Nov. 22, 1966 T. FERRANTE 3,287,050

TWO-WAY ADJUSTABLE BRACE FOR MAINTAINING DOORS IN THE FULLY OPENED POSITION

Filed March 24, 1965

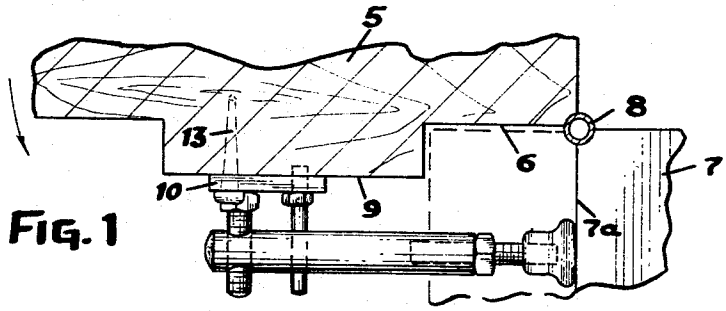


FIG. 1

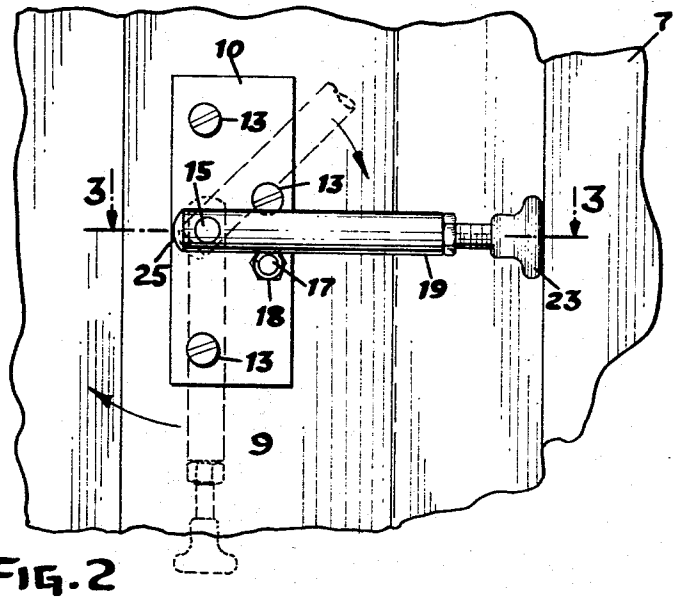


FIG. 2

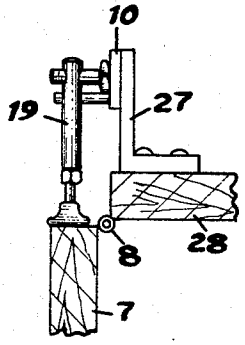


FIG. 6

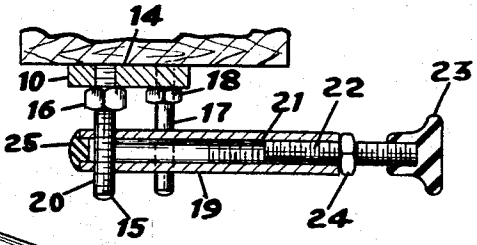


FIG. 3

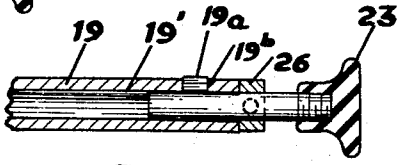


FIG. 5

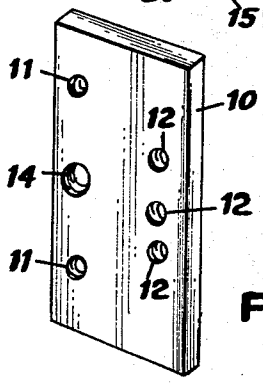


FIG. 4

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TWO-WAY ADJUSTABLE BRACE FOR MAINTAINING DOORS IN THE FULLY OPENED POSITION

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This invention relates to a stop device for swingable engagement with an edge of a door closure to maintain the door against inward closure and primarily with the type of doors that have spring actuated door checks attached thereto.

