Oct. 27, 1925. 1,558,522

S. L. WATSON ET AL

LOCK

Filed Sept. 23, 1922 2 Sheets-Sheet 1

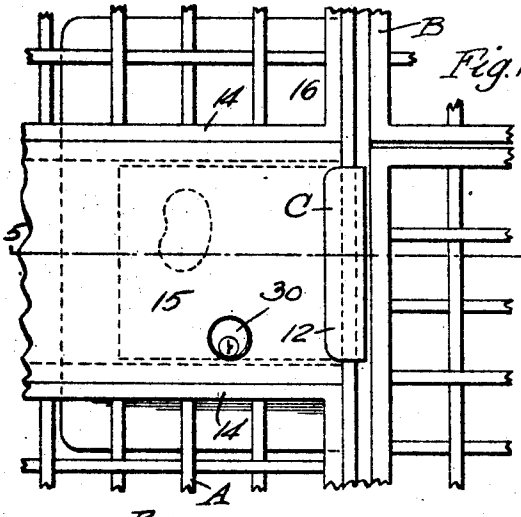


Fig. 1.

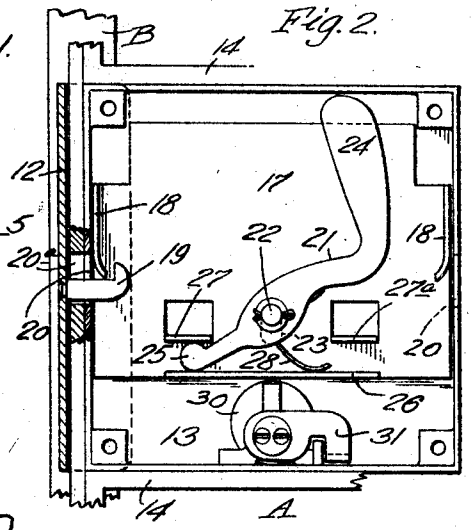


Fig. 2.

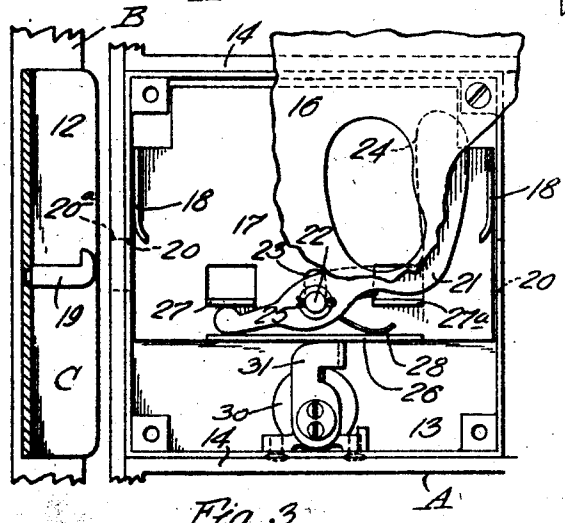


Fig. 3.

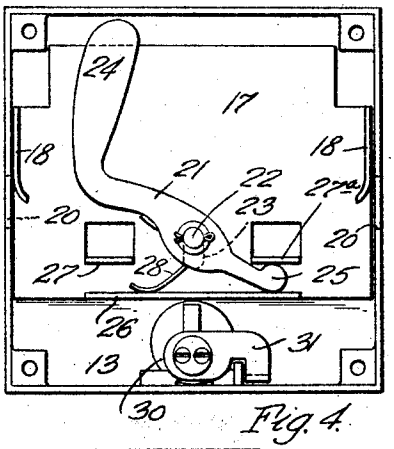


Fig. 4.

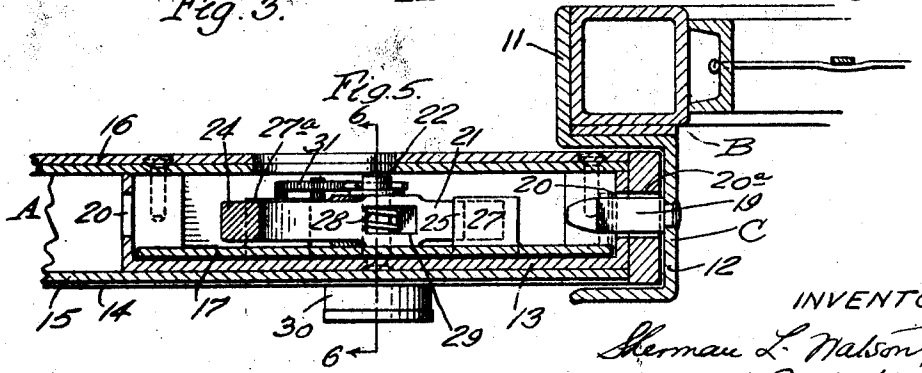


Fig. 5.

