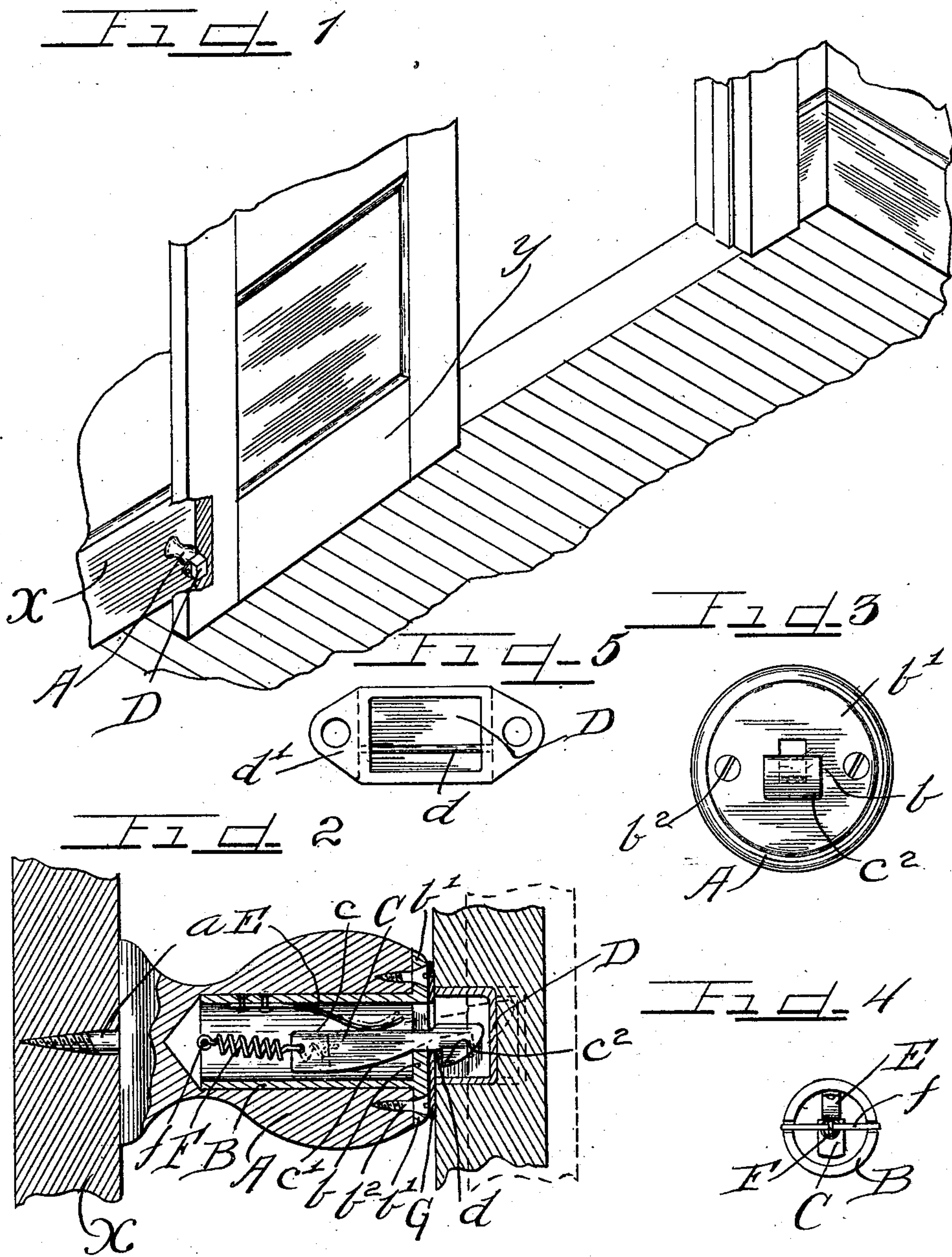


T. R. THORSEN.  
COMBINATION DOOR STOP AND CHECK.  
APPLICATION FILED DEC. 6, 1907.

903,243.

Patented Nov. 10, 1908.



WITNESSES

J. H. Angell.  
J. P. Hannah

INVENTOR

Theodore R. Thorsen.

BY

Charles E. Smith



# UNITED STATES PATENT OFFICE.

THEODORE R. THORSEN, OF CHICAGO, ILLINOIS.

## COMBINATION DOOR STOP AND CHECK.

No. 903,243.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed December 6, 1907. Serial No. 405,353.

*To all whom it may concern:*

Be it known that I, THEODORE R. THORSEN, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in a Combination Door Stop and Check; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Various forms of stops have been used for preventing doors from knocking against the walls when opened. These act more or less satisfactorily for that purpose but do not hold the door from swinging shut when impelled by the wind or from recoil due to the impact from the door striking the stop.

