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DOOR HOLDING DEVICE

Filed March 9, 1925

Fig. 1.

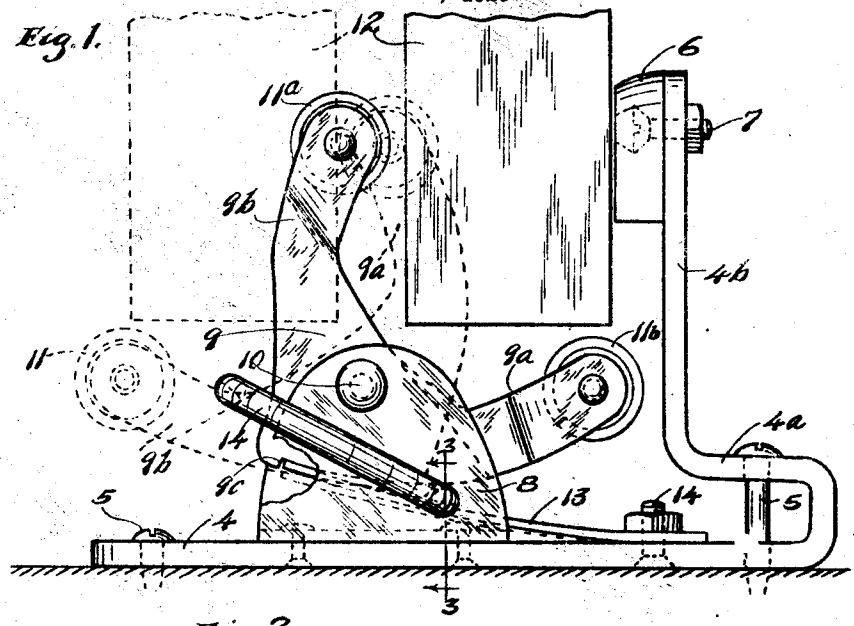


Fig. 2.

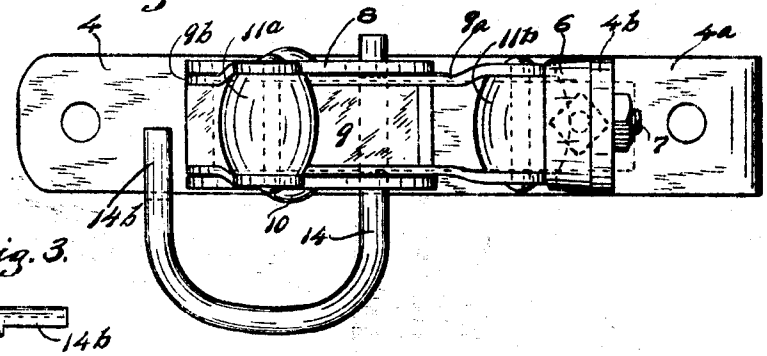
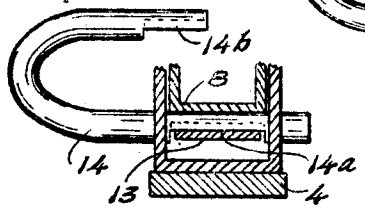


Fig. 3.



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UNITED STATES PATENT OFFICE.

EMIL OLSON, OF SOUTH HAVEN, MINNESOTA.

DOOR-HOLDING DEVICE.

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To all whom it may concern:

Be it known that I, EMIL OLSON, a citizen of the United States, residing at South Haven, in the county of Wright and State of Minnesota, have invented certain new and useful Improvements in Door-Holding Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a door holding means and while the invention may be disposed to hold doors and other swinging members in various positions, it particularly is adapted to hold a door in wide open position. It is desirable with many doors and particularly garage doors, that the same be held in open position after having been opened. With garage doors this is important, for, if the door swings toward closed position it is apt to be struck by an incoming or outgoing vehicle.

It is an object of this invention, therefore, to provide a simple and very efficient door holding means adapted to be operated by the door to hold the door in fixed position.

It is a further object of the invention to provide such a member together with a securing means for holding the same in position with the door held therein and a means adapted to be manipulated by the operator for releasing said securing mechanism so that the door may again be closed.

