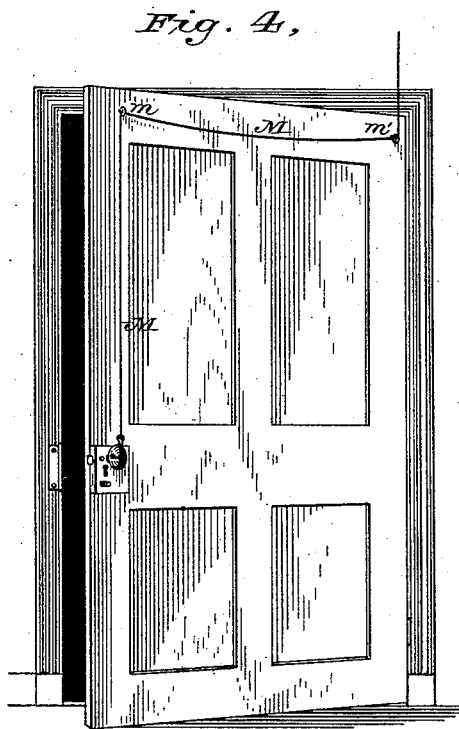
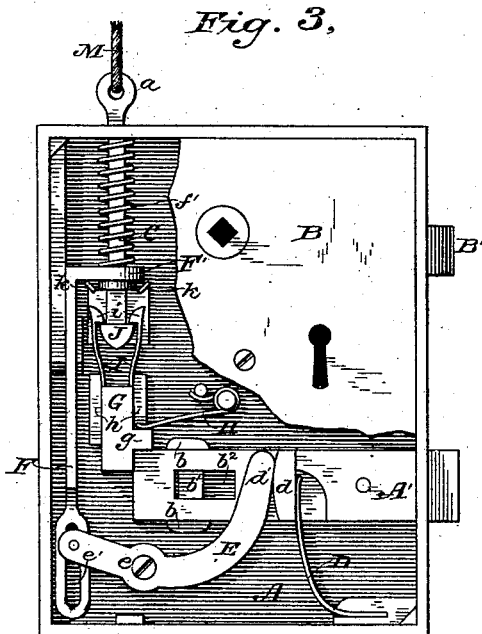
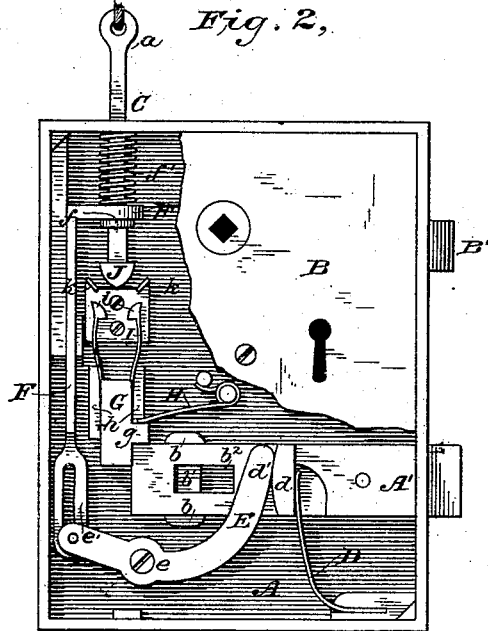
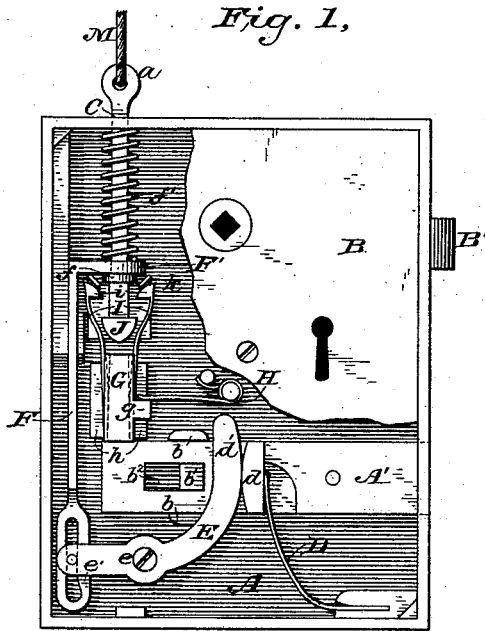


(Model.)

