

(No Model.)

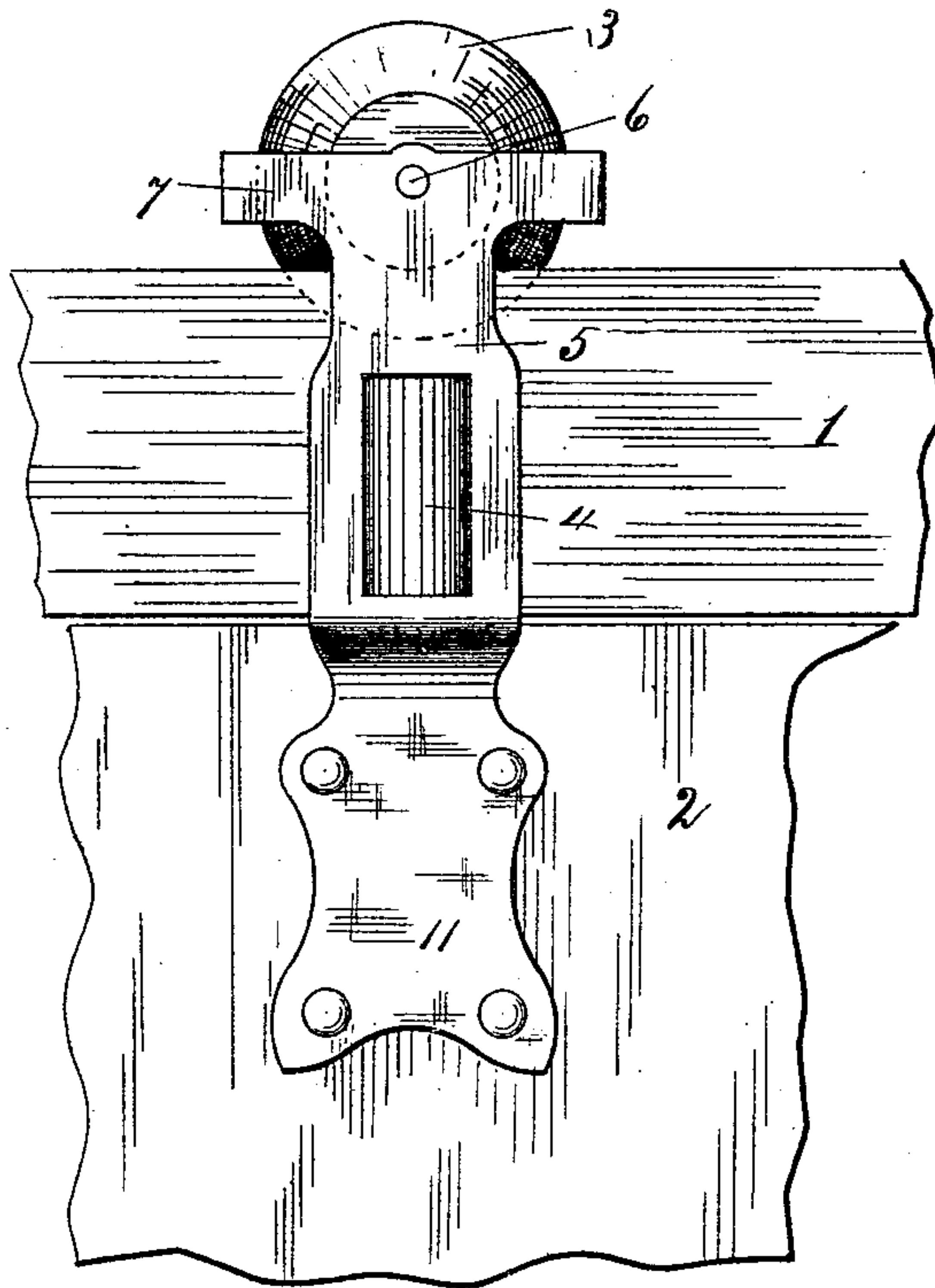
G. M. WALDORF.