It is more specifically an object of this invention to provide a door holding means comprising a base which may be made of a strip of flat iron having secured thereto and pivoted thereon, a bell crank lever having arms with door engaging means thereon, which arms are adapted alternately to be disposed in upstanding or depressed position, said base member carrying a stop toward and from which said arms swing, together with securing means for holding the arm remote from said stop in upstanding position with the door between the same and said stop, and means for releasing said securing mechanism so that said bell crank lever may be swung to permit said door to be closed.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to the same parts throughout the different views, and in which,

Fig. 1 is a view in side elevation of the device showing a portion of the door, a different position of the device and door being indicated in dotted lines;

Fig. 2 is a plan view of the device; and

Fig. 3 is a vertical section taken on the line 3—3 of Fig. 1, as indicated by the arrows.

Referring to the drawings, the device comprises a base member 4 adapted to be secured to or set into the floor, and while this base member may be made in various ways, in the embodiment of the invention illustrated, the same is shown as formed of a flat strip preferably of metal having one end 4^a reversely bent and extending parallel to the horizontal portion of the strip, the end 4^b then being bent substantially at a right angle to extend vertically. Attaching screws or bolts 5 extend through holes in one end of strip 4 and through the other end and its parallel portion 4^a, said screws being adapted to hold the base member in position. The vertical arm 4^b has secured at its top a stop member 6 which may be of resilient material and which is held in place by a headed and nutted bolt 7. A U-shaped or channel-shaped plate 8 having vertical side portions is secured to the base 4 by suitable rivets. A bell crank member 9 having arms 9^a and 9^b, is pivoted on a pivot member 10 extending transversely through the side portions of plate 8. The arms 9^a and 9^b extend at an angle to each other and are bifurcated at their upper ends and have revolubly mounted therein door engaging rollers 11^a and 11^b, respectively which may have rubber or similar yielding material at their peripheries. The members 11^a and 11^b are spaced a somewhat greater distance than the width of the door 12 and are adapted to be respectively engaged by the sides of said door so that the arms 9^a and 9^b alternately are swung to upstanding or depressed position. The axis of member 10 is substantially horizontal and parallel to the door engaging surface of stop 6. A plate or sear spring 13 is secured to the top of base 4 by a headed and nutted bolt 14 and extending between the sides of plate 8 and beneath member 9. This spring is under tension and engages the bottom surface of arm 9^a when said arm is depressed so that member 9 is held yieldingly in such position. Said member 9 is also provided with a ledge

or shoulder portion 9^c which engages the end of spring 13 so that when arm 9^a is depressed the member 9 is in the position illustrated in full lines in Fig. 1, with the door 12 between arm 9^b and the stop 6, said member 9 is effectively fastened or secured in position and cannot be swung. A rod 14 extends through the sides of plate 8 and is journaled therein, said rod being cut away to form a flat surface 14^a adapted to engage the top of spring 13, said rod extending between said spring and member 9. The rod 14 is reversely bent at the side of plate 8 and base 4 and has its other end extending over base 4 at the outer side of plate 8, said latter end being cutaway, as shown at 14^b and adapted to engage the top of base 4 to limit the turning movement of rod 14. It will be noted that the cutaway surface 14^a is eccentric to the horizontal axis of rod 14. The member 9 when swung to the position shown in dotted lines in Fig. 1, also engages the top of spring 13 and is yieldingly held by said spring in such position.

In operation, the device will be placed in position to hold the door in its open position. The device when not holding the door will be in the position shown in dotted lines in Fig. 1 with the arm 9^a and its roller 11^a yieldingly held in upstanding position. The arm 9^b will then be depressed and its roller 11^b will be low enough for the door to pass over the same. As the door swings to its open position therefore it will engage the roller 11^a on arm 9^a and arm 9^a will be depressed against the tension of spring 13 and arm 9^b will be swung to upstanding position. The door engages stop 6 and when between said stop and the roller 11^b on arm 9^b the shoulder 9^c engages the end of spring 13. The member 9 then cannot be swung backwardly and the door is held in position between roller 11^b and arm 9^b and the stop 6. When it is desired to again close the door the operator merely steps on the bent or bight portion of the rod 14. This rod is thus oscillated in plate 8 and the flat surface 14^a which is eccentric presses down on the spring 13 and moves the end of said spring out of engagement with shoulder 9^c. The door 12 can then be swung towards closed position and arm 9^b will again be depressed and arm 9^a brought to upstanding position.

