UNITED STATES PATENT OFFICE.

WILLIAM M. VALENTINE, OF ROCHESTER, NEW YORK.

COMBINED DOOR HOLDER AND STOP.

1,081,707.


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To all whom it may concern:

Be it known that I, WILLIAM M. VALENTINE, a citizen of the United States, and a resident of the city of Rochester, in the county of Monroe and State of New York, have invented a new and useful Combined Door Holder and Stop, of which the following is a specification.

This invention relates to means for governing a door.

The objects of the invention are to provide means: 1, for holding door firmly and securely in the closed position; 2, for rigidly holding a door in a partly open position, so that it may not be moved by the application of force thereto until the holding means is released; 3, for so positioning the holding means that it can only be released by a person on a predetermined side of the door; 4, for preventing a greater arc movement of the door than is desired; 5, for resiliently bringing the door to a stop when it has completed the desired arc of movement; 6, for accomplishing all of the above stated objects which will be so designed that by an easy and convenient interchange of a minimum number of parts, the means may be applied either to a door which swings to the left or to one which swings to the right.

Other objects and advantages will be apparent to those familiar with the class of devices to which this invention relates, and will furthermore become apparent as the description of the physical embodiment selected by applicant to illustrate his invention progresses, it being understood that the form selected is merely illustrative and by no means exhausts the possible forms in which his idea of means may be embodied, and which will fall within the scope of the claims contained herein.

For a full understanding of the invention, reference is had to the accompanying drawings, wherein applicant has illustrated a preferred form of his invention and wherein like characters of reference designate like parts throughout the several views, and in which:

Figure 1, is a plan view of a fragment of door frame with the invention applied thereto; Figure 2, is a side view of the device shown in Fig. 1; Figure 3, is a plan view of a detail, which I have herein designated a spring buffer; Figure 4, is a longitudinal cross sectional view on the line A—B of Fig. 3; Figure 5, is a side elevational view of the device shown in Fig. 3, viewed from the right hand side; Figure 6, is a bottom plan view of the device illustrated by Fig. 3.

1, designates a fragment of a door frame to which is hinged the door 2 by means of hinge 3.

A bracket 5 is attached to the frame 1 by any suitable fastening means such as screws 4. The bracket has an upper lug 6 and a lower lug 7, through which a headed pin 8 passes, the head of the pin resting on the upper lug 6. Positioned between the lugs 6 and 7, and pivoted on the pin 8 is one end of a stiff arm 9, which is enlarged into a cylinder at its other end. A shouldered hole 10 is formed in the cylindrical end of the arm 9 and in this hole is loosely mounted a shoulder stop and guiding pin 11. The pin 11 has an upper screw threaded end 12 which bears a lifting head 13 screwed thereon. The shoulders on the pin 11 and the shoulders formed in the hole 10 are at such distance apart that by grasping the lifting head 12, the pin 11 may be lifted so that its lower end is just even with the lower edge of the cylindrical head on the end of the stiff arm 9.

A door plate 14 is attached to the door 2 by any suitable adjustable means as by the provision of elongated slots 15 through which screws 16 are passed and screwed into the door 2, thus binding the door plate firmly to the door, but nevertheless providing for the possibility of adjustment necessitated by settling of the door. A series of holes 17 are formed in the bracket, of any desired number and of any desired distance apart. At either end of the series of holes there is formed a pair of holes designated 18 and 19, and 20 and 21. Holes 19 and 20 are what I term "erecting" holes because they are used to position the door plate on the door. This is accomplished by first fastening bracket 5 to the frame 1 by means of the screws 4 at such a distance from the floor that it will interfere in no wise with anything that may be located back of the door and will preferably be beyond the reach of children liable to tamper therewith. The stiff arm 9 is then attached to the bracket 5 by means of the pin 8 and then swung to the position as shown in Figs. 1 and 2. The door plate 14 is then brought up under the stiff arm 9 so that pin 11 fits into hole 20 when the door is closed and the door plate rests there-against if the device is being fitted to a door which swings to the left as
shown in the drawings, or if bracket 5 has been fastened to the left hand side of the door frame and the door swings to the right, then the pin is inserted in the hole 19, and then screw 16 is inserted in the slot in the end of the plate adjacent the hole in which pin 11 is placed and screwed almost entirely in, then the plate is leveled, screw 16 inserted in the slot in the other end of the door plate so as to grip it firmly, and then the screw 16 first inserted is completely screwed in.

By erecting the device in the manner described it will be found that when pin 11 is positioned in hole 20 the door will be firmly and securely held in the full closed position and any attempt to open the door to be successful will necessitate breaking some part or parts of the apparatus. This function constitutes the door holding feature of the device.

