

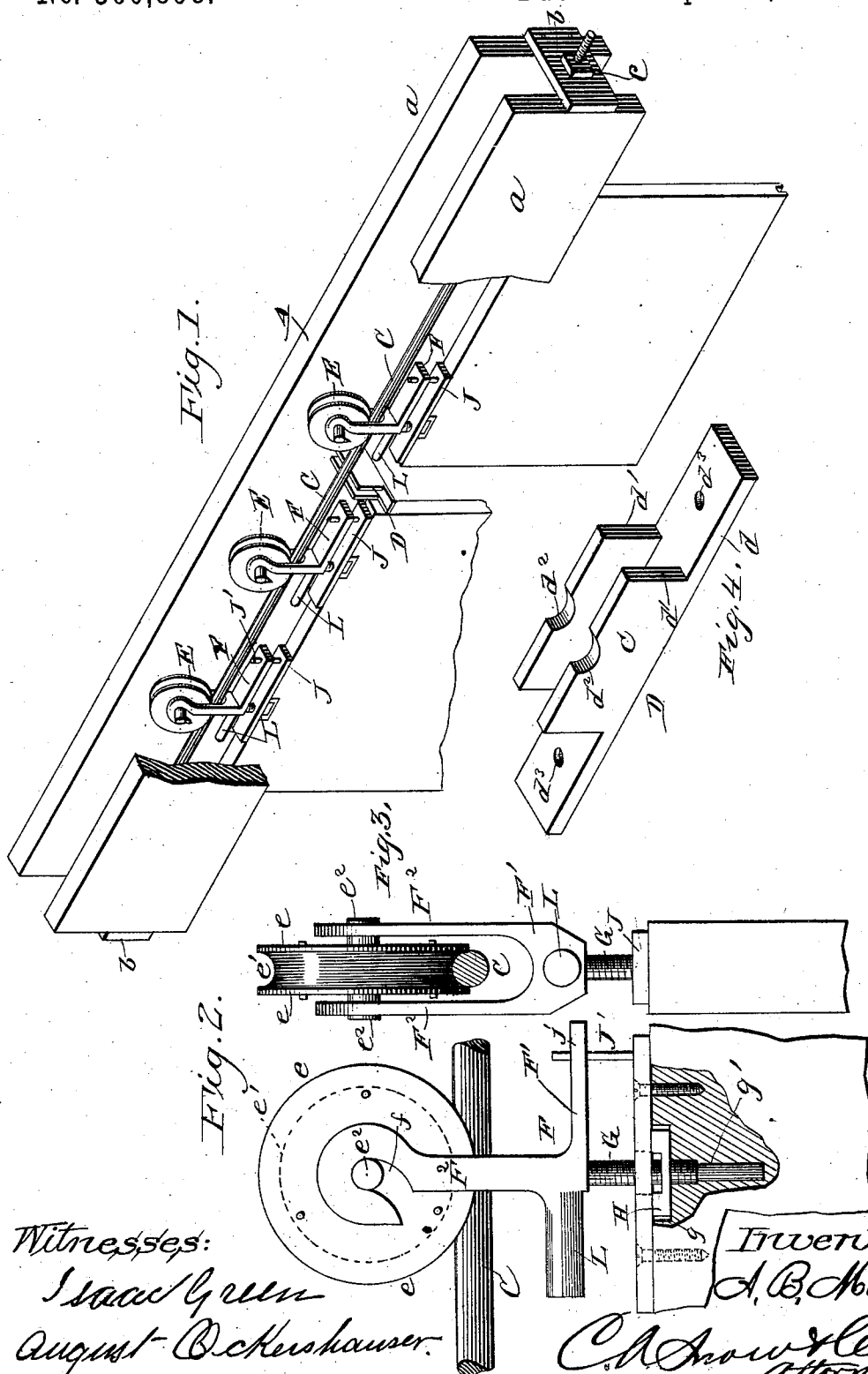
(No Model.)

A. B. MORSE.

DOOR HANGER.

No. 360,898.

Patented Apr. 12, 1887.



Witnesses:

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ISAAC GREEN, OF SAME PLACE.

DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 360,898, dated April 12, 1887.

Application filed June 28, 1886. Serial No. 206,548. (No model.)

