

No. 723,376.

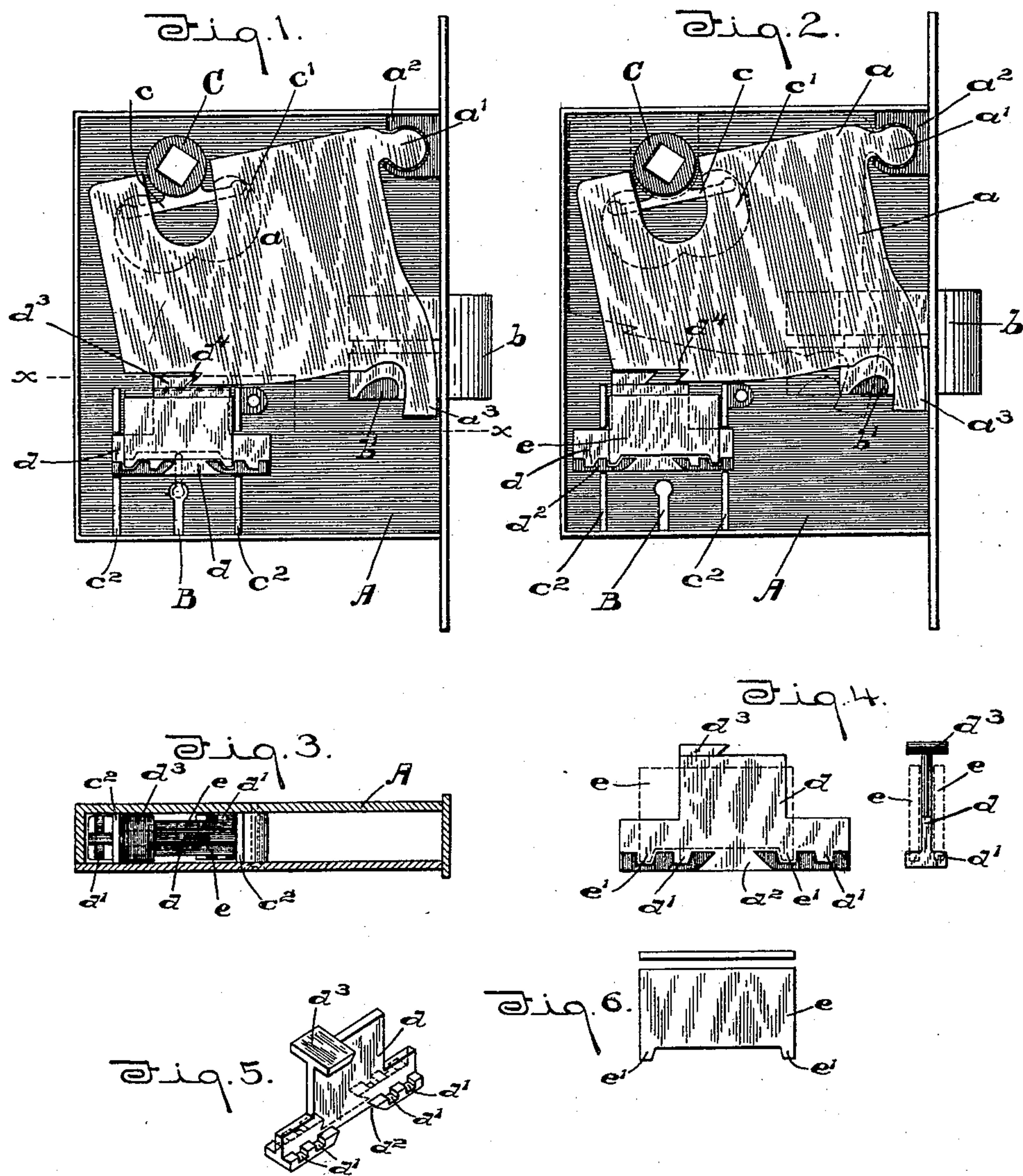
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J. FISH.

## COMBINED LOCK AND LATCH.

APPLICATION FILED SEPT. 11, 1901.

NO MODEL.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 723,376, dated March 24, 1903.

Application filed September 11, 1901. Serial No. 75,017. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN FISH, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in a Combined Lock and Latch; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a combined lock and latch; and its object is to provide one which completely avoids the use of springs and obviates the employment of parts which readily become clogged and broken by undue strains and which when used as a latch will be free and unhampered by the elements composing the lock.

For a full understanding of the merits and advantages of my invention reference is to be had to the accompanying drawings and the following description.

In the drawings, Figure 1 is a view in elevation of the inner face of the lock-case and the parts contained therein, the gravity-plate and the bolt being held in their locked position. Fig. 2 is a similar view of the parts shown in Fig. 1 with the locking-slide released from the gravity-plate and showing in dotted lines the position the latter would assume when the bolt is withdrawn from the keeper. Fig. 3 is a cross-section on the line  $x x$  of Fig. 1, showing a plan view of the locking mechanism. Fig. 4 is a side and end view of the locking-slide, showing the tumblers in dotted lines. Fig. 5 is a perspective view of the locking-slide. Fig. 6 is an edge and side view of the gravity-tumblers.

