D. CHURCHILL.

DOOR FOR LOCKERS.

APPLICATION FILED MAY 1, 1905.

899,589. Patented Sept. 29, 1908.

2 SHEETS—SHEET 1.

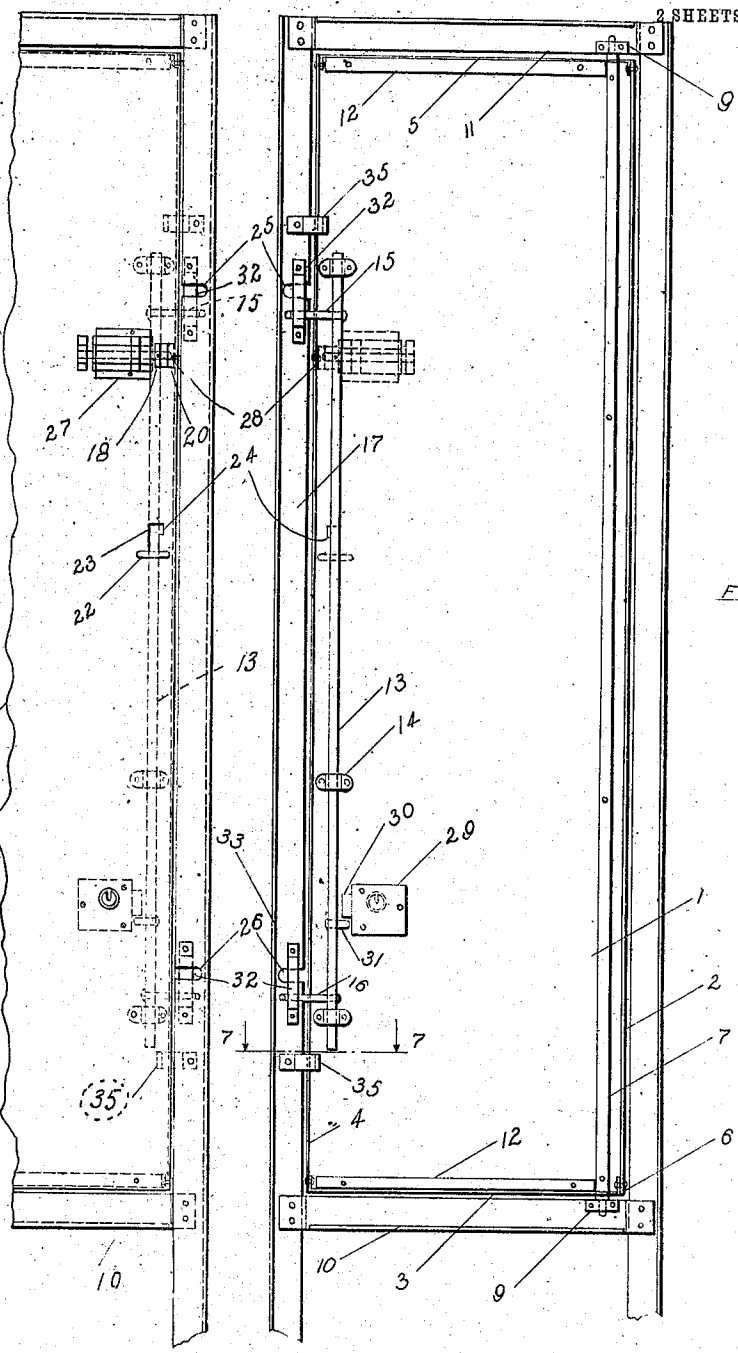

Fig. 1

Fig. 2

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Fig. 3

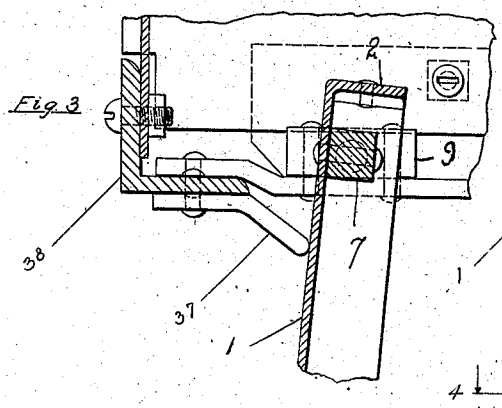
