

C. E. SMITH & C. E. FRENCH.
Latch.

No. 219,316.

Patented Sept. 2, 1879.

Fig. 1.

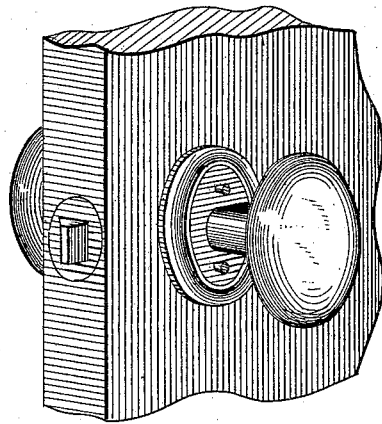


Fig. 5.

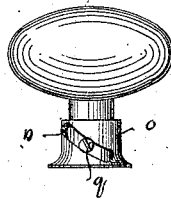


Fig. 3.

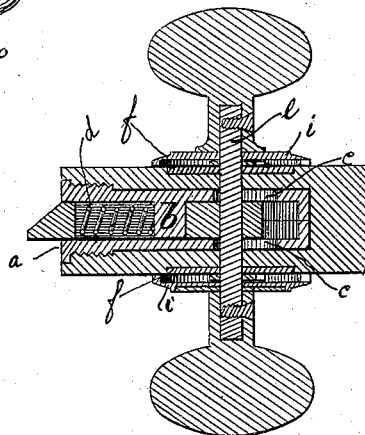


Fig. 2.

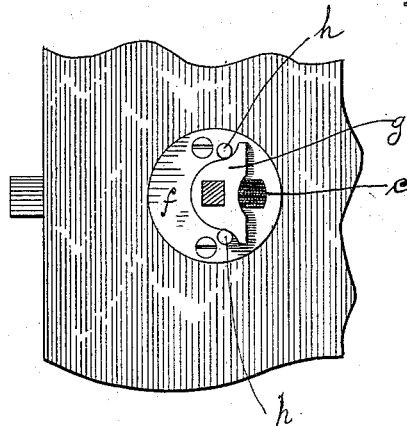
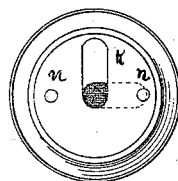


Fig. 4.



Attest,
W. H. Knight
F. L. Middleton

Chas. E. Smith Inventors,
Chas. E. French
by Eli Spear
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES E. SMITH AND CHARLES E. FRENCH, OF GOFFSTOWN, N. H.

IMPROVEMENT IN LATCHES.

Specification forming part of Letters Patent No. **219,316**, dated September 2, 1879; application filed January 19, 1878.

To all whom it may concern:

Be it known that we, CHARLES E. SMITH and CHARLES E. FRENCH, both of Goffstown, in the county of Hillsborough and State of New Hampshire, have invented certain Improvements in Lock-Latches; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention relates to latches of that class in which the bolt is thrown by a lateral movement of the knobs and their connecting shaft or spindle; and it consists of certain details of construction, whereby the apparatus is made more simple and efficient, easier of application, and of better appearance when in place upon the door.

In the drawings hereunto attached and forming part of this specification, Figure 1 represents, in perspective, the section of the door, showing the lock-latch in place. Fig. 2 is a side elevation with knob and outer disk removed from the latch. Fig. 3 is a horizontal section taken centrally through the knobs and shaft. Fig. 4 is a plan view of the locking apparatus. Fig. 5 is a side view of the knob with a device for adjusting the latch to different thicknesses of door.

In Fig. 3, *a* represents the sheath or casing for the bolt. It is cast preferably round, flattened upon two sides for a part of its length, and is adapted to be inserted into a round hole bored into the door. The outer end is provided with a flange, and inside the flange for a short distance the shell is threaded, in order that it may be held in place more securely within the door.

The shell is cast in two parts, as indicated in Fig. 3, the parts being provided with lugs for holding them accurately in place in the ordinary manner. The interior is formed to fit the rectangular bolt, and is provided with a square lug, *b*, which serves as a support on one side for the spring. The slots *c c* are formed in the flattened sides of the case, for the purpose which will be hereinafter pointed out.

The bolt is shown in section in Fig. 3. It is of ordinary form, slotted to receive a spring, *d*, and provided with a round hole at the rear end, through which passes the shaft or spin-

dle *e*. This shaft also passes through the slots *c c* in the shell. These slots are extended through the door on each side, and through the disks *f f*, so that the shaft of the knob may be moved directly backward a sufficient distance to draw the bolt entirely within its case. This backward movement of the bolt is effected by a device shown in Fig. 2. This consists of a yoke, *g*, having a square perforation to allow it to fit snugly over the shaft of the knob. It is provided at each end with a projection, which extends over a pin, *h*, fixed in the plate *f*. The front edge of this yoke *g* is formed upon such a curve that when the knob is turned in either direction the yoke will bear upon the pin upon one side or the other, according to the direction of the turning, and, acting upon the pin as a fulcrum or support, will throw the shaft backward to the rear of the slot, and thus draw the bolt into the case.

The yoke may be placed upon both sides, if desired. It is covered by an outer disk or rose, *i*, which may be ornamented in any suitable manner. On the inside of the door we form this outer disk, *i*, with a circular recess, into which fits a disk, *k*. (Shown clearly in Figs. 1 and 4.) This disk is provided with a slot corresponding to that through which the shaft of the knobs moves. It is held securely in place by the bead or raised edge *m* formed around it, and is provided with small knobs or pins *n n*, by which it may be turned.

When turned as shown in dotted lines in Fig. 4, so as to register exactly with the slot in the case, the shaft may be thrown backward to withdraw the bolt; but when turned at right angles or in any approximate position sufficiently out of register with the inner slot it locks the shaft against any backward movement, and thereby prevents the bolt from being thrown backward.

The shaft of the knobs has been described as passing through a slot in the casing. This is a feature of material advantage, as it prevents the case from turning should it become loose by shrinkage or otherwise.

In Fig. 5 we have shown a sleeve, *o*, provided with a flange corresponding to that ordinarily formed upon the shank of the knob and fitted internally to a plain cylindrical shaft. It is formed with a diagonal slot, *p*,

and a set-screw, *g*, whereby it may be adjustably attached to the shank of the knob, and moved in or out upon the said shank, according to the thickness of the door.

We are aware that a latch constructed to be thrown back by a shaft moving laterally in a slot in the door is not new.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. The slotted disk *k*, in combination with

the slotted rose or disk *i*, the slotted case, the shaft or spindle of the knob, and the bolt, as set forth.

2. The sleeve *o*, provided with an inclined slot, in combination with the set-screw and shank of the knob, as set forth.

CHAS. E. SMITH.

CHARLES E. FRENCH.

Witnesses:

JAMES H. CONNER,

WALLACE CALDWELL.