

(No Model.)

A. H. BARNES.
LOCK.

No. 605,466.

Patented June 14, 1898.

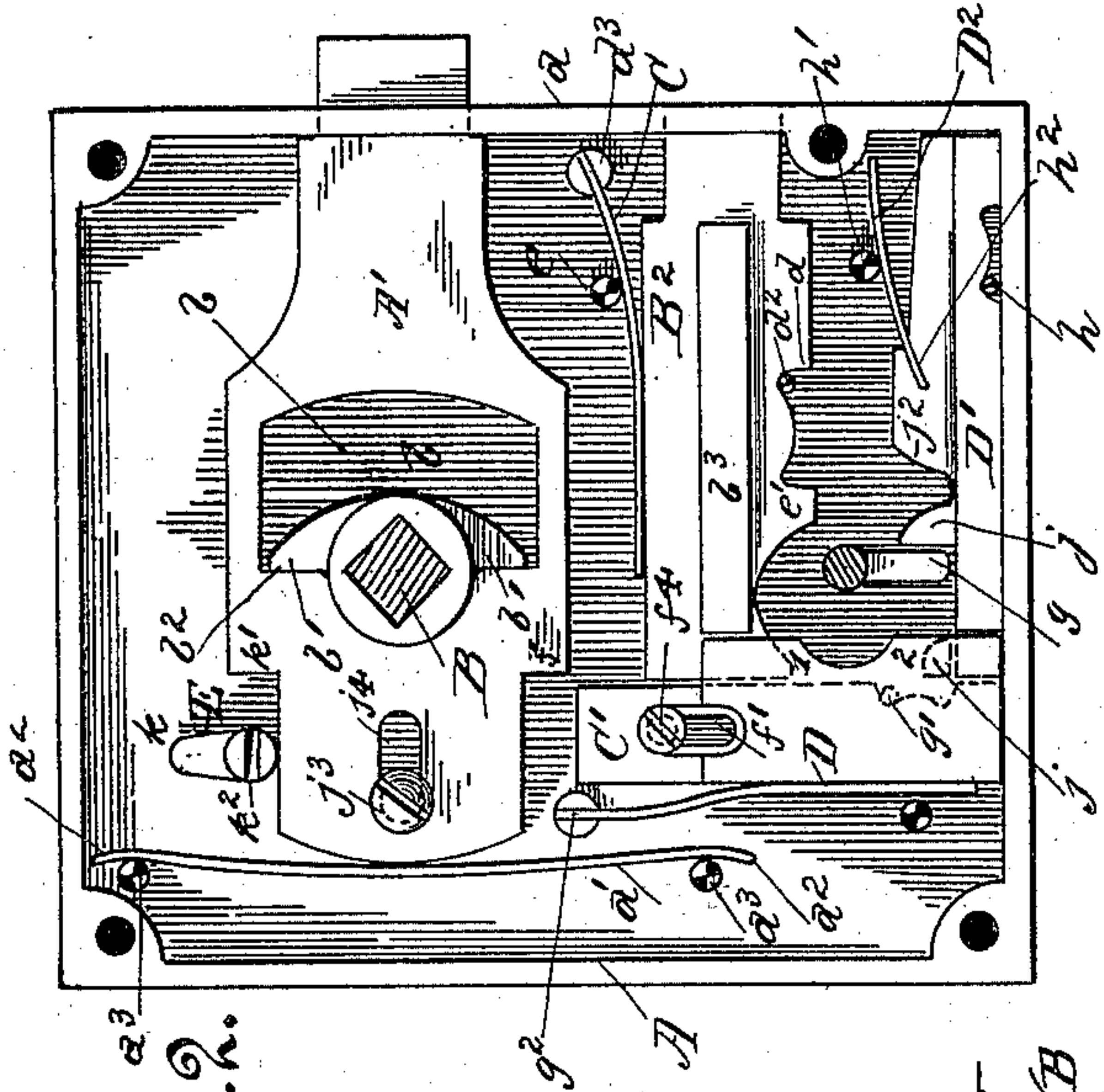


Fig. 2.

