

Sept. 12, 1950

J. G. VASQUEZ

2,521,885

MAGNETIC RETAINER

Filed Feb. 26, 1947

Fig. 2

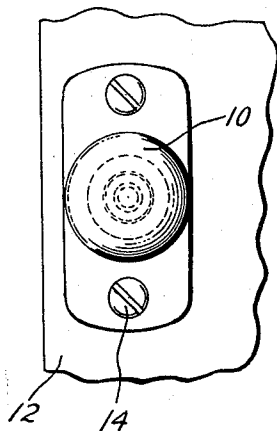


Fig. 1

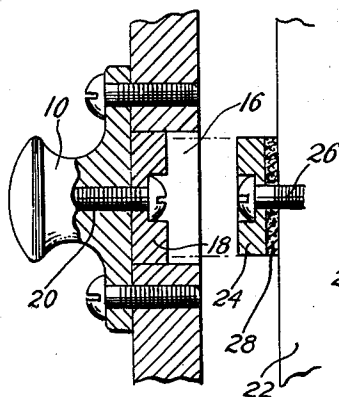


Fig. 3

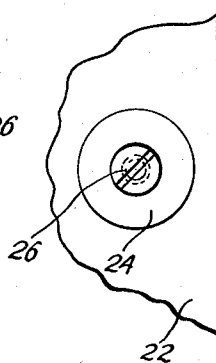


Fig. 4

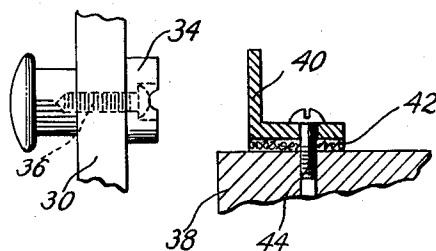


Fig. 5

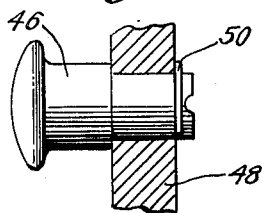
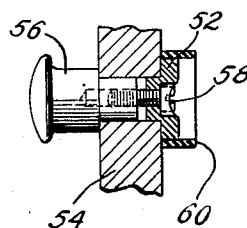


Fig. 6



INVENTOR.

J. G. Vasquez

BY

Joseph H. Schofield

ATTORNEY

UNITED STATES PATENT OFFICE

2,521,885

MAGNETIC RETAINER

John G. Vasquez, Hartford, Conn.

Application February 26, 1947, Serial No. 731,160

2 Claims. (Cl. 292-70)

This invention relates to magnetic holding devices and particularly to a means for retaining a door, drawer or the like in closed or retracted position.

An object of the invention is to provide an improved form of magnetic retainer adapted to increase the attraction of the magnet for its armature, the magnet being mounted preferably on a door or drawer and its armature on the frame so that the armature will be in contact with the magnet when the door or drawer is in closed position.

Another object of the invention is to provide a flexible backing for the armature or the magnet so that there may be sufficient angular adjustment or movement of the armature or magnet to assure complete contact between the pole surfaces of the magnet and the surface of the armature.

With the above and other objects in view, the invention may include the features of construction and operation set forth in the following specification and illustrated in the accompanying drawing.

In the accompanying drawing annexed hereto and forming a part of this specification, I have shown the invention embodied in various forms of retaining means but it will be understood that the invention can be otherwise embodied and that the drawing is not to be construed as defining or limiting the scope of the invention, the claims appended to this specification being relied upon for that purpose.

In the drawing:

Figure 1 is a view of one form of the invention, the magnet and its armature being shown separated by a short distance.

Fig. 2 is a view taken from the left-hand side of Fig. 1.

Fig. 3 is a view taken from the right-hand side of Fig. 1.

Fig. 4 is a view similar to Fig. 1 showing a modified form of the magnet and mounting or support for the armature, and

Figs. 5 and 6 are detail views showing different methods of retaining the magnet or armature in place.

