Feb. 3, 1959 H. E. LAWSON 2,872,232

DOOR CHECK

Filed May 14, 1956

Fig. 1

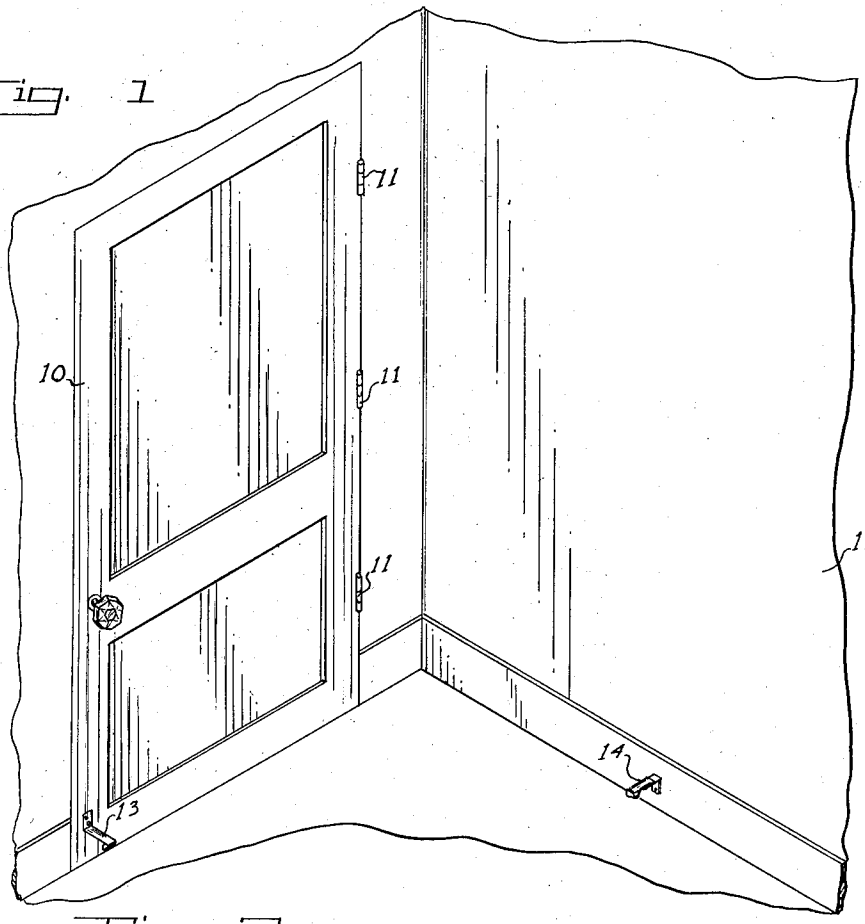


Fig. 2

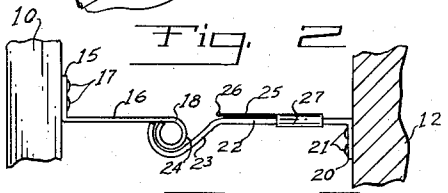


Fig. 3

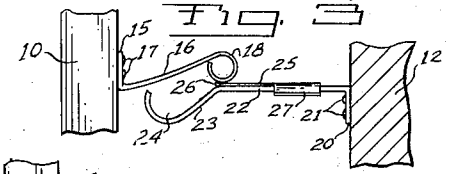


Fig. 4

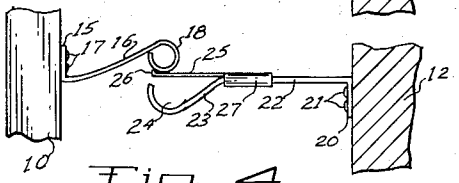


Fig. 5

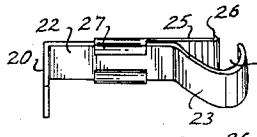


Fig. 6

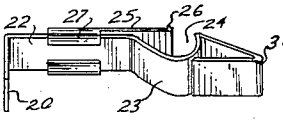
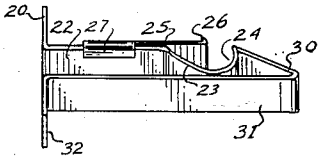


Fig. 7



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DOOR CHECK

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8 Claims. (Cl. 292—80)

This invention relates to door checks and is particularly concerned with self-releasing door checks by which a door may be releasably retained in open position.

