Oct. 23, 1923. 1,471,517

E. C. KLINE

LOCK AND LOCK MOUNTING

Filed Dec. 24, 1921

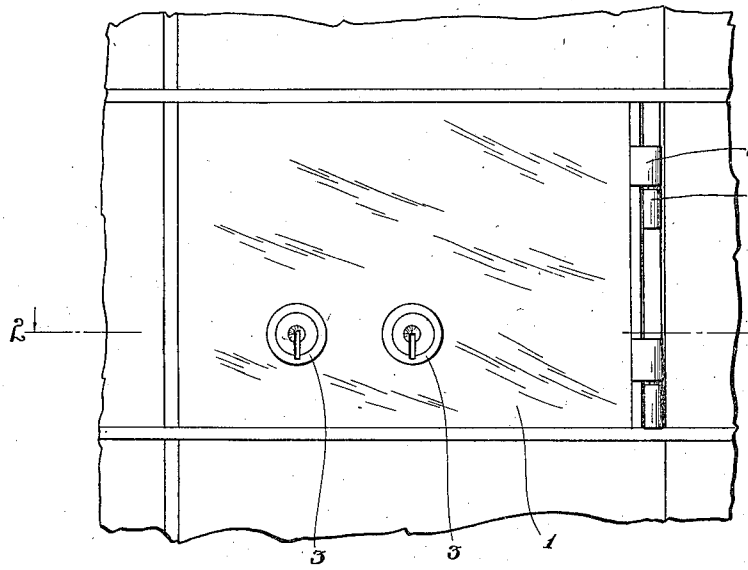


Fig. 1

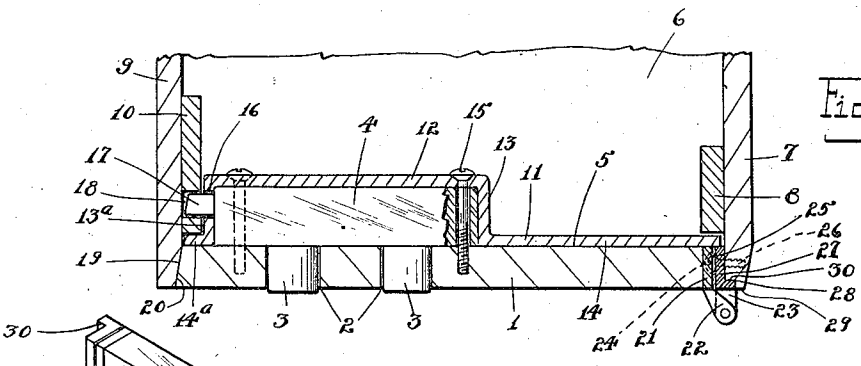


Fig. 2

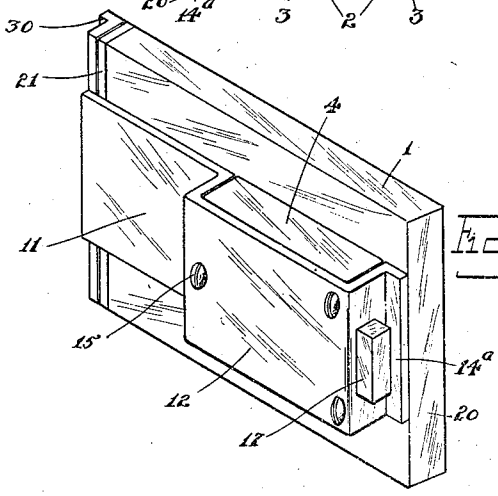


Fig. 3

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UNITED STATES PATENT OFFICE.

EVERETT C. KLINE, OF CINCINNATI, OHIO, ASSIGNOR TO THE LAMINATED METAL PRODUCTS COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

LOCK AND LOCK MOUNTING.

Application filed December 24, 1921. Serial No. 524,606.

To all whom it may concern:

Be it known that I, EVERETT C. KLINE, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in a Lock and Lock Mounting, of which the following is a specification.

My invention relates to that type of lock generally employed upon deposit boxes in safety deposit vaults as is also disclosed in my co-pending application Serial No. 524,607, filed December 24th, 1921.

In the ordinary deposit boxes referred to, employing keys, it is possible by hammering upon the shank of the lock, to break the lock from the door of the deposit box.

These boxes have also been broken into by having the hinges of the door broken off and the hinged end then withdrawn from the mouth of the box.

An object of my invention is to provide a lock adapted to be used with safety deposit boxes, wherein it will be impossible to separate the lock from the door of the box without demolishing the entire door.

