

(No Model.)

U. D. MIHILLS.  
COMBINED LOCK AND LATCH.

No. 534,276.

Patented Feb. 19, 1895.

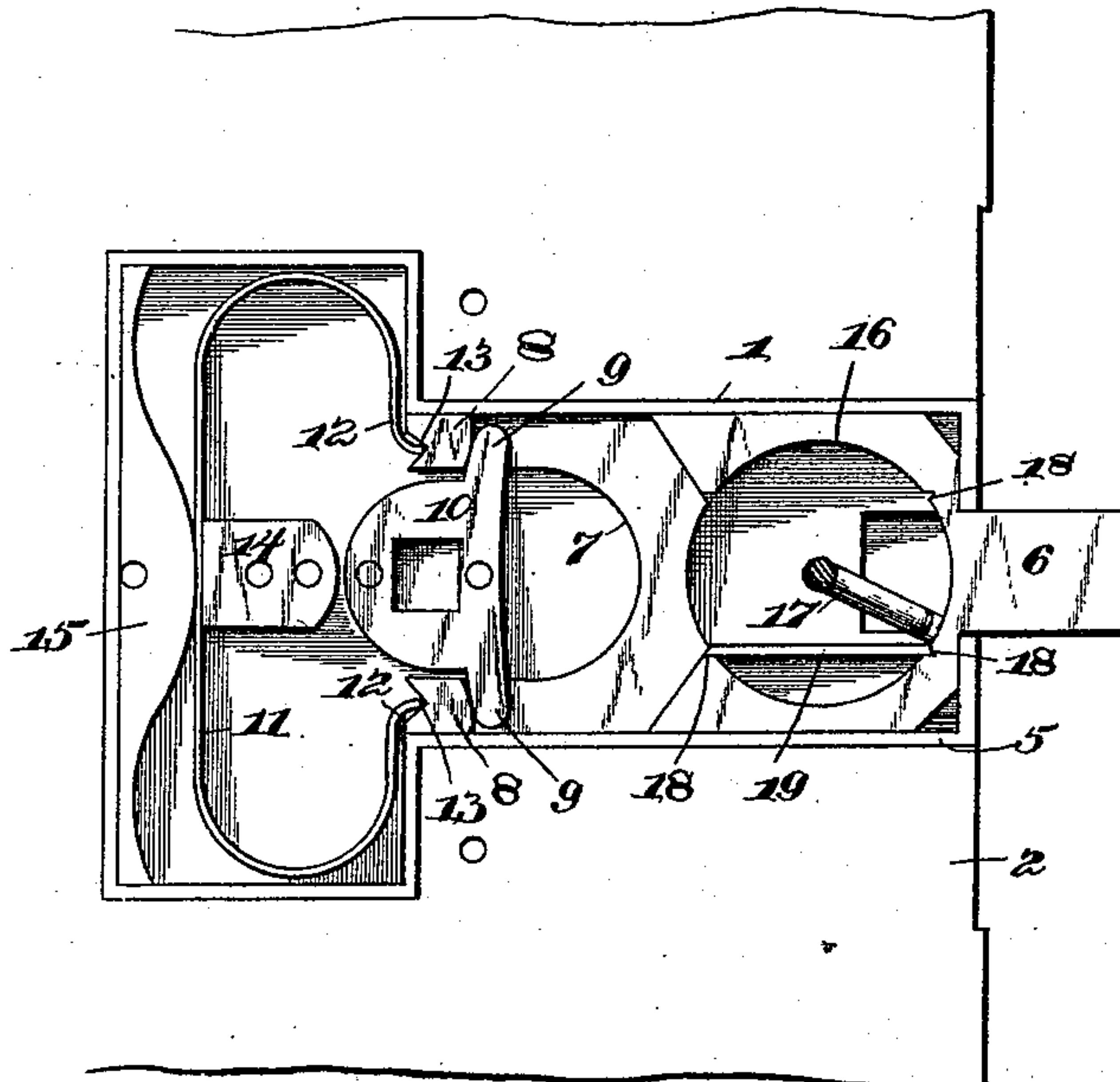


Fig. 1.

