Feb. 16, 1937. H. E. HUBBS 2,071,203

DOOR STAY CONSTRUCTION

Filed Feb. 26, 1936

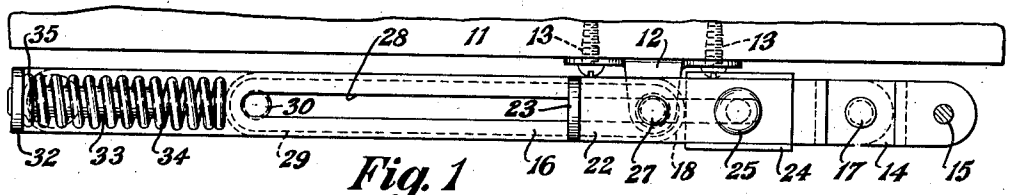


Fig. 1

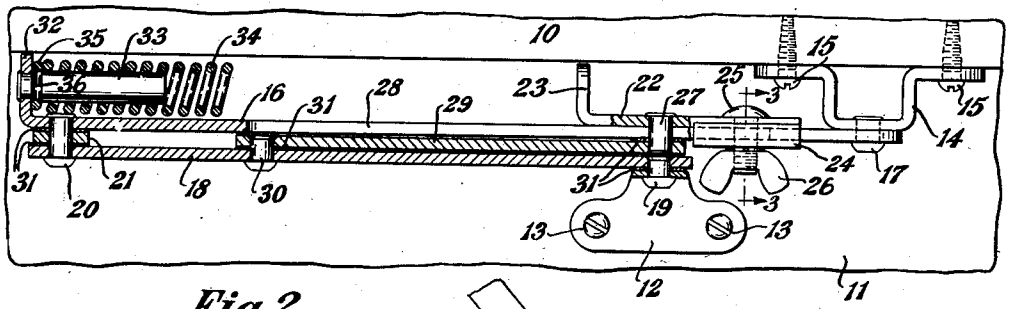


Fig. 2

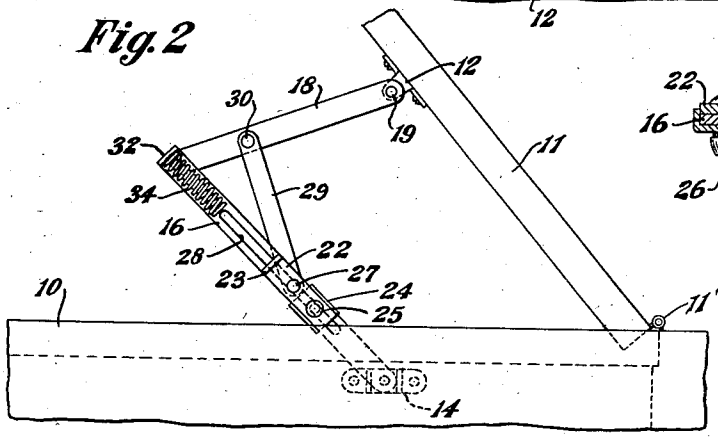


Fig. 4

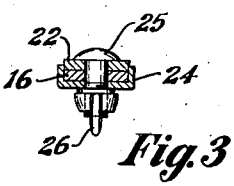


Fig. 3

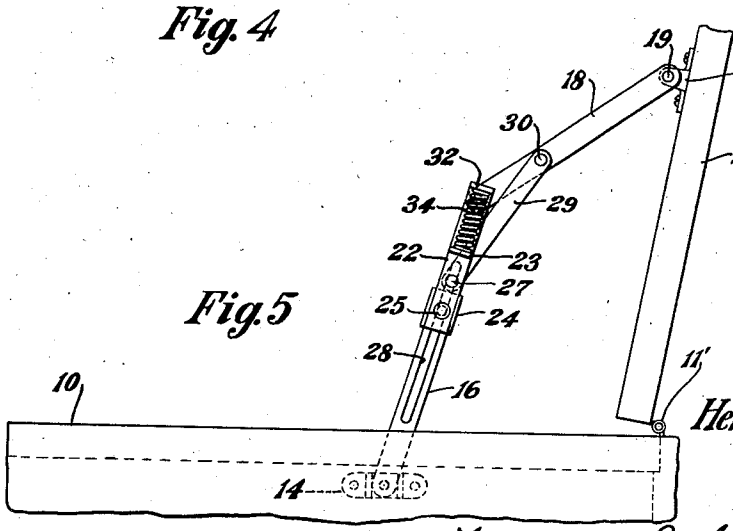


Fig. 5

Inventor

Henry E. Hubbs

By Frease and Bishop Attorneys

Patented Feb. 16, 1937 2,071,203

UNITED STATES PATENT OFFICE

2,071,203

DOOR STAY CONSTRUCTION

Henry E. Hubbs, Shelby, Ohio, assignor to The Shelby Spring Hinge Co., Shelby, Ohio, a corporation of Ohio

Application February 26, 1936, Serial No. 65,851

2 Claims. (Cl. 292—263)

The invention relates generally to door stays for holding doors in an open position, and more particularly to a door stay having mechanism for yieldably limiting the opening movement of a door.

The term "door" as used herein, is intended to include any hinged closure member, such as a door or window, because the improved door stay can be used equally well on any of such members.

Certain prior constructions have been provided for holding a door at predetermined open positions, but in these constructions either no provision is made for yieldably limiting the door opening movement, or where such provision has been attempted, the construction has been rendered unduly complicated, expensive or impractical.