DOOR HANGER.

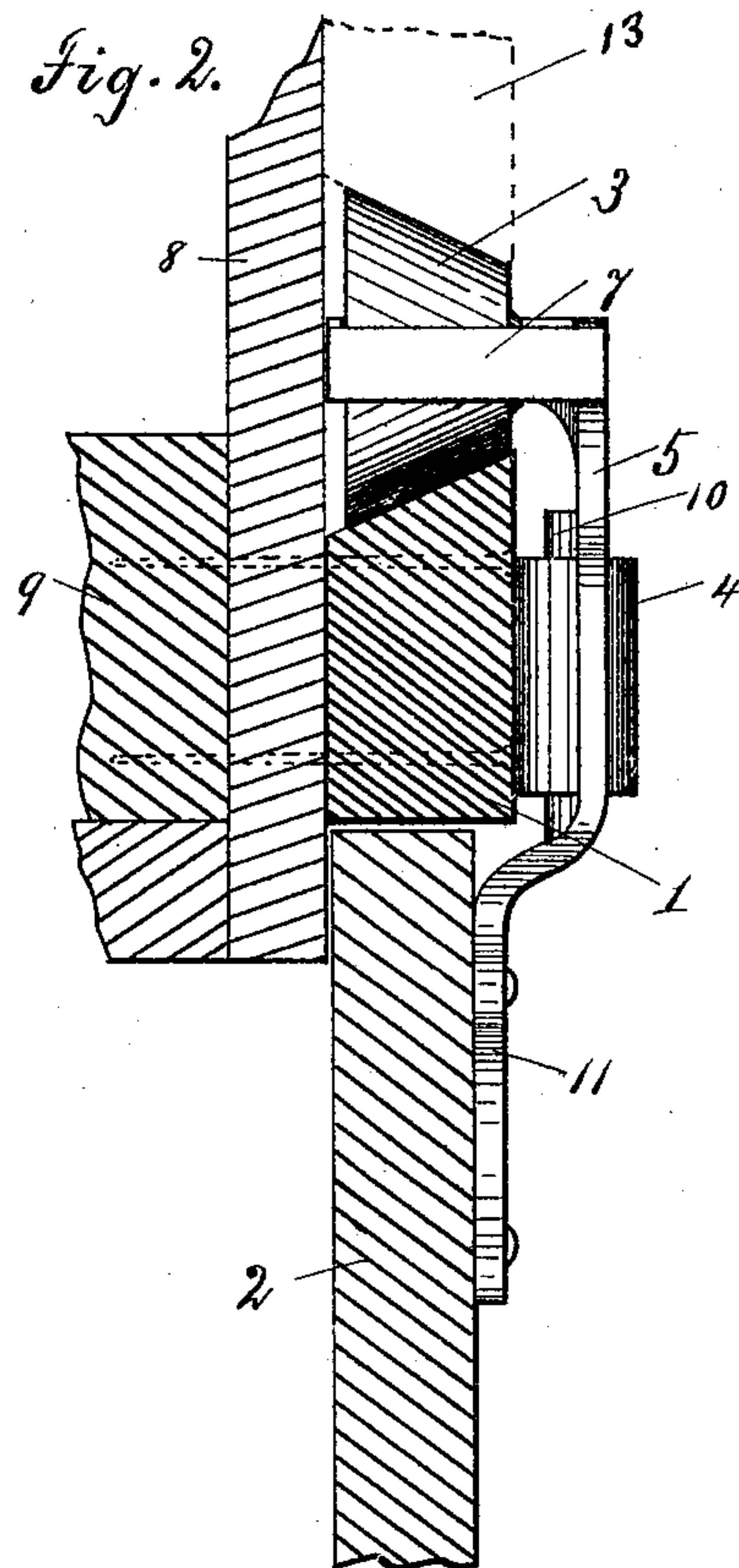
No. 370,109.

Patented Sept. 20, 1887.

