

(No Model.)

C. H. BRIGDEN.
LATCH.

No. 560,568.

Patented May 19, 1896.

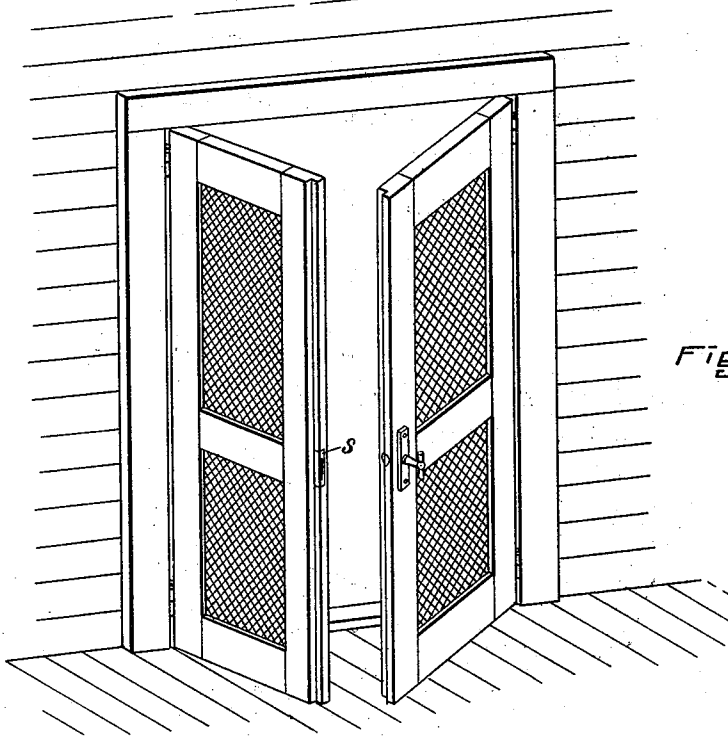


Fig. 1.

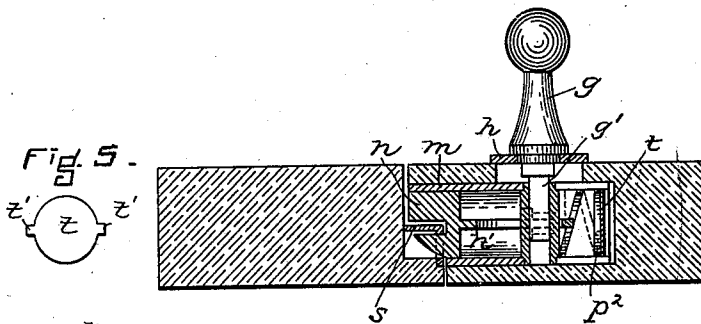


Fig. 2.

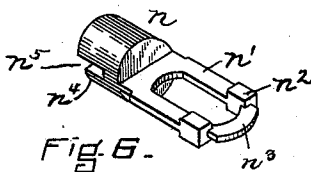


Fig. 6.

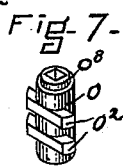


Fig. 7.

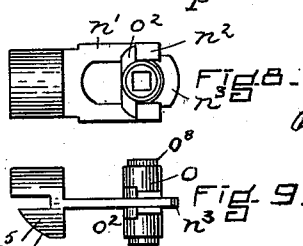


Fig. 8.



Fig. 9.

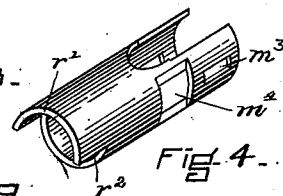


Fig. 4.

WITNESSES.

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By

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att'y.

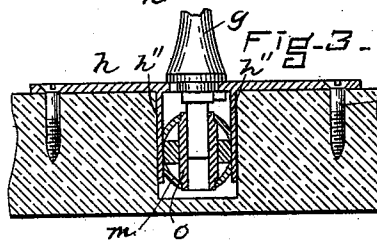


Fig. 3.

UNITED STATES PATENT OFFICE.

CHARLES H. BRIGDEN, OF WALTHAM, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO S. M. HAWES, JR., OF YONKERS, NEW YORK.

LATCH.

SPECIFICATION forming part of Letters Patent No. 560,568, dated May 19, 1896.

Application filed September 24, 1895. Serial No. 563,541. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BRIGDEN, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Latch Mechanisms, of which the following is a specification.

This invention has relation to latch mechanism and more particularly to that class in which a spring-held latch-bar is operated by means of a knob or handle. It is designed more especially for use on the doors of such furniture as bookcases, buffets, refrigerators, and the like, the ordinary rabbeted screen and cupboard-doors, and on that class of swinging windows commonly known as "French" windows, in all of which it is desirable that the door or window should not be mutilated by a formation of a large mortise to receive the latch-casing.

The object therefore of this invention is primarily the provision of a latch mechanism which shall possess the smallest number of parts possible for accomplishing the latching of a door or window and so placing them relatively to each other as that they shall be contained in a casing of a shape that may be inserted most easily in an aperture formed for it.

To these ends the invention consists of the latch mechanism which I shall proceed to describe in detail in the annexed specification, and then point out in the claims hereto appended.

Reference is to be had to the annexed drawings and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 illustrates screen-doors with rabbeted edges, for which my lock mechanism is more particularly adapted. Fig. 2 is a horizontal section through the doors when they are closed and through the latch mechanism. Fig. 3 is a sectional view transversely of the casing. Fig. 4 is a perspective view of the casing with the parts removed. Fig. 5 is a detail view of the cap for closing the end of the casing. Fig. 6 is a perspective view of the bolt. Fig. 7 is a perspective view of the hub or barrel. Figs. 8 and 9 show the latch-bar and the barrel or hub in operative position.

