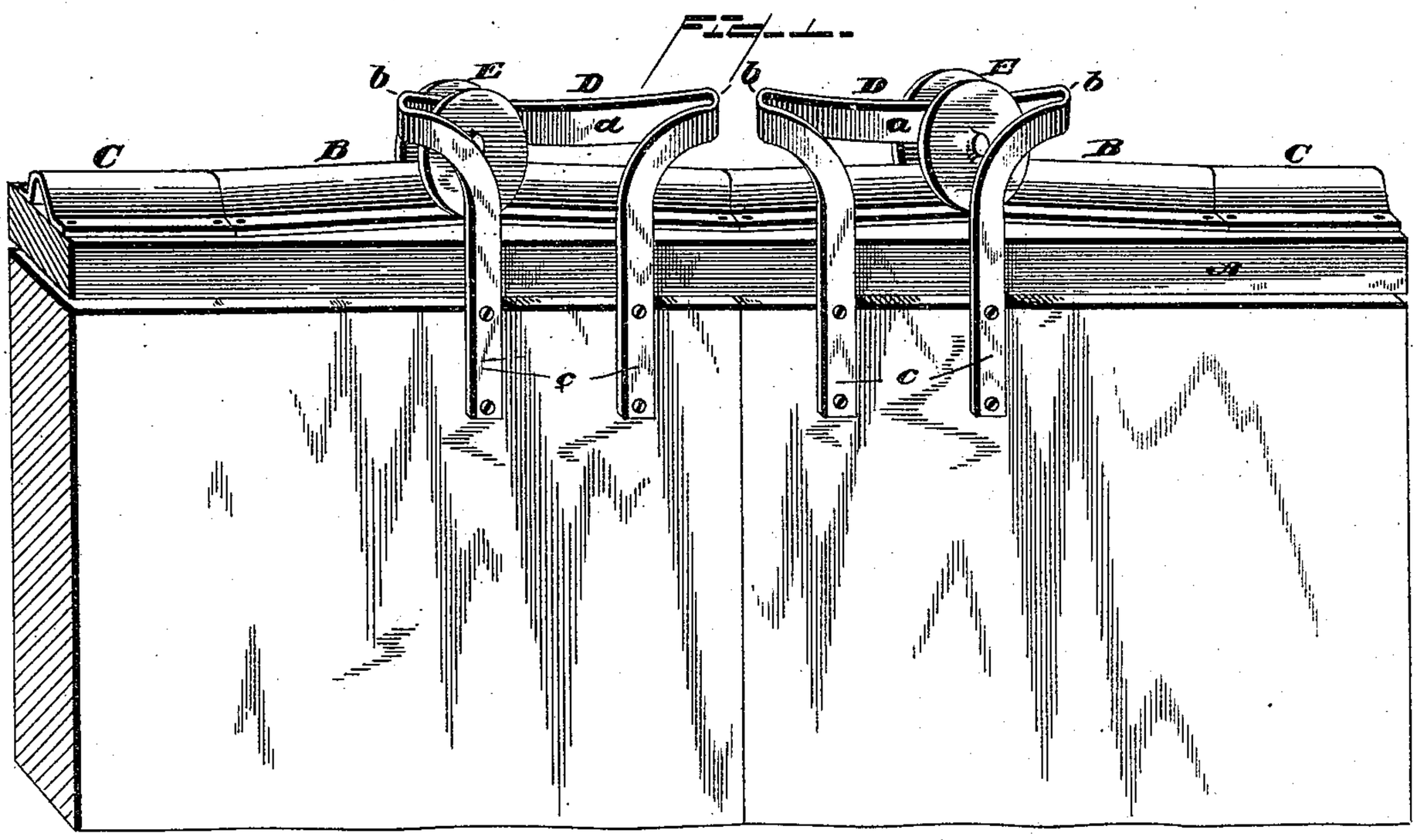
(No Model.)

R. MILLER & J. G. KANOUSE.

DOOR HANGER.

No. 356,075. Patented Jan. 11, 1887.



