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DOOR HOLDING DEVICE

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2 Sheets-Sheet 1

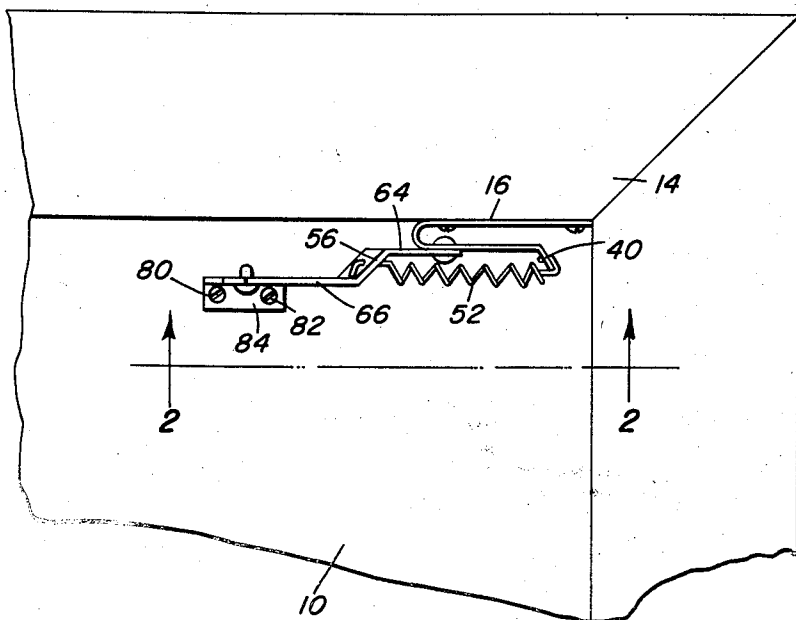
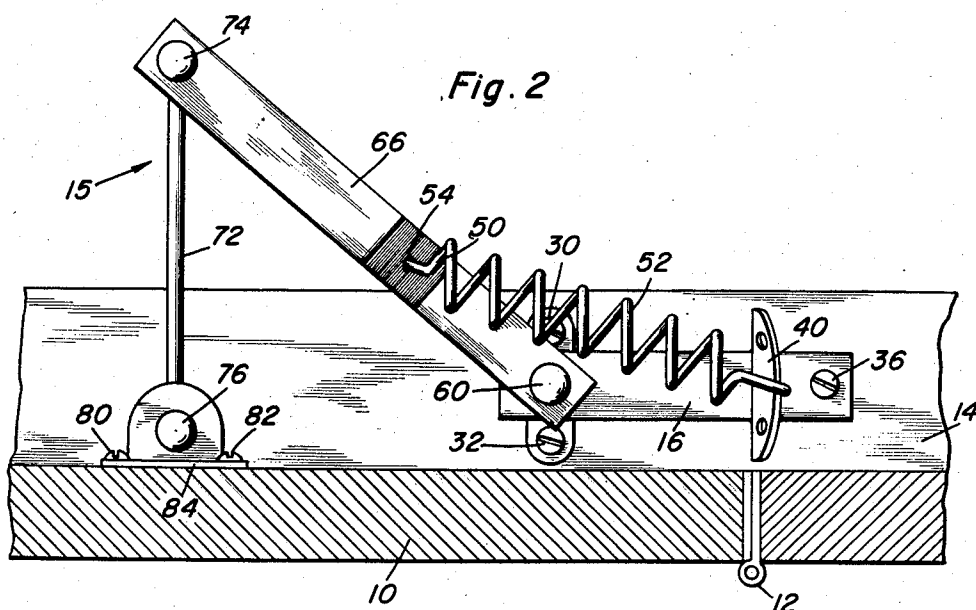


Fig. 1

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DOOR HOLDING DEVICE

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2 Claims. (Cl. 16—80)

This invention relates to a door holding device and more particularly to a device of the type capable of holding a door in either an opened or closed position.

The primary object of the present invention resides in the provision of a door holding device adapted for use in closet doors, cabinets and the like of any suitable size which will hold the doors in either an opened or closed position.

The construction of this invention features the utilization of a spring which is arranged in conjunction with a mounting bracket, pivoted link and pivoted arm to be under tension at all times and in all positions except a single intermediate opened position of the door so that the door is continuously held in either an opened or a closed position as may be desired.

