

[54] OCCUPANT SAFEGUARDING DOOR STOP

[76] Inventor: Jimmie A. Chezem, 4210 8th St. Ct.
E., Bradenton, Fla. 33505

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292/DIG. 15

[51] Int. Cl. E05c 3/12

[58] Field of Search. 16/86 A, 144, 145;
292/DIG. 15, 338, 210

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661,845	11/1900	Brye et al.	16/144
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Primary Examiner—Bobby R. Gay

Assistant Examiner—William E. Lyddane

Attorney, Agent, or Firm—Clarence A. O'Brien; Harvey B. Jacobson

[57]

ABSTRACT

Occupant safeguarding door stop means expressly designed and adapted for protective use on an interior surface near the lower edge and corner portion of a vertically hinged inwardly openable door. It comprises a mounting base or bracket screwed or otherwise fixed, and a complementary leg member hingedly mounted and depending and having a laterally directed contoured foot portion whose underneath side is equipped with a normally elevated anti-slipping floor engaging shoe. Spring means functions to yieldingly lift and release the foot-equipped leg and permits the leg to be forced down to the desired door stop position. Releasable spring-loaded latching means functions to hold the door stop in its safety door retaining position.

4 Claims, 4 Drawing Figures

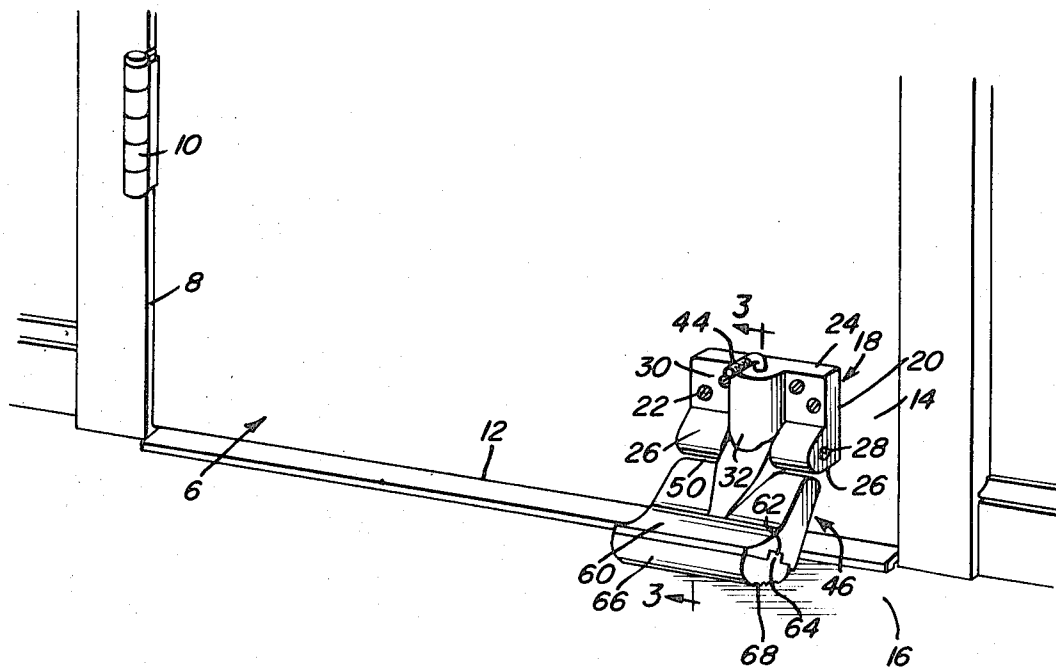


Fig. 1

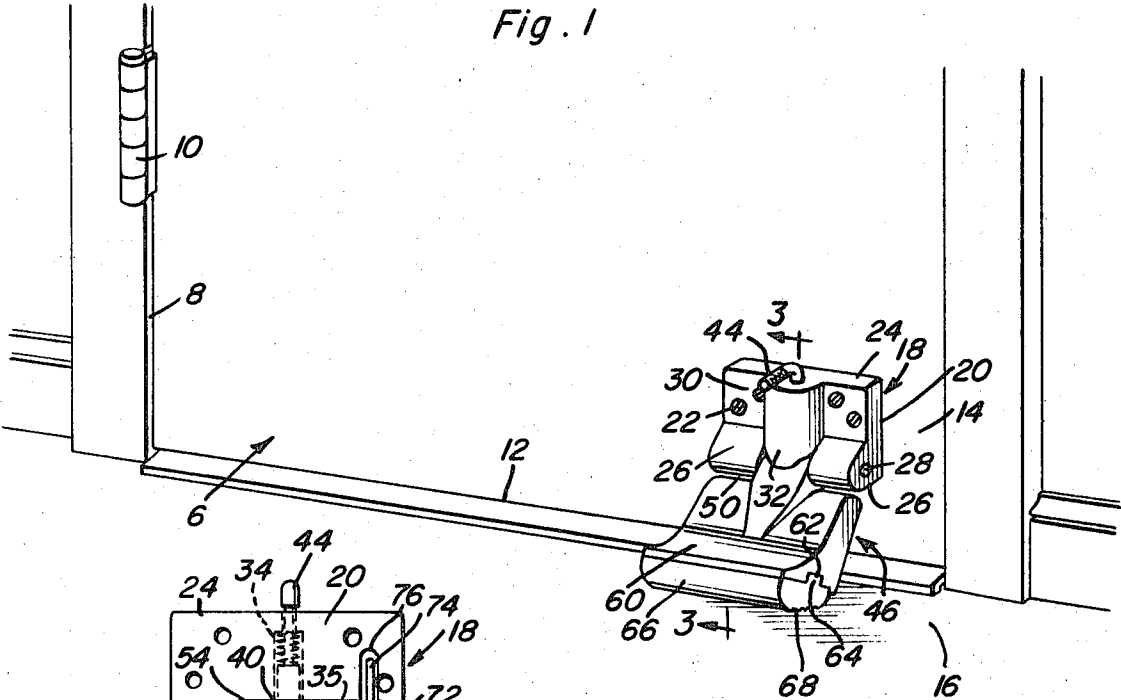


Fig. 2

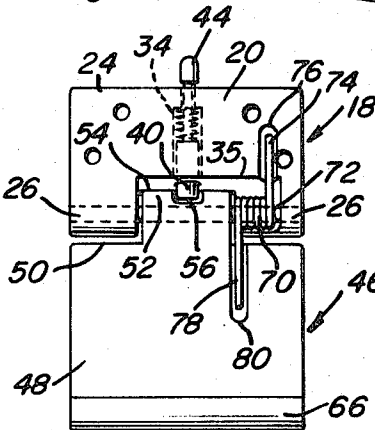


Fig. 3

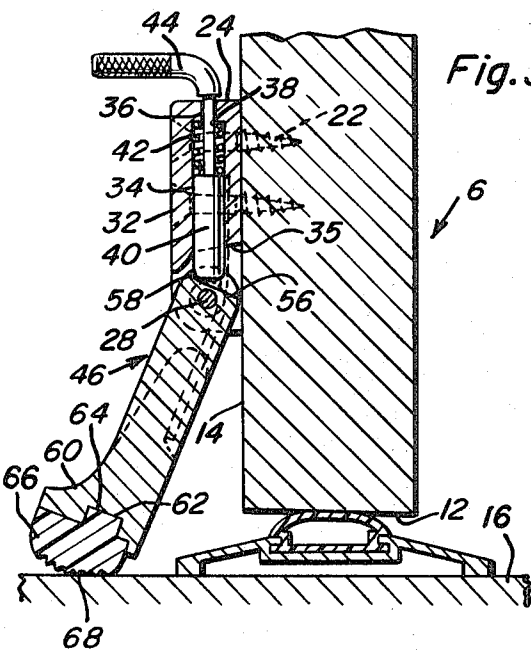
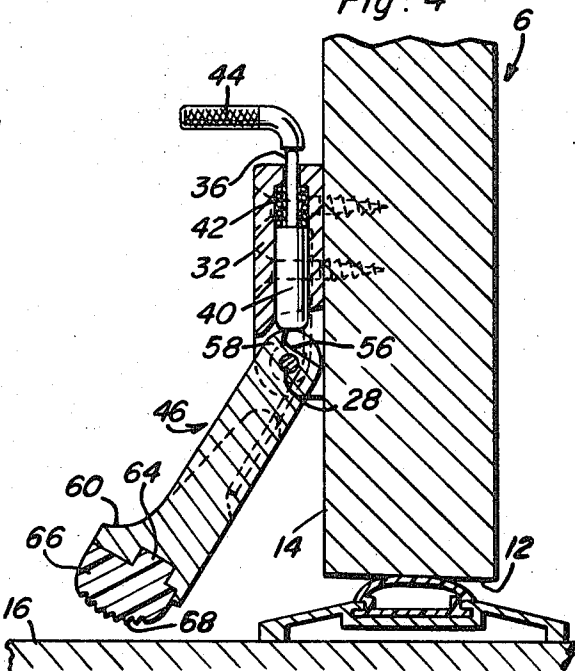


