

No. 654,608.

Patented July 31, 1900.

A. CRAMOND.
LOCK.

(Application filed Apr. 26, 1899.)

(No Model.)

FIG. 1

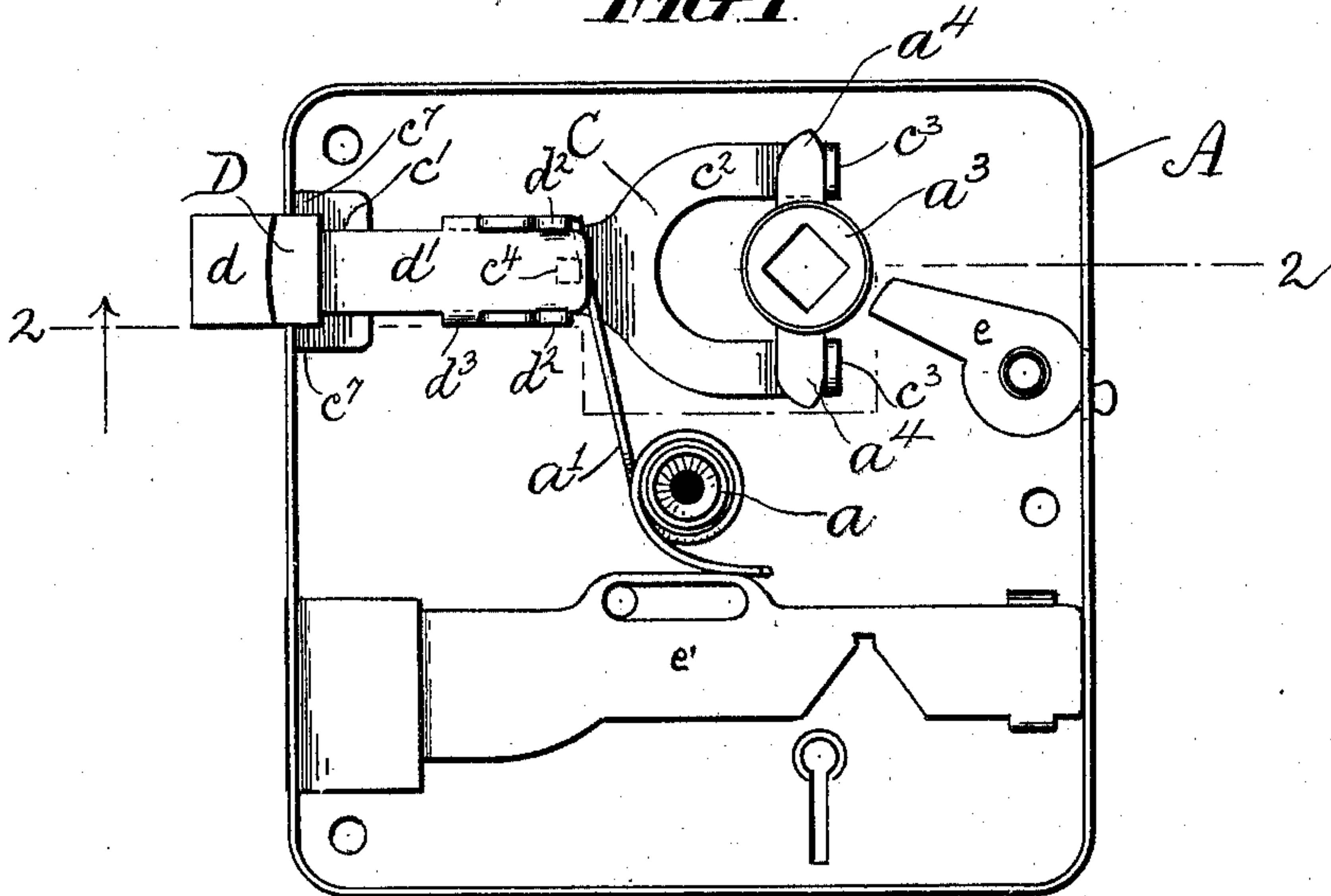


