Jan. 13, 1931. J. K. REED 1,789,083

LOCKER

Filed June 13, 1928 2 Sheets-Sheet 1

Fig. 1

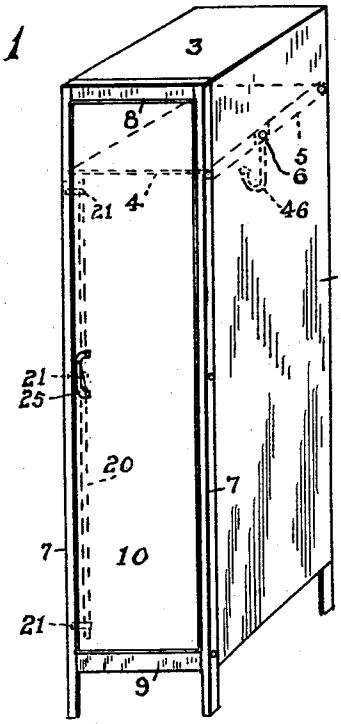


Fig. 2

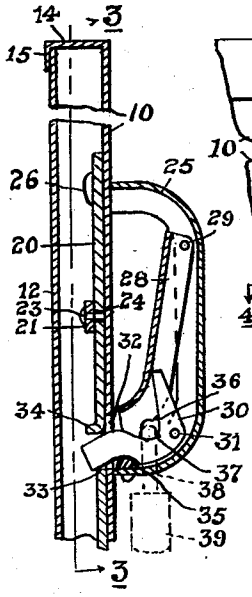


Fig. 3

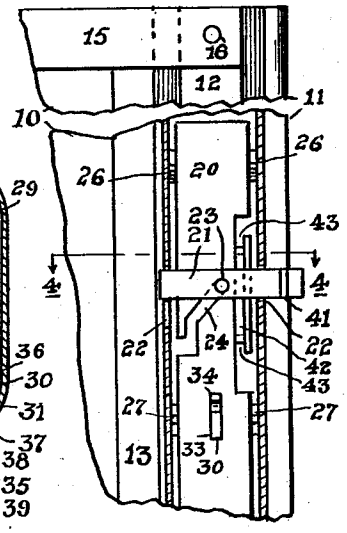


Fig. 4

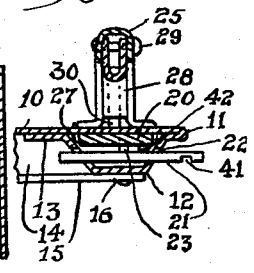


Fig. 5

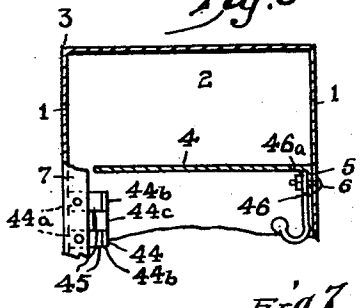


Fig. 6

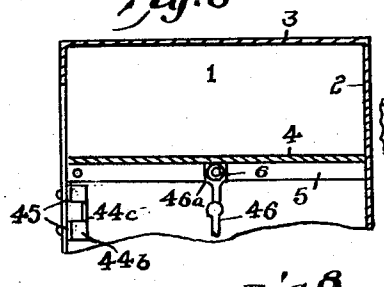


Fig. 7

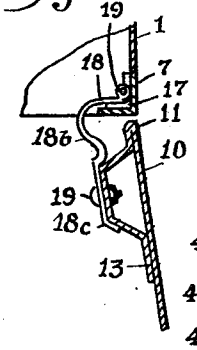


Fig. 8

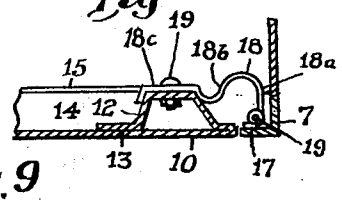
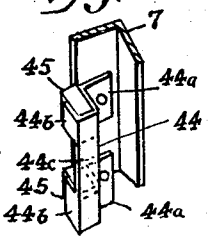


