H. G. VOIGHT.

LOCK.

APPLICATION FILED DEC. 8, 1917.

1,434,513.

Patented Nov. 7, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

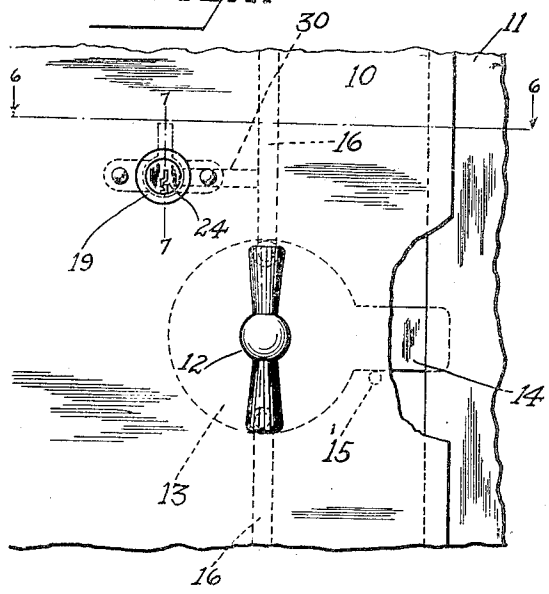


Fig. 3.

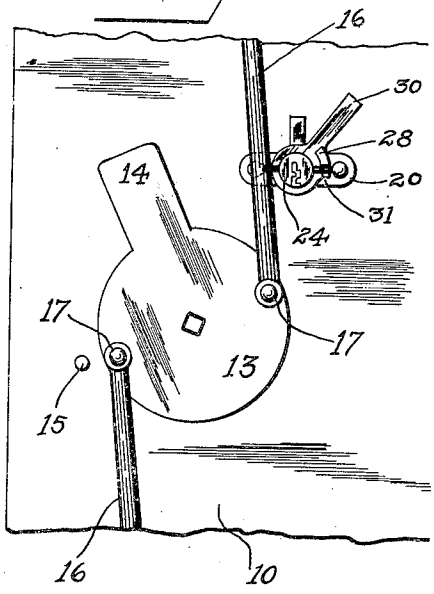


Fig. 2.

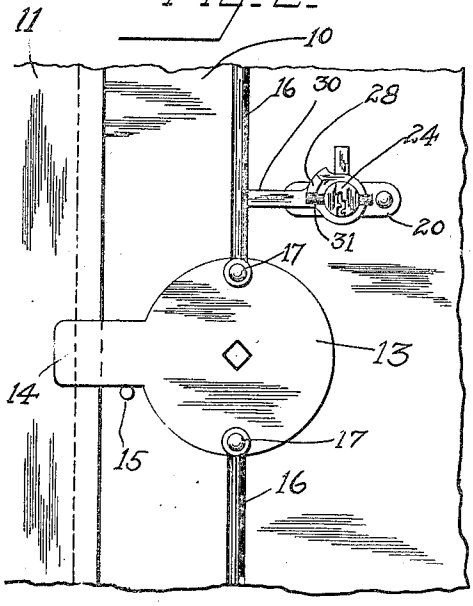
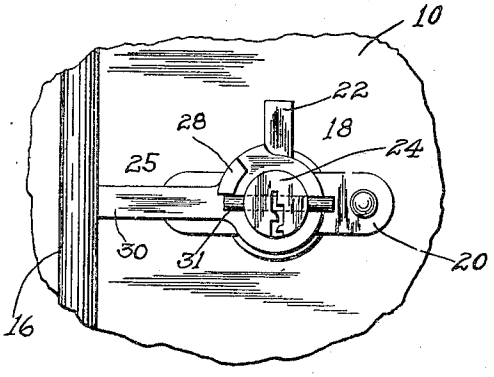


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 6.