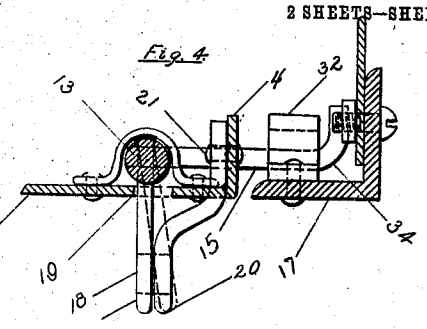


Fig. 4



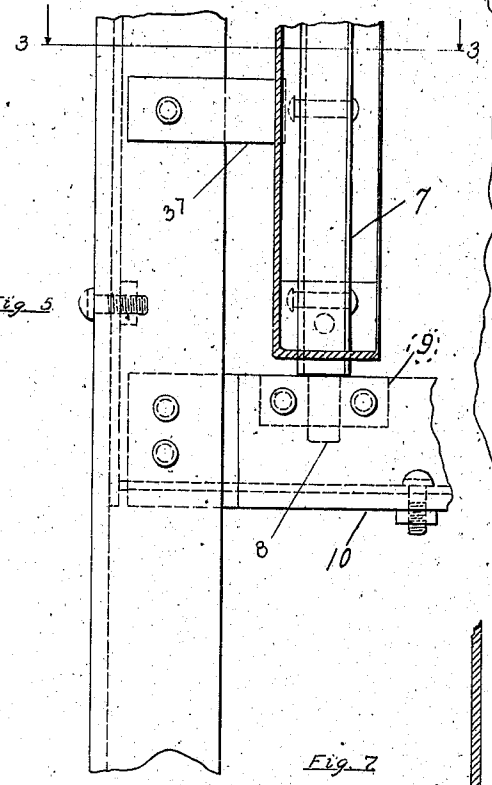


Fig. 5

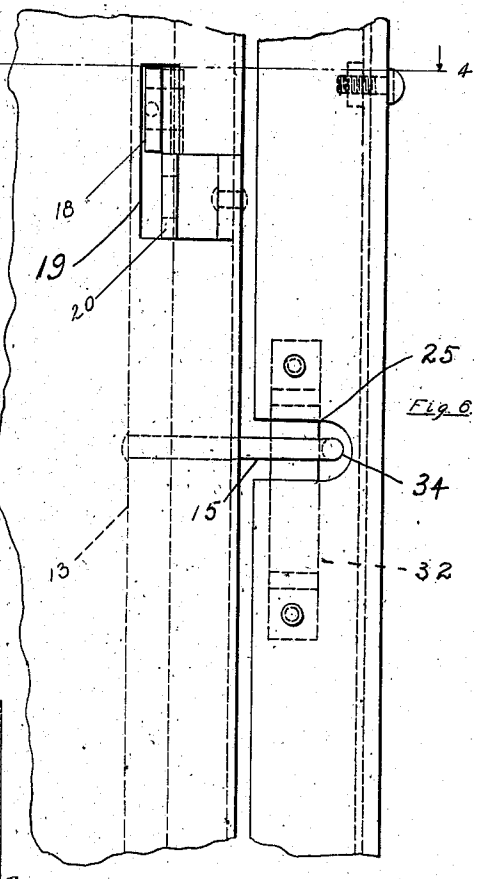
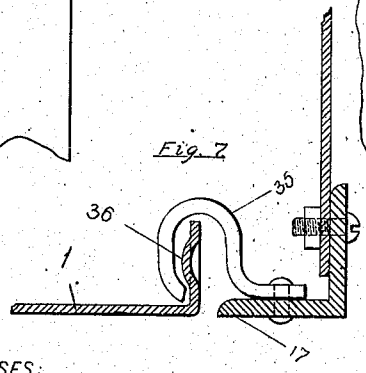


Fig. 6

Fig. 7



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UNITED STATES PATENT OFFICE.

