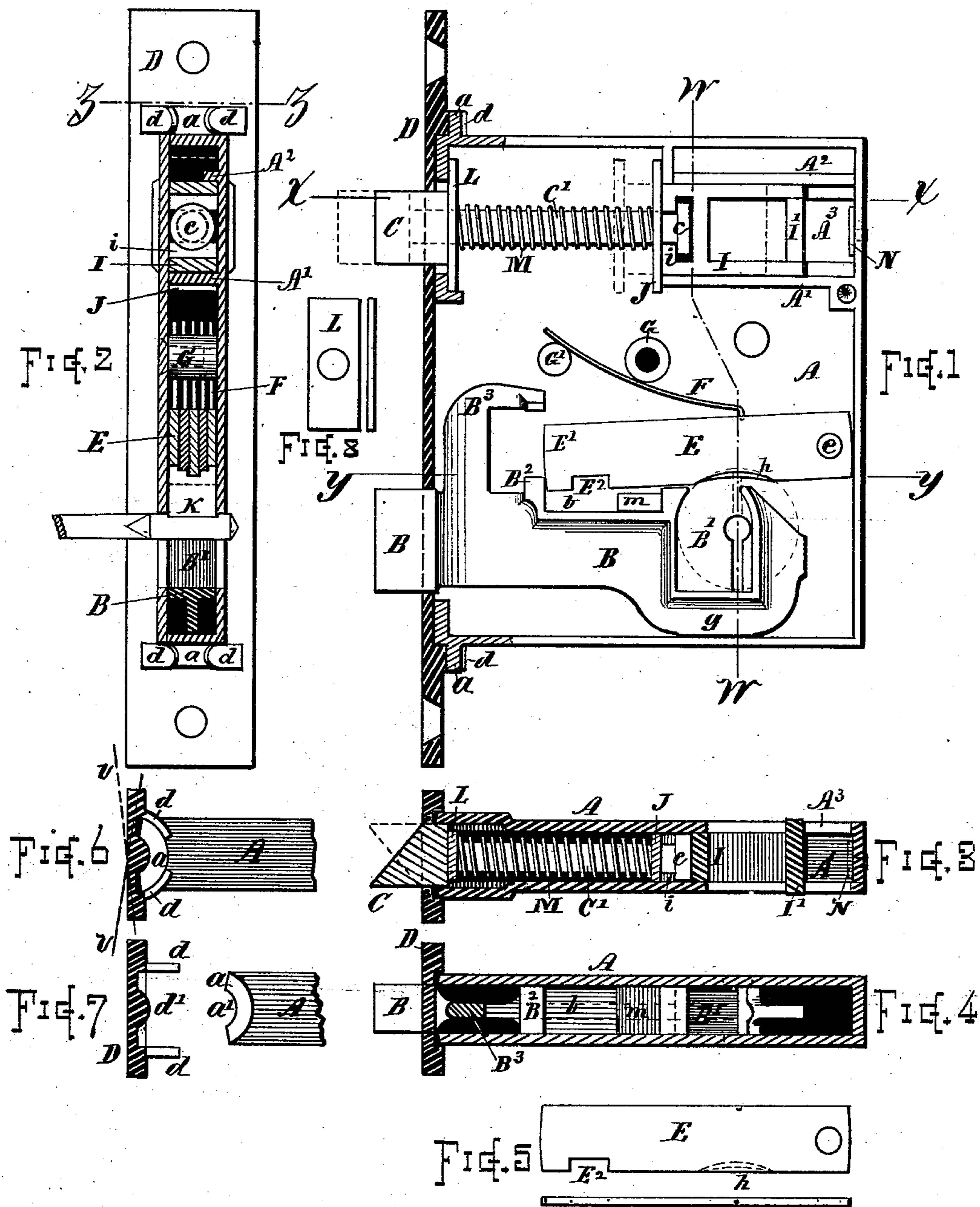


(Model.)

A. B. PROUTY.-
Lock.

No. 235,963.

Patented Dec. 28, 1880.



WITNESSES—
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UNITED STATES PATENT OFFICE.

AUGUSTUS B. PROUTY, OF WORCESTER, MASSACHUSETTS.

