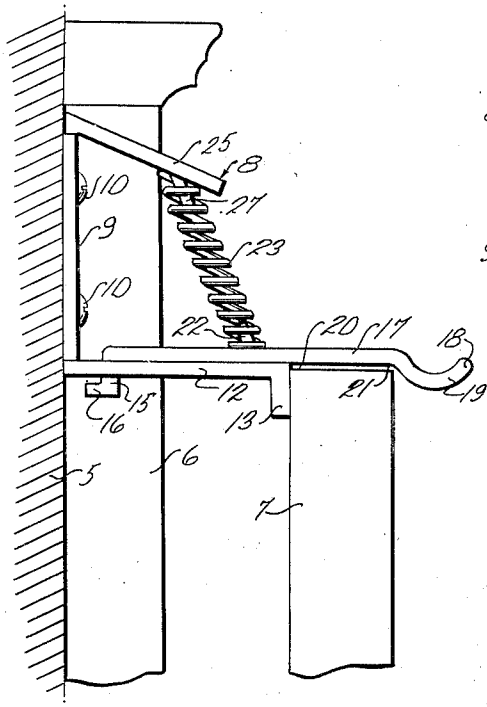
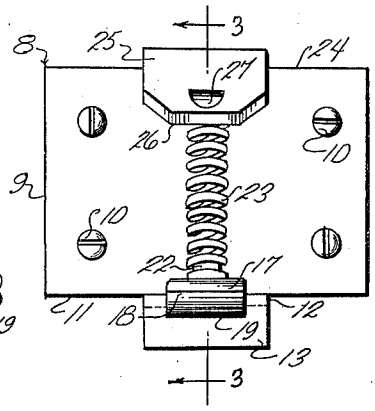
April 18, 1950 E. V. LAWLESS 2,504,540

RELEASABLE DOORSTOP

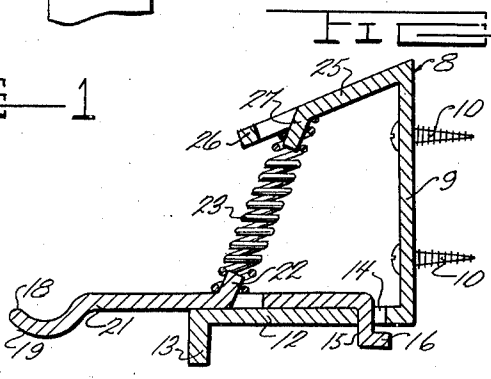
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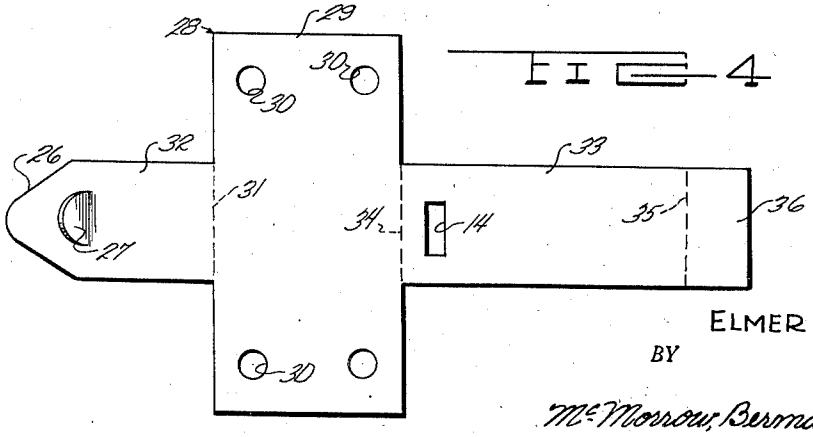
FIG—1



FIG—2



FIG—3



FIG—4

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RELEASABLE DOORSTOP

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4 Claims. (Cl. 292—78)

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This invention relates to door checks and stops, and particularly to a releasable door stop.

The main object of my invention is to provide stop means for a door which engages with the top of the same upon opening the door, and retains it in attained position and yet allows the door to be readily released and closed at will.

Another object is to provide a stop having a resiliently-urged latch member mounted for limited movement sufficient to engage with the upper edge of a door and stationary stop means for determining a definite open position of the door.

A further object is to make a door stop of the indicated character consisting of two sheet metal parts and a spring associated therewith, one part being adapted to be permanently fixed in position, and the other part movable thereon but restrained by the spring.

It is also an object to have such a door stop which is simple in form, reasonable in cost and certain to operate, and, in addition, which requires no attention and is not likely to get out of order.

Other objects and advantages of the invention will appear in further detail as the specification proceeds.

In order to facilitate ready comprehension of this invention for a proper appreciation of the salient features thereof, the invention is illustrated on the accompanying drawing forming part hereof, and in which:

Figure 1 is a fragmentary side elevation of the upper part of a door frame and of a door in open position adjacent thereto, as well as a portion of the wall adjacent to the door frame which is shown in section, the wall having secured thereto beside the door frame the releasable door stop engaging the door and made according to the invention so as to embody the same in a practical form;

Figure 2 is a front elevation of the door stop of Figure 1, as seen from the right in the latter figure;

Figure 3 is a vertical section taken on line 3—3 in Figure 2;

Figure 4 illustrates a blank from which the stationary member of the two main parts of the door stop is formed.