A numerous variety of door or closure checks adapted to retain a hinged door or closure in open position have long been widely known and successfully used. For the most part, such checks have been of a hook type whereby the door is hooked in open position by manual manipulation of the hook structure. Obviously it is desirable that a check structure be provided which will automatically and in response to the opening movement of the door engage the check to retain the door in such open position without such manual manipulation. Various types of such automatically engaging checks have been designed; however, most of such checks, while automatically engageable, require manual manipulation for disengagement. Such checks as have heretofore been known which both automatically engage and disengage through movement of the door or closure itself have been complicated and/or expensive as well as being subject to undue wear and fracture making them unable to maintain a long life of operable usefulness.

It is therefore among the primary objects of the present invention to provide a novel, simple and improved door check which will be automatically operable to be engaged and disengaged by movement of a hinged door or closure.

Another object of the present invention is to provide a door check which will be releasable only upon the positive and inward movement of the door towards the check as opposed from a check which is releasable upon outward pressure which may be inadvertently applied to the door.

It is a further object of the present invention to provide a rugged and durable door check which may be readily formed of inexpensive material and which is constructed of few parts and hence one which is simple in operation as well as well designed to meet the demands of economic manufacture.

Numerous other objects, features and advantages of the present invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a perspective view of a door and wall assembly showing the application of one form of the present invention.

Fig. 2 is a perspective view of that form of the invention illustrated in Fig. 1 showing the two elements of the check structure in engaged relationship.

Fig. 3 is a view of the parts shown in Fig. 2 in midway released position.

Fig. 4 is a similar view of the parts in released position.

Fig. 5 is a perspective detail view of the keeper member of the check shown in Figs. 1 to 4.

Fig. 6 is a similar view of a modified form of keeper member.

Fig. 7 is a similar view of a further modification thereof.

While certain aspects of the present inventive concept may be carried out by variously constructed and designed elements that form of the invention here presented by way of illustration may be generally characterized as including a member preferably for attachment to the door which consists of a generally flat somewhat flexible metal strip formed with a flange at one end for attachment to the door and at the other end with a return bent or rounded catch extremity adapted for engagement with the companion or keeper member of the check assembly. The intermediate flat metal body between the attaching flange and the curved catch extremity provides for a limited flexing of the body as the door is moved to open position and the rounded end portion engages the opposite or wall mounted keeper member. The companion keeper member comprises a somewhat similar flat metal blade having a flange at one end for attachment to the wall and at the opposite end the curved receiving portion adapted to receive the rounded catch end of the opposite member. The keeper is preferably rigid and provided on the intermediate shank of the blade with a slidable pocket cover including a terminal flange formed as an operating detent. In the operation of the structure as the door is moved to fully opened position the catch member flexes upwardly over the front wall of the pocket of the keeper member and, in so moving, will engage the detent of the cover sliding the same rearwardly to open the pocket so as to permit reception of the rounded catch end of the catch thus retaining the door in open position. When it is desired to release the door, the further inward motion thereof will move the rounded end of the catch upward and over the detent, thereafter upon reverse or closing movement of the door the end will draw the cover to slide it forwardly over the pocket so as to preclude the return of the catch to the pocket and thus permit the door to be closed. In Fig. 6 of the drawing a modified form of the keeper member is disclosed wherein the pocket is provided with an outwardly extending triangular guide to assist the location of the catch end of the door member in the pocket and in Fig. 7 the further modification is formed with the guide of Fig. 6 having an extension to form a second securing flange.

