May 15, 1934. C. J. BATES, JR., ET AL 1,959,192

REPLACEMENT STRUCTURE FOR SAFES OR DEPOSITORIES

Filed May 18, 1932

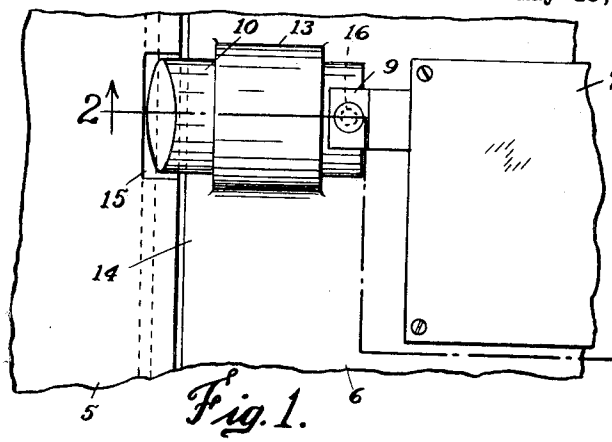


Fig. 1.

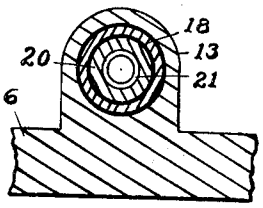


Fig. 4.

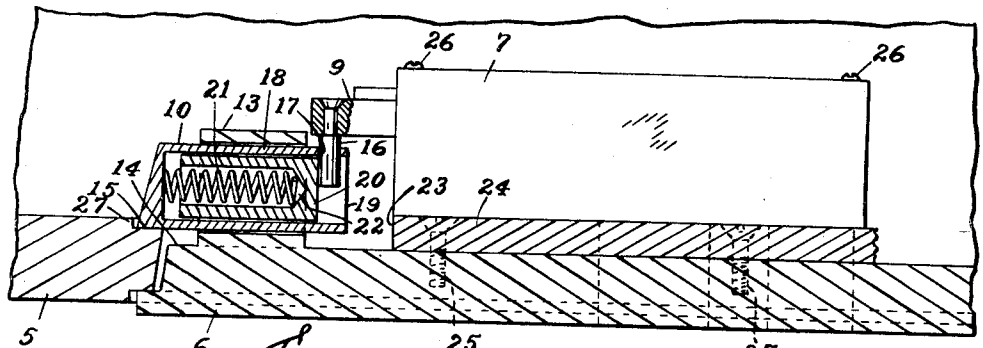


Fig. 2.

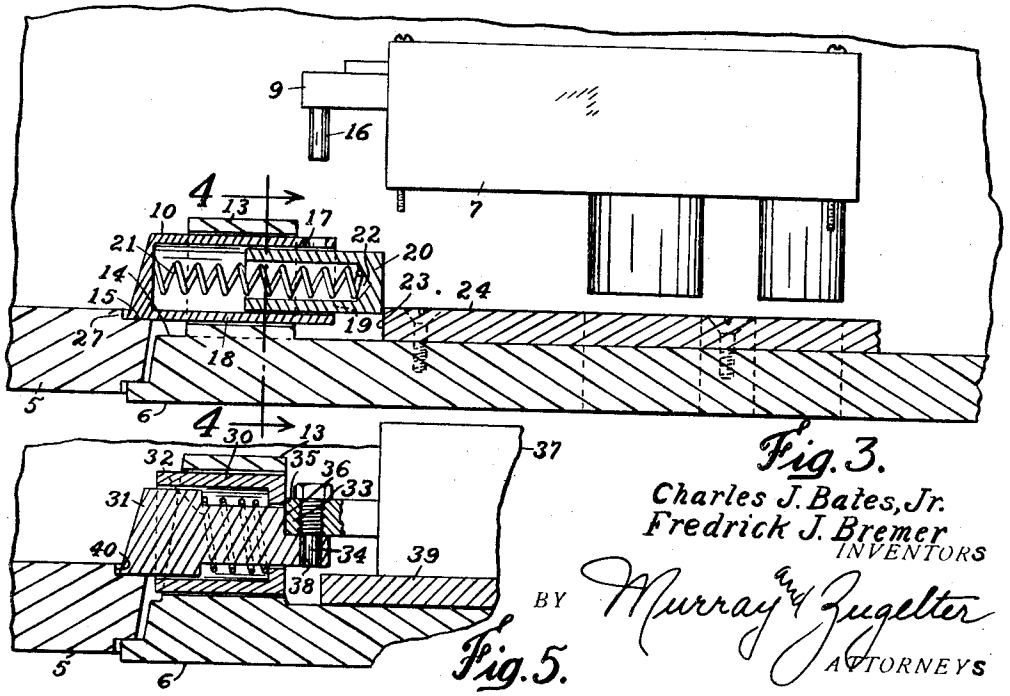


Fig. 3.