Still further objects and features of this invention reside in the provision of a door holding device that is simple in construction, easy to install, and relatively inexpensive to manufacture thereby permitting wide use and distribution.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this door holding device, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a side elevational view of the door holding device comprising the present invention;

Figure 2 is a bottom plan view of the door holding device shown with the door in a closed position;

Figure 3 is a view similar to that of Figure 2 illustrating same in bottom plan view with the door in an opened position;

Figure 4 is a perspective view of the link comprising one of the important elements of the invention; and

Figure 5 is a perspective view of the mounting bracket illustrating in particular the construction of the spring mounting plate.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates a door of conventional construction which is provided with a hinge 12 for connection with a door frame 14. Obviously, the door holding device comprising the present invention and generally designated by reference numeral 15 may be utilized for doors of various sizes and therefore may be produced in various dimensions and of various materials as may be desired. The door holding device 15 includes a mounting bracket 16 which has a generally cruciform shaped portion 18 including ears 20 and 22 apertured as at 24 and 26 for reception of screws 30 and 32 utilized in holding the bracket 16 to the inner portion of the door frame 14. A further aperture 34 is provided for reception of a screw fastener 36 also utilized in holding the cruciform shaped portion 18 of the mounting bracket 16 to the door frame.

The mounting bracket 16 further includes a strap portion 38 terminating in an arcuate mounting plate 40 hav-

ing apertures as are indicated at 42, 44 and 46 there-through. These apertures are for the reception of one end as at 48 of a coil spring 52. The other end of the coil spring 52 as at 50 is secured in an aperture 54 in an angulated portion 56 of a link 58. By means of a rivet 60 extending through an aperture 62 in the strap portion 38 of the bracket 16 the link 58 is pivotally attached to the mounting bracket 16. The link has its end portions 64 and 66 offset from each other by means of the angulated portion 56. The end portions 64 and 66 are apertured at their ends as at 68 and 70 respectively, the aperture 68 receiving the rivet 60 therethrough. Extending through the aperture 70 is an angulated portion of an arm 72 having a flattened head portion 74. The other end of the arm 72 which has a flattened head portion 76 is received in a mounting bracket 78 secured as by screw fasteners 80 and 82 extending through the flange 84 of the bracket 78 to the door 10.

Due to the disposition of link 58 on opposite sides of a dead center when the door is moved between open and closed positions, Figures 3 and 2 respectively, the spring will be maintained under an increasingly greater amount of tension as the relative angular relationship between the link 58 and the mounting bracket 16 approaches 180°. Therefore, since the spring will be constantly under tension even when the door is closed, and will remain under tension even when the door is open, there will be no tendency to close the door by the spring since such would cause an angular relationship between the link 58 and the mounting bracket 16 to more closely approximate 180°. Likewise, the door will resist opening since the opening thereof will increase the tension of the spring 50. It is noted that when the link 58 is aligned with the bracket 16, the device will be in a dead-center position holding the door in a half-open position. However, as soon as the dead-center position is crossed during the opening of the door it will tend to urge the door open and during the closing of the door will tend to aid the closing of the door.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An attachment for doors for holding the same in either opened or closed position, comprising a mounting bracket for attachment to a door frame including an elongated attaching portion of generally cruciform shape presenting a pair of opposite and laterally directed ears at opposite sides and one end thereof with said ears and the other end of the attaching portion being apertured to receive a plurality of widely spaced fastening elements for securing the mounting bracket to the associated door frame, said mounting bracket including a relatively shorter strap portion underlying and spaced from said attaching portion parallel therewith and return bent therefrom and terminating at one end in a transverse plate angulated downwardly therefrom, an elongated link below said strap portion and having one end pivotally secured to the strap portion remote from said one end of the strap portion and about an axis perpendicular thereto, an arm pivotally connected to the other end of the link and extending therefrom for connection to an associated door, the end portions of said link being offset and disposed in parallel planes with both such planes being substantially parallel to said strap portion and with the plane containing said other end of the link being spaced below the plane con-

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taining the pivoted end of the link, said end portions of the link being interconnected by an intermediate portion angulated with respect thereto, and a spring stretched between and connected to said transverse plate and to said intermediate portion of the link, said link being movable between positions on opposite sides of a dead center as the associated door is opened and closed so that said spring serves to maintain the door in the position to which it is moved.

2. The assembly as defined in claim 1 wherein said transverse plate is transversely elongate and is provided with a plurality of spaced apertures thereacross for re-

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ceiving the associated end of said spring to vary the tension thereon.

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