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COMBINED DOOR CATCH AND BUFFER

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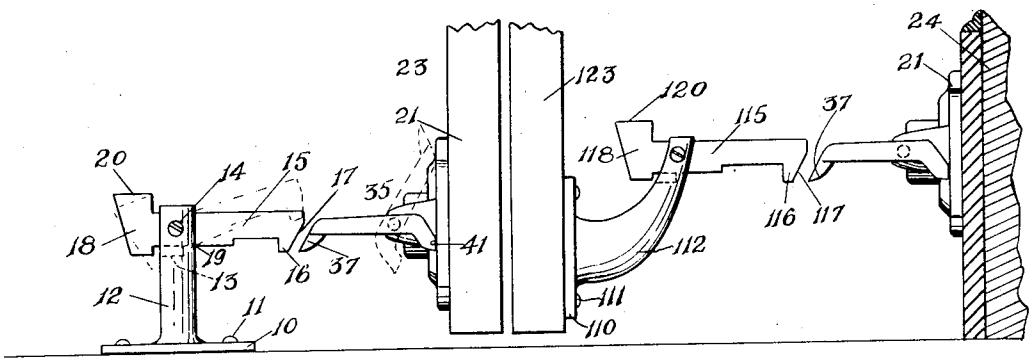


Fig. 1

Fig. 2

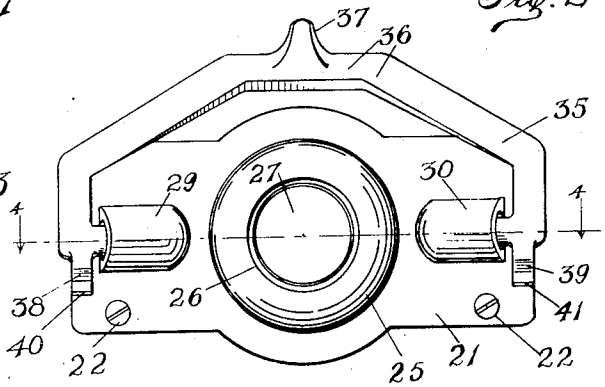


Fig. 3

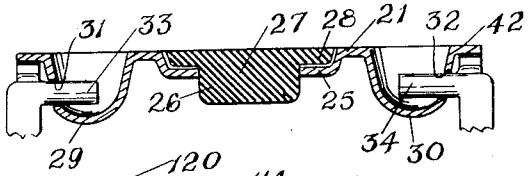


Fig. 4

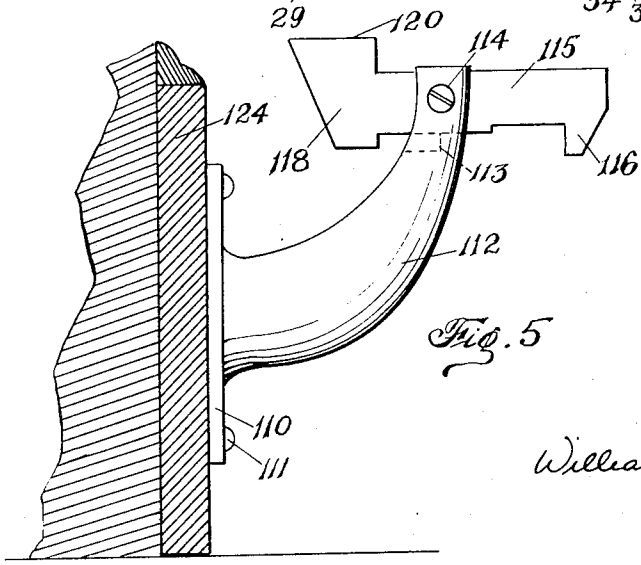


Fig. 5

William A. Pond Phipps
INVENTOR

BY
Watson, Bristol, Johnson & Leavenworth
ATTORNEY

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COMBINED DOOR CATCH AND BUFFER

William A. Pond Phipps, Rye, N. Y.