Fig. 5.

Charles J. Bates, Jr.
Fredrick J. Bremer
INVENTORS

BY Murray and Zugelter
ATTORNEYS

Patented May 15, 1934 1,959,192

UNITED STATES PATENT OFFICE

1,959,192

REPLACEMENT STRUCTURE FOR SAFES OR DEPOSITORIES

Charles J. Bates, Jr., Englewood, N. J., and Fredrick J. Bremer, Hamilton, Ohio, assignors to The Mosier Safe Company, Hamilton, Ohio, a corporation of New York

Application May 18, 1932, Serial No. 612,104

11 Claims. (Cl. 109—3)

This invention relates to a bolt structure for safes and the like.

Objects of the invention are to provide simple means capable of easy and ready installation, for converting an ordinary standard slide bolt structure for safes and the like into a re-locking bolt structure; to accomplish the foregoing object without dismantling and taking the safe out of service; to accomplish the foregoing objects by merely removing the old solid metal bolt and replacing it with a bolt designed in accordance with this invention; to provide an inexpensive, simple, and easily installed unitary relocking device for enhancing the safety of ordinary slide bolt types of safes, whether new or used; and to facilitate the safe-worker's task of specifying the parts needed to remodel the locking structure of a common slide bolt type of safe.

The foregoing and other objects are attained by the means described herein and disclosed in the accompanying drawing, in which:

Fig. 1 is an interior view of a safe or depository embodying the invention.

Fig. 2 is an enlarged cross-sectional view taken on line 2—2 of Fig. 1 showing the bolt mechanism in a normally operative locked position with the relocking mechanism inoperative.

Fig. 3 is a view similar to Fig. 2, showing the lock displaced from a normal position, the relocking mechanism being operative to preclude opening of the safe.

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a view of a modification.

The drawing illustrates a very common type of safe or depository having a body 5 and a door 6, which door carries any ordinary type of lock mechanism 7 that may be operated for effecting or permitting reciprocatory movement of a bolt retracting and advancing link or member 9 having a separable connection with the bolt 10. The bolt retractor 9, by means of any of the well known manually operated keys, handles, or permutation lock dials, may be manually moved for advancing or retracting the bolt 10 only when the lock mechanism is placed in an unlocked condition, as is common practice. In some forms of common locks the retraction of the bolt is effected directly by the dial or key structure, and in others a suitable handle is provided which may be actuated after unlocking of the lock mechanism. The present invention is made in anticipation of the use of any of the common locks that adapt themselves to use in connection with the means of the invention. The means of this invention is applicable to all types of depositories which require a lock.

Attention is directed to the fact that safes and other depositories, for example, safe deposit boxes, are commonly made in accordance with the foregoing described construction, and that one of the objects of the present invention is to convert such common type of safe into a more acceptable and satisfactory depository having re-locking bolt features. In outward appearance, the improved locking bolt 10 forming part of the present invention resembles, and is adapted to readily replace, the usual solid metal bolt or bolts which are found in the above mentioned common type of safe. To apply the invention to old safes already in use, or to new unused safes as well, it is necessary only to remove the bolt and replace it by the unitary relocking replacement bolt structure 10 which is of the same size and the same general appearance as the bolt removed.

Safes such as are above referred to have the door thereof provided with an extending bolt guide or support 13, usually formed by a drilled lug extending from the inner face 14 of the door, adjacent to the outer jamb of the door. In this guide or support, the bolt 10 may be reciprocated longitudinally to engage or disengage the keeper 15, which, in some constructions, is provided by the body of the safe or by an opening or a drilled lug (not shown), similar to lug 13, associated with the safe body. The bolt 10 is adapted to be reciprocated by reason of its connection at 16 with the reciprocating link or bolt retracting member 9. The connection 16 may comprise a locking bolt, pin or lug which is carried by the member 9 and extended through an aperture 17 formed near the rear end of the bolt body.