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LOCK

Filed Sept. 23, 1922 2 Sheets-Sheet 2

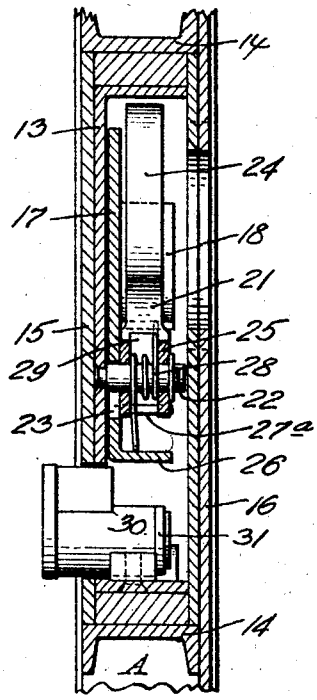
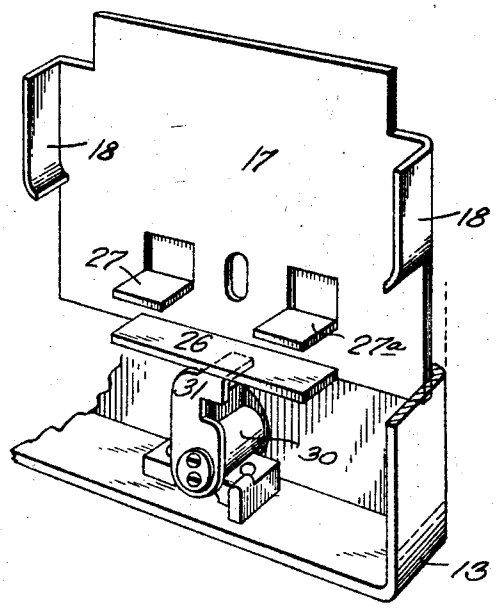


Fig. 6.

Fig. 7.



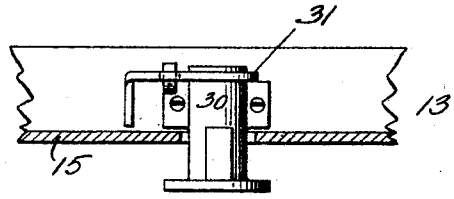


Fig. 8.

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Patented Oct. 27, 1925. 1,558,522

UNITED STATES PATENT OFFICE.

SHERMAN L. WATSON, AUGUST W. BECKSTROM, AND VICTOR GRONBERG, OF JAMESTOWN, NEW YORK, ASSIGNORS TO ART METAL CONSTRUCTION COMPANY, OF JAMESTOWN, NEW YORK.

LOCK.

Application filed September 23, 1922. Serial No. 590,058.

To all whom it may concern:

Be it known that we, SHERMAN L. WATSON, AUGUST W. BECKSTROM, and VICTOR GRONBERG, citizens of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented a new and useful Improvement in Locks, of which the following is a specification.

This invention relates to locks and latches, and more particularly to an improved lock adapted for use on sliding doors, such as used for example in metal lattice or cage work in banks or other institutions. The locks forming the subject of this invention are not, however, necessarily restricted to use on doors of this kind, but the locks can also be used on other doors and members analogous to a sliding door.

One object of the invention is to produce a lock of exceedingly simple construction, which is strong and durable, will be reliable and positive in action, and cannot be picked or opened except in the intended manner, by the proper use of a key or unlocking device, or the manipulation of the lock-operating handle on the inside of the door or member to which the lock is applied. Other objects of the invention are to produce a lock of simple construction, which is double faced, and can be readily adapted for use in either of two opposite positions, or in other words, for use on a door or member adapted to be opened either to the left or to the right; also to construct the lock or device so as to permit the use with the same of an ordinary cylinder or other suitable key-actuated lock, such as employed for counter drawers or other devices, thereby permitting a keying arrangement, such that the locks for the cages and various other devices can all be operated with the same key, or so that the lock can be masterkeyed wih other locks in the bank or place where the lock is used.

In the accompanying drawings:—

Fig. 1 is a fragmentary, front elevation of a portion of a cage and sliding door for the same equipped with a lock embodying the invention.

Fig. 2 is a rear, sectional elevation of the lock on an enlarged scale, showing the locked position of the parts.

Fig. 3 is a similar view showing the released position of the parts.

