July 13, 1926. 1,592,405

J. WORLEY, JR., ET AL

DOOR LATCH

Filed May 19, 1924

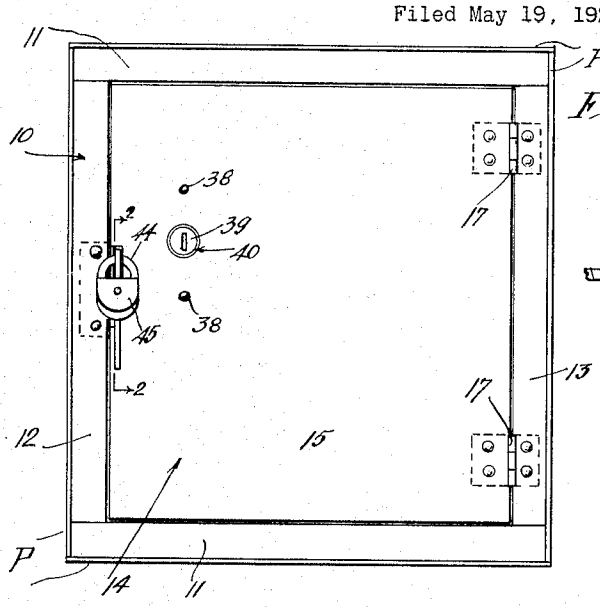


Fig. 1.

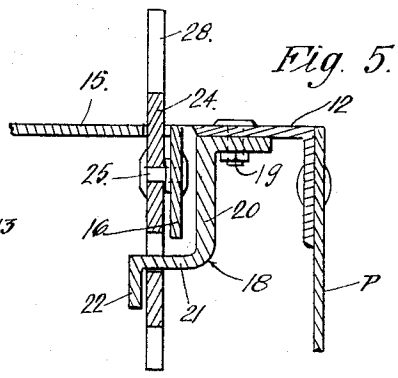


Fig. 5.

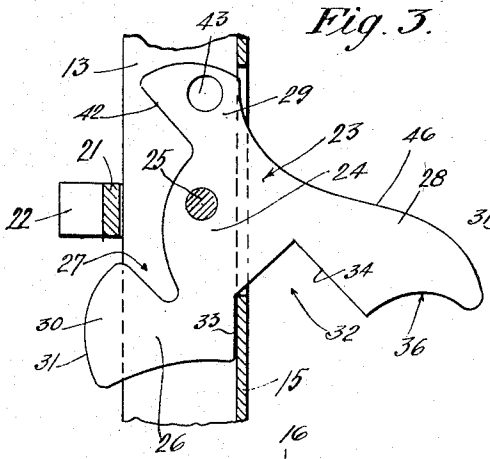


Fig. 3.

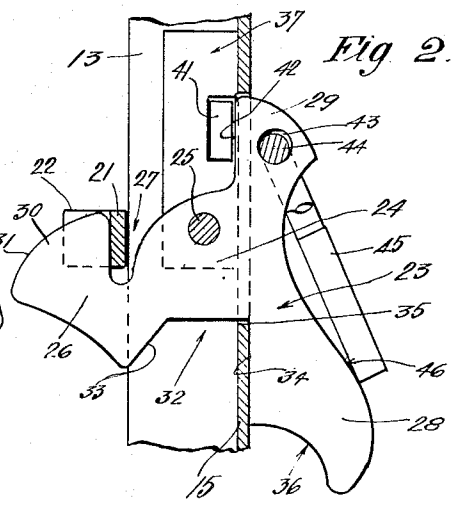


Fig. 2.

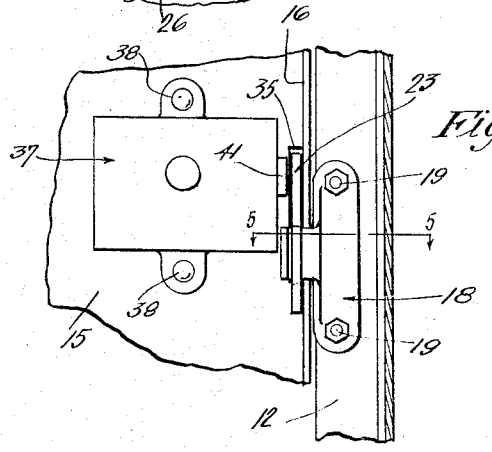


Fig. 4.

Inventors.
John Worley, Jr.
Elmer L. Vreeland.

Attorney

Patented July 13, 1926. 1,592,405

UNITED STATES PATENT OFFICE.

JOHN WORLEY, JR., AND ELMER L. VREELAND, OF LOS ANGELES, CALIFORNIA, ASSIGNORS TO WORLEY & CO., OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

DOOR LATCH.

Application filed May 19, 1924. Serial No. 714,324.

