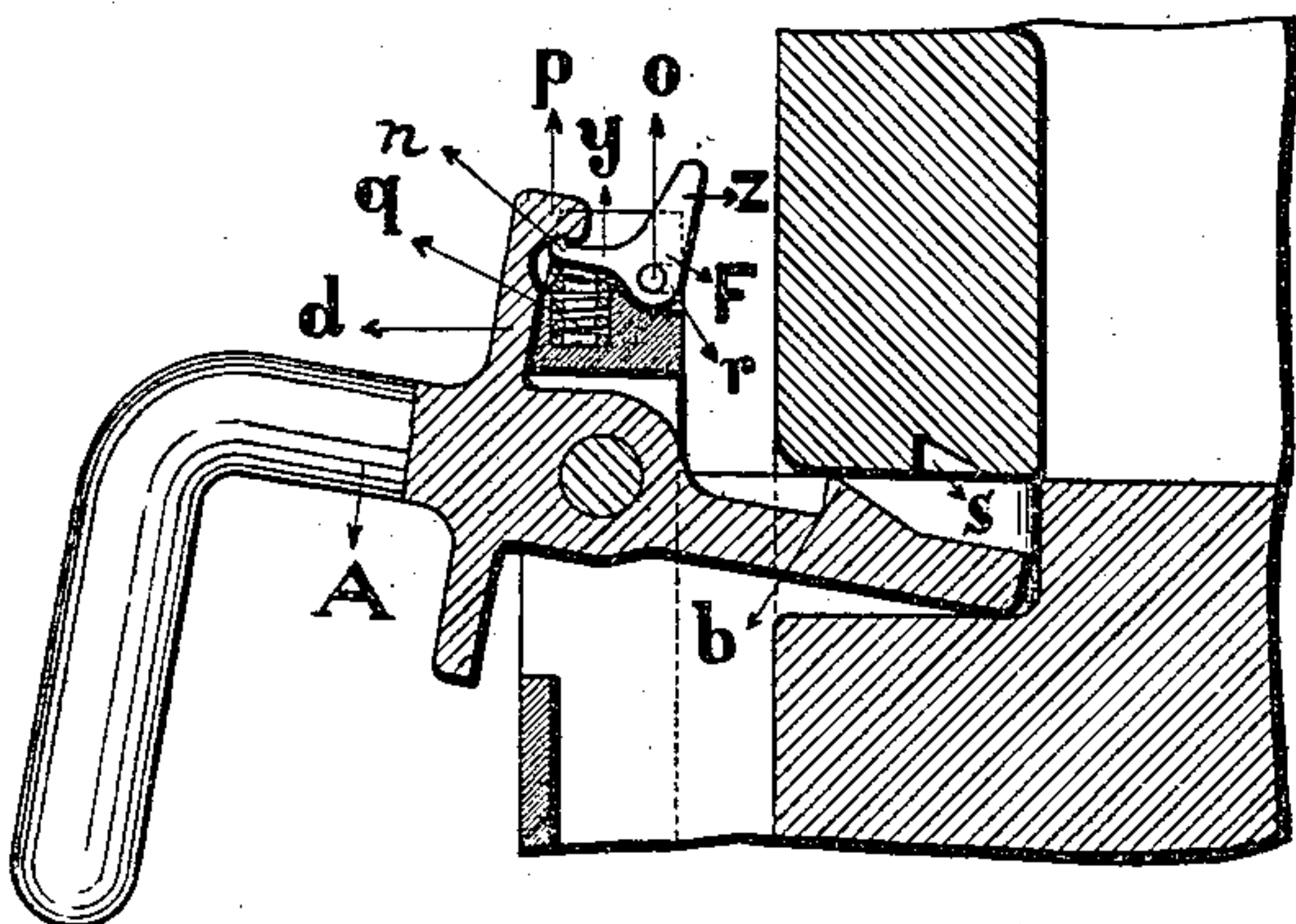


Fig.15.