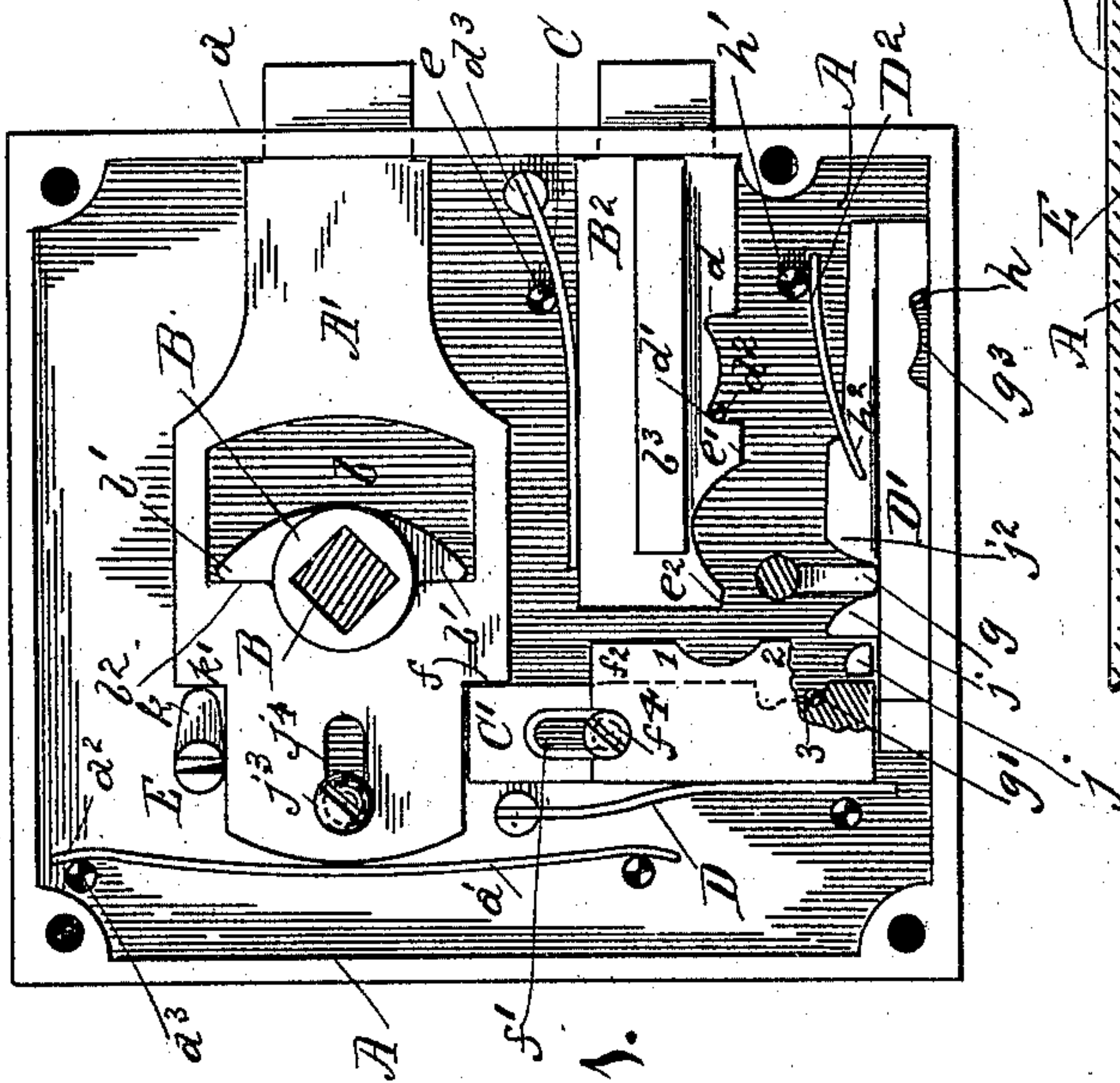
