Dec. 8, 1942. E. BORCHERS 2,304,145

CATCH OPERATOR

Filed Jan. 31, 1941

Fig. 1.

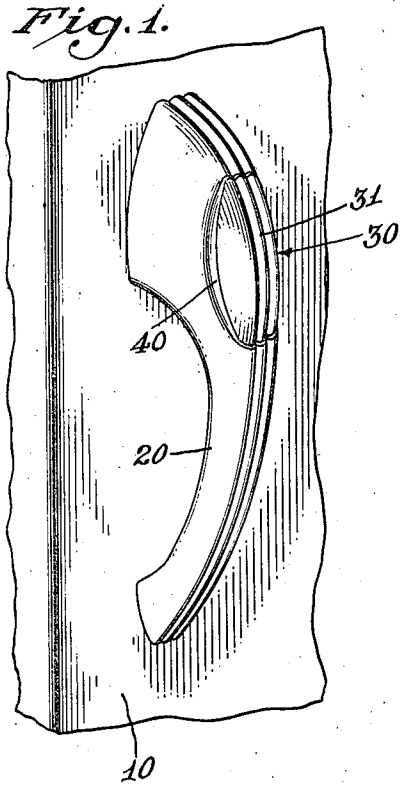


Fig. 2.

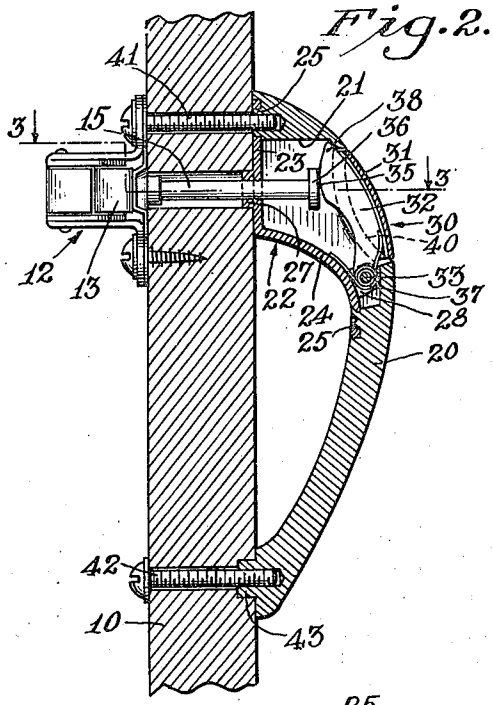


Fig. 3.

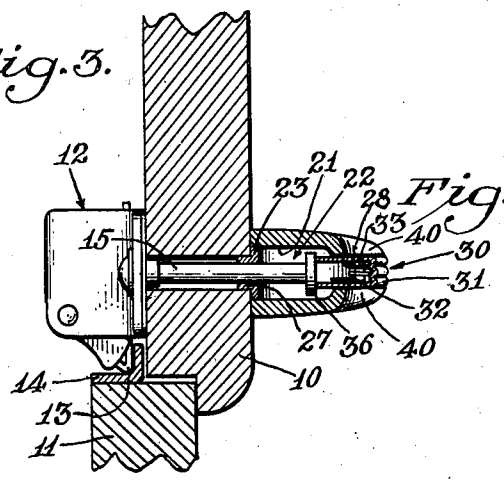
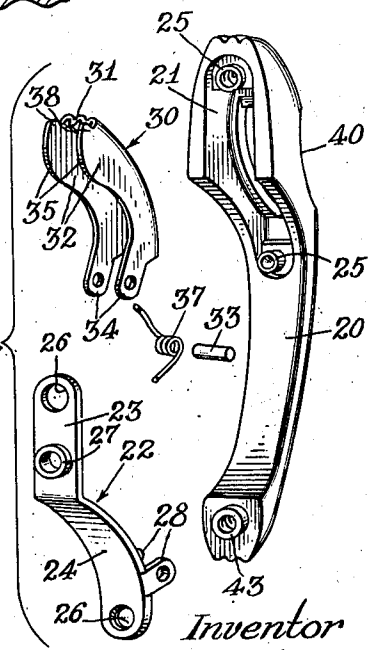


Fig. 4.