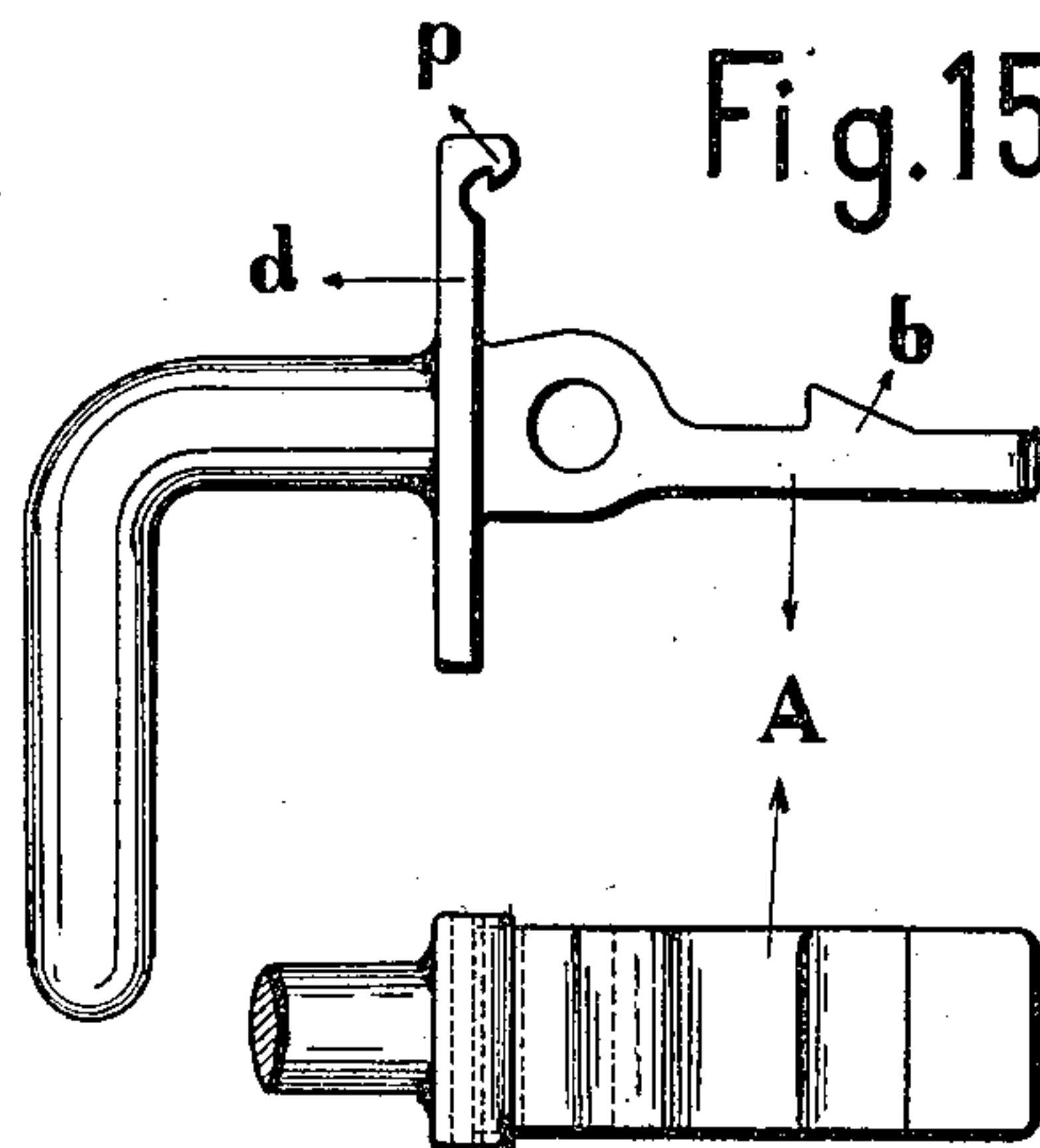