This invention relates generally to latches for lockers, cabinets, and the like; and is more particularly concerned with the latching mechanism for doors of relative small lockers or boxes wherein a single latching element suffices to hold the door in closed position. Generally described, the invention comprises an oscillatory latch pivoted on the inner side of the door and adapted to engage a keeper on the door frame.

We have provided a handle extension on the latch, proper, and this handle extends through a suitable passage way to the outer face of the door and is of a weight to normally retain the latch in latching position and is utilized to rock the latch about its pivot point to release it from engagement with the keeper.

The latch has a cam nose which is adapted to engage the keeper during door closing movement, this engagement causing the latch to rotate out of latching position. When the door is fully closed, said nose clears the keeper, allowing the handle to return the latch to latching position behind the keeper.

We provide novel means for limiting the pivotal movement of the latch and additional means for locking the latch in latching position, but such means may be discussed to better advantage in the following detailed description.

In its preferred embodiment, our latch, together with its handle and locking element, may be in the form of a single stamping, this construction contributing greatly to the low cost of manufacture and installation of the device.

We will point out further objects and features of novelty of the invention in the following description, reference being had to the accompanying drawings, in which:

Fig. 1 is a front elevation of a box locker equipped with our latch;

Fig. 2 is an enlarged vertical section on line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 but showing the latch moved out of latching position;

Fig. 4 is a view showing the inner face of the locker door with its associated latch mechanism, one of the side walls of the locker being shown in section; and

Fig. 5 is a horizontal section on line 5—5 of Fig. 4.

In the drawings, we have illustrated the latch associated with a locker box which is made up of an angle iron door frame and sheet metal sides, while the door is shown as consisting of a sheet metal plate having inwardly turned, marginal flanges. However, it will be understood this specific showing is made merely for the purpose of aiding in the accurate description of a typical latch installation, and is not to be construed as limiting the application of the invention to this particular type of locker. Furthermore, while we have shown the latch hook as being adapted to engage the keeper from beneath, it lies within the scope of our broader claims to arrange the latch so it is adapted to engage the keeper from other sides, or so it may operatively engage keepers other than that of the particular form illustrated.

The door frame 10 to which the side, top, and bottom plates P of the locker are secured, consists of horizontal angle irons 11, and vertical angle irons 13. Door 14 is made up of plate 15 having an inwardly turned marginal flange 16, and is hinged to frame iron 13 at 17. A keeper 18 is secured to frame iron 12 at 19 and has a portion 20 which approximately parallels flange 16 where it lies adjacent iron 12 (see Fig. 5), a bar 21 extending across the edge of said flange, and a portion 22 extending substantially parallel to portion 20 and away from the door opening.

Oscillatory latch 23 includes a body portion 24 which is pivotally connected at 25 to flange 16, a hook 26 with an upwardly opening mouth 27, handle 28, and lock element 29. Nose 30 of hook 26 has a cam face 31, while a notch 32 in the lower edge of the latch provides opposed stop shoulders 33, 34.

The latch extends through slot 35 provided in door plate 15 at a point adjacent flange 16, and the weight of handle 28 is such that it tends to swing the latch in a clockwise direction, as viewed in Fig. 2, shoulder 34 being adapted to engage the outer face of door plate 15 to limit the extent of this latch movement and thus serving to establish the "latching position" of the latch.

With the door closed and the latch in latching position, (see Fig. 2), the major portion of element 29 extends beyond the outer face of door plate 15, and hook 26 is in position to engage cross-bar 21, as clearly shown in Fig. 2, this engagement being adapted to hold the door closed until the latch is rotated in a counter-clockwise direction by manually lifting handle 28 after the manner shown in Fig. 3. The end of the handle is undercut at 36 to enable the operator to more readily grasp and lift the handle. Shoulder 33 is adapted to engage the inner face of door plate 15 to limit the counter-clockwise movement of the latch, and when the latch is at this limit of movement the major portion of element 29 lies at the inner side of the door. With the parts in the position shown in Fig. 3, it is obvious that the door may be swung open without latch interference, by a continued pull on handle 28. When the operator releases handle 28 the latch gravitates back to latching position.

Upon subsequently closing the door no manipulation of the latch is necessary, for, during closing movement, the cam edge of nose 30 engages the forward lower edge of bar 21 causing the latch to rotate in a counter-clockwise direction until the door is closed, whereupon nose 30 clears the keeper bar and allows the latch to gravitate back to the position of Fig. 2. It will be noted by reference to Fig. 5 that portion 22 of keeper 18 lies adjacent nose 30 and is in a position to prevent the door from being forced by the insertion of a prying tool between the door frame and door.

We have illustrated two locking devices for the door, both devices acting directly on the latch to prevent its movement out of latching position except by the holder of proper keys, or by knowledge of a particular lock combination. Either or both of these lock devices may be used in connection with a single locker.

First referring to Figs. 2 and 4, we have illustrated a lock 37, either of combination or key operated type, fastened to the inside of plate 15 at 38. The usual lock nose 39 extends to the outer face of door 14 through a suitable aperture 40. (Fig. 1.)