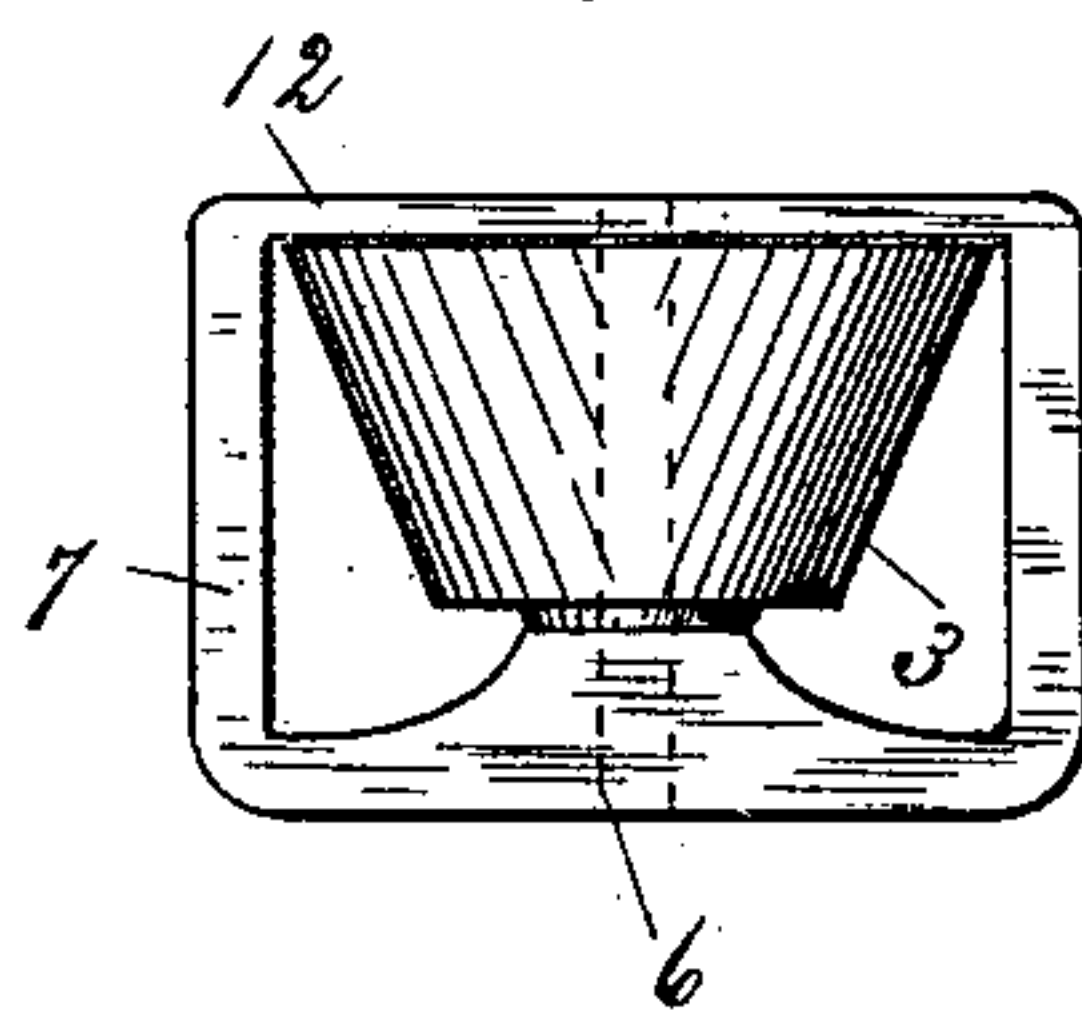
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses  
*C. H. Graham.*  
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# UNITED STATES PATENT OFFICE.

GEORGE M. WALDORF, OF FREEPORT, ILLINOIS.

## DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 370,109, dated September 20, 1887.

Application filed August 27, 1886. Serial No. 211,989. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE M. WALDORF, a resident of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Door-Hangers; 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 pertains to make and use the same.