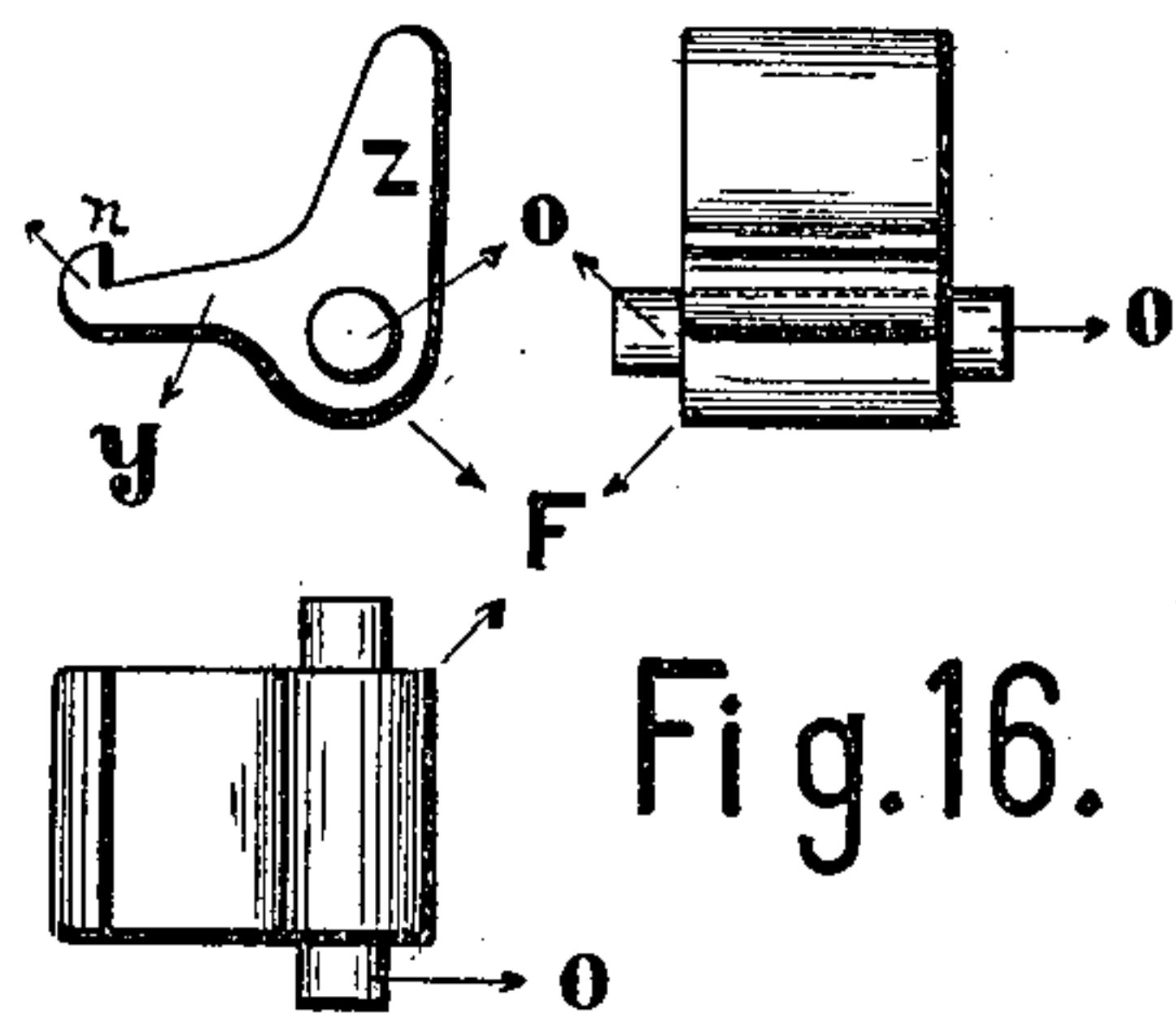


