(No Model.)

A. W. McINTYRE.

BOLT.

No. 367,827. Patented Aug. 9, 1887.

Fig. 1.

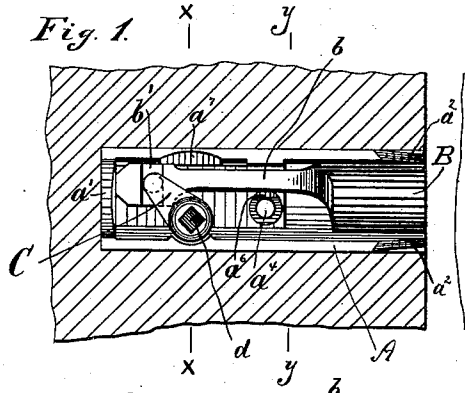


Fig. 3.

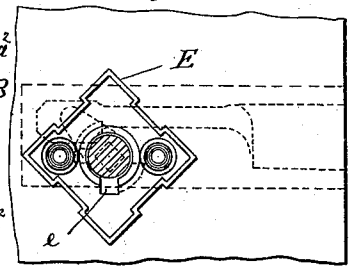
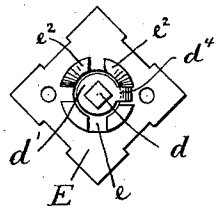


Fig. 4.



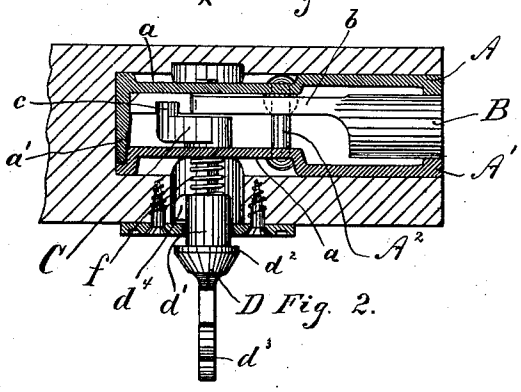


Fig. 2.

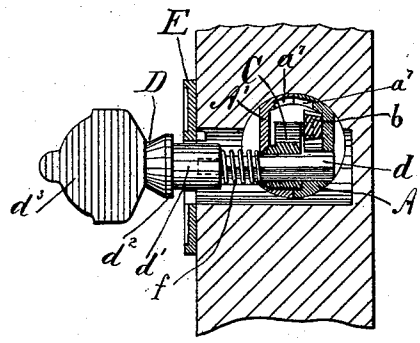


Fig. 5.

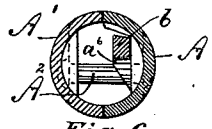
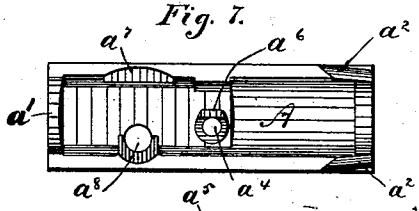


Fig. 6.

Fig. 7.



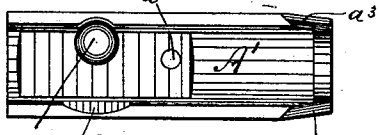
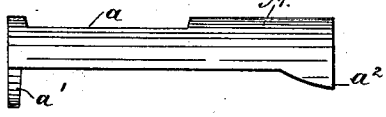


Fig. 8.

Fig. 9.



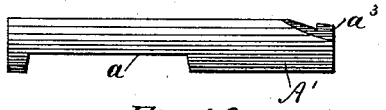


Fig. 10.

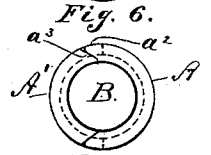


Fig. 11.

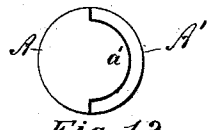


Fig. 12.

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N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

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BOLT.

SPECIFICATION forming part of Letters Patent No. 367,827, dated August 9, 1887.

Application filed August 16, 1884. Renewed January 6, 1887. Serial No. 223,592. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTIN W. MCINTYRE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bolt Mechanism, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My present invention, which relates to the class of bolt mechanism commonly used for dwelling-doors and analogous purposes, has for its object, first, to provide improved means for throwing the bolt of a construction that shall consist of few and simple parts that can be readily cast and quickly put together, and, second, to provide means whereby the escutcheon shall serve to engage with the operating-spindle for the purpose of securely locking the bolt, and thus guarding against its being "picked" or forced open.

To this end the invention consists, first, in providing the shank of the bolt, constructed and sustained as hereinafter described, with a groove upon its side, within which groove will rest, in a manner free to move therein, the pin or lug of a crank that may be turned by a suitable spindle, and, second, in providing the escutcheon with locking means adapted to engage with the spindle to securely lock the bolt in either or both of its extreme positions.

My invention also consists in certain details of construction, that will be hereinafter described in connection with the accompanying drawings, and particularly defined in the claims at the end of the specification.

Figure 1 is a view through the casing in vertical section, the bolt-work being shown in elevation. Fig. 2 is a view in central longitudinal section, the bolt-work and operating mechanism being shown in plan. Fig. 3 is a front view of the escutcheon attached to the door, subjacent parts being shown in dotted lines. Fig. 4 is a view of the reverse side of the escutcheon, the spindle being shown in place therein. Fig. 5 is a view in section on line $x\,x$ of Fig. 1. Fig. 6 is a view in section on line $y\,y$ of Fig. 1. Figs. 7 and 8 are interior views of the sections of the casing. Figs. 9 and 10 are side views of the sections of the casings, and Figs. 11 and 12 are respectively front and end views of the casing.

