March 29, 1932. A. C. WERTH 1,851,612

DOORSTOP

Original Filed Dec. 23, 1925

Fig. 1.

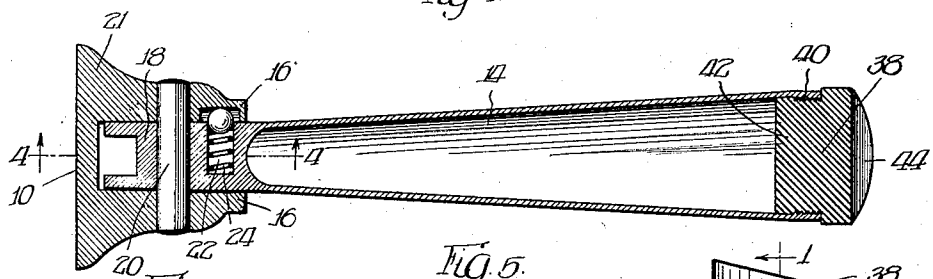



Fig. 2.

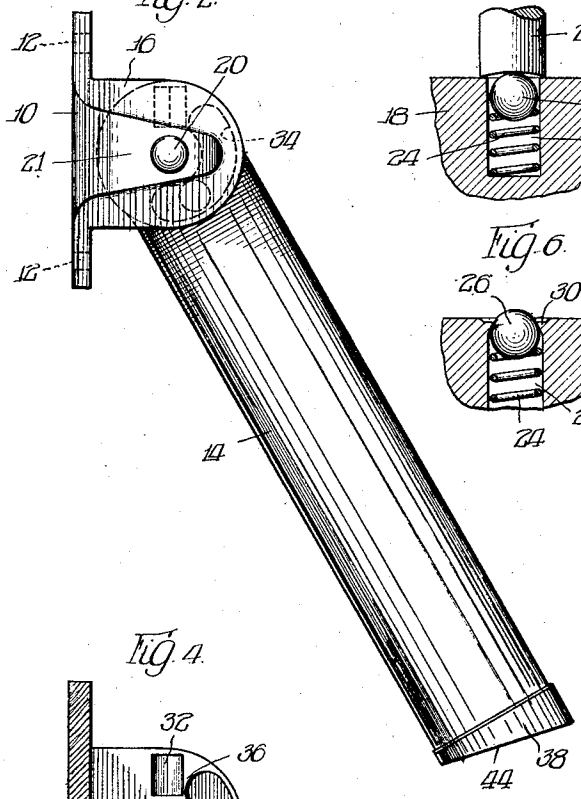



Fig. 5.

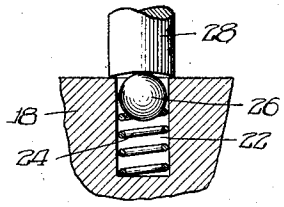



Fig. 6.

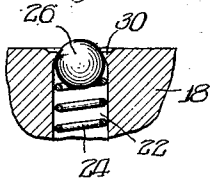



Fig. 3.

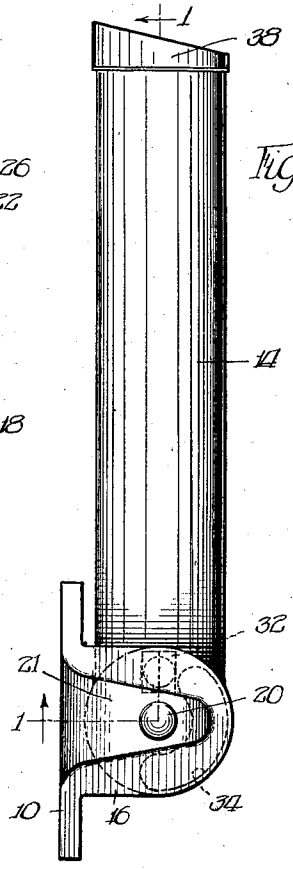
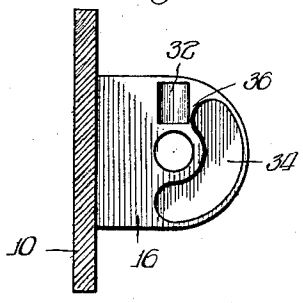



Fig. 4.




INVENTOR

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Patented Mar. 29, 1932 1,851,612

# UNITED STATES PATENT OFFICE

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## DOORSTOP

Application filed December 23, 1925, Serial No. 77,265. Renewed March 14, 1930.

My invention relates to door stops, and more specifically to an improvement in the type of door stop, comprising a pivoted stop member adapted to drag over the floor as the door is moved in one direction and grip the floor frictionally to prevent return movement.

Among the objects and advantages of the invention may be enumerated:

First, the operating characteristic of having the arm very loosely pivoted when in operative position to maintain good contact with the floor, and grip promptly at the beginning of return movement;

Second, a characteristic relating to durability in service, involving the subjection of the catch means for holding the arm in inoperative position, to a minimum of wear; and

Third, characteristics relating to cheapness and convenience in manufacture such as the employment of an extremely simple shape for the friction terminal, and forming the two main elements of simple shapes, suitable for casting at small expense.

Other objects and advantages of the invention will become apparent as the description proceeds.