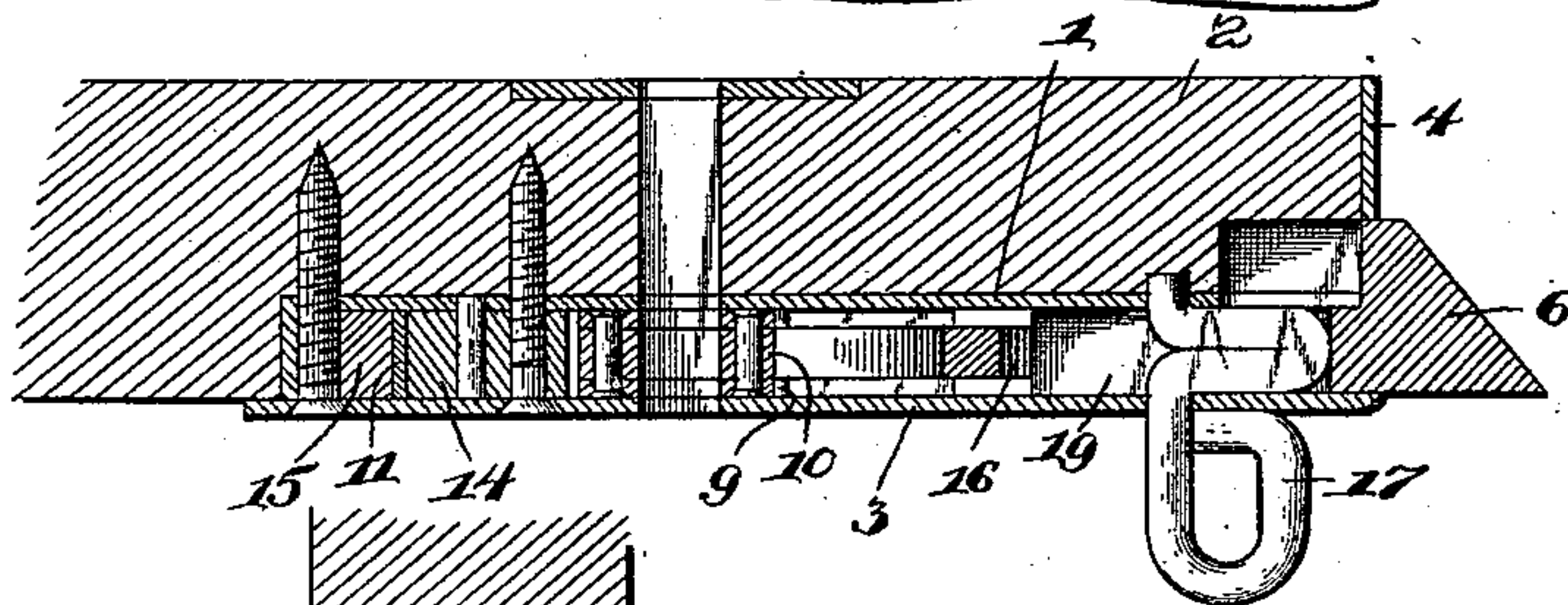


Fig. 2.

Fig. 4.