In the above-mentioned drawing there have been shown several embodiments of the invention which are now deemed preferable, but it is to be understood that changes and modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

Briefly, and in its broadest aspect, the in-

vention may include means to mount a magnet having maximum attractive power on one member of door and frame construction or a drawer and frame, the other member mounting an armature contacting the magnet when the door or drawer is closed and being flexibly mounted for adjustment into complete metal to metal contact with the pole surfaces of the magnet.

Referring more in detail to the figures of the drawing, and first to the form of the invention shown in Figs. 1, 2 and 3, it will be seen that a knob 10 is mounted adjacent the free edge of a door 12 and attached thereto by suitable screws 14. The knob 10 covers a hole 16 through the door and within this hole or opening is mounted a small magnet 18 such as one of an alloy of nickel or other magnetic metal having extremely high attractive power. As shown in this figure, the magnet 18 is secured to the knob 10 by a screw 20 positioned centrally of the magnet 18 and threaded into the knob 10.

Mounted in the door frame 22 is an armature 24 in position so that as the door 12 is closed the armature 24 will enter the opening 16 in the door 12 and permit the armature 24 to contact the end face of the magnet 18. The armature 24 is of such size that it fits loosely within the hole 16.

To secure the armature 24 in position on the door frame 22 a screw 26 passes through the central part of the armature and enters the door frame 22. Between the armature 24 and the forward surface of the door frame 22 is a soft pad or layer of compressible material such as felt 28. When the magnet 18 is brought into contact with the armature 24 by closing the door 12, armature 24 may adjust itself into full metal to metal contact throughout its surface due to pressure of the magnet 18 against it and by compression of material 28.

Referring to the form of the invention shown in Fig. 4 it will be seen that a movable member 30 has a knob 32 on one surface and a circular magnet 34 on the other, the knob and magnet being held in position by means of a single screw 36. On a relatively fixed member 38 is an angular member 40 forming the armature for magnet 34. This member 40 is set back from the edge of member 38 so that the outstanding magnet 34 may contact its forward surface when the movable member is in closed position. Between the lower surface of the angle member 40 and the member 38 is a thickness or pad of flexible compressive material 42 similar to

the belt shown at 28. By means of this material 42 the member 40 may adjust itself angularly to contact the magnet 34 over its full area. To retain the member 40 in position on the fixed member 38 and permit the necessary angular movement, a central screw 44 is provided as shown.

In Fig. 5 is shown another form of magnet in which the entire knob 46 is of magnetizable metal attached to the door 48 by means of a snap ring 50. The inner end of the metal knob 46 extends far enough to contact a mating piece of the magnet armature combination.

In Fig. 6 another form of retaining device for a magnet 52 for a door or other movable member 54 is shown. In this form the magnet 52 extends partially within and also outside the inner surface of the door 54. It is attached to its knob 56 by means of a central screw 58. To protect the magnet 52, which is somewhat exposed, against contact with metals that might cause demagnetization, a sleeve 60 of plastic or other non-magnetizable material may be fitted around the magnet so that the magnet will be enclosed by the sleeve.

I claim:

1. A retainer for doors and the like having a recess extending therethrough comprising a magnet disposed in said recess and having a pole surface adjacent the inner surface of the door, an armature mounted on the door frame for contact with said magnet when said door is closed, flexible means between the armature and the door frame for supporting said armature for

limited angular movement, whereby said limited angular movement of the armature permits positive and complete metal to metal contact between said magnet and armature, and a wall of non-magnetic material surrounding said magnet and extending beyond said pole face thereof to protect said magnet.

2. A retainer for doors and the like having a recess extending therethrough comprising a magnet disposed in said recess and having a pole surface adjacent the inner surfaces thereof, an armature mounted on the frame of the door for contact with said magnet when said door or the like is closed, a layer of flexible compressible material interposed between said armature supporting surface and the member to which the armature is attached, and a sleeve of non-magnetic material surrounding said magnet and extending beyond said pole face thereof to protect said magnet.

JOHN G. VASQUEZ.

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