A foot operated door stop comprising a stop plate pivotally mounted within the housing for movement to a raised position above the housing. A parabolic resilient member has a lower portion fastened to the base of the housing and has an upper portion engaging the stop plate. The stop plate has a finger member attached thereto which normally rests on the top surface of a cylinder member having a passage in proximity to the finger member so that when the cylinder member is rotated clockwise, the finger member enters the passage and enables the resilient member to bias the stop plate into its raised position.

3 Claims, 7 Drawing Figures
FOOT OPERATED DOOR STOP

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to an apparatus which braces the lower portion of a door against unwanted entry. More specifically, this invention provides a foot operated door stop that lodges within a floor behind the door and shores the lower portion of the door to prevent it from being opened for unwanted entrance.

2. Description of the Prior Art

Chains, latches and the like, are employed to prevent doors from being opened sufficient to give access and are a safety precaution in barring would-be intruders. Their success in preventing the complete opening of doors has generally been favorable, but their success to the latter purpose essentially depends on how cunning and persistent the would-be intruder is because conventional devices are vulnerable to disengagement, severance and bristing. In addition to their deficiencies as a safety apparatus, conventional devices for preventing doors from opening completely became undesirable in their everyday use when they gouge the edges of doors and scratch the rear of doors and adjacent paneling. What is needed and what has been invented is a novel foot operated door stop for the prevention of doors opening completely without the foregoing major deficiencies.

SUMMARY OF THE INVENTION

The present invention accomplishes its desired objects by broadly providing a foot operated door stop, having a housing capable of being floor mounted, a stop plate pivotally connected within the housing, upwardly biased means contacting the bottom of the stop plate, and means attached to the housing for releasing the stop plate and enabling the stop plate to be snapped into a raised shoring position for the door. Also provided is a pivotal stoppage member that ceases the pivoting of the stop plate when a finger member, which is connected to an end of the stop plate, attains contact with the top of the pivotal stoppage member.

It is therefore an object of the invention to provide a foot operated door stop for preventing a door from completely opening that is more durable than any conventional apparatus, and essentially burglar proof.

It is another object of the invention to provide an apparatus which does not mar the edge of doors, scratch the adjacent paneling and is relatively economical to manufacture, and which may be operated by the foot of the occupant even while the occupants hands are occupied as when accepting a false telegram, package or message which may permit an intruder to force access through a door or like closure under false pretenses.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a foot operated door stop according to the invention positioned within a floor;

FIG. 2 is a vertical section view of the invention shown in a closed position;

FIG. 3 is a vertical sectional view of similar to FIG. 2 showing the foot operated door stop in a raised position in contact with a door;

FIG. 4 is a horizontal sectional detail view taken along the plane of line 4-4 in FIG. 2;

FIG. 5 is the view similar to FIG. 4 after a clockwise rotation of parts;

FIG. 6 is a top plan view looking along the plane of line 6-6 in FIG. 3; and

FIG. 7 is a fragmentary vertical sectional view of the top of the bar member utilized in raising the stop plate.

DETAILED DESCRIPTION OF THE INVENTION

Referring in detail now to the drawings, wherein similar parts of the invention are identified by like reference numerals, a housing 20 is mounted within floor 702 by screws 24 and includes end walls 26, 28, and opposed side walls 38. The housing 20 also includes a base 30 and a partial top 32. The base 30 and the partial top 32 are connected to end walls 26, 28 and to side walls 38.

A stop plate 34 which is substantially rectangular in shape and is pivotally mounted within housing 20 on a shaft 36 which extends between the opposed side walls 38. Stop plate 34 has an end 40 semi-cylindrical in shape and an end 42 tapering from the circumference of the end 40 into an essentially blunt straight edge. A finger member 44 is connected to the end 40. When stop plate 34 is in a closed position as illustrated in FIG. 2, end 42 is situated closely adjacent partial top 32, and stop plate 34 is essentially aligned with the plane of partial top 32.

Housing 20 also contains a spring 46 for upwardly biasing the stop plate 34 and pivotal stoppage member 48. Spring 46 is connected to base 30 by rivets 50 and may be any resilient means with enough elasticity to lift end 42 away from housing 20 while end 40 remains pivoted to shaft 36. In a preferred embodiment, the spring 46 is a parabolic resilient steel member in contact with the bottom of stop plate 34. Pivotal stoppage member 48 is connected to base 30 by bolts 52 and has top sides 54, 56, and vertex 58. Top side 54 defines an arcuate groove closely juxtaposed and in frictionless contact with the lower portion of the circumferential surface of end 40, and top side 56 defines an essentially straight downward sloping side. When stop plate 34 is in a raised position as illustrated in FIG. 2, the lower half of end 40, the bottom finger member 44, and the connecting point of finger member 44 and end 40, are meshed with top sides 54, 56 and vertex 58, respectively; thereby preventing end 42 of stop plate 34 from pivoting too high which would reduce the effectiveness of stop plate 34 as a preventer for keeping door 84 from opening completely. The member 48 is attached by screws or welded to the base 30.