LOCK.

SPECIFICATION forming part of Letters Patent No. 235,963, dated December 28, 1880.

Application filed May 14, 1880. (Model.)

To all whom it may concern:

Be it known that I, AUGUSTUS B. PROUTY, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Door Locks and Latches; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a side view of the lock-and-latch mechanism, the side plate of the case being removed and the face-plate shown in section. Fig. 2 represents a vertical transverse section at line *w w*, Fig. 1. Fig. 3 is a horizontal section at line *x x*, Fig. 1, showing the latch-bolt. Fig. 4 is a horizontal section at line *y y*, Fig. 1, showing the lock-bolt. Fig. 5 shows the construction of the tumbler-bars. Fig. 6 is a transverse section of the face-plate at line *z z*, Fig. 2, showing the manner of connecting the face-plate to the lock-case. Fig. 7 is a similar section, showing the form of the parts before they are connected; and Fig. 8 shows the construction of the bar for sustaining the spring of the latch-bolt.

The objects of my invention are to provide a simple, durable, and efficient locking mechanism, which can be manufactured with facility and at slight cost, to render more convenient, inexpensive, and practical the devices of the reversible latch-bolt and the attachment of the adjustable face-plate to the case, and to perfect and improve the construction of lock-and-latch mechanism, as more fully hereinafter set forth.

For the attainment of these objects my invention consists in a lock-and-latch mechanism constructed in the manner shown in the accompanying drawings and herein described, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, the letter A denotes the case or frame. B indicates the locking-bolt, C the latch-bolt, and D the face-plate.

The case A is provided at its upper and lower front corners with projections or lugs *a*, circular at the back, and having front depressions, *a'*, (see Fig. 7,) while the face-plate D is made with projecting fingers or points *d* and central

lugs, *d'*, which latter fit into the depressions *a'*, while the fingers *d* are clinched around the exterior of the lugs *a*, said lugs being firmly embraced in the curved space between the parts *d d'*, thus forming a secure connection between the lock-case A and face-plate D, while permitting the latter to swing about an axial center at or near the plane of its face, so that said face-plate can be practically adjusted to either a right or left hand bevel on the door (see inclined lines *v v*, Fig. 6,) without throwing the plate toward one side to such a degree as to injuriously affect its central alignment with the bolts B C and casing A.

The locking-bolt B is constructed with an open-topped recess, *B'*, for the reception of the key. The sides of said recess are vertical and parallel up to a level with the key-center, above which they curve toward each other, so that the key will take bearing to move the bolt when its bit reaches a vertical position. (See dotted lines, Figs. 1 and 2.) A recess, *b*, is formed along the upper edge of the bolt for the accommodation of the stop-lug *m*, which is rigidly fixed on the casing A. At its forward part bolt B is provided with a guard-lug, *B²*, and with an arm, *B³*, which extends upward and backward, as shown, forming a top guard above and in line with the under guard, *B²*, and at such distance therefrom that the front ends of the tumbler-bars E can just pass between them when said tumbler-bars are brought to a uniform horizontal position. The bearing portions and guards on the bolt B extend the full width of the lock-case, the body of the bolt being made somewhat thinner. The rear part of the bolt may be guided on the lower part of the case, as at *g*, and the rear end of the bolt may be extended so as to strike the case and form the stop for the movement of the bolt when drawn back.

The tumblers E consist of thin straight bars or pieces, which may be punched or cut from sheet metal, or otherwise formed, as desired. They are arranged above the bolt and in such manner as to occupy the entire width of the interior space in the case A. (See Fig. 2.) In the present instance five tumbler-bars, E, are shown; but a greater or less number may be used, as desired. The tumbler-bars E are hung at their rear ends upon a fulcrum stud or pivot, *e*, located above and at a short dis-

tance back from the key-center, thus proportioning their leverage, so that a slight movement at the key-bearing will give an increased movement at their forward ends, E' , where
 5 they work in conjunction with the guards B^2 and B^3 . The bars E are provided with notches or recesses E^2 , which lock over the guard B^2 when the bolt is drawn back. The lower edge of the bars is variously cut away or left full,
 10 (see dotted lines at h , Fig. 5) to effect variety of movement among the several tumblers and give variation of keys.

