Oct. 7, 1924. 1,510,562

S. SEGAL

BOLT

Filed March 29, 1921

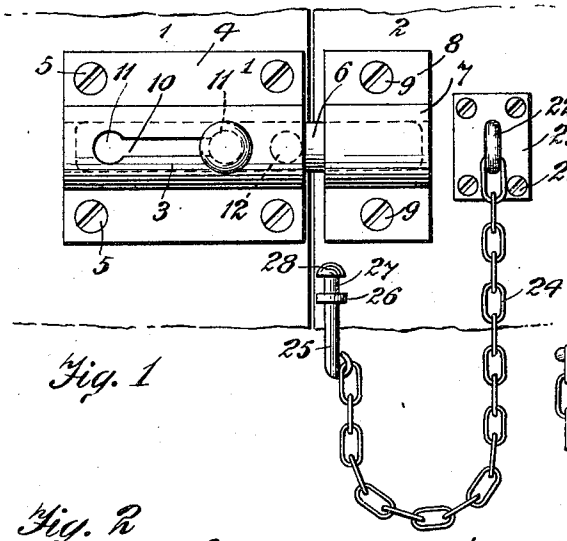


Fig. 1

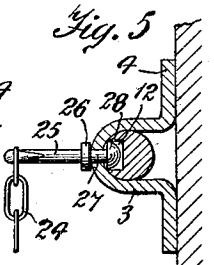


Fig. 5

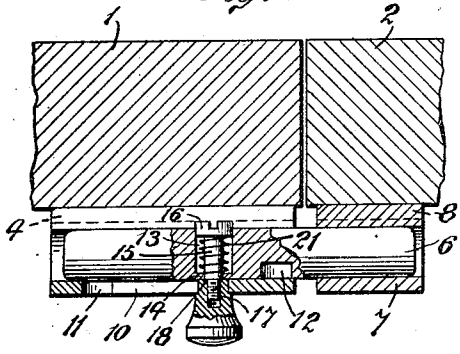


Fig. 2

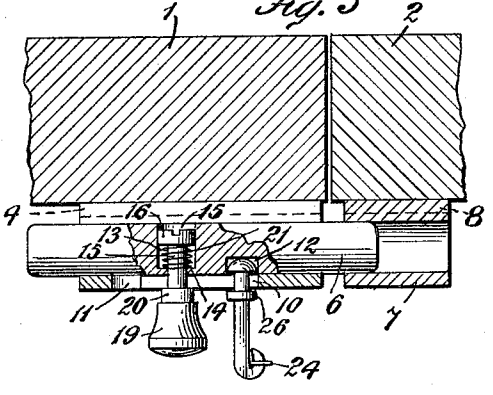


Fig. 3

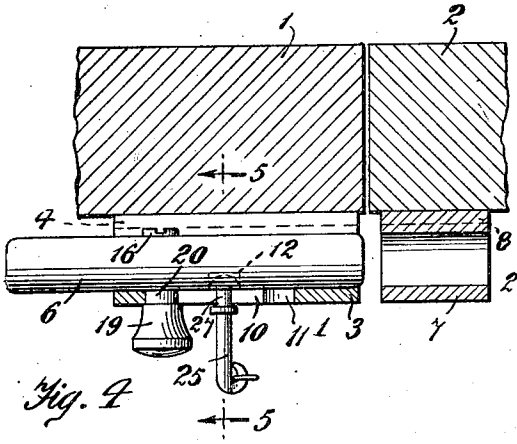


Fig. 4

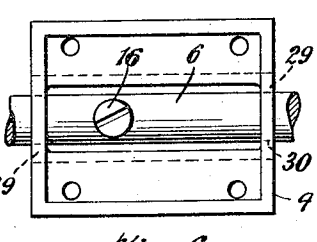


Fig. 6

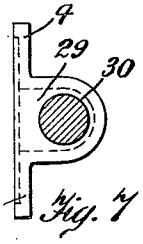


Fig. 7

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By Attorney
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UNITED STATES PATENT OFFICE.

SAMUEL SEGAL, OF NEW YORK, N. Y.

BOLT.

Application filed March 29, 1921. Serial No. 456,761.

To all whom it may concern:

Be it known that I, SAMUEL SEGAL, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Bolts, of which the following is a specification.

My invention relates to bolts adapted to be fastened to doors or the like for locking the same against opening and is an improvement on the type of device shown and described in my prior application for patent filed January 29, 1920, Serial No. 354,766, allowed October 22, 1920.

The object of the invention is the production of a novel construction of bolt of few parts, of simplicity of construction and of strength which shall be adapted to become automatically locked against unauthorized movement when the bolt-bar is thrown into projected or locked position.

A further object of the invention is the production of removable means adapted to extend through the slot in the barrel within which the operating knob is moved and to interlock with the bolt-bar so as to permit the door to which the bolt is fastened to be opened partially only.

