(No Model.)

A. H. JONES.

DOUBLE ACTING LATCH.

No. 381,792. Patented Apr. 24, 1888.

Fig. 1

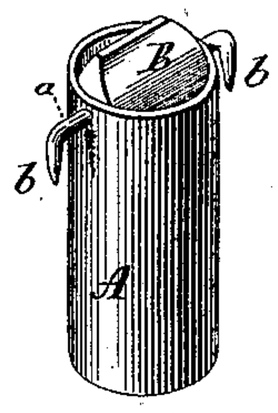


Fig. 2

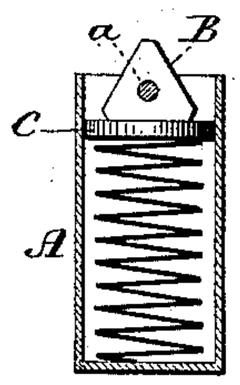


Fig. 3

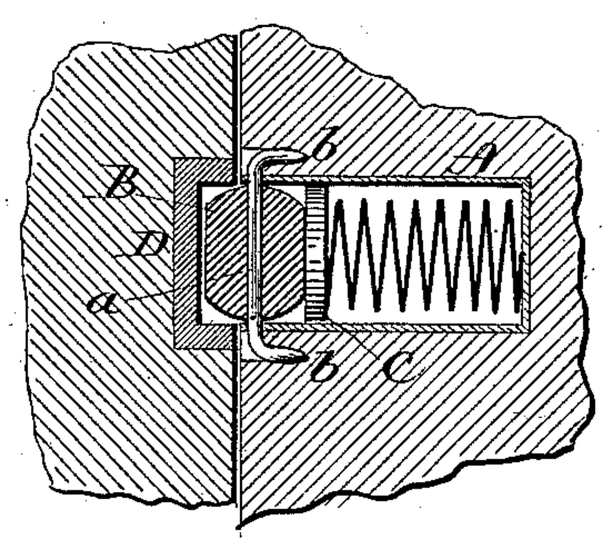


Fig. 4

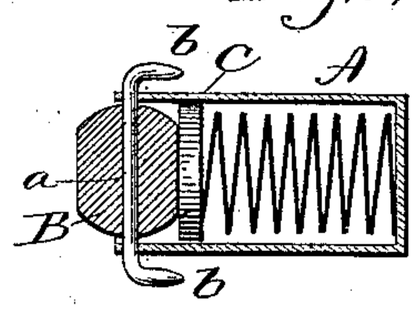


Fig. 5

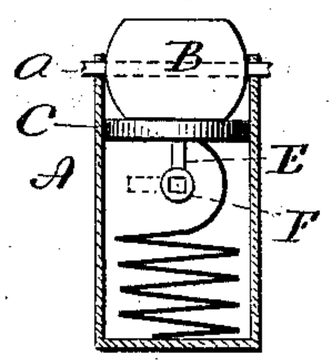


Fig. 6

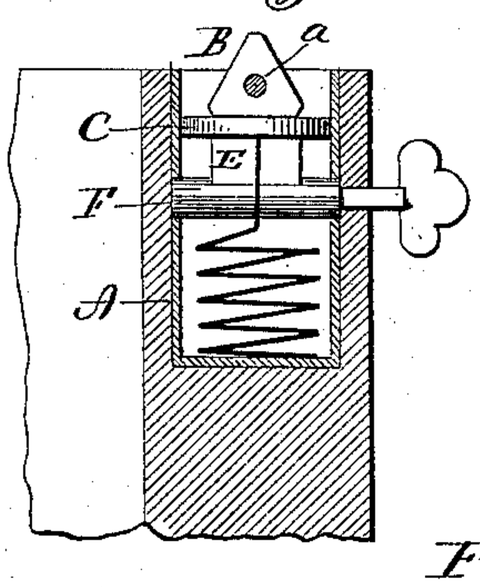


Fig. 7

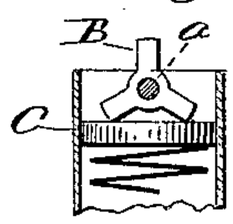


Fig. 8

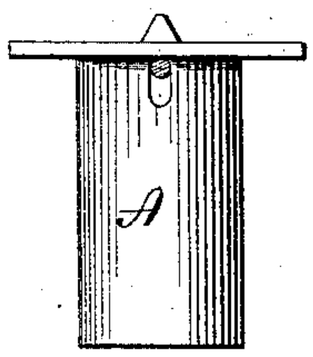


Fig. 10.