Fig.16.



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UNITED STATES PATENT OFFICE.

CARL POHLIT, OF ESSEN, GERMANY, ASSIGNOR TO FRIED. KRUPP, OF
SAME PLACE.

BREECH-CLOSING MECHANISM OF THE WEDGE SYSTEM FOR ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 627,308, dated June 20, 1899.

Application filed November 2, 1898. Serial No. 695,270. (No model.)

To all whom it may concern:

Be it known that I, CARL POHLIT, a citizen of the German Empire, residing at Essen, Germany, have invented certain new and useful
5 Improvements in Breech-Closing Mechanisms of the Wedge System for Ordnance, of which the following is a specification.

My invention has reference to breech-closing mechanism of the wedge system for ord-
10 nance; and it consists, essentially, in an operating-lever for locking the breech, which operating-lever is pivoted to the breech-block, has an outer actuating-arm and an arm which projects into a cavity of the breech, and is
15 provided with a catch adapted to interlock with a recess in the rear wall of the breech-box. A spring is arranged to act against the operating-lever, so as to force the catch into the recess. Combined with the operating-
20 lever is a safety device, which in its safety position completely locks the operating-lever, as well as the trigger, in order to prevent opening of the breech and firing of the gun.

The nature of my invention will best be understood when described in connection with
25 the accompanying drawings, in which—

Figure 1 is a side elevation of the breech mechanism, the handle being shown in section, breech locked, but not secured. Fig. 2
30 is a horizontal section of Fig. 1, breech unlocked. Fig. 3 is a vertical section on the line 3 3, Fig. 1, viewed from the right. Fig. 4 is a horizontal section of Fig. 3, ferreture being in the position after firing. Fig. 5 is a
35 vertical section on the line 5 5, Fig. 1, viewed from the left, breech being secured. Fig. 6 is a horizontal section of Fig. 5. Figs. 7 to 10 are detail views. Fig. 11 is a side elevation of a modification. Figs. 12, 13, and 14
40 are horizontal sections of Fig. 11, showing the operating-lever in different positions. Figs. 15 and 16 are detail views.

Similar letters of reference designate corresponding parts throughout the several views
45 of the drawings.

Referring now in particular to Figs. 1 to 10, the letter G designates the breech block or wedge.

A is the operating-lever. (Shown in detail in
50 Fig. 7.) It is pivoted within the breech-block by a fulcrum-pin *a*, extends into a recess of

the block, and is provided with an actuating-handle A'. The part extending into the block is provided with a catch *b*, an end piece *k*, projecting beyond the catch, and with a toe *c*.
55 The outer part of the lever has a plate *d*. A recess *s* in the rear wall of the breech-box is provided to receive the catch *b*, so as to prevent opening of the breech.

B is the trigger, pivoted to the breech-block
60 by a pin *e* and provided with a tumbler *j*, determined to act in the usual manner upon the cocking-lever *p* of the firing-lock. A cam-shaped projection *t* of the trigger is adapted to be acted upon by the toe *c*, so as to return
65 the trigger to the position of rest, Fig. 2, when the actuating-handle is turned from the position Fig. 4 to the position Fig. 2. *l* is the eye for attaching the lanyard.

The safety device consists of the following
70 principal parts—namely, the sliding piece C, Fig. 8, a bolt D, Fig. 9, a handle E, Fig. 10, and a spring *g*, Figs. 3, 5, and 6.

The sliding piece C (shown in detail in Fig. 8) has a socket for the spring *g* and the bolt
75 D. Two lateral ledges *ff'* are guided within suitable ways of the breech-block, so as to allow a change of the position of the sliding piece C in a vertical direction within the breech-block. The strip *f'*, as shown, is
80 longer than *f*, for purposes to be referred to hereinafter. *ii* are upwardly-projecting arms of the sliding piece, adapted to bear against the plate *d* of the lever A when the sliding piece is in its upper position.
85

The bolt D (shown in detail in Fig. 9) consists of a cylindrical central part terminated at the inner end by a collar and a tenon *m* and at the outer end by a small projection
90 *m'*. The handle E (shown in detail in Fig. 10) is pinned to this outer projection *m'* of the bolt D and is provided with an upwardly-projecting arm *h*. The bolt D and the spring *g* are placed into the socket of the sliding piece C, and then the handle E is pinned to the bolt
95 D. The spring abuts against the shoulder of the bolt D and against the annular bottom of the socket of the sliding piece C. It tends to force the tenon *m* of the bolt D into one or the other of the recesses *u* and *v*, Figs. 3 and
100 5, provided in the block and holds it therein. The upwardly-projecting arm *h* of the handle

E is confined between the arms *i i* of the sliding piece C, Figs. 3 and 5.

It will be observed that when the handle E is pulled out the tenon *m* of the bolt D is withdrawn from its mortise in the block, so that the sliding piece C can then be moved vertically in its guides and that the tenon *m* may then be inserted into the other mortise. When the tenon *m* is within the mortise *v*, Figs. 1 and 3, the end of the two arms *i i* is somewhat below the plate *d* of the lever A, so that this lever may be turned for the purpose of opening the fermeture, while the arm *h* of the handle E bears against the plate *d*, so that when the operating-lever is turned into the position Fig. 2 the plate *d* of the operating-lever pushes the handle E outward against the tension of the spring *g*. If after unlatching the pull on the operating-lever A should be released, the tension of the spring *g* would cause the handle E and the operating-lever to be pushed in, so that the catch *b* is forced into its recess. The safety-spring *g* thus performs the function of a separate spring for the operating-lever. Of course the arm *h*, through which the action of the safety-spring is transmitted to the lever A, may be omitted and a separate spring for actuating the operating-lever may be used, such as the spring *g'*. (Shown in Figs. 12 and 13.)

