Dec. 11, 1934. R. C. WATKINS ET AL 1,983,784

FLEXIBLE DOORSTOP

Filed Sept. 30, 1933

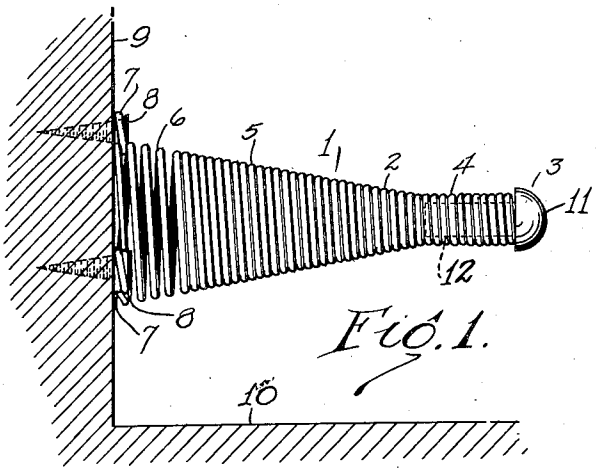


FIG. 1.

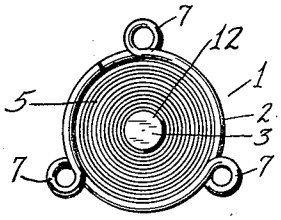


FIG. 2.

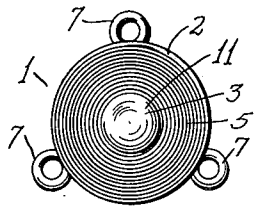


FIG. 3.

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# UNITED STATES PATENT OFFICE

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## FLEXIBLE DOORSTOP

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Application September 30, 1933, Serial No. 691,662

1 Claim. (Cl. 16—85)

Our invention relates to improvements in flexible door stops, and it consists of the combinations, constructions and arrangements hereinafter described and claimed.

In the rigid type of door stop there is no possibility of the door stop yielding when struck from the side, as for example when a cleaning implement, such as a vacuum sweeper or a mop, strikes the side of the door stop. The result is that the door stop is frequently broken. The principal object of the present invention is to provide a flexible door stop which will bend laterally when struck from the side, and which will then return to normal position. Such a type of door stop will remain indefinitely secured to the supporting surface.

In rigid door stops very little yielding is permitted in the direction of the length of the stop. When a door strikes such a stop it generally rebounds a considerable distance. In our flexible door stop we form the device from a wire, and fashion this wire into coils. Adjacent coils contact with each other, with the exception of a few coils disposed near the base. These coils are spaced a slight distance from each other, and when a door strikes the end of the door stop the spaced coils will give and act as a snubber and bring the door to a quick, quiet stop with practically no rebound.

The device saves the hinges of the door in that it gently brings the door to a stop rather than abruptly stopping the swinging movement of the door. The device is also silent in operation because the noise caused by an abrupt stop is eliminated by the door being brought to a gradual stop.

The device is extremely simple in construction and is made in two pieces, one a coil of wire shaped in a particular manner, and the other a rubber button secured to the free end of the coil.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claim.

Our invention is illustrated in the accompanying drawing forming a part of this application, in which.

Figure 1 is a side elevation of the device shown operatively applied to a wall;

Figure 2 is a bottom plan view of the device; and

Figure 3 is a top plan view thereof.

In carrying out our invention we provide a flexible door stop indicated generally at 1, and made from a wire 2 and having a button 3 secured to its free end. The wire 2 is formed into a cylindrical coil indicated generally at 4, the adjacent coils contacting with each other. From the cylinder 4 the wire 2 is wound into a number of coils, each coil gradually increasing in diameter and forming a conical shaped portion 5 that merges into the cylindrical portion 4. At the base of the cone 5 the coils are spaced from each other as indicated at 6.

Figures 2 and 3 clearly show the wire 2 disposed at the base as being formed into a number of small loops or eyes 7. Fastening screws 8 are insertable in these loops and may be screwed into a wall 9 for supporting the flexible door stop the desired distance above the floor 10.

The button 3 is preferably made of rubber and has a semi-spherical head 11 with a cylindrical shank 12 projecting therefrom. The diameter of the shank is slightly greater than the inner diameter of the cylindrical portion 4. This permits the shank to be screwed into the portion 4 and the rubber surface will give, and have grooves formed therein complementary to the coils forming the cylindrical portion 4. This construction prevents the button from being removed without first rotating it so as to unscrew it from the portion 4. The coils in the portion 4 prevent the shank from being moved longitudinally.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

The door stop will flex when struck on the side and then will resume its normal position. This flexing strain is not transmitted to the base and therefore the device will have no tendency to be pulled from the supporting wall. When a force is exerted in the direction of the axis of the door stop the spaced loops 6 will permit the stop to compress a slight distance in the direction of its length. This movement will bring the door to a quick stop without unnecessarily jarring the door. The hinges on the door are therefore not subjected to undue strain. The rebounding of the door is also eliminated, and the device will operate silently because of this particular manner of bringing the door to a stop. The shank 12 of the button 3 is made long enough to prevent the accidental removal of the button from the device. The cone 5 gives a firm support to the button 3.

While we have shown only the preferred form of our invention, it should be understood that various changes or modifications may be made within the scope of the appended claim without departing from the spirit of the invention.

We claim:

A door bumper comprising a wire formed into a cylindrical coil, the loops of the coil contacting with each other, a rubber button having a shank threaded into the cylindrical portion, the wire being formed into a frusto-conical portion, the loops of the conical portion for the greater portion of its length contacting with each other, whereby a door stop is formed that is rigid in the direction of its axis but flexible when struck from the side, a few loops adjacent to the base of the conical portion being spaced from each other for allowing the bumper to be compressed slightly when struck a blow in the direction of its axis, and means for securing the bumper to a support.

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