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2,304,145

UNITED STATES PATENT OFFICE

2,304,145

CATCH OPERATOR

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Application January 31, 1941, Serial No. 376,795

4 Claims. (Cl. 292—166)

The invention relates generally to catches for cabinet doors or the like and more particularly to a manual operator for the catch.

The general object of the invention is to provide a novel catch operator comprising a handle or pull provided with a manually movable part for operating the catch, which part is so shaped and positioned as to conform to the general design of the handle or pull and to appear to constitute a part thereof.

It is also an object to provide a novel operator comprising a handle of a generally bowed form under which the fingers of the hand may be inserted to pull the door open, and a movable part mounted in the front face of the handle and adapted to be actuated by pushing thereagainst with the thumb while the handle is grasped by the fingers.

A further object is to provide a novel operator for a catch of the type adapted to be operated by a pin extending through the door, the operator being provided with a manually movable part by means of which the pin is pushed to operate the catch.

Other objects and advantages will become apparent from the following description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a door provided with a catch operator embodying the features of the invention.

Fig. 2 is a vertical sectional view through the catch operator and showing its connection with the catch.

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2.

Fig. 4 is a view of the parts of the catch operator disassembled.

The catch operator herein disclosed is adapted for use with a door 10 of a cabinet or the like, the door being surrounded by a frame 11. A device embodying the features of the invention is adapted for use with a catch, indicated at 12, mounted on the inner face of the door and provided with a bolt 13 arranged to engage a strike 14 secured to the frame 11. The catch 12 is of the type which is operated by means of a push pin 15 extending from the catch through the door and into the catch operator.

The catch operator in the present instance is adapted to be mounted on the front face of the door and is of bowed form, that is, in the general shape of a door pull or the like which is adapted to be grasped by inserting the fingers under the bowed portion thereof. When the device is so grasped, the thumb is free. For this reason the present structure is designed so that the thumb may be utilized to effect a manual release of the catch. Heretofore catch operators have been provided with thumb pieces for operating the catch, but usually such thumb pieces project beyond the handle and thus detract from the appearance of the device. The present device is arranged so that the thumb piece is embodied in the handle and is shaped to conform to the contour of the handle so that a unitary appearance is presented.

In its preferred form, a catch operator embodying the features of the invention comprises a handle 20 of bowed form so that its ends may be secured flush against the outer face of the door. Preferably the upper end is somewhat larger than the lower end and is provided with a cavity 21 extending through from the front to the rear face thereof. In the preferred commercial form, the handle 20 is a die casting. The cavity 21 in the present instance extends not only through the upper end portion of the handle but also through a part of the intermediate portion which is adapted to be grasped by the fingers.

Mounted in the rear part of the cavity 21 and closing the rear face thereof is a supporting strip, indicated generally at 22. The supporting strip comprises a straight portion 23 underlying that portion of the end of the handle which is secured flush against the door, and a curved portion 24 conforming to the curvature of the portion of the handle adapted to be grasped by the fingers. To secure the supporting strip 22 in place, riveting lugs 25 are formed on the handle to extend through apertures 26 in the respective ends of the supporting strip and are riveted over the rear face of the strip. The supporting strip 22 is also provided with a flanged aperture 27 to receive and serve as a guide for the push pin 15.

Mounted in the front portion of the cavity 21 is a manually operable member or thumb piece, indicated generally at 30. The thumb piece in its preferred form is shaped to conform to the front contour of the handle 20. To this end it is generally arcuate in form and preferably comprises a sheet of metal bent to the form of a channel having a central web 31 and side flanges 32. The central web is of a width substantially equal to the front edge of the handle 20 and may be provided with the same surface decoration as the handle. Thus in the present instance a plurality of longitudinally extending grooves are formed in the web 31, which aline with and con-

stitute extensions of similar grooves formed in the handle.

The thumb piece **30** is preferably pivotally mounted. To so support the thumb piece, the curved portion **24** of the supporting strip is provided with a pair of ears **28** bent from the side edges thereof and extending forwardly within the cavity to support a pivot pin **33**. The side flanges **32** of the thumb piece are also provided with a pair of ears **34** mounted on the pivot pin **33** between the ears **28** of the supporting strip.

