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O. METZEROTT

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LATCH FOR THE DOORS OF SAFETY DEPOSIT STRUCTURES

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FIG. 1.

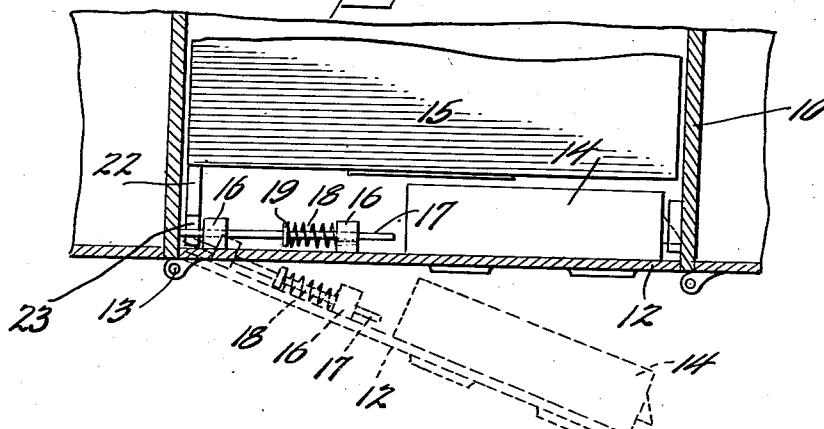


FIG. 2.

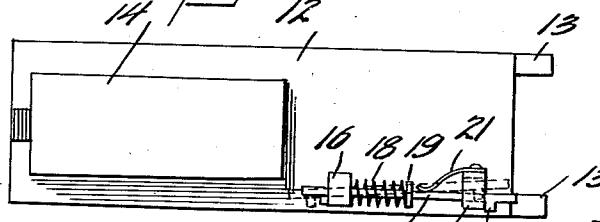
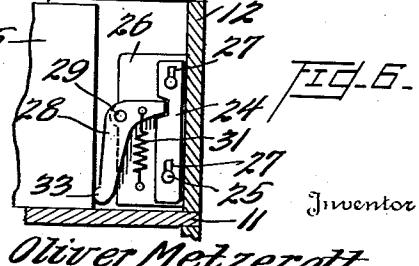
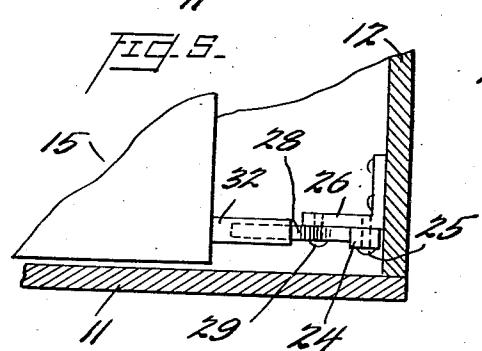
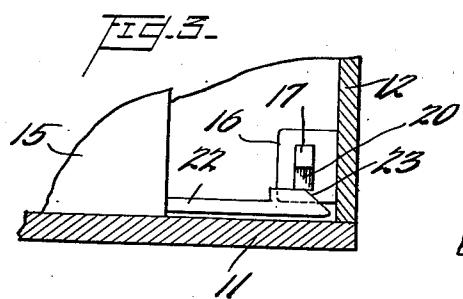
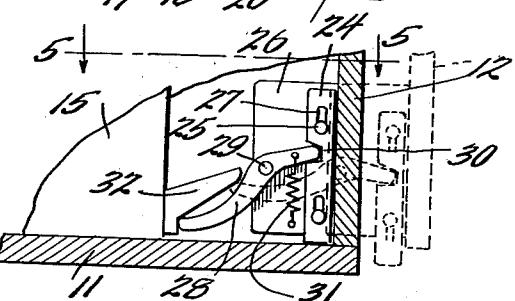


FIG. 4.



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## UNITED STATES PATENT OFFICE

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LATCH FOR THE DOORS OF SAFETY  
DEPOSIT STRUCTURES

Oliver Metzerott, Hyattsville, Md.

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9 Claims. (Cl. 109—59)

The present invention relates to safety deposit box structures.

Safety deposit boxes, such as are designed and used for banking institutions and others providing means for the safe accommodation of valuables of their customers, usually comprise a series of compartments of varied sizes, each closed by its individual door, and each containing a removable receptacle for the accommodation of valuables. The doors for these compartments usually include duplex locks, one of which is operated by a key retained by the banking institution and the other possessed by the owner of the compartment, and the lock bolt can be operated only upon the simultaneous insertion and operation of both keys.