It is therefore an object of the present invention to provide an improved door stay construction for securing a door at any desired open position.

Another object is to provide an improved door stay construction having means for yieldably limiting the opening movement of the door.

A further object is to provide a novel door stay construction having both means for holding the door at any desired open position and means for yieldably limiting the door opening movement.

Another object is to provide an improved door stay construction which folds into a minimum amount of space in door closed position.

A still further object is to provide a novel door stay incorporating all of the foregoing advantageous features, which is extremely simple in construction and efficient in operation, which is inexpensive to manufacture, and which is easily installed upon any standard type of hinged closure member.

These and other objects are attained by the improvements, parts, combinations and arrangements comprising the present invention, which may be stated in general terms as including a pair of hinged arms pivoted one to a door and the other to the door frame, a holding link pivoted at one end to an intermediate portion of one arm and having a sliding connection with the other arm, and spring means on said other arm for abutting said sliding connection to yieldingly limit the opening movement of the door.

Referring to the drawing forming part hereof,

Figure 1 is a plan view of the improved door stay mounted on a door in closed position;

Fig. 2 is an elevation thereof, parts being shown in section and the door and door frame being shown fragmentarily;

Fig. 3 is a transverse sectional view as on line 3—3, Fig. 2;

Fig. 4 is a plan view on a reduced scale showing the improved door stay on a door in partially open position; and

Fig. 5 is a similar view showing the door in fully open position.

Similar numerals refer to similar parts throughout the drawing.

In the drawing, a door frame is shown fragmentarily at 10, and a door 11 is hinged thereto as at 11' in a usual manner. An angular bracket 12 is secured to the door, as by screws 13 preferably at the upper portion of the door, and a bracket 14, which may be U-shaped as shown, is secured to the underside of the upper part of the door frame as by screws 15.

A preferably flat bar or arm 16 is pivotally connected at one end to the bracket 14 as by the pivot 17, and another arm 18 is pivotally connected at one end to the bracket 12 as by the pivot 19.

The arms 16 and 18 are pivotally connected at their other ends as by a pivot pin 20, there being a washer 21 located around the pivot 20 between the arms for spacing them apart.

A slide 22 is movably mounted on the upper side of the arm 16 and may be a flat bar having at one end an upturned flange 23 for a purpose to be hereinafter described.

A U-shaped clamping member 24 fits around the other end of the slide and the arm 16 thereunder, and a bolt 25 extends through the arm and slide and is provided with a wing nut 26 for frictionally clamping or securing the slide to the arm 16 for preventing movement of the slide on the arm.

Intermediate its ends, the slide 22 is provided with a pivot pin 27 which projects downwardly through a longitudinal slot 28 provided in the arm 16.

A holding member or flat link 29 is pivotally connected at one end to an intermediate portion of the arm 18 as by the pivot 30 and is connected at its other end to the pivot pin 27. Preferably, anti-friction washers 31 are provided at both sides of the washer 21 and between the arms 16 and 18 and the link 29, as well as between the arm 18 and the bracket 12. The anti-friction washers 31 around the pivots 30 and 27 also serve to space the link 29 slightly from the arms 18 and 16 respectively.

The arm 16 is preferably provided adjacent the pivot 20 with an upturned flange 32, and a spring centering pin 33 is secured therein. A coil spring 34 is located around the centering pin 33 and se-

cured thereto at its inner end by clamping the inner convolution **35** into an annular groove **36** in the pin.

In the operation of the improved door stay, assuming that the wing nut **26** is loosened to permit longitudinal movement of the slide **22** on the arm **16**, as the door **11** is opened to a position such as shown in Fig. 4, the slide **22** moves outwardly along the arm **16**, the pivot **27** and bolt **25** moving in the slot **28**. By tightening the wing nut **26** to clamp the slide to the arm **16** the door **11** may be held or secured in any desired partially open position.

If the door **11** is permitted to swing to fully open position as indicated in Fig. 5, the flange **23** of the slide **22** abuts and compresses the coil spring **34**, with the result that the opening movement of the door **11** is yieldingly limited or cushioned, thus eliminating shocks and strains on the door or the door frame, as well as on the door stay parts.

If it is desired to secure or hold the door in fully open position, it is only necessary to tighten the wing nut **26** when the door is in that position.

As shown in Figs. 1 and 2 when the door is in closed position the improved stay folds into a minimum amount of space, because the link **29** folds into the space between arms **16** and **18** provided for by washer **21**, and the whole door stay lies substantially against the inside of the door and substantially against the underside of the door frame.

The improved door stay is simply and cheaply constructed mainly of flat straps or strips, and is quickly and easily installed upon any standard door or the like by merely attaching the brackets **12** and **14** by means of screws.

I claim:

1. Door stay construction including a pair of arms pivoted together at one end and pivotally connected one to a door and one to a door frame, one of said arms having a longitudinal slot, a slide movably mounted on the upper side of said arm, a link pivotally connected at one end to the upper side of an intermediate portion of the other arm and extending under said slot, and a pin extending through said slot and pivotally connecting said link to said slide.

2. Door stay construction including a pair of arms pivoted together at one end and pivotally connected one to a door and one to a door frame, one of said arms having a longitudinal slot, a slide movably mounted on the upper side of said arm, means for frictionally securing said slide to said arm, a link pivotally connected at one end to the upper side of an intermediate portion of the other arm and extending under said slot, and a pin extending through said slot and pivotally connecting said link to said slide.

HENRY E. HUBBS.