When the safety device is in the position Figs. 5 and 6, the tenon *m* of the bolt D is within the mortise *u*. The two arms *i i* of the sliding piece C bear then against the plate *d* of the lever A, and since the sliding piece C is held in ways at right angles to the plane of oscillation of the lever A the latter cannot be moved nor can the trigger be pulled, because the strip *f'*, which is longer than *f*, bears against the rear edge of the trigger B, as shown in Fig. 6, so that the fermeture cannot be opened, and firing is impossible.

The operation of the apparatus is as follows: After firing the several parts are in the position shown in Fig. 4. When, now, the handle of the operating-lever A is pulled out, it withdraws the catch *b* from the recess *s*, so as to unlock the breech-block. At the same time the toe C, acting against the cam-shaped projection *t* of the trigger, carries the trigger back to its position of rest, Fig. 2, and the spring *g* is compressed by the action of the plate *d* on the projecting arm *h*. The fermeture being thus unlocked, the breech-block is pulled out by continued pull on the operating-lever far enough for the insertion of a new cartridge. The moment the catch *b* loosens its hold on the rear walls of the breech-box while the breech-block is being pulled out the spring causes the lever A to be returned to its original position. When the breech-block is pushed in, the inclined surface of the catch *b* passes over the rounded edge *w* of the rear wall of the breech-box, so that under the tension of the spring *g* the lever is returned to the position Fig. 2, and the catch *b* finally enters the recess *s*. The fermeture is now again

in the position for firing. When the fermeture is to be secured, the handle E is pulled out and the sliding piece C is moved toward the plate *d* until the tenon *m* of the bolt D snaps into the mortise *u* of the block. Since now the arms *i i* of the slide C bear against the plate *d* of the lever A and the ledge *f'* secures the trigger, as shown in Figs. 5 and 6, the fermeture cannot be opened and the gun cannot be fired.

In the above-described apparatus the lever A oscillates back and forth twice while the fermeture is opened and closed. In Figs. 11 to 16 I have shown a modification in which this is avoided by the use of a spring-actuated bell-crank lever. The remaining parts of this modification, however, are the same as in Figs. 1 to 10, and the engagement of the catch *b* is effected by using the safety-spring *g* or by another spring acting directly on the lever A, such as the spring *g'*, Figs. 12 and 13. In these views, Figs. 11 to 16, the letter F designates a bell-crank lever. (Shown in detail in Fig. 16.) It has pivots O O, which are placed within open bearings *r* on the stop-flange of the breech-wedge, and arms *y* and *z*, the arm *y* having at its end a catch *n*, the arm *z* of which bears against the gun when the breech is closed. A spring *q*, placed within a suitable socket on the stop-flange, bears against the arm *y* of the bell-crank lever F. As long as the stop-flange, together with the arm *z* of the lever F, abuts against the body of the gun the spring *q* does not come into action. When, however, the wedge is pulled out but a short distance, the spring pushes the lever F outward. The plate *d* of the operating-lever A has a catch *p*, which as soon as the lever A is unlatched, as in Fig. 13, stands opposite the catch *n*, which catch *n* then through the action of the spring is caused to engage the catch *p* as soon as the wedge is pulled out. When the breech is closed, the several parts take the positions shown in Fig. 12. When the lever A is unlatched, Fig. 13, the catch *n* is in position to engage the catch *p* and hooks into it as soon as the wedge is pulled out a short distance, Fig. 14, and before the catch *b* of the lever A has lost its bearing against the rear wall of the breech-box. The lever A is thereby held in its position, Fig. 14, while the wedge is pulled farther out and until in pushing the wedge in the catch *b* has come nearly opposite the recess *s*, when the arm *z* strikes against the gun and releases the catch *n* from the catch *p*, Fig. 13. After this in pushing the wedge home, with the stop-flange against the gun, the catch *b* snaps into the recess *s*, thereby locking the wedge.