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7 Claims. (Cl. 292—136)

This invention relates to door catches and door stops, more particularly to an improved arrangement wherein such devices are effectively combined.

General objects of the invention are the provision of improved forms of door catches and door stops which possess enhanced characteristics as to simplicity of construction and operation, are amenable to easy and inexpensive manufacture, have a pleasing, attractive appearance, and are adapted to be readily fastened to metallic and other doors without any necessity for notching, recessing, or similarly marring the door or wall.

A further object of the invention is to provide and improved form of combined door catch and door stop in which the stop may be selectively used in conjunction with or independently of the catch; and particular objects of the invention are the provision of structural combinations and sub-combinations of elements useful both effectively to attain this general end and to perform certain subsidiary functions involved therein.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

Fig. 1 is a side elevation showing one form of combined door catch and door stop embodying features of the present invention;

Fig. 2 is a side elevation showing a different embodiment of the present invention;

Fig. 3 is a front elevation, on an enlarged scale, showing a catch and buffer construction of the form used in both Figs. 1 and 2;

Fig. 4 is a central horizontal sectional view, substantially corresponding to line 4—4 of Fig. 3; and

Fig. 5 is a side elevation, on an enlarged scale, showing a hooked member of the form illustrated in Fig. 2 applied to a wall.

In general, the present invention contemplates provision of a door catch including a pivoted bail member which may be mounted either on the back of a door or on the wall opposite such door, and which is adapted to cooperate with a pivoted hook element which conversely may be mounted on a door or wall. The pivoted bail is adapted selectively to assume either an operative or inoperative position with respect to the hook element, and has associated with it a resilient buffer element which is adapted to cooperate with such hook at all times, whether or not the bail member is in operative position for engagement with the latter. The presently illustrated embodiments, hereinafter described in detail, possess these general features and other useful and desirable characteristics and refinements which serve to provide a commercially attractive and useful device.

Referring more particularly to the drawing, and especially to Fig. 1, there is shown a cooperative arrangement of a pivoted hook element which is adapted to be fastened to the floor in proper position for engagement with a swinging bail which is illustrated as being fastened on the back of a door. The form of hook element shown in this figure comprises a base plate 10, provided with perforations for accommodating fastening screws 11, which are utilized to secure such plate firmly against the floor. An upright post 12 is firmly and rigidly and preferably integrally fastened to the center of base 10. The upper end of post 12 is slotted as at 13 to provide a bifurcated construction and has extending transversely across its furcations a pivot pin 14. Pivotally mounted on pin 14 and disposed between the furcations of the post, is a hook element 15 having a forwardly disposed nose 16 which is adapted to catch behind a cooperating bail or like member on the door in order to secure the latter. The forward face of the hook element has a portion which is adapted to engage a resilient buffer and also has a portion or face 17 which is upwardly inclined as illustrated, to enable the hook readily to ride up over its cooperating fastening bail. A portion of hook element 15 extends rearwardly beyond the pivot pin to form a counter-weight portion 18, which to some extent assists in the upward movement of nose 16 as it rides over its cooperative bail, but which is light enough to be over-balanced by the forwardly extending portion of the hook, the latter thus is normally maintained by gravity in a substantially horizontal position, preferably by having its under edge rest against the forward portion of slot 13 at point 19. A projection or lug 20 extends upwardly from counterweight portion 18, and is adapted to be depressed by one's foot in order to elevate and release nose 16 when

desired. The bottom of slot 13 preferably is downwardly located from point 19, as illustrated, in order to accommodate such pivotal movement of the hook element. As is clearly shown in the drawing, the main upper edge of hook element 15 is flat and normally approximately horizontal and is located only slightly below the top surface of post 12. The upper surface of projection 20 is located relatively higher than any part of the main upper edge of the hook element, and also is higher than the top of post 12. Because of this construction, the foot may be lowered more or less promiscuously over the entire hook and bail assembly, and so long as even the edge of the foot engages projection 120, the hook can be raised. Since the space between the door and the wall which is available for accommodation of the foot is usually rather restricted, this construction is very desirable. The parts of this hook member may be made from any suitable desired material, preferably a strong, attractive metal, such as brass.