Fig. 4 is a rear elevation of the lock showing the latch-operating lever reversed to adapt the lock for use in an opposite position.

Fig. 5 is a sectional plan view on a still larger scale, on line 5—5, Fig. 1.

Fig. 6 is a transverse, sectional elevation on line 6—6, Fig. 5.

Fig. 7 is a broken, rear, perspective view of the lock removed from the door.

Fig. 8 is a sectional plan view showing the key-actuated lock cylinder for operating the latch member.

A represents a sliding door, and B one side or jamb of the door frame, the door and frame in the construction illustrated being of metal lattice or openwork structure, such as used for bank cages and analogous structures. C represents a door strike or keeper which is secured to the door jamb B, in position for the front edge of the door to strike against when the door is closed. The keeper shown consists of a metal plate bent to provide a flange 11, by which it is secured to the door jamb B, and a channel-shaped portion 12, which projects out from the door jamb and is adapted to receive and embrace the front edge of the door when the latter is closed.

13 represents the casing of the lock, which is suitably secured in or on the door A. The door shown is provided with parallel, horizontal frame bars 14, and the lock casing 13 is suitably secured between these frame bars back of a front panel or plate 15, which connects and closes the space between the frame bars 14. At its rear side the lock casing is secured to and closed by a guard plate 16 which is of larger area than the lock casing and projects sufficiently beyond the edges of the same to prevent the lock being operated by reaching or inserting an implement through the openings in the door.

17 represents a latch plate or member arranged to slide vertically in the lock casing. As shown, this plate 17 is arranged to slide against the front wall of the lock casing, and is provided at its opposite ends with lugs or flanges 18 which extend rearwardly parallel with and close to the opposite end walls of the casing which constitute guides

for the sliding plate. One of these lugs or flanges 18, depending upon whether the lock is used at the right hand or left hand edge of the door, is adapted to cooperate with a fixed stud or hooked projection 19 on the keeper C, and the opposite end walls of the lock casing are provided adjacent the lower ends of the lugs or flanges 18 with openings 20 through which the stud 19 is adapted to project into the lock casing when the door is closed. In the construction shown, the door is intended to close by a movement to the right, and the stud or hooked projection 19 on the keeper projects toward the left from the bottom of the channel portion 12 of the keeper and is adapted to enter the opening 20 in the right hand end wall of the lock casing for engagement with the adjacent lug 18. The latch plate 17 is normally held in the lower position shown in Figs. 2 and 4, by a spring, hereinafter described, with the lower ends of the lugs 18 projecting below the upper edges of the openings 20 in the lock casing. The outer end of the stud and lower ends of the lugs 18 are suitably bevelled to cause the latch plate to be lifted by engagement with the stud. When the door closes, the hooked stud 19 passes through the adjacent opening 20 of the lock casing and strikes the lower end of the cooperating lug 18, thereby lifting the latch plate 17, and when the hooked end of the stud passes the lug 18, the latter will be moved downwardly in rear of the hooked end of the stud by the plate-operating spring, and lock the door. It will be understood that when the lock is applied to the opposite or left hand edge of the door, the keeper stud will enter through the opening 20 in the opposite end of the lock casing and cooperate in a similar manner with the other lug 18 for locking the door. If the door, as shown in the drawings, has a bar or portion in front of the end wall of the lock casing, an opening 20^a is, of course, provided in this part for the passage of the stud 19.

21 represents a latch-operating lever. This lever is arranged in rear of the latch plate 17 to swing parallel with the face of the plate, as for instance on a pivot stud 22 which projects rearwardly from the front wall of the lock casing through an elongated slot 23 in the latch plate 17. One arm or portion of this lever is shaped to form a handle 24 for engagement by the fingers for swinging the lever, and the other arm or portion 25 of the lever projects between parts projecting rearwardly from the latch plate 17 for sliding the plate. These parts, as shown, are formed by a flange 26 at the lower edge of the plate, and lugs 27 and 27^a projecting from the plate above the flange 26. The plate 17 shown is made from a piece of sheet metal, and the lugs or flanges 18, 26, 27 and 27^a are formed by bending portions of the plate rearwardly. A spring 28 coiled about the lever pivot and bearing at one end against the lever and at its other end against the flange 26 on the latch plate tends to move the end 25 of the lever downwardly, and thus lower the latch plate 17 to and yieldingly retain it in its lower position. The spring 28 is preferably confined within a slot 29 in the lever 21. By moving the handle end 24 of the lever laterally, the latch plate 17 is lifted to disengage its lug 18 from the keeper stud. The arrangement of the lever handle is such that it is moved to release or unlock the door by pressure on the handle in the direction in which the door opens, so that in order to open the door, it is only necessary to pull on the handle in the direction to open the door, the pressure at the first portion of the movement releasing the latch, and the continued pressure sliding the door open. When the lock is to be used at the opposite edge of a door, or on a door which opens by a movement to the right, it is only necessary to remove the lever 21 and reverse it, placing it again on its pivot stud in the reversed position indicated in Fig. 4. In this position the lever operates in the same manner to unlock the door, but by a pressure or movement of the lever in the opposite direction. The lock is thus adapted for use either on a right hand or left hand moving door, simply by reversing the position of the lever 21.

