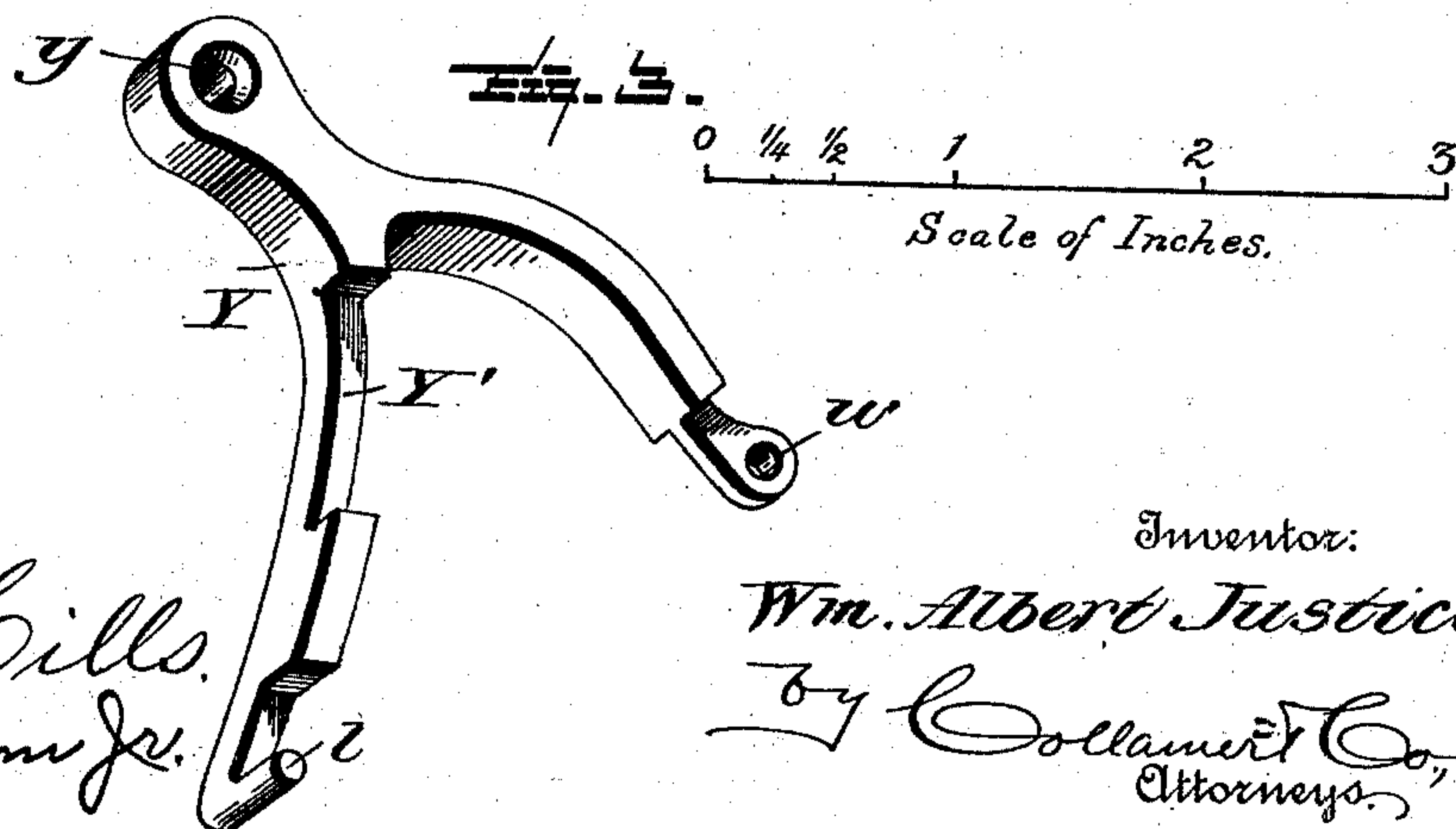
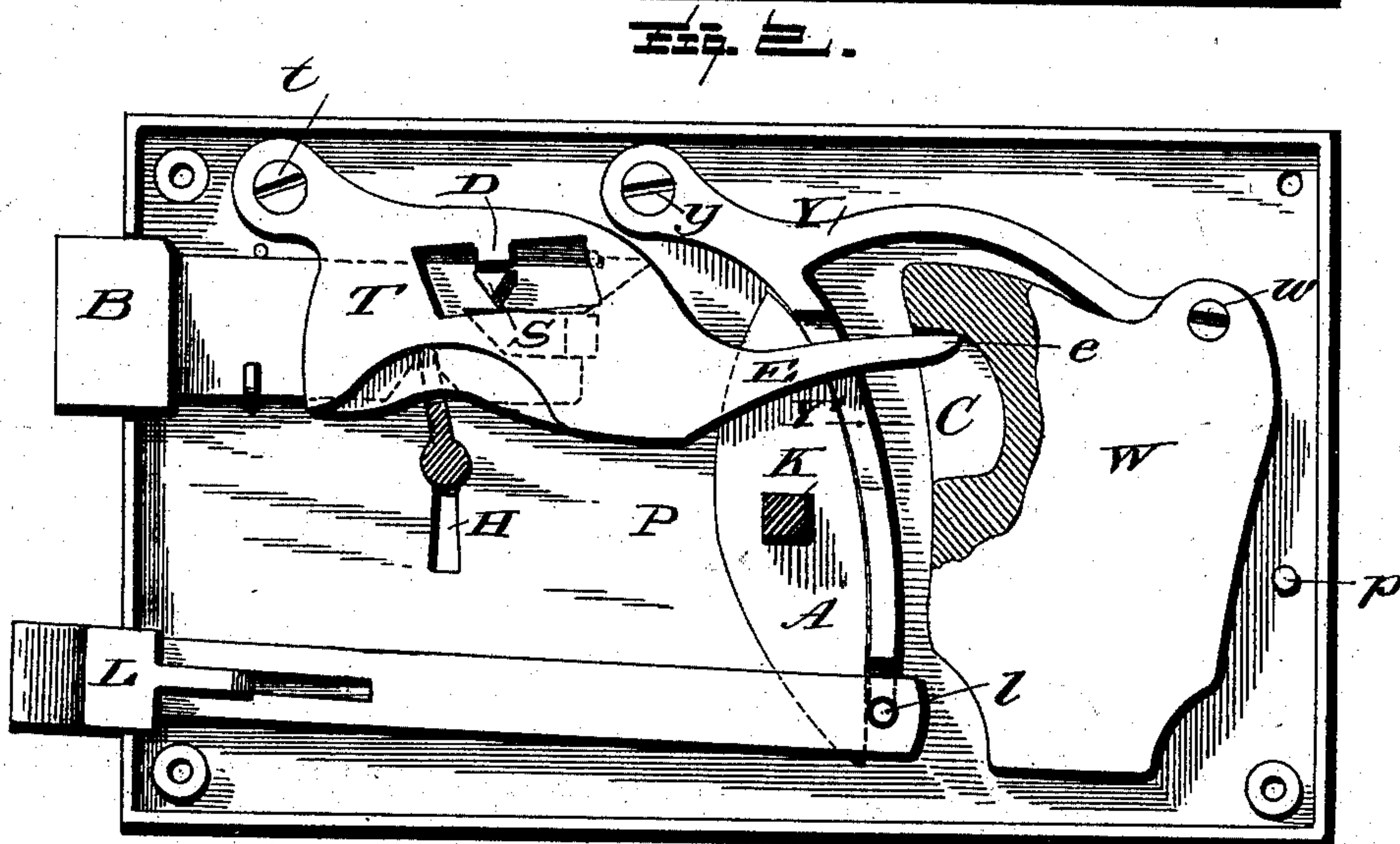