To all whom it may concern:

Be it known that I, ANCIL B. MORSE, a citizen of the United States, residing at Baraboo, in the county of Sauk and State of Wisconsin, have invented certain new and useful Improvements in Door-Hangers, of which the following is a specification, reference being had to the annexed drawings, forming a part hereof.

My invention relates to improvements in sliding-door hangers; and it consists in an improved hanger-casting, and also in a peculiar device for supporting the track.

It also consists in a certain novel combination of parts, as will be hereinafter fully described, and then pointed out in the claims.

In the accompanying drawings, which illustrate a door-hanger embodying my improvements, Figure 1 is a perspective view partly broken away to show details of construction and arrangement. Fig. 2 is an enlarged view of the hanger in side elevation, showing a portion of the door in section. Fig. 3 is an end elevation of the hanger as shown in Fig. 2, with the track in section, and Fig. 4 is a detached perspective view of the bridge.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the housing for the track of my improved door-hanger, which comprises the parallel sides *a*, arranged a short distance apart to leave an intermediate space for the hanger and track, and the transverse plates *b*, which are rigidly affixed to the ends of the parallel sides *a*, to securely connect them together and provide a rigid and firm structure, which is left open on its lower side, so that the upper edge of the door can be fitted therein, to slide freely back and forth. These transverse plates *b* are provided with central openings, which are arranged in line with each other, and through these aligned openings are passed the threaded ends of a rod, C, which is arranged in the space between and parallel with the sides *a* of the housing A, the threaded ends of this rod being provided with binding-nuts *c*, which bear or impinge upon the transverse plates *b*, and thus serve as the means for stretching the rod should it become slack under the weight and strain of the door or doors thereon.

The parallel sides *a* of the housing are connected at an intermediate point of their length by means of a bridge, D. (Shown in detail in Fig. 4 of the drawings.) The bridge is cast or formed in a single piece of metal, and comprises a flat base-plate, *d*, and the vertical right-angled bearing-plates *d'*, which are arranged at the sides of the base-plate *d* and parallel with each other; but in lieu of these vertical parallel plates *d'* a single thick bearing-plate can be substituted therefor the upper edges of the bearing plate or plates *d'* being provided with transverse recesses or notches *d''*, that are arranged in line with each other.

The bridge is arranged transversely across the parallel sides of the housing, and the ends thereof are fitted in recesses formed in the lower edges of the sides, so that the lower side of the base-plate lies flush with the lower edges of the parallel sides *a*. The said ends of the base-plate have openings *d''*, through which are passed screws or other like means to rigidly fasten the bridge to the sides *a*, and the vertical bearing-plates *d'* are extended upwardly from the base-plate, so that the rod or track C will rest or bear in the transverse aligned recesses *d''* in the said bearing-plates, and thereby support the rod or track at an intermediate point of its length, and more effectively prevent it from sagging. It will thus be seen that the bridge serves to connect and brace the parallel sides of the housing, and to aid in supporting the horizontal track or rod C, to prevent the latter from sagging, thereby fulfilling a twofold purpose, which very materially increases the strength and durability of the structure.

My invention is capable of use on double or single doors, and in the drawings I have shown it adapted to the former purposes. In the case of a single door the bridge is arranged between the two hangers which are provided for the single door, so that it will not interfere with the action of the rollers which travel upon the track, and also to serve as the intermediate support for the track; but in the case of double sliding doors the bridge is arranged at the center of the housing and in the path of buffers on the hangers of the doors, as will be more fully hereinafter described, so that

the buffers will strike the bridge in closing the doors and thereby limit the movement of the same.

F designates my improved hanger, which is shown in detail in Figs. 2 and 3, and comprises the horizontal base-plate F' and the vertical suspending-arms F², which are arranged parallel with each other and at one end of the base-plate, the whole being cast or formed of a single piece of metal. The upper terminal ends of the vertical suspending-arms F² of the hanger are enlarged, and they are each provided with segmental slots *f*, which open at their lower ends through the lower edge of the enlargement of the arms, as clearly shown in Fig. 2. The upper terminal ends of the segmental slots *f* are rounded, as shown, to permit the trunnions *e*² of the roller E to turn or rotate freely therein, these rollers E being readily fitted in and removed from the suspending-arms of the hanger by merely sliding the trunnions thereof through the open ends of the slots, which are arranged in line and concentric with one another for this purpose. One of these supporting-rollers is provided for each hanger; and each roller comprises the parallel sides or disks *e*, which are rigidly connected together in any suitable manner, and an elastic tire, *e'*, of rubber or other suitable material, which is arranged between the disks and suitably connected thereto.