Another object of my invention is to provide a simple and efficient device that will accomplish this purpose.

These and other objects are attained by the means described herein and disclosed in the accompanying drawings, in which:—

Fig. 1, is a front elevation of a deposit box of the type ordinarily encountered in safety deposit vaults, but to which a lock embodying my invention has been applied.

Fig. 2, is a sectional view on line 2—2 of Fig. 1.

Fig. 3, is a perspective view of a door having mounted upon it a lock embodying my invention.

Safety deposit boxes are ordinarily built in tiers or rows, and each box has a door 1, which may be opened, closed and locked. To lock and to unlock these doors it is generally necessary to have two keys, one key generally being retained by the bank and the other by the renter of the safety deposit box. Although I have shown a lock embodying my invention as being a two key lock, same may be readily applied to locks having one or more keys.

The door 1, has suitable slots 2, formed therein, through which the shanks 3, of the lock 4, extend. The lock is mounted upon the rear wall 5, of the door 1, which door forms a closure for the chamber 6, of the deposit box. The wall 7, of the chamber 6, has a block 8, mounted upon it, and the wall 9, of the chamber 6, has a block 10, mounted upon it. A band 11, extends over the lock 4, and its opposite ends are adapted to lie intermediate the blocks on the side walls and the door of the chamber, when the door is closed. The band 11, comprises a base 12, which extends over the rear wall of the lock 4, sides 13, and 13^a, and flanges 14, and 14^a, the flanges engaging the rear wall of the door, and carrying the ends of the band which engage the blocks The heads of the screws 15 engage the base of the band, and the shanks of the screws extend through the lock and engage in the door. The side 13^a of the band, has a slot 16, in alignment with the bolt 17, of the lock, and through which slot the bolt 17, may be reciprocated. The block 10, has a slot 18, into which the bolt 17 may be projected. The forward end of the side 9, of the deposit box, is flared outwardly as shown at 19, and the side 20 of the door is tapered in order to provide a snug fit between the free end of the door and the side of the deposit box. The other end of the door has mounted upon it a plate 21, carrying a hinge member 22, which is pivotally connected with a hinge member 23, mounted upon the wall 7. The plate 21, has a slot 24, in which may lodge the head 25 of the screw 26, which screw secures the plate 27 upon the wall 7. The wall 7, has a notch 28 formed in its front face 29, against the rear wall of which notch the shoulder 30 formed on plate 27 abuts. When the door is closed, the end of the band, adjacent the hinged end of the door, lies behind the plate 27.

By referring to Fig. 2, it is readily apparent that any force directed upon the shanks 3, of the locks will be transmitted to the band 11, so that instead of stripping the threads from the screws 15, and thereby separating the lock from the door, as has been possible heretofore, the force directed on band is met by the blocks 8 and 10, mounted on the walls of the compartment 6. None of the strain is directed upon the lock bolt 17. In event that the hinges 22, and 23, are broken from the door, the head 25 on the screws, 26, and the abutment of

band 11 on plate 27, will prevent this end of the door from being withdrawn from its seat in the mouth of the chamber 6.

What I claim is:—

1. In a lock and mounting the combination of a box having a mouth and side walls, a door adapted to enter the mouth and forming a closure therefor, one of the walls of the box having a notch in its forward face, said notch communicating with the mouth, whereby a shoulder is formed adjacent the mouth, a hinge plate mounted on the notched wall and extending into the box, a shoulder on the hinge plate abutting the shoulder on the wall, a complementary hinge plate substantially co-extensive with the first mentioned hinge plate and pivotally mounted on the first mentioned hinge plate exteriorly to the mouth of the box and mounted on the one edge of the door, means to secure the first mentioned hinge plate upon the wall and projecting into the mouth of the box, the second mentioned hinge plate having a notch into which the fastening means may enter, and a band mounted on the door adapted in the closed portion of the door to lie between the side wall and the hinge plates, whereby pressure on the door is directed against the wall, and the engagement of the band on the hinge plates precludes withdrawal of the hinged end of the door from the mouth in event the pivotal connection between the hinge plates is severed.

