March 1, 1960 W. F. STACKHOUSE 2,926,946

SAFETY LATCH MECHANISM

Filed July 12, 1957

Fig. 1

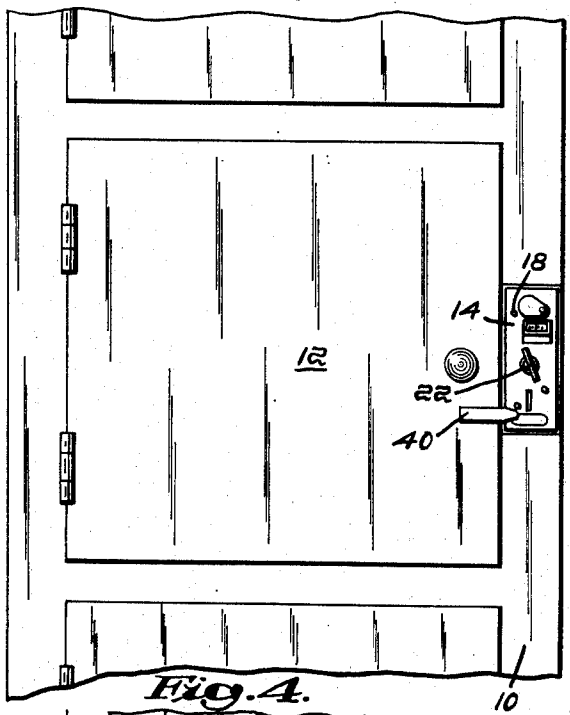


Fig. 2.

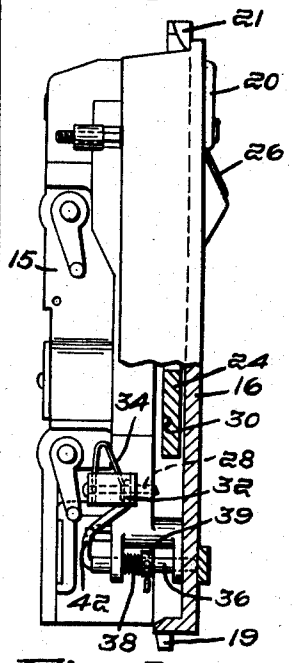


Fig. 4.

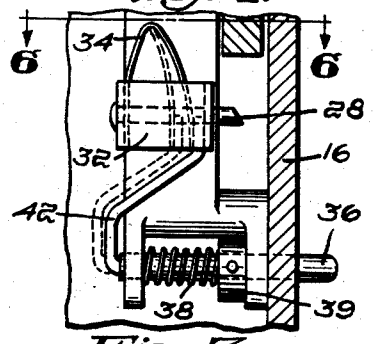


Fig. 5.

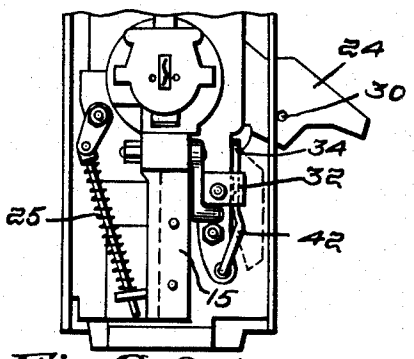


Fig. 3.

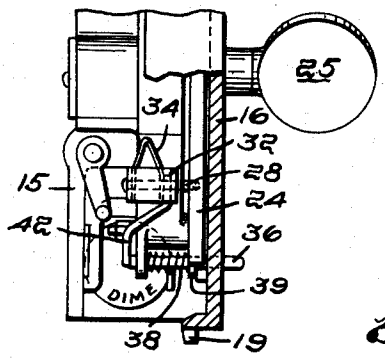
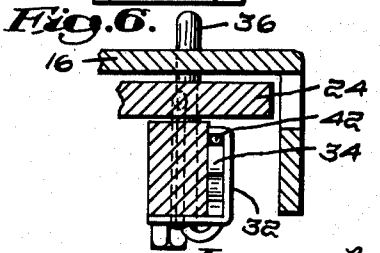


Fig. 6.



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SAFETY LATCH MECHANISM

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2 Claims. (Cl. 292—333)

This invention relates to safety latch mechanism and more particularly to coin controlled checking lockers. A coin controlled and key operated lock is commonly employed with each locker cabinet, the lock being secured to the cabinet in position to cooperate with the closure door. When the cabinet is not in use the lock is in unlocked position and the door can be opened for depositing parcels in the cabinet. The depositing of a coin in the lock functions to permit the key to be rotated to the door locking position and thereafter to be removed and taken by the patron as his check.

The locking unit employs a rotary door locking bolt having a latch associated therewith and adapted normally to prevent movement of the bolt from the unlocked position to the door locking position. Also associated with the latch is abutment means disposed in door engaging position and automatically operative to move the latch to inoperative position when the door is closed, thereby preventing the patron from throwing the bolt to locked position before he has closed the door, all as shown in Patent 2,437,742.

Heretofore, and as shown in said patent, the latch is positively moved to inoperative position when the door is closed and such positive operation of the latch has resulted in considerable difficulties and damage, hereinafter described. The present invention provides means permitting inward movement of the abutment member without moving the latch out of the path of movement of the locking bolt when abnormal resistance to such movement is placed on the latch, thereby eliminating these objections. The production of novel mechanism for performing this function comprises the primary object of the invention.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof selected for purposes of illustration and shown in the accompanying drawing in which:

Fig. 1 is a front elevation of a checking cabinet employing a locking unit embodying my invention,

Fig. 2 is an enlarged side elevation of the locking unit partly in section,

Fig. 3 is a fragmentary like view with the parts in another position,

Fig. 4 is an enlarged view of a portion of Fig. 3,

Fig. 5 is a fragmentary rear view of the locking unit, and

Fig. 6 is a fragmentary section taken on line 6—6 of Fig. 4.

