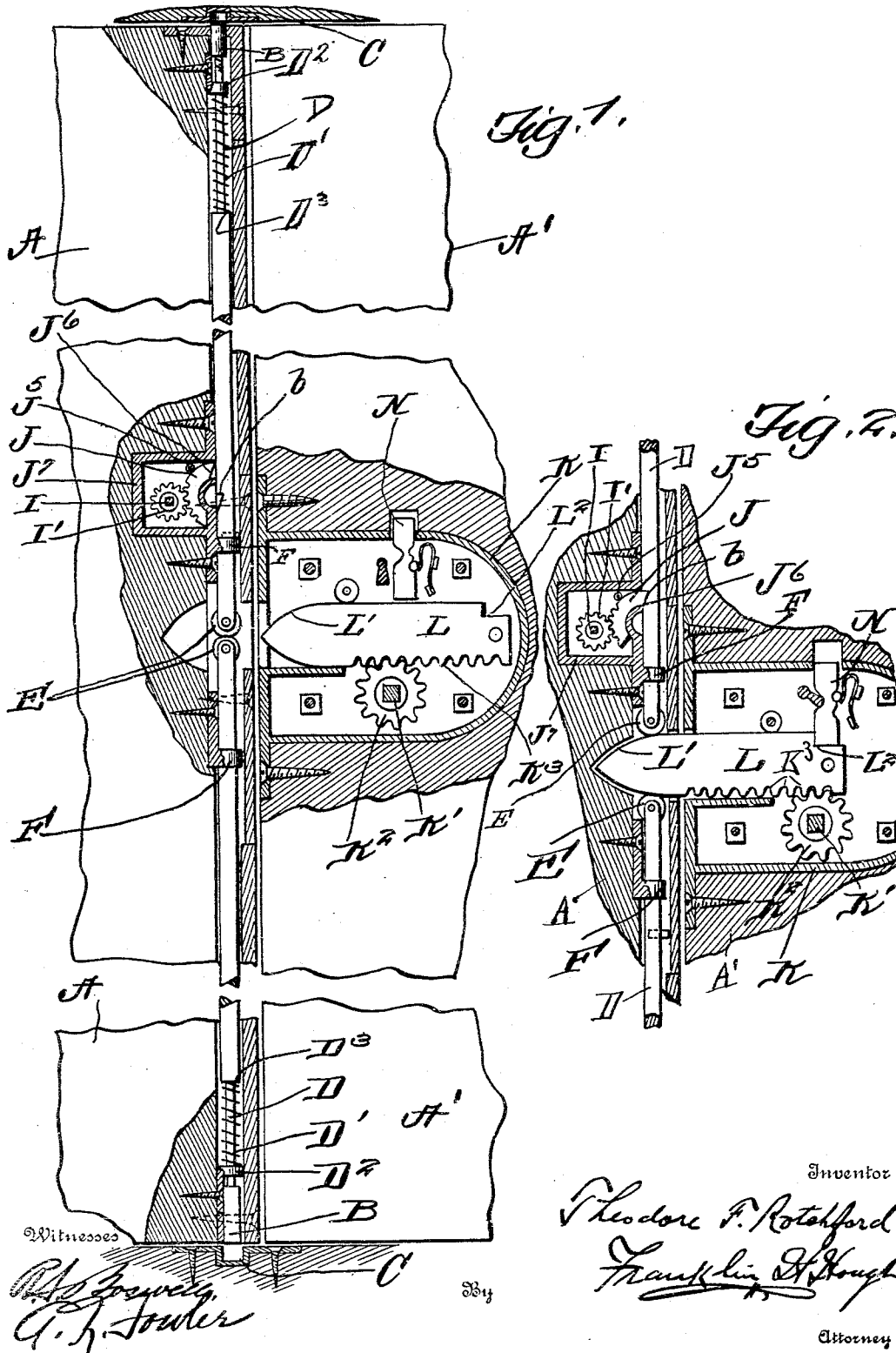


T. F. ROTCHFORD.
 MULTIPLE DOOR BOLT.
 APPLICATION FILED MAR. 20, 1909.

932,330.

Patented Aug. 24, 1909.



UNITED STATES PATENT OFFICE.

THEODORE F. ROTCHFORD, OF BALLSTON, VIRGINIA.

MULTIPLE DOOR-BOLT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THEODORE F. ROTCHFORD, a citizen of the United States, residing at Ballston, in the county of Alexandria and State of Virginia, have invented certain new and useful Improvements in Multiple Door-Bolts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in multiple door bolts, and comprises various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view through two doors equipped with my improved apparatus, showing the bolts drawn within the recesses in the door, and Fig. 2 is a vertical elevation showing a part of the apparatus thrown into position to cause the bolts to be projected.

Reference now being had to the details of the drawings by letter, A, A' designate two doors, one of which is provided with the locking bolts B and B, one of which bolts is mounted near the bottom and the other near the top of the door and each positioned within a recess or channel adjacent to the marginal edge of the door.

C, C designate socket members designed to be seated one in the sill or threshold and the other in the top of the door frame and designed to be engaged by the bolts B when in projected positions. Said bolts B are provided each with a stem having a reduced portion D, said reduced portion of each stem being surrounded by a stem D', one end of which bears against a fixed collar D² on the door, while the other end bears against a shoulder D³ on the stem. Each stem is guided in its longitudinal movements by passing through an aperture in the bracket plate F and the adjacent ends of the stems each have an anti-friction roller E journaled thereon. The two springs D' and D' tend to normally hold the bolts out of engagement

with the plates C and C and with the anti-friction rollers in contact with each other.

