

Dec. 13, 1938.

A. N. DION

2,140,002

DOOR HOLDER

Filed Dec. 18, 1935

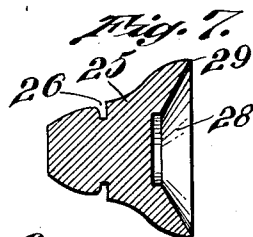
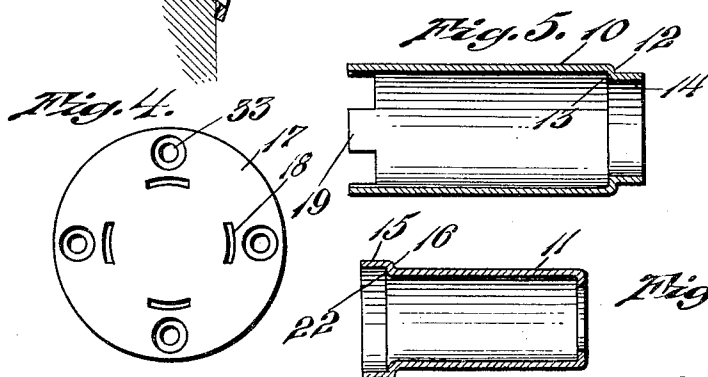
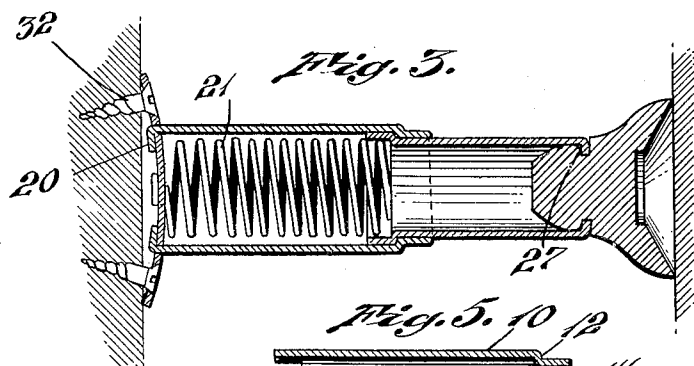
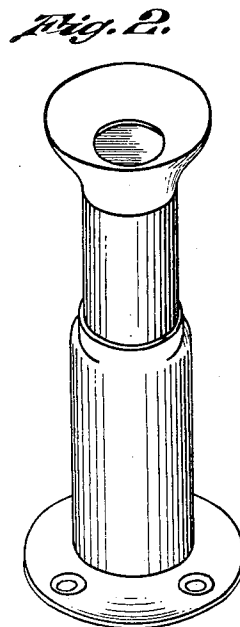
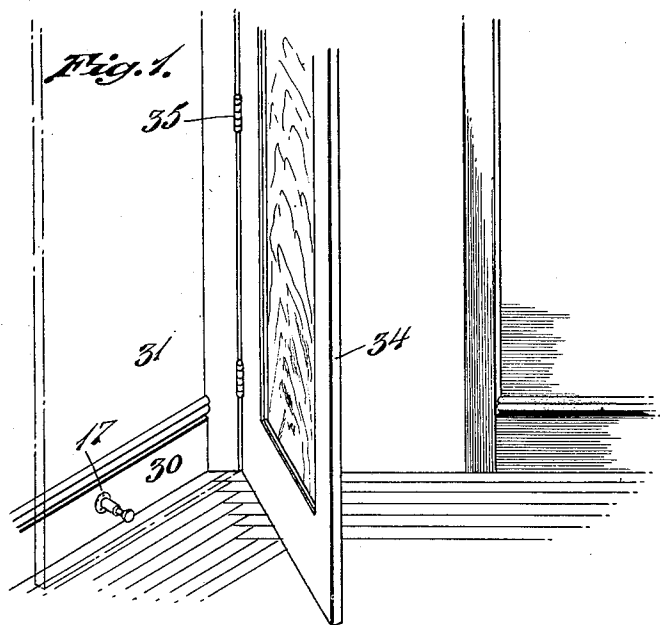


Fig. 6.

INVENTOR.
Arthur N. Dion
BY *Barlow & Barlow*
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,140,002

DOOR HOLDER

Arthur N. Dion, Attleboro, Mass.

Application December 18, 1935, Serial No. 55,090

2 Claims. (Cl. 292—70)

This invention relates to a door holder, and has for one of its objects the provision of a device which may be attached to relatively swinging parts such as a hinged door, window or the like for mechanically engaging one of the relatively swinging parts when fastened to the other to hold the two against further movement.

Another object of the invention is the provision of a device such as a suction cup, which will engage the flat surface of a door without being permanently attached thereto so that when the device is utilized it may be mounted as a whole upon the wall towards which the door swings.