In Fig. 1 of the drawing, 10 indicates a bank of coin controlled checking cabinets, and 12 the closure door of one of the cabinets. The lock mechanism 14 is secured to a marginal portion of the cabinet in position to cooperate with and lock the door. This lock mechanism comprises a body member 15 having a front plate 16 secured thereto by bolts 18. The front plate is disposed over and fills an opening through the cabinet wall, the lower end of the plate being provided with a lip 19 engaging behind

the cabinet wall and the upper end being equipped with a lock normally covered by a pivoted closure plate 20 and having a lock bolt 21 for engaging behind the cabinet wall.

The unit also carries a lock 22 having a bolt 24 for engaging and locking the cabinet door 12 in the closed position of Fig. 1. A counter 26 operated by this lock is adapted to register one unit at each actuating cycle of the lock. The lock barrels at 20 and 22 are key operated and each contains key operated plungers and tumblers. The bolt 24 is connected to rotate with the barrel of the lock 22 and is rotatable to and between two extreme locked and unlocked positions, as indicated in Fig. 5, and is held in either of such positions by means including a spring 25.

Occasionally a patron inadvertently turns the lock 22 to the cabinet locking position before fully closing the door 12, and in such case the patron loses his coin into the cash box and the lock is locked in the cabinet door open position so that the patron to check properly must again turn the key anti-clockwise to unlock the lock and then insert another coin in the lock and repeat the operation, being sure all the while that the door is in a closed position. To eliminate this trouble the lock is provided with a latch pin 28 slidably mounted in the body 15 in position to engage within a hole 30 in the lock bolt 24 when the lock is in unlocked position. A U-shaped housing member 32 has its longer leg fixed to the rear end of the latch pin and one leg of a U-shaped leaf spring 34 is fixed to said longer leg within the U-shaped member.

An abutment member has a straight plunger portion 36 slidably mounted in the body 15 beneath the latch 28 and a compression spring 38 on the plunger rearwardly of a collar 39 fixed to the plunger normally forces the plunger forwardly to the position of Fig. 4 wherein its forward end portion is in the path of movement of a plate 40 fixed to and forming a part of the door 12. An arm 42 carried by and extending upwardly from the rear end of the plunger 36 has its free end disposed within the member 32 between its shorter forward leg and the forward leg of the leaf spring 34. The expansion of the spring 38 normally forces the plunger 36 forwardly into the path of door closing movement of the door and simultaneously therewith the arm 42 moves the latch 28 forwardly into the hole 30 of the lock bolt 24 when the lock is in unlocked position. Thus the lock bolt cannot be moved to door locking position until the door is closed.

When the door is moved to closed position the abutment member 36—42, together with the member 32, spring 34 and latch pin 28, are all normally moved rearwardly as a unit. However, if abnormal resistance to such movement is placed on the latch pin, as by exerting turning pressure on the key 25 and bolt 24, such rearward movement of the member 36—42 will merely compress the leaf spring, as illustrated in broken lines in Fig. 4, and will not move the latch pin 28 from the hole 30.

Heretofore, as shown in said Patent 2,437,742, the latch pin 28 has been positively connected to the abutment member 36 and various troubles and damage to the latch pins has resulted when the door is closed while placing pressure on the latch pin through turning pressure on the key. Such turning pressure may be exerted innocently by a patron or deliberately for any of several reasons. In any event, such action will frequently result in stripping and damaging the latch end of the pin 28 as the door is slammed closed and the pin suddenly withdrawn from the hole 30 under pressure causing substantial resistance to such movement.

Attempts have been made by unscrupulous persons to beat the lock by manipulating pressure on the key while simultaneously slamming the door. One object of such

action is to cause the mechanism to turn so rapidly, when the latch is suddenly released that the pawls in the lock do not have time to function in their proper notches, thereby circumventing normal functioning of the lock. Attempts have also been made through such manipulation of the key to cause abnormal turning of the counter **26**, thereby running up an unwarranted number on the counter. The previous positive functioning of the members **28** and **30** have thus caused damage and other troubles which are remedied by the present invention since the latch **28** can in accordance with the invention be released only when it is normally free for movement from the hole **30** in the locking bolt.

Having thus disclosed my invention what I claim as new and desire to secure by Letters Patent is:

1. In coin controlled mechanism, a lock having a bolt for locking a door in closed position, means mounting the bolt for movement to door locking and released positions, an abutment member movably mounted in the lock, a latch in the lock, means normally operative to move the latch forwardly into the path of door locking movement of the bolt and simultaneously therewith the abutment

member forwardly into the path of door closing movement of the door, a housing carried by the latch, the second named means including an arm carried by the abutment member and having a terminal portion engaging the housing forwardly of said portion, and a compression spring disposed in the housing between said portion and the rear wall of the housing, said spring normally maintaining said portion in said engagement with the housing but permitting independent rearward movement of said portion when abnormal resistance to rearward movement is placed on the latch.

2. The mechanism defined in claim 1 in which said spring is a U-shaped leaf spring having its rear leg fixed to the rear wall of the housing and its forward leg engaging said terminal portion of the arm.

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