Jan. 23, 1934. A. J. WECKER 1,944,382

AUTOMATIC DOORSTOP

Filed March 30, 1931

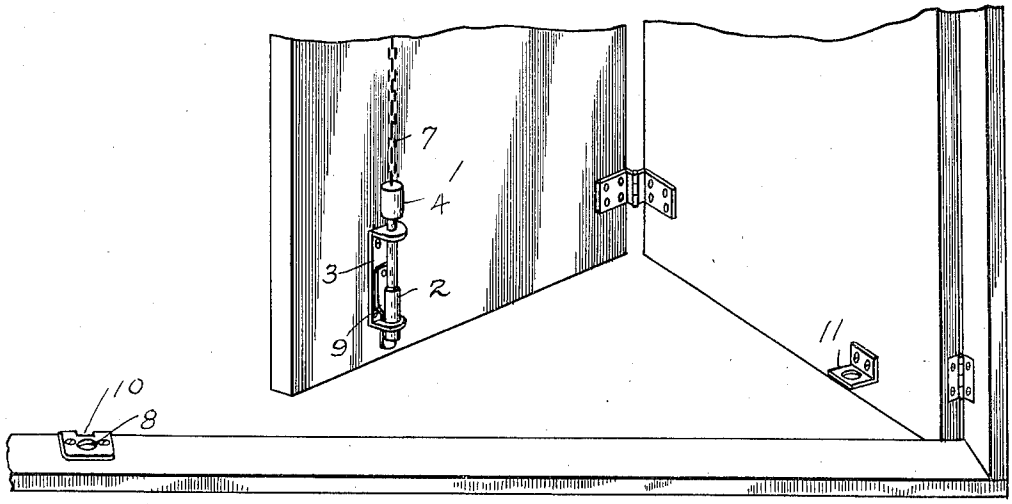


Fig. 1.

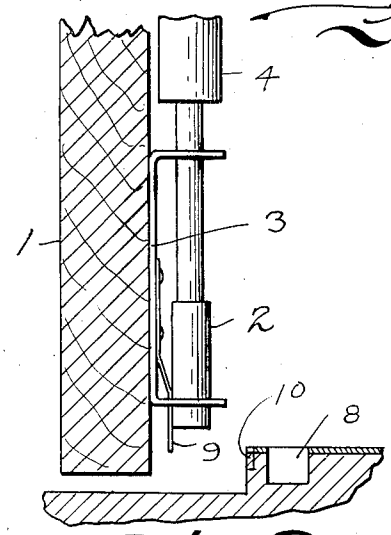


Fig. 2.

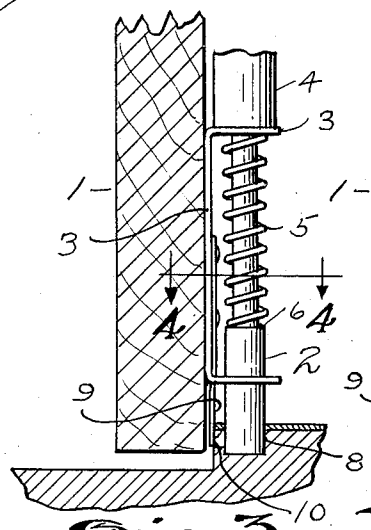


Fig. 3.

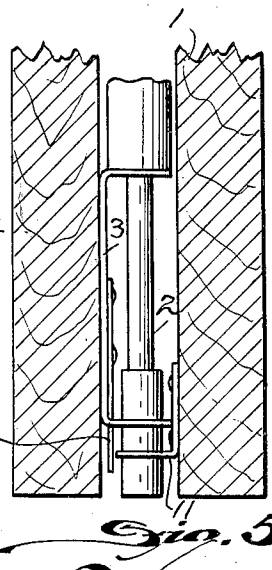


Fig. 5.

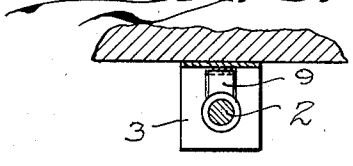


Fig. 4.

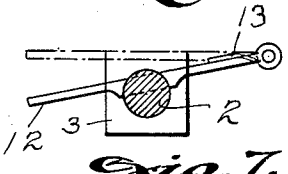


Fig. 7.

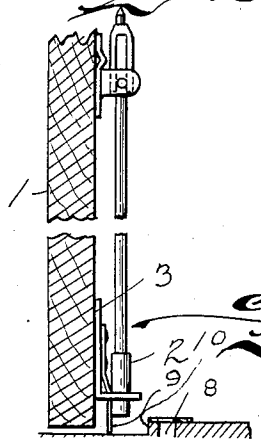


Fig. 6.

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AUTOMATIC DOORSTOP

Andrew J. Wecker, Dayton, Ohio

Application March 30, 1931. Serial No. 526,413

1 Claim. (Cl. 292—334)

This invention relates to door stops or bolts and particularly to a locking device which is held inoperative during to and fro movement of the door but which is automatically released for locking engagement as the door reaches its final position of adjustment, and to a duo-functional application of the device to not only secure the closure in closed position but to hold it when open against closing movement.

The present invention is especially applicable to garage doors, barn and warehouse doors and the like but is not limited thereto, but may be applied to windows or other closures, either swinging or sliding.