FIG. 2

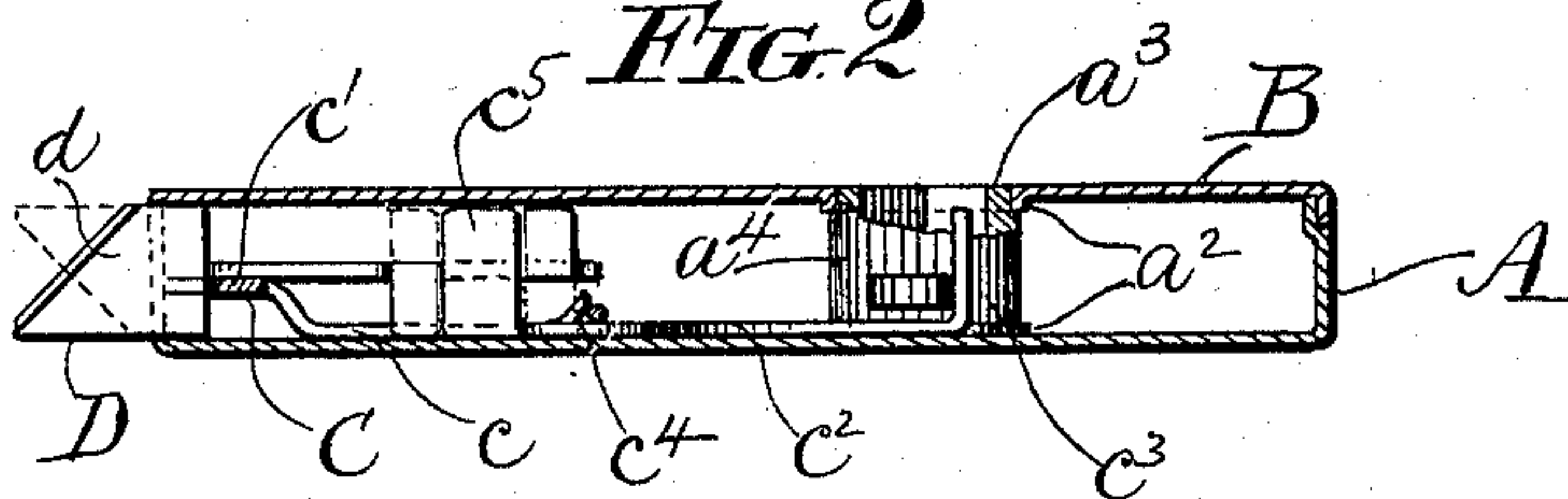


FIG. 3

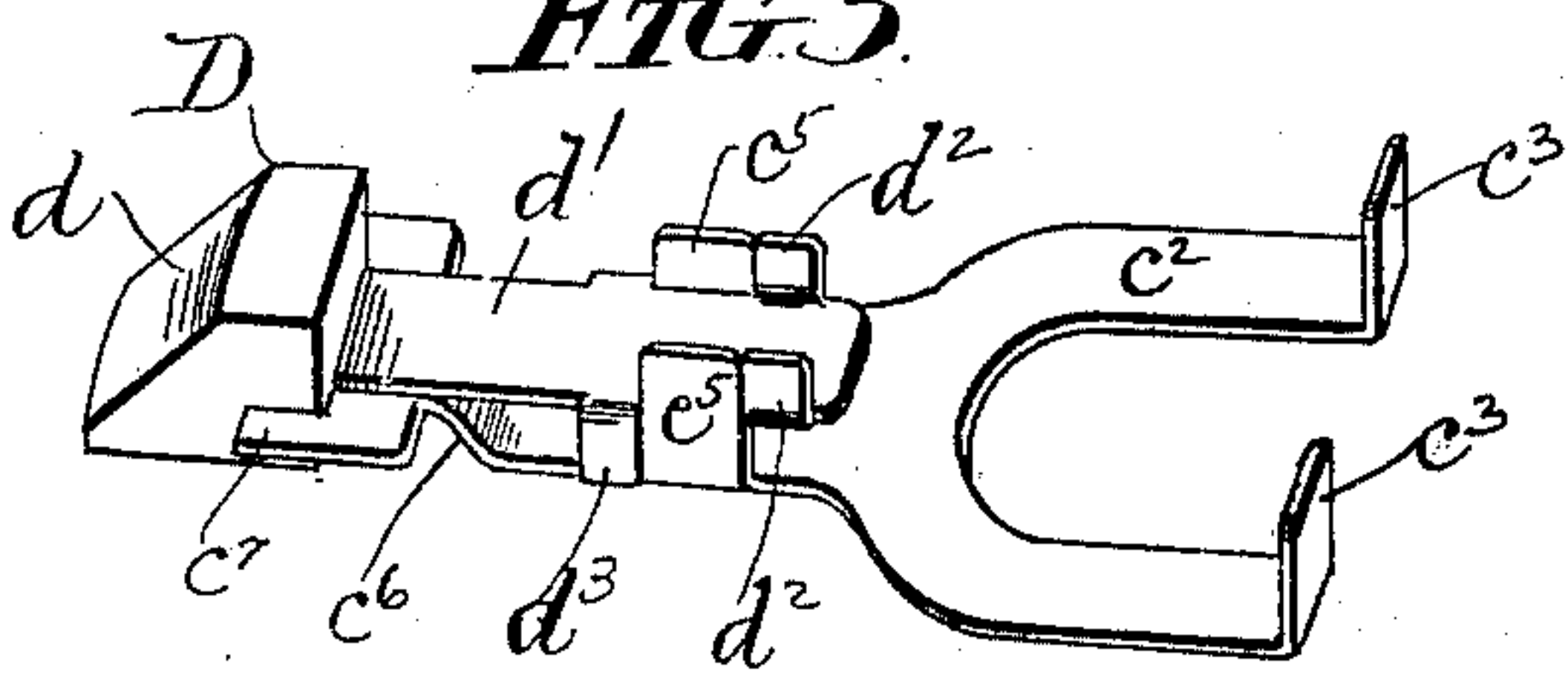