If not hung true on its hinges a door will not remain fully opened unless blocked. This causes annoyance and may prove a source of danger especially for one passing from an unlighted room to another of which the door is thought to be fully opened but has swung partly closed. Often too with double swinging doors it is desired to temporarily fasten them. This necessitates blocking the door or the use of one of the somewhat expensive door checks sometimes employed which must be manually set or adjusted to hold the door open. When desiring to close a door so held open it is first necessary to manually release the check and then close the door, this requiring two separate and distinct operations, each involving a waste of time and often necessitating an uncomfortable position in setting and releasing the checks.

It is an important object of this invention to provide a combination door stop and check which prevents the door striking the wall and which automatically engages and retains the door in fully opened position.

It is a very important object of this invention to provide a device of the class specified which by pulling on the door in the ordinary act of closing automatically releases the door permitting the same to close.

It is finally an object of this invention to provide a device of the class specified which stops the door and securely holds the same fully opened yet automatically releases at a gentle pressure in closing and which is simple and durable in construction, cheap to manufacture and neat in appearance.

The invention relates to the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a fragmentary detail illustrating the application and use of a device embodying my invention. Fig. 2 is an enlarged vertical longitudinal section of a device embodying my invention. Fig. 3 is an enlarged end elevation of the stop and check. Fig. 4 is an inner end view of the housing or sleeve removed from the stop. Fig. 5 is a front elevation of the keeper.

As shown in the drawings: A indicates the body of the stop which is of the usual or any preferred shape and may be constructed of any suitable material, conveniently of wood. A screw *a*, or equivalent is rigidly secured to the attaching end of the stop and by means of which the same is engaged to the wall or the base board X. Said stop is provided with a central longitudinal bore of suitable size to receive therein the housing or sleeve B. Said sleeve is closed at the outer end by an integral plate or head *b*, which affords a peripheral flange *b'* apertured to receive the screws *b*<sup>2</sup>, by means of which the housing is rigidly but removably secured to the stop. Automatic locking and releasing mechanism is provided within said sleeve comprising a dog or cam bar C, which extends through a slot in the head *b*, at about the middle of the head and is provided in the housing with a straight flat face *c*, and an opposite downwardly inclined cam face *c'*, which at its outer or narrower end rests in the slot in said head. The outer end of the dog or cam bar is provided with a right angled, downwardly and inwardly directed hook *c*<sup>2</sup> and from said hook the end of the bar tapers upwardly and outwardly, to an obtuse point.

A leaf spring E rigidly secured at one end to the housing bears at its opposite or free end upon the upper flat face *c* of the dog or cam bar C and presses the tail of the bar down. Secured to the inner end of the dog or cam bar C is a strong pulling spring F which at its opposite end is engaged to a pin *f*, extending transversely the sleeve. The ends of said pin as shown in Fig. 4, fit in oppositely disposed notches in the inner end of the housing but may be rigidly secured in place if desired.

The keeper D as shown in Figs. 2 and 5 comprise a metallic socket or pocket usually fitted into a suitable recess in the door in



register with the stop. Rigidly secured in said pocket below the center is the pin  $d$  which lies horizontally at the mouth of the pocket. Lugs  $d'$  integral with the keeper  
 5 are countersunk flush with the side of the door affording a smooth finish and neat appearance.

The operation is as follows: The keeper D, is secured to the lock stile of the door near  
 10 the lower end thereof and the stock and check engaged at the appropriate place on the base board or wall as shown in Fig. 1. If a door is to be left open or if a swinging door is to be fastened open temporarily, the  
 15 door is simply swung until the hook  $c^2$  enters the pocket engaging the bar or rod  $d$  as the door contacts the end of the stop. The door is now held in open position. To close the door it is only necessary to pull on the  
 20 knob, exerting but slightly greater pressure than the resistance of the spring F. This pulls the dog or cam bar C longitudinally of its housing and the lower cam face  $c'$  slides up in the slot while the spring E presses the  
 25 tail of said bar down thus elevating the hook as shown in dotted lines until the keeper is disengaged, permitting the door to close. When this release occurs the pulling spring F, immediately returns the cam bar to nor-  
 30 mal position again ready to fasten the door open.

It is seen by this construction that the check or locking device operates automatically both when engaging and when releasing  
 35 and not only saves time but avoids the inconvenience and labor necessary in manually setting and releasing checks and locks heretofore used.

It is quite immaterial as far as the operation of the device is concerned whether the  
 40 door is gently opened or opened with great force for in the latter case the recoil due to the impact is never greater than the strength of the spring and consequently the cam bar  
 45 is never pulled out far enough to release.