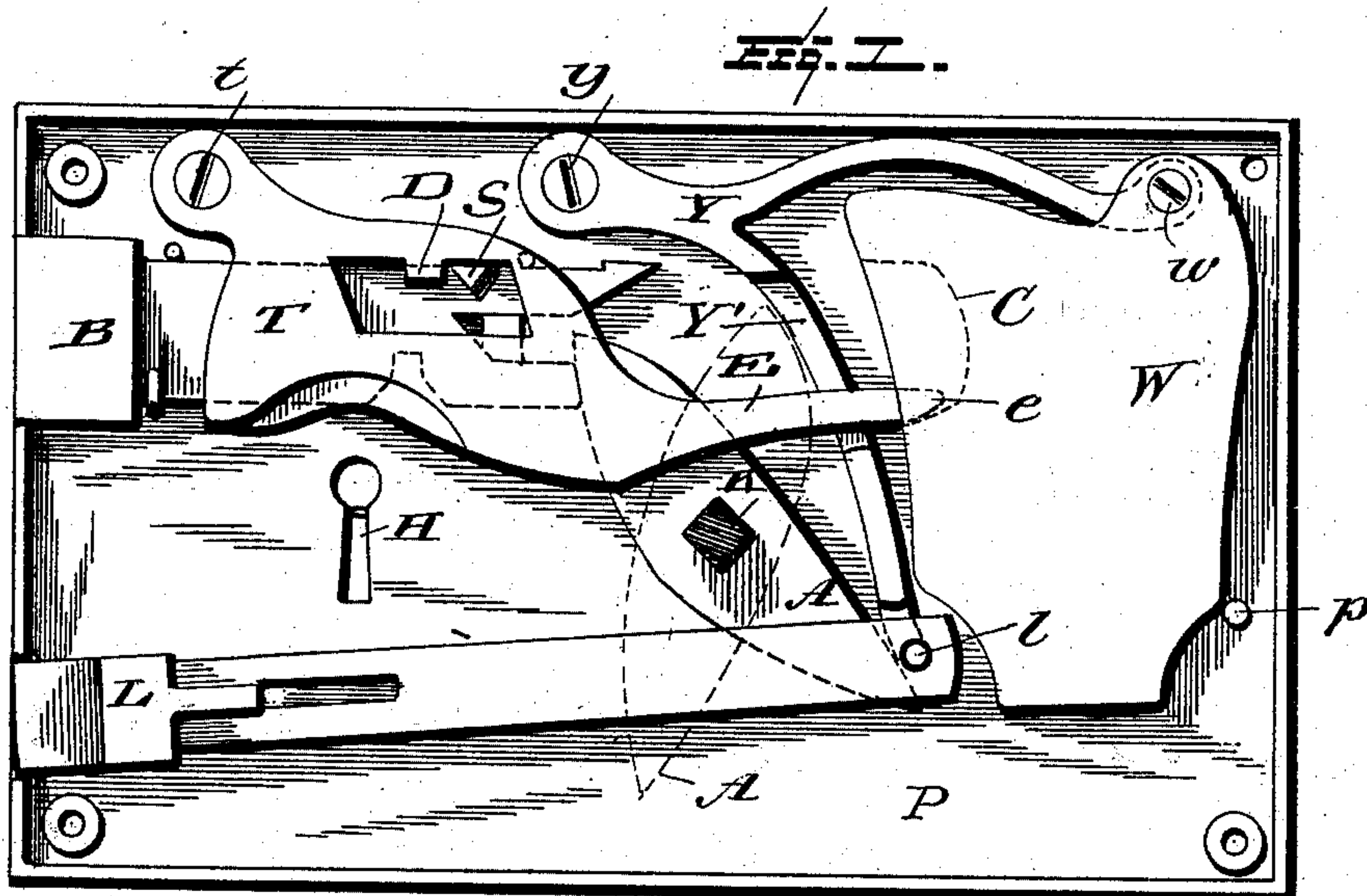