FIG. 4

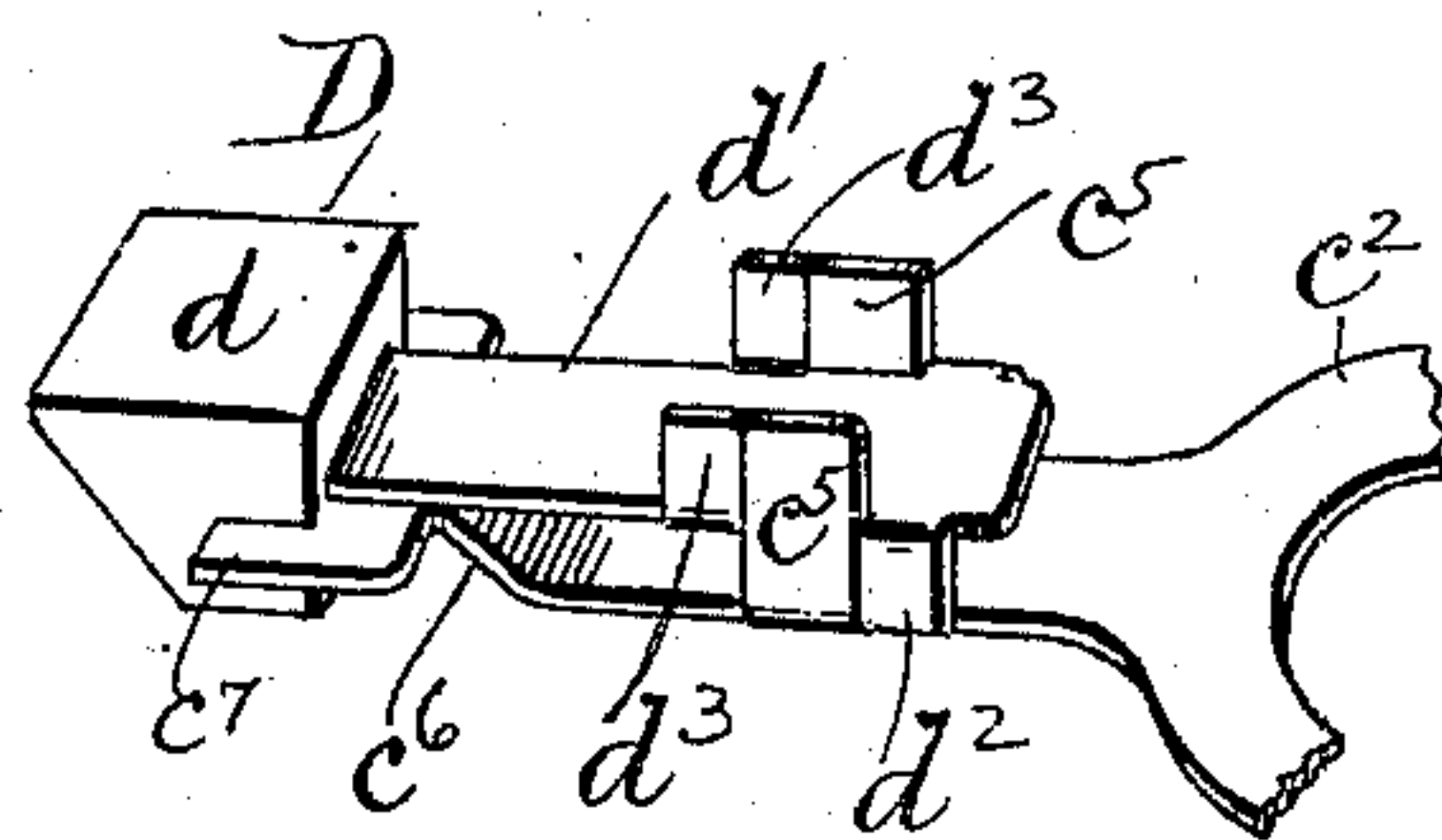


FIG. 5