The invention comprises a swingable stop device that is connected to a hinge pin, carried by a face of the door jamb and whereby the stop device is swingable to engage the side of the door in the closed position and, when the door is swung outwardly, the stop device will drop downwardly to engage the inner edge of the door to maintain the door in the open position.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout.

In the drawings:

FIGURE 1 is a sectional view through a door jamb and a hingedly connected door, having the invention applied thereto,

FIGURE 2 is a face view of the door jamb and showing the invention in a position to brace the door in the open position,

FIGURE 3 is a longitudinal section taken substantially on line 3—3 of FIGURE 2,

FIGURE 4 is a perspective view of a mounting plate embodied in the invention,

FIGURE 5 is a fragmentary longitudinal sectional view illustrating a modified form of adjusting means for the stop device, and

FIGURE 6 is a horizontal sectional view illustrating the mounting of the stop device.

Referring specifically to the drawings, there has been illustrated a conventional door jamb **5**, recessed at one side as indicated at **6** to form a closure opening for a door **7**, through the medium of a conventional hinge **8**.

Fixed to the face of the door jamb, illustrated at **9**, is a rectangular face plate **10** apertured at **11** and **12** to receive fastening screws **13**. A threaded opening **14** is provided in the plate **10**, intermediate its length to threadedly receive a threaded pivot pin **15**, shown more particularly in FIGURE 3. The pin **15** is engaged into the opening **14** and a lock nut **16** is engaged therewith to securely lock the pin **15** to the plate **10**. The threaded apertures **12** adjacent the opposite side of the plate **10** threadedly receive a stop pin **17**, having a lock nut **18** thereon and the pin **17** extends forwardly from the plate **10** to constitute a stop in one direction for a tubular stop device, to be described. The apertures **12** constitute a mounting means for the stop pin **17** and also an additional stop screw **13**.

Threadedly connected to the pivot pin **15** is an elongated tubular stop **19**, having one end apertured and threaded, as indicated at **20** for rotatable and threaded engagement with the pin **15**. The tubular stop **19** is also partially threaded at its opposite end, as indicated at **21** to threadedly receive a threaded rod **22** that is adjustable with the tube **19** and projects outwardly from the tube **19** to moldably or threadedly receive a preferably rubber bumper **23**. The rod **22** also carries a lock nut **24** whereby the bumper **23** may be axially adjusted

with respect to the tube **19** and to adjust the bumper with respect to the door **7**. The opposite end of the tube **19** is open and is normally closed by a yieldable plug **25**. The apertures of the plate **10** upon one side are above and below the apertures **14** for the pin **15** and constitutes the threaded mounting for the pin **17** that is threaded into either one of the threaded apertures **12** so that the device will be reversible from one side of the jamb **5** to the other, depending upon the direction in which the door **7** is hinged.

In this form of the invention, the plate **10** is disposed upon the face **9** of the jamb in accordance with the particular opening position of the door and the screws **13** are inserted through openings in the face **9** to rigidly mount the plate **10** in a rigid position against shifting when the device is in the operative position. The bumper **23** is adjusted through the medium of the rod **22** so that the tube **19** when in the operative position will rest upon the stop pin **17** in a horizontal position and, when the device is to be disposed in a position for an oppositely opening door, the plate **10** is mounted upon the jamb face **9** and in an inverted position so that the tube **19** and the stop **23** may be swung toward and from the door **7** and when inverted, the stop pin **17** will engage in the next upper opening **12** and the additional fastening screw **13** will then engage through the adjacent opening **12**. In the use of the device, the plate **10** is mounted upon the face of the jamb **9** in accordance with the mounting of the door **7** and secured by the fastening screws **13**. The pivot pin **15** is threaded into the opening **14** and locked against movement by the lock nut **16**. The tube **19** is threadedly engaged with the pin **15** by swinging the tube **19** around the pin **15** until the tube **19** is in a position to brace against the edge **7***a* of the door **7**. A stop pin **17** is then threaded into a lower opening **12** and constitutes a stop means for the tube **19** and the bumper **23** when in the bracing position for the door. In a normal inoperative position, the tube **19** and the bumper **23** are swung around the pivot pin **15** and is suspended in a vertical position, as indicated in dotted lines in FIGURE 2. With the door in the fully closed position, the tube **19** is swung upwardly and around the pivot **15** to a position where the bumper **23** lies against the inner face of the door then, when the door is manually shifted outwardly, the tube **19** and the bumper will drop downwardly by gravity and rest upon the pin **17** at which position, the bumper **23** will engage the rear edge of the door, as shown particularly in FIGURE 1 and the door will then be maintained in the fully open position, as indicated. When the door is to be released, the tube **19** is swung upwardly and over the pin **15** and dropped downwardly to the position illustrated in dotted lines in FIGURE 2 and the upper opening **12** may also receive a screw **13** to additionally support the plate **10** against movement.

