D. SCHUYLER & H. LAUGHLIN, JR.

SAFETY DOOR HANDLE.

APPLICATION FILED JULY 10, 1901.

956,433.

Patented Apr. 26, 1910.

Fig. I

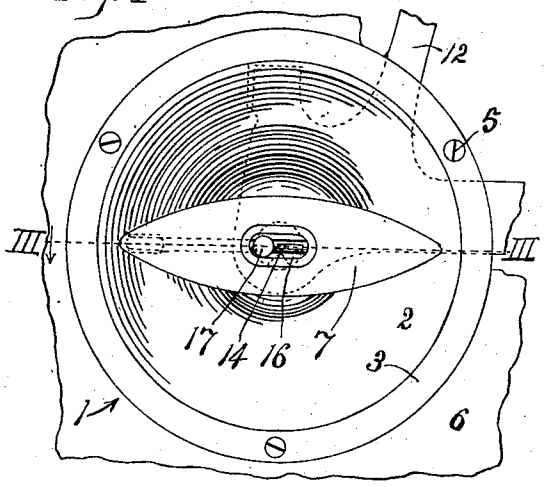


Fig. II

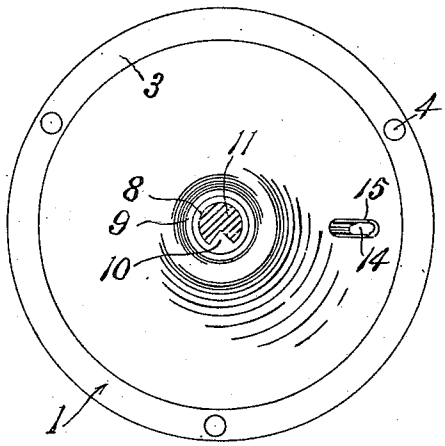


Fig. III

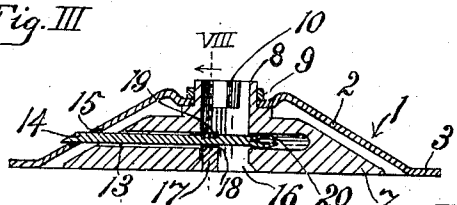


Fig. VIII

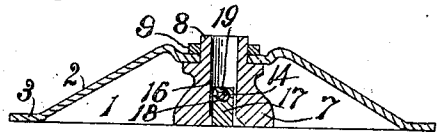


Fig. IV

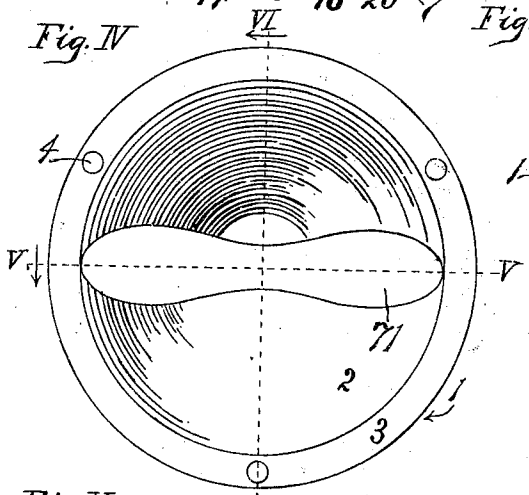


Fig. V

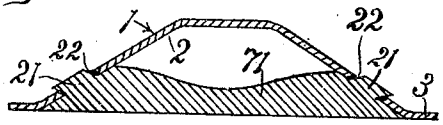


Fig. VI

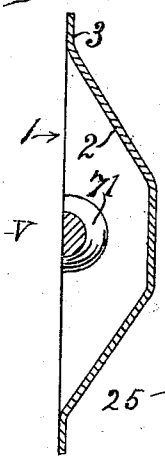
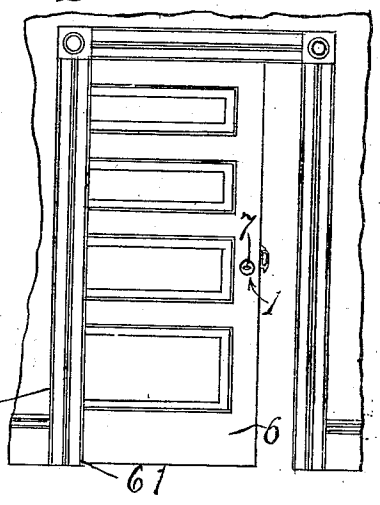


Fig. VII



Witnesses

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UNITED STATES PATENT OFFICE.

DANIEL SCHUYLER AND HOMER LAUGHLIN, JR., OF LOS ANGELES, CALIFORNIA, ASSIGNORS TO THE PERFECT SLIDING DOOR COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

SAFETY DOOR-HANDLE.

956,433. Specification of Letters Patent. **Patented Apr. 26, 1910.**

Application filed July 10, 1901. Serial No. 67,803.