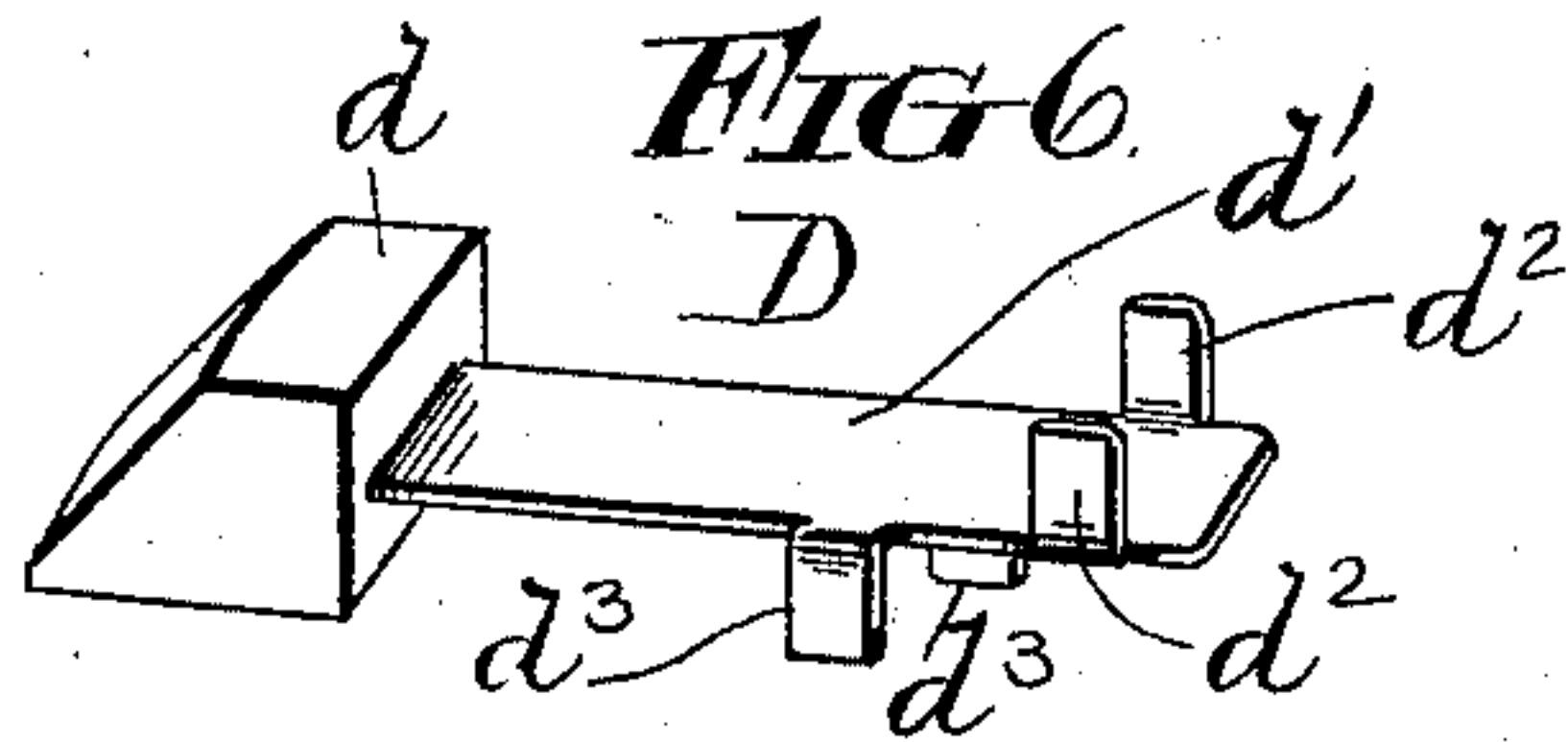
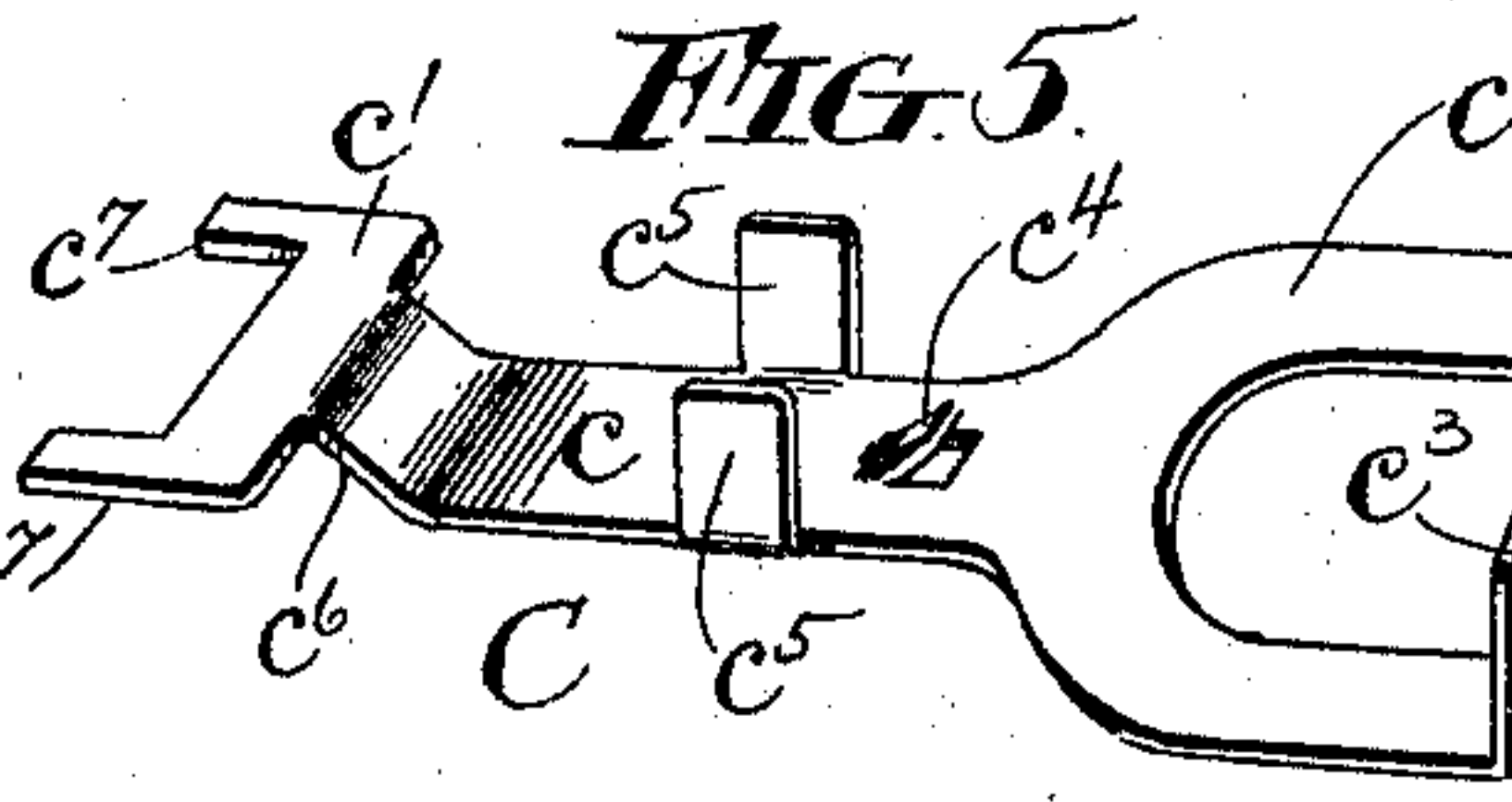