It sometimes occurs that the door of a safety deposit box is closed and locked without the valuable container having been placed within the compartment. This sometimes happens inadvertently, while in some instances it has resulted from trickery on the part of the box renter by purposely withholding the box and later claiming damages for the supposed loss of the box and its contents. It is the primary object of the present invention to provide means whereby the door cannot be closed unless the receptacle has been properly replaced within the compartment. The appearance of an open door in the series of safety deposit box compartment is a visual indication that the box has not been replaced.

In carrying out this object, use is made of a latch or bolt movably mounted upon the inner face of the door in such manner that upon opening of the latter the latch will be automatically projected to such position as to engage with the jamb of the door or with a wall of the compartment so as to prevent closing of the door. The latch or bolt is so arranged as to be operated to retracted position when the door is swung to closed position only when the container is properly positioned within the compartment.

The means here proposed for accomplishing this result is of such nature that it may be easily and comparatively inexpensively applied to safety deposit boxes or compartments now in use, and no radical departure from the present construction of such devices is necessary. It will be understood that the mechanism here shown and described is illustrative of a simple form of the invention for accomplishing the desired result, and variations from this construction may be resorted to in adapting the invention to other or different forms or constructions of safety deposit box structures.

In the drawing:

Figure 1 is a fragmentary horizontal sectional view taken through a conventional type of safety deposit box and showing the application of door retarding means involving my invention.

Figure 2 is an elevation of the inner face of the door,

Figure 3 is a fragmentary sectional view, on an enlarged scale, through the lower corner of the compartment and door and illustrating the means on the receptacle for moving the latch to releasing position,

Figure 4 is a fragmentary sectional view through the casing and door and showing a modified form of the invention,

Figure 5 is a sectional view taken substantially upon the line 5—5 of Figure 4, and

Figure 6 is a view similar to Figure 4 and showing a further modification of the invention.

20 The safety deposit box structure includes a compartment defined by the side walls 10 and the bottom wall 11; the front end of the compartment being closed by a door 12 hinged at 13. The inner face of this door carries a housing 14 for the lock structure, the details of which are immaterial, but which mechanism is controlled by the application of proper keys as will be understood. The receptacle for the accommodation of the valuables is represented at 15, and it will be understood that this receptacle slides freely within the compartment.

25 The inner face of the door 12 is provided with horizontally aligned spaced keepers or guides 16, within which slides a latch or bolt 17. A spring 35 18 encircles the latch or bolt and is interposed between one of the keepers 16 and a collar 19 on the bolt. This spring normally tends to force the latch so that one end thereof projects beyond the lines of the door. The latch, near its projecting end, is equipped with a detent or tooth 20 adapted, when the latch is in projected position, to engage behind an edge of the adjacent keeper so as to lock the said keeper with its end in projected position. The keeper for this end 40 of the latch will be so constructed as to permit of lateral play of the latch within the keeper, and a flat spring 21 may be employed, if desired, to yieldably hold the latch in such position that the tooth 20 is engaged behind the keeper. When 45 thus locked in this projected position, any attempt to close the door will be resisted by the latch, as the latter will engage the jamb of the door or the inner face of the compartment wall and thus maintain the door in the partly opened 50 position as shown by dotted lines in Figure 1.

The door may not then be entirely closed and locked until the latch has been raised to move the tooth 20 from locking engagement with its keeper 16.

The valuables receptacle 15 is provided in its forward end with a forwardly projecting arm 22, so positioned as to underlie the forward end of the latch 17 as the door moves to closed position. The forward end of this arm is provided with a cam or inclined face 23, upon which the latch end rides in an upward direction as the door is swung to closed position. It will be understood that the arm 22 will be accurately positioned upon the box or receptacle 15 so that when the latter is correctly inserted within the compartment, the operative or inclined face 23 of the arm end will be disposed in the direct path of the latch as the door is moving to closed position. As the latch rides upwardly upon the face 23, the tooth 20 clears the lower edge of the keeper 16, and continued closing movement of the door will cause the latch or bolt 17 to be retracted against the tension of spring 18. By this arrangement it is obvious that the absence of the receptacle with a properly positioned operating arm 22 within the compartment will prevent closing of the door.

