Sept. 11, 1923. 1,467,782

G. A. ENGLUND

DOOR STOP AND HOLDER

Filed Dec. 29, 1921

Fig. 1

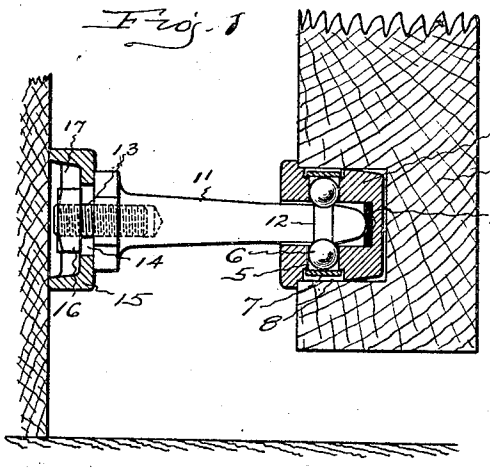


Fig. 2

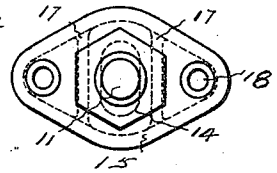


Fig. 3

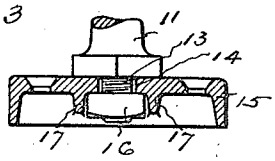


Fig. 4

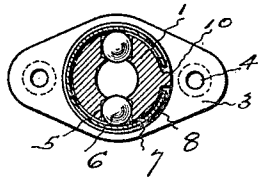


Fig. 5

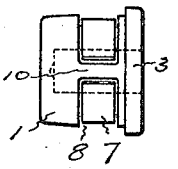


Fig. 7

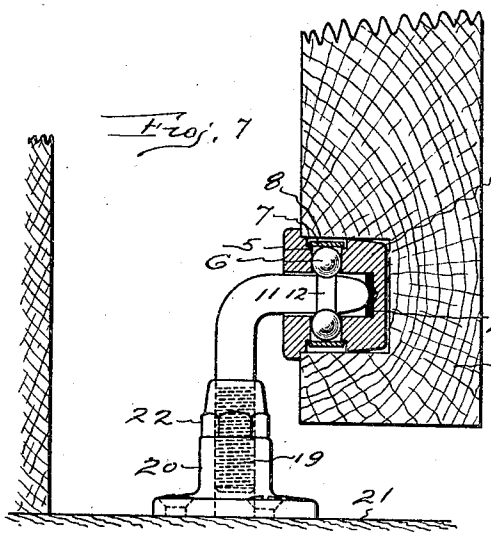


Fig. 6

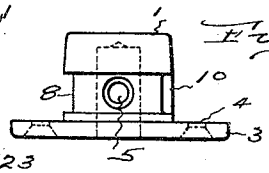
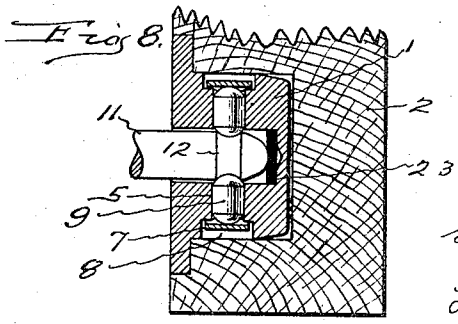


Fig. 8.



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UNITED STATES PATENT OFFICE.

GUSTAF A. ENGLUND, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE JACOBS MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

DOOR STOP AND HOLDER.

Application filed December 29, 1921. Serial No. 525,614.

To all whom it may concern:

Be it known that I, GUSTAF A. ENGLUND, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Door Stops and Holders, of which the following is a specification.

This invention relates to those devices which have a part that is adapted to be secured to a door and a part that is adapted to be secured to a wall or floor, the former part frictionally engaging the latter part when the door is swung open so as to hold the door in its open position.

The object of the invention is to design a cheap, easily applied and neat device of this character having parts so designed that they will engage without shock and hold securely and yet will readily disengage when it is desired to close the door.

This object is attained by providing a relatively small diameter and short socket with balls or rollers that are pressed radially into the opening in the socket by a simple spring, which socket is adapted to be attached to or set into the face of a door in position to receive the grooved tip of a pin that may be adjustably mounted on a base which can be fastened to the wall or a base designed to be fastened to the floor.