It is to be understood that the described operation of the lever for unlocking the door can be effected only from the inside of the cage or compartment, which is closed by the door. For opening the door from the outside, a suitable lock 30, which can be operated only by a key or unlocking device, is provided. An ordinary key-actuated lock cylinder is shown for this purpose, and is secured in the lower portion of the lock casing 13 beneath the latch plate. The rear end of the rotatable barrel of the lock 30 is provided with an arm 31 which is adapted, when the key is inserted and the barrel turned, to engage the flange 26 of the latch plate and lift the latch for unlocking the door. Any other suitable actuating lock for the latch 17 can be used.

Inasmuch as the stud or hooked projection 19 on the keeper is stationary and rigid, it is, of course, impossible to move this part and thus unlock the door, as would be the case with the usual pivoted or movable hooked latch which projects from the lock, and is adapted to snap into engagement with a keeper. With such a lock it is possible to release the door by lifting the pivoted latch by means of an implement inserted through the crack between the door and the door frame or keeper. Such, of course, is impossible with the lock hereindescribed, and inas-

much as the stationary, rigid keeper stud projects into the lock through the hole 20 in the end wall of the lock casing, it is impossible to unlock the door by lifting or springing the door, this being prevented by the engagement of the lower edge of the opening 20 with the rigid keeper stud 19. The movable latch plate 17 is completely housed within and protected by the lock casing and the opposed keeper, so that it is practically impossible to pick a lock constructed as described. The lock is further safeguarded by forming the keeper as shown with the channel shaped portion into which the edge of the door extends when the door is closed. Furthermore, by providing the stud in the channelled keeper, there is no objectionable projecting part on either the door or the door frame which is apt to be struck by a person or object passing through the door opening.

We claim as our invention:—

1. The combination of a lock casing having at opposite ends thereof openings for the entrance of a keeper stud, opposite stud-engaging parts movable in said casing adjacent said openings and each adapted to move into and out of holding engagement with a keeper stud entering through the adjacent opening, said latch-engaging parts being arranged to move in the same direction to engage the keeper studs, a pivoted lever which actuates both of said stud-engaging parts, and a keeper stud arranged to enter one of said openings.

2. The combination of a lock casing having opposite walls provided with openings for the entrance of a keeper stud, a latch member arranged to slide in said casing between said walls parallel therewith and having a stud-engaging portion adjacent each of said openings and adapted to engage a keeper stud entering said opening by movements in the same direction of said sliding latch member, and a pivoted lever engaging said latch member for actuating the same, and a keeper stud arranged to enter one of said openings.

3. The combination of a lock casing having opposite walls provided with openings for the entrance of a keeper stud, a sliding latch plate extending between and guided by said walls and having flanges projecting from opposite ends of the plate parallel with said walls and adapted to engage a keeper stud entering either of said openings, means for actuating said latch plate, and a keeper stud arranged to enter one of said openings.

4. The combination of a lock casing, a latch member movable in said casing and having keeper-engaging portions adjacent opposite ends of said casing arranged for holding engagement with a keeper at either end of said casing, a reversible actuating lever for said latch member adapted to actuate said latch member in either of two opposite positions of the lever, and a keeper arranged for holding engagement with one of said keeper-engaging portions of the latch member.

5. The combination of a lock casing provided with openings in its opposite ends for the entrance of a keeper stud, a latch member movable in said casing and having stud-engaging portions arranged for holding engagement with a keeper stud entering either of said openings, a reversible actuating lever for said latch member adapted to actuate said latch member in either of two opposite positions of the lever, and a keeper stud arranged to enter one of said openings.

6. The combination of a lock casing, a latch member movable in said casing and having keeper-engaging portions adjacent opposite ends of said casing arranged for holding engagement with a keeper at either end of said casing, and a reversible actuating lever for said latch member pivoted in the casing between the ends of said latch member, said latch member having parts at one side of the lever pivot for operative engagement by said lever in one position thereof, and parts at the opposite side of the lever pivot for operative engagement by said lever in a reversed position of the lever.

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