It is to be understood that the pin 16 has a loose fit within the lateral aperture 17 of the bolt, so that upon forced displacement of the lock mechanism toward the interior of the safe, as indicated in Fig. 3, the pin will recede from the aperture 17 to initiate functioning of the bolt as a relocking element.

The bolt comprises the shell or body portion 18 which is hollow, and open at its rear end 19. Within the hollow interior of the body portion 18 is disposed a plunger or telescopically arranged projectable member 20, which is urged constantly outwardly toward the rear end of the bolt body by any suitable means such as a compression spring 21. The spring may have one end thereof

seated in a suitable bore 22 provided in member 20, while the other end abuts the interior of the front end of the bolt. It will be noted that the member 18 is made shorter than the length of the shell bore, so that it may enter the bore and be held in restraint by the pin 16 when in the normal position within the aperture 17. In the event of displacement of the lock mechanism as indicated in Fig. 3, pin 16 leaves the aperture 17 and permits the relocking plunger 20 to spring from the open rear end of the bolt body, so as to strike a suitable abutment 23 which is close enough to the bolt to stop the plunger movement before the compressive force of the spring 21 is spent. As a result of the foregoing action, the bolt body 18 is held in an advanced or locked position by the rearwardly directed force of the plunger upon the abutment 23, and retraction of the bolt thereby is rendered impossible from the exterior.

It is to be understood that the member 9 may support or actuate several pins such as 16, whereby to provide for multiple bolt security.

Although the abutment 23 as herein illustrated and described, is provided by a steel protective plate 24 upon which the locking mechanism is mounted, it is immaterial to the invention whether the abutment is provided by such a plate or by any other substantially stationary part of the safe door. It is considered practical, however, to permit the plunger 20 to abut upon the plate 24 in the manner above set forth, because the plate is secured to the inner face of the door by heavy screws 25 or welds which are accessible only from the interior of the safe. The locking mechanism 7 may be secured to the protective plate by means of screws or the like 26.

In accordance with the modification illustrated in Fig. 5 the relationship of parts is reversed, in which case the sleeve or hollow member 30 constitutes the relocking bolt, and the inner plunger 31 serves as the regular locking bolt. The spiral spring 32 functions to constantly urge the plunger and sleeve apart, but the bolt retractor 33 normally precludes such relative movement by reason of its being held, by the pin 34, securely in abutment against both of the members at 35 and 36. Upon inward displacement of the lock casing 37 as hereinbefore set forth, the pin 34 is removed from the opening 38 formed at the rear end of the plunger 31 and the retracter thereby is taken away from the abutments 35 and 36, thus permitting the member 30 to move rearwardly and strike the abutment or plate 39 while the member 31 moves forwardly to strike the abutment 40, just as the member 18 of Fig. 2 strikes its abutment 27. Because of the abutting relationship of parts at 33—35—36, the assembly constituted of the parts 30, 31, and 32, moves normally as a unit when the operating bar 33 of the lock is actuated.

From the foregoing it should be apparent that we have provided a simple and inexpensive unitary replacement means for converting a common safe into a relocking type safe, which replacement unit may be installed with the use of common tools and without taking the safe out of service. The installer of the device need only to specify the dimension of the bolt guide, whereupon the factory can supply the single unit 10 to replace the removed bolt.

It is to be understood that various modifications and changes in structural details may be made, within the scope of the claims, without departing from the spirit of the invention.

What is claimed is:

1. The combination with a depository having a body provided with a door, a lock mechanism, and an extendable bodily reciprocable slide bolt comprising relatively movable spring-separated parts for bolting the door to the body, of displaceable means associated with the lock mechanism for advancing and retracting the bolt, and means including the displaceable means for precluding relative movement of the spring-separated parts while said displaceable means is in position for retracting the bolt.

2. The combination with a depository having a body provided with a door, a lock mechanism, and a slide bolt for bolting the door to the body, of means associated with the lock mechanism for retracting the bolt, and means including a telescopic member associated with the bolt operating upon displacement of the lock mechanism for precluding retraction of the bolt by the bolt retracting means.

