Feb. 3, 1942. W. C. ANDERSON ET AL 2,272,145

LATCH FOR ELECTRIC SWITCH CABINETS

Filed April 1, 1939

Fig. 1.

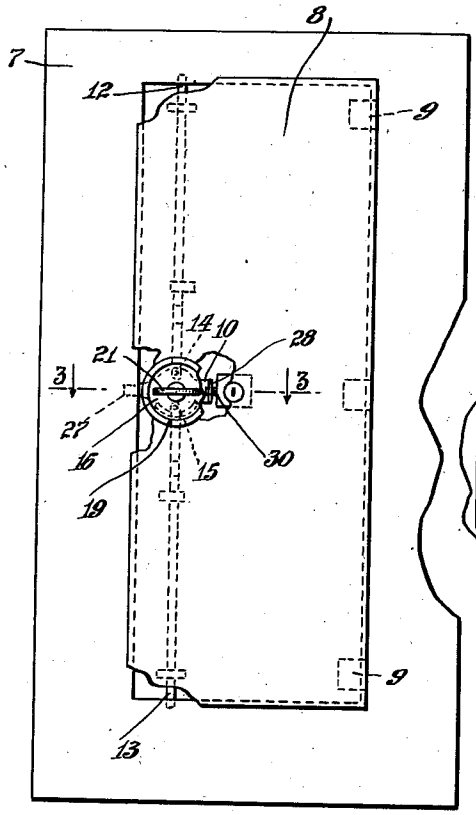
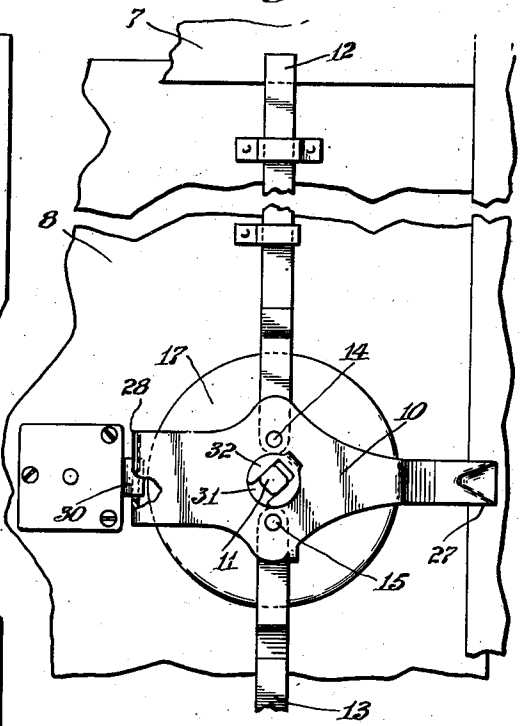


Fig. 2.



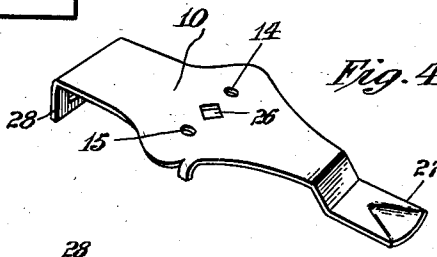
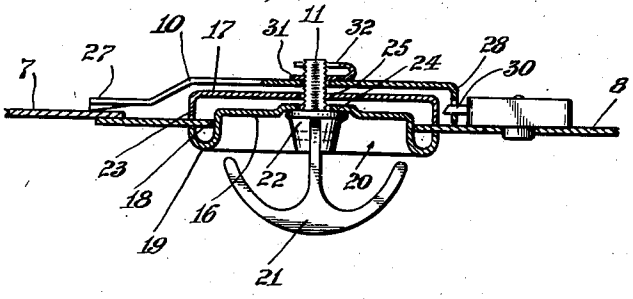


Fig. 4.

Fig. 3.



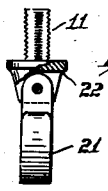


Fig. 5.

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LATCH FOR ELECTRIC SWITCH CABINETS

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Application April 1, 1939, Serial No. 265,412

2 Claims. (Cl. 292—7)

This invention relates to door locks and latches and more particularly to those having a three-point engagement, such as doors for switch cabinets, etc.

One object of the invention is to provide a latch that will effectively hold at three points.