Fig. 9



INVENTOR

James K. Reed,

by Edward A. Lawrence.

his attorney

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LOCKER

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Fig. 10

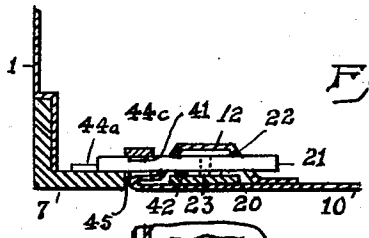


Fig. 11

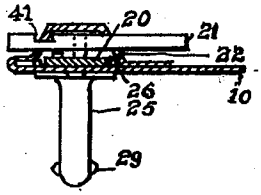


Fig. 12

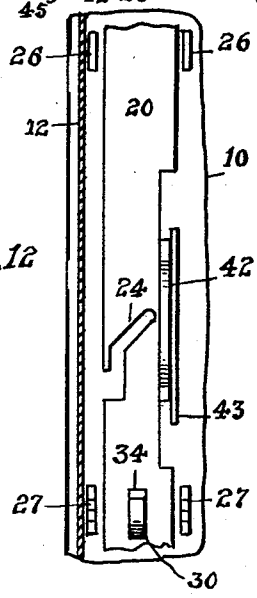


Fig. 13

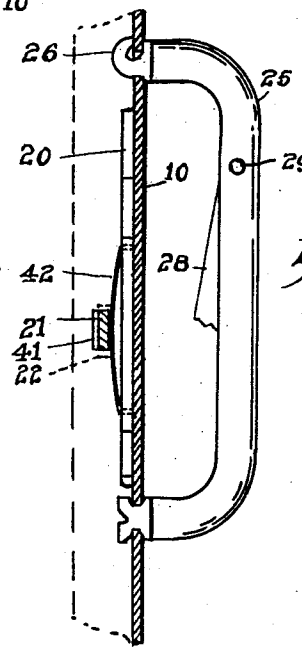
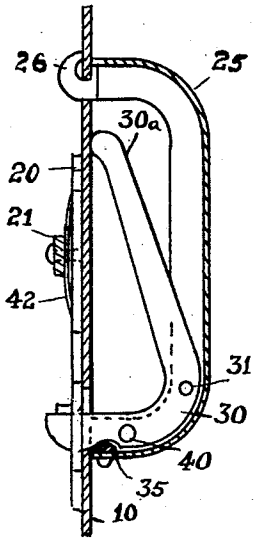


Fig. 14



INVENTOR
James K. Reed.
by Edward A. Tamm.
his attorney.

Patented Jan. 13, 1931 1,789,083

UNITED STATES PATENT OFFICE

JAMES K. REED, OF INGRAM, PENNSYLVANIA

LOCKER

Application filed June 13, 1928. Serial No. 284,916.

While my invention is more particularly intended for metal lockers, it is applicable with advantage to lockers of wood or other material.

One of the characteristic features of my invention is the improved latching and locking mechanism for the locker door.

Another of the characteristic features of my invention is the improved hinged mounting of the door.

Another of the characteristic features of my invention is the improved cushion stop which limits the closing movement of the door.

Another of the characteristic features of my invention is the improved garment-hook arrangement which enables me to secure the garment-hooks in place and against turning with but one bolt or other fastening means.

Other noval features of construction, and also of arrangement of parts will appear from the following description.

In the accompanying drawings, wherein I have illustrated a practical embodiment of the principles of my invention, Fig. 1 is a perspective view of a metal locker to which my invention is applied.

Fig. 2 is an enlarged detail in vertical section showing the housing; the actuating bar; the pull and the latch mechanism.

Fig. 3 is a detail of the inner side of the of the door partially in elevation and partially in section along the line 3—3 in Fig. 2.

Fig. 4 is a horizontal section taken along the line 4—4 in Fig. 3.

Fig. 5 is a broken vertical section of the upper portion of the locker.

Fig. 6 is a vertical section taken in a plane at right angles to that of Fig. 5.

Fig. 7 is a detail in horizontal section showing one of the hinges which connect the door to the door frame, the door being shown open.