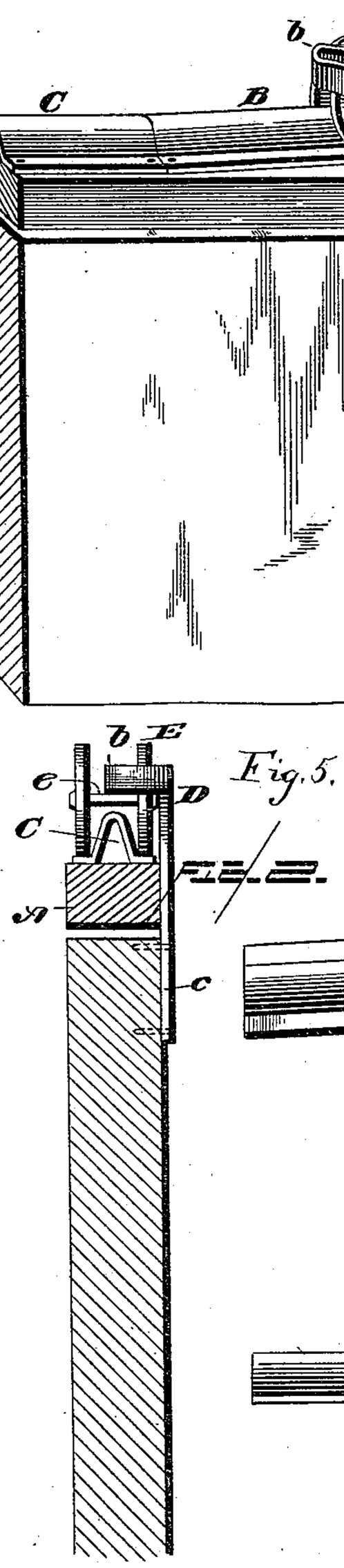
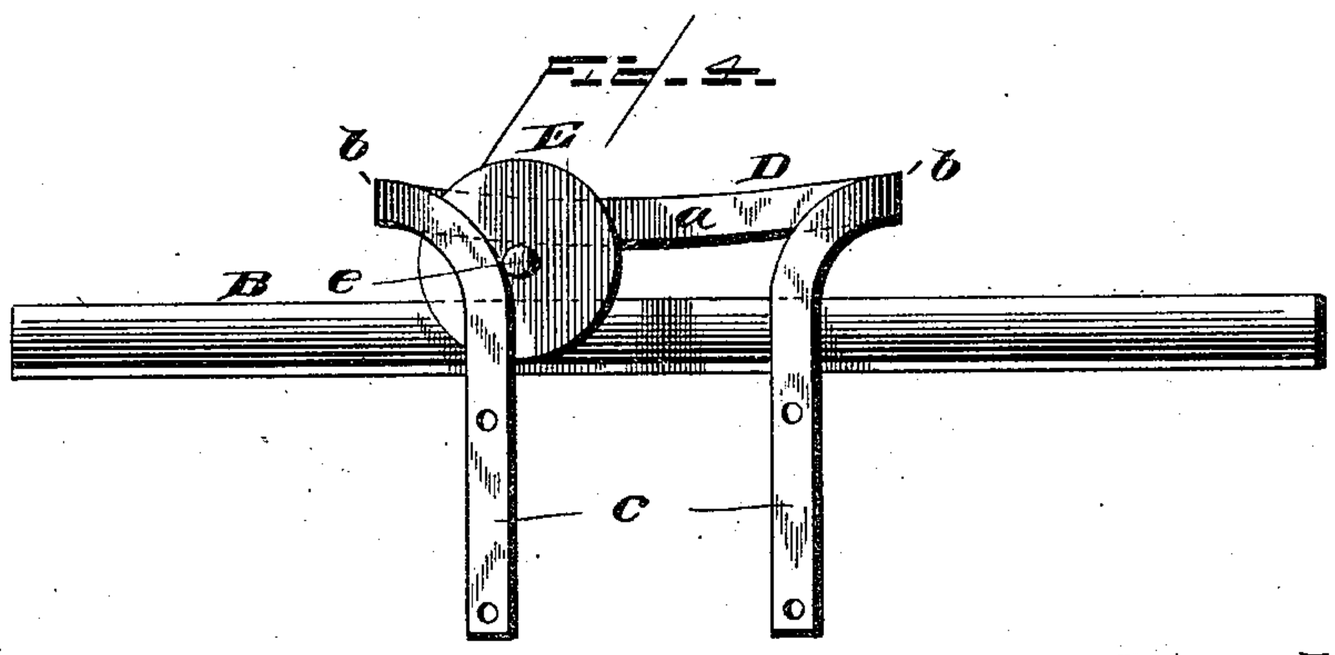


Fig. 5.

Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

RICHARD MILLER AND JOHN GEORGE KANOUSE, OF APPLETON, WISCONSIN, ASSIGNORS OF ONE-THIRD TO WILLIAM POLIFKA, OF SAME PLACE.

DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 356,075, dated January 11, 1887.

Application filed September 22, 1886. Serial No. 214,235. (No model.)

To all whom it may concern:

Be it known that we, RICHARD MILLER and JOHN GEORGE KANOUSE, citizens of the United States, residing at Appleton, in the county of Outagamie and State of Wisconsin, have invented certain new and useful Improvements in Door-Hangers; and we do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in door-hangers wherein the doors are hung from an overhead beam and sustained by rollers; and our objects are, first, to provide means for lifting the meeting ends of the doors free from the sill during the act of opening them; second, to provide means for giving the doors more or less lateral movement in a horizontal plane in the act of opening and closing them; and, third, to provide an inverted arched hanger of one piece of metal, which shall possess great strength to resist edgewise and lengthwise strain and afford end stops for an anti-friction wheel, on the axle of which the said inverted arch is supported, all of which will be fully understood from the following description when taken in connection with the annexed drawings, in which—

Figure 1 is a perspective view of our improved anti-friction door-hangers, adapted for two doors and mounted on the curved central sections of the guide-rail secured upon the overhead beam or support. Fig. 2 is an end view of the same. Fig. 3 is a top view of one of the curved central rail-sections. Fig. 4 is a front view, in detail, of the hanger proper, its wheels and track. Fig. 5 is a plan view of the overhead beam with the track thereon, showing a portion broken away.

Referring to the annexed drawings by letters, A designates the horizontal overhead beam, upon which the rails B C are suitably secured. These rails may be made of either wrought or cast metal, preferably of the inverted V shape shown. The rails C C are straight, but the central sections, B B, are slightly curved or bowed, for a purpose hereinafter explained.

D designates the improved hanger proper, which is formed of a single bar of flat metal, preferably of steel. The bar is bent so as to form an inverted arch, *a*, of any desired radius. It is then bent upon itself to form two looped stops and offsets, *b b*. It is then bent again in a direction with its width, so as to form two depending arms, *c c*, which are perforated to receive fastenings for securing the hanger to a door. The two arms or straps *c c* are in a plane parallel to the plane of the inverted arched or bowed rider *a*, with a suitable space at the looped ends *b b* to overhang the beam A and its rail-sections B B C C, as shown in Figs. 1 and 2.

E E designate anti-friction wheels, connected centrally by a cylindrical axle, *e*, and adapted to roll upon the flanges of the rails B C and to be kept on the track and guided by the raised portions of these rails.

In operation the bowed or convexed portion *a* of the hanger D bears upon the axle *e* of the wheels E E, so that the door is suspended from said axle, and the hanger is allowed to roll upon it a distance equal to the length of said bowed portion from one stop *b* to the other as the door is opened and closed. At the same time the wheels roll upon the track. In practice the length of the bowed portion *a*, together with the diameters of the wheels and their axle, are suitably proportioned to the distance it is required the door should move.

It will be observed that in opening the door the portion *a* will ride upon the axle *e* and lift the door vertically, and that in closing the door it will be lowered. We thus free the door from uneven sills, from frost, mud, and other obstructions at its bottom. It will also be observed that by curving the central rail-sections, B, more or less, in opening or closing the door it will be moved laterally and freed from the side of the barn or building, and yet when closed the door will be brought tightly against the casing.

By our invention we are able to close a door

tight at the sides and bottom against storm and cold, and can open the door free of all obstructions and with the greatest possible ease.

Having described our invention, we claim—

1. The combination, with a door-hanger suspended by wheels, of a continuous track having an angular serpentine portion the middle angle of which is at the meeting-point of the doors when closed, whereby the adjacent edges of the doors may be made to abut and move laterally toward or from a building, substantially as specified.

2. The within-described door-hanger, adapted to be secured to the side of a door, and consisting of the inverted arch or lifting portion *a*, terminating in looped stops and depending arms, all formed of a single piece, substantially as specified.

3. The combination of a door-hanger provided with an arched lifting portion, a pair of wheels connected by an axle upon which the lifting portion of the hanger is free to ride, and a curved track adapted to sustain and guide said wheels, whereby in opening or closing a door it will be moved both vertically and laterally, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

RICHARD MILLER.
JOHN GEO. KANOUSE.

Witnesses:
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JOS. KOPPUD.