Nov. 26, 1940. J. W. BARRINGTON ET AL 2,223,236

DOOR HANDLE

Filed Sept. 26, 1938

Fig. 1.

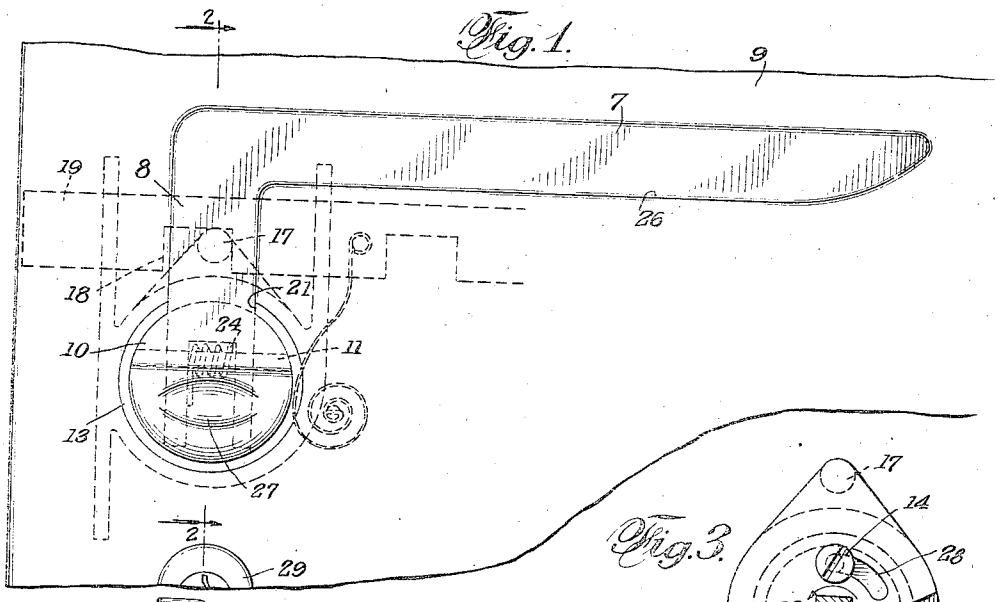


Fig. 3.

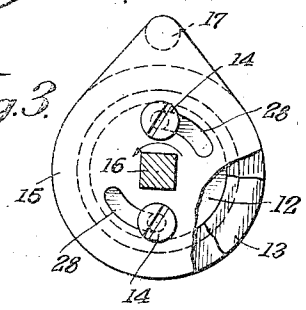


Fig. 2.

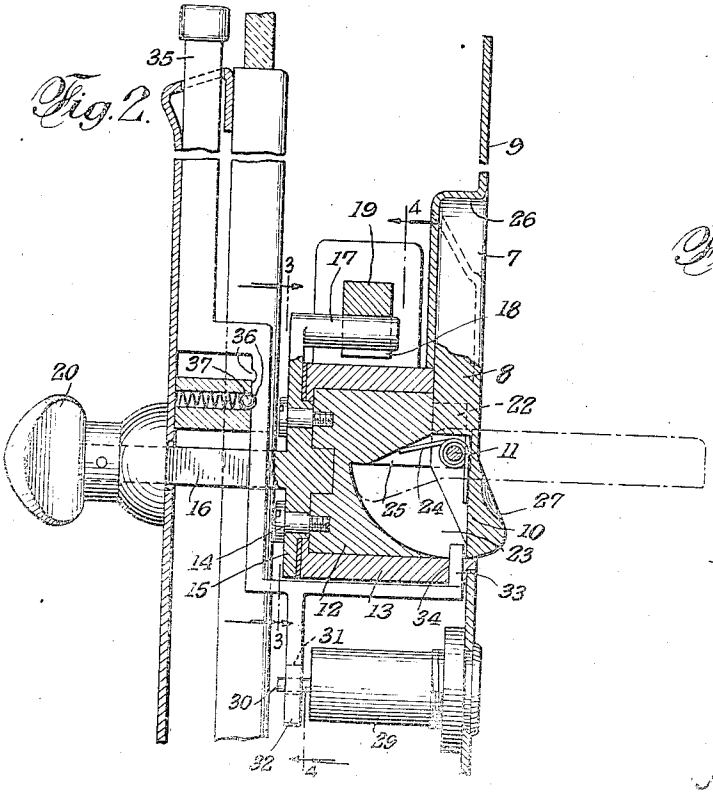
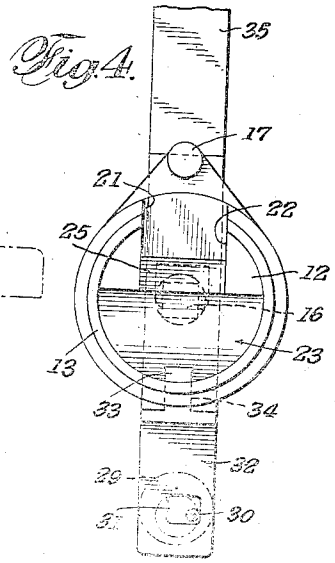