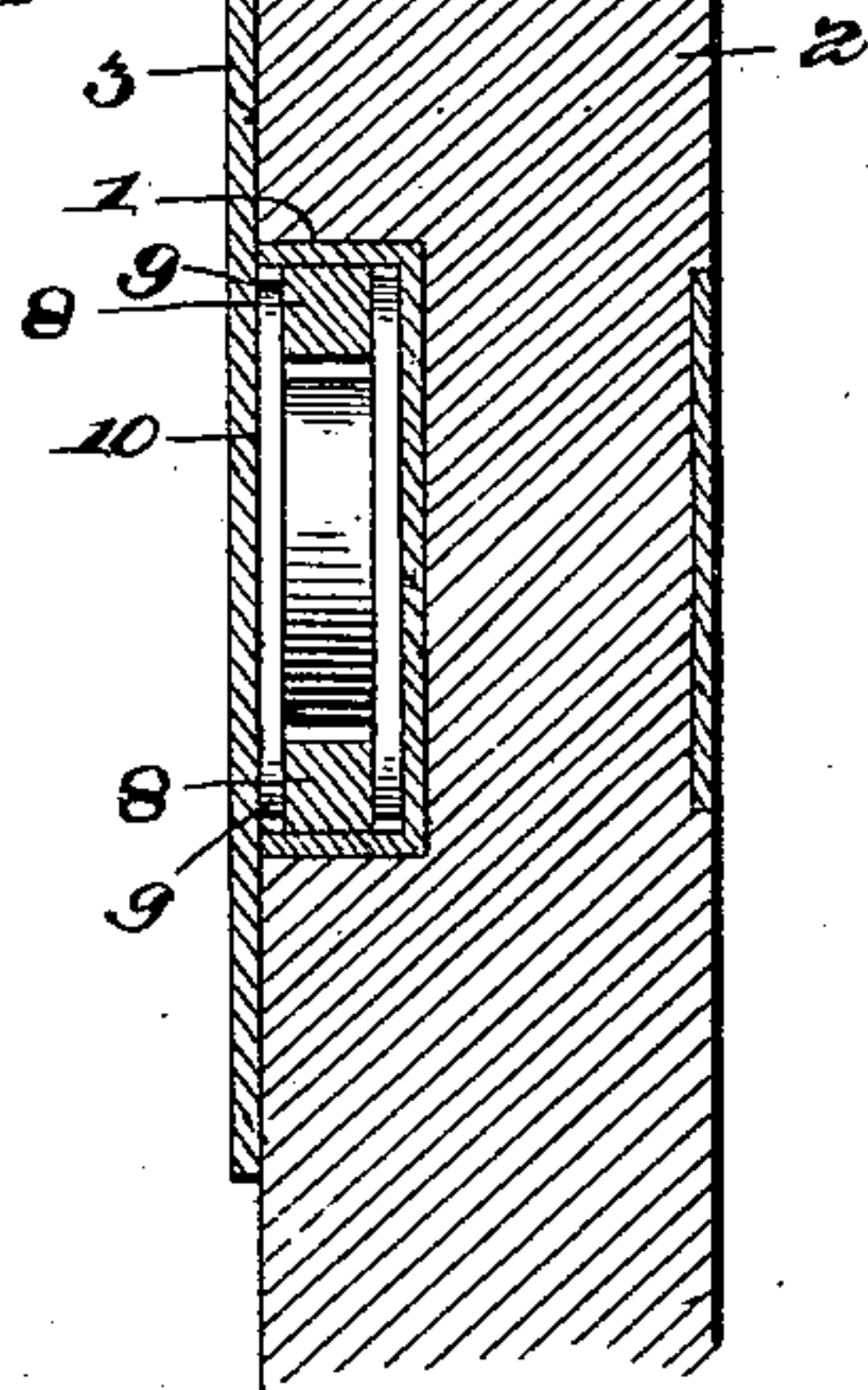
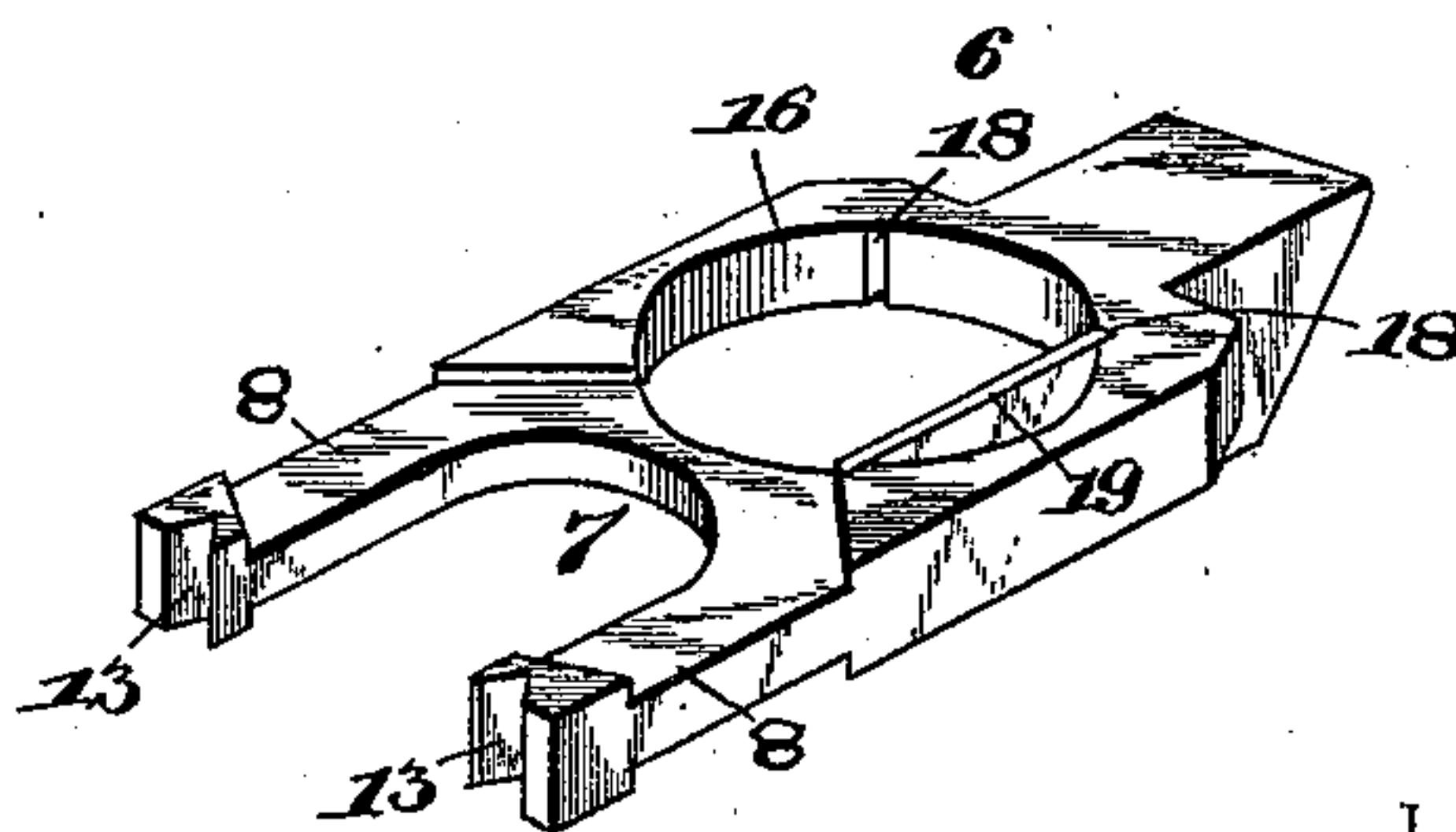