Fig. 8 is a similar view with the door closed.

Fig. 9 is a broken perspective view of a portion of the doorway showing one of the cushion stops which limit the inward movement of the door.

Fig. 10 is an enlarged detail in horizontal section showing the door closed and bolted.

Fig. 11 is a similar view of the door showing the bolt retracted.

Fig. 12 is a broken inside elevation of a portion of the door with the housing and the bolt omitted to show the actuating bar.

Fig. 13 is a side elevation of the pull on enlarged scale with the door in vertical section to show the attachment of the pull to the door.

Fig. 14 is a view similar to Fig. 2 but showing a modified form of latch mechanism.

Referring to the drawings, 1 represents the side walls of the locker; 2 the rear wall; 3 the top, and 4 a horizontal shelf whose edges are formed with downturned flanges 5, bolts 6 extending through the locker wall and said flanges to fix the shelf in position.

The sides of the doorway are formed by the vertically disposed angle-irons 7 whose rearwardly extending flanges are secured as by bolting against the exterior surface of the side walls 1 and whose other or front flanges form the vertical walls of the doorway.

The top of the doorway may be defined by the horizontally disposed plate 8 and its bottom by the plate 9, the same being attached to the top and bottom of the locker, respectively.

10 represents the door which is preferably of sheet metal.

At the vertical edges of the door the metal is first doubled over rearwardly and flattened against the body of the door as at 11 and then bent to form the vertical housing 12 disposed against the rear face of the door and preferably of substantially the cross-sectional shape shown. The material is then again flattened against the inside surface of the door as at 13.

At the top and the bottom of the door the material is first bent inwardly and horizontally as at 14 and then flanged vertically as at 15, the ends of the flanges 15 fitting against the housings 12 and being attached thereto as at 16. The portions 14 and 15

do not extend past the housings toward the vertical edges of the door.

This door-construction, in addition to the purposes hereinafter appearing, provides a strong, stiff door which will not warp or be easily distorted from its proper shape.

To mount the door on the locker I employ the type of hinge illustrated in the drawings.

Thus 17 represents a flat leaf welded or otherwise secured to the inner face of the front flange of the adjacent angle-iron 7 with the pintle sleeves disposed towards the angle of the angle iron 7.

18 represents the other leaf of the hinge pivotally connected to the leaf 17 by the pintle 19.

The leaf 18 has a flat portion 18*a* which when the door is closed is substantially parallel with the rearwardly extending flange of the angle-iron and when the door is open fits flat against the leaf 17, thus acting to limit the outward movement of the door.

Adjacent to its flat portion 18*a*, the leaf 18 is provided with an arcuate portion 18*b* which provides clearance for the angle-iron when the door is opened.

Adjacent to its portion 18*b*, the leaf 18 is provided with a portion 18*c* which fits the outer surface of the adjacent housing 12 and is attached thereto as by bolts 19.

Two or more hinges are provided as may be found necessary.

Within the other housing 12 is slidably mounted the vertically disposed bolt-actuating bar 20. The bar is arranged to automatically drop, preferably by gravity.

21 represents one of a plurality of bolts made of flat bars and mounted in openings 22 in the side walls of the housing 12 so as to be slidable in horizontal planes.

Each of the bolts 21 is provided with a pin 23 which engages a slot 24 in the bar 20. The upper portions of said slots are inclined upwardly toward the adjacent edge of the door and their lower portions are vertical and open at their lower ends to the other side of the bar to enable the bolts and the bar to be assembled in the housing.

It is evident that when the bar 20 is allowed to drop, as by gravity, the pins 23 will be engaged by the upper inclined portions of the slots 24, thus extending the bolts outwardly past the edge of the door, as shown in Fig. 3.

Also when the bar 20 is raised, the inclination of the slots 24 will retract the bolts and their pins 23 will engage the vertical portions of the slots.

When the door is closed and the bolts are extended the latter engage behind the front flange of the adjacent angle-iron 7, thus locking the door shut.

