Aug. 30, 1938. F. HALL 2,128,704

WALL SAFE

Filed May 17, 1937

Fig. 1.

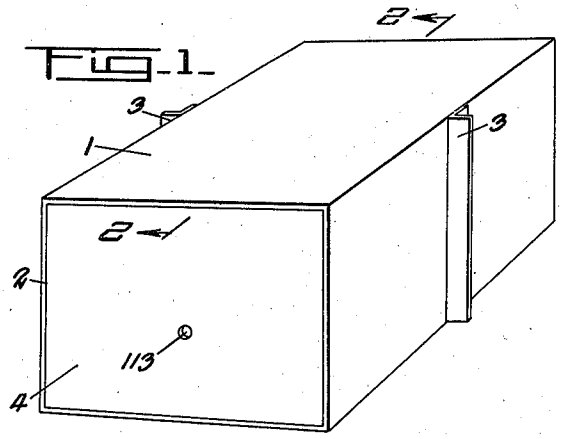


Fig. 3.

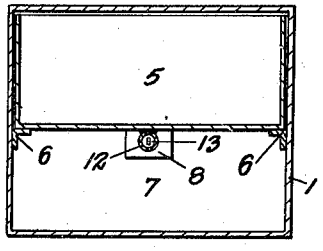


Fig. 2.

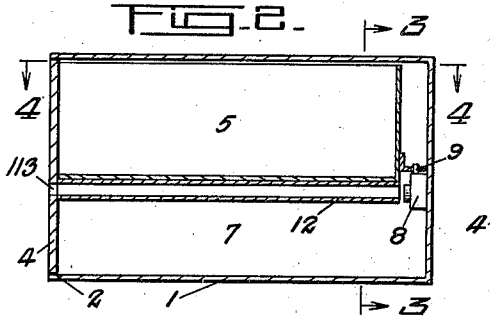


Fig. 4.

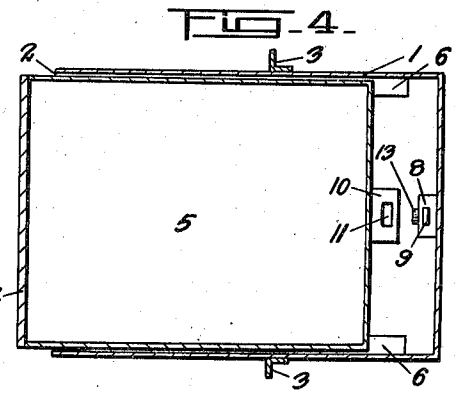


Fig. 5.

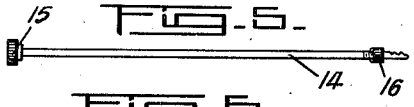


Fig. 6.



Fig. 7.



Fig. 8.

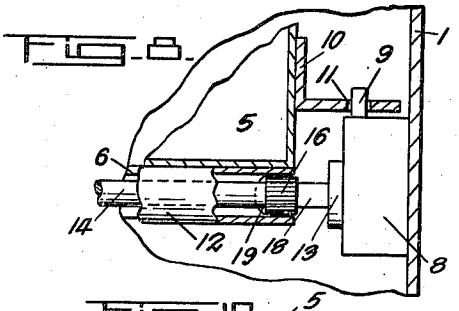


Fig. 10.

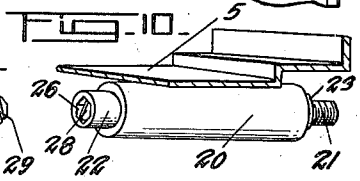


Fig. 11.

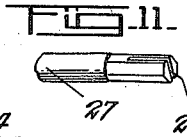
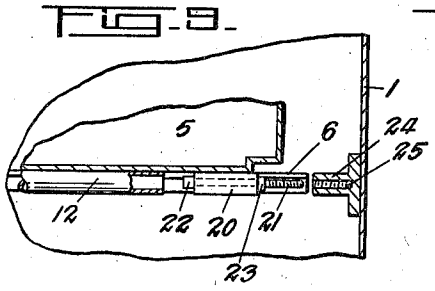


Fig. 9.



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UNITED STATES PATENT OFFICE

2,128,704

WALL SAFE

Fred Hall, Hamilton, Ontario, Canada

Application May 17, 1937, Serial No. 143,015

3 Claims. (Cl. 109—1)

My invention relates to improvements in wall safes or strong boxes, and the object of my invention is to provide a safe adapted to be built into a wall and only having the door thereof exposed, the safe lock being positioned in the inner back portion of the safe entirely away from the door and only capable of actuation by a specially provided rod which is removably insertable through an orifice in the door to extend to the rear portion of the safe and engage the lock.