DURAND CHURCHILL, OF CHICAGO, ILLINOIS.

DOOR FOR LOCKERS.

No. 899,589. Specification of Letters Patent. Patented Sept. 29, 1908.

Application filed May 1, 1905. Serial No. 258,340.

To all whom it may concern:

Be it known that I, DURAND CHURCHILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Doors for Lockers, of which the following is a full, clear, and exact specification.

My invention relates more particularly to a door for metallic lockers or lockers composed of thin sheet metal and the improvements have reference to the various features whereby the door is rendered rigid and made secure when closed.

The invention has for its primary object to provide an improved and efficient form of locker door which may be constructed of thin sheet metal and at the same time will be rigid and securely held from being pried open when closed.

With a view to the attainment of these ends and the accomplishment of certain other objects that will hereinafter appear, the invention consists in the features of novelty which will now be described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings—Figure 1 is a front elevation of my improved locker door showing the same closed and partially broken away. Fig. 2 is an inside elevation thereof. Fig. 3 is an enlarged plan section of one corner of the door and connected parts on an enlarged scale, the section being taken on the line 3, 3, Fig. 5. Fig. 4 is an enlarged plan section on the line 4, 4, Fig. 6. Fig. 5 is a front elevation of the parts shown in Fig. 3. Fig. 6 is a front elevation of the parts shown in Fig. 4, and Fig. 7 is an enlarged plan section taken on the line 7, 7, Fig. 2.

1 is the door proper, which is formed of thin sheet metal and provided around its edges with flanges 2, 3, 4, 5, which are constituted by turning up the edges of the sheet and securing the ends of the flanges thus constituted by means of rivets 6 or other suitable devices. Riveted or otherwise secured to the door parallel with and contiguous to the flange 2 is a rod 7 which is preferably square, and has its ends provided with journals or pins 8 and carried through the top and bottom flanges 3, 5 and journaled in blocks 9 secured above and below the door, one of these blocks being secured to the bottom cross bar 10 and the other to the top cross bar 11, which constitute the upper and lower ends of the door frame. By these means the door is securely journaled or hinged and the edge of the door from end to end is braced by the rod 7, making it practically impossible to bend the door and spring the hinged pintles out of their sockets. If desired similar rods 12 may be riveted along the upper and lower edges of the door for stiffening the door in a longitudinal direction.

On the edge of the door opposite the hinge rod 7 is mounted a vertically sliding bolt rod 13, which is secured in place in any suitable way as by straps 14 riveted or attached to the inner face of the door. This bolt rod 13 extends throughout a substantial portion of the height of the door, and is provided at its upper end with a bolt 15 projecting laterally therefrom and at or near its other end with a similar bolt 16. These bolts are substantially the same in construction and they extend laterally a sufficient distance to project across the outer flange 17 of an upright angle iron arranged at one corner of the locker with its upper and lower ends attached to the bars 10, 11 and constituting the side of the door frame, so that when the bolts 15, 16 are behind the flange 17, as shown in Figs. 1, 2 and 4, they will prevent the door from being opened. The bolt rod is held against rotation beyond a certain degree, by a staple 18 which projects through an aperture or slot 19 in the door 1 and is arranged contiguous to a companion staple 20, which is carried through the face of the door 1 and secured by a rivet 21 to side flange 4. Thus when the staple 18 is opposed to the staple 20, the rod 13 is held against rotation and the door is consequently bolted at top and bottom by the bolts 15, 16. This rotary movement of the rod 13 is also prevented by a knob or handle 22 secured to the rod 13 and projecting through a slot 23 formed vertically in the face of the door but the upper end of this slot is formed with an offset or notch 24 so that the rod 13 may be lifted by means of the knob 22 until the staple 18 passes above the staple 20, as shown in Fig. 6, whereupon the rod may be turned to bring the staple 18 on top of the staple 20 where it will rest and support the rod. When the rod is thus lifted, the bolts 15, 16 come opposite notches or apertures 25, 26 respectively, formed in the flange 17 and thus allow the door to be opened. When the door is closed again the jar dislodges the staple 18 from the staple 20 and the rod 13

drops and carries the bolts 15, 16 behind the flange 17 as before.