An illustrative embodiment of a bail element with which hook 15 is adapted to cooperate is most clearly shown in Figs. 3 and 4. It comprises a base plate 21 provided near its corners with screw holes 22, by means of which it may be attached to a door 23 (Fig. 1) or to a wall 24 (Fig. 2). Located centrally in plate 21 is an upwardly projecting hollow boss 25 which is provided with a central opening 26. A resilient buffer element 27 is disposed beneath plate 21 and projects outwardly through such opening for abutting cooperation with the forward end of a hook element such as 15, in order to absorb or reduce the shock attendant upon an abrupt arrest of movement of the door. The buffer 27 has a laterally extending annular flange 28 which extends beneath and is confined by boss 25. Disposed laterally on opposite sides of boss 25 are a pair of outwardly extending hollow journal bosses 29 and 30 which are respectively provided with outwardly facing journal openings 31 and 32 for accommodation of trunnions 33 and 34 on a bail member 35. This bail member preferably is comparatively wide, extending entirely across the base plate 21 and having its trunnions turned inwardly in the illustrated form. While it may be of any suitable desired configuration, it preferably has a cross bar portion 36 of substantial width which is adapted to be engaged behind the nose 16 of the hook element. A downwardly inclined nose 37 is provided on the bail and this may be used for sliding cooperation with the correspondingly inclined portion 17 on the hook element. Because of the generous width of the bail as at 36, the mating hook and bail elements may be readily fastened into place without requiring unduly troublesome nicety or precision as to their relative locations. A pair of supporting lugs 38 and 39 are respectively located on each arm of the bail member and extend rearwardly beyond the respective trunnions 33 and 34. These lugs have flat bottom portions 40 and 41 which are adapted to rest against the face of plate 21 so as to support the bail in a substantially horizontal plane for cooperation with its mating hook element, as shown in Fig. 1. When desired, bail 35 may be removed from the path of hook 15 by raising it pivotally about its trunnions to the position illustrated in dotted lines in Fig. 1. The journal bosses 29 and 30 are of rather pronounced height and the journal openings 31 and 32 are spaced outwardly a material distance from the rear face 42 of face plate 21, so that the bail when in such inoperative position is adapted to recline against the door 23 at a considerable inclination. This assures stability and serves to prevent undesired jarring or jolting of the bail into its horizontal fastening position. The nose 37 on the bail also provides a projection which is adapted to be engaged by the foot for the purpose of moving the bail from inoperative to horizontally operative position. It will be noted that the base plate 21 with its various bosses is of simple construction and is admirably suited for manufacture by a simple stamping process. This plate preferably is formed of some suitable attractive metallic material, such as brass, although other suitable materials obviously may be employed.

In Figs. 2 and 5 a somewhat different form of hook element is illustrated. In this form there is provided a vertically disposed base plate 110 which is provided with openings for screws 111 to facilitate its attachment to a door 123 (Fig. 2) or to a wall 124 (Fig. 5), as desired. Projecting outwardly and upwardly from plate 110 is a curved post 112 which is slotted at its upper end as at 113 to accommodate a hooked member 115, which is pivotally mounted on a pivot pin or screw 114 extending transversely across the bifurcated end of post 112. This hook element has a forward nose 116, a counterweight portion 118, and an upwardly extending foot engaging projection 120, all substantially similar to the corresponding elements of the first-described modification. The outer slotted end of arm 112 and the projection 120 are located a substantial distance outwardly and forwardly from plate 110 to assure easy access to the foot when stepping upon such projection. This last-described form of apparatus is adapted to be screwed against the wall or baseboard of the room in lieu of the hook element shown in Fig. 1, when the presence of carpeting, or a desire to avoid damage to the floor of the room with screw holes, prevents satisfactory use of such first-described hook. In addition, a hook of the form shown in Fig. 5 is equally applicable to the movable door, in which case the bail element may be fastened to the wall as shown in Fig. 2. With this latter arrangement, when the bail is intended to be kept in its upper inoperative position, it is not so likely to become dislodged through abrupt movement of the door.

