A. McKay,

Bolt.

No. 110,486. Patented Dec. 27. 1870.

Fig. I.

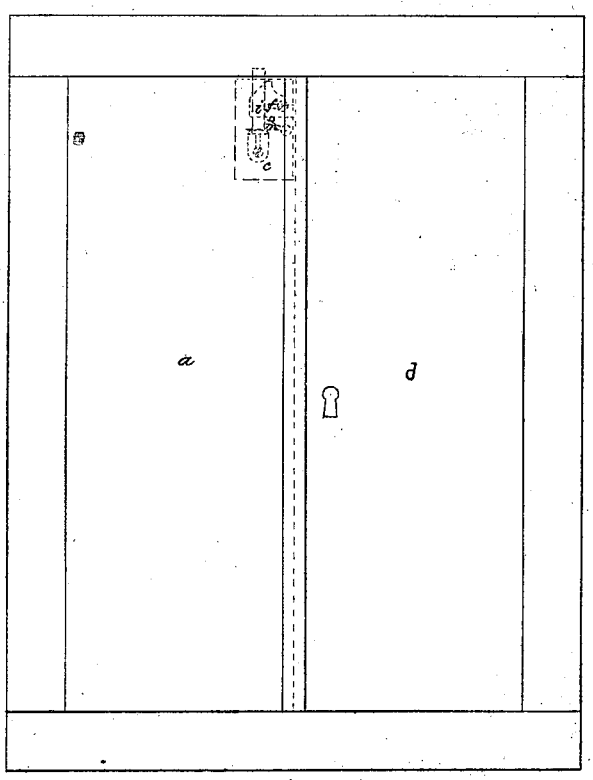


Fig. II.

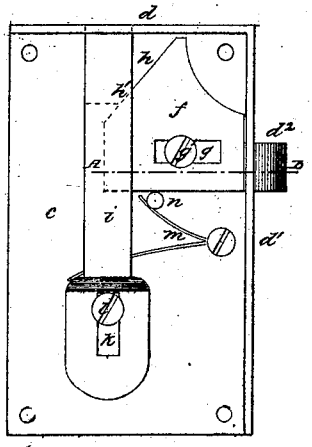


Fig. III.

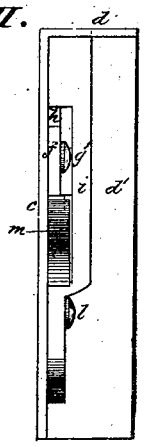
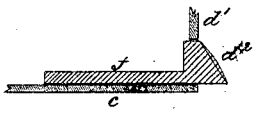


Fig. IV.



WITNESSES

Charles Legge

Charles. G. C. Simpson

INVENTOR

Angus McKay

United States Patent Office.

ANGUS McKAY, OF MONTREAL, CANADA,

Letters Patent No. 110,486, dated December 27, 1870.

IMPROVEMENT IN AUTOMATIC DOOR-BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ANGUS McKAY, of the city of Montreal, in the district of Montreal, in the Province of Quebec, in the Dominion of Canada, merchant, have invented new and useful "Improvements on Self-acting Flush Safety-Bolts;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, where—

Figure I represents an elevation of a pair of doors arranged with the bolts;

Figure II represents an elevation of the inner side of the bolt;

Figure III represents an elevation of the inner edge of the bolt;

Figure IV represents a section on line A B, Fig. II.

This invention relates to improvements on self-acting flush safety-bolts for double doors, such as those employed for buildings, closets, cupboards, &c.

These doors, in ordinary use, are provided with bolts attached to the first-closing leaf, which, after this part of the door is shut, are pushed out, entering into recesses at the top and bottom. The other door is provided with the lock, but should the pushing out of the bolt, by forgetfulness, be neglected in the first leaf of the door, the locking of the second door is rendered useless.

By my improved bolt the pushing out of the bolts in the first-closing door is automatically performed by forcing the second leaf of the door (or the one provided with the lock) in place.

