Dec. 1, 1925. 1,563,876

B. F. SMITH

SHOCK ABSORBING DEVICE FOR DOORS

Filed May 13, 1925

Fig. 1.

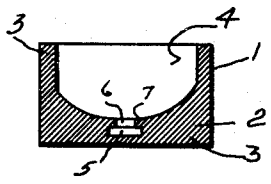


Fig. 2.

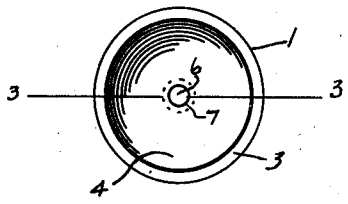


Fig. 3.

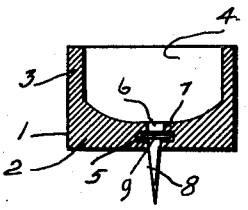


Fig. 4.

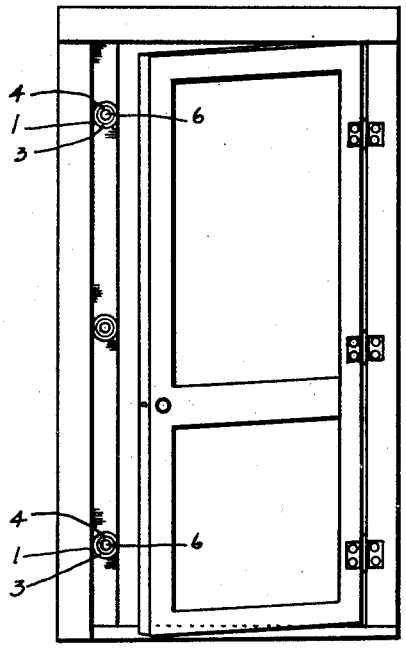


Fig. 5.

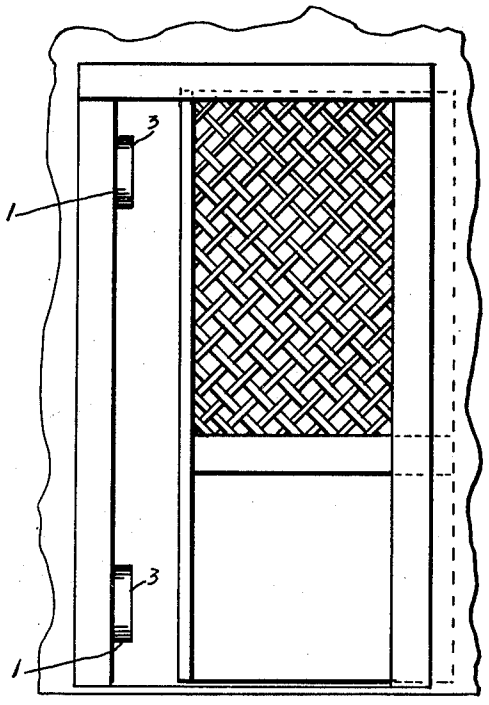


Fig. 6.

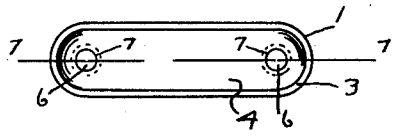
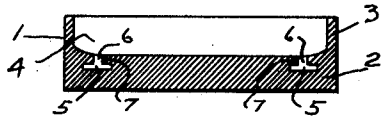


Fig. 7.



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UNITED STATES PATENT OFFICE.

BALUS F. SMITH, OF KANSAS CITY, MISSOURI.

SHOCK-ABSORBING DEVICE FOR DOORS.

Application filed May 13, 1925. Serial No. 29,993.

To all whom it may concern:

Be it known that I, BALUS F. SMITH, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Shock-Absorbing Device for Doors, of which the following is a specification.

My invention relates to shock absorbing devices for doors, and the object of the invention is to provide a resilient body having an elastic cup formation adapted to absorb shocks and prevent noise incident to violent closing of doors.

A further object of the invention is to provide means for attaching the device to door casings without impairing its resiliency and usefulness to function as an air cushion when the resilient body is forced to yield by the closing door.

I attain these objects by means of the structure illustrated in the accompanying drawing in which—

Figure 1 is a vertical section of a shock absorber for doors which embodies my invention.

Figure 2 is a top plan view of the device.

Figure 3 is a sectional view of the device on the line 3—3, in Figure 2.

Figure 4 is a front elevation of a door and its casing, and showing the device applied thereto.

Figure 5 is a front elevation of a sliding door and its casing, and showing the device applied thereto.

Figure 6 is a top plan view of a modified form of the device and—

Figure 7 is a sectional view of a modified form of the device, on line 7—7, in Figure 6.

Similar reference numerals refer to corresponding parts throughout the several views.

Referring to the drawing—the numeral 1 designates a shock absorbing device for doors constructed in accordance with my invention and which is formed of suitable resilient material, preferably rubber. The device consists of a body portion 2 having an upturned flange 3 integral with the body and forming therewith a cup 4. In the body portion and directly below the cup is formed a circular cavity 5 which communicates with the interior of the cup by means of a passage 6 having a diameter less than the diameter of the cavity. The difference of diameters of the cavity and the passage results in forming an annular flange portion 7 which extends partly over the cavity and is adapted to yield to allow the head of a tack or other similar fastening device to enter the cavity and to react, thereafter, to its normal condition, as shown in Figure 3.

The device is applied to the stop rail of the door casing and is secured in place by a tack 8 having a head 9. The tack is entered through the passage 6 into the cavity 5 and, thereupon, forced through the body portion of the device and into the stop rail until the head of the tack shall press down the flange 7 and pass by the same to a seat on the bottom wall of the cavity, whereupon, the flange 7 will react to assume its normal position over the cavity.

In applying the device to metal door casings machine screws may be used. A plurality of the devices may be used, as shown in Figures 4 and 5, and the device may have an elongated form for applying to sliding doors, as shown in Figure 5.

When the device is placed in operative position and the door is violently closed the door will strike upon the flange 3 of the cup portion and come to a bearing upon the peripheral edge of the same and, thereby, momentarily trap the air in the cup. The air in the cup, together with the yielding nature of the flange 3, cushions the shock and permits the door to close without noise. The provision of the cavity 5 in the solid portion of the device permits the entry of the tack or other fastening device to the cavity to be driven into the supporting medium without limiting the resiliency of the device or impairing the usefulness of the cup, as would happen if the tack were forced through the bottom of the cup. To obtain the full benefit of the elastic cup and to use the air therein for a cushion, the cavity 3 is essentially necessary to receive and partly house the head of the fastener. When the head portion of the fastener enters the cavity it engages the flange 7 and forces it to yield downward until the head is seated in the cavity, whereupon, the flange reacts and assumes its normal position.

Having described my invention what I claim is—

A shock absorbing device for doors formed of a body of resilient rubber having a flexible

compressible rim flange around the perimeter of its outer face and adapted to engage the face of a door and a concentrically concaved cup portion registering with the inner end of the rim flange, said body being provided with a concentrically formed cavity and with an opening at the axis of the body communicating with the cup portion and with the cavity, the portion of the body between the cavity and the cup portion forming a flexible annular flange.

Dated Kansas City, Mo., April 25, 1925.

BALUS F. SMITH.