A further object of my invention is to furnish the safe with a sliding element such as a drawer and to mount the door upon the front end of such sliding element, so that no hinges are required.

A still further object of my invention is to utilize the rear end of the sliding element or drawer to support a keeper which is engaged by the retractable bolt of the lock, and another object of my invention is to provide a suitable key rod receiving tube which is also carried by the sliding element or drawer and is provided for the purpose of guiding the inserted key carrying end of the rod into alignment with the hole of the lock.

With these and other objects in view which shall be made apparent in the following description of my safe, my invention consists of a safe constructed and arranged all as hereinafter more particularly described and illustrated in the accompanying drawing in which,

Figure 1 is a perspective view of my safe.

Figure 2 is a vertical longitudinal sectional view taken through the line 2—2, Figure 1.

Figure 3 is a vertical transverse sectional view taken through the line 3—3, Figure 2.

Figure 4 is a plan sectional view taken through the line 4—4, Figure 2.

Figure 5 is a side view of my key carrying rod used for actuating the lock.

Figure 6 is an enlarged perspective view of the inner end portion of the rod illustrated in Figure 5, the key retaining nut for the end of such rod being shown removed.

Figure 7 is a perspective view of a key adapted to be carried upon the end of the rod as shown in Figure 6.

Figure 8 is an enlarged fragmentary vertical cross-sectional view through the inner portion of my safe, showing the lock bolt engaging the keeper and the key inserted in the lock.

Figure 9 is a vertical cross-sectional view through a fragmentary portion of a safe of alternative construction wherein a threaded rotatable stud is carried by the drawer and engages a threaded orifice in the rear of the safe.

Figure 10 is an enlarged perspective view of the stud as illustrated in Figure 9 showing a rod end receiving orifice provided in the head of the stud, and

Figure 11 is a perspective view of the end of the rod receivable within the orifice in the stud as illustrated in Figure 10.

Like characters of reference indicate corresponding parts in the different views of the drawing.

My safe broadly consists of a box-like shell 1 having an open end 2, and adapted to be built into a wall structure with the open end flush with the face of the wall. A pair of side braces 3 are carried upon the outer side faces of the shell to be embedded within the concrete or other material of which the wall may be made. Such embedded members will resist any effort that might be made to pull the safe from out of the wall.

The door 4 of the safe is preferably a close fit within the orifice 2 and is carried upon the outer end of a sliding element within the safe such as a drawer 5, as illustrated in the drawing. The drawer 5 is carried upon a pair of runners 6 which are secured to the inner faces of the side walls of the shell 1. The door and drawer slide out of the shell 1 together in the same manner as in standard filing cabinet construction. The drawer preferably does not occupy the entire height of the shell 1 so that an additional storage space 7 is provided underneath the drawer.

The safe lock 8 is secured in any suitable manner to the inner face of the rear end of the shell 1, with the key receiving orifice facing the door 4, and the lock is provided with the usual retractable bolt 9, which in this case is directed vertically. The inner end of the drawer 5 carries a keeper member 10, the orifice 11 of which is positioned to receive the retractable bolt 9 of the lock.

The under face of the drawer 5 carries a tubular member 12 which is suitably secured thereto, as by welding. The tube 12 extends from an orifice 13 provided in the door 4 to the back of the drawer 5, and its open rear end is in alignment with the key orifice containing barrel 13 of the lock.

To actuate the lock 8 from the front of the safe, I furnish a rod 14 of slightly greater length than the distance between the door 4 and the lock. Such rod is provided with a handle upon one end, such as the knurled knob 15, and at the other end is constructed to detachably receive the key for the lock. In the construction illustrated

in Figures 6 and 7, the inner end of the rod 14 is threaded to receive a key retaining nut 16 and is also formed with a diametrically positioned key end receiving slot 17. The key as illustrated in Figure 7, is formed with an outer portion 18 which is receivable within the slot 17 in the rod, and such key portion 18 is formed with a pair of lugs 19 which protrude from the rod and are engaged by the inner end of the key retaining nut 16, as illustrated in Figure 8. The tube 12 is of an inner diameter just sufficiently large to permit the nut 16 on the end of the rod to be slid within the tube.