To all whom it may concern:

Be it known that we, DANIEL SCHUYLER and HOMER LAUGHLIN, Jr., citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Safety Door-Handle, of which the following is a specification.

Our invention is especially designed to aid in the production of a handle for sliding doors; but in some of its features is applicable as a handle for locks in general.

Objects of this invention are: to provide for sliding-doors a handle which will avoid any liability of pinching the fingers of the person who opens the sliding-door; to provide a handle which may carry a bolt to lock the latch-operating shaft of the door against operation from the other side of the door; to provide a superior flush-handle for sliding-doors; to provide a firm grasp for the purpose of drawing the sliding-door toward the person, if desired, as well as to slide the door along its path; to provide for a sliding-door an extremely simple handle which will be ornamental; and to provide for guiding the fingers onto a handle that might otherwise be difficult to grasp.

In carrying out our invention it may be applied in connection with a latch for the purpose of operating the same, and may also be applied independently of any latch. In the drawings means are provided for holding the bar which constitutes the handle proper with its greatest length in the line of the movement of the door; and said bar is preferably tapered from the middle toward its ends, so that if, in the act of sliding the door open, the fingers grasping the handle should be brought against the door-stop, the further movement of the door would simply force the fingers out of danger.

The invention comprises a flush handle for sliding doors and the like and a finger fender having slanting walls adjacent to the flush handle to eject the fingers of the operator from the handle and out of the way of the door as the door moves relative to the fingers holding such handle, thereby avoiding any danger of pinching the fingers between the door frame and the parts adjacent the flush handle.

The accompanying drawings illustrate our invention.

Figure I is a front view of a handle embodying our invention as applied with a pivoted latch, a fragment of which is shown. Fig. II is a rear view of the same. Fig. III is a section on line III—III, Fig. I. Fig. IV is a view of a safety sliding-door handle embodying our invention as applied without a latch. Fig. V is a section on line V—V, Fig. IV. Fig. VI is a section on line VI—VI, Fig. IV. Fig. VII is a view of a sliding-door 25 provided with our newly invented handle 7. Fig. VIII is a section on line VIII, Fig. III.

This invention comprises a dished plate or member 1, the walls of which slope outwardly. The cavity of the dish is preferably of a conical form and a flange 3 extends outward around the rim of the dish and is perforated with holes 4 for screws or pins 5 by which it is fastened to the door 6. The handle-bar 7 may be variously formed, but is preferably tapered from the middle toward its ends and from the bottom upward and outward, thus forming an undercut behind the bar between it and the plate to afford a firm and ready grasp for the fingers.

Our invention includes the combination with the sliding member or door 6, of a handle-bar of greater length than width extending with its length along the path of the sliding member and a recessed member behind said handle-bar, the recess of which flares outward toward the ends of the handle-bar. The handle-bar 7 may be variously formed and may be variously fastened to the dished member 1. Where the handle-bar is to be connected with a latch it will be furnished with a stem 8 to project through the dished member 1 which is perforated for that purpose and will be suitably fastened by a ring 9 or by any other suitable means, and the stem 8 will preferably be furnished with a socket 10 to receive the end of the stem 11 for operating a latch 12. It is to be understood that the latch has a limited movement after the manner of the latches for sliding-doors and the handle-bar 7 is therefore appropriately held in line by the latch. Where the handle is to operate a latch it is preferably provided with a bolt-way 13 in which a bolt 14 is arranged to slide to enter a socket 15 in the walls of the cavity in which the handle is mounted.

16 indicates a transverse opening in the

handle and 17 indicates a perforated bolt-handle in said opening 16. The bolt 14 is inserted through the perforation 18 in the bolt-handle and is provided with an indentation 19 into which a portion of the handle 17 is bent to secure the bolt-handle 17 on the bolt and to secure the bolt 14 in the handle-bar or member 7. The portion of the handle may be bent into the indentation by a punch inserted through the hollow stem 8. The bolt is preferably made of resilient material and the inner end of said bolt is split to form spring tongues 20 to spring outwardly to press against the walls of the bolt-chambering perforation 13 to hold the bolt steady in the handle and to prevent any looseness or rattling of the bolt in the handle.

The handle-bar 71 shown in Figs. IV, V and VI is fixed and stationary within the cavity of the member which is fastened to the sliding member 6. This may be done in various ways. In the drawings two projections 21 extend into sockets 22 in the wall of the securing member 1 which is fastened to the sliding member 6. The finger fender 2 constitutes means for moving the fingers out of danger when, in operating an edgewise moving body, as a sliding door 6 or the like, they come into contact with a stationary object, as the jamb 25 of the door frame while the member is moving into such jamb and the fingers are grasping the handle. The slant of the wall of the finger fender, relative to the path of the edgewise moving member is required to be of sufficient slope to eject the fingers without pinching them against the jamb. By this construction an effective finger fender is provided in order to afford the desired safety against pinching the fingers.