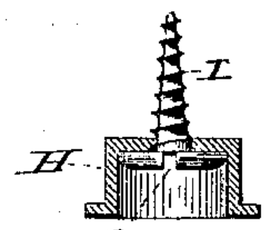
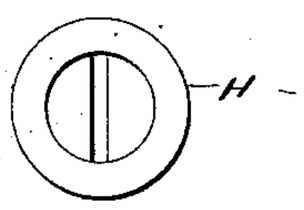
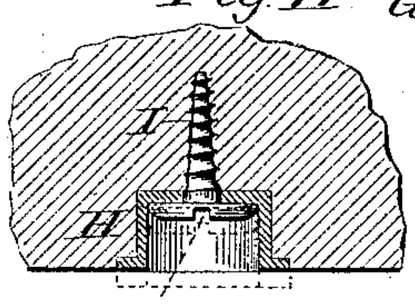


Fig. 9.



G Fig. 11



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Inventor.
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UNITED STATES PATENT OFFICE.

AUGUSTUS H. JONES, OF MERIDEN, CONNECTICUT.

DOUBLE-ACTING LATCH.

SPECIFICATION forming part of Letters Patent No. 381,792, dated April 24, 1888.

Application filed January 16, 1888. Serial No. 260,889. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS H. JONES, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Double-Acting Latches; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of the latch complete; Fig. 2, a longitudinal central section at right angles to the axle through the bolt, but omitting the locking device. Fig. 3 represents the latch as applied to a door; Fig. 4, a longitudinal central section on the plane of the axle through the bolt; Fig. 5, a longitudinal central section showing the locking-cam; Fig. 6, a section through a drawer-front, illustrating the operation of the lock; Figs. 7 and 8, modifications; Fig. 9, an end view of the keeper; Fig. 10, a longitudinal central section of the same; Fig. 11, a section showing the application and adjustment of the keeper.

This invention relates to a device to be applied to doors, or for other purposes hereinafter indicated, which will automatically engage a keeper and yet yield for disengagement by simply applying a swinging or moving force to the door. It is specially adapted for the smaller class of doors—such as closets in dwellings or small doors in furniture, where an engaging device is desirable which will hold the door in the closed position, but permit the door to open by simply a push or pull thereon—and the invention consists of a bolt of substantially triangular shape hung in the case upon an axis longitudinally through the bolt and so that one of the angles may project from the case, combined with a spring-follower within the case adapted to bear upon two angles while the one angle projects from the case, the said follower yielding for the rotation of the said triangular bolt, but serving always to turn the bolt to present one angle outward.

In the best construction of this latch the case A is made in the form of a cylindrical cup—that is, a tube closed at one end and open at the other end.

B represents what may be called the bolt. This is made of triangular shape, and is hung in the open end of the case upon an axis, *a*, diametrically across the case and longitudinally through the bolt, as represented, but so that one angle may project beyond the open end of the case, as shown.

Within the case a spring follower, C, is arranged, adapted to bear with force against the said bolt, and so that two angles of the said bolt will normally rest on said follower, and be thereby retained in the position of one angle projecting. The follower, however, yields, so that if the bolt be rotated the follower will be accordingly depressed, one angle acting as a cam upon the follower; but when the bolt is rotated so far as to turn the angle so acting as a cam to one side of a central line, then the reaction of the follower upon the cam will force the bolt into its normal position, so as to bring two angles upon the follower. More or less force will be required to thus turn the bolt, according to the power of the spring.

I preferably make the axle or pintle upon which the bolt B turns of wire and longer than the diameter of the case, as represented in Fig. 1. The projecting ends of the wire are pointed and turned at right angles to form prongs *b b*. These prongs prevent the escape of the axle, and also serve as a means for securing the latch in place.

The latch is introduced—say into a door, as seen in Fig. 3—by boring a hole into the edge of the door corresponding to the size of the case. The case is then set therein, and the prongs *b* are driven into the door, as seen in Fig. 3. The points of the prongs will tend to deflect the prongs as they are thus driven and turn them out of line, so as to make a firm engagement with the door. The jamb against which the door swings is provided with a keeper, which may be, for this illustration, simply a plate, D, driven into the jamb, as seen in Fig. 3, and having a recess in its face, into which the angle, or what will then be the nose of the bolt, may enter.