L. C. NORTHROP.
Door Fastening.

No. 237,583.

Patented Feb. 8, 1881.



WITNESSES

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LUCIUS C. NORTHROP, OF GREENVILLE, SOUTH CAROLINA.

DOOR-FASTENING.

SPECIFICATION forming part of Letters Patent No. 237,583, dated February 8, 1881.

Application filed December 2, 1880. (Model.)

To all whom it may concern:

Be it known that I, LUCIUS C. NORTHROP, of Greenville, in the county of Greenville and State of South Carolina, have invented certain new and useful Improvements in Door-Fastenings, of which the following is a specification.

My invention relates to improvements in door-fastenings or lock attachments of the class in which securing-latches or locking-bolts are provided which are adapted to be operated by cords, wires, &c., at a distance from the doors to which the fastenings are applied.

My objects are to so construct the fastening devices that the securing latches or bolts may from a distance be shot or thrown into locked position and be retracted or thrown into unlocked position by means of a cord, &c., one pull on the cord serving to shoot or to retract the bolt or locking-latch, according to whether it occupied its unlocked or locked position at the time of such pull, and another pull acting upon the bolt to move it in a direction contrary to that in which it was caused to move by the first pull, the door being locked and unlocked by two pulls of the cord, as will hereinafter fully be described.

The subject-matter deemed novel will hereinafter specifically be claimed, after first describing my improvements with reference to the accompanying drawings, in which my invention is shown as applied to an ordinary combined latch and lock. No special form of lock is required. The lock-case may be set inside instead of outside, and my improvements may be separately cased and applied to doors so as to supplement the ordinary lock and latch, instead of being applied inside the casing thereof, as shown by the drawings, in which—

Figure 1 is a view, in elevation, with the back plate or cover partly broken away, the bolt being represented in the unlocked position; Fig. 2, a similar view with the bolt shot or in the locked position; Fig. 3, a like view with the bolt in the locked position, but with the actuating devices in positions unlike those in which they are represented in the preceding figure. Fig. 4 is a view, in perspective, of a door and its frame-work as seen from the

inside of a room with my improvements applied.

A suitable shell or case, A, with a back plate or cover, B, serves to inclose the fastening-latch or locking-bolt A' and actuating mechanism therefor. In this instance the bolt and its mechanism are applied to a casing, which serves, also, for the ordinary latch B', knob-spindle, &c. The usual lock-works and locking-bolt may be, and preferably are, provided, thus making my invention an auxiliary to a combined door latch and lock of suitable and well-known construction. Obviously, however, a casing adapted simply to receive the bolt A' and its mechanism may be employed.

The fastening-bolt A' is actuated by way of a vertically-reciprocating endwise-moving rod or pull-stem, C, and connecting and co-operating mechanism, as presently described. A cord or wire fastened at one end by an eye or link, *a*, to the pull-stem, and terminating at its opposite end at any desired point more or less distant from the door, admits of the locking-bolt being operated by a pull on the cord at any preferred place where it may terminate, whether in a room to the door of which the fastening may be applied, or in any desired portion of a building where it may be deemed best to have the cord for locking and unlocking the door terminate. The locking-bolt A' reciprocates in suitable guideways, which, in this instance, are formed by the opening in the edge of the case through which the bolt plays and by the lugs *b b* and *b'*, the latter projecting into a slot, *b²*, in the bolt and limiting its movement. A spring, D, bears at its free end against a rib or lug, *d*, on the bolt and acts with a constant tendency to retract or force back the bolt. A curved lever or bent tappet-like arm, E, pivoted at *e*, acts upon the rear curved face of the rib *d* by its nose *d'*. At its heel end the lever E is provided with a pin or short stud, which projects into the slot or cup *e'* at the lower end of a reciprocating controlling-rod, F, the pull-stem C passing through an eye or opening in the laterally-projecting head or bent end F' of this controlling-rod. A collar or shoulder, *f*, on the pull-stem below the head F', and a coiled spring, *f'*, encircling the stem above said head, and bearing at opposite ends against the head and top wall of

the lock-case, keep the pull-stem and lever-controlling rod in proper relative position at all times.