In the accompanying drawings Figure 1 shows a door holder that embodies the invention with the socket in the door engaging a pin mounted on a base fastened to the wall, cut in vertical section. Fig. 2 shows a front view of the base plate and pin. Fig. 3 shows a horizontal section of the base. Fig. 4 shows a transverse section of the socket. Fig. 5 shows a side view of the socket. Fig. 6 shows a plan of the socket. Fig. 7 shows a socket in the door engaging a pin mounted on a base fastened to the floor. Fig. 8 shows a section of the socket with the top of the pin engaged by rounded-end rollers or pins.

The body of the socket 1 is cylindrical and is shown as set into a hole bored in the face of the door 2. The front of the socket has flanges 3 with holes 4 for screws to fasten it in place. Two radial holes 5 are drilled in the side of the socket and a ball 6 placed in each hole. A band 7 of spring metal is arranged around the socket in a groove 8 in such manner as to engage and press the balls inward so that portions of their surfaces will normally extend into the central opening in the socket. Instead of balls, rollers 9 or short pieces of rod with rounded ends may be placed in the radial holes of the socket as illustrated in Fig. 8. The groove for the spring may extend completely around the socket but desirably it does not so as to leave a rib 10 which is engaged by the ends of the spring to prevent the spring from turning after it has been snapped into place over the balls or pins.

The pin 11 that is designed to enter the socket has a rounded tip with a curved groove 12 near the tip. The pin may be straight as illustrated in Fig. 1 when it is to project from a wall or it may be bent as shown in Fig. 7 when it is to stand up from a floor.

The straight pin has a screw stud 13 that projects through a slot 14 in the base plate 15 and on the inside of the plate engages a nut 16. The nut is shown as square and as lying between ribs 17 on the back of the plate so that the nut will not turn when the threaded stud is screwed into it. This plate is shown as having wings with holes 18 for the passage of fastening screws. Before the pin is screwed in tightly it may be raised or lowered so that its tip will properly register with the opening in the socket.

The bent pen is shown as having a threaded shank 19 screwed into a base 20 designed to be fastened by screws to the floor 21. The threaded end of this pin is turned into the base until the tip is at the necessary height and points in the required direction to properly enter the socket, and then a lock nut 22 is screwed down upon the threaded shank of the pin against the top of the base so as to hold the pin in position. Upon loosening the lock nut the pin may be adjusted for any change in the position of the socket as would be caused by the sagging of the door.

A rubber washer 23 may be located in the bottom of the socket to cushion the parts when engaged.

When the door is swung open the socket passes over the tip of the pin, the balls or rollers yielding until the groove near the tip of the pin reaches them. Then the balls or rollers are pressed into the groove by the band spring so as to retain the parts together and hold the door open. Balls of commerce are preferred, but pins or rollers

with rounded ends may be used for heavy doors, or where the wear is great. The band spring is simple to make, is easily snapped into the groove over the holding parts, and is durable.

The invention claimed is:

1. A door stop comprising a socket having radial holes through its sides and means for securing it in place, members with rounded surfaces located in said holes and having portions of their surfaces extending beyond the ends of said holes into the opening in the socket, a band spring encircling the socket and bearing on said members and yieldingly holding said members with portions of their surfaces extending into the opening in the socket, and a pin with a groove near its tip adapted to enter the opening in the socket and be engaged by said members.

2. A door stop comprising a socket having radial holes through its sides and means for securing it in place, balls located in said holes, a band spring encircling the socket and yieldingly holding the balls with portions of their surfaces extending into the opening in the socket, and a pin with a groove near its tip adapted to enter the opening in the socket and be engaged by the balls.

3. A door stop comprising a socket having radial holes through its sides and means for securing it in place, balls located in said holes, a band spring encircling the socket and normally holding the balls with portions of their surfaces extending into the opening in the socket, a pin with a groove near its tip adapted to enter the opening in the socket and be engaged by the balls, and a base adjustably supporting the pin, said base having means for securing it in position.

4. A door stop comprising a socket having radial holes through its sides and means for securing it in place, balls located in said holes, a band spring encircling the socket and normally holding the balls with portions of their surfaces extending into the opening in the socket, a pin with a groove near its tip adapted to enter the opening in the socket and be engaged by the balls, a base adjustably supporting the pin and means for locking the pin to the base in adjusted position.

5. A door stop comprising a socket having radial holes through its sides and means for securing it in place, balls located in said holes, a band spring encircling the socket and yieldingly holding the balls with portions of their surfaces extending into the opening in the socket, an elastic cushion in the bottom of the socket, and a pin with a groove near its tip adapted to enter the opening in the socket and be engaged by the balls.

GUSTAF A. ENGLUND.