Fig. 4.



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DOOR HANDLE

John W. Barrington, Baldwin, and Milton White, Brooklyn, N. Y., assignors of ten per cent to Joseph P. Canfield, Brooklyn, N. Y., ten per cent to Philip S. McLean, Bloomfield, N. J., forty per cent to said Barrington and forty per cent to said White

Application September 26, 1938, Serial No. 231,650

5 Claims. (Cl. 70—208)

The invention herein disclosed relates to door handles of the type covered in the Barrington and White Patent 2,131,033, Sept. 27, 1938, designed particularly for high speed conveyances, such as automobiles and aircraft.

Special objects of the invention are to provide a flush or substantially flush door handle, which when not in actual use will fit smoothly to the door surface, which can instantly and easily be brought to the handle grasping position and which may then be employed to apply all the force necessary for releasing the bolt and opening the door.

Particularly it is an object to provide a handle of the type described, which when swung out in position for use will stand sufficiently in the clear for the free grasp by the hand and then be adapted to be used as any ordinary door handle.

Other objects are to improve the locking mechanism to provide for locking and release at both sides of the door and to simplify and improve the construction of door handles and locking means generally.

The foregoing and other objects are attained in this invention by the novel features of construction, combinations and relations of parts hereinafter described, illustrated in the drawing and broadly covered in the claims.

Fig. 1 is a broken face view of an embodiment of the handle as built to fit substantially flush in the face of a door.

Fig. 2 is a broken vertical sectional view as on substantially the plane of line 2—2 of Fig. 1.

Fig. 3 is a broken cross-sectional view as on substantially the plane of line 3—3 of Fig. 2.

Fig. 4 is another broken sectional view as on substantially the plane of line 4—4 of Fig. 2.

In the present invention, the "handle" proper is in the form of a generally L-shaped lever having a hand grasping portion 7, and an angularly related portion 8, for "offsetting" the first or grip portion from the surface of the door 9.

This "bent" hand lever is shown disposed with the grasping portion substantially horizontal and the offsetting portion substantially vertical, the latter serving as the mounting means and for that purpose, terminating in a head 10, pivoted on a generally horizontal axis at 11, on a rotatable member 12. The latter is shown as a substantially cylindrical element journalled in a bearing 13, and attached by screws 14, to a disc 15, on the end of the squared bolt shank or spindle 16. The latter carries the rollback 17, engaged in the notch 18, of the spring pressed bolt 19, and on the inner end of this spindle, there is shown an inside door handle 20, which may be more or less conventional in design.

The stationary bearing 13, in which the cylindrical spindle head 12, is journalled is shown notched at the top at 21, to receive the angular supporting portion 8, of the handle, in line with the corresponding transverse notching or slotting 22, in the end of the rotatable head 12. The latter is shown in Fig. 2, as having a segmental recess 23, curved from the axis of pivotal handle support 11, to receive the lower circular end portion 10, of the handle and a spring 24, is shown engaged about the pivot pin and caught between the back of portion 10 and notch 25, in the end of member 12, to thrust the lower portion of the handle outwardly and thus swing the angularly related portions of the handle upwardly and inwardly into the correspondingly shaped seat or recess 26, in the door for receiving the same.

The horizontal pivot pin 11, is shown located at a distance above the center of the cylindrical head 12, corresponding to the distance it is set back from the end surface of the bearing 13, thereby to enable the circular head portion 10, of the lever to swing freely inwardly into the circular recess 23.