A vertically-moving bolt-dogging device is shown as formed of a sliding piece, G, having a shoulder or front lateral projection, *g*, which bears upon the top of the bolt when locked, while the lower end of the sliding dog rests behind the bolt to secure it. This sliding dog is guided in ways *h h*. A spring, H, bears at its free end upon the shoulder *g* of the dog, and acts constantly with a tendency to move the dog downward. Two laterally-yielding or spring arms, I I, project upward from the dog G and terminate at top in curved-edged hooks or shouldered inclines *i i*, facing each other. A shouldered and curved or inclined head, J, at the lower end of the pull-stem serves to engage the hooks *g g*, as will presently be described. Hook trippers or inclines *k k* serve to open or spread apart the spring-hooks when these hooks abut against them, and thus release the shoulder of the head J after drawing up the dog G in unlocking.

From the above description, and by reference to the drawings, it will be understood that a pull on the stem or cord will serve to actuate the locking-bolt, by way of its controlling mechanism, in such manner that the bolt will be caused to move into the locked position if unlocked, or into the unlocked position if locked. For instance, with the bolt and mechanism in the positions in which they are represented in Fig. 1, it will be seen that a pull on the stem-cord M (which passes through eyes *m m'* and by way of other supporting-eyes, pulleys, &c., to the desired point) will cause the controlling-rod, by way of its link *e'*, to actuate the lever E and shoot the bolt, allowing the dogging-slide to drop into its position to secure the bolt, as shown by Figs. 2 and 3. In Fig. 2 the pull-stem and controlling-rod are represented as in the positions they are caused to assume by the strain on the cord, or before releasing the cord. Upon releasing the cord the parts assume the positions in which they are represented in Fig. 3, the spring *f'* serving to move the pull-stem and controlling-rod downward. In unlocking, the shouldered head of the pull-stem engages the spring-hooks *g g*, drawing them and the sliding dog G upward to free the bolt and enable its retracting-spring D to move the bolt back

to the position in which it is shown in Fig. 1. In unlocking, it will be seen that the spring-hooks are opened or tripped by the inclines *k k*, to release the head of the pull-stem, and the stem is, when released, forced downward again by its spring.

I am aware that locking-bolts have heretofore been actuated by cords leading away from them and from the doors to which they were applied, and therefore I do not claim, broadly, means for actuating a lock-bolt at a distance from the door to which it may be applied. I am not aware, however, of any prior use of mechanism such, or substantially such, as hereinbefore described; nor do I know or believe that any fastening device for doors, &c., has heretofore been devised which may be positively actuated by means of a cord, &c., so as positively to control the locking and unlocking as in my invention.

I claim as of my invention—

1. The combination, substantially as hereinbefore set forth, of the case or shell, the locking-bolt, its retracting-spring, the pull-stem, and mechanism, essentially such as described, actuated by the pull-stem to both lock and unlock by strain thereon in the same direction.

2. The combination of the reciprocating locking-bolt, its retracting-spring, the sliding dog, the spring-hooks, and the pull-stem, substantially as and for the purpose hereinbefore set forth.

3. The combination of the reciprocating locking-bolt, the curved lever acting thereon, the slotted or link-ended controlling-rod actuating said lever, the pull-stem operating upon the controlling-rod, the spring of the pull-stem, the dogging device, and its spring-hooks engaged by the pull-stem head, substantially as and for the purpose hereinbefore set forth.

4. The combination of the locking-bolt, the dogging device, its spring-hooks, the tripping-inclines for spreading the hooks, the pull-stem, having the shouldered and inclined head, and the spring for moving the pull-stem when released, substantially as and for the purpose hereinbefore set forth.

In testimony whereof I have hereunto subscribed my name.

L. C. NORTHROP.

Witnesses:

THOMAS J. LA MOTTE,
LOUIS JACOBS.