July 2, 1963 L. A. POLZIN 3,096,113

FLUSH-TYPE DOOR LOCK

Filed Oct. 2, 1961

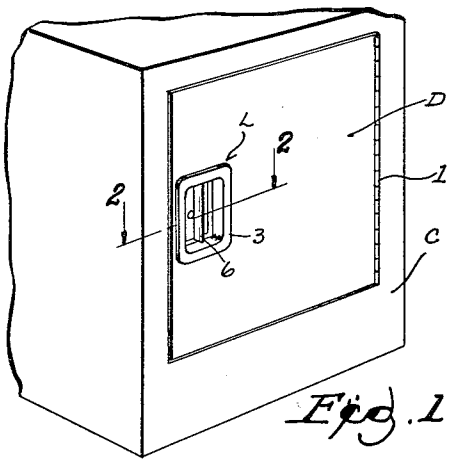


Fig. 1

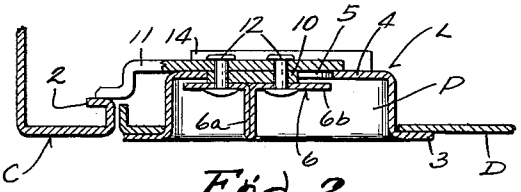


Fig. 2

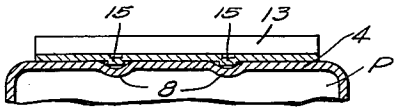


Fig. 6

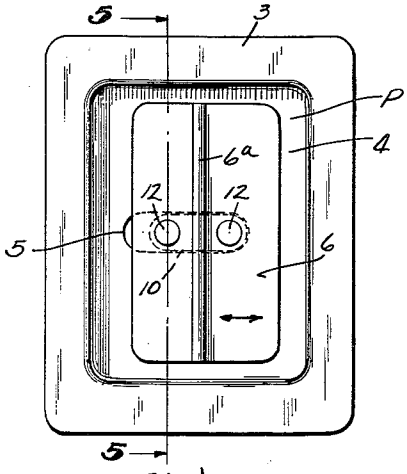


Fig. 3

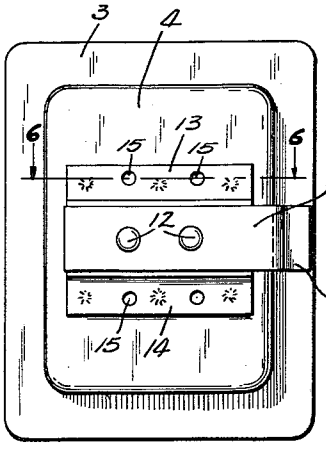


Fig. 4

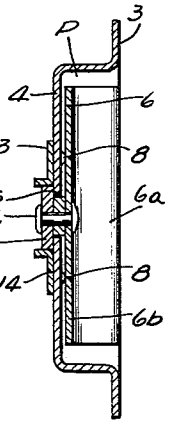


Fig. 5

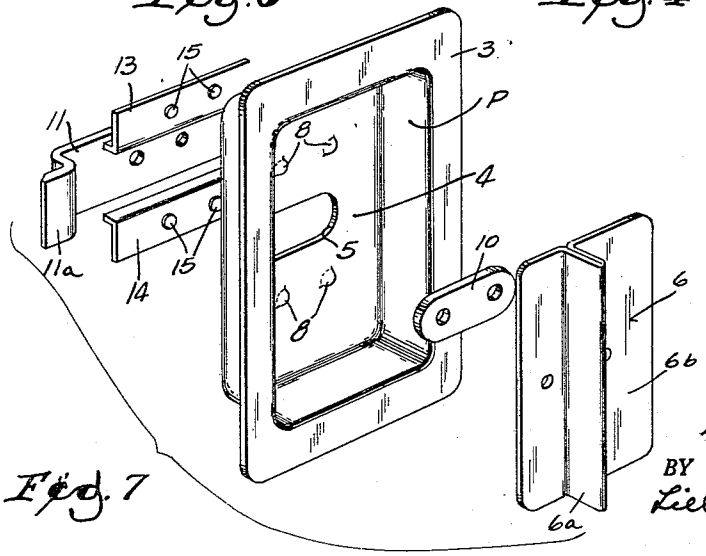


Fig. 7

INVENTOR.
LESTER A. POLZIN
BY
Lieber, Lieber & Nilles
ATTORNEYS

United States Patent Office

3,096,113
Patented July 2, 1963

3,096,113

FLUSH-TYPE DOOR LOCK

Lester A. Polzin, New Berlin, Wis., assignor to Western Metal Specialty Division, Western Industries, Inc., a corporation of Wisconsin

Filed Oct. 2, 1961, Ser. No. 142,309
4 Claims. (Cl. 292—147)

The present invention relates to flush locks which are adapted to fit in a recess formed in an external surface of a door.

In accordance with the present invention, a flush-type lock has been provided which is fabricated from sheet metal, is of simple construction and operation, and is economical to manufacture.

Furthermore, the improved lock is easily assembled and operates smoothly without malfunction, servicing, or adjustment. Generally, the present invention provides an integral and compact lock of clean design and one which has no protruding parts.

The unitary construction of the improved lock is comprised of a small number of inexpensively produced and simple parts which can be readily assembled.