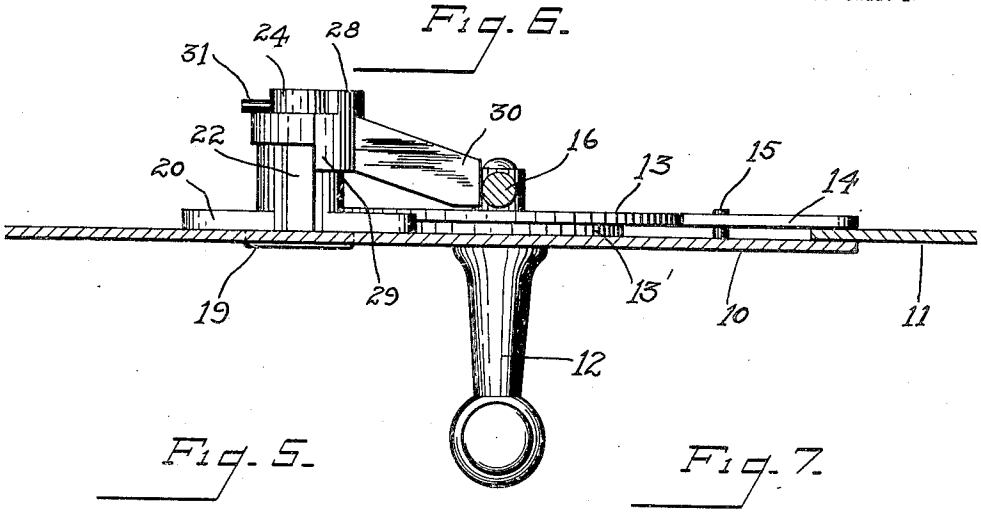


Fig. 5.

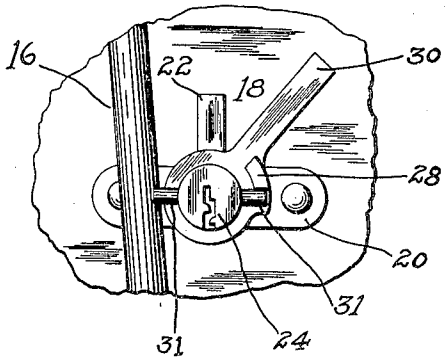


Fig. 7.

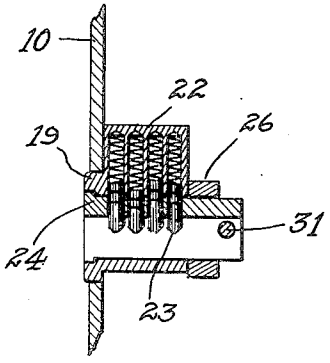


Fig. 8.

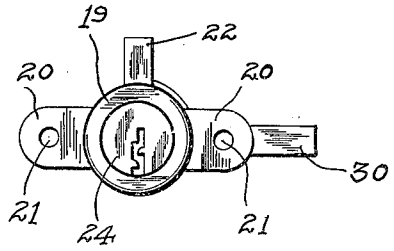
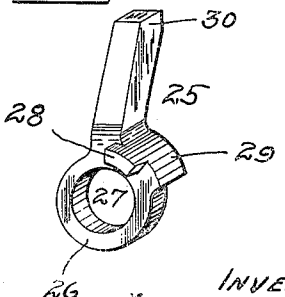


Fig. 9.



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Patented Nov. 7, 1922. 1,434,513

UNITED STATES PATENT OFFICE.

HENRY G. VOIGHT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO SARGENT & COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCK.

Application filed December 8, 1917. Serial No. 206,322.

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, of New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a full, clear, and exact description.

This invention relates to locks, and more particularly to a cylinder lock designed to be mounted upon the rear face of a sheet metal locker door and constructed to prevent the knob upon the door from being turned to unlock the locker door by withdrawing the bolts upon the door from their protracted position. However, it will be apparent that my invention is capable of other uses.

The principal object of the invention is to provide means for holding a locker knob in its locked position, so that an unauthorized person cannot turn the knob to open the locker. More particularly the principal object is to provide a cylinder lock which may be readily applied to the rear face of the door of a sheet metal locker, the lock being positioned adjacent the swinging bolts of the door to hold the bolts in their locked position.

A further object of my invention is to provide means by which a plurality of bolts mounted upon the inner face of the door may be simultaneously operated when the knob on the outer face of the door is turned.

To these and other ends, the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawing:

Fig. 1 is a fragmentary front elevation of a sheet metal door having a knob for operating bolts positioned upon the rear side of the door; the position of the lock upon the rear face of the door is indicated by dotted lines, the several parts being shown in their locked position;

Fig. 2 is a rear view of the device shown in Fig. 1, showing the elements in their locked position;

Fig. 3 is a view similar to Fig. 2, but showing the parts in their unlocked position;

Fig. 4 is an enlarged view of a portion of the locking mechanism shown in Fig. 2;

Fig. 5 is an enlarged view of a portion of the locking mechanism shown in Fig. 3;

Fig. 6 is an enlarged sectional view taken on the line 6—6 of Fig. 1 looking in the direction of the arrows;

Fig. 7 is an enlarged sectional view taken on the line 7—7 of Fig. 1;

Fig. 8 is an enlarged front elevation of the cylinder lock removed from the door; and

Fig. 9 is an enlarged perspective view, showing the swinging arm removed from its cylinder lock.