It will be seen by referring to Figs. I, II, III and IV, that the handle-bar 7 may be rotatably pivoted in the dished member 1 and fixed against rotation by the bolt 14, which holds the handle so as to extend with its axis along the path of the sliding member. By withdrawing the bolt 14 from the socket 15 the handle will be released and allowed to rotate to move the latch 12. The handle-bar 7 normally extends with its axis along the path of the sliding member so that there is no liability of the fingers being caught between the bar and the door jamb; but in actual practice, in case the handle-bar 7 were upright, the operator will naturally place the fingers behind the handle for pushing the door into the jamb and the handle will therefore pass from the fingers, and the fender readily ejects the fingers.

In actual practice a person passing through the door will ordinarily place his fingers in the cavity of the finger fender 2 between a wider portion or projection of the handle, approximately at the part in Fig. I where the leader from the character 7 is applied to the handle, and the portion of the rim 3 nearest the edge of the door, and will sweep the hand, the handle and door, toward the mouth 61 of the pocket; and as the door passes to its fully open position, the wall of the cavity in a natural manner throws the fingers out of the cavity before the fingers reach the mouth of the wall pocket. We thus avoid the danger which is present in flush handles mounted in a cavity having an abrupt wall which is liable to catch the fingers and drag them into the wall pocket, thus jamming the fingers between the wall of the cavity and the stop at the mouth of the wall pocket. It is apparent by our novel construction and arrangement, if the handle against which the fingers are applied were vertical, the wall of the cavity which is toward the edge of the door would yet remove them from a way of danger in the ordinary process of opening the door.

The slanting wall that forms the fender 2 extends to and terminates at the plane of the outer face of the handle so that in the operation above described said walls act as an ejector to eject the fingers from the path of the handle, forcing them out to the plane of the face of the handle. In any event, the liability of crushing the fingers is largely done away with by the construction shown.

It will be understood by comparison of Figs. I and VII with the several cross-sectional views, that when the dished member 1 is mounted flush with the face of the door 6, the cavity formed by the dish portion 2 thereof is inside the door, and that the sloping inside wall of the dish 2 terminates aslant at the outer margin and forms a finger-fender between a projection of the handle, as the widened middle thereof as seen near the character 7 in Fig. I, and the edge of the door 6 at the right in Fig. VII, which edge is farthest from the pocket 61 into which the door is to slide when the door is thrown open, and that said fender will operate to eject the fingers from the cavity as the door moves relative to the fingers and toward the pocket, thereby to avoid crushing the fingers between the walls of the cavity and the margin of the pocket after the operator has applied pressure against said projecting portion of the handle for the purpose of opening the door.

What we claim and desire to secure by Letters-Patent of the United States is:—

1. A flush handle for sliding doors and the like, and a finger fender having a slanting wall adjacent the flush handle, the same terminating aslant at its outer margin to eject the fingers of the operator from the path of the handle as the door moves relative to the fingers holding such handle, substantially as and for the purpose set forth.

2. The combination with a sliding mem-

ber, of a dished member fastened to the sliding member and having walls which slope outwardly at an angle less than 45° in the direction in which the sliding member moves; a handle member of greater length than width pivoted in the chamber of the dished member; and means for holding the handle member to extend with its axis along the path of the sliding member.

3. The combination of a flush handle member having a cavity therein and a socket in the wall of the cavity; an oblong handle member pivoted in and extending crosswise of the cavity and adapted for attachment with latching mechanism; and a bolt extending lengthwise of and carried by the handle member and adapted to slide into the socket therefor in the wall of the cavity.

4. The combination with a revoluble oblong handle and a member in which said handle is mounted; of a bolt mounted lengthwise in said handle and adapted to be shot out at the end of said handle to fasten said handle to said member, substantially as and for the purpose set forth.

5. The combination of a handle member furnished with a longitudinal bolt-way and an opening communicating with said bolt-way; a bolt in said bolt-way; and a perforated handle for said bolt in the transverse opening, said bolt being inserted through said perforation and held therein by an inbent portion of said bolt-handle, substantially as and for the purpose set forth.

6. The combination of a flush handle member furnished with a cavity; a handle member pivoted thereto and furnished with a bolt-way; a transverse opening leading into said bolt-way; a bolt in said bolt-way and being split at its inner end and furnished with resilient members to engage the bolt-way; and a handle fastened to the bolt to operate the same.

7. The combination with an edgewise moving door which moves into a pocket, of a handle mounted in a cavity in said door and a finger fender between a projection of said handle and the edge of the door farthest from said pocket to eject the fingers from the cavity substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 8th day of June, 1901.

DANIEL SCHUYLER.
HOMER LAUGHLIN, JR.

Witnesses:
JAMES R. TOWNSEND,
E. A. WATERMAN.