The rollers E are made in sections, so as to admit the grooved rubber tire E' to be placed between the flanges or disks *e*, and secured thus between the flanges. Figs. 2 and 3 show the securing pins or bolts for the sections of the rollers. This elastic tire is of smaller diameter than the disks, and it is arranged within the peripheries of the disks and concentric therewith; and the periphery of the tire is made concave in cross-section, to snugly fit and bear upon the convex surface of the track or rod C. The elastic tire of the roller is seated firmly upon the track to run smoothly and steadily thereon, and the edges of the disks *e* fit on opposite sides of the track to prevent lateral play of the roller thereon.

The base-plate of the hanger is provided with a vertical depending arm, G, which is arranged immediately beneath the suspending-arms F² of the hanger, and this depending arm is exteriorly threaded, as shown. A recess or slot, *g*, is formed in the upper edge of the door I, as shown in Fig. 2, and a vertical opening, *g'*, is bored in the door, so that it opens through the slot *g* formed in the upper edge thereof. A plate, J, is rigidly affixed to the upper edge of the door by means of screws, as shown, or other suitable devices, and this plate has a central opening, (shown in dotted lines in Fig. 2,) which aligns with the vertical opening *g'*.

H designates a rotary nut, which is fitted in the horizontal slot or recess in the upper edge of the door and beneath the fixed plate J thereon, and this nut is capable of free rotation in the recess or slot by a suitable implement.

The threaded depending arm G of the hanger passes through the aligned openings in the plate J and door, and the rotary nut is fitted on the said arm to adjust the door vertically and cause it to hang perpendicular.

The base-plate of the hanger is provided with a transverse opening, *j*, at one end, and through this opening passes the upper end of a stop-pin, J', that is rigidly secured to the fixed plate J, so that the hanger is effectually prevented from turning. The hanger is further provided with a buffer, L, which is extended beyond the vertical suspending-arms of the hanger; and the said buffer is arranged in a horizontal position to adapt its free outer end to impinge upon the fixed bridge. This buffer is preferably made integral with the hanger, and the free end thereof is extended beyond the front edge of the roller of the hanger, so that the said roller is prevented from coming in contact with the fixed bridge.

The hanger is connected centrally to the door, so that the vertical axes of the hanger and door are in line, and the supporting-roller of the hanger is arranged between the parallel suspending-arms thereof, so that its vertical axis is in line with the corresponding axes of the door and hanger, thereby causing the door to hang perpendicular.

The operation of my invention will be very readily understood from the foregoing description, taken in connection with the drawings.

I do not desire to confine myself to the exact details of construction and form and proportion of parts herein shown and described as an embodiment of my invention, as I am aware that changes therein can be made without departing from the spirit of my invention.

It will be seen that the suspending-arms of the hanger are supported on the trunnions of the roller, which travels on the rod or track, and that the hanger is connected to the door through the depending arm, the fixed plate, and the nut bearing against the plate and fitted on the arm. By rotating the nut in one direction the door will be raised, and by turning it in the reverse direction it will be lowered, thereby adjusting the door vertically to cause it to hang perpendicular.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a door-hanger, the hanger-casting comprising the base-plate F', the parallel arms F², with hooks at their upper ends, and the screw-bolt G, all in a single piece, as set forth.

2. In a door-hanger, the hanger-casting formed in a single piece with the base-plate F', the buffer L, and the suspending-arms F², having hooks, as set forth.

3. In a door-hanger, the track C, in combination with the fixed bridge-plate D, supporting the track at an intermediate point, and the hanger having a roller traveling on the track and provided with a projecting buffer adapted to come in contact with the bridge-plate, whereby the latter serves both as a sup-

port for the track and a stop for the hanger, substantially as set forth.

4. The combination of the housing comprising the parallel sides and the transverse plates
5 connecting the sides, the track arranged between the sides and having the threaded ends passed through aligned openings in the said transverse connecting plates, the nuts fitted on

the threaded ends of the track, and the hanger having the suspending arms and roller, substantially as described, for the purposes set forth.

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Witnesses:

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