Fig. 3.



Inventor

Uriah D. Mihills.

Witnesses

W. F. Doyle  
J. H. Piley

By his Attorneys.

C. A. Snow & Co.



# UNITED STATES PATENT OFFICE.

URIAH D. MIHILLS, OF FOND DU LAC, WISCONSIN.

## COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 534,276, dated February 19, 1895.

Application filed June 20, 1894. Serial No. 515,175. (No model.)

*To all whom it may concern:*

Be it known that I, URIAH D. MIHILLS, a citizen of the United States, residing at Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented a new and useful Combined Lock and Latch, of which the following is a specification.

The invention relates to improvements in combined locks and latches.

10 The object of the present invention is to improve the construction of combined locks and latches, and to provide an exceedingly simple and inexpensive one, which may be readily applied to either side of a door, and  
15 which will not project from the face of the door like a rim lock or require the mortise of an ordinary mortise lock.

The invention consists in the construction and novel combination and arrangement of  
20 parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings: Figure 1 is an elevation of a portion of a door provided with a combined lock and latch constructed in accordance with this invention, the front or face plate being removed. Fig. 2 is a horizontal sectional view, showing the key turned for locking the bolt against inward movement.  
25 Fig. 3 is a detail perspective view of the bolt. Fig. 4 is a vertical sectional view of the lock.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

35 1 designates a lock casing, which is approximately T-shaped, and which is let into a recess in the face of a door 2, and which is provided with a removable front or face plate 3, which extends over the door adjacent to the  
40 recess thereof, and which is provided with a flange 4 arranged at right angles, and located on the edge of the door, and provided with a bolt opening. This front plate is rectangular, and when in position gives the lock a rectangular appearance, as the T-shaped body portion of the casing is concealed.  
45