In operation, assuming bail 25 to be in its horizontally operative position, as the door 123 approaches the limit of its opening movement, the inclined face 17 of the hook will engage and ride up over the portion 36 of the bail until nose 16 drops behind such bail portion and fastens it against subsequent closure. The resilient buffer 27 is in registry with the forwardly extending hook 15 or 115 and is adapted to abut against the same to act as a door stop. The catch may be readily released by simply stepping upon the hook projection at 20 or 120 so as to free nose 16 from engagement behind the bail. Selective movement of the bail member to either operative or inoperative position may similarly be simply effected by moving it with the foot. It will be noted that the buffer 27 cooperates with the projecting end of the hook whether or not the bail is in use.

It will be seen that the described construction is adapted to fulfill its intended objects.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing

from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. In a combined door catch and buffer assembly a support having a hook element pivotally supported in a normally horizontal position thereon, a forward nose on said hook element, said nose being adapted to catch behind a cooperating catch and to abut a cooperating buffer element, and a rearwardly disposed upward projection on said hook element adapted to be depressed by the foot to release said nose, said upward projection being located higher than any other part of said hook element and said support.

2. In a combined door catch and buffer assembly, the combination comprising vertical base plate means having outwardly projecting journal members thereon, a bail member having its arms respectively pivotally mounted in said journal members outwardly from said base plate means, supporting lug means between said bail and base plate for supporting said bail member in substantially horizontal position, and a resilient buffer mounted between said journal members.

3. In a combined door catch and buffer assembly, the combination comprising a vertical base plate adapted to be fastened to a door or wall and having a cut away central opening, a resilient buffer element extending outwardly from said opening and a horizontally extending bail member mounted on said base plate and spanning said opening and buffer element.

4. In a combined door catch and buffer assembly, the combination comprising a vertical base plate adapted to be fastened to a door or wall and having a centrally perforate hollow boss projecting outwardly therefrom, a resilient buffer element projecting through the perforation in said boss, a flange on said element confined beneath said boss, and a horizontally extending bail member mounted on said plate and spanning said buffer element.

5. In a combined door catch and buffer assembly, the combination comprising a vertical base plate adapted to be fastened to a door or wall, a centrally perforate hollow boss projecting outwardly therefrom, a resilient buffer element confined beneath said boss and having a portion extending outwardly through the perforation therein, a pair of outwardly extending journal members on said plate respectively located on opposite sides of said buffer, a bail member having its arms provided with trunnions pivotally mounted in said journal members outwardly from said base plate, and a lug on each arm of said bail member extending rearwardly from said trunnions for selectively supporting said bail member in substantially horizontal position.

6. In a combined door catch and buffer assembly, the combination comprising a vertical base plate adapted to be fastened against a door or wall, a centrally perforate hollow boss projecting outwardly therefrom, a resilient buffer element confined beneath said boss and having a portion projecting outwardly through the perforation therein, a pair of outwardly extending hollow journal bosses on said plate respectively located on opposite lateral sides of said buffer and each having a journal opening therein spaced outwardly a material distance from said base plate, a wide bail member extending across said base plate and having an inturned trunnion on each of its arms respectively passing through said journal openings, lug means on each arm of said bail member extending rearwardly from said trunnions for selectively supporting said bail member in substantially horizontal operative position, said bail member being adapted to be raised and reposed in an inclined inoperative position, and a projection on said bail member adapted to be engaged by the foot to move it from inoperative to operative position.

7. An article for use in a combined door catch and buffer assembly comprising a stamped sheet plate having a flat base portion and an outwardly projecting hollow boss, said boss having a central buffer opening therethrough, and a pair of hollow outwardly projecting journal bosses on said base portion respectively laterally located on opposite sides of said buffer opening, each of said journal bosses having a journal opening in a side wall thereof spaced a material distance outwardly from said flat base portion.

WILLIAM A. POND PHIPPS.