



# UNITED STATES PATENT OFFICE.

GEORGE T. BUDDLE, OF CHICAGO, ASSIGNOR OF ONE-HALF TO A. R. RAWLINGS, OF JEFFERSON, ILLINOIS.

## DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 511,929, dated January 2, 1894.

Application filed May 31, 1893. Serial No. 476,115. (No model.)

### *To all whom it may concern:*

Be it known that I, GEORGE T. BUDDLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Door-Hanger, of which the following is a specification.

My invention relates to improvements in door-hangers, the object in view being to provide a suspension mechanism for sliding doors, which is so constructed as to be adapted for application to doors of varying sizes or lengths; which is capable of being adjusted so as to raise and lower the door, whereby it may clear the threshold; which will permit the door to move noiselessly and without friction only in the line of its reciprocation, thus avoiding any jarring, tilting, or binding within the door-frame.

Other objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is an elevation of a door supported by a hanger constructed in accordance with my invention, the door being closed. Fig. 2 is a similar view, the door being open.

Like numerals of reference indicate like parts in both the figures of the drawings.

1 designates an ordinary sliding door, which is mounted for reciprocation horizontally in the usual door-frame 2, above which is the joist 3 and at one side of which, the studding 4. A guide rail 5 is arranged immediately above the door-frame and is provided with a longitudinal slot.

Secured to the under side of the joist 3 within and to one side of the door frame is a pair of hanger castings 6, the same being flanged and perforated to receive screws that serve to secure them in position. Pivoted as at 7 to these castings is a pair of suspension straps 9 which are of such length as to nearly reach from the hanger castings to the guide rail 5. The suspension straps 9 are connected pivotally as at 10 at their lower ends to the opposite ends of an intermediate connecting strap 11.

The upper edge of the door near its ends is provided with recesses 12, and over said re-

cesses are let into the door, plates 13 having perforations. Through the perforations of these plates pass suspension hooks 14, whose lower ends are threaded and below the plates have introduced thereover adjusting nuts 15 by which the door being suspended by the hooks may be adjusted vertically to a slight degree and so as to clear the threshold. The upper ends of the hooks 14 engage over one or two headed studs 16, which project in vertical alignment from the rear sides of a pair of straps 17. The straps 17 are connected pivotally at their upper ends, as at 18, to a horizontal connecting strap 19 which is above and parallel with the connecting strap 11, and straps 20 and 21 are pivotally connected by the pivots 18 to the upper ends of the straps 17 which are the same length as the straps 9, and to the opposite ends of the connecting strap 19. The strap 21 is twice the length of the straps 9, 17 and 20, and therefore its lower end extends below the pivot 10, which latter pivot is at the center thereof. To the lower end of the strap 21 there is centrally pivoted as at 22 a short lever or strap 23, to the lower end of which is pivoted as at 24 a link strap 25 whose front end is pivoted as at 26 to the door frame or adjacent studding. To the upper end of the short lever 23 is pivoted a link 28 whose upper end is pivoted as at 29 to a studding arranged at the opposite side of the said lever 23.

The connecting strap 19 is provided with a series of perforations 30, into any one of which the upper hook end 31 of a pair of diagonal braces 32 may engage, the lower ends of said braces being pivoted as at 33 in the perforations provided for that purpose in the straps 17. It will be seen that by arranging the upper hook-ends 31 in the various holes 30 the bars 17 will be spread or contracted at their lower ends and thus may be adjusted for doors of varying lengths. The hooks 14 it will be understood engage with the lower studs 16 whenever the straps 17 are contracted or spread so that they will permit of such adjustment, but when the straps 17 are simply vertical the hooks preferably engage over the two studs of each strap.

By means of the toggle connection at the rear end of the door and the extended lever

21, it will be seen that the mechanism for moving the door is entirely hidden from view, and thus the said mechanism is adapted for house use especially.

5 From the foregoing description in connection with the accompanying drawings it will be seen that I have provided a hanger mechanism that will permit the door to move only in a horizontal line, or in other words, only in  
10 the line of its reciprocation, absolutely avoiding all jarring or vibrations common to sliding doors and avoiding friction and noise.

Changes in the details of my invention will readily suggest themselves, and I therefore do  
15 not limit the invention to the exact details herein shown and described.

Having described my invention, what I claim is—

1. In a door-hanger, the combination with a  
20 pair of suspension straps 9 pivotally connected at their upper ends to a support, a horizontal strap 11 pivoted to the lower ends of said suspension straps, an upper horizontal connecting strap 19, door-supporting straps  
25 17 pivoted to the ends of the strap 19, straps 20 and 21 pivotally connected to the upper ends of the straps 17 and the opposite ends of the strap 11, the said strap 21 only extending beyond its pivot, of a lever connection between  
30 the lower end of the strap 21 and a fixed support, and a door connected to the lower ends of the straps 17, substantially as specified.

2. In a door-hanger, the combination with a  
35 pair of suspension straps 9 pivotally connected at their upper ends to a support, a horizontal strap 11 pivoted to the lower ends of said suspension straps, an upper horizontal connecting strap 19, door-supporting straps  
40 17 pivoted to the ends of the strap 19, straps 20 and 21 pivotally connected to the upper ends of the straps 17 and the opposite ends of the strap 11, the said strap 21 extending beyond its pivot, of a loose connection between  
45 the lower end of the strap 21 and a fixed support, a door connected to the lower ends of the straps 17, perforations formed at each

side of the center of the strap 19, and opposite diagonal braces pivotally connected to the straps 17 and having their free ends bent  
50 to form hooks for engaging said perforations, substantially as specified.

3. In a door-hanger, the combination with a pair of suspension straps 9 pivotally connected at their upper ends to a support, a horizontal strap 11 pivoted to the lower ends of  
55 said suspension straps, an upper horizontal connecting strap 19, door-supporting straps 17 pivoted to the ends of the strap 19, straps 20 and 21 pivotally connected to the upper  
60 ends of the straps 17 and the opposite end of the strap 11, the said strap 21 extending beyond its pivot, of a loose connection between the lower end of the strap 21 and a fixed support, a door connected to the lower ends of  
65 the straps 17, and means for adjusting laterally the lower ends of the straps 17, substantially as specified.

4. In a door hanger, the combination with a pair of suspension straps 9 pivotally connected at their upper ends to a support, a horizontal strap 11 pivoted to the lower ends of  
70 said suspension straps, an upper horizontal connecting strap 19, door-supporting straps 17 pivoted to the ends of the strap 19, straps  
75 20 and 21 pivotally connected to the upper ends of the straps 17 and the opposite ends of the strap 11, the said strap 21 only extending beyond its pivot, of a loose connection between  
80 the lower end of the strap 21 and a fixed support, a door connected to the lower ends of the straps 17, a short lever 23 pivoted to the lower end of the strap 21, and the upper and lower links 25 and 28 pivotally connected to  
85 the opposite ends of the short lever and to the studding at opposite sides thereof, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE T. BUDDLE.

Witnesses:

GEO. I. HOFFMANN,  
FRED. KELLER.