Other and further objects and advantages of the invention will appear from the accompanying description, the invention consisting in the novel parts and combinations thereof hereinafter more particularly described and then specified in the claims.

In the accompanying drawing showing a practical embodiment of the invention:

Fig. 1 is a front elevation of the bolt as applied to a door.

Fig. 2 is a horizontal section (partly in elevation) taken through the bolt shown in Fig. 1.

Fig. 3 is a view similar to Fig. 2 showing the bolt-bar in partially retracted position with the locking pin in position for interlocking with the device.

Fig. 4 is a view similar to Fig. 3 but showing the bolt-bar in retracted position.

Fig. 5 is a cross-section on the line 5—5 of Fig. 4.

Fig. 6 is a rear elevation of a modified form of barrel.

Fig. 7 is an end elevation of the barrel shown in Fig. 6.

Referring to the drawings:

A door is indicated at 1 while 2 indicates the door frame. 3 indicates a U-shaped piece forming the bolt barrel and the flanges 4 thereof are fastened to the door 1 by suitable screws 5. Said barrel receives and guides in its movement a horizontally slidable bolt-bar 6. 7 indicates a U-shaped piece whose flanges 8 are fastened to the door frame by suitable screws 9, said U-shaped piece forming a keeper adapted to receive therein the end of the bolt-bar 6 to lock the door against opening, as shown in Fig. 1.

The bolt barrel 3 is provided with a horizontal slot 10 therein terminating at either end in enlarged annular openings 11 and 11′. The bolt-bar 6 is provided with a hole 12 which is adapted to register with the annular opening 11′. Said bolt-bar is also provided with an annular opening 13 extending through the body thereof and with an annular shoulder 14 adjacent said opening. 15 indicates a pin having one end thereof headed and slotted as indicated at 16 and the other end reduced and screw-threaded as at 17, said reduced end forming an annular shoulder 18 on said pin. The headed end 16 slidably interfits with the opening 13 and a space obtains intermediate the shank or body of the pin and the wall of said opening, as illustrated.

19 indicates an operating knob having a screw-threaded hole therein within which the reduced end 17 of the pin is screwed, said operating knob being provided with an annular reduced or shouldered portion 20 adapted to interfit with the openings 11, 11′ of the slot 10 whereby the end of the reduced portion 20 will bear against the bolt-bar 6 when it is received within said openings 11, 11′. The shoulder 18 of the pin 15 is adapted to engage the end of the reduced or shouldered portion 20 of the operating knob 19 when the end 17 is screwed within said knob, as shown in Fig. 2, said shoulder 18 acting as a stop to prevent said end 17 from being screwed too far within said operating knob and thus prevent the headed end 16 from being drawn too far within the annular opening 13. A spring 21 encircles the pin 15 and bears against the shoulder 14 of the bolt-bar and against the headed end 16 of the pin and tends by its action to draw the pin inwardly through the opening 13 and towards the door in an obvious manner.

The bolt-bar 6 which is actuated by the operating knob 19 is shown in projected or locked position in Figs. 1 and 2 with the end

thereof extending within the keeper 7. When in this position the reduced or shouldered portion 20 of said operating knob interfits with and engages the annular opening 11′ of the slot 10 where it is held by the action of the spring 21 thus holding the bolt-bar against movement. To retract the bolt-bar so as to open the door, the operating knob 19 is pulled outwardly against the action of the spring 21 so as to release the shouldered portion 20 from engagement with the opening 11′. The operating knob is then pressed to the left (Fig. 3) whereby the pin 15 rides in the slot 10 and the end of the shouldered portion 20 of the operating knob engages the barrel and spans said slot. This movement acts to retract the bolt-bar 6 and to withdraw the end thereof from the keeper 7. When the bolt-bar has reached its extreme retracted position the shouldered portion 20 automatically snaps or slips into the opening 11 due to the action of the spring 21 and the bolt-bar is thus firmly held or locked in retracted position, from which it may be released only by pulling the operating knob outwardly against the action of the spring and sliding or pressing the operating knob to the right. When it reaches the extreme position to the right or the projected position the shouldered portion 20 again automatically slips into the opening 11′ due to the action of the spring.

22 indicates a staple having a base-plate 23 fastened to the door frame 2 by suitable screws 23′. Fastened to said staple is a chain 24 having attached thereto a locking pin 25 provided with a collar 26, a neck 27 and a head 28. The head 28 is of a size permitting it to be inserted through the annular opening 11′ in the barrel and within the hole 12 of the bolt-bar but not through the slot 10 while the neck 27 is of a size permitting it to slide through said slot.