The details of the last-described device may of course be varied and the device may be used alone or together with the safety device above described and shown in Figs. 1 to 10.

What I claim as new is—

1. In a breech-fermeture of the wedge system, an operating-lever A pivoted to the

breech-block, said lever A having an outer actuating-arm A' and an inner arm projecting into a cavity of the breech-block and provided with a catch *b* adapted to engage a corresponding recess *s* in the rear wall of the breech-box, and a spring connected to the operating-lever so as to force the catch *b* into the recess *s* and hold it therein, substantially as shown and described.

2. In a breech-fermeture of the wedge system, an operating-lever A pivoted to the breech-block, said lever A having an outer actuating-arm A' and an inner arm projecting into a cavity of the breech-block, provided with a toe *c* and with a catch *b*, adapted to engage a corresponding recess *s* in the rear wall of the breech-box; a spring connected to the operating-lever so as to force the catch *b* into the recess *s* and hold it therein, and a trigger B provided with a projection *t* against which the toe *c* acts, so as to return the trigger to the position of rest, when the actuating-handle is pulled for releasing the latch, substantially as shown and described.

3. In a breech-fermeture of the wedge system, an operating-lever A pivoted to the breech-block; said lever A having an outer actuating-arm A' and an inner arm with a toe *c* and a catch *b*, adapted to engage a corresponding recess *s* in the rear wall of the breech-box; a spring connected to the operating-lever so as to force the catch *b* into the recess *s* and hold it therein; a trigger B provided with a projection *t* against which the toe acts, when the actuating-handle is pulled to unlock the latch, and returns the trigger to its position of rest, a sliding piece C with side strips *f f'* guided in ways of the breech-block at right angles to the plane of motion of the operating-lever; said sliding piece C also provided with projecting arms *i i* adapted to bear against the plate *d*; and a handled spring-bolt D within the sliding piece, with an inner tenon *m* adapted to engage mortises *u* or *v* in the breech-block for the purpose of vertically adjusting the sliding piece in two positions, of which in the higher one the projecting arms *i i* bear against the plate *d*, thereby locking the operating-lever A, and the strip *f'* bears against the trigger, thereby locking the latter, while in the lower position of the sliding piece the operating-lever and the trigger are released, substantially as shown and described.

4. In a breech-fermeture of the wedge system, an operating-lever A pivoted to the breech-block; said lever A having an outer actuating-arm A' and an inner arm with a toe *c* and a catch *b*, adapted to engage a corresponding recess *s* in the rear wall of the breech-box; a trigger B provided with a projection *t* against which the toe acts, when the actuating-handle is pulled to unlock the latch, and returns the trigger to its position of rest, a sliding piece C with side strips *f f'* guided in ways of the breech-block at right angles to the plane of motion of the operating-lever; said sliding piece C also provided with pro-

jecting arms *i i* adapted to bear against the plate *d*; a handled spring-bolt D within the sliding piece, with an inner tenon *m* adapted to engage mortises *u* or *v* in the breech-block for the purpose of vertically adjusting the sliding piece in two positions, of which in the higher one the projecting arms *i i* bear against the plate *d*, thereby locking the operating-lever A, and the strip *f'* bears against the trigger, thereby locking the latter, while in the lower position of the sliding piece the operating-lever and the trigger are released, and an arm *h* projecting from the handle E of the bolt D, which transmits the tension of the spring *g* to the lever A, so as to dispense with a separate spring, substantially as shown and described.

5. In a breech-fermeture of the wedge system, an operating-lever A pivoted to the breech-block, said lever A having an outer actuating-arm A' and an inner arm projecting into a cavity of the breech-block, provided with a catch *b*, adapted to engage a corresponding recess *s* in the rear wall of the breech-box; a spring connected to the operating-lever so as to force the catch *b* into the recess *s* and hold it therein; a bell-crank lever F pivoted in the stop-flange of the breech-wedge, the arm *z* of which bears against the gun when the breech is closed, and a spring *q* bearing against the arm *y* of the bell-crank lever, said arm *y* being provided with a catch *n* adapted to engage under the action of the spring *q* a catch *p* of the operating-lever A as soon as the wedge is pulled out, substantially as shown and described.