My invention relates to improvements in barn-door hangers of the class wherein the door is supported on rollers which move along a horizontal track rigidly fixed upon the building. Its object is to provide a hanger that shall require the minimum of mechanical skill in placing it properly in working position, and that shall obviate the necessity of shipping with the hanger a special track.

In the accompanying drawings, to which this specification refers, Figure 1 is a front elevation of the hanger in position, a portion of the door and of the track being shown. Fig. 2 shows the hanger seen from the left in Fig. 1, section being made by the plane  $xy$ . Fig. 3 is a top view of the hanger alone.

The hanger consists of a horizontal roller-frame, 7 12, Fig. 3, a hanger-bar, 5, Figs. 1 and 2, a door-plate, 11, and two rollers, 3 and 4. The roller 3 is conical, its larger base being toward the building, and is revolvably mounted in the frame 7 12 by means of a spindle, 6, perpendicular to the plane of the door 2, to which the hanger is attached. The bar 5 is provided with an aperture, in which a roller, 4, is mounted. This roller is a cylinder, whose vertical axis or shaft revolves in bearings 10, formed integrally with and upon the inside of the bar 5. The rollers 3 and 4 press, respectively, upon the upper and front surfaces of a track, 1, Figs. 1 and 2, which is beveled to fit the inclined surface of the roller 3. The vertical depth of this track is nearly equal to the distance between the roller 3 and the upper edge of the door 2, so that the hanger can be removed from the track only by sliding past its extremity or by disengaging it from the door. The track is rigidly fastened upon the building 8 9, by nailing or otherwise, in a horizontal position, and at a suitable height above the doorway.

When the various parts have been adjusted as set forth, the weight of the door 2 will be supported by the rollers 3, and will tend to force both door and hanger down the inclined surface of the track toward the building or the supporting-wall. This tendency is resisted by the anti-friction roller 4 resting against the face of the track. If desired, a piece similar to the track 1 may be inverted and fixed upon the wall in the position indicated in dotted lines at 13, Fig. 2. The roller 3 then moves in a dovetail groove.

The track is preferably of wood and of a single piece. It is then required that the piece be simply beveled and nailed in position. It is desirable, but not essential, that the track be straight, since if straight less power is required, while if not the apparatus cannot "bind" in any part unless the deflection of the track be sufficient to throw some part of the door against the wall of the building or its edge against the track.

I am aware that it is not broadly new to provide a door-hanger with two rollers, one resting on the upper surface of a suitable track and supporting the weight of the door and hanger, and the other pressing against the outside face of the track and preventing friction of the hanger or door against the side of the track. So far as I know, however, it has never been proposed to make the supporting-roller a cone or a frustum of a cone in order that the weight of the door and hanger may tend constantly to draw them toward the track and thus hold the second roller firmly against the side of the track. The use of the conical roller adds greatly to the stability and steadiness of motion of the door, holds it close to the casings of the door or walls of the building, and prevents rattling; and this change of form is therefore a material improvement.

It is true that it has been heretofore proposed to employ a horizontally-pivoted roller having both conical and cylindrical faces in combination with a track having corresponding beveled and horizontal surfaces; but in every case with which I am familiar the weight of the door and hanger have been supported wholly by the horizontal surface of the track or the cylindrical face of the roller, or both. In no case that I am acquainted with has it

been proposed to make the conical surface of the roller the weight-supporting element in order to cause the weight of the hanger and door to draw those parts toward the track.

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

10 In a door-hanger, the combination, with a suitable frame adapted to be attached to a door, of a roller having a simple conical surface journaled in the frame and decreasing in diameter toward the outer face of the frame, and a vertical guide-roller, also journaled in the frame,

the conical surface of said roller being adapted to rest on a suitable track and to support the entire weight of the hanger and door, and said guide-roller to press against the outer face of said track, substantially as and for the purpose set forth. 15

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 20

GEORGE M. WALDORF.

Witnesses:

J. A. CRAIN,

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