Referring to the drawings, Figs. 1 and 2, A designates the casing for the lock, which is of the usual construction and adapted to be mortised within a door. The lock is provided with the usual keyhole B and the socket for the knob-spindle C, the latter of which is provided with the depending horizontal arms  $c$ , which engage the cam-grooves  $c'$  in the gravity-plate  $a$ . This gravity-plate  $a$  is provided at one corner with a round lug  $a'$ , which serves as a pivot for the plate, said lug being journaled in a socket formed in the block  $a^2$ , which is suitably mounted in one corner

of the casing. The lower end of the plate is provided with a depending arm  $a^3$ , which engages the opening in the bolt  $b$ . The said bolt  $b$  is bifurcated and provided with a transverse abutment  $b'$ , against which the arm  $a^3$  contacts when the plate is drawn backwardly and upwardly to the position shown in dotted lines in Fig. 2. This movement is effected by means of the turning of the knob-spindle, which likewise turns the socket C, and with it the arms  $c$ , the ends of the arms engaging the cam-slot  $c'$ . The casing is provided near one corner with the keeper-plates  $c^2 c^2$ , which are slotted to receive the ends of a locking-slide  $d$ . The locking-slide  $d$  is formed with extended ends at its base, which fit within the slot of the keepers  $c^2$ , and its upper portion is narrower than the distance between the keepers, so that it will have a free longitudinal play between the same, but be limited in its movement by the edges of the upper vertical portion contacting with the sides of the keepers. Upon each side of the base of the locking-slide are formed the notched or recessed extensions  $d'$ , which do not extend the entire length of the slide, but provide a central recess  $d^2$  to allow free movement of the key-guard therein, and the top of the slide is provided with a lug  $d^3$ , which engages the notch  $d^4$ , formed in the gravity-plate, when the plate is in a locked position, as shown in Fig. 1, but which may be released from the said notch when the plate is unlocked and operating as a latch. Mounted upon each side of the locking-slide are the tumblers  $e$ , each of which is provided with the projection  $e'$  at its lower end, and which projections fit within the notches  $d'$  of the slide and hold the said slide in a locked or unlocked position. The tumblers are restrained from longitudinal movement by means of the keepers  $c^2$ , but are free to move vertically, as they do not extend to the full height of the locking-slide or to the lug  $d^3$ , which projects laterally from the locking-slide and limits the upward movement of the tumblers.

It will be apparent that a single or a multiplicity of tumblers may be employed without departing from the mode of operation, it only necessitating a key of different construction for a multiplicity of tumblers, whereas when a single tumbler is employed the guard



of the key would have only one nib or projection. When the key is inserted and turned in the casing to the position shown in dotted lines in Fig. 1, the guard of the key will first  
 5 pass within the recess  $d^2$  and contact with the lower edge of the tumblers, which will lift the latter and disengage the projections  $e'$  from the notches  $d'$ , when upon further rotation of the key the same will engage the  
 10 edge of the notched portion  $d'$  and throw the locking-slide longitudinally to the position shown in Fig. 2. The lug  $d^3$  is now disengaged from the notch  $d^4$  of the gravity-plate, and the plate is free to be operated as a latch  
 15 by means of the knob-spindle and the arms  $c$ , the lower arm  $a^3$  engaging with the bolt  $b$  and sliding it rearwardly to the position shown in dotted lines in Fig. 2. When the operator releases the knob, the plate  $a$  will  
 20 drop by gravity and push the bolt outwardly into its keeper. A reverse rotation of the key will disengage the tumblers from the notched portion  $d'$  and throw the lock forwardly in engagement with the gravity-plate  
 25 to hold the parts in a locked position.

It will be apparent that this construction obviates the necessity of springs, which so often break and render the lock inoperative, and also of a complicated mechanism or arrangement of parts which are likely to get  
 30 out of order or become clogged by undue strains and careless use.

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

1. A combined lock and latch comprising a casing having a socket therein, a gravity-plate having a lug mounted in the socket and

a depending arm, a bolt engaged by said arm, cam-slots in the plate to be engaged by the  
 40 arms of a knob-spindle, and a notch formed in the lower corner of the plate, combined with a longitudinally-movable locking-slide provided with notched lateral extensions at  
 45 its face and a lug at its top to engage the notch in the plate, keepers on the casing in which the slide is mounted, vertically-moving tumblers mounted between the keepers and supported by the lateral extensions on  
 50 the slide, and depending lugs on the tumblers to engage the notches in the lateral extensions on the slide.

2. In a combined lock and latch, the combination with a pendulous bolt-controlling plate having a notch formed therein and  
 55 adapted to control the movement of the bolt when operating as a latch, of a locking means comprising a locking-slide provided with notched extensions at its base, and a lug at  
 60 its top, said slide movable longitudinally to be engaged and disengaged from the notch in the pendulous plate, vertically-moving tumblers provided with depending lugs to  
 65 normally engage the notches in the slide and hold the slide in a locked or unlocked position, and keepers arranged within the casing of the lock to limit the movement of the locking-slide and hold the tumblers in position, substantially as described.

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

JOHN FISH.

Witnesses:

GEORGE OLTSCH,  
 HUGO OLTSCH.