In the accompanying drawings:

Figure 1 is a section of the device according to the invention on line 1—1 of Figure 3;

Figure 2 is a side elevation of the parts with the arm approaching operative position;

Figure 3 is a similar view with the arm swung up into inoperative position;

Figure 4 is a section of the support on line 4—4 of Figure 1; and

Figures 5 and 6 are detail sectional views, indicating the method of fastening the catch means in place.

In the embodiment of the invention selected for illustration, the support comprises a face plate 10 apertured at 12 for attachment to a door, or the like, and an arm 14 pivoted thereon for movement down into the operative position of Figure 2, or up into the inoperative position of Figure 3. One of the parts, in this instance the support, has two spaced leaves 16 between which the single end leaf 18 of the other element, in this instance the arm, is received; the pivotal connection being completed by a pintle 20 fastened to one of the parts, in this instance the support, and rotatable with respect to the other.

To strengthen the support against blows from the side, either on the support or the arm, I prefer to provide a strong brace in the form of a rib 21 on each side.

In the central leaf 18 I form a pocket 22 for housing a spring 24, and a catch member 26 pressed outwardly by the spring. In case the catch member is a ball, the assembly may conveniently be completed by merely dropping the parts into place as in Figure 5, placing a tool 28 of slightly greater diameter than the pocket 22, over the end of the pocket and striking the tool a light blow to deform the edge of the pocket into a retaining bead 30. The face of the tool must obviously be shaped so as to push the ball 26 down a little when the blow is struck, to hold it out of the way.

In the side leaf 16 facing the pocket 22, I cast a socket in the form of a radial groove 32 positioned to register with the catch member 26 when the arm is in the position of Figure 3. The radial arrangement makes it unnecessary to do accurate machining in locating the holes for the pivot 20. I also form a much deeper arcuate groove 34 separated from the socket 32 by a relatively narrow ridge 36. This groove is deep enough to completely clear the catch member 26, so that during approximately the lower two-thirds of its range of movement, the arm 14 dangles free and loose on the pintle 20.

In the embodiment shown, the arm 14 is the central member of the pivot, and its tubular wall is preferably flared out from an oval section close to the leaf 18 to a round section at the other end, receiving the friction foot 38 of rubber, or the like.

The attachment means for this rubber foot comprises a simple screw thread 40 formed inside the arm 14 at the end. The rubber foot may be provided with a perfectly plain cylindrical shank 42 and a head 44 of larger diameter, which in this instance, is beveled. To assemble the parts, it is sufficient to press

the shank 42 against the threads 40 and rotate the foot. The threads 40 will imbed themselves in the shank 42 and form an entirely satisfactory retaining means.

Without further elaboration, the foregoing will so fully explain the gist of my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service. It will, for instance, be obvious that while I have preferred to rely entirely on gravity to keep the arm in the position of Figure 2, the addition of spring means urging it toward operative position would not interfere with the advantages resulting from the extreme freedom of pivotal movement obtainable on account of groove 34, and the resulting complete separation of the catch member to eliminate frictional resistance to pivotal movement. Similarly, the circular foot end of the arm might be of a diameter equal to the smaller transverse dimension of the oval section near the leaf 18, rather than the larger. These and many other modifications and alterations may readily be made by those skilled in the art, without eliminating certain features which may properly be said to constitute the essential items of novelty involved, which items are intended to be defined and secured to me by the following claims.

I claim:

1. A door stop comprising a U-shaped support; an arm having one end pivoted between the leaves of said support; a laterally opening pocket in said end and between said leaves; a catch member in said pocket; a spring pressing on said member to cause it to project from said pocket; means for retaining said member against completely leaving said pocket; the leaf facing said catch having a socket for receiving said catch member, and a cut-away portion permitting pivotal movement without friction between said catch and leaf, except adjacent said socket.

2. An automatic door stop, comprising: a rigid support to be mounted on a door; a stop arm supported thereby for free swinging movement about an axis parallel to the face of the door; and catch means operating parallel to the axis of rotation for holding said arm swung up beside the door, said catch means comprising a spring pressed projection, and socket means provided with a circumferential recess for receiving said projection, out of contact therewith, when said arm is in operative position, and with another recess latchingly engaging said projection when the arm is in inoperative position.

3. A door stop comprising a member adapted to be secured to a door, a movable member flexibly connected to said first member, a spring pressed catch member carried by one of said members and adapted to project therefrom, means on the other of said members for engaging with said catch member when said flexibly connected member is in an inoperative position, and a circumferentially elongated recess in said other member for receiving said catch member to leave said movable member freely movable when in operative position.

4. A door stop, comprising: a support, including a plate adapted to be bolted to the face of a door, and spaced members projecting from said plate away from the door; a pintle, having an axis parallel to the face of the door, and supported by said spaced members; an arm, having a head housed between said spaced members and pivoted on said pintle, said head lying close to said plate to secure minimum dimensions perpendicular to the door; and a spring pressed ball catch housed in the head of said arm, within the extent of and between said members; said support being provided with a socket for latchingly receiving said ball catch when said arm is in elevated position, and being formed to permit free swinging of said arm through the normal range of movement of said arm, up to elevated position.

In witness whereof, I hereunto subscribe my name this 19th day of December, 1925.

ALFRED C. WERTH.