Lock 37 has a bolt 41 which, when fully extended, engages or lies in the path of the vertically extending face or shoulder 42 of lock element 29, face 42 preferably lying substantially parallel to and flush with the inner face of door 14 when the latch is in latching position. Thus, when the door is closed and the lock is in operative condition, bolt 41 coacts with element 29 to prevent the latch from being rotated out of latching position.

Element 29 is also provided with an aperture or eye 43 which is adapted to receive the shackle or bolt 44 of a padlock 45, it being obvious that shackle 44 is adapted to engage the outer face of door 14 to prevent rotation of the latch out of latching position.

The body of the padlock is adapted to rest on the inclined upper edge 46 of handle 28 and is thus held from contact with the face of the door.

By this arrangement the padlock is supported in a manner to be easily grasped and manipulated and the padlock body is held clear of the locker so it will not mar or scratch the door finish during lock application or withdrawal.

It will be noted that the latch may be made up of a single metal stamping and that its attachment involves only the provision of a narrow slot in the door and a single pivotal mounting. While we have specified that the latch is pivoted on flange 16 and is adapted to oscillate in a plane parallel to the flange plane, it will be understood it lies within the scope of the invention to pivot the latch elsewhere on the door, though the illustrated arrangement is preferable both from a standpoint of manufacture and of utility.

While we have illustrated and described a preferred embodiment of our invention we do not wish to be limited thereto except for such limitations as a fair interpretation of the claims may import.

Having described a preferred form of our invention, we claim:

1. In combination, a locker having a sheet metal door hinged thereto, a keeper on the door frame, an oscillatory latch pivoted on the inside of the door and pivotally movable through the door into and out of latching engagement with the keeper, and spaced abutments on the latch and arranged at opposite sides of the door, said abutments being adapted alternately to coact with the opposite sides of the door when the latch is oscillated and thereby limit the extent of pivotal movement of the latch.

2. In combination, a locker having a door hinged thereto, a keeper on the door frame, an oscillatory latch pivoted on the inside of the door and pivotally movable through the door into and out of latching engagement with the keeper, a handle on the latch and at the outside of the door, a lock element on the latch and movable through a passageway provided in the door, said element being positioned so it lies at the outside of the door when the latch is in latching engagement and at the inside of the door when the latch is out of latching position, and two independently actuated releasable lock mechanisms adapted to engage the locking element in a manner to prevent movement of said element from outside to inside of the door and thereby to prevent movement of

the latch out of engagement with the keeper, one of said locking mechanisms being on the inside and the other on the outside of the door and both being operable from the outside of the door.

3. In combination, a locker having a sheet metal door hinged thereto, said door having a flange along the edge opposite its hinged side, a keeper on the door frame, an oscillatory latch pivoted on the flange and pivotally movable in a plane substantially parallel to the flange into and out of engagement with the keeper, and an operating handle on the latch extending through a slot provided in the door adjacent the flange.

4. In combination, a locker having a sheet metal door hinged thereto, said door having a flange along the edge opposite its hinged side, a keeper on the door frame, an oscillatory latch pivoted on the flange and pivotally movable in a plane substantially parallel to the flange into and out of engagement with the keeper, an operating handle on the latch extending through a slot provided in the door adjacent the flange, and releasable means operable from the outside of the door adapted to engage the latch to hold it from pivotal movement out of engagement with the keeper.

5. In combination, a locker having a sheet metal door hinged thereto, said door having a flange along the edge opposite its hinged side, a keeper on the door frame, an oscillatory latch pivoted on the flange and pivotally movable in a plane substantially parallel to the flange into and out of engagement with the keeper, an operating handle integral with the latch and extending through a slot provided in the door adjacent the flange, and releasable means operable from the outside of the door adapted to engage the latch to hold it from pivotal movement out of engagement with the keeper.

6. In combination, a locker having a sheet metal door hinged thereto, said door having a flange along the edge opposite its hinged side, a keeper on the door frame, an oscillatory latch pivoted on the flange and pivotally movable in a plane substantially parallel to the flange into and out of engagement with the keeper, an operating handle on the latch extending through a slot provided in the door adjacent the flange, and an abutment on the latch adapted to engage the inner face of the door to limit the pivotal movement of the latch in one direction.

7. In combination, a locker having a sheet metal door hinged thereto, said door having a flange along the edge opposite its hinged side, a keeper on the door frame, an oscillatory latch pivoted on the flange and pivotally movable in a plane substantially parallel to the flange into and out of engagement with the keeper, an operating handle on the latch extending through a slot provided in the door adjacent the flange, and spaced abutments on the latch and arranged at opposite sides of the door, said abutments being adapted to coact with the opposite sides of the door in a manner to limit the pivotal movement of the latch.

In witness that we claim the foregoing we have hereunto subscribed our names this 10th day of May, 1924.

JOHN WORLEY, JR.
ELMER L. VREELAND.