Fig. 4



OCCUPANT SAFEGUARDING DOOR STOP

This invention relates to an occupant safeguarding door stop or check which lends itself to reliable use on the lower edge and corner portion of a swinging door and has to do, more particularly, with a unique adaptation characterized by a mounting base or bracket, a pivoted depending foot-equipped leg, and latching and retaining means which well serves the purposes desired.

A significant aspect of the concept which may well be taken into account and stressed at the outset is the fact that the door stop or door check will effectually cope with and preclude the entrance of an unauthorized person even through the door is in a partially open position. It follows that the invention disclosed allows the occupant to partially open the door to an extent sufficient to observe the caller and, assuming that entry is to be denied, to immediately and forcibly engage the door stop with the floor in a manner that any effort of the caller to gain entry will be prevented. In fact, physical force against the door functions to stabilize rather than weaken the safeguarding purpose of the door stop.

Assuming that limited background information will assist the reader in assessing and evaluating the present invention attention is directed to the door stop of James H. Gray revealed in U.S. Pat. No. 3,141,188. The reader may also desire to note that the idea of a foot pressed and actuated wedge-type door check is shown in U.S. Pat. 2,737,408 granted to Pierce Sperry.

Briefly the herein revealed safety door stop is characterized, by a readily applicable securely retained mounting bracket or base which has a flat face capable of being operatively screwed or otherwise mounted on the interior of the door adjacent to but above the level of the lower edge and an adjacent corner portion. A companion as well as complementary rigid leg member is provided and is aligned with and poised below the level of the base and has a central upper edge portion coordinated and hingedly joined to a lower portion of the base and is fashioned into and provides a laterally directed easy-to-press foot portion. This foot portion has a suitably contoured upper surface capable of being readily and forcibly pressed and actuated toward the floor by the foot of the user. It also has a horizontal bottom surface provided with and in fact covered by a compressibly resilient floor-contacting anti-slipping shoe or pad. Spring means is operatively mounted on the flat face of the bracket or base unit and normally functions to elevate and disengage the foot from the floor surface.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

FIG. 1 is a view in perspective showing a door frame, part of a floor and a fragmentary portion of a closed but inwardly opening swingably mounted door provided on the lower right-hand corner portion with an occupant safeguarding door stop constructed in accordance with the invention, the friction pad or shoe being shown firmly engaged with the floor.

FIG. 2 is an elevational view of the door stop by itself.

FIG. 3 is an enlarged view with parts in section and elevation taken approximately on the plane of the vertical section line 3—3 of FIG. 1, looking in the direction of the indicating arrows.

FIG. 4 is a view like FIG. 1 showing the manner in which the latch pin functions to permit the foot-equipped leg to automatically spring in and up to a released position.

With reference first to FIG. 1 the door is denoted at 6 and has an edge 8 hinged as at 10 so that said door is swingable in a horizontal plane on a vertical axis inwardly into the room. The bottom edge of the door is designated at 12, the lower right-hand corner portion at 14 and the floor at 16.