In closing the door the projecting angle of the bolt strikes the keeper, and being thereby stopped, the door, continuing its closing movement, causes a rotation of the bolt, so that the one angle will escape as it passes into the keeper, while the next angle will be brought

into the keeper. Then as the door is opened by simply a pull thereon a reverse action is produced upon the bolt.

This latch may be applied to the bottom of a door, as a stop to retain it in any desired position, there being a keeper applied to the floor wherever such stop is required; and, if desired, several keepers may be applied within the path of the latch in the movement of the door. In this case, in opening the door, if the movement be continued, one angle of the bolt will strike one keeper, causing its rotation, as before described, then the next angle will strike the next keeper, producing another rotation, and so on, so that while the latch will retain the door at either position to which the door is set, it will readily yield under sufficient force for the further movement of the door in either direction.

In some cases it may be desirable to give to this automatic latch the capacity of a lock. To do this, a cam, E, is formed as a part of a hub, F, hung upon an axis diametrically across the case inside the follower, and so that a key may be introduced through the case into a corresponding key-hole in the hub, as represented in Fig. 6, and so as to impart rotation to the said hub and cam, to throw it from the position seen in Fig. 5 to the position seen in broken lines, same figure. Standing as in Fig. 5, the cam E forms a stop, so as to prevent the inward movement of the follower; hence the rotation of the bolt in that condition is prevented; but if the cam be turned to one side, as indicated in broken lines, Fig. 5, then the follower is free to move and the bolt to rotate.

I have represented the bolt as of triangular shape; but instead of presenting three flat sides, as I have represented, the triangular shape may be produced, as represented in Fig. 7, in the form of three wings; but this preserves the same triangular effect, so that one angle projects, while the follower bears upon the other two, as in the first illustration. It will be evident, therefore, that various shapes may be employed, but substantially the triangular shape must be retained.

In order to allow for shrinkage of a door or drawer-front, the openings through the sides of the case for the axle are elongated, as seen in Fig. 8, so as to permit a movement of the axle in the direction of the axis of the case, and so that when the latch is first applied to the door it will not project to its full extent as it comes into engagement with the keeper. Then as the door shrinks the axle will permit the bolt to be thrown farther outward, so that it will still engage the keeper, the same as when first applied.

The case may be constructed with a flange or face-plate, as represented in Fig. 8, around its outer end, so that the case may be secured in its place in like manner as mortise-latches are secured.

To provide a keeper which may be adjustable, so that as the door shrinks the keeper may be adjusted to accommodate such shrinkage, I construct the keeper in the form of a cylindrical cup, H, (see Figs. 9 and 10,) in the bottom of which is fixed a screw, I, in axial line with the cup. Upon the interior of the cup a nick, G, is provided, which may be in the head of the screw which is secured to the cup. The cup is made fast to the screw by any suitable interlocking device, or soldered so as to make the cup substantially an integral part of the screw. The depth of the cup is sufficient to serve as the keeper for the bolt.

In applying the keeper a hole is bored into the jamb, as represented in Fig. 11, of a diameter corresponding to the diameter of the keeper, and the keeper is then forced into the socket by simply turning the screw into the jamb, until the keeper is drawn into the jamb to the required extent. Then, should the door or jamb shrink, so that the bolt is not properly engaged, the keeper may be withdrawn by simply applying a screw-driver into the nick of the keeper to withdraw it from its seat, as indicated in broken lines, Fig. 11. Then the keeper is made easily adjustable to adapt itself to ordinary shrinkage of the door, drawer-front, or to whatever it may applied.

It will be understood that any of the known equivalents for a nick may be employed, by which to apply an instrument to drive the keeper to place or to adjust it, and by the term "nick" I wish to be understood as including all such known equivalents.

I claim—

1. The combination of the cylindrical case A, open at one end, spring-follower C within the case, and triangular bolt B, hung upon an axis, *a*, at the open end of the case, said axis diametrically across the case and projecting through the case, its two ends turned at right angles to form prongs *b b*, substantially as and for the purpose described.

2. The combination of the case A, open at one end, spring follower C within the case, and triangular bolt B, hung upon an axis diametrically across the open end of the case and through said triangular bolt, with a cam, E, arranged within the case inside the follower upon an axis diametrically across the case, and a key adapted to turn said cam, substantially as and for the purpose described.

3. In combination with a spring-bolt latch or lock, a keeper consisting of the cup H, with the central screw, I, projecting therefrom, and as substantially an integral part thereof, and constructed with a suitable nick within the cup, substantially as and for the purpose described.

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