In the present construction there is employed a reciprocatory bolt engageable in a keeper when the door is in its finally adjusted open or closed position, or both, and which upon being withdrawn from the keeper is held in its retracted position by a suitable detent which is automatically tripped or disengaged as the door approaches its final position of adjustment, to permit reengagement of the bolt with its keeper.

The object of the invention is to simplify the construction as well as the means and mode of operation of door stops and closure fasteners, whereby they will not only be cheapened in construction but will be more efficient in use, reliable in operation, automatic in action, and unlikely to get out of repair.

A further object of the invention is to provide a duo-functional stop or fastener adapted to hold a door or other closure open as well as closed.

A further object of the invention is to provide detent means for holding the stop or fastener in inoperative or retracted position after being disengaged until the door is adjusted to its final open or closed position as the case may be.

A further object of the invention is to provide an automatic release for the retracted locking bolt or fastening device which will be quite simple in construction and inexpensive, and which will be operated by the final movement of the door or other closure.

A further object of the invention is to enable the automatic locking of a door from the outside, thus avoiding the necessity of re-entering the building, which is especially convenient and desirable when applied to garage doors.

A further, but none the less important, object of the invention is to provide a door stop or fastener, the parts of which are so designed and arranged as to be capable of being quickly and easily installed by an unskilled person.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation, or their equivalents, as hereinafter described and set forth in the claim.

Referring to the drawing wherein are shown the preferred, but obviously not the only forms of embodiment of the invention, Fig. 1 is a perspective view of a portion of a folding garage door to which the present invention has been applied. Fig. 2 is a side elevation of the device as the door approaches its closed position. Fig. 3 is a similar view showing the bolt or locking device engaged. Fig. 4 is a sectional plan view. Fig. 5 is a side elevation illustrating the door locked in its open position. Fig. 6 shows the automatic detent applied to the door stop device shown and described in my copending application, Serial No. 297,704, filed August 6, 1928, now Patent No. 1,808,393. Fig. 7 is a detail plan view of a further modification of the bolt detent means.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawing, 1—1 indicates a folding garage door, although it is to be understood that the invention is not so limited but may be applied to any door or other adjustable closure. The door stop or fastening device comprises a reciprocatory bolt 2 mounted in a suitable guide bracket 3. The bolt 2 is illustrated as gravity operated, and to this end is shown provided with a weight or enlarged head 4. In lieu thereof or when the bolt is to be mounted in other position than substantially vertical, an actuating spring 5 may be interposed between the shoulder 6 of the bolt and the bracket 3 as indicated in Fig. 3. This enables the device to be used in reverse position at the top of a door. For conveniently lifting the bolt, a chain 7 is illustrated. In the closed position of the door the bolt operatively engages within a keeper 8 in the door sill to lock the door in closed position.

A detent is provided for temporarily holding the bolt 2 in its retracted position when disengaged from the keeper. As a simple but effective form of detent there is shown a spring finger 9 secured to the supporting bracket 3 and extending through the lower guide opening of the bracket beside the bolt as shown more particularly in Fig. 4. The guide opening in the bracket is enlarged sufficiently to accommodate the spring detent finger 9 and to permit it a limited flexing movement toward and from the bolt. The spring

finger bearing laterally against the bolt affords sufficient frictional engagement to hold the bolt retracted against gravity or against the tension of the spring 5 as the case may be.

The spring detent finger projects somewhat below the lower end of the bolt when the latter is retracted and in the final closing movement of the door the projecting portion of the detent finger engages a stop 10 in its path of movement which may be the side of the keeper or the door sill.

The engagement of the projecting end of the detent against the stop 10 as the door reaches its final position flexes the detent finger away from the bolt, thus releasing the latter which thereupon enters its keeper 8 under influence of gravity or the spring 5.

To hold the door open there is shown on the second section of the folding door 1 an auxiliary keeper 11 so positioned that the bolt 2 is engageable therewith, as shown in Fig. 5, when the door is in its extreme open position. The keeper 11 is so located that the end of the retracted bolt will pass above the keeper as the door reaches its final position of adjustment, and the protruding end of the detent finger will engage with the side of the keeper 11 as the operating stop, to effect release of the bolt which thereupon enters the keeper 11 to hold the door open as well as closed. A folding door 1 with the keeper 11 on one section thereof has been shown for illustrative purposes only, and it is to be understood that the keeper 11 may be mounted upon a stationary wall against which the door opens or upon a post or other suitable support. Likewise while the device has been illustrated as applied to a swinging door, it is equally applicable to sliding closures or other adjustable closures whatever may be their construction.

In lieu of the spring finger 9 there is shown in Fig. 7 a modification wherein a pivoted arm 12 is movable into and out of the path of the bolt 2. It is spring actuated by the spring 13 into such relation upon retraction of the bolt and is oscillated therefrom upon the closing of the door (or opening thereof) by its engagement with the stop 10.

The device will be found quite convenient in enabling a garage door to be locked upon the inner side upon the closing of the door from the outside, without necessity of re-entering the building and for securely holding the door open.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise the preferred form of several modes of putting the invention into effect and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claim.

Having thus described my invention, I claim:

A closure assembly including a pair of folding doors having a locking bolt engageable alternately with one of two keepers, one of which is engaged by the bolt when the doors are closed, the other of which is engaged when the doors are open, characterized by a spring frictionally engaging the bolt to hold the same in inoperative position during the swinging motion of the doors in each direction, said spring automatically engaging either keeper to release the bolt as the doors move into operative range of a keeper which permits the bolt to drop into the keeper engaged by the spring to lock the doors.

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