Feb. 23, 1926. 1,574,222

L. WENSEL

DOOR AND WINDOW BOLT

Filed August 23, 1923

Fig. 1.

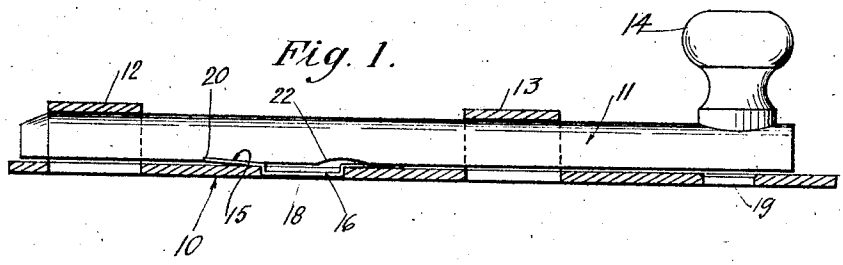


Fig. 2.

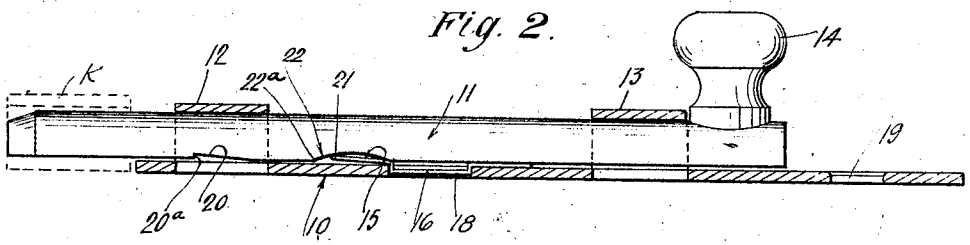


Fig. 3.

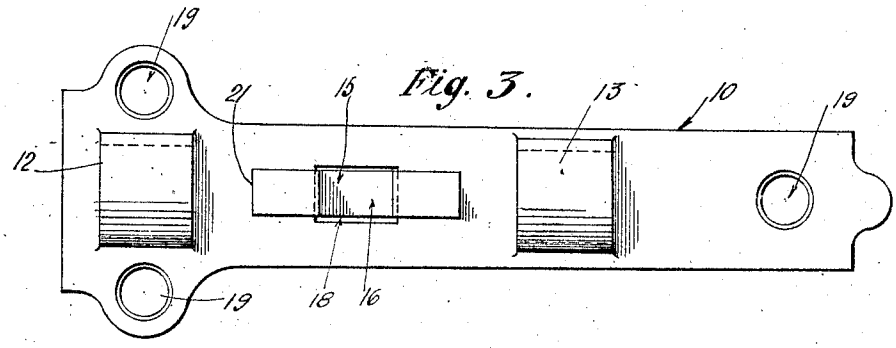
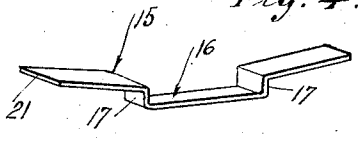


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DOOR AND WINDOW BOLT.

Application filed August 23, 1923. Serial No. 658,907.

To all whom it may concern:

Be it known that I, LOUIS WENSEL, a citizen of the United States, residing in Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Door and Window Bolts, of which the following is a detailed specification.

This invention relates to bolts for fastening doors, window sashes, gates and the like, and especially to means for placing a frictional drag on sliding bolt bars to frictionally retain them in the position in which they were last manually set. In addition, I have provided means whereby, after the bolt bars have been shot completely home, increased resistance is offered to initial unlocking movement, thus rendering it difficult for intended intruders to "work" the bolt back by inserted tools between the bolted door and its jamb.

I obtain the requisite frictional drag on the bolt bar by the insertion of a spring between the bar and the bolt plate, and, in this way, I eliminate the necessity and expense of accurately fitting the bolt bar to its keepers, the spring taking up all play between them.

A special feature of the invention resides in the manner in which I have utilized the spring as a detent for purposes of limiting the extent of bar withdrawal movement, I accomplish this by notching the underside of the bolt bar, the end of the spring being adapted to engage the shoulder formed by the notch when the bolt is withdrawn to full unlocked position and thus prevent further withdrawal of the bar to retain the plate and bar in assembled relation.

By reason of the novel construction employed, the assembling of the bolt is very easily accomplished without the aid of tools. The spring is provided with a projection which is adapted to protrude into a positioning socket formed in the base plate. In assembling, the bolt bar is merely thrust through the keepers and over the spring. The spring is thus positively positioned without being rigidly attached to either plate or bar, and subsequent separative withdrawal of the bar is prevented by the coaction of the spring and the bar notch. Thus, in contra-distinction to the usual method of bolt assembly, no additional operation is necessary to prevent separative movement between the bar and the bolt plate.

Other features of novelty and objects of the invention will be pointed out in the following detailed description, reference being had to the accompanying drawings, in which:—

Fig. 1 is a longitudinal medial section taken through a bolt which embodies my invention;

Fig. 2 is a view similar to Fig. 1 but showing the bolt thrust into full locked position;

Fig. 3 is a top plan view of the bolt with the bolt bar removed to expose the spring member of my device; and

Fig. 4 is a perspective view of the preferred form of spring member.