If it is desired to hold the door in a partly open position, the pin 11 is raised so that it is even with the bottom of the cylindrical end of the stiff arm 9, the door is then opened the desired amount and the pin 11 dropped into such one of the holes 17 that comes under the pin 11 when the stiff arm 9 is swung directly over the row of holes. When the pin 11 has been dropped in the proper hole the door will be held firmly and rigidly in the desired position, and furthermore the device will be out of reach of persons on the side of the side remote from the device, so that the device cannot be manipulated to allow the door to fully open unless the door has been held so far open that sufficient space is left for the entrance of the entire body of a person. This mode of operation provides a ready means for holding a door ajar in a bed chamber but still prevents the entrance of intruders. This function constitutes a door holding feature of the device also.

A spring buffer has been illustrated in detail in Figs. 3, 4, 5 and 6. This spring buffer consists of a barrel 22 in which a helical spring 23 is positioned, bearing at one end against a reciprocable plunger 24, which bears an enlarged end 25, having a piece of rubber or similar sound deadening material 26 fastened thereto. The other end of the spring bears against a plug 27. The top of the barrel is formed with a slot 28 in which is positioned a pin 29, which is screwed into the plunger 24. The pin 29 bears against the end walls of the slot 28 when the plunger is in the position as shown in Fig. 4 and so prevents the plunger from being pushed entirely out of the barrel 22 by the force of the spring 23. A similar pin 30 is screwed into plug 27 and rests against the end wall of the slot 28 and so prevents the plug 27 from being forced out of the barrel 22 by the force of the spring 23. Directly beneath the barrel 22 and extending downwardly is an integral fin, to which is revolvably attached by means of screw 32, a clamping piece 33. To one side of the barrel and with its bottom face on a line with the bottom of the barrel is an apron 34, which bears two cylindrical lugs 35 and 36, each of approximately the same diameters as the holes 17 in the door plate 14 and spaced apart the same distance as the holes 17.

When it is desired to use the device herein illustrated as a stop, the buffer member is placed in position on the door plate 14 as shown in Figs. 1 and 2 with lugs 35 and 36 positioned in holes 17 and the fin 31 positioned in an elongated slot 37 formed in the door plate, then the clamping piece 33 is moved at right angles to the fin 31 thus clamping the buffer in place. The pin 11 in stiff arm 9 is then positioned in slot 37. With the parts in the described position the door will be resiliently stopped at a certain position, governed by the position of the buffer on the door plate, when it is opened. This will be accomplished without severe jar because the cylindrical end of stiff arm 9 will contact with resilient piece 26 and then force plunger 24 into the barrel 22 against the expansive tendency of spring 23, thus bringing the door gradually and gently to a stop. By positioning the buffer at different places on door plate 14, the amount which the door may be opened before being stopped may be regulated and by varying the size of the spring 23 or the size, stiffness, or character of the wire of which it is composed the door may be brought more or less abruptly to a stop. If the device is used on a right hand door then plunger 24 and plug 27 will be reversed by placing plug 27 in the end of the barrel in which plunger 24 is now placed, and placing plunger 24 in the end of the barrel in which plug 27 is now placed. This interchange may be very easily and conveniently made as both may be easily removed from the barrel by unscrewing pins 29 and 30. This function constitutes the door stopping feature of the device.

If it is desired to use the device as a stop only and it is desired to bring the door to a stop somewhat more abruptly than can be done by the use of spring 23, then the spring 23 may be removed from the barrel 22 of the buffer and entire reliance placed upon resilient piece 26 to effect the stopping of the door.

Having fully described and clearly illustrated a preferred form of my invention and explained the principle and mode of operation thereof, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a spring buffer for a door stop: a
member formed with a hole therethrough; a spring positioned in said hole; a plunger in one end of said hole; a plug in the other end of said hole; said plug and plunger being interchangeable; means to prevent the ejection of the plug and plunger from the hole by the spring; lugs attached to the body; a clamping piece attached to the body; a door; means attached to the door formed with a series of holes therein for the reception of the said lugs and formed with a face against which the said clamping piece can bear to clamp the member in adjusted position; and a swinging stiff arm for contact with the end of said plunger.

2. In a spring buffer for a door stop; a body formed with a hole therethrough; a plunger positioned in one end of said hole and a plug positioned in the other end of said hole; said plug and plunger being interchangeable; a spring positioned in said hole intermediate the plug and plunger and pressing thereagain; means to prevent said plug and plunger from being ejected from said hole by said spring; a plurality of like lugs attached to said body; a fin attached to said body; and a clamping piece attached to said fin.

3. In a spring buffer for a door stop; a body formed with a hole therethrough; a plunger positioned in one end of said hole and a plug positioned in the other end of said hole; said plug and plunger being interchangeable; a spring positioned in said hole intermediate the plug and plunger and pressing thereagainst; means to prevent said plug and plunger from being ejected from said hole by said spring; a door plate, formed with a plurality of equally spaced holes and a slot therethrough; means attached to said body adapted to fit in any of said holes and in said slot whereby the body may be positioned at different places on said door plate; and means for fastening said body securely in position on the door plate.

WILLIAM M. VALENTINE.

Witnesses:
LILLIAN L. PHILLIPS,
LYNN CURRY.

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