The drawings illustrate but one of many forms of devices of a like nature that may be constructed embodying the same principle as for instance the stop may be posi-  
 50 tioned so that half acts as a stop and the lock in this instance may engage the outer edge of the door in which case the keeper is dispensed with.

Preferably, a rubber washer G is secured  
 55 on the outer end of the stop though this is not necessary and many details of construction may be varied without departing from the principles of this invention. I therefore do not purpose limiting this application for  
 60 patent otherwise than necessitated by the prior art.

I claim as my invention:

1. In a device of the class described a hollow door stop, a sleeve closely fitting the  
 65 bore therein provided with an integral slot-

ted head at one end, a catch projecting through the slot in the head, means secured to a door adapted to be engaged by said catch for holding the door open, a leaf spring acting to hold the catch to yield to  
 70 permit said catch automatically engaging and disengaging said means secured to the door and means normally holding the catch at its inward limit of movement.

2. In a device of the class described a  
 75 stop provided with an axial bore, a sleeve engaged in said bore provided with a flange by means of which the same is secured in place, a locking bar projecting outwardly from the sleeve provided with a hooked  
 80 outer end and a cam face on one side and coacting means acting to hold the bar in normal position and permitting yielding of said bar.

3. In a device of the class described a  
 85 door stop, a casing concealed therein and rigidly secured thereto, a locking bar extending outwardly from the casing provided with a hook adjacent its outer end and shaped to afford a cam face at the outer end,  
 90 a cam face provided on one side of the bar in the casing and yielding means for holding the bar in normal position.

4. In a device of the class described a hollow stop, a casing secured therein and rigidly but removably secured thereto, locking  
 95 means extending into the casing having the outer end projecting outwardly from the stop adapted to engage in a recess in a door and mechanism concealed in the casing for  
 100 retaining the locking means in normal position.

5. In a device of the class described a stop provided with a suitable bore, a casing or sleeve therein having a closed outer end  
 105 except for a slot, a longitudinally movable cam bar or catch extending through the slot and a plurality of springs in the casing, one bearing against the top of the cam bar and one secured to and exerting tension in-  
 110 wardly on the cam bar for automatically returning the cam bar or catch to normal after each actuation.

6. In a device of the class described a hollow stop, a casing therein, a cam bar or  
 115 catch extending outwardly from the casing, a resilient pad secured to the stop provided with an aperture to admit the cam bar there-through, means adapted for engagement to a door adapted to engage the cam bar or  
 120 catch and springs coacting to return and secure the cam bar or catch to normal after each actuation.

7. In a device of the class described the combination with a stop of a casing secured  
 125 thereto, a plate integral with the outer end thereof having a slot therein, a bar extending through the slot having a cam face adapted to engage at the lower end of the slot for adjusting the bar, a cam face on the  
 130



outer end of the bar, said cam bar having a notch adjacent the same, a spring exerting pressure to hold the first named cam faces in contacting engagement, and a spring exerting at all times an inward pressure on the bar.

8. In a device of the class described the combination with a top of a casing secured thereto, a plate integral with the outer end thereof having a slot therein, a bar extending through the slot having a cam face adapted to engage on the lower edge of the slot for elevating the bar, a cam face on the outer end of the bar, said cam bar having a notch adjacent the same, a spring exerting pressure to hold the first named cam faces in contacting engagement, a spring exerting at all times inward pressure on the bar, a keeper secured to the door, a pin therein adapted to engage the cam face at the outer end of the bar and move the bar to engage in the notch in said bar and adapted to pull the bar outwardly in closing whereby the first named cam faces operate to throw the bar out of engagement with the pin.

9. In a device of the class described a stop, a housing secured therein, coacting means, one secured in the housing and the other seated in a recess in a door adapted for engagement to lock the door open and coacting faces, one of which is a cam face adapted to adjust said coacting means out of engagement in closing the door.

10. In a door stop and check a stop, a housing secured therein, coacting means secured to the housing and door for automatically fastening the door in open position from return movement, a cam adapted to automatically release the coacting means as the door is being closed and a plurality of springs secured in the housing, one bearing on the top of the fastening means in the housing and the other engaged to said fastening means for moving the same longitudinally.

11. In a door stop and catch, a stop, a housing secured therein provided with a slot, coacting means secured to the housing and door for automatically fastening the door in open position from return movement, a cam coacting with the edge of the slot adapted to automatically release the coacting means as the door is being closed and springs automatically returning the means in the housing to normal after the release, one pressing the cam into engagement with the edge of the slot at all times and the other spring exerting inward pressure on the fastening means in the housing.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses:

THEODORE R. THORSEN.

Witnesses:

C. W. HILLS,

J. W. ANGELL.