In FIGURE 5 there has been illustrated a slightly modified form of the invention wherein the tube **19** has a plain bore **19'** and a plurality of threadedly transverse openings **19***a* for the reception of stop screws **19***b* that engage the unthreaded surface of a rod **26**, carrying the bumper **23** so that the bumper and the rod **26** may be adjustable in accordance with the door mounting and also to securely hold the rod **26** against turning movement or axial movement with respect to the bore **19'**.

There has been illustrated in FIGURE 6 a further modified mounting means for the device wherein the plate **10** is mounted upon a bracket **27**, that is fixed to the inner side of a panel member **28** in such cases where the door is not provided with a jamb member **5** and the structure basically is the same as in the first form of the invention, and the door **7** is hingedly connected at **8** to the panel member **28**.

It will be apparent from the foregoing that a very novel

means has been provided to securely brace the door in a fully open position and, adjustable with respect to the bumper **23** and whereby the bumper is held in the operative position by the pin **17** and swingable to the inoperative position as shown in FIGURE 2.

It is to be understood that the invention is not limited to the precise construction shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

I claim:

1. A door stop for outwardly swinging hinged doors whereby to maintain the door in a fully opened position, the device comprising a tubular arm that is hingedly connected to a portion of a door jamb and whereby the arm may be swung to engage the inner edge of the door, the arm being swingable in an inoperative position to be freely suspended from the pivot, the arm at its free end being provided with an adjustable yieldable bumper that has engagement with the edge of the door and means to prevent the arm from dropping downwardly when engaged with the door.

2. An adjustable brace device for connection to a door jamb and whereby to maintain an outwardly opening door in a fully opened position, the device comprising a base plate that is secured to the door jamb, a pivot element connected to the plate, a brace arm of tubular construction that is apertured to engage the pivot and whereby the brace arm is swingable in a vertical plane, the brace arm having an adjustable member extending from its opposite end and with the adjustable member carrying a yieldable bumper, the plate also being provided with a stop pin that is engaged by the arm whereby to limit the swinging movement of the arm in one direction to engage the bumper with a rear edge of the door, the arm also being swingable about the pivot to be freely suspended from the pivot when in the inactive position.

3. The structure according to claim **2** wherein the pivot comprises a threaded stud that is fixed to the plate and with the apertures of the arm being also threaded and engaged with the threaded stud.

4. The structure according to claim **2** wherein the bumper is adjustable connected to a threaded bore of the arm, the brace being adjustable to engage oppositely

opening doors, the plate being apertured adjacent its upper and lower end and in alignment with the pivot and additional threaded apertures adjacent the opposite side of the plate, one aperture receiving a threaded stop pin while the opposite aperture receives a fastening screw for the plate, the plate being reversible so that the stop pin is always positioned to be engaged by the arm when the arm is in a horizontal position and to dispose the bumper in engagement with the edge of the door.

5. The structure according to claim **4** wherein the arm is tubular to receive a rod at its free end, the said rod being fixed to the bumper and a set screw threaded through an opening of the arm to fix the rod in various positions of adjustment.

6. The structure according to claim **1** wherein the brace arm is pivotally connected to a bracket that is fixed with respect to the opening and an outwardly swing door.

7. The structure according to claim **2** wherein the brace arm is tubular and open at its opposite ends, the arm at one end being threadedly connected to a threaded stud whereby the arm is swingable in a vertical plane to and from an operative bracing position with respect to the door, the arm adjacent its pivotal end being provided with a closure plug, the arm at its opposite end receiving an adjustable rod that carries the bumper, the said brace in its initial engaging position with the door adapted to be swung upwardly and over and to contact the bumper with the inner side of the door and, when the door is swung fully open, the bumper drops downwardly to engage the rear edge of the door.

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