Another object of the invention is the provision of a suction cup which will be so resiliently mounted that the resiliency in its mounting will cooperate with the attaching action of the suction cup to cause it to better engage the object to which it is desired it shall be attached, and to hold the same without strain or undue stress exerted in the suction cup or holding device which is utilized for such attachment.

Another object of the invention is the provision of a cushioning device which as well as holding the door in open position will cushion the door if it is moved to such open position with a greater momentum than is desired.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a perspective view of the corner of a room showing the door partially open with my holding device mounted on the wall, and illustrating in dotted lines the door in engagement with this holding device to be secured thereto;

Fig. 2 is a perspective view of the holding device;

Fig. 3 is a sectional view thereof illustrating the same in mounted position on the wall and also as in engagement with the surface of a door, both the door and wall being fragmentally shown;

Fig. 4 is a top plan view of the base to which one of the tubular working members is attached;

Fig. 5 is a sectional view of one of the tubular members;

Fig. 6 is a sectional view of another tubular member;

Fig. 7 is a sectional view of the suction cup which is mounted on the tubular member shown in Figure 6.

Door holding devices usually consist of a part secured to the door and a part secured to the wall against which or close to which it is desired

the door shall be secured in open position; in order to provide a holding device which need be attached to one of the parts only, for instance as to a wall for holding the door in open position, I have provided a suction cup and I have mounted this suction cup on a slidable plunger which is backed up by a resilient element so arranged as to tension as to cause the suction cup to operate in a predetermined manner by reason of a certain amount of pressure exerted thereagainst, after which the plunger will slide so that no undue strain need be brought upon the cup which has been impacted by a door swinging faster than is necessary to cause the suction cup to operate; and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished:

With reference to the drawing, I have provided two telescoping tubes designated 10 and 11. The larger of these tubes extends inwardly as at 12 to provide a shoulder 13 and a collar 14, while the smaller of these tubes 11 is expanded outwardly as at 15 providing a shoulder 16 to contact the shoulder 13 and limit the movement of these tubes in an expanding direction, such as shown in Figure 3. The diameter of the tube 11 is such as to be guided by the collar 14, whereas the expanded end portion 15 will be of a diameter to be guided by the inner surface of the main portion of the outer tube 10. A base comprising a disc 17 having slots 18 therein receives the fingers 19 formed on the end of the tube 10, which fingers are bent inwardly as at 20 to secure this disc in position on the tube 10. A coiled spring 21 engages the base and the internal shoulder 22 formed by the different sizes of portions 11 and 15 of the inner telescopic member so as to force these tubes outwardly as illustrated in Figure 3.

A rubber suction cup 25 provided with an annular groove 26 which receives an inwardly extending flange surrounding the cup and formed by the turned in edge 27 of the tubular member 11 to secure this rubber suction cup 25 in position. As illustrated in Figs. 3 and 7, the flange 27 and groove 26 are shown as being substantially in line with the marginal portion of the base of the circular wall of the cup and thus act to apply the releasing force around the outer part or edges of the cup and to the flange or turned in edge 27 of the tubular member 11 when a pull is exerted on the door to disengage the latter from the outer circular edges 29 of the cup. Also, the construction further acts to transmit any force of impact around the outer part

or edges of the cup and to the flange 27 when the door is swung against the outer circular edges of the cup. This cup is recessed as at 28 with its edges 29 thinned so that when forced against some surface the air will be extruded, and when contraction occurs a partial vacuum will be formed between the cup and the surface such as of a door to hold the rubber suction cup in a known manner.

- 10 I have illustrated in Figure 1 an example of the use of my device wherein the base 17 is secured to the base board 30 of the wall 31 by means of screws 32 passing through the opening 33 in the base 17, there being a plurality of such screws, 15 for instance four as shown in Figure 4. The door 34 swinging on its hinges 35 when it strikes the suction cup 25 in its path of travel and will be held fast thereagainst, spring 21 being of such tension as to yield to take up any pressure not 20 needed for the operation of the suction cup and at the same time cushion and slowly bring to a stop the door or the like engaged.

The foregoing description is directed solely towards the construction illustrated, but I desire 25 it to be understood that I reserve the privilege of resorting to all the mechanical changes to

which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A door holder comprising a pair of telescoping members, a spring on one member to urge the other member to extended position with relation thereto, a suction cup carried at the end of one member, flange and groove means for attaching said suction cup to an end of one of said 10 telescoping members, and a base for mounting the device on a wall surface secured to the other member.

2. A door holder comprising a pair of telescoping tubular members, a spring in the larger 15 member to engage the end of the other member and urge the other member to extended position with relation thereto, a suction cup, mounting means for said cup comprising a flange at the end of the smaller telescoping member, and 20 an annular groove in said suction cup for attachment to said flange, and a rigid, non-pivoted base for mounting the device on a wall surface secured to the other member.

ARTHUR N. DION.