In Figure 4 of the drawing the door 12 is shown as provided with a slide bolt or latch 24 disposed laterally of the door and slidably upon pins 25 projecting from a base plate 26 properly affixed to the interior face of the door. The latch 24 is provided with slots 27 for the reception of these pins. A trigger 28 is pivotally mounted at 29 intermediate its ends upon the plates 26. One end of this trigger rides in a recess 30 in the latch 24, and a spring 31 normally forces the trigger to such position as to project the latch 24 below the edge of the door 12. The trigger projects inwardly of the compartment in such manner as to engage the inclined face of an arm 32 projecting from the forward end of the receptacle 15.

In this form of the invention, upon opening of the door the spring 31 immediately causes the latch 24 to be moved to projected position with the inner end of the trigger elevated. Should an attempt be made to close the door in the absence of the box 15 within the compartment, such movement will be resisted by engagement of the lower end of the latch 24 with the outer face of the compartment. Upon insertion of the box with its properly positioned arm 32 within the compartment, closing movement of the door causes the trigger to ride upon the inclined face of the arm 32, to rock upon its pivot 29 and to retract the latch member as shown in full lines in the drawing.

The modification shown in Figure 6 is a slight variation of the structure of Figure 5. In this form there is no projecting arm upon receptacle 15. The latch 24 is operated by the trigger 28 as shown, and this trigger has a toe 33 at its inner end to engage directly with the forward face of the receptacle 15 when the latter is properly positioned within the compartment. In other respects, the structure is similar to that shown in Figure 4.

From the foregoing it is apparent that safety deposit box structures so equipped will accomplish the object set forth, and while the forms here disclosed are illustrative of means for generally accomplishing this purpose, it will be understood that variations in the structural details may be resorted to without departing from

the spirit of the invention as defined by the claims.

Having thus described my invention, what I claim as new and useful is:

5. In combination, a compartment and a door therefor, a latch member adapted when the door is open to prevent closure of the door, and means operable upon movement of the door and operated by engagement with an object within said compartment to release said latch from door obstructing position.
10. 2. In combination, a compartment, a door for said compartment and a receptacle within said compartment, a latch member on said door, said latch member adapted to move to door obstructing position when said door is open, and means operated by engagement with the said receptacle to release said latch member from obstructing position.
15. 3. In combination, a compartment, a door hingedly connected to said compartment for closing the latter and a receptacle removably positioned within said receptacle, a latch slidably mounted on said door, a spring tending to project said latch to door obstructing position when the latter is open, means for holding said latch in obstructing position, and means on said receptacle engageable with said latch when the door is moving to closed position to release said latch holding means.
20. 4. In combination, a compartment, a door hingedly connected to said compartment for closing the latter and a receptacle removably positioned within said compartment, a latch slidably mounted on said door, a spring tending to project said latch to door obstructing position when the latter is open, a detent on said latch engageable with one of said keepers to hold said latch in projected position, and a finger on said receptacle positioned in the path of movement of said latch when the door is moving to closed position to remove said detent from locking engagement with said keeper.
25. 5. In combination, a compartment, a door hingedly connected to said compartment for closing the latter and a receptacle removably positioned within said compartment, keepers on the interior of said door, a latch slidably mounted in said keepers, a tooth on said latch adapted when the latter is projected to lockingly engage with one of said keepers, a spring to project said latch when the door is in open position, and an element on said receptacle in the path of movement of said latch when the door is moving to closed position to lift said latch to tooth unlock position.
30. 6. In combination, a compartment, a door hingedly closing the same and a receptacle removably accommodated in said compartment, keepers on the interior face of said door, a latch slidably held in said keepers, a spring tending to project said latch to door jamb engaging position when the door is opened, means on said latch and one of said keepers to lock the latch in projected position, and a cam member on said receptacle engageable with said latch when the door is moving to closed position to release said latch locking means.
35. 7. In combination, a compartment, a door hingedly closing the same and a receptacle removably accommodated in said compartment, keepers on the interior face of said door, a latch slidably held in said keepers, a spring tending to project said latch to door jamb engaging posi-

tion when the door is opened, a tooth on said latch engageable with one of said keepers when the latch is projected to lock said latch in projected position, and a cam member on said receptacle engageable with said latch when the door is moving to closed position to lift said latch and release said tooth from locking position.

8. In combination, a compartment and a door therefor, a latch member adapted when in operative position to prevent closure of the door, and means engageable with an object within the

compartment and operating automatically when the door is moving toward closing position to render said latch inoperative.

9. In combination, a compartment and a door therefor, a latch member adapted when in operative position to prevent closing of the door, and means engageable with an object within the compartment and operable automatically when the door has moved to a predetermined position with respect to said object to render the latch inoperative, whereby the door may be closed.

OLIVER METZEROTT.