Referring now to the upper unit it will be observed that it comprises a mounting base 18, also hereinafter referred to as a bracket. This bracket comprises a one-piece block-like body of rigid material which has a substantially flat or planar outward surface 20 which is applied to the door surface, that is, the lower right-hand corner portion 14. The body portion of the bracket has suitable holes drilled therein to accommodate screw-threaded headed fasteners 22 applied in the manner illustrated in FIGS. 1, 3 and 4. The upper marginal edge portion of the bracket is denoted at 24, the lower edge portion being provided with a pair of like suitably spaced horizontally disposed hinge pin knuckles 26, in which a suitable hinge pin or pintle 28 is cooperatively mounted. It will be noted that a median surface portion of the plate or body, that is the portion 30 (FIG. 1) is provided with a vertically disposed inwardly projecting part which is designated here as a socket member 32. This socket member is convexly rounded and has its upper end flush with the upper edge 24. The hollow socket portion of the socket member is denoted by the numeral 34, said socket being closed at the upper end and having its lower end opening in communication with the median part of a notch 35 which is perhaps best shown in FIG. 2. The upper end portion of the socket member is provided with a bore 36 which serves to accommodately pass the slidable and turnable stem portion 38 of a spring-loaded latch pin 40. The pin proper and stem provide a satisfactory shoulder to accommodate one end portion of the confined coil spring 42. The upper end of the stem projects through and beyond the opening 36 where it is provided with a right-angularly directed suitably knurled handle 44 which can be either operated by hand or with the toe of the user's foot. Normally the coil spring 42 serves to force the lower end of the latch pin down and into the aforementioned clearance notch 35. It follows that the mounting base or bracket 18 is of one-piece construction and provides the necessary body or plate portion, fastening means, aligned hinge pin knuckles 26 and the hinge pintle 28 fitted in said knuckles. In addition it embodies the aforementioned convexly mounted vertically disposed socket member which is properly oriented with the knuckles 26 and serves to accommodate the spring-loaded L-shaped retaining latch.

The aforementioned foot-equipped leg provides the second unit and it is denoted by the numeral 46. This unit is also generally block-like in overall appearance and is proportional and in keeping in size and appearance with the mounting or bracket 18. As brought out in FIG. 2 this leg has a generally flat or planar surface

48 cooperable with the surface 20. The upper edge portion is convexly rounded as at 50 and the central area thereof is provided with an upstanding lug 52 which fits into the aforementioned clearance notch 35 as also shown in FIG. 2. It will be evident that the upper edge portion of this lug is convexly rounded as at 54 and that the central portion thereof is provided with a transverse latch accommodating or keeper recess which is denoted at 56. This recess does not extend entirely across the surface 54 but terminates short of the closed end, that is the portion 58 which provides a detent or limit stop shoulder for the cooperable end portion of the spring-loaded latch pin 40. This is particularly evident in FIGS. 3 and 4. The lower portion of the leg is increased noticeably in cross-sectional thickness and is contoured to provide a ledge-like surface 60 which can be conveniently pressed upon by the foot of the user when desiring to force the foot-equipped leg from the elevated normal spring-pressed position shown in FIG. 4 to the down safeguarding or door locking position shown in FIG. 3. The bottom side of the footpiece is provided with a channel or groove 62 to accommodate a rib 64 on the upper edge of a compressibly resilient and satisfactorily durable pad 66. This pad has anti-slipping teeth 68 which serve best in the manner shown in FIG. 2, that is when the foot-equipped leg is in its down door-locking position. As is evident from the views of the drawing the foot-equipped leg is not only hingedly mounted and swingable from the elevated or released position shown in FIG. 4 to the down locking position shown in FIG. 3, appropriate spring means is employed to facilitate moving the leg 46 from the position shown in FIG. 3 to the position shown in FIG. 4 and this means preferably comprises a coil spring 70 of appropriate tension which as shown in FIG. 2 is coiled around an end portion 72 of the hinge pin and which has one straight terminal end portion 74 extending up and seated in a depression 76 provided therefor. The other end portion 78 extends down below the level of the hinge pin and across the surface 48 where it is securely seated in an appropriately shaped depression or pocket 80 which is provided therefor. Therefore the tendency of the spring means is to exert force against the unit 46 for raising or lifting the same.

The broad and properly contoured surface portions 60 of the foot-equipped leg 46 provide an outstanding or laterally extending foot portion which facilitates quick and emergency application of the leg-equipped foot when it must necessarily be brought into use to guard against unauthorized entry of an undesirable caller.