The casing or barrel is formed of the semi-cylindrical castings A and A′, each furnished with the flattened portions a, the inner faces of which serve to form even bearings for the bolt-work. The section A is provided at its rear with the end plate, a', and at its open front end with the ears a^2, having beveled sides, which, when the sections are put together, fit within the cut-away spaces a^3 of the section A′. The sections of the casing are cast with the holes a^4 and a^5, to admit the rivet A^2, which serves to unite the sections, and above the hole a^4 is the lug a^6, on which rests the reduced shank b of the bolt B. The rear portion of the bolt-shank is enlarged, as shown, and in the side of such enlarged portion is formed the groove b', within which fits, in a manner free to move, the pin c of the crank C. The hub c' of this crank is beveled at one side to fit within a correspondingly-beveled socket of the casing, and at its other side abuts against the shoulder at the bottom of the hole a^4 of the casing.

By forming the groove b' in the side of the bolt-shank a comparatively long crank can be employed without increasing the diameter of the casing. This feature is of importance, as it enables a longer throw of the bolt to be obtained, and thus more securely guards against the prying open of the door. The casing-sections A and A′ are cut away, as at a^7, above the crank, so as to allow space for its movement.

The crank C is provided with the square opening, opposite which are the holes a^8 and a^9 of the casing, and through this opening and these holes passes the square stem or key d of the turning spindle D, beyond which is formed the hub or shoulder d', that extends through the escutcheon E, and is furnished with the flange d^2 and the thumb-piece d^3. The escutcheon E is provided with an opening for the spindle and with a slot, e, through which, when the spindle is inserted into the escutcheon, passes the stop d^4, formed on the shoulder of the spindle, as clearly shown in Fig. 2. On the inner face of the escutcheon, in the position shown in Fig. 4, are formed the locking-lugs e^2, which, when the turning spindle is

forced outwardly by the coiled spring *f*, that bears against the casing and the shoulder *d'*, engage with the stop *d*[1] and securely lock the spindle against displacement. It will be noticed that the spindle is held in such manner as to be capable of a slight reciprocal or sliding movement in the direction of its length, the extent of which movement is determined by the flange *d*[2] and the stop *d*[1], bearing against the escutcheon. One end of each of the lugs *e*[2] of the escutcheon is inclined to allow the stop *d*[1] to ride over the same, while the other end is square, so as to firmly lock the spindle until it is pressed so far inwardly against the action of the spring as to entirely disengage the stop *d*[1] from the lugs *e*[2].

From the construction of parts as above defined the operation will be seen to be as follows: The casing or barrel, with its contained mechanism, having been placed within a suitable recess of the door, the spindle, with the coiled spring thereon, is inserted through the escutcheon and into its place within the casing and crank. The escutcheon is then fastened in place by suitable screws, the slot *c* being in such position that the spindle cannot be withdrawn. The coiled spring, bearing upon the casing and the shoulder *d'*, tends to force the spindle outward and causes the stop *d*[1] to engage with the locking-lugs *e*[2] of the escutcheon-plate when the bolt is in either of its extreme positions. When the bolt is withdrawn, the stop *d*[1], bearing against the inclined end of the lug *e*[2], offers sufficient resistance to the turning of the spindle to prevent the accidental throwing of the bolt; but by turning the thumb-piece of the spindle this stop will be caused to ride over the lug *e*[2] until the bolt is in its extreme forward or locked position, when it will be forced by the spring to engage with the square end of the lug. With the parts in this locked position it will be impossible to force the bolt backward until the spindle is pressed inward against the action of the spring to allow the stop *d*[1] to pass over the lug *e*[2]. It will be seen that my improved bolt can be used as a right or left handed bolt, as desired. The details of construction above set out may be varied without departing from the scope of the invention—as, for example, instead of the lugs upon the escutcheon any other suitable form of locking device thereon may be employed. So, also, a desirable construction of bolt mechanism may be effected without using the spiral spring or locking stop and lugs, and when these are dispensed with the crank should be so placed as to assume a dead-center with respect to the bolt when the latter is in its extreme forward or locked position. In such construction the spindle, if desired, may be made removable, like an ordinary key. I regard the spring, however, for the purpose of forcing the spindle into contact with the locking device on the escutcheon as one of the most valuable features of my present invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In bolt mechanism, the combination of the inclosing-casing having a key-opening in each side thereof, a bolt having a reduced shank extending at one side of said openings and having a grooved end portion, a crank having a hole entirely through it, located between said openings of the casing, and having a pin to engage with and move freely in the groove of the bolt-shank, and a turning key-spindle, all substantially as described.

2. In bolt mechanism, the combination, with the bolt, of a turning spindle having a stop and an escutcheon-plate having a locking device to engage with the stop of the spindle, substantially as described.

3. In bolt mechanism, the combination, with the bolt, its shank, and the crank, of a turning spindle passing through said crank and having a stop thereon, a spring held upon said spindle, and an escutcheon-plate provided with a locking device to engage the stop of the spindle, substantially as described.

4. In bolt mechanism, the combination, with the bolt and its throwing-crank, of the sliding spindle having the shoulder and the stop, the escutcheon-plate having cut-away space to admit the spindle and its stop, and having upon its inner face locking-lugs, arranged substantially as shown, to engage with the stop of the spindle, and a spiral spring for forcing the spindle-stop into engagement with the escutcheon-lugs, substantially as described.

AUGUSTIN W. McINTYRE.

Witnesses:
GEO. P. FISHER, Jr.,
CORNELIUS MACKENZIE.