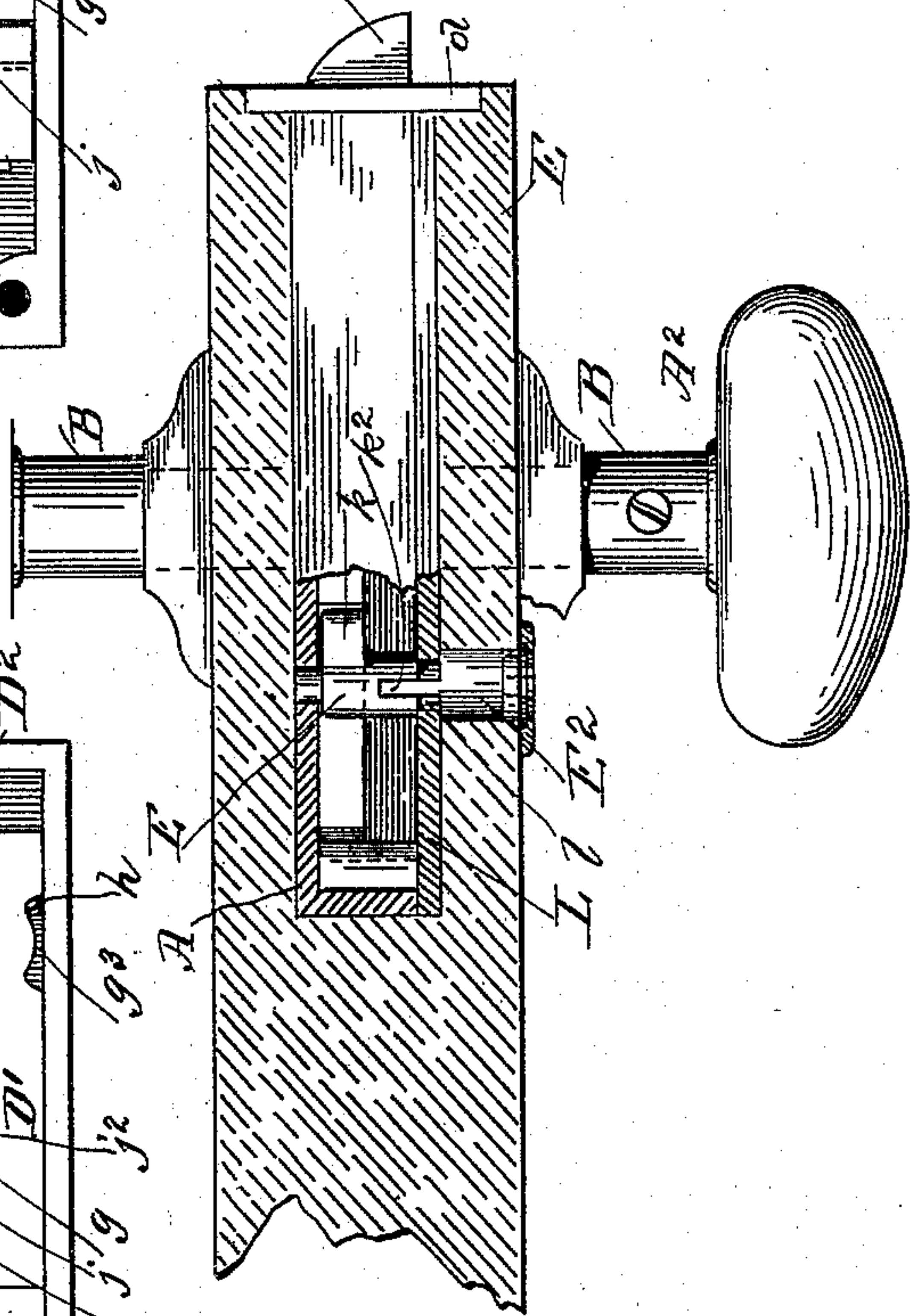