FIG. 6



Witnesses:
W. J. Bell
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Inventor.
Alexander Cramond
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UNITED STATES PATENT OFFICE.

ALEXANDER CRAMOND, OF LYONS, IOWA, ASSIGNOR TO D. J. BATCHELDER,
OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 654,608, dated July 31, 1900.

Application filed April 26, 1899. Serial No. 714,607. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER CRAMOND, a citizen of the United States, residing at Lyons, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Reversible Latches for Rim-Locks, of which the following is a specification.

My invention relates to that class of locks in which the bevel of the latch may be reversed or changed to accommodate it to a door opening either to the right or to the left; and its objects are to provide a device and organization of this character wherein the construction is greatly simplified and the reversal of the latch readily and easily accomplished and without in any manner disturbing the internal mechanism of the case.

The invention consists in the construction, combination, and arrangement of parts, all as fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is an interior view of a lock containing my improvements, the cap or top of the case being removed. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail view showing the latch-slide and latch-bolt in their relative positions when assembled. Fig. 4 is a detail view similar to Fig. 3, but showing the latch-bolt reversed on the latch-slide. Fig. 5 is a detail perspective view of the latch-slide, and Fig. 6 is a similar view of the latch-bolt.

In carrying out my invention I employ a case composed of a shell A and a cap piece or top B of any desired description. The shell is provided with a suitable post a , which is internally threaded to provide a seat for the screw that fastens the cap in position upon the shell. The post also provides a bearing for the spring a' , which operates the latch-slide in a manner hereinafter fully described.

The letter C indicates the latch-slide, having a shank c , the head c' , and a rear bifurcated portion or yoke c^2 , which receives the latch-operating mechanism. The shank and yoke of the slide are in the same plane, as shown in Fig. 2, and thus form a smooth surface to slide back and forth upon the under face of the