I have shown my improved device applied to a sheet metal door designated as 10, the marginal portion of the inner face of which is shown contacting with a portion of the door frame 11. The outer face of the door is provided with a knob 12 rotatably mounted in the same. Upon the rear face of the door 10 is provided a swinging bolt 13, which is rigidly secured to a portion of the knob 12 which extends through the door. The swinging bolt is preferably spaced from the door 10 by a washer or similar means 13′. The bolt 13 is so positioned upon the door that when an extension 14 formed upon this bolt is swung to a horizontal position, this extension will lie back of and in locking engagement with a portion of the door frame 11, as is shown in Figs. 1, 2 and 6. In order to prevent the extension 14 from being swung past the proper locking position, a stock such as the pin 15 may be rigidly secured to the door 10.

In addition to the locking means 14 just described, it is often advisable to provide sheet metal doors with locking means for both the top and bottom of the same, it being obvious that if the sheet metal door is made of very thin metal and the door is rather long, it would not be difficult to spring either end of the door away from the door frame while the middle of the door may remain in its locked position. In order to provide means for locking the door at both its top and bottom, I provide the sliding bolts 16 having their inner ends pivotally mounted upon the bolt 13 by means of pins or similar means 17 at points diametrically opposite each other and at substantially right angles to the locking means 14, so that the bolt member 13 forms actuating means for the bolts 16.

From the structure so far described, it will be seen that all three of the locking

means above mentioned; that is, the locking means 14 and the bolts 16 for locking the door at the top and bottom of the same, may be operated simultaneously by rotating the knob 12. This simultaneous operation is clearly shown in Figs. 2 and 3 of the drawing.

In order to secure the locking bolts above described in their locked position, I provide preferably a cylinder lock 18, although it will be apparent that my invention is not necessarily limited to this particular type of lock. This lock 18 is secured to the rear face of the door 10, and is preferably positioned adjacent one of the sliding bolts 16 and near the pivoted end of the same. However, it will be seen that this is not the only position which the lock may be given in order to hold the bolts above referred to in their locked position. The door 10 is provided with a round opening in which the escutcheon 19 of the cylinder lock may be positioned. Adjacent the escutcheon and formed integral upon the case of the cylinder lock are provided a pair of oppositely projecting lugs 20 having drill holes therein 21, adapted to receive rivets or the like by means of which the lock may be firmly secured to the rear face of the door 10. The cylinder lock is provided with the usual pin tumbler extension 22, provided with the well-known pin tumblers 23. The cylinder lock is further provided with a key-plug or barrel 24, which barrel is preferably provided with a rearwardly projecting end portion, which end portion has loosely mounted upon the same a swinging bolt designated in its entirety by the numeral 25. This bolt is preferably provided with an enlarged rim-like portion 26 formed at one end thereof, having a round hole 27 therein which receives the projecting end of the key-plug. Upon one face of the ring-like portion 26 is formed a lug 28, and upon the opposite face of the ring-like portion is a second lug or projection 29. The ring-like portion 26 is further provided with the extension 30, which lies in a plane extending radially to the portion 26 but forms an angle with the face of the portion 26, so that when the bolt 25 is mounted upon the rear end of the key barrel, the outer end 30 inclines towards the face of the door upon which the lock is mounted, the arrangement being such that the outer end of the swinging bolt will lie back of one of the rods 16 when the bolt is swung to its locking position, as shown in Figs. 2 and 6. It will be apparent from the above description that when the swinging bolt 25 is moved into locking engagement with one of the bolts 16, both of the bolts 16 and the locking means 14 will be locked in their protracted position. The swinging bolt 25 is preferably secured upon the rearwardly projecting end of the key-plug 24 by oppositely projecting pins 31 rigidly mounted in the rear end of the key-plug 24. These pins serve not only as means for retaining the bolt 25 upon the extension, but also provide a lazy connection between the extension and the swinging bolt, as the extension upon the key-plug will not move the swinging bolt until one or the other of the pins 31 is brought into contact with the lug 28. When one of the pins 31 is brought into engagement with the lug 28, the swinging bolt may then be rotated until either the projection 29 or a face of the extension 30 is brought into contact with the key tumbler extension 22. The object in providing the lazy connection between the key-plug and the swinging bolt is to permit the key to be removed from the lock when the swinging bolt 25 is in either its locking or idle position. Since in the type of lock herein disclosed the key cannot be removed from or inserted in its key barrel except when the same is in the position shown in Fig. 7, the lazy connection between the key barrel and the swinging bolt 25 is provided to permit the key barrel to be given a complete rotation in order that the key may be withdrawn, without swinging the bolt 25 through a complete revolution and into locking position again.