In the views the same reference numerals indicate the same or like parts.

It is quite common to use cleats or blocks, wedges and the like for engaging beneath doors to hold them open, especially when the doors have springs tending to close them, and various

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makeshifts have been resorted to for the purpose of retaining doors in open position. Such devices are usually mere makeshifts and have the great disadvantage in common that they are loose objects on the floor which may be lost or over which some one may trip, and in addition, are sometimes unsightly and must always be definitely handled or attended to when setting them in position or releasing the door. Sometimes such door stops are very uncertain and slip, and thus allow the door to close inadvertently and are troublesome in various ways.

Upon considering this problem, it has occurred to me that a door stop can well be a convenient device permanently mounted upon a wall in effective position to engage with the upper part of the door so that the floor is entirely clear and also so designed as to be operative automatically to hold the door when the latter is opened as far as the stop will allow and also effective to release the door when desired. As a result, I have succeeded in producing a door stop which requires no attention and which allows the door to be released at will, which I shall now proceed to describe more fully.

Hence, in the practice of my invention, and referring again to the drawing, upon a wall 5 at an appropriate distance from a door frame 6 and at the proper height with respect to a door 7 is secured a stationary bracket generally indicated at 8. This bracket primarily includes an attachment plate 9 substantially rectangular in shape and of greater width than height and secured to wall 5 by means of four screws 10, 10, etc. From the lower edge 11 of plate 9 extends a rigid horizontal arm 12 substantially at right angles with plate 9 terminating at the outer end in a downwardly-bent stop member 13 spaced a predetermined distance from wall 5 to determine the properly-located open position of the door 7. The mentioned arm 12, with its depending stop 13, is relatively narrow with respect to the width of plate 9, and extends forwardly from the intermediate portion of the mentioned lower edge of the plate.

In the horizontal arm 12 but a short distance forwardly of plate 9 is a transverse slot 14 through which extends a depending tongue 15 in a downward direction, which at the lower end terminates in a rearwardly-directed retaining lug 16, both members forming a rear anchorage for a forwardly-extending latch member 17. This latch member is of substantially the same width throughout its length, but relatively narrower than arm 12 upon which it rests normally, and at

the forward end extends beyond stop 13 and terminates in a downwardly and then upwardly-curved contact finger 18. The latter curved finger 18 is adapted to engage with its under side 19 against the upper edge 20 of door 7 when the door is brought against the mentioned contact finger during opening thereof, the corner or point 21 at which the curvature of finger 18 begins on arm 17 being spaced a sufficient distance from stop 13 to accommodate the width of the door. It is self-evident that due to the presence of the depending tongue 15 and the rearwardly-extending retaining lug 16, the inner or rear end of latch member 17 will normally be retained in the slot 14, but will allow the outer end terminating in the curved finger 18 to be raised as though the latch member were pivotally connected at the rear end to rigid arm 12, and whenever lifted coming to rest upon this arm, after release.

In order to bias latch member 17 downward upon arm 12 to provide effective operation, intermediate the ends thereof a lug 22 is struck upward to project above the surface thereof and provide a locating point for the lower end of spring 23 normally bearing down resiliently on latch member 17. From the upper edge 24 of plate 9 intermediate the sides thereof extends an inclined spring retainer 25 within the lower outer end 26 thereof having a depending lug 27 struck down from the main body portion of the same to provide an upper centering member for spring 23, thus confining the spring between the two lugs 22 and 27 under compression and thereby biasing latch member 17 down upon the upper surface of rigid arm 12, of bracket 8.

The arrangement is such that when the upper edge 20 of the door is swung against the lower curved surface 19 of the contact finger 18, the latter will ride up on the upper edge or top of the door with latch member 17 raised against the pressure of spring 23 until the door has reached stop 13 when the curvature of finger 18 terminates at the point 21 along latch member 17 and allows the latter to drop into place so that the door is confined between the curved portion of contact finger 18 and stop 13. When the force of spring 23 is sufficient to hold the door in place, this, however, is not sufficient to prevent the door from being pulled away from stop 13 by hand, which is readily done, and when free from finger 18, the door may be readily closed again and yet operation of the stop assembly described is performed from start to finish without attention or adjustment and without any loose parts lying about the floor or in any way causing inconvenience.