25 represents the pull which is fixed relative to the door. The pull is preferably pressed out of metal and has an arcuate or substantially U-shaped cross section, as indicated in Fig. 4.

The intermediate portion thereof is vertical to be conveniently grasped by the hand while at its upper and lower extremities the pull is bent toward the horizontal to be attached to the door.

The upper end of the pull is provided with twin upwardly turned hooks 26, as shown in Figs. 12 and 13, which engage twin slots in the door. The lower end of the pull is provided with a pair of split ears 27 which extend through twin slots in the door and are then spread as shown in Figs. 12 and 13.

28 represents a trigger of U-shaped cross-section which is pivotally attached at its upper end at 29 in the hollow of the pull 25 and whose free lower end straddles and rides on the upwardly extending leg of the angular operating lever 30 which is pivoted at its angle, as at 31, between the walls of the pull 25 and whose lower leg extends inwardly through a vertically elongated hole 32 in the door 10 and engages a socket hole 33 in the bar 20. The tongue of material cut from the bar 20 to form the socket hole 33 or a portion thereof, is bent outwardly at the top of the hole, as at 34, to provide a better bearing for the end of the operating lever.

When the outer leg of the operating lever 30 is depressed the bar 20 is raised and the bolts 21 are retracted and when the outer end of the operating lever 30 is relieved of downwardly exerted pressure, the bar 20 is free to drop, extending the bolts.

Thus when the pull is grasped and the fingers closed over the trigger 28, the lower end of the trigger 28 is swung into the hollow of the pull 25 and the operating lever is operated to raise the bar 20 and retract the bolts 21 to unlock the door. When the hand is removed from the trigger, the parts assume their positions shown in Figs. 2 and 3 and the bolts are automatically extended by the drop of the bar 20 by gravity.

35 represents a rubber bumper block mounted in a depression in the hollow of the pull 25 to cushion the drop of the latch when the bar descends.

The trigger 28 and the operating lever 30 are provided with notches 36 and 37 which, when the bar 20 is dropped come into such relation as to form a hole through which the shackle 38 of a padlock 39, indicated in dotted lines in Fig. 2, may be inserted, the shackle thus holding the trigger and operating lever against relative movement and thereby locking the bar 20 in its lowered position.

In Fig. 14 I show a modified latch structure wherein the trigger as a separate element is omitted and the upwardly extending leg 30*a* of the operating lever 30 is employed as a trigger, the same extending for-

wardly from within the arc of the pull when the bar 20 is dropped and being retracted into the bar by the hand when the bar is to be raised. This form is simpler than that previously described but requires a somewhat longer throw.

In the modified structure illustrated in Fig. 14 the latch 30 and the pull 25 may be provided with holes, as at 40, which register when the bar 20 is in its lowered position, the shackle of a padlock being then inserted through said holes to lock the bar 20 against elevation.

One of the bolts 21 is provided with means for holding the whole locking mechanism in the unlocked position against accidental release which would permit the dropping of the bar 20 and cause the extension of the bolts.

Thus the bolt may be provided with a vertical notch 41 cut in its outer face and so positioned relative to the length of the bolt as to register with the wall of the outer opening 22 in the housing 12 when the bolt is retracted. The bolt is resiliently pressed outwardly—that is away from the door, by the slightly bowed leaf spring 42 which is mounted on the outer face of the bar 20 by having its inturned extremity engaging the notches 43 cut in the bar.

Thus the spring-pressed engagement of the notch 41 with the edge of the opening 22 of the housing 12 hold the retracted bolt against accidental extension, and the open door may be slammed or pushed shut without necessitating the operation of the trigger or operating lever to retract the bolts to permit the door to close.

When the door attains its shut position, the bolts are automatically released from their retracted position so that the bar immediately falls and extends the bolts into their locking position.

I provide means for limiting the movement of the door as it attains its shut position and also cushioning the closing of the door. I also employ these means for releasing the bolts from their retracted position when the door is closed.

Thus 44 represents a metal bracket having vertically spaced apart plate-portions 44*a* by means of which the bracket is secured as by bolts to the inner face of the front flange of the adjacent angle-iron 7.