2. In a lock and mounting the combination of a box having a mouth and side walls, a door adapted to enter the mouth and forming a closure therefor, one of the walls of the box having a notch in its forward face, said notch communicating with the mouth, whereby a shoulder is formed adjacent the mouth, a hinge plate mounted on the notched wall and extending into the box, a shoulder on the hinge plate abutting the shoulder on the wall, a complementary hinge plate substantially coextensive with the first mentioned hinge plate and pivotally mounted on the first mentioned hinge plate exteriorly to the mouth of the box and mounted on the one edge of the door, projections on the first mentioned hinge plate extending into the mouth transversely thereof, the second mentioned hinge plate having a notch into which the projections may enter, and a band mounted on the door adapted in the closed position of the door to lie between the side wall and the hinge plates, whereby pressure on the door is directed against the wall, and the engagement of the band on the hinge plates precludes withdrawal of the hinged end of the door from the mouth in event the pivotal connection between the hinge plates is severed.

3. In a lock and mounting the combination of a box having a mouth, a slotted door adapted to enter said mouth and forming a closure therefor, hinges having plates mounting the door upon one wall of the box and having their plates mounted on the end of the door and upon the side of the box, whereby the plates of the hinges lie between the door and the box wall when the door is closed, a lock to which access may be had thru the slot in the door and a band extending about the lock adapted, when the door is closed, to transmit pressure upon the lock and door to the walls of the box, and to resist movement of the hinged end of the door from the mouth of the door in event the hinge is broken.

4. In a lock and mounting the combination of a box having a mouth, a slotted door adapted to enter said mouth and forming a closure therefor, hinges having plates mounting the door upon one wall of the box and having their plates mounted on the end of the door and upon the side of the box, whereby the plates of the hinges lie between the door and the box wall when the door is closed, the free end of the door being tapered rearwardly and centerward and the wall of the box adapted to be engaged by the tapered end of the door being flared outwardly complementary to the taper of the door, a lock to which access may be had thru the slot in the door, and a band extending about the lock adapted, when the door is closed, to transmit pressure upon the lock and door to the walls of the box, and to resist movement of the hinged end of the door from the mouth of the door in event the hinge is broken.

5. In a lock and mounting the combination of a box having a mouth, a slotted door adapted to enter said mouth and forming a closure therefor, blocks mounted on the walls of the box adjacent the mouth and one of which is slotted, a plate mounted on one wall of the box, projections mounted on the plate extending transversely of the mouth of the box, hinge members on the plate and on the door, the door having notches in its hinged end into which the projections may enter, a lock to which access may be had thru the slot in the door and the bolt of which may enter the slot in one block, and a band extending about the lock and adapted to have its opposite ends lie between the door and a block, and a block and the hinge plate respectively.

6. In a lock and mounting the combination of a box having a mouth, a slotted door adapted to enter said mouth and forming a closure therefor, blocks mounted on the walls of the box adjacent the mouth and one of which is slotted, the free end of the door being tapered rearwardly and centerward, and the wall of the box adapted to be engaged by the tapered end of the door being flared outwardly complementary to taper of the door, a plate mounted on one wall of

the box, projections mounted on the plate extending transversely of the mouth of the box, hinge members on the plate and on the door, the door having notches in its hinged end into which the projections may enter, a lock to which access may be had thru the slot in the door and the bolt of which may enter the slot in the one block, and a band extending about the lock and adapted to have its opposite ends lie between the door and a block, and a block and the hinge plate respectively.

7. In a lock and mounting the combination of a box having a mouth and side walls, a door adapted to enter the mouth and forming a closure therefor, one of the walls of the box having a notch in its forward face said notch communicating with the mouth, whereby a shoulder is formed adjacent the mouth, a hinge plate mounted on the notched wall and extending into the box, a shoulder on the hinge plate abutting the shoulder on the wall, a complementary hinge plate substantially co-extensive with the first mentioned hinge plate pivotally mounted on the first mentioned hinge plate exteriorly to the mouth of the box and mounted on the edge of the door, projections on the hinge plates adapted in the closed position of the door to extend transversely to the mouth, the hinge plates having notches formed in them, into which the projections on the other hinge plates may enter, and a band mounted on the door adapted in the closed position of the door to lie between the side wall and the hinge plates, whereby pressure on the door is directed against the wall, and the engagement of the band on the hinge plates precludes withdrawal of the hinged end of the door from the mouth in event the pivotal connection between the hinge plates is severed.

8. In a door mounting the combination of a box having a mouth, a door adapted to enter said mouth and forming a closure therefor, hinges mounting the door on the box having their plates mounted on the end of the door and upon the side of the box, means independent of the hinge pivot pins adapted to lock the hinge plates against relative movement when the door is closed, and a band mounted on the door extending over the ends of the hinges and contained within the box when the door is closed.

In testimony whereof, I have hereunto subscribed my name this 19th day of December, 1921.

EVERETT C. KLINE.