case or shell as the latch is "shot" or retracted. The metal of the case and cap is drawn inwardly at a^2 to form bearings for the barrel or arbor a^3 , which is provided with a square bore or channel to receive the shank or spindle of the knob in the usual manner. The barrel or arbor is provided with two oppositely-projecting wings a^4 , which constitute the latch-operating mechanism cooperating with the yoke of the slide, as hereinafter more fully described. The yoke c^2 of the slide C straddles the inwardly-drawn portion a^2 of the shell. The ends of the yoke are bent at right angles to terminate in the upwardly-projecting lugs c^3 , which are in the path of the wings a^4 when the parts are assembled and cooperate with the wings when the barrel or arbor is turned in its bearings by the operation of the knob, whereby the slide is operated to be retracted from the bolt-opening in the face-plate of the shell or case by the cam action of the wings upon the lugs. The forks of the yoke pass freely back and forth between the inner face of the case or shell and the wings a^4 , the yoke being thereby guided in its backward-and-forward movements and retained at all times in proper position with respect to its associated parts. The shank of the slide is provided with a lug c^4 , preferably struck up from the body of the slide, to form a bearing for one end of the operating-spring a' , which is placed around the post a , its other end bearing upon any suitable portion of the lock e' or case. The slide is shot by the spring or is normally held in its forward position toward the bolt-opening in the end or face plate of the shell. The shank is also provided in front of the lug c^4 with a pair of ears c^5 , between which the shank of the latch-bolt rests, as more fully hereinafter described. The head c' of the slide is slightly above the plane of the shank, the slide being slightly bent upwardly at the shoulder c^6 for this purpose. The head c' is somewhat greater in width than the shank of the slide and forms with the shank a substantially T-shaped head. The head is provided with forwardly-projecting lugs c^7 , one at each end of its cross portion, which form a seat for the reception of the head of the latch-bolt, as hereinafter fully set forth. The lugs c^3 , the ears

c^5 , and the shoulder c^6 are formed by suitably shaping the metal of which the slide is composed, the lugs and ears being angular to the slide or projecting in planes at substantially right angles to the plane of the shank of the slide.

The latch-bolt D is composed of a suitable head d of the usual form and construction, having a bevel and a shank d' , the shank being connected to the head at about its center, whereby a shoulder is formed by the body of the head upon either side of the shank. The shank is provided with two pairs of ears $d^2 d^3$, the former being located near the rear end of the shank and the latter slightly nearer the head, the distance between these pairs of ears being approximately the width of the ears c^5 on the shank of the slide. The ears extend in pairs in opposite directions, as shown clearly in the drawings, and form a seat on each edge of the shank for the reception of the ears c^5 of the shank of the latch-slide, whereby the slide and bolt are interlocked and the bolt may be readily reversed in either its right or left hand position and securely locked in place upon the slide in either of its positions. The ears $d^2 d^3$ of the shank of the bolt are angularly arranged with reference to the shank itself, projecting in planes at about right angles to the plane of the shank, the ears of one pair extending in one direction on one side of the shank and the ears of the other pair extending in the opposite direction upon the other side of the shank.

When the parts are in the position indicated in Fig. 1 of the drawings the shank of the latch-bolt is superimposed upon the shank of the slide, the ears c^5 of the latter interlocking with the oppositely-projecting pairs of ears $d^2 d^3$ of the former. The ears d^3 of the shank of the bolt in this position embrace the shank of the slide, while the ears c^5 of the slide in turn embrace the shank of the bolt, thus holding the bolt and slide in alinement and compelling them to move simultaneously backward or forward, as if they were integral. The head d of the bolt rests in the seat formed between the lugs c^7 of the head of the slide, as clearly shown in Fig. 3, thereby being held rigidly in position with relation to the slide. When it is desired to reverse the latch, the cover or cap B of the case having been removed to expose the parts, as in Fig. 1, the latch-bolt is lifted from its position as shown in that figure and is reversed or turned over and then resealed in place. In this reverse position the ears d^2 of the bolt embrace the shank of the slide and the ears c^5 of the slide embrace the shank of the bolt, these parts again being interlocked as before by reason of the position of the ears c^5 between the oppositely-extending pairs of ears of the shank of the bolt. The head of the bolt likewise rests in the seat in the head of the slide, as clearly shown in Fig. 4, and the parts are rigidly and firmly retained in their proper relations as before. The head d of

the bolt is of such thickness that in either of its positions its lower face is flush with the lower face of the slide C, the shouldered head of the slide being of the proper height to form a rest for the shank of the bolt, as shown in Fig. 2. The forward bevel edge of the head d projects normally through the opening in the edge or face plate of the case when in its forward position, and the relation of the parts is such that it is withdrawn flush with the opening when retracted by turning the knob, but not entirely through the opening.