Another object is to prevent deformation and tilting of the latch.

Another object is to provide mechanism for permitting positive locking of the latch.

Another object is to provide a hinged handle for the latch that is effective and positive in operation.

Another object is to provide actuating means that will take up a minimum of space.

Another object is to provide a handle that is strong and compact.

Another object is to provide a guard for the latch handle.

Fig. 1 is a front view of a door with lock and latch mechanism embodying one form of our invention, parts being broken away to show parts which would otherwise be concealed.

Fig. 2 is an inside view showing fragments of the mechanism.

Fig. 3 is a horizontal sectional view on the plane of the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the latch member.

Fig. 5 is a detail sectional view of the handle and its spindle.

The door frame 7 and the door 8 may be of any suitable form with hinges, for instance at 9.

The main latch member 10 is carried by the spindle 11 so that it can be turned through approximately 90°. The latch bolts 12 and 13 are pivoted at 14 and 15 to the latch member 10 and are adapted to interlock with the upper and lower edges of the door frame as is usual in such structures. The spindle 11 is rotatably supported in two cup-shaped members 16 and 17 which are secured to the door and reinforce it at the latch member. The member 16 is mounted in an opening 18 in the door and has a rim or flange 19 which extends around the edge of the opening in contact with the door and surrounds a recess 20 adapted to receive the handle 21. This handle is hinged to the head 22 of the spindle and is adapted to be swung into the recess 20 so that it does not project beyond the rim 19. This smooth rim constitutes the only projection from the face of the door when the handle is not in use.

The cup member 17 is mounted on the inside of the door and its rim 23 engages the door. These cup members 16 and 17 may be secured to the door 8 by soldering, welding or otherwise suitably fastening their rim portions thereto and provide spaced bearings 24 and 25 for the spindle 11. The bearing 24 is preferably set inwardly somewhat to support the inner end of the spindle head 22. The spindle 11 is suitably shaped so as to interlock with the latch member 10, for instance the spindle may be substantially square in cross section and fit in a square hole 26 in the center of the latch member. The outer end 27 of the latch member is offset so as to engage the inner edge of the door frame when the door is latched and the inner end 28 is also offset so as to stand against or close to the inner face of the door and thus reinforce the latch member and prevent tilting of the latch member.

A key actuated locking bolt 30 is adapted to engage the offset end 28 of the latch member 10 to lock the member 10 and the connected bolts 12 and 13. The locking bolt is actuated by an externally operated key.

The latch member 10 may be secured on the spindle 11 in any suitable manner for instance by a nut 31 screwed onto the spindle and provided with a bendable U-shaped extension 32 adapted to be bent over to embrace the square sectioned spindle and prevent further turning of the nut on the spindle.

The handle is hinged in such a way as to normally hang downward within the cup plate 16 when the door is latched so that there is substantially no projection—in fact the cup member may be set in deep enough so as to leave no projection whatever when the handle is turned down.

The two plates 16 and 17 form spaced bearings for the spindle so as to reinforce it and also so as to reinforce the door and prevent twisting stresses from deforming the door. This arrangement also reinforces the latch plate member 10 so as to prevent its deformation when the door is slammed or when the handle is too strongly pulled.

We claim:

1. A door latch construction including a cup-shaped sheet metal member having a flange portion, a latch spindle member having a bearing in said cup-shaped metal member, another cup-shaped member on said spindle extension having a flange concentrically arranged relative to said first-named cup-shaped member, the outer flange portion of said second-named cup-shaped member being in substantial alignment with the edge of said first mentioned flange portion but spaced therefrom to receive the wall of a door therebetween, fastening means on the inner end of said spindle for holding the spindle in said cup-shaped

members and a handle for rotating said spindle mounted on the outer end of the spindle.

2. A sheet-metal door latch construction including a door panel having an opening, a cup-shaped member fitted in said opening and having its bottom protruding rearwardly of the door panel and a flange portion protruding outwardly of the door panel, another cup-shaped member secured to the rear of the door panel and protruding rearwardly of the rearward portion of the first named cup shaped member, a spindle supported by said rearward portions of said cup-shaped members with one end outwardly of the first named cup-shaped member and a handle pivoted on the outer end of said spindle, said handle being adapted to fold into and nest in said first named cup-shaped member within the outer edge of its flange portion when not in use.

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