To close and lock the safe, the door 4 with the drawer 5 is pushed inwardly as far as it will go, in which position the keeper 10 is above the lock 8 with its orifice 11 in alignment with the bolt 9. The rod 14 carrying the key is then pushed inwardly through the orifice 113 and tube 12 until the key enters the lock 8, at which time the rod is twisted with the resultant twisting movement of the key and movement of the bolt 9 of the lock into the orifice 11 in the keeper. The rod 14 is then pulled outwardly, leaving the safe locked. The key can then be removed from the rod 14 through the removal of the nut 16 and put in a place of safe-keeping by the owner of the safe. To open the safe it is only necessary to again position the key upon the end of the rod 14 and insert such rod through the orifice 113 whereby the key engages the lock.

In the alternative construction illustrated in Figures 9 to 11, I provide a draw bolt arrangement instead of a lock. In this construction the bottom face of the drawer carries a bearing 20 which contains a freely rotatable threaded stud 21, the threaded portion of which projects rearwardly. The stud 21 is formed with a head 22 which retains it against sliding within the bearing 20 in one direction, and carries a collar 23 which engages the other end of the bearing and retains it against sliding in the opposite direction. The inner face of the rear wall of the shell 1 carries a boss 24 which is suitably secured thereto, and such boss is formed with a threaded orifice 25 which receives the threaded end of the stud 21. In this form of construction, the tubular member 12 does not extend to the rear end of the drawer 5, but has its open inner end in alignment with the head 22 of the stud. The head 22 of such stud contains any suitable form of recess, as for example, the hexagonal recess 26, as illustrated in Figure 10, and the stud turning rod 27 which has a similar function to the rod 14, is formed of hexagonal shape and receivable within the recess 26. As an additional safeguard, I show the recess 26 containing a cross-bar 28 and the hexagonal end of the rod 27 formed with a slot 29 within which the cross-bar 28 is received.

To lock the safe of my alternative construction, the door 4 and drawer 5 are pushed inwardly as far as they will go, which point is where the threaded end of the stud 21 is in engagement with the outer end of the threaded orifice 25. The rod 27 is then inserted in the same manner as the rod 14 and is slowly twisted until its hexagonal end enters the recess 26. When this entrance has been effected, further turning of the rod 27 in the required direction will turn the stud 21 and such stud will screw into the orifice 25 and thus draw the door 4 tightly into place. When the door is drawn inwardly to the fullest extent, the rod 27 is removed and the safe is locked. In this construction the tubular member 12 is of an inner diameter closely approximating the diameter of the rod 27.

From the foregoing description it will be apparent that I have provided a wall safe which, though simple in construction, is substantially pilfer proof, for by furnishing the lock in the rear end of the safe, instead of on the door as is usual practice, I have evolved a construction wherein it is practically impossible for any unauthorized person to reach and tamper with the lock in an endeavour to open the safe, and although I have shown a particular construction of my invention wherein a drawer is provided as the sliding door supporting means, it is to be understood that it is not necessary to provide an actual drawer construction, nor is it necessary to position the lock intermediately of the height of the safe, but that my construction is susceptible of numerous modifications without departing from the spirit of my invention as set forth in the appended claims.

What I claim as my invention is:

1. In a safe, a sliding element, a safe door carried upon the sliding element, key actuated inter-engaging locking members positioned respectively on the sliding element and in the inner back portion of the safe entirely away from the door, a substantially tubular member carried upon the sliding element and extending rearwardly into the safe from an orifice in the door, and a removable key member insertable through the orifice in the door and through the tubular member to actuate the inter-engaging locking members.

2. In a safe, a sliding element, a safe door carried upon the sliding element, a key actuated and key receiving tumbler door lock positioned in the inner back portion of the safe entirely away from the door, a retractable bolt in the lock, a keeper carried on the inner end of the sliding element to receive the lock bolt, and a removable elongated key member insertable through an orifice in the door to extend rearwardly through the safe and enter the orifice in the tumbler lock and actuate the retractable bolt.

3. In a safe, a sliding element, a safe door carried upon the sliding element, a key actuated and key receiving tumbler door lock positioned in the inner back portion of the safe entirely away from the door, a retractable bolt in the lock, a keeper carried on the inner end of the sliding element to receive the lock bolt, a substantially tubular key guide member carried upon the sliding element and extending rearwardly into the safe from an orifice in the door and having its inner end directed towards the key receiving orifice in the tumbler lock, a rod insertable through the orifice in the door and through the tubular member, and a key detachably secured to the end of the rod and adapted to enter the orifice in the tumbler lock and actuate the retractable bolt.

FRED HALL.