(No Model.) 2 Sheets—Sheet 1.

T. LYONS.

DOOR BOLT.

No. 458,180. Patented Aug. 25, 1891.

Fig. 1.

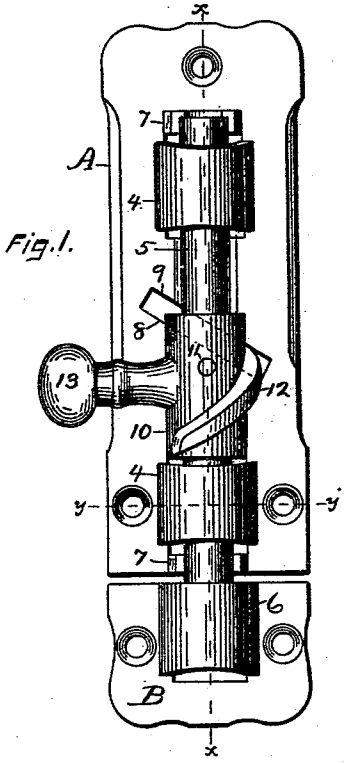


Fig. 2.

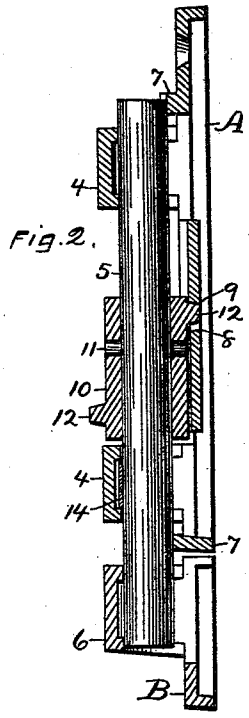
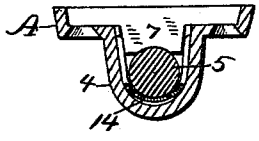


Fig. 3.



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Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

T. LYONS.

DOOR BOLT.

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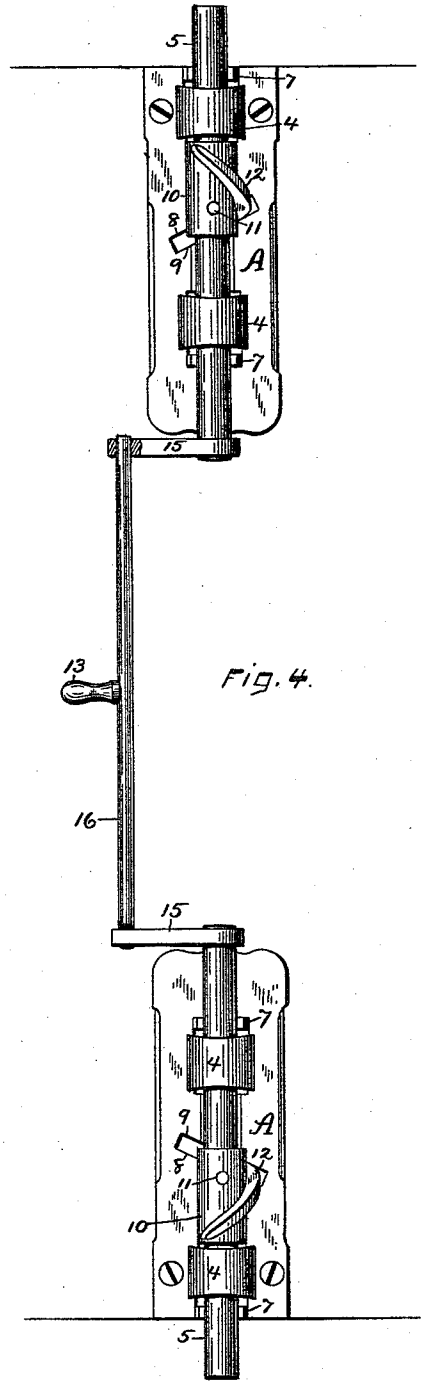


Fig. 4.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS LYONS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

DOOR-BOLT.

SPECIFICATION forming part of Letters Patent No. 458,180, dated August 25, 1891.

Application filed June 6, 1891. Serial No. 395,342. (No model.)

To all whom it may concern:

Be it known that I, THOMAS LYONS, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Door-Bolts, of which the following is a specification.

My invention relates to improvements in door-bolts; and the objects of my improvement are to specially adapt the bolt for use in a vertical position, to simplify the construction, and, in general, to improve the efficiency and convenience of the bolt, while at the same time it can be produced at a small cost.