The narrow portion 5 of the lock casing forms a way for guiding a sliding bolt 6, which is provided at its outer end with the usual  
50 beveled nose having a broad bevel not liable to be readily worn. The rear end of the bolt

is provided with an integral yoke 7 which is reduced at opposite sides to form end lugs 8; and these reduced portions or sides of the yoke fit in bifurcations, openings or recesses  
55 in opposite arms 9 of a hub 10, which is engaged by the knob spindle in the usual manner, whereby when the knob is turned, the bolt will be retracted against the action of a spring 11. The spring is approximately elliptical. It is located in the wider portion of the  
60 T-shaped casing, and its ends 12 are located opposite each other, and extend toward the front of the lock, and engage notches 13 of the lugs, or rather the ends of the sides of the  
65 yoke. This elliptical spring is centrally supported at its rear side by a lug 14 of the lock casing. It bears loosely, that is, without a rivet or similar fastening device, against the rear side of the lug and is held against the  
70 same by a strip 15 of wood or other suitable material, which will not wear the spring. This strip 15 forms at the rear end of the casing a central convex fulcrum or bearing for the elliptical spring, and also provides concave  
75 end recesses for the reception of the end portions of the spring. By this arrangement the strain on the spring is equally divided, and it cannot become broken as readily as springs that are fastened at one end, and are bent  
80 against a lug or other support, as these generally break at the point of contact with such support.

The bolt is provided intermediate of its ends with a circular opening 16 receiving a  
85 key 17, which is permanently swiveled to the front plate of the lock casing, and which is adapted to have its lug turned forward to be engaged by the front of the bolt to prevent the latter from moving inward. The bolt is  
90 provided above and below the center of the opening 16 with opposite notches, either set of which notches 18 are adapted for the reception of a longitudinal stop piece 19, adapted to support the lug of the key when in position  
95 for locking the bolt, to prevent the lug from swinging downward through the force of gravity and releasing the bolt. The longitudinal stop piece is changed from one set of notches to the other, in order to bring it at the  
100 bottom of the bolt when the lock is changed from one side of a door to the other.



The key is preferably constructed of a single piece of stout wire bent, as shown, to form the lug and the handle portions.

The casing is provided at opposite sides with perforations to receive one end of the key, and the inner terminal of the shank. The lug is located between the sides of the casing, and the shank is bent to form an exterior loop, which bears against the adjacent side of the casing, whereby the latch key or catch 17 is permanently mounted on the casing.

It will be seen that the combined lock and latch is simple and comparatively inexpensive in construction, that it is adapted to be conveniently applied to a door whether the same be thick, or too thin for an ordinary mortise lock, and that it may be readily arranged on either side of the door. It will also be apparent that this arrangement will shorten the spindle of a knob, and thereby lessen the cost of the same; and by balancing the spring in the manner shown its durability is greatly increased.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. In a combined lock and latch, the combination of a spring actuated bolt having an opening and provided at the top and bottom of the same with opposite notches, a reversible longitudinal stop piece adapted to fit in either set of notches to permit a reversal of the lock and latch, and a key arranged in the opening of the bolt and adapted to be turned longitudinally of the same to prevent the bolt moving inward and arranged to be supported by the stop piece, substantially as described.

2. In a combined lock and latch, the combination of a bolt having an opening, a key having its lug located in the opening of the bolt and adapted to be turned against the front side of the opening, and a reversible stop piece arranged in the opening of the bolt for supporting the lug of the key and adapted

to permit the lock and latch to be reversed, substantially as described.

3. In a combined lock and latch, the combination of a casing provided at its rear end with a central convex fulcrum and having recesses at opposite ends of the same, a lug located in advance of the fulcrum, a bolt slidingly mounted in the casing and provided at its rear end with a yoke, the approximately elliptical spring having its straight side arranged between the lug and the fulcrum and having its terminals engaging the ends of the yoke, the end portions of the elliptical spring being disposed opposite the said recesses of the casing, and means for operating the bolt, substantially as described.

4. In a combined lock and latch, the combination of a casing, a bolt slidingly mounted therein and terminating at its inner end with a yoke having the sides thereof reduced forming end lugs and provided with notches, a hub having the ends of its arms bifurcated and receiving the reduced portion of the yoke, and the elliptical spring centrally supported and having its ends terminating opposite the sides of the yoke and engaging the notches thereof, substantially as described.

5. In a combined lock and latch, the combination of a casing provided with oppositely disposed perforations, a bolt mounted in the casing, and a permanently mounted latch key or catch constructed of a single piece of wire folded or doubled intermediate of its ends to form a lug, and having one end and its shank journaled in said perforations, the shank of the key or catch being located on the exterior of the casing and bent to form a loop bearing against the adjacent side of the casing, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

URIAH D. MIHILLS.

Witnesses:

MINA M. MIHILLS,  
LIBBIE L. HOWARD.