In order that the rod 13 may be locked against vertical movement for preventing the door from being opened, a padlock, not necessary to illustrate, may be passed through the staple 18, 20, or, if desired, the door may be permanently provided with any suitable permutation lock 27 having a bolt 28 adapted to pass through the staples 18, 20. In addition to this lock or as a substitute for this the door may be provided with a key-lock 29 having a bolt 30 adapted to engage over a lug 31 projecting from the rod 13 and thus prevent the rod from being lifted.

When the bolts 15, 16 enter their respective notches 25, 26 and fall with the rod 13 they engage between the flange 17 and two straps 32, 33 respectively, which are riveted or otherwise secured to the inner face of flange 17, and the ends of the bolts 16 are provided with hooks or bends 34, which are so constructed and arranged that should it be attempted to pry the door away from the flange 17 the hooks will engage with the straps 32, 33 and prevent the bolts 15, 16 from being dislodged from behind the flange 17. This prying action of the door is further resisted by hooks or catches 35 riveted or otherwise secured to the inner face of flange 17, and as more clearly shown in Fig. 7, engage around the flange 4 of the door when the door is closed. If desired these hooks 35 may also be utilized as catches for holding the door from swinging open accidentally when unlocked, by providing the flange 4 with bosses 36 opposite each of the hooks 35 and with which the point of the hook engages.

The opening movement of the door may be limited, if desired, by a stop 37 secured to angle iron 38, which, together with the angle irons or bars 10, 11 and 17, completes the door frame. This stop 37, it will be seen, is so close to the plane of the locker as not to be objectionable and at the same time it is a sufficient distance from the axis of the hinge to be effective in stopping the door. This is because the hinge is situated within the locker and consequently a considerable distance from the plane of the outer face or front of the locker, and it is also situated a considerable distance laterally from the edge of the door frame, as shown in Fig. 3, thus leaving a space between the angle iron 38 and the face of the door when the door is open, but when it is closed this space is filled or closed by that portion of the door which projects beyond the hinge and towards the angle iron 38. Not only does this arrangement enable me to provide the door with a neat and effective stop for checking its opening movement, but it locates the hinge entirely within the locker and protects the hinge pintles from the possibility of being driven out or dislodged from their sockets 9.

The closing or inward movement of the door at the opposite edge is prevented or stopped by the hooks 35 as well as by the straps 32 which receive the impact of the bolts 15 as the door closes and thereby throw the staple 18 off the staple 20 in the event the jar should not be sufficient to do so.

The lock *per se* which is shown and described in this application has not been claimed herein, as it constitutes the subject-matter of the claims of my pending application Serial No. 272,949, filed August 7, 1905.

Having thus described my invention what I claim as new therein and desire to secure by Letters Patent, is:

1. In a locker door the combination with the doorframe, of a sheet metal door proper having flanges at its edges turned at an angle to the face of the door, means securing the ends of said flanges together at the corners of the door, a rod secured to one edge of the door and extending from top to bottom thereof and having its ends passing through the said flanges at the top and bottom of the door, and means for journaling the ends of said rod on the door frame.

2. In a locker door the combination with the door frame, and the door proper hinged therein, of a flange arranged on the edge of the free side of the door, and a hook or catch secured to the inner side of the frame for embracing said flange.

3. In a locker door the combination with the door frame and the door proper, of a hinge supporting the door within the frame and having its axis arranged inwardly from the outer face of the door frame and laterally from the edge of the door frame contiguous to the hinge, and a stop situated on the outer side of the door frame and projecting laterally into the door-way or opening.

4. In a locker door the combination with the door frame and the door proper, of a hinge supporting the door within the frame and having its axis situated inwardly from the plane of the outer face of the frame and laterally from the edge of the frame contiguous to the hinge, the hinged edge of the door being projected towards the frame beyond the axis of the hinge whereby when the door is opened a space will be left between the face of the door and the frame, and a door stop projecting across the said space and acting between the door and frame for limiting the opening movement of the door.