Referring now to the drawings there is depicted in Fig. 1 a conventional wall and door assembly, the door **10** being vertically hinged at **11** to be moved from the closed position indicated to an open position parallel with the wall **12**. In this illustration the door mounted catch member is generally indicated by the numeral **13** while the wall mounted keeper member is designated by the numeral **14**. As will be hereinafter discussed, when the door is opened to parallel position with the wall **12** the rounded catch end of the member **13** will engage within a keeper pocket of the wall mounted keeper member **14** to retain the door in fully open position. When it is desired to release the door for closure, further movement of the door toward the wall **12** will release the rounded end of the member **13** from the pocket of member **14** and thereafter a closing motion of the door will slide a pocket closure over the pocket to preclude the return of the rounded end of the member **13** to the pocket after such reverse movement of the door toward the wall, thus permitting free full closure motion.

Referring now more particularly to Figs. 2, 3, 4 and 5 it will be seen that one element of the check combination which is here designated as the door mounted catch element comprises a body of flat relatively flexible material, preferably metal, having at one end a vertically disposed securing flange **15** whereby the flat blade body **16** of the door element may be secured in horizontal

position extending inwardly at right angle to the plane of the door by securing means indicated at 17. The outer extremity of the blade 16 is rolled downwardly and inwardly to form a rounded catch end 18. The rounded catch end 18 supported from the flexible body 16 is adapted to be flexed upon engagement with the keeper or wall member as illustrated in Figs. 3 and 4.

The keeper or wall member comprises a body of flat material such as metal provided with a terminal right angle disposed flange 20 adapted to be secured to the wall 12 by securing members 21 together with a horizontally disposed flat and comparatively rigid intermediate body portion 22 terminating in a downwardly curved end 23 forming a keeper pocket 24 for reception of the catch end 18 of the companion element. In addition there is slideably mounted on the flat intermediate body 22 a pocket closure comprising a flat top section 25 having an upwardly turned detent flange 26. This pocket closure member is slideably engaged over the body 22 by downwardly and inwardly turned side flanges 27.

As the door is opened the member 13 as hereinbefore mentioned will move with the door toward the member 14. As the rounded catch end 18 approaches the front of the curved keeper pocket forming end 23 the end 18 will be cammed upwardly flexing the body 16 to permit the end 18 to pass over the front wall of the curved portion 23 and be received within the pocket 24 as shown in Fig. 2, thus retaining the door against inadvertent closing movement. In such movement the catch end will strike the detent 26 sliding said pocket closure member in the direction of catch movement to open the keeper pocket to admit the catch. When it is desired to disengage the door a further motion of the door toward the wall as shown in Fig. 3 will again upwardly cam the member 18 and again flex the body 16 so that the catch end 18 will move upwardly and over the detent flange 26. Thereafter, upon a movement of the door toward closing position the latch end 18 will engage the flange 26 to slide the pocket closure forwardly over the keeper pocket 24 precluding the re-entry of the catch end 18 within the pocket. Such motion is illustrated in Fig. 4 and it will be noted that a continued closing movement of the door is thus possible after the opposite inward movement of the door toward the wall.

By this arrangement it will be seen that the normal position of the pocket closure when the check is not in operation is over the pocket. When the door is again opened the end 18 will again be cammed upwardly by the curved end 23 and it will engage the front face of the detent to push the pocket closure rearwardly to the position shown in Fig. 2 whereupon the member 18 will fall into the pocket 24 the body 16 flexing to its normal flat position as shown in Fig. 2.

In that modification of the invention presented in Fig. 6 the terminal edge of the pocket forming curve 23 is provided with an outwardly extending V-shaped guide member 30 which not only acts to assist in guiding the latch end 18 upwardly and toward the pocket and pocket closure member as hereinbefore mentioned but further provides a supporting structure for enhancing the rigidity of this member.