As is evident from the views of the drawing and particularly FIG. 4, the normal elevated or raised position of the foot-equipped leg unit 46 is shown in FIG. 4, this position being attained by way of the anchored spring means 70 with its cooperating terminal end portions 74 and 78. With the unit 46 in this raised or elevated position the spring-loaded latch pin is projected upwardly and virtually enclosed within the socket means 34. Assuming that upon opening the door the occupant spots an unwanted caller, the situation calls for an emergency step. The toe portion of the desired shoe or foot is pressed against the foot-equipped leg 46 and this part is jammed forcibly down on the floor so as to bring the anti-slipping shoe 66 into the door-locking position illustrated in FIG. 3. With the parts in this position and relationship it will be evident that any pressure from

the outside tending to force the door inwardly will function to jam the anti-slipping shoe against the floor surface 16. At the same time the spring-loaded latch pin drops down into the recess 56 behind the shoulder 58 and stabilizes the hinge joint making it even more difficult to force the door open.

When the handle 44 of the latch means is engaged and lifted and the coil spring 42 is retracted, the latch pin is likewise retracted into its socket and the spring means 70 then comes into play again to swing the leg and foot unit 46 from its down to its up position.

A studied consideration of the views of the drawing individually and conjointly will enable the reader to obtain a clear understanding of the construction not only of the individual main units 18 and 46 but the spring-loaded latch pin and leg-lifting spring means shown. Such being the case, it is believed that a more detailed description of the disclosure is unnecessary.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. For use on the interior surface of the lower edge portion of a vertically hinged inwardly openable door: occupant safeguarding door stop means comprising, in combination, a base capable of being securely mounted on said interior surface in a position adjacent but above the level of said lower edge portion, a complemental rigid leg member aligned with said base and having an upper portion coordinated and hingedly joined to a lower portion of said base and having a laterally directed relatively broad foot portion, said foot portion having a contoured upper surface capable of being forcibly pressed and readily actuated toward the floor by foot applied pressure, and having a bottom surface provided with and covered by a compressibly resilient floor contacting anti-slipping pad, spring means mounted on said base, said spring means constantly contacting and exerting yieldable leg-lifting pressure on said leg and foot portion in a manner to elevate and release the same from frictional engagement with the floor, said mounting base comprising a bracket embodying a rigid attaching and supporting plate having an outwardly disposed face adapted to be superimposed upon and securely fastened to an indoor surface of said door, an inwardly disposed face having a pair of spaced horizontal hinge pin knuckles and an integral outstanding vertically disposed socket member positioned in a locale between and at right angles to the respective knuckles, said knuckles and complemental socket member conjointly defining a downwardly opening notch, a hinge pin supported in said knuckles and having a median portion bridging said notch, said socket member having a socket formed therein and extending therethrough, the lower end of said socket being aligned and communicating with said notch, a spring-loaded latch pin slidably operable in said socket, and a foot-equipped leg having an upper edge provided with a lug which is interposed between said knuckles and disposed in said notch and pivotally mounted on said hinge pin, said lug having a recess for said latch pin and a complemental shoulder with which an end por-

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tion of said latch pin is cooperable, and spring means cooperable with said plate, leg and hinge pin and functioning to exert yieldable lifting pressure on said foot-equipped leg, said latch pin projecting upwardly beyond the upper end of said socket member and terminating upwardly in an angulated laterally directed handle.

2. The door stop defined in and according to claim 1 and wherein said spring means comprises a coil spring of requisite tension surrounding and mounted on a predetermined portion of said hinge pin, said coil spring having one terminal end portion aligned with and seated in a depression provided therefor in a cooperating surface of said bracket, said spring also having a second terminal end portion which is aligned with and

6

seated in a depression provided therefor in a coating surface of said foot-equipped leg.

3. The door stop defined in and according to claim 2 and wherein said foot-equipped leg comprises a block-like body member whose upper edge is convexly rounded and which has a lower edge portion contoured and fashioned into and providing an easy-to-operate footpiece, said bottom portion being provided with a compressibly resilient pad and said pad constituting an anti-slipping shoe.

4. The combination of claim 1 wherein said leg is of fixed length from its axis of pivotal movement to said compressibly resilient floor contacting pad.

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