In the drawings, numeral 10 indicates the base member or bolt plate upon which the bolt bar 11 is mounted and adapted to longitudinally slide. Keepers or guides 12 and 13 guide bar 11 in its longitudinal movement, and, in the present instance, plates 10 and keepers 12, 13 are integral. This, however, is not a limitation on the invention as the keepers may be of any of the well known types. Handle 14 provides means for manually moving bar 11 and, by engagement with keeper 13, for limiting movement of this bar to the left as viewed in Fig. 2. There is sufficient clearance between bar 11 and plate 10 to allow the insertion of flat spring 15 therebetween, which spring serves to thrust bar 11 upwardly into engagement with keepers 12 and 13 to frictionally retain the bar in set position and to offer a certain amount of resistance to the movement of the bar during its reciprocation. It is evident that spring 14 obviates the necessity of accurately forming or machining the bar and keepers to provide for a snug fit therebetween.

In the particular embodiment illustrated, I have shown a novel means for anchoring or positioning spring 15 on plate 10. The central portion 16 of the spring is depressed to form shoulders 17, while plate 10 is punched out to form a socket 18 to receive portion 16. The engagement of shoulder 17 and the side edges of portion 16 with the walls of aperture 18 serve to prevent other than limited lateral and longitudinal relative movement between the plate and the spring. While the construction illustrated

is preferred, it will be understood that a recess in plate 10 will serve the purpose of aperture 18, and that any suitable projection on the under face of spring 15 will serve the purpose of depressed portion 16. It will also be understood that it lies within the scope of this invention to anchor the spring on the plate by such means as rivets or screws, but the illustrated method is superior in that no special anchoring operation is necessary to properly position the spring with respect to the base plate and the bar, the spring merely being placed on the plate with portion 16 in registry with aperture 18 and bar 11 thrust through keeper 13, over the spring, and through keeper 12, whereupon the spring is definitely positioned. But a single punching and forming operation on plate 10 is necessary to form keepers 12 and 13 and to provide aperture 18 and screw holes 19, after which single punching operation the entire plate is ready for assembly.

To limit the movement of bar 11 to the right as viewed in Fig. 1 and to thus prevent unintended withdrawal of the bar from its keepers, I mutilate or notch the underface of bar 11 at 20 to provide shoulder 20^a. Shoulder 20^a is so located on bar 11 that when the bar is completely withdrawn from locking position (as in Fig. 1) the end 21 of spring 15 engages the shoulder 20^a and thus prevents further withdrawal of the bolt. Thus spring 15 acts as a detent for bar 11. Should occasion arise for disassembling the bolt, a thin instrument may be inserted between the bar and the upper face of spring 15 and the spring forced downwardly and out of notch 20, whereupon the bar may be completely withdrawn from its keepers.

When bar 11 is shot home into socket K, a secondary notch 22 on the under face of bar 11 is entered by spring end 21. The face 22^a formed by notch 22 is engaged by spring end 21 to offer increased resistance to initial bar withdrawal movement to prevent the bolt becoming unintentionally unlocked from jar or vibration and to render it difficult to work the bar back and out of socket K by inserting tools between the door and its jamb from the outside of the bolted door. However, since face 22^a is inclined, spring end 21 will ride out of the notch 22 when sufficient manual pull is exerted on handle 14.

Various changes in structure, arrangement and design may be made without departing from the spirit and scope of my invention and therefore I do not wish to be limited to the specific embodiment illustrated except for such limitations as a fair interpretation of the appended claims may import.

Having described a preferred form of my invention, I claim:

1. A bolt embodying a base member, a bolt bar longitudinally slidable on the base and having a stop shoulder formed thereon, keepers for guiding the bar in its longitudinal movement, a socket in the base, a spring interposed between the base and the bar, a portion of the spring projecting into the socket to position the spring with respect to the bar and base, said spring being adapted to thrust the bar into frictional contact with the keepers, and the free end of said spring being adapted to positively engage the shoulder on the bar for positively limiting the extent of longitudinal movement of the bar in one direction.

2. A bolt embodying a base member, a bolt bar longitudinally slidable on the base and having a stop shoulder thereon, keepers for guiding the bar in its longitudinal movement, the base member having a depression in alignment with the keepers, and a spring interposed between the base and the bar and provided with shoulders adapted to co-act with the walls of the depression in the base member whereby the spring is longitudinally and laterally positioned on the base, the spring being adapted to thrust the bar into frictional engagement with the keepers, and the free end of said spring being adapted to engage the stop shoulder positively to limit the longitudinal movement of the bar in one direction.

3. A bolt embodying a base member, a bolt bar on the base member and longitudinally slidable into and out of retracted position, and a resilient member interposed between the base and bar, said resilient member being anchored to the base member and having a free end adapted to engage the bar in a manner both to yieldably resist initial retractive movement of the bar and to positively limit the extent of said retractive movement.

4. A bolt embodying a base member, a bolt bar on the base member and longitudinally slidable into and out of retracted position, a shoulder on the bar, and a resilient member interposed between the base and bar, said resilient member being anchored to the base member and having a free end adapted to frictionally engage the bar in a manner to yieldably resist initial retractive movement of the bar, and said resilient member also being adapted to engage said shoulder positively whereby it positively limits the extent of said retractive movement.

In witness that I claim the foregoing I have hereunto subscribed my name this 14th day of August, 1923.

LOUIS WENSEL.