Fig. 1.

Fig. 3.



Witnesses.

J. E. Monteverde.

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Inventor.
Amos H. Barnes
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his atty.

UNITED STATES PATENT OFFICE.

AMOS H. BARNES, OF RENO, NEVADA.

LOCK.

SPECIFICATION forming part of Letters Patent No. 605,466, dated June 14, 1898.

Application filed March 29, 1897. Serial No. 629,749. (No model.)

To all whom it may concern:

Be it known that I, AMOS H. BARNES, a citizen of the United States, residing at Reno, in the county of Washoe and State of Nevada, have invented certain new and useful Improvements in Locks; and I do hereby declare that the following is a full, clear, and exact description thereof.

The present invention relates to a certain new and useful door-lock, and more especially to that class known as "mortise-locks;" and it consists in the arrangement of parts and details of construction, as will be hereinafter fully set forth in the drawings and described and pointed out in the specification.

The object of the invention is to provide a simple and inexpensive lock which shall be so constructed that as the lock-bolt is thrown outward the latch-bolt will be locked against inward movement.

In order fully to understand the invention, reference must be had to the accompanying sheet of drawings, forming a part of this application, wherein—

Figure 1 is a top plan view of the lock with the face-plate removed, showing the position of the parts when the lock-bolt is thrown inward. Fig. 2 is a similar view showing the position of the parts when the lock-bolt is moved outward and the latch-bolt locked against inward movement, and Fig. 3 is a broken sectional view showing the lock secured within the mortise of a door.

In the drawings the letter A is used to indicate the frame or casing for the lock mechanism. Within the frame or casing is located the slide or latch bolt A', the outer end of which works through an opening formed in the edge *a* of the frame or casing. This slide or latch bolt is held pressed outward by the flat steel spring *a'*, which bears against the rear or tail end of the said bolt. The ends *a*² of this spring are slightly curved and bear against the studs or pins *a*³, upwardly projecting from the base-plate of the frame or casing. This latch-bolt is thrown inward or operated by the turning of the door knobs or handles A², secured upon the ends of the square shank B, which extends through the casing and guide B'. This guide is fitted within the slot *b*, cut in the latch-bolt, and is provided with the side wings *b'*, which wings

or lugs as the door-knob is turned bear against the face *b*² of the slide or latch bolt and force the said bolt inward, the tension or pressure of the spring *a'* being sufficient to move the same outward when the door-knob is released.

Below the latch-bolt is arranged the lock-bolt B², the outer end of which works through an opening formed in the edge *a* of the frame or casing A. This bolt is cast with a rib *b*³, so as to make the upper face of the said bolt come flush with the edge of the casing or frame. The lower edge of the lock-bolt is formed with the notches *d d'* and rests upon the pin or stud *d*², upwardly projecting from the base-plate or the frame or casing, being held downward by the spring C. This spring is connected to the stud *d*³ and the free end thereof passes beneath the stud *e* and bears upon the upper edge of said bolt, so as to hold the same pressed down upon the stud or pin *d*² and prevents its being jarred out of position during the handling of the lock. The lower inner end portion of this bolt is also cut away in order to form two shoulders *e' e*², with which the bit of the key engages, so as to throw the bolt B² forward and backward.

At the rear of the lock-bolt is arranged the vertically-movable slide-tumbler C', which when thrown upward moves against the tail of the latch-bolt behind the shoulder *f* and holds the latch-bolt against inward movement. This slide-tumbler is held in place by means of the guide-screw *f*⁴, which extends through the slot *f'*, cut in the slide-tumbler, and screws into the bottom plate of the frame or casing, and said slide-tumbler is cast with an inwardly-projecting flange *f*², the edge of which is cut away, so as to provide the shoulders 1 2, which are engaged by the bit *g* of the key, so as to throw the tumbler in order to lock or release the latch-bolt as the same is turned to lock or release the slide-bolt.

The inner edge of the slide-tumbler is cut away, as shown at 3, and rides, as raised or lowered, upon the stud *g'*, upwardly projecting from the bottom plate of the casing or frame, being held against said stud by the pressure of the spring D, which is secured to the pin *g*² and extends downward and bears against the outer edge of the slide-tumbler C'.