(No Model.)

W. A. JUSTICE.
LATCH AND LOCK COMBINED.

No. 505,403.

Patented Sept. 19, 1893.



Witnesses:

L. C. Hills.
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Inventor:

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UNITED STATES PATENT OFFICE.

WILLIAM ALBERT JUSTICE, OF NEW ATHENS, ASSIGNOR OF ONE-THIRD
TO ELMORE E. JUSTICE, OF BRIDGEPORT, OHIO.

LATCH AND LOCK COMBINED.

SPECIFICATION forming part of Letters Patent No. 505,403, dated September 19, 1893.

Application filed April 24, 1893. Serial No. 471,589. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ALBERT JUSTICE, a citizen of the United States, and a resident of New Athens, Harrison county, State of Ohio, have invented certain new and useful Improvements in a Combined Lock and Latch; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims, particularly specifying the novelty.

This invention relates to locks and latches, and more especially to that class thereof wherein the lock and latch are combined; and the object of the same is to utilize a weight for pressing the latch forward and for holding the tumbler in engagement with the bolt.

To this end the invention consists in the construction hereinafter more fully described and as illustrated on the accompanying sheet of drawings, wherein—

Figure 1 is an inside elevation of my improved latch and lock showing the parts in position with the latch retracted by the turning of the knob-spindle. Fig. 2 is a similar elevation showing the latch in its normal position to latch the door and illustrating how the weight is canted on its pivot by the raising of the tumbler as the bolt is shot. Fig. 3 is a perspective detail of the Y-shaped lever to which the weight is pivoted and by which it is supported.

In certain devices of this character heretofore constructed the latch has been thrown forward into its latching position through the instrumentality of a weight and suitable connections. I employ this general arrangement and in addition I form an extension at the rear end of the bolt-tumbler which engages a cavity in the weight so that the latter holds the tumbler in engagement with the bolt to prevent a movement thereof. In the preferred construction of my device I pivotally connect the weight with one arm of a bell-crank lever whose other arm is connected with the latch, and I so arrange the extension of the tumbler that when the latter is elevated it swings the weight on its pivot rather than raising it bodily, and hence I may employ a heavier weight to shoot the latch than

would be possible if the entire weight were raised by the tumbler when the key has turned.