6. In a breech-fermeture of the wedge system, an operating-lever A pivoted to the breech-block, said lever A having an outer actuating-arm A' and an inner arm projecting into a cavity of the breech-block, provided with a toe *c* and a catch *b*, adapted to engage a corresponding recess *s* in the rear wall of the breech-box; a spring connected to the operating-lever so as to force the catch *b* into the recess *s* and hold it therein; a bell-crank lever F pivoted in the stop-flange of the breech-wedge, the arm *z* of which bears against the gun when the breech is closed, and a spring *q* bearing against the arm *y* of the bell-crank lever, said arm *y* being provided with a catch *n* adapted to engage under the action of the spring *q* a catch *p* of the operating-lever A as soon as the wedge is pulled out; a trigger B provided with a projection *t* against which the toe *c* acts, so as to return the trigger to the position of rest, when the actuating-handle is pulled for releasing the latch, substantially as shown and described.

7. In a breech-fermeture of the wedge system, an operating-lever A pivoted to the breech-block, said lever A having an outer actuating-arm A' and an inner arm projecting into a cavity of the breech-block, provided with a toe *c* and a catch *b*, adapted to engage a corresponding recess *s* in the rear wall of the breech-box; a spring connected to the op-

erating-lever so as to force the catch *b* into the recess *s* and hold it therein; a bell-crank lever *F* pivoted in the stop-flange of the breech-wedge, the arm *z* of which bears against the gun when the breech is closed, and a spring *q* bearing against the arm *y* of the bell-crank lever, said arm *y* being provided with a catch *n* adapted to engage under the action of the spring *q* a catch *p* of the operating-lever *A* as soon as the wedge is pulled out; a trigger *B* provided with a projection *t* against which the toe *c* acts, so as to return the trigger to the position of rest, when the actuating-handle is pulled for releasing the latch; a sliding piece *C* with side strips *f f'* guided in ways of the breech-block at right angles to the plane of motion of the operating-lever; said sliding piece *C* also provided with projecting arms *i i* adapted to bear against the plate *d*; and a handled spring-bolt *D* within the sliding piece, with an inner tenon *m* adapted to engage mortises *u* or *v* in the breech-block for the purpose of vertically adjusting the sliding piece in two positions, of which in the higher one the projecting arms *i i* bear against the plate *d*, thereby locking the operating-lever *A*, and the strip *f'* bears against the trigger, thereby locking the latter, while in the lower position of the sliding piece the operating-lever and the trigger are released, substantially as shown and described.

8. In a breech-fermeture of the wedge system, an operating-lever *A* pivoted to the breech-block; said lever *A* having an outer actuating-arm *A'* and an inner arm with a toe *c* and a catch *b*, adapted to engage a corresponding recess *s* in the rear wall of the breech-box; a bell-crank lever *F* pivoted in the stop-flange of the breech-wedge, the arm *z* of which

bears against the gun when the breech is closed, and a spring *q* bearing against the arm *y* of the bell-crank lever, said arm *y* being provided with a catch *n* adapted to engage under the action of the spring *q* a catch *p* of the operating-lever *A* as soon as the wedge is pulled out; a trigger *B* provided with a projection *t* against which the toe *c* acts, so as to return the trigger to the position of rest, when the actuating-handle is pulled for releasing the latch; a sliding piece *C* with side strips *f f'* guided in ways of the breech-block at right angles to the plane of motion of the operating-lever; said sliding piece *C* also provided with projecting arms *i i* adapted to bear against the plate *d*; and a handled spring-bolt *D* within the sliding piece, with an inner tenon *m* adapted to engage mortises *u* or *v* in the breech-block for the purpose of vertically adjusting the sliding piece in two positions, of which in the higher one the projecting arms *i i* bear against the plate *d*, thereby locking the operating-lever *A*, and the strip *f'* bears against the trigger, thereby locking the latter, while in the lower position of the sliding piece the operating-lever and the trigger are released; and an arm *h* projecting from the handle *E* of the bolt *D*, which transmits the tension of the spring *g* to the lever *A*, so as to dispense with a separate spring, substantially as shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CARL POHLIT.

Witnesses:

WILLIAM ESSENWEIN,
GEO. P. PETTIT.