At the lower portion of the casing is located

the longitudinally-movable lock-bar D' , which bar, when the slide-tumbler is thrown upward, moves beneath the slide-tumbler and holds the same upward until the key is turned to throw it out of engagement with the tumbler. This lock-bar is cut away near its outer lower edge, so as to present an inclined shoulder or edge g^3 , which rides upon the stud h as the lock-bar is thrown forward and backward. The lock-bar is held downward by the spring D^2 , which is attached to a pin h' , upwardly projecting from the bottom plate of the casing, the free end resting within a groove h^2 , cut in the upper edge of said bar. The inner end portion of the lock-bar is reduced and moves beneath the guide-piece j . In the upper edge of the lock-bar is cut a socket which forms the shoulders $j j^2$, against which the bit of the key bears as turned to throw the lock-bolt inward or outward.

The latch-bolt as moved inward or outward rides upon the guide-screw j^3 , which extends through the slot j^4 cut therein into the bottom plate of the casing.

To the bottom plate of the casing is secured, above the latch-bolt, the turn-pin E , the outwardly-projecting leaf or bit k of which when thrown downward engages the shoulder k' at the inner end of the latch-bolt and locks the latch-bolt against inward movement. This pin has a cross-slot k^2 cut in its upper end and is operated by a flat key, which is inserted through an opening cut in the face-plate of the casing or frame and fits within the cross-slot.

In the jamb of the door E' , Fig. 3, on the inside, is fitted the guide-thimble E^2 , which is arranged in line with the opening l of the face-plate L . Through this thimble the key is inserted for operating the turn-pin. This pin serves as a night-catch for locking the latch-bolt independent of the slide-tumbler.

When the parts are in position illustrated by Fig. 1, they are thrown into locked position, Fig. 2, by turning the key, so that the bit g is forced against the shoulder 1 of the slide-tumbler, which throws the said slide-tumbler upward against the latch-bolt A' , back of the shoulder f . As the bit g moves away from the shoulder 1 it bears against the shoulder e' of the lock-bolt B^2 and forces the said bolt outward. (Position illustrated in Fig. 2.) Continuing its movement the bit g

is brought to bear against the shoulder j' of the lock-bar and forces the said bar inward beneath the lower end of the slide-tumbler. Turning the key in an opposite direction the bit g first engages the shoulder j^2 of the lock-bar, forcing it outward, then the shoulder e^2 of the lock-bolt, forcing it inward, and then the shoulder 2 of the slide-tumbler, forcing it downward.

In my lock it will be observed that by one turn of the key I either lock or release both the lock-bolt and the latch-bolt.

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

1. In a lock, the combination with a case having a keyhole, of a horizontally-sliding latch-bolt provided on its under side with a shoulder f , a vertically-sliding tumbler adapted in its raised position to engage said shoulder and hold the latch-bolt from inward movement, a horizontally-sliding lock-bolt below the latch-bolt and above the keyhole and on the same side of the vertically-sliding tumbler as the keyhole, and a horizontally-sliding lock-bar below the keyhole of a length when thrown back to extend under the vertically-sliding tumbler when the latter is raised and hold it in engagement with the shoulder f , said lock-bolt, tumbler, and lock-bar adapted to be operated by a key in said keyhole, substantially as described.

2. In a lock, the combination with a case having a keyhole, and the latch-bolt, of a sliding lock-bolt situated between the latch-bolt and the keyhole, a sliding tumbler moving in a direction substantially at right angles to that of the lock-bolt and adapted to hold the latch-bolt from inward movement, and a sliding lock-bar situated on the side of the keyhole opposite the lock-bolt and moving in a direction parallel with that of the lock-bolt and adapted to hold the sliding tumbler from movement, said lock-bolt, tumbler and lock-bar being adapted to operate by the key.

In testimony whereof I affix my signature, in presence of two witnesses, this 3d day of February, 1897.

AMOS H. BARNES.

Witnesses:

F. M. LEE,
R. C. MOORE.