Another aspect of the present invention relates to providing a door lock of the above type having a recessed sheet metal pocket in which a manually operated handle is slidably mounted but does not protrude outwardly beyond the flush mounting flange of the pocket. The handle is accurately guided in its reciprocatory movement by a guide fixed thereto and which slides in a guide slot in the bottom of the pocket. A latch is located on the inner side of the pocket and is secured to the handle for confined movement thereby within a guide track. The entire unitary assembly results in a smoothly operating and trouble-free lock having only one exposed movable part.

These and other objects and advantages of the present invention will become apparent as this disclosure progresses, reference being had to the accompanying drawing, in which:

FIGURE 1 is a fragmentary, perspective view of a cabinet in which the present invention is embodied;

FIGURE 2 is a horizontal, sectional view, taken through the lock shown in FIGURE 1 and generally along line line 2—2 in that view, but on an enlarged scale;

FIGURE 3 is a front elevational view of the lock shown in FIGURE 1, but on an enlarged scale;

FIGURE 4 is a rear elevational view of the lock shown in FIGURE 3;

FIGURE 5 is a sectional view taken along line 5—5 in FIGURE 3;

FIGURE 6 is a fragmentary, sectional view taken along line 6—6 in FIGURE 4, but on an enlarged scale, and

FIGURE 7 is an exploded, perspective view of the lock.

Referring in greater detail to the drawings, the lock L can be mounted in any position in a door D or the like, but has been shown as being positioned for operation in a horizontal direction. The cabinet C in which the door is hinged at 1 has an inwardly extending flange 2 (FIGURE 2) which defines one edge of the door opening with which the lock cooperates, as will appear.

The lock includes a recessed pocket P formed of sheet metal and which has a laterally extending flange 3 extending therearound that fits flush against the outer side of the door D. The pocket can be secured to the door in any suitable manner, as by welding, for example. The bottom wall 4 of the pocket has an elongated guide slot 5 formed therein, and also has two pairs of nipples 8 formed therein, one pair being located on either side of the elongated guide slot.

The entire pocket P can be formed as a stamping from sheet steel.

A handle 6 is also formed from sheet steel and has an outwardly extending portion 6*a* which may be grasped to reciprocate the handle in the directions indicated by the arrows in FIGURE 3. It will be noted that the handle portion 6*a* extends outwardly only coextensively with the depth of the recessed pocket but does not protrude outwardly beyond the flange 3. The base portion 6*b* of the handle constitutes a considerable area which slides over the outer surface of the bottom wall 4 of the pocket and thereby contributes to the smooth operation of the lock by stabilizing the shiftable parts in one plane and thereby prevents binding, wobbling, or tilting of the shiftable parts, as will appear.

A guide 10 and the latch 11 are both secured to the handle by rivets 12 extending therethrough. The guide 10 is of about the same width as the guide slot 5 but is somewhat shorter so that it can be guidingly reciprocated in the slot. The latch has an offset portion 11*a* which terminates intermediate the depth of the pocket, thereby maintaining the overall shallowness of the entire lock. The offset portion is adapted to engage the flange 2 of the cabinet when the handle is shifted to the left, as viewed in FIGURES 1 or 2, thereby locking the door.

The latch is also guided in its reciprocatory movement by the guide tracks 13 and 14 secured to the rear side of the bottom wall 4, as by spot welding. These tracks have two pairs of punch marks 15 pressed therein which register with and set into the nipples 8 in the wall 4. Thus, the tracks are easily and accruately located on the wall preparatory to spot welding to the wall. The dimples 8 also serve the function of providing the proper amount of frictional resistance to movement of the handle which presses thereagainst.

The handle 6, latch 11, and the guide 10 located therebetween are thus rigidly secured together by the rivets 12 for sliding movement together as a unit. The handle is the only exposed movable part, and the latch is located on the opposite side of the wall 4, while the guide 10 slides in the wall. The guide is of about the same thickness as the wall so that the flat, plate-like latch can bear firmly against the wall for good stability. This arrangement provides smooth operation of the latch without binding or cocking of the handle or latch in any direction.

The present lock, which consists of a few simple parts, is simple and foolproof to assemble.

The installed lock presents no protruding parts and requires no servicing, adjusting, or other maintenance.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention:

1. A flush-type lock comprising, a sheet metal pocket having a flat bottom wall and a flange extending laterally from its front opening to form a recess of substantially uniform depth, said bottom wall having a guide slot formed therein, a manually operable handle mounted within said recess for sliding coaction with the bottom wall thereof, a flat guide plate reciprocal in said slot, a latch slidably engaged with the bottom wall exteriorly of said recess and on the side of the wall opposite from said handle, said handle, guide and latch all being rigidly secured together for sliding as a unit, and guide track means on said bottom wall exteriorly of said recess and adjacent said latch for guiding the latter in its reciprocatory movement.

2. A flush-type lock according to claim 1, wherein the handle is formed of sheet metal shaped to provide an outwardly extending transverse gripping portion bounded by

laterally extending wings seated for sliding movement on the bottom wall interiorly of the recess.

3. A flush-type lock according to claim 1, wherein the bottom wall is provided with a series of dimples extending toward the interior of the recess and the handle is mounted in the recess for sliding engagement with said dimples to provide spaced bearing points therefor.

4. A flush-type lock according to claim 1, wherein the guide plate is of substantially the same thickness as the bottom wall of the sheet metal pocket so that the latch is stabilized in its movement.

References Cited in the file of this patent

UNITED STATES PATENTS

828,033	Lachman	Aug. 7, 1906
1,521,572	Hammer et al.	Dec. 30, 1924

FOREIGN PATENTS

468,333	Italy	Jan. 2, 1952