In the accompanying drawings, Figure 1 is a front elevation of my bolt. Fig. 2 is a vertical section of the same, partly in elevation, on line *x x* of Fig. 1. Fig. 3 is a horizontal section on line *y y* of Fig. 1; and Fig. 4 is a front elevation, on a smaller scale, of two connected bolts.

A designates the base-plate having barrels or bearings 4 for supporting and guiding the bolt 5, and B designates the base-plate of the keeper having the barrel or socket 6 for the end of the bolt 5 to engage, as in ordinary door-bolts. I form the barrels or bearings 4 immediately opposite open spaces in the base-plate in order to enable them to be cast integral therewith, and by reason of which they bear only upon the front side of the bolt 5. At the upper and lower ends of the base-plate A, when in the position illustrated, and outside of the barrels 4, I form lugs 7 with slightly-rounded depressions to form bearings for the opposite side of the bolt 5, as shown most clearly in Fig. 2. This enables the base-plate and the proper bearings for supporting and guiding the bolt 5 to be cast integral. In the middle of the base-plate I form a pair of opposing shoulders 8 9, the same extending obliquely across the base-plate, and, as shown, they form the side walls of an oblique slot; but two opposing points is all that is essential.

10 designates a sleeve or collar secured to the bolt 5 in any proper manner, so as to be rigid therewith—as, for instance, by means of the pin 11—said sleeve being provided with a spiral web 12, that extends between and is engaged by the opposing shoulders 8 and 9 in the base-plate. Said sleeve may also be provided with an operating-handle 13, as shown in Fig. 1, whereby the said handle and web are rigidly connected with the bolt.

The barrels 4 are recessed in their middle portion, as shown in Figs. 2 and 3, and in the recessed portion of the barrel nearest the keeper I place a plate-spring 14 to bear upon the bolt with friction enough to prevent its accidental rotation. If desired, a spring may also be inserted in the other barrel.

The base-plate A and the bearings for the bolt may be cast integral in the form shown. The sleeve, knob, and spline may also be cast in like manner and drilled to receive the bolt 5. The spring 14 may be formed simply as a flat spring, or, if desired, slightly curved before insertion. The spring is placed in its barrel and the bolt inserted through the barrels and sleeve 11, after which firmly securing the sleeve to the barrel completes the article.

The bolt may be used in a vertical position at the bottom or top of a door. By turning the handle 13 a half-revolution the spiral web and confronting shoulders of the base-plate cause the bolt when so turned to move longitudinally for projecting its end in or out for engagement or disengagement with the keeper. The spring 14 causes sufficient friction to make the bolt stay in the position in which it is set, and by the construction shown the bolt operates the same and works equally well whether it is placed at the top or bottom of the door, and which is not the case with a bolt that slides out and in by a direct push. While adapted for use in a vertical position it may of course be used in a horizontal position in place of an ordinary door-bolt. Furthermore, two bolts, one having a right-hand spiral web and the other a left-hand one, may be placed at the top and bottom, respectively, of a door and connected together for simultaneous operation. Such an application of two bolts is illustrated in Fig. 4. In this construction the operating-handle on the sleeve may be dispensed with and an arm 15 rigidly connected to the confronting end of the top and bottom bolts 5 5. These arms are connected by a connecting-rod 16 in any proper

manner—as, for instance, by screwing one end of said rod into a threaded hole in one of the arms 15 (the lower one as shown) and let the other end of said rod pass loosely through a hole in the other arm, as shown. The operating-handle 13 may be connected to said rod, or the rod itself may serve as a handle, as may be desired.

The bolts are set in alignment with each other at the top and bottom of the door and connected by the rod 16, which may be longer or shorter, according to the height of the door. If the rod is too long, the portion that projects above the arm 15 of the upper bolt, when both bolts are forced out of their case, as shown in Fig. 4, may be cut off. It will readily be seen that turning the one handle 13 on the rod 16 in the manner before described for a single bolt will simultaneously operate both bolts, that end of the connecting-rod which is loosely connected with one of the arms 15 permitting of the necessary sliding movement to compensate for the bolts 5 5 moving in opposite directions up and down.

I claim as my invention—

1. The herein-described door-bolt, consisting of a suitable case or support having opposing shoulders 8 9, the bolt 5, mounted in said case and provided with the spiral web 12, and operating-handle rigidly connected with said bolt, substantally as described, and for the purpose specified.

2. The herein-described door-bolt, consisting of a suitable case having recessed barrels and opposing shoulders 8 9, the bolt 5, mounted in said case, the spiral web and operating-handle rigidly connected with said bolt, and a plate-spring inclosed within said recessed barrel in contact with said bolt, substantially as described, and for the purpose specified.

THOMAS LYONS.

Witnesses:
CHAS. M. BURGESS,
M. S. WIARD.