The barrel a^3 is securely held in its bearings a^2 in the shell and cap when these parts are assembled, being provided with slightly-reduced ends to rest within the bearings and projecting outwardly therethrough flush with the outer faces of the cap and shell.

The head d of the latch-bolt corresponds approximately in thickness with the inside width of the case and is thereby flush with the inner faces of the shell and cap-piece when they are assembled. The ears c^5 of the latch-slide are approximately equal in height to the inside width of the case, and the ears $d^2 d^3$ of the latch-bolt together equal in height the same width, so that the parts when assembled are securely held against displacement between the inner faces of the shell and cap, as shown in Fig. 2, and the latch is retained in substantially-horizontal alinement in either position and at all times. The tail of the latch-bolt preferably projects slightly over the lug c^4 of the slide in either of its positions, so as to come normally over the end of the spring a' and prevent its accidental displacement. The stop e is operated in the usual manner to permit or prevent the throw of the latch-slide.

In a construction of this nature when the cover or cap of the case is removed the internal mechanism remains undisturbed while the latch-bolt is removed for reversal, the spring which rests upon the slide holding the parts securely in position. The latch-bolt and latch-slide interlock in either position of the former, which may be reversed by being turned over, the interlocking means being so arranged that the proper adjustment of the parts is secured and determined automatically and without any other change in the disposition of the bolt beyond its mere reversal. The slide and bolt are securely and effectively locked together in either position by the same means and constitute a strong and rigid structure equal to an integral latch and slide, with the advantage of the additional function of providing a reversible latch.

It is obvious that changes and modifications of details may be made without in any manner departing from the spirit of my invention. For example, the form of the operating mechanism for the slide and of the parts of the slide cooperating therewith may be changed by using any other equivalent means. Other changes may be made by those skilled in the art within the scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a reversible latch, a latch-slide provided with a pair of ears, and a latch-bolt provided with ears extending in pairs in opposite directions, to interlock with the ears of the slide in either position of the bolt.
2. The combination of a case, a latch-slide having a pair of ears and a latch-bolt having oppositely-extending pairs of ears, the ears of both members being equal in height to the inside width of the case.
3. The combination of a case, a latch-slide composed of a shouldered shank, a head and a yoke having lugs, a barrel having means cooperating with the lugs on the yoke to retract the slide, of a latch-bolt having a head resting in a seat in the head of the slide and interlocking ears on the bolt and slide.
4. In a reversible latch for locks, a latch-slide having a shank and a head forming a shoulder on either side thereof and a shouldered shank, a latch-bolt having a head adapted to the head of the slide in either position of the bolt, and coacting means to interlock the slide and bolt.
5. In a reversible latch, a latch-slide having a shank and a head provided with lugs forming a seat, a latch-bolt having a head and a central shank forming a shoulder on either side of the head, whereby the head may be reversed in its seat, and interlocking means.
6. In a reversible latch, a latch-slide hav-

ing a T-shaped head provided with a seat, and a latch-bolt composed of a shank and a head, the latter adapted to the seat of the slide in either of its positions and the former interlocking with the slide.

7. In a reversible latch, a latch-slide composed of a yoke, a shouldered shank, and a head, the latter being provided with a seat, a latch-bolt having a head and a central shank whereby the head may rest in the seat of the slide in either its right or left hand position, and interlocking means on the shanks.

8. In a reversible latch, a slide having a pair of angular ears, and a bolt having pairs of oppositely-disposed angular ears forming seats for the ears on the slide.

9. The combination of a case, a latch-slide having a lug, a spring resting on the slide and bearing against the lug, a latch-bolt superposed upon the slide, the tail of the bolt projecting over the lug, and interlocking means for the bolt and slide.

10. In a reversible latch, a latch-slide provided with ears and a latch-bolt provided with ears, the ears of one member being arranged in an opposite pair and the ears of the other member in opposite pairs forming seats for the first pair in either position of the parts.

In testimony whereof I affix my signature in the presence of two witnesses.

ALEXANDER CRAMOND.

Witnesses:

A. L. HOLMES,
J. H. PETERS.