In that modification shown in Fig. 7 the lower wall 31 of the guide 30 is extended rearwardly parallel to the body of the keeper member and is formed at its inner end with a flange 32 cooperating with the flange 20 to provide a double securement of the keeper to the wall and to further provide a reinforcing leg to strengthen the entire assembly and preclude a flexing of the parts thereof.

It will, of course, be understood that in the practice of the present invention numerous changes, modifications and the full use of equivalents may be resorted to without departure from the spirit or scope of the invention as outlined in the appended claims.

I claim:

1. A three piece door catch comprising the combination of a resilient catch member having a circularly bent catch end, a rigid keeper member having a keeper pocket for receiving said catch end and a cover mounted on said keeper and slidable to and from a position over said keeper pocket, said cover adapted to be selectively engageable by said catch end to move the cover to uncover said pocket upon movement of the catch over the keeper in one direction and engageable by said catch end to move the cover to cover said pocket upon movement of the catch in the opposite direction.

2. In a three piece door catch, a keeper, said keeper having a securing flange, a flat rigid body extending outwardly from the flange, said body having a curved end defining a catch receiving keeper pocket, and a keeper pocket closure slidable on said body, said closure having a catch engageable operating detent.

3. In a three piece door catch, a keeper, said keeper having a securing flange, a flat rigid body extending outwardly from the flange, said body having a curved end defining a catch receiving keeper pocket, a keeper pocket closure slidable on said body, a catch engageable operating detent formed on said closure, said curved end terminating in an inclined outwardly extending substantially V-shaped catch guide.

4. In a three piece door catch, a keeper, said keeper having a securing flange, a flat rigid body extending outwardly from the flange, said body having a curved end defining a catch receiving keeper pocket, a keeper pocket closure formed on said closure slidable on said body, a catch engageable operating detent, said curved end terminating in an inclined outwardly extending substantially V-shaped catch guide, and an inwardly extending leg having a wall engaging flange.

5. A door keeper assembly including a catch member having a door engaging flange adapted to be secured to a door, said catch member having a flat resilient body with a terminal rounded catch end, a keeper adapted to be secured to a wall, said keeper having a flat rigid body with a return bent curved end forming a catch receiving keeper pocket, a cover slidably mounted on said keeper, a catch engageable detent on said cover, said cover adapted for movement to and from a position over said pocket by selective engagement of said rounded catch end with said catch engageable detent.

6. A door keeper assembly including a catch member having a door engaging flange adapted to be secured to a door, said catch member having a flat resilient body with a terminal rounded catch end, a keeper adapted to be secured to a wall, said keeper having a flat rigid body with a return bent curved end forming a catch receiving keeper pocket, a cover slidably mounted on said keeper for movement to and from a position over said pocket by selective engagement with said catch, a catch end engageable detent in the form of an upstanding end flange on said cover, said cover normally lying over said pocket, said detent being engageable by said catch end to slide the cover over the pocket as the catch moves in one direction to engage the keeper, said detent adapted to be over-ridden by said catch upon continued movement in said one direction, whereby movement of the catch in the opposite direction will cause the catch end to engage the detent so as to slide the cover over the pocket.

7. A three piece door catch comprising, a resilient catch member having a circularly bent catch end, a rigid keeper member having a keeper pocket for receiving said catch end, a cover slidably mounted on said keeper, and a catch engageable detent on said cover, said cover adapted for movement to and from a position over said keeper pocket by selective engagement of said circularly bent catch end with said catch engageable detent.

8. A three piece door catch comprising, a resilient catch member having a circularly bent catch end, a rigid

keeper member having a keeper pocket for receiving said catch end, and a slidable cover mounted on said keeper member and slidable to and from a position over said keeper pocket, said cover adapted to be selectively engageable by said catch end to move the cover to uncover said keeper pocket upon movement of the catch over the keeper in one direction and engageable by the said catch end to move the cover to cover said keeper pocket upon movement of the catch in the opposite direction, said catch end being releasable from said keeper pocket only by movement of said catch end in said one direction to move said catch end beyond keeper pocket engaging position.

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