The tumbler-springs F consist of short plain pieces of wire laid between the studs G G' , and
 15 having their rear ends bent at an angle and set into slight depressions formed in the upper edges of the bars E , as illustrated. In their normal position the tumbler-bars E rest with their front ends behind the guard B^2 , as
 20 shown in Fig. 1; and to permit the withdrawal of the bolt B said tumbler-bars must be all raised to a horizontal position, so that their ends can enter the space between the guards B^2 and B^3 . Should one or more of the bars E
 25 be raised too high, it engages the top guard, B^3 , and arrests the movement of the bolt.

The entire width of the edge on the bit of the key K is shaped to match the tumbler-bars E , the bolt being worked by the side of the
 30 key and by the longest of the projections.

The latch-bolt C is made with a round shank terminated with an enlarged head, c , at its rear end, which fits into and is retained in an under-cut jaw or recess, i , at the forward end
 35 of a rectangular slide-piece, I , which receives movement from the hand-knob or other device by which the latch mechanism is operated. The bolt C and slide I are arranged in a direct line with each other, said slide being supported by a horizontal ledge, A' , and guide-flange A^2 , formed on the interior of the case,
 40 below and above the openings A^3 , through which the latch devices work.

Upon the shank C' are arranged two plates, J and L , between which the spring M is strained. Said plates J and L rest against lugs or portions of the case and retain the spring M in proper position while permitting of either a backward or forward movement of the bolt,
 45 thus permitting, before the operating-handle is placed through the slide I , the end of the bolt C to be reversed for right or left hand doors by drawing it forward to the position indicated by dotted lines, Fig. 1, and then turning
 50 it, as desired.

The slide-piece I is in the present instance expressly adapted for the use of a latch mechanism such as described in Letters Patent Nos. 222,907 and 224,040, heretofore issued to me,
 60 the operating device acting to press back the

plate I' of the slide I for withdrawing the latch-bolt.

A cushion, N , of rubber, leather, or other suitable material, is arranged between the end of the slide I and casing A , to deaden any
 65 shock or sound which might occur from a sudden movement and stroke of the bolt and slide-piece against the back of the case.

It will be observed that the several parts of my lock and latch are simple in construction
 70 and readily put together, while they form an effective and durable mechanism.

I do not desire to claim, broadly, a reversible latch-bolt which can be turned over by being drawn to the front; neither do I claim,
 75 broadly, the adjustment of the face-plate of a door-lock to an inclined position, as I am aware that such features have heretofore been embraced in mechanism of different construction from that herein described.
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What I claim as of my invention, and desire to secure by Letters Patent, is—

1. In a door lock or latch, the face-plate constructed with clinching ears or fingers d , as shown, in combination with the case provided
 85 at its upper and lower corners with rounded projections a , the rear or bearing surfaces of which are formed to the segment of a circle having its central axial line at or nearly coincident with the plane of the face of said plate,
 90 substantially as and for the purpose set forth.

2. The combination, with the lock-case A and face-plate D , of the circular projections a , with recesses a' , the central lugs, d' , and fingers d , clinched upon and embracing said
 95 projections, substantially as and for the purpose set forth.

3. The locking-bolt constructed, substantially as shown, with key-recess B' and guards B^2 B^3 , as set forth.
 100

4. The combination, with the locking-bolt B and series of tumbler-bars E , arranged substantially as shown and described, of the arm or top guard, B^3 , formed upon said locking-bolt and projecting above and over the ends of said
 105 tumbler-bars, as and for the purpose set forth.

5. In combination, as described, the case A , provided with the ledge A' , guide-flange A^2 , and openings A^3 , the latch-bolt C , having round shank C' , with head c , and furnished
 110 with plates J L and spring M , and the rectangular open slide-piece I , having striker-bar I' and under-cut jaw i , all arranged as shown, and for the purposes set forth.

Witness my hand this 3d day of May, A. D. 1880.
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AUGUSTUS B. PROUTY.

Witnesses:

GEO. M. RICE, 2d.,
 CHAS. H. BURLEIGH.