From the above description it is seen that applicant has provided a very simple and efficient door holding means. The same is easily made from very few parts and it is easily and quickly operated by the door. The device can be very ruggedly made and is particularly adapted for use with heavy garage doors. The device has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above set forth and in the novel parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:

1. A door holding means comprising a stop adapted to be contacted by the door, a spring-pressed bell crank member pivoted on a horizontal axis substantially parallel to the plane of the door when the same is adjacent said stop, said member being swingable to position with the arm remote from said stop below said door and the arm adjacent said stop upstanding in position to be engaged by said door, said member being adapted to be swung by engagement of said door to swing said arm remote from said door in upstanding position at the side of said door when the same is adjacent said stop whereby said door is held between said latter arm and said stop and a securing means holding said member in said latter position.

2. The structure set forth in claim 1, and a swinging member adapted to be manipulated by the operator to release said securing means to permit said member to be swung into the first mentioned position by said door and said door closed.

3. A door holding means comprising a base, a stop upstanding at one end thereof, a swinging bell crank member secured to said base, the arms thereof swingable toward and from said stop into upstanding and depressed position alternately, a spring adapted yieldingly to hold said member in position with the arm adjacent said stop in upstanding position and engaging with said member to hold the same in position with the arms remote from said stop in upstanding position, and means for releasing said member from said spring.

4. A door holding means comprising a stop adapted to be engaged by the side of the door, a bell crank member having substantially straight arms pivoted on a substantially horizontal axis parallel to the door engaging surface of said stop, said member being spring-controlled to hold said arms alternately in upstanding or depressed position, and means for securing said member in position with the arms remote from said stop in upstanding position with the door between said latter arm and stop.

5. A door holding means comprising a flat strip adapted to be secured to the floor, said strip having one end bent into vertical position and equipped with a stop adapted to be engaged by a door, a U-shaped plate secured to said strip, a bell crank member

having door-engaging arms pivoted in said plate on a horizontal axis, a sear spring secured to said strip extending into said plate, and beneath said member, said member having surfaces adapted to engage said spring to hold said arms in upstanding and depressed positions alternately, said arms being engageable by said door, and said member having a shoulder thereon engaging the end of said spring to hold said member in position with the arms of said member remote from said stop in upstanding position.

6. The structure set forth in claim 5, a U-shaped rod journaled in said plate on an axis parallel to the axis of said bell crank member and having an eccentric portion adapted to engage and depress said spring to move the same out of engagement with said shoulder, said rod having its bight portion extending at one side of said plate and strip in position to be engaged by the foot of the operator.

7. A door holding means comprising a base formed of a flat strip adapted to be secured to the floor, said strip having one end reversely bent to extend parallel thereto for a short distance to form an attaching portion and then bent vertically at a right angle, a resilient stop secured to said vertical portion at the side thereof adjacent the main body of said strip, a channel-shaped plate secured to said strip, a bell crank member pivoted in said channel plate between the sides thereof and on a substantially horizontal axis extending transversely of said strip, said member having arms equipped with revoluble door engaging means, a plate spring secured to said strip and extending into said channel-shaped member beneath said bell crank member, said member having a surface engaging said spring to hold said member yieldingly in position with the arms thereof adjacent said stop in upstanding position, said member having a shoulder thereon adapted to be engaged by the end of said spring to hold said member locked in position with the arm thereof remote from said stop in upstanding position with the door between said latter arm and said stop, a rod journaled in said channel-shaped plate extending beneath said member and over said spring having an eccentric portion adapted to engage and depress said spring when said rod is turned, said rod being reversely bent at one side of said plate and strip and having its other end disposed over said strip to limit the turning movement of said rod.

In testimony whereof I affix my signature.

EMIL OLSON.