3. The combination with a depository having a body provided with a door, a lock mechanism, and a slide bolt for bolting the door to the body, of means associated with the lock mechanism for retracting the bolt, and means including a yieldingly urged telescopic member associated with the bolt operating upon displacement of the lock mechanism for precluding retraction of the bolt by the bolt retracting means.

4. The combination with a depository having a body provided with a door and a lock mechanism, of a retractable door bolt and means for retracting said bolt, said bolt retracting means being under the control of the lock, a projectable spring urged member carried by the bolt, a latch means normally maintaining the spring urged member in restraint, an abutment for limiting projection of the projectable member, and means operating upon displacement of the lock for releasing the latch means and the projectable member, whereby to effect an increase in the length of the bolt, limited by the abutment.

5. The combination with a depository having a body provided with a door and a lock mechanism, of a retractable door bolt and means associated with the lock for retracting the door bolt, said bolt comprising a hollow bolt body, a telescopically arranged member in the body, and a spring tending to extend the telescopic member outwardly from the body, a support relative to which the hollow bolt body is arranged to slide bodily longitudinally, and a lug supported by the lock mechanism arranged to provide normally a connection between the bolt body and the bolt retracting means, whereby the bolt may be given reciprocatory movement, said lug serving also to preclude separation of the bolt constitutents under the influence of the spring, and an abutment aligned with the telescopic member to limit the outward movement thereof upon displacement of the lock mechanism and the lug from their normal positions.

6. The combination with a depository having a body provided with a door and a lock mechanism, of a retractable door bolt and means associated with the lock for retracting the door bolt, said bolt comprising a hollow bolt body having an opening therein, a telescopically arranged member in the body, and a spring tending to project the telescopic member outwardly from the body, a support relative to which the hollow bolt body and the telescopic member may reciprocate as a unit, and a lug supported by the lock mechanism and received in the opening of the

bolt body, to normally provide a connection between the bolt body and the bolt retracting means and to maintain the telescopic member within the hollow bolt body against the force of the spring, and an abutment disposed in the line of extension of the telescopic member to limit the outward movement thereof upon displacement of the lock mechanism and the lug from their normal positions.

7. As a new article of manufacture, a safe door bolt comprising a body having a transverse opening therein for reception of a bolt throwing element, a projectable member supported by the bolt body, yielding means urging the body and projectable member apart so as to increase the length of the bolt, and an abutment on the projectable member alignable with the transverse opening only when the projectable member is depressed and retracted with respect to the bolt body.

8. As a new aricle of manufacture, a safe door bolt comprising a hollow body provided near one end thereof with a lateral aperture for reception of a bolt throwing element, a projectable member reciprocably supported in the hollow interior of the body, means yieldingly urging the body and projectable member apart so as to increase the length of the bolt, and an abutment on the projectable member alignable with the transverse opening only when the projectable member is depressed and retracted with respect to the bolt body.

9. As a new article of manufacture, a safe door bolt comprising a hollow body substantially cylindrical in shape and provided near one end thereof with a lateral aperture for reception of a bolt throwing element, a projectable member of lesser length than the body reciprocably supported in the hollow interior of the body, and means yieldingly urging the body and projectable member apart so as to increase the length of the bolt and an abutment on the projectable member alignable with the transverse opening only when the projectable member is depressed and retracted with respect to the bolt body.

10. The combination with a depository having a body provided with a door, a lock mechanism, and a slide bolt for bolting the door to the body, said slide bolt including a rear abutment, of means including an abutment and associated with the lock mechanism, for retracting the bolt, a yieldingly projected member associated with the bolt for increasing the effective length of the bolt when said yielding member is projected, and an abutment on the yieldingly projected member adapted to cooperate with both the rear abutment of the slide bolt and the abutment of the bolt retracting means, to maintain the projectable member in a normally retracted position.

11. As a new article of manufacture, a replacement safe door bolt comprising a slidable tubular relocking bolt having a transverse rear abutment, a yieldingly projectable plunger-like locking bolt telescopically arranged within the tubular relocking bolt, a rear abutment on said projectable bolt for alignment with the abutment of the tubular relocking bolt, and a projection on the projectable bolt adjacent to the said abutments for the attachment thereto of a bolt retracting element.

CHARLES J. BATES, JR.
FREDRICK J. BREMER.