The main bracket 8 is preferably made from a blank indicated at 28 in Figure 4, in which the blank is substantially cruciform with the main plate 29 thereof provided with four holes 30, 30, etc., for receiving screws 10, 10, and when all the parts are bent into position, this plate portion 29 forms the main plate 9 by which the bracket is attached to the wall 5. At line 31, the plate section 32 is bent to form an acute angle with plate portion 29, and then forms the spring-retaining member 25, while the upper spring-centering lug 27 is partly stamped through plate section 32. At the other side of plate member 29, the section 33 is bent at line 34 to form the rigid arm 12, and the latter has its outer end bent along line 35 to form the stop 13 thus formed from the end 36 on plate section 33. The latter has the transverse slot 14 punched through the same to receive the anchoring tongue 15 with its retaining lug 16 of the latch plate. Naturally, the bracket 8 and latch member 17 may be made of metal, such as steel, sheet iron, brass, or any other metal or alloy that will serve the purpose, while the spring 23 is either steel or bronze, but both the bracket and the latch member may also be made of cast metal if so desired.

Manifestly, variations may be resorted to and parts and features may be modified or used without others within the scope of the appended claims.

Having now fully described my invention, I claim:

1. A releasable door stop including a bracket adapted to be secured to a wall adjacent to a door when the latter is in open position, an arm extending rigidly upon the bracket toward the edge of the door substantially at right angles to the surface thereof in the open position, an angularly-bent stop portion on the arm forming a stop against which said door engages in said open position, an elongated latch member normally disposed along said arm and extending a distance beyond the stop portion thereof, a curved contact finger upon the outer free end of the latch member adapted to engage with and be shifted by the edge of the door during opening of the latter, the inner portion of the contact finger being spaced a sufficient distance exteriorly of the stop member on said arm to accommodate the thickness of the door between said finger and said stop member, means loosely connecting the rear or inner end of said latch member to the rear portion of said arm and allowing the latch member to be moved a limited distance from the outer end of said arm, and resilient means operatively connected to said latch and said bracket for biasing said latch member toward said arm.

2. A releasable door stop including a bracket adapted to be secured to a wall adjacent to a door when the latter is in open position, an arm extending rigidly upon the bracket toward the edge of the door substantially at right angles to the surface thereof in the open position, a depending angularly-bent stop portion on the outer end of the arm forming a stop against which said door engages in said open position, an elongated latch member normally disposed longitudinally upon said arm and extending a distance beyond the stop portion thereof, a curved contact finger rigidly disposed upon the outer free end of the latch member adapted to engage with and be shifted by the edge of the door during opening of the latter, said contact finger extending arcuately downward and then upwardly with the inner portion thereof being spaced a sufficient distance exteriorly of the stop member on the arm to accommodate the thickness of the door between said curved contact finger and said stop, means loosely connecting the rear or inner end of said latch member to the rear portion of said arm and allowing the latch member to be moved a limited distance from the outer end of said arm, and spring means having one end operatively connected to said latch member and having the other end operatively connected to said bracket for biasing said latch member toward said arm.

3. A releasable door stop including a bracket adapted to be secured to a wall adjacent to a door when the latter is in open position, an arm extending rigidly upon the bracket toward the edge of the door substantially at right angles to the surface thereof in the open position, a

depending angularly-bent stop portion on the outer end of the arm forming a stop against which said door engages in said open position, an elongated latch member normally disposed longitudinally upon said arm and extending a distance beyond the stop portion thereof, a curved contact finger rigidly disposed upon the outer free end of the latch member adapted to engage with and be shifted by the edge of the door during opening of the latter, said contact finger extending arcuately downward and then upwardly with the inner portion thereof being spaced a sufficient distance exteriorly of the stop member on the arm to accommodate the thickness of the door between said curved contact finger and said stop, means loosely connecting the rear or inner end of said latch member to the rear portion of said arm and allowing the latch member to be moved a limited distance from the outer end of said arm, a spring-centering lug fixed upon the intermediate portion of said latch member, a projecting portion upon said bracket terminating in another spring-centering lug, and a helical compression spring mounted between said latch member and said projecting portion with the ends thereof encircling both centering lugs.

4. A releasable door stop including a bracket adapted to be secured to a wall adjacent to a door when the latter is in open position, an arm extending rigidly upon the bracket toward the edge of the door substantially at right angles to the surface thereof in the open position, a depending angularly-bent stop portion on the outer end of the arm forming a stop against which said door engages in said open position, an elongated latch member normally disposed longitudinally upon said arm and extending a distance

beyond the stop portion thereof, a curved contact finger rigidly disposed upon the outer free end of the latch member adapted to engage with and be shifted by the edge of the door during opening of the latter, said contact finger extending arcuately downward and then upwardly with the inner portion thereof being spaced a sufficient distance exteriorly of the stop member on the arm to accommodate the thickness of the door between said curved contact finger and said stop, said arm having a slot in the rear portion thereof, a depending tongue on the inner or rear end of the latch member extending through the slot and terminating on the other side thereof in a retaining lug, a spring-centering lug upon the intermediate portion of said latch member, a forwardly and downwardly-inclined projecting spring-retaining member upon the upper portion of said bracket, a second spring-centering lug upon said spring-retaining member adjacent to the outer end thereof and directed toward the first-mentioned spring-centering lug, and a helical compression spring mounted between said latch member and said spring-retaining member with the ends thereof encircling both spring-centering lugs.

ELMER V. LAWLESS.

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