In carrying out my invention I employ a cylindrical casing which, on account of its peculiar shape, is adapted to be inserted in a hole bored in the door or window, a latch-bar mounted in the casing and normally held in its forward position by a spring, a latch-bar actuating device, such as a barrel or hub, a handle connected with the latch-actuating device, and an escutcheon or rose surrounding the spindle and provided with means engaging the casing for preventing a change of position of the latter. The casing *m* is cylindrical with open ends and is formed integrally of a tube. It is cut away or rabbeted at its outer end, so as to provide one edge *r'*, which is flush with the outer edge of the rabbeted door and an edge *r*², which is flush with the inner edge of the rabbet. The latch has a cylindrical head *n* with a cross-slot *n*⁵ and a slabbed-off side *n*⁴. Its rearwardly-extending arms *n'* are thickened at *n*³ to form lugs and are connected by means of a thin web *n*³. The head of the latch-bar fits closely in the casing with the cut-away side next the edge *r*².

For operating the latch I employ a barrel or hub *o*, which has reduced ends *o*⁸, journaled in the casing, and two laterally-projecting cams or arms *o*², between which the arms *n'* of the bolt lie, the rear edges of the cams lying against the lugs *n*². The casing has opposing slots *m*² extending from the rear end in which the reduced ends *o'* of the hub are journaled. The hub has a central square aperture to receive the spindle *g'* of the knob *g*, which I shall hereinafter describe. To hold the latch-bar forward I employ a helical spring *p*², which is secured in place by a circular plate *t*. The latter has projections extending into slots *m*³ in the side of the casing.

h is a rose, which is provided with a key-hole aperture through which the spindle is passed. The latter has a projection *g*⁶, which lies under the edge of the rose and prevents the spindle from being withdrawn. The rose is provided with two inwardly-projecting parallel arms *h''*, which lie on either side of the casing and slide in slots *m*⁴ in the sides thereof, so as to hold the casing firmly in place. The rose and the spindle are thus slidably united, so that they may be employed in connection with doors of different degrees of thickness. Upon the other door I place a

slotted catch-plate *s*, which is bent and has its front face flush with the front edge of the door.

It will be seen that in the form of latch mechanism which I have illustrated on the drawings and described herein the casing is practically rigidly connected with the rose by arms cast upon the rose. This is an important feature of my invention, and the reasons are apparent upon reflection. I have found by long experiment that in order to provide a perfectly-operating latch mechanism the spindle of the knob or handle must be loosely mounted, so as to allow the spring to throw the latch forward after it has been drawn back. Hence, if the handle and its spindle alone were depended on for holding the casing in place, the latter would twist or be moved forward or backward and therefore the spindle would bind and would not turn easily, so that the latch-bar would also stick. To prevent trouble of this kind, I employ a rose and connect it rigidly with the casing, so that the latter is not only prevented from turning or moving longitudinally, but all strain is taken from the knob or handle, and the latter is thus mounted loosely and in such manner as to insure the perfect operation of the latch.

In the latch mechanism above described I retain the rigid connection of the casing with the rose and provide a peculiarly simple mechanism to be mounted in the casing. The casing itself is formed of a tube with a smooth interior surface, so that the end of the latch-bar is made to fit closely in the forward end thereof. It is necessary to support the other end of the latch, and this is done in a novel way. The sleeve or barrel is journaled in slots in the casing, so that it is held against displacement, and it has the cams which support the arms of the latch-bar against motion in any direction, save when the knob is actuated. Thus the latch and the actuating device are held firmly in the casing (by the aid of the spring) without changing the smooth interior surface of the tube. Again, it has been difficult to provide a lock for doors with rabbeted meeting edges, but by my invention a simple lock for such doors is provided.

Having thus explained the nature of the invention and described a way of making and

using the same, though without attempting to set forth all of the forms in which it may be constructed or all of the modes of its use, I declare that what I claim is—

1. A latch mechanism for a door with a rabbeted edge, comprising in its construction, a casing having its front end rabbeted to correspond with the door, a spindle, and a latch-bar actuated by the spindle, and having its head provided with a slot, for the purposes set forth.

2. A latch mechanism, for use on a door with a rabbeted edge, comprising in its construction, a cylindrical casing having its front end cut away to form an edge r' , and an edge r'' , a latch-bar having its head slabbed off on the side toward the edge r'' , and having a longitudinal slot, and a spindle for actuating the latch-bar.

3. A latch mechanism, comprising in its construction, a smooth tubular open-ended casing, having opposing longitudinal slots extending from its rear end and a transverse slot between its ends, a barrel or hub journaled in the longitudinal slots, a latch-bar actuated by the barrel or hub, a spindle for said barrel or hub, and a rose having two parallel arms straddling the casing, one of which lies in the transverse slot in the casing.

4. A latch mechanism, comprising in its construction, a smooth tubular open-ended casing, having opposing longitudinal slots extending from its rear end and a transverse slot between its ends, a barrel or hub journaled in the longitudinal slots, a latch-bar actuated by the barrel or hub, a spindle for said barrel or hub, a removable circular plate for closing the rear end of the open-ended casing, a spring inserted between the said plate and the latch-bar, and a rose having two parallel arms, straddling the casing, one of which lies in the transverse slot in the casing.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 19th day of September, A. D. 1895.

CHARLES H. BRIGDEN.

Witnesses:

MARCUS B. MAY,
ARTHUR W. CROSSLEY.