In some cases it will be found desirable to open the door partially only and to lock it against further opening so as to permit the person on the outside of the door to be seen before the door is completely opened. In these cases the bolt-bar 6 is retracted partially within the barrel, as indicated in Fig. 3, until the hole 12 therein registers with the annular opening 11′ of the slot 10. The locking pin 25 is then inserted, head foremost, through said opening 11′ whereby the head 28 thereof will be received by the hole 12. A further movement to the left or a retracting of the bolt-bar by means of the operating knob carries the locking pin 25 with it, the neck 27 of said pin sliding within the slot 10. This further movement, moreover, throws the hole 12 out of alignment with the opening 11′ and prevents withdrawal of the locking pin as the head 28 thereof is too large to be drawn through the slot 10. When the bolt-bar reaches its extreme retracted position it becomes automatically locked in that position as has been explained heretofore. The door may now be opened partially, the extent of the opening thereof being limited by the length of the chain 24. A full opening of the door may not be effected until the bolt-bar is projected to the position shown in Fig. 3, the locking pin withdrawn, and the bolt-bar again thrown into retracted position.

In the modification illustrated in Figs. 6 and 7 the barrel comprises a U-shaped piece as in the preferred form of the invention with the rear thereof open or exposed to view but the ends of said U-shaped piece are supported by solid walls 29, preferably cast as an integral structure with the barrel and its flanges, said walls being provided with openings 30 receiving the ends of the bolt-bar 6.

It will be noted that in both forms of the invention the bolt barrel is open at its rear side which makes for economy of material and cheapness of manufacture. It also permits access to the bolt-bar for the purpose of cleaning, oiling or for other purposes and provides for ease of assembly of the various parts of the structure.

What I claim as my invention is:

1. In a bolt, a barrel comprising a U-shaped piece having a slot and an opening therein, a bolt-bar adapted to slide sidewise within said barrel and provided with an opening extending through the body thereof, an operating knob for actuating said bolt-bar, a screw-threaded pin screw-threaded within said operating knob and slidably interfitting with the opening in the body of the bolt bar to move axially in said opening and adapted to slide within the slot of the barrel after the knob is pulled outwardly, said operating knob being provided with a shoulder adapted to span said slot and to be received by said opening in the barrel.

2. In a bolt, a barrel having a slot therein, a bolt-bar adapted to slide within said barrel and provided with an opening in the body thereof, an operating knob for actuating said bolt-bar and a pin slidable axially within the opening of said bolt-bar when the knob is pulled outwardly and extending through the slot in the barrel and screwed to said operating knob, said pin being provided with a shoulder thereon engaging said operating knob to limit the relative position of said knob and pin.

3. In a bolt, a barrel having a slot therein, a bolt-bar adapted to slide within said barrel and provided with an opening therein, an operating knob for actuating said bolt-bar, a pin extending through said slot and into the opening in said bolt-bar and provided with a headed end, a reduced end screwed within said operating knob and a

shoulder adapted to engage said operating knob and a spring encircling said pin within the opening in said bolt-bar acting to draw said pin inwardly through said opening.

4. In a bolt, a barrel comprising a U-shaped piece open at its rear side and having a slot therein terminating in an annular opening, a bolt-bar adapted to slide within said barrel, an operating knob for actuating said bolt-bar and adapted to be received by said annular opening and to span said slot and a pin carried by said operating knob and slidable axially in the bolt-bar and having a reduced threaded end providing a shoulder engaging and fixed against the end of the knob, said pin extending through the slot in the barrel and providing a connection between said operating knob and said bolt-bar.

5. In a bolt for a door, a barrel having a slot therein, a bolt-bar slidable in said barrel, an operating knob having means extending through said slot for actuating said bolt-bar and means adapted to extend through said slot and to engage said bolt-bar to permit the door to be partially opened.

6. In a bolt for a door, a barrel having a slot therein, a bolt-bar slidable in said barrel, an operating knob having means extending through said slot for actuating said bolt-bar and means fastened to the door frame and adapted to extend through said slot and to engage said bolt-bar and said barrel and to permit the door to be partially opened.

7. In a bolt for a door, a barrel having a slot therein terminating in an opening, a bolt-bar slidable in said barrel and provided with a hole therein adapted to register with said opening, an operating knob having means extending through said slot for actuating said bolt-bar and means adapted to extend through said opening and into said hole in said bolt-bar to permit the door to be partially opened.

8. In a bolt for a door, a barrel having a slot therein terminating in an opening, a bolt-bar slidable in said barrel and provided with a hole therein adapted to register with said opening, means extending through said slot for actuating said bolt-bar and a locking pin provided with a neck of a size permitting it to be received by said slot and with a head adapted to extend through said opening and into said hole and to engage said barrel.

Signed at New York, in the county of New York and State of New York, this 28th day of March A. D. 1921.

SAMUEL SEGAL.

Witnesses:
IRENE LEFKOWITZ,
F. B. TOWNSEND.