Aslo included within housing 20 are means for releasing stop plate 34, generally illustrated as 60, and a support member 62. The means 60 for releasing stop plate 34 has a shaft 64 rotatably positioned between the partial top 32 and the base 30. At one end of the shaft 64 is a disc member 66 stationarily contained within partial top 32, and disc 66 may contain means for exerting a counter-clockwise rotation to shaft 66 when it is rotated in a clockwise direction. Superimposed to the disc 66 is a serrated disc shaped cap 68 which may be made of rubber or the like and is removably and replaceably fixed to and rotatable with shaft 66 and exposed above the planar surface area of top 32. Also rotatable with the shaft 64 and situated thereon between the disc 66 and the base 30 is cylinder member 70 which has a substantially rectangular slot or passage 72...
is wider than finger member 44 and which transverses the entire height of cylinder member 70. A stop pin 73 is mounted on cylinder member 70. A spring 59 is provided for spring biasing the cylindrical member to an initial position.

The support member 62 is essentially polygonal and is attached to end wall 26 and provides a pivotal point for locking bar 74 and spring 76, which is also connected to the lower portion of bar 74. A spring 80 is positioned about the end of locking bar 74 and within the cap member 78 and provides longitudinal axial movement for cap member 78 when it is pressed downwardly for snugly lodging within recess 82; thereby locking stop plate 34 in a raised position as shown in FIG. 3.

In operation and with the stop plate in closed position as shown in FIG. 2, the finger member 44 rests on the top surface of cylinder member 70, thereby preventing spring 46 from urging stop plate 34 to a raised position. When serrated disc 68 is rotated clockwise, finger member 44 is released from the top surface of cylinder member 70 permitted to pass into passage 72 and spring 46 pivots end 40 around shaft 36 until the bottom of finger member 44 encounters top side 56 of pivotal stoppage member 48. Supporting member 62 braces the bow of spring 46, preventing the portion of spring 46 contacting the bottom of stop plate 34 from slipping past recess 82 which would make the subsequent closing of stop plate 34 difficult.

Stop plate 34 is presently in a raised position to prevent door 84, having protector member 86 fastened thereto to prevent end 42 from gouging door 84, from opening completely. Stop plate 34 may be securely locked into place by merely pressing cap member 78 downward until it lodges within recess 82. Spring 80 keeps cap member 82 snugly engaged within recess 82 by a constant upward spring biased force.

Stop plate 34 may subsequently be closed and returned to the position disclosed by FIG. 2 by disengaging cap 78 from recess 82 and pressing end 42 downward with enough force to exceed the force of spring 46. When end 42 is approximately contiguous with partial roof member 32, finger member 44 exits passage.

72 and means for exerting counter-clockwise rotation to shaft 66 snaps cylinder member 70 back to the position disclosed by FIG. 2 and FIG. 4.

While the present invention has been described herein with reference to particular embodiments thereof, a latitude of modification, various changes and substitutions are intended in the disclosure, and in some instances some features of the invention will be employed without a corresponding use of other features without departing from the scope of the invention as set forth.

What is claimed is:

1. A foot operated door stop comprising a housing, a stop plate pivotally mounted in said housing, spring means engaging said stop plate for urging said stop plate to a raised position, and foot actuated means attached to said housing for releasing said stop plate so that said spring means pivotally raise said stop plate, a shaft rotatably mounted in said housing, said stop plate including a first end on said shaft, said first end including a finger member attached thereto for engaging said foot actuated means, said spring means comprising a parabolic resilient member having a lower portion securely fastened to said housing and an upper portion in contact with said stop plate, said foot actuated means for releasing said stop plate including a vertical shaft member rotatably mounted in said housing, a serrated disc member secured to said vertical shaft member and exposed above said housing, a cylinder fixed on said vertical shaft member, said cylinder including a slot wider than said finger member, said finger member resting on said cylinder so that when said serrated disc is rotated clockwise said finger member extends into said passage and said spring means pivots said first end of said stop plate around said vertical shaft member.

2. A door stop according to claim 1, wherein said stop plate additionally includes a recess.

3. A door stop according to claim 2, additionally including a locking bar pivotally mounted in said housing said locking bar having an end with a spring biased cap member engagable within said recess for locking said stop plate in a raised position.