Mounted in the door A is a knob shaft I to which a gear wheel I' is fixed and J designates a curved segment pawl having teeth in engagement with the gear wheel I' and said segment J is adapted to engage a notch b formed in the stem of the upper bolt for the purpose of holding the latter in a projected position. The segment pawl J is mounted about a convexed surface J⁶ of the casing J⁷ and moves intermediate said convexed surface and a pin J⁵.

Mounted in the door A' is a casing K through which a knob shaft K' passes, having a gear wheel K² thereon, the teeth of which mesh with the teeth K³ of the longitudinally movable member L which has its outer end tapering as at L' while its rear end has a notch L². N is a locking bolt adapted to be thrown into the notch L² when the member L is moved forward to its farthest outer throw. Said member L serves to hold the bolts in projected positions as well as to lock the two doors together.

In operation, when it is desired to lock the doors, they are closed and assume the positions shown in Fig. 1 of the drawings. By turning the knob shaft K', the member L with a tapering end is moved forward and coming in contact with the two anti-friction rollers will cause the same to separate and the two stems of the bolts to move into projected positions. When it is desired to hold the upper bolt in a projected position, the knob shaft I is given a partial rotary movement sufficient to throw the segment pawl J into the notch b to hold the upper bolt at its highest throw. When the member L is positioned intermediate the two anti-friction wheels, the two bolts as well as both doors will be securely locked. By turning the knob shaft in a reverse direction, the member L may be thrown back into the position shown in Fig. 1 of the drawings and the bolts will be thrown out of the socket plates C.

It will thus be seen that by the provision of multiple door bolts arranged as shown and described the bolt carrying door A may only be locked by the throwing of the member L intermediate the anti-friction wheels and this is accomplished when the doors are closed and the knob shaft K' given a partial revolution. If it is desired

to open the door A' independent of the door A while the latter is locked, it may be done by causing the upper bolt B to be held in a projected position by means of the segment pawl J engaging the notch b. Should it be desired to allow both doors to open simultaneously, this may be easily done by simply giving a partial rotary movement to the knob shaft I and causing the pawl J to be thrown out of the notch b. Then, when the member L is withdrawn from between the anti-friction wheels, both doors will be allowed to freely swing open.

What I claim to be new is:—

15 1. A multiple door bolt apparatus, comprising spring-actuated bolts positioned upon a door, an anti-friction wheel mounted upon the inner end of the stem of each of said bolts, means for holding one of said bolts in a projected position, a movable gear actuated member adapted to be mounted upon an adjacent door and to be moved intermediate said anti-friction wheels to throw the bolts into projected positions, as set forth.

2. A multiple door bolt apparatus, comprising, in combination with a door, spring-actuated bolts mounted therein, an anti-friction wheel mounted upon the stem of each bolt, one of said stems being provided with a notch, a gear segment pawl adapted to be thrown into said notch to hold one of said bolts in a projected position, a gear and knob shaft for operating said segment, a movable member carried by an adjacent door and adapted to be inserted intermediate said anti-friction wheels to throw the bolts in opposite directions, and gear mechanism for moving said member, as set forth.

40 3. A multiple door bolt apparatus, comprising spring-actuated bolts positioned upon a door, an anti-friction wheel mounted in the inner end of the stem of each of said bolts, means for holding one of said bolts in a projected position, a movable member adapted to be mounted in an adjacent door and having a tapering end adapted to be inserted between said rollers to separate the same and throw the bolts into projected positions, as set forth.

4. A multiple door bolt apparatus, comprising spring-actuated bolts positioned upon a door, an anti-friction wheel mounted

upon the inner end of the stem of each of said bolts, means for holding one of said bolts in a projected position, a movable member adapted to be mounted in an adjacent door and having a tapering end adapted to be inserted between said rollers to separate the same and throw the bolts into projected positions, and means for holding said member in a locked position, as set forth.

5. A multiple door bolt apparatus comprising, in combination with a door, spring-actuated bolts mounted therein, an anti-friction wheel journaled in the inner end of the stem of each of said bolts, one of said stems being provided with a notch, a casing fitted to said door and provided with a convex surface, a curved segment pawl having its concaved edge bearing against the convex portion of said casing and provided with teeth upon its convex edge, a gear wheel in mesh with the teeth of said segment, a knob shaft in said gear, and means carried by an adjacent door for moving said bolts longitudinally in opposite directions, as set forth.

6. A multiple door bolt apparatus comprising, in combination with a door, spring-actuated bolts mounted therein, an anti-friction wheel journaled in the inner end of the stem of each of said bolts, one of said stems being provided with a notch, a casing fitted to said door and provided with a convex surface, a curved segment pawl having its concaved edge bearing against the convex portion of said casing and provided with teeth upon its convex edge, a gear wheel in mesh with the teeth of said segment, a knob shaft in said gear, a member adapted to be carried by an adjacent door and provided with teeth upon one edge thereof, one end of said member being tapering and adapted to engage between said anti-friction wheels, a gear wheel meshing with the teeth of said member and adapted to move the same longitudinally, as set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

THEODORE F. ROTCHFORD.

Witnesses:

A. L. HOUGH,
A. R. FOWLER.