The thumb piece is adapted to actuate the pin and, in order to provide easy operation thereof, the edges of the side flanges **32** of the thumb piece are curved as at **35** to bear against a head **36** formed on the front end of the catch operating pin **15**. The edges **35** because of their curvature will always bear squarely against the head **36** as the thumb piece swings. Preferably a torsion spring **37** is mounted on the pivot pin **33** to cause the thumb piece to swing forwardly. In order that the thumb piece may normally occupy a position in proper alinement with the handle, the upper end of the side flanges **32** extend beyond the web **31**, as indicated at **38**, to abut the handle and limit the forward movement of the thumb piece caused by the torsion spring **37**. To provide space for the thumb, the handle **20** is provided with an indentation, or in other words, is cut away at the side portions thereof, as at **40**, to form a curved depression fitting the end of the thumb.

The handle **20** is adapted to be secured at its respective ends to the door. In the preferred manner of so securing the handle, the upper riveting lug **25**, by which the supporting strip **22** is secured to the handle, is tubular in form and is threaded to receive one of the screws, here indicated at **41**, by which the catch is secured to the door. A second screw **42** extends through the door and is threaded into the lower end of the handle **20**. Preferably the threaded portion of the lower end of the handle is lengthened by providing a small boss **43** on the rear face of the lower end, extending into a bore in the door.

In use, the handle is adapted to be grasped by inserting the fingers thereunder so that the door may be pulled open. To release the catch, the thumb piece **30** is depressed by the operator's thumb and the pin **15** thereby given a push to release the bolt **13** of the catch. The indentation or cut away portions **40** of the handle provide space for the thumb so that the thumb piece **30** may be fully depressed. When the thumb piece is released, the torsion spring **37** swings it forwardly into a position where it is alined with the front face of the handle.

From the foregoing, it will be apparent that I have provided a novel catch operator generally in the form of a pull and provided with a manually movable part for operating the catch, which is so shaped and positioned as to conform to the general design of the handle. The handle may be readily grasped by the fingers of the hand and at the same time the movable part may be readily operated by the thumb.

I claim as my invention:

1. A catch operator of the character described comprising, in combination, a handle adapted to be secured to the face of a door and having a generally bowed form which may be grasped by inserting the fingers thereunder, said handle having a cavity extending through one end thereof from the front to the rear face, a supporting strip closing the rear of said cavity and slidably supporting a push pin for operating the catch, and a manually operable member pivotally carried by said supporting strip and located in the front part of said cavity and adapted to bear against said pin, said manually operable member being adapted to be operated by the thumb when the handle is grasped.

2. A catch operator of the character described comprising, in combination, a die cast handle having a cavity extending through one end thereof, a supporting strip secured in the rear portion of said cavity and provided with a pair of ears extending into the cavity, a thumb piece of generally channel shape mounted in the front portion of said cavity and pivotally supported by said ears, and a pin slidably supported by said supporting strip and in abutment with said thumb piece to be operated thereby.

3. A catch operator of the character described comprising, in combination, a handle having a cavity therethrough, a thumb piece mounted in the front portion of said cavity and comprising an arcuate channel member, the flanges of said channel member being pivotally supported at one end within the cavity, the edges of said flanges being curved at the other end of said member, and a slidable pin having a head bearing against said curved edges.

4. A catch operator of the character described comprising, in combination, a handle having a cavity extending through one end thereof, a supporting strip secured in the rear portion of said cavity and provided with a pair of ears extending into the cavity and carrying a pivot pin, a thumb piece mounted in the front portion of said cavity and provided with a pair of ears mounted on said pivot pin, a pin extending rearwardly from the handle and actuated by the thumb piece for operating the catch, and a torsion spring mounted on said pivot pin and tending to swing the thumb piece forwardly.

EARL BORCHERS.

CERTIFICATE OF CORRECTION.

Patent No. 2,304,145. December 8, 1942.

EARL BORCHERS.

It is hereby certified that the name of the assignee in the above numbered patent was erroneously written and printed as "American Cabinet Hardware Corporation" whereas said name should have been written and printed as --American Cabinet Hardware Corporation, Rockford, Illinois, of Rockford, Illinois, a corporation of Illinois--, as shown by the record of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 6th day of June, A. D. 1944.

Leslie Frazer

(Seal) Acting Commissioner of Patents.