In the said drawings, the letter B designates the bolt moving in suitable guides and having a stud S adapted to be engaged against either side of a dog D carried by the tumbler T, which latter is pivoted as at *t* to the base plate P of the lock as is usual. L is the latch having a beveled face and moving in suitable guides, and K is the knob-spindle which passes through a double arm A such as usually operates within a yoke connected to the latch for the purpose of retracting the latter as the knob-spindle is turned in either direction. All these parts are of the usual or of any well known construction, though preferably shaped about as shown in the drawings, and their operation will be understood by all persons familiar with the art.

Coming now to the present invention, the letter Y designates a Y-shaped bell-crank lever pivoted at *y* to the base plate P above the double arm A, and with one of its arms passing closely over the rear of said double arm and pivotally connected at its extremity as at *l* with the latch L. The other arm of the lever Y extends in an approximately horizontal direction toward the rear of the latch-casing and is pivoted as at *w* to the upper rear corner of a weight W which is arranged to rise and fall within the lock-casing forward of a pin *p* or other suitable guide therein, and which weight is so shaped that when it is raised it will fit closely within the lever Y. At the rear end of the tumbler T is an arm or extension E which passes over and may normally rest upon the knob-spindle, whose body thence passes loosely through a large notch Y' in the lower arm of the lever Y, and whose extremity *e* extends into a cavity C formed in the front edge of the weight W. The parts are of suitable sizes, shapes, and materials, and considerable change in the exact construction and arrangement may be made without departing from the principle of my invention.

In operation, the weight normally draws down the upper arm of the lever Y and throws the lower arm forward so as to shoot the latch L, but when the knob-spindle is turned in

either direction the double arm A bears said lower arm of the lever Y to the rear and with it the latch—the weight rising about vertically and sliding against the pin *p*. When the hand is removed from the knob, the weight descends and again shoots the latch.

In the operation of moving the bolt B, the key is inserted in the keyhole H and turned. It first raises the tumbler and its dog, then moves the bolt so that its stud passes under the dog to the opposite side thereof, and then again lowers the tumbler so that the dog falls over the stud and holds it against return to its first position. As the key thus raises the tumbler of my improved lock, the extremity *e* of the extension E is caused to rise around the pivot *t*, and hence it will be clear that the weight W will be swung on its pivot *w* in the lever Y as shown in Fig. 2. It will be clear that if the pivot between the upper arm of the lever Y and the weight were at the center of the upper end of the latter, the extension of the tumbler would raise the weight entire; and if the weight were sufficiently heavy to shoot the latch with as much force as is desired, it would then be almost impossible to raise the tumbler by turning the key at the point shown. Moreover, the raising of the tumbler would then cause the unlatching of the door which is not always desirable, whereas by the construction shown and described the raising of the tumbler merely brings the weight temporarily forward and does not retract the latch at all.

What is claimed as new is—

1. In a latch, the combination with a knob-spindle and a double arm thereon; of a bell crank lever pivoted at its angle to the latch-casing above the knob-spindle with one arm passing down in rear of said double arm, a latch loosely connected with the lower extremity of this arm, the other arm of said lever extending to the rear, a weight pivoted at its upper rear corner to the rear end of the latter arm, and a guide within the latch-casing against which the rear edge of said weight slides, substantially as described.

2. The combination with a latch, a weight,

a lever pivotally connecting them so as to normally shoot the latch, a knob-spindle, and a double arm thereon engaging said lever for retracting the latch; of a bolt, a tumbler therefor, and an extension on the tumbler engaging a cavity in and normally depressed by said weight, as and for the purpose set forth.

3. In a combined latch and lock, a knob-spindle having a double arm, a Y-shaped lever pivoted at its angle above said spindle with one arm standing in rear of said double arm, a latch pivoted to the extremity of this arm, the other arm of the lever extending about horizontally to the rear, and a weight pivotally connected therewith and having a cavity in its front edge; combined with a bolt, a tumbler therefor pivoted at its front end to the lock-casing, and an extension at the rear end of the tumbler entering said cavity and normally depressed by the weight, as and for the purpose set forth.

4. In a combined lock and latch, a knob-spindle having an arm, a Y-shaped lever pivoted at its angle above said spindle with one arm extending to the rear and the other arm having a vertical notch and engaged by said arm on the knob-spindle, a latch pivotally connected with the last-mentioned arm of the lever, a weight pivoted at its upper rear corner to the first-mentioned arm of the lever and having a cavity in its front edge, and a guide in the lock-casing against which the rear edge of the weight slides; combined with a bolt, a tumbler therefor pivoted at its front end to the lock-casing, and a rigid extension at the rear end of the tumbler passing over the knob-spindle, through said notch, and into said cavity in the weight, as and for the purpose hereinbefore set forth.

In testimony whereof I have hereunto subscribed my signature on this the 20th day of April, A. D. 1893.

WILLIAM ALBERT JUSTICE.

Witnesses:

CHARLES B. DAWSON,
CHARLIE COBBS.