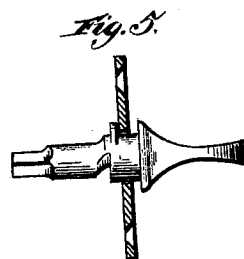
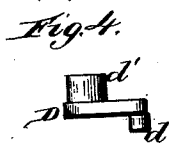
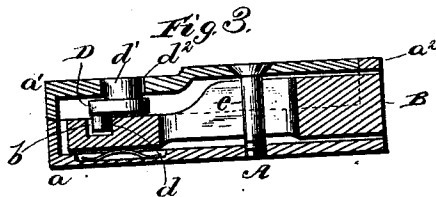
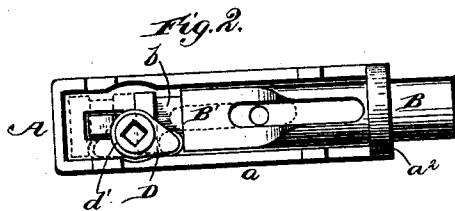
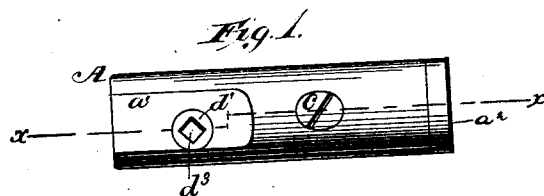


(Model.)

W. H. KING.
Bolt.

No. 241,998.

Patented May 24, 1881.



Witnesses.
Phil Everett.
J. A. Rutherford.

Inventor.
W. Haskell King.
By *James L. Nor.*
At.

UNITED STATES PATENT OFFICE.

W. HASKELL KING, OF ATHOL, MASSACHUSETTS.

BOLT.

SPECIFICATION forming part of Letters Patent No. 241,998, dated May 24, 1881.

Application filed April 6, 1881. (Model.)

To all whom it may concern:

Be it known that I, W. HASKELL KING, a citizen of the United States, residing at Athol, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Door-Bolts, of which the following is a specification.

The object of my invention is to simplify the construction of mortise door-bolts, to render them strong and durable, and to lock the bolt in its positions of projection and retraction, so that it cannot be moved therefrom except by the use of a suitable key.

In the accompanying drawings, Figure 1 is a view, in elevation, of my improved door-bolt. Fig. 2 is a similar view, the front portion of the case being removed and the bolt projected. Fig. 3 is a longitudinal section on the line *xx* of Fig. 1. Fig. 4 is an edge view of the crank-dog detached. Fig. 5 is a view of the key and escutcheon.

The letter A denotes the case, made of two semi-cylindrical parts, *a* and *a'*, the part *a* having secured to its front end an annular face-plate, *a*², behind which the front end of the part *a'* sets.

B designates the cylindrical bolt, resting in the part *a*, and adapted to play longitudinally in the case. The rear portion, B', of the bolt is cut away on one side to about half the thickness of the front part, forming a flat front face, across and near the rear end of which is formed a straight groove, *b*. Through the bolt is formed a longitudinal slot, through which passes the screw *c*, which secures the two parts of the case together.

The letter D designates a flat crank-arm, which lies against the flat front face of the part B' of the bolt, and is provided with a crank-pin, *d*, which plays in the groove *b*, while at its other end said crank-arm is provided with a circular hub, *d'*, projecting in the opposite direction from the crank-pin. When the two parts of the case are placed together the hub *d'* of the crank-arm enters a correspondingly-shaped aperture or bearing, *d*², formed through the wall of part *a'* of said casing, so that a suitable key may be inserted in the socket *d*³ of the hub, which socket may be squared, as shown,

or otherwise formed to embrace a corresponding key and prevent said key from turning without also turning the hub. The socket is preferably closed at its inner end, and thus dust will be prevented from entering the case, as the hub and bolt will fit snugly in their bearings. The center of the hub, in its bearing, stands above the center line of the casing and bolt, and the crank-arm is of such length that it can perform a little more than a half-revolution in the direction of the arrows, Fig. 2, and its crank-pin strikes the wall of the casing immediately after it rises above the center line in its movement in both directions.

When the parts are secured in position, as shown in Fig. 1, a key—say, such as is shown in Fig. 5—has its squared tip inserted in the hub *d'*, and by turning said key forward the crank-arm is thrown forward to the limit of its movement—that is, with its crank-pin against the upper part of the casing and a little above its own dead-center line. This movement of the crank throws the bolt out, of course, the crank-pin playing in groove *b*. The crank-arm in this position acts as a dog to prevent the retraction of the bolt except by the turning of the key in the opposite direction, for it is obvious that any rearward pressure upon the bolt would tend only to revolve the crank in the same direction it followed in throwing the bolt out; but in this direction it cannot move farther, because its pin *d* is stopped by the wall of the case. By turning the key rearward the bolt is retracted and the crank-arm carried to its rearward limit, as shown in dotted lines, Fig. 2—that is, to a position the reverse of that shown in full lines—and its pin stopped by the upper wall of the case.

I have shown, simply for greater security, the crank-arm as making a little more than a half-revolution and rising a little above its dead-center line in projecting the bolt; but it is obvious that if it were stopped directly upon its dead-center line, which coincides with the center line of the bolt, the bolt could not be pushed in or otherwise retracted than by a key. I do not, therefore, confine myself to moving the crank above its dead-center.

To give steadiness and smoothness of mo-

tion to the bolt, and to obviate rattling when the bolt is used on the door of vehicles, a bow-spring, *f*, is arranged behind the bolt, between it and the wall of the case, and presses the bolt forward snugly to its bearings.

I am aware that cranks have been used to operate bolts, and I do not, broadly, claim the combination of a crank and bolt operated thereby.

10 What I claim is—

1. A mortise door-bolt combining in its structure an inclosing-casing, a sliding bolt arranged therein, and provided at or near its rear end with a groove extending transversely across the bolt, and the crank-arm constructed to receive a key, and having a crank-pin arranged to play in the transverse groove across the bolt, and to make not less than a half-revolution between two points on opposite sides of its axis, and stops to limit the movement of the crank-

pin in both directions, substantially as described, whereby the crank serves both to operate and to dog the bolt, as set forth.

2. A mortise door-bolt combining in its structure the inclosing-casing, the sliding bolt arranged therein, and having at or near its rear end a groove extending transversely across the bolt, and the crank-arm having on one side a crank-pin arranged to play in the groove across the bolt, and on its other side a hub passing through a bearing in the wall of the casing, and provided with a socket to receive a key, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

W. HASKELL KING.

Witnesses:

JAMES L. NORRIS,
J. A. RUTHERFORD.