In the drawing hereunto annexed similar letters of reference indicate like parts.

Letter *a* is the first-closing leaf of a pair of doors, shown in Fig. I as shut, and provided with my improved bolt at its upper end only, but, if required, it may be placed on the lower side, or have one at each end, entering into the upper and lower frame-work of the doorway.

b is the second-closing door. By pushing this into position for locking, the bolt or bolts securing the first-mentioned door are automatically operated.

The position of my improved bolt and its parts are shown on a small scale in dotted lines in Fig. I in the relative position they will stand in when the doors are closed, and on an enlarged scale in Fig. II, in the position the various parts of the self-acting bolt will occupy when the doors are open, in which—

c is a metal plate, having a flange, d d^1, extending on two of its sides.

In d^1 an opening is cut for the inclined end d^2 of the bolt *f* to pass through.

This bolt slides back and forth in a line at right angles to the flange d^1, being guided in its action by the end d^2 and by a slot, *g*, sliding on a screw, *g'*, inserted in the plate *b*, and provided with an enlarged or flanged head-holding bolt, *f*, loosely down on *c*.

The back upper corner of the bolt *f* is cut off, giving it the form of an incline, *h*, of suitable angle, to act on a shoulder, *h'*, formed for that purpose on the bolt *i*.

The exact shape of this bolt is so clearly shown in Figs. II and III as to require no further explanation than to say that it passes through a suitable opening in the flange *d*, and in the position shown in Fig. II.

The end of the bolt *i* is flush with the upper side of the flange *d*, acting as a guide for it, while, in the lower end of the bolt *i*, a slot, *k*, is formed, sliding on a screw, *l*, inserted in the plate *c*, and serving as a guide to keep the lower end of the bolt in its proper line of action, at right angles to the bolt *f*.

The spring *m* is provided and arranged to cause the bolt *i* to return to the position shown in Fig. II, after it has been forced out, as shown in Fig. I.

n is a stop-pin for the other end of the spring, and, if desired, is so placed that it may not only answer this purpose, but also assist in guiding the bolt *f* by its lower edge resting against it.

Having briefly described the construction of my invention, I will now describe its operation.

The corners of the doors to which these bolts are attached are recessed in the same manner as for locks, so that the plate *c* may be flush with the inner surface of the door, the flange d^1 with its edge, and *d* with its end, leaving room also for the working parts, hereinbefore described, to freely move about in.

The plate *c* is secured to the door with screws, in the ordinary manner.

In the doorway suitable recesses are formed to receive the ends or end of the bolts or bolt *i*, when it is caused to project beyond the flange *d*.

The door and doorway having been thus arranged, the door *a*, to which the bolts are attached, is shut, or placed so that the bolt *i* comes under the recess before mentioned in the doorway. The other door, *b*, is then closed, and, in doing this, its edge presses on the inclined end d^2 of the bolt *f*, causing it to slide in flush with the flange d^1. At the same time, the incline *h*, acting on the shoulder *h'*, causes the bolt *i* to be pushed out into the receptacle formed to receive it in the doorway, when, by locking the door *b* in the ordinary way to the door *a*, both are secured.

When it is desired to open the doors, it is only necessary to unlock the door *b* and open it. The spring *m* causes the bolt *i* to return to the position shown in

Fig. II. In doing this the shoulder h', acting on the incline h, causes the bolt f to project its inclined end d^2, as above described.

Having now described the construction and operation of my invention,

What I claim as my invention, and wish secured by Letters Patent, is—

The novel combination of the plate c, flanges d and d^1, inclined end d^2, bolt f, slot g, screw g', incline h, shoulder h', bolt i, slot k, screw l, spring m, stop-pin n, together with doors a and b, and recess for bolt i in the doorway, all working together substantially in the manner and for the purpose described.

Montreal, 1st day of November, A. D. 1870.

ANGUS McKAY.

Witnesses:

CHARLES LEGGE,

CHARLES G. C. SIMPSON.