From the above description it will be seen that I have provided a simple, desirable and efficient means for locking the bolts upon the inner side of a door in their protracted position. The locking means which I provide is entirely separate and independent from the knob-operated bolts, so that my locking device may easily be applied to a door without requiring any alteration in the knob-controlled bolts with which the door may previously have been provided.

While I have described the knob-operated bolts and the locking means for the same as applied to a sheet metal door, it is apparent that this structure may be used upon other doors and that my locking means may be used for other purposes.

Various changes may be made in the details of the construction without departing from the scope of the invention as defined in the claims.

What I claim is:

1. In a door locking mechanism, a locking bolt, a rotatable knob, actuating means secured to said knob for operating said bolt, locking means for said bolt, comprising a lock mounted adjacent said knob, a rotatable key controlled plug therein, a locking member mounted upon said plug having an abutment portion arranged to be moved into and out of position to block the operation of said bolt, and a lazy connection between said plug and locking member to operate the latter.

2. In a door locking mechanism, a locking bolt, a rotatable knob, actuating means

secured to said knob for operating said bolt, locking means for said bolt, comprising a lock mounted adjacent said knob, a key plug therein, a locking member mounted upon said plug having an abutment portion arranged to be moved into and out of position to block the operation of said bolt, and a lazy connection between said plug and locking member to operate the latter, said lazy connection permitting said plug to be turned to its locked position when said locking member is in either its operative or inoperative position.

3. In a door locking mechanism, a locking bolt, a rotatable knob, actuating means connected to said knob for operating said bolt, locking means for said knob, comprising a lock mounted adjacent said knob, a rotatable key controlled plug therein, a locking member loosely mounted upon said plug and provided with a lazy connection to operate the same by rotating said plug, said locking member having an abutment portion arranged to be moved into and out of position to prevent said knob from being rotated to retract said bolt.

4. Locking mechanism for a sheet metal door or the like, comprising a rotatable knob mounted upon said door, a locking bolt upon the inner face of said door operated by said knob, and a separate lock mounted upon and clamped against the inner face of said door, said lock provided with a rotatable key controlled plug, and a locking member rotatably mounted upon the inner end of said plug movable into and out of position to block the rotation of said knob from its locked to its unlocked position.

5. Locking mechanism for a sheet metal door or the like, comprising a rotatable knob mounted upon said door, a locking bolt upon the inner face of said door operated by said knob, and a separate lock mounted upon and clamped against the inner face of said door, said lock provided with a rotatable key controlled plug, and a locking member upon the inner end of said plug and constructed so that its free end lies adjacent the inner face of said door, said locking member having its free end movable into and out of position to block the rotation of said knob from its locked to its unlocked position, said plug having a limited rotation relatively to the locking member whereby said plug may be given a complete turn while imparting only a partial turn to said locking member.

6. In a door locking mechanism, a locking bolt, a rotatable knob, actuating means for said bolt operated by said knob, a lock mounted adjacent said knob to lock the same against rotation, a key plug in said lock, a locking member rotatably mounted upon the inner end of said plug, and a lazy driving connection between said plug and locking member, comprising a pin projecting outwardly from said plug and a lug upon said locking member positioned to be operatively engaged by said pin, whereby said locking member may be operated by its plug to block the rotation of said knob.

7. Locking mechanism for a sheet metal door or the like, including a locking bolt mounted upon the inner face of said door and having a knob operatively connected thereto, and key controlled means for locking said bolt, comprising a lock mounted upon the inner face of said door adjacent said bolt, a rotatable key controlled plug rotatably mounted within said lock and having an end projecting from the face of said lock remote from said door, and a locking member mounted upon the projecting end of said plug and operatively secured thereto, said locking member being spaced from the inner face of said door and having its free end constructed to extend towards said face into position to engage said bolt.

8. In a device of the character described, a bolt, means for projecting the same into and retracting the same from locking position, locking means cooperating with said bolt comprising a rotatable member and a key controlled rotatable plug having a limited free rotary movement relative to said member, said member being movable by said plug to and from a position to prevent operation of the bolt.

9. In a device of the character described, a bolt, means to project the same into and retract it from locking position, locking means cooperating with said bolt comprising a lock having a rotatable key controlled member, a locking member mounted on the first member and having a limited rotary movement relative thereto and being movable by the rotation of said key controlled member into and out of position to prevent operation of the bolt.

10. In a device of the character described, a bolt, means to project the same into and retract it from locking position, locking means cooperating with said bolt comprising a lock having a rotatable key controlled member, a locking member mounted on the first member and having a limited rotary movement relative thereto and being movable by the rotation of said key controlled member into contact with said bolt to prevent the unlocking operation thereof.

In witness whereof, I have hereunto set my hand on the 1st day of December, 1917.

HENRY G. VOIGHT.