

T. K. WORTHINGTON.
DOOR BOLT.
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1,000,222.

Patented Aug. 8, 1911.

Fig. 1.

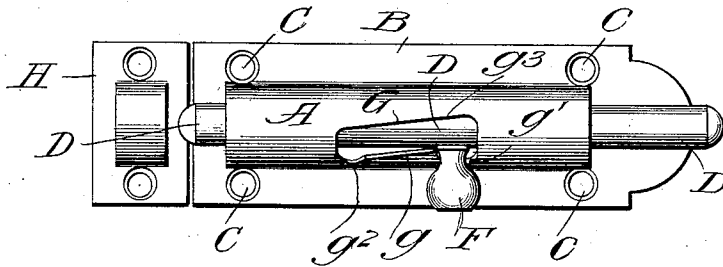


Fig. 2.

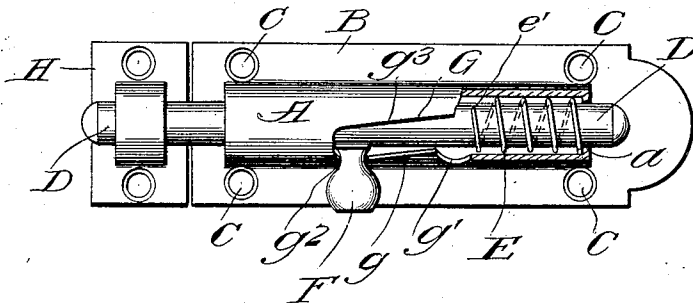
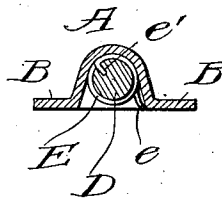


Fig. 3.



WITNESSES

T. L. Moeckner
P. B. Franzoni.

INVENTOR

T. K. Worthington,
Richard Wright Atty.
by Richard Wright

UNITED STATES PATENT OFFICE.

THOMAS K. WORTHINGTON, OF LANCASTER, PENNSYLVANIA.

DOOR-BOLT.

1,000,222.

Specification of Letters Patent.

Patented Aug. 8, 1911.

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To all whom it may concern:

Be it known that I, THOMAS K. WORTHINGTON, a citizen of the United States, residing in Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Door-Bolts, of which the following is a specification.

This invention relates to bolts of the class comprising a bolt bar arranged to slide within a casing or barrel provided with a longitudinal slot through which extends the shank of a knob or handle which is adapted to be moved back and forth in the slot to operate the bolt. In this class of bolts the slot has been usually provided at each end with a recess into which the shank of the knob or handle may be moved by turning it about the axis of the bolt bar in order to prevent accidental endwise movement of the bolt.

The object of my invention is to provide a bolt of this kind with means for automatically shooting or moving it to its locked position when the knob is released from the retaining notch or recess at the outer end of the slot in the barrel, and to automatically move it into the notch or recess at the opposite end of the slot when the bolt bar has fully moved to its locked position. By such a construction, in order to shoot the bolt it is necessary to give an upward movement of the knob when the spring will act automatically to shoot the bolt and to turn the knob into its locking recess.

In the accompanying drawings:—Figure 1 shows an elevation of a bolt constructed in accordance with my improvements, the bolt being unlocked. Fig. 2 is a similar view with the bolt in engagement with its keeper and with part of the barrel broken away, in order to better illustrate the interior construction. Fig. 3 shows a transverse section of the bolt and barrel.

The barrel, A, is provided with a base, B, having screw holes, C, as is usual in this class of bolts, and the keeper, H, is of usual construction. The bolt bar, D, extends longitudinally through the barrel as usual, and is provided with a knob or handle, F, of usual construction. The barrel is formed with a longitudinal slot, G, which has an inclined upper wall, g^2 , and an inclined lower wall, g , and notches or recesses, g' , g^2 , at opposite ends. Within the barrel and

encircling the bolt bar is a coiled spring, E, which is attached to the bolt bar at e' and has a laterally projecting end, e , which bears against one wall of the casing inside the flange, a , against which it also bears. When the bolt bar is in the withdrawn position shown in Fig. 1 the spring is compressed, but when the bolt is in the locked position shown in Fig. 2 the spring is relaxed as shown in this figure. When the bolt bar is turned about its longitudinal axis, the spring is either wound or unwound according to the direction in which the bolt bar is turned. When the bolt bar is withdrawn from the keeper, the shank of the knob or handle, F, lies within the recess, g' and is held there by the spring, E. When the knob is raised out of the notch, g' , the spring, E, causes the bolt to shoot into its keeper and at the same time the knob is moved along the slot, G, and is made to enter the notch or recess, g^2 , the connections between the spring, the bolt bar and the casing being such as to cause the bolt bar to be given this compound movement, viz., a movement toward the keeper and a transverse rotary movement to turn the knob downward. In order to unlock the bolt, the knob is lifted so as to turn it out of the recess, g^2 , and it is then moved sidewise along the slot, G, and the spring, E, then automatically turns the knob down into the notch or recess g' .

I find it advantageous to provide inclined walls for the slot, G, as this materially relieves friction but the notch or recess, g^2 , is so formed that the knob cannot be moved therefrom by merely giving to the bolt an endwise movement which might be done from the outside of the door but it is necessary to take hold of the knob and turn it out of the recess before the rearward endwise movement of the bolt can be effected.

The construction is extremely simple, and the bolt can be manufactured at small cost. At the same time it is reliable and can be easily operated. If any attempt is made from the outside of the door to slide the bolt after it is locked by giving a progressive step-by-step movement thereto such operation would not be effective because even if the bolt were given a short movement and then released the spring, E, would immediately return the knob to the locking recess, g^2 .

The bolt shown, while primarily intended for locking doors, may of course be used for other purposes.

I claim as my invention:—

- 5 The combination of a bolt barrel having a longitudinally disposed slot with an inclined lower wall and provided with bolt-retaining notches at opposite ends of said inclined wall and a bolt sliding in the barrel
10 having a knob the shank of which extends through the slot, bears on the inclined lower wall thereof and at times enters said retaining notches, and a spring encircling the

bolt attached thereto and connected with the casing for shooting the bolt toward its keeper and for turning it about its longitudinal axis to cause the shank to bear on the inclined lower wall of the slot and to enter either of said notches.

In testimony whereof, I have hereunto subscribed my name.

THOMAS K. WORTHINGTON.

Witnesses:

CHAUNCEY K. HERNOHAN,
JAMES REED.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