5. In a locker door, the combination with the door frame and the door proper hinged thereto, of a flange on the edge of the free side of the door projecting inwardly, and a hook secured to the inner side of the frame and extending around the edge and sides of said flange for holding the flange against movement transversely of the door-way.

6. In a locker door, the combination with the door frame and the door proper hinged therein, of a flange on the edge of the free side of the door projecting inwardly and having a boss formed on one side thereof, and a hook secured to the door frame and extending around said flange and adapted to be engaged by said boss as the door closes, whereby the boss will hold the door from swinging open when unlocked, and said hook will hold the flange from being pried away from the door frame while the door is closed.

7. In a locker door, the combination with the door frame and the door proper hinged therein, of an inward projection on the free side of the door, and a hook arranged on the inner side of the door frame and extending to the farther side of said projection, whereby the projection will be between the end of the hook and the door frame, and the door will be prevented from being pried away from the frame.

8. In a locker door, the combination with the door frame, of a sheet metal door proper, means for stiffening one edge of the door, locking means secured to the opposite edge of the door, and adapted to engage the door frame a continuous bolt-rod secured to the latter edge of the door at points contiguous to said locking means and coöperating with said locking means for holding the door closed, said bolt-rod continuing above and below the point of engagement of the locking means with the door frame, whereby the door will be stiffened above and below the locking means.

9. In a locker door, the combination with the door frame, of a door proper, constructed of thin sheet metal and having a circumferential flange at its edges turned at an angle to the face of the door, a locking means secured to one edge of the door and adapted to engage behind the frame, an operating rod secured to the door adjacent one edge and coöperating with said locking means for operating the same, said rod projecting for some distance on both sides of the points of engagement of the locking means with the frame to brace the door and serve as an additional means to prevent the door from being sprung at said points.

10. In a locker door, the combination with the door frame, of a sheet metal door proper, a bolt supported by one face of the door adjacent one edge thereof and extending throughout a substantial part of the height of the door for stiffening the latter at that edge, and fastening means supported by the bolt adjacent the same face of the door and remote from the extremities of the bolt whereby the door will be braced by the bolt on each side of the fastening means, said fastening means being adapted to engage the frame.

11. In a locker door, the combination with the door frame, of a sheet metal door proper, a bolt supported by one face of the door adjacent one edge thereof for stiffening the door at that edge and movable vertically with respect to the door, and a laterally projecting locking means supported by the bolt adjacent the same face of the door and remote from the extremities of the bolt whereby the door will be braced by the bolt on each side of the locking means, said locking means being adapted to engage behind the frame.

12. In a locker door, the combination with the door frame having transverse passages in the edges thereof near its upper and lower ends, a door proper formed of sheet-metal having flanged edges, hinged at one side, a continuous catch-bar slidably mounted in an upright position against the inner face of the door at the opposite side to the hinged side and extending throughout a substantial portion of the height of the door, catches secured to said catch-bar near the upper and lower ends thereof and extending transversely therefrom across the door frame in a plane substantially parallel with the plane of the door and in line with and adapted to enter said passages in the door frame when the catch-bar is elevated and to drop down behind and lock against the door frame when the catch-bar is lowered, and means for locking said catch-bar against longitudinal movement.

13. In a locker door, the combination of a door frame having passages formed transversely in the edge thereof at one side of the door, a door proper composed of sheet-metal having inwardly flanged edges, means for hinging the door proper at one side of the door frame, an upright catch-bar slidably secured against the inner face of the door proper at the opposite side of the door, catches secured to the catch-bar near its upper and lower ends and extending through the flange of the door transversely across the door frame and adapted to enter said passages therein when they register with said passages and engage with the back of the door frame when the catch-bar is moved longitudinally, and means for moving the catch-bar longitudinally to cause the catches to register with said passages.

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Witnesses:
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A. M. UHER.