The lower circular portion of the hand lever is shown as inclined outwardly, thus to form as in Fig. 3, an angularly protruding thumb rest 27, hollowed as indicated if desired, to provide a seat and guide for the thumb which is to exert the pressure for swinging the handle out into the grasp of the hand.

The flange 15 of the bolt retracting spindle 16, is shown in Fig. 3, as arcuately slotted at 28, for passage of the screws 14, thus enabling the spindle to be rotated by the inside handle, in the direction of the arrow sufficiently to cause the rollback to withdraw the bolt, without disturbing or being held by the outer handle.

A key actuated lock is provided in the present disclosure in the form of a cylinder lock 29, having a rollback 30, engaged in a substantially square opening 31, in the locking slide 32. The latter carries a locking lug 33, which can be extended through opening 34, into position back of the thumb press portion of the handle, Fig. 2. The locking slide further is shown extended in the form of a push-pull handle 35, accessible inside the door and as having seats 36, engageable by spring detent 37, for retaining the slide in its different positions.

Ordinarily, the handle is retained in the seated or substantially flush position indicated in Figs. 1 and 2. Pressure on the thumb leverage portion throws the grip portion outwardly into the broken line position shown in Fig. 2, with the grip offset from the door surface in position for full and free grasp by the hand and convenient to be turned by the hand for retracting the bolt. When thrown outwardly as indicated, the offsetting portion clears the notch in the mounting bearing, thus freeing the lever for rotational movement and after clearing the notch, the rim of the bearing then serves as an annular stop to prevent the handle being rocked backwardly against the door surface. Hence the possibility of pinching or crushing the fingers is avoided. The key operable lock may be used at the outside of the door for securing the handle in its seated relation interlocked with the door escutcheon. Similarly, the parts can be locked and unlocked at the inside through operation of the locking slide. The parts are relatively simple and of sturdy construction. Further, the structure is relatively inexpensive and because of its few parts and light weight, applicable to aircraft as well as land vehicles. While ordinarily the handle may be arranged as shown in a horizontal relation with the offsetting portion projecting downwardly, it is contemplated that these relations may be changed. For example, the handle may be horizontal, but the offsetting portion project upwardly instead of downwardly, so that the weight of the handle will assist the spring in returning the handle to retracted position. In both relations, the handle when projected for use stands in the same relation to the plane of the door as a regular handle of present standard construction.

What is claimed is:

1. In combination, a rotary bolt retracting member, a handle having a grip portion and an angularly related mounting portion, said angularly related mounting portion being pivotally connected with the end of said rotary bolt retracting member on an axis substantially at right angles to the axis of the bolt retracting member and substantially parallel with the length of the grip portion, whereby said mounting portion will offset the grip portion from the end of the rotary bolt retracting member when said handle is swung on said mounting axis.

2. The combination of claim 1, in which said angularly offset portion has a thumb press projecting angularly from the general plane of the handle to afford a guiding protuberance for engagement by the thumb for actuating the same.

3. In combination, a rotary bolt retracting member, a substantially horizontal bearing for supporting the same and a substantially L-shaped handle having one substantially vertical arm pivotally secured on a substantially horizontal axis at a right angle to the horizontal axis of the bearing over the end of said rotary bolt retracting member and having a substantially horizontally extending arm projected by the pivoting of the substantially vertical arm to form an exposed handle grip for rotating said bolt retracting member.

4. In combination, a rotary bolt retracting spindle member, an actuating handle pivoted transversely thereon to swing from a non-projecting to a projecting position for use and a compound locking slide having portions to secure said bolt retracting spindle member against rotary movement and to secure said transversely pivoted handle against outwardly swinging movement for use, said rotary member including an angular cross-section spindle and said locking slide having both a portion engageable with said pivoted handle and a locking portion engageable with said angular cross-section spindle.

5. In combination, a rotary bolt retracting member, a bolt retracting handle having substantially angularly related portions, a substantially horizontally disposed pivot pin carried by the outer end of said rotary bolt retracting member, one portion of said handle being supported by said substantially horizontal pivot pin in substantially vertical position in the normal position of the bolt retracting member and with the other angularly related portion of the handle substantially horizontal in the normal position of the parts, said first portion by which the handle is pivotally mounted on the rotary bolt retracting member being of a length to offset the substantially horizontal portion of the handle away from the end of the bolt retracting member a distance convenient for grasping said substantially horizontal portion for turning said rotary bolt retracting member.

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