44*b* represents a pair of vertically spaced apart pockets integral with the plates 44*a* and protruding into the door opening. The pockets are connected together at their rear by the web 44*c*.

In the pockets 44*b* are pinched the rubber bumper blocks 45 against which the door strikes as it reaches its closed position.

The closing movement of the door is thus limited and cushioned.

As the door closes the bolts 21 impinge against the webs 44*c* of the brackets 44, thus releasing the notch 41 from its engagement with the wall of the opening 22 and thus permitting the bar 20 to drop and extend the bolts so that they will extend in contact with the rear of the front flange of the adjacent angle-iron 7 and thus lock the door shut.

The brackets 44 are arranged so that the bolts of the closed door engage the angle-iron 7 between the two bumper blocks of each bracket.

I provide a new and improved means of and method for mounting the garment hooks in the locker, employing for their attachment in place the bolts which are also used for securing elements of the locker together and also holding the hooks fixedly in place and against turning with but the one attaching bolt.

Thus I have shown the hooks 46 having their upper ends in the form of a flat plate 46*a* from which the hook portion depends and the plate is provided with a bolt hole through which extends the bolt 6 which is employed to secure together two elements of the locker, such as the shelf 4 and the side wall 1, the shelf 4 being provided with a downturned flange 5 which fits flat against the side wall, and the bolt 6 extending through registering holes in the side wall and the flange.

The bolt 6 extends also through the hole in the hook plate 46*a* and the nut is screwed snugly up against the plate.

The hook is prevented from turning on the bolt by the contact of one of the straight edges of the plate 46*a* with one of the elements of the locker, such as with the under surface of the shelf 4, as shown in Figs. 5 and 6.

I am thus able to attach the hooks without the use of special or additional bolts and also prevent the hooks, attached in place by a single bolt, from turning.

The structure of my improved locker is inexpensive yet durable and rigid. They present a neat appearance, take up a minimum of space for a given capacity and are convenient and easy to open and close, the door being closed and bolted merely by swinging it shut, and being unbolted and opened by simply clasping the pull and drawing outwardly thereon, the pressure of the fingers operating the latch.

What I desire to claim is:—

1. In combination with a locker doorway and a door hinged thereto to swing on a vertical axis, of a vertically disposed bar slidably mounted on the inner side of said door, locking means arranged to be extended by the downward movement of said bar into engagement with the doorway and to be retracted by the upward movement of said bar, an operating lever pivotally mounted to

swing on a horizontal axis, one end of said lever extending through an aperture in said door and being flexibly attached to said bar, and a depending trigger pivotally mounted at its upper end at the front of the door and having its lower end bearing on the outer end of said operating lever whereby the manual movement of said trigger elevates the bar.

2. In combination with a locker doorway and a door hinged thereto to swing on a vertical axis, of a vertically disposed bar slidably mounted on the inner side of said door, locking means arranged to be extended by the downward movement of said bar into engagement with the doorway and to be retracted by the upward movement of said bar, an operating lever pivotally mounted to swing on a horizontal axis, one end of said operating lever extending through an aperture in the door and being flexibly attached to the bar, and a depending trigger pivotally mounted at its upper end at the front of said door and at its lower end having a straddle-bearing on the outer end of said operating lever whereby when the trigger is forced outwardly relative to said door said bar is raised.

3. In combination with a locker doorway and a door hinged thereto to swing on a vertical axis, of a vertically disposed bar slidably mounted on the inner side of said door, locking means arranged to be extended by the downward movement of said bar into engagement with the doorway and to be retracted by the upward movement of said bar, a pull fixed to the outside of said door and having its intermediate portion spaced therefrom, an operating lever mounted to swing on a horizontal axis, the inner end of said operating lever extending through an aperture in said door and being flexibly attached to the bar, and a depending trigger pivotally attached at its upper end to said pull and having its lower end bearing on said operating lever whereby when said trigger is swung toward said pull the outer end of said operating lever is depressed and the bar is raised.

Signed at Carnegie, Pa., this 11th day of June, 1928.

JAMES K. REED.