(No Model.)

N. M. G. SYVERSON.

DOOR HANGER.

No. 564,318. Patented July 21, 1896.

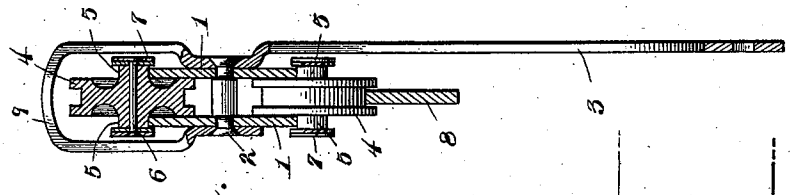

Fig. 2.

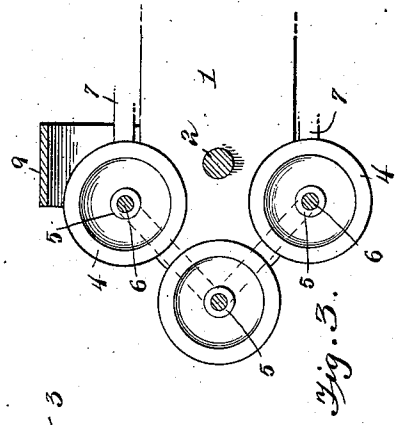

Fig. 3.

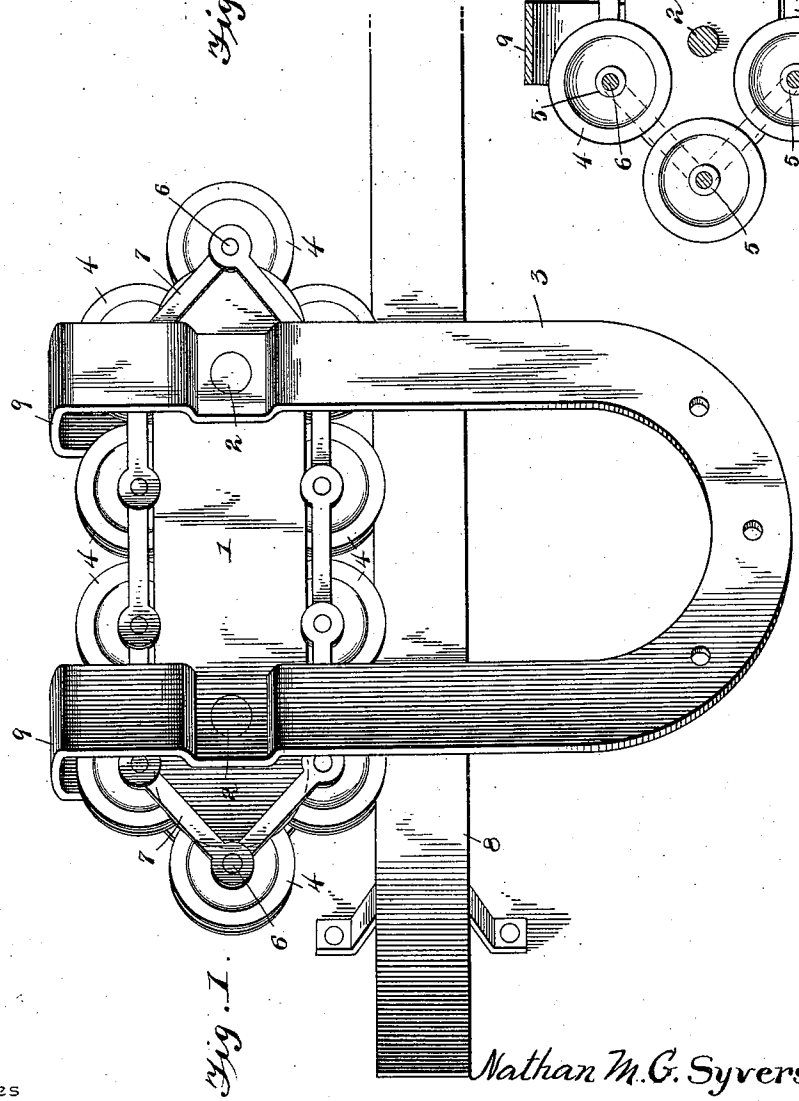

Fig. 1.

Witnesses

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NATHAN MARIUS GUSTAV SYVERSON, OF ROCK DELL, MINNESOTA.

DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 564,318, dated July 21, 1896.

Application filed March 17, 1896. Serial No. 583,608. (No model.)

To all whom it may concern:

Be it known that I, NATHAN MARIUS GUSTAV SYVERSON, a citizen of the United States, residing at Rock Dell, in the county of Olmsted and State of Minnesota, have invented a new and useful Door-Hanger, of which the following is a specification.

My invention relates to door-hangers particularly adapted for heavy doors of the kind used upon barns, granaries, sheds, and similar buildings; and the object in view is to provide a simple, strong, and durable construction and arrangement of parts wherein the friction due to the operation of the device is reduced to the minimum, the pivots or trunnions of the antifriction-rolls being relieved of strain due to the weight of the door.

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

In the drawings, Figure 1 is a perspective view of a door-hanger constructed in accordance with my invention. Fig. 2 is a vertical transverse section of the same. Fig. 3 is a partial longitudinal section.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The body portion of the hanger consists of twin parallel-spaced bearing-plates 1, having straight parallel upper and lower bearing edges and rounded extremities, and being held in the proper relative positions by means of transverse-shouldered rivets 2, which also serve to secure the hanger bracket or bow 3 to the bearing-plates, said bracket or bow being adapted for attachment to the door to be supported by the hanger or by two or more hangers of the construction illustrated.

The antifriction rollers or sheaves 4 operate at one side between the planes of the bearing-plates, the width of said rollers or sheaves being approximately equal to the interval between the inner surfaces of the plates, and said rollers or sheaves are provided with concentric lateral bearing-hubs 5, which extend outwardly over and are adapted to traverse the bearing edges of the plates. Said rollers or sheaves are further extended to form reduced journals or trunnions 6, upon which are fitted the terminal eyes of connected links 7, a continuous series of these links being arranged to connect the rollers or sheaves in an endless series and hold them in operative relation with the bearing-plates. The connecting-links thus form an endless flexible connection between the rollers, whereby the hubs of each roller are adapted to bear upon the edges of the plates when they reach the lower side of the body portion and when its grooved periphery is in contact with the horizontal track 8. The parallel bearing edges of the plates 1 are of such length that three or more of the rollers or sheaves are simultaneously at the lower side of the body portion, and hence in contact with the track, whereby the weight upon each hanger is distributed to a plurality of the rollers, and the weight, instead of being carried by the journals or trunnions of the rollers or sheaves, is transmitted by the latter through their hubs to the bearing-plates to which the arms of the bracket or bow 3 are attached. In the construction illustrated the arms of the bracket or bow are extended to form loops 9, which span the interval between the bearing-plates, whereby a single rivet 2 engages an arm of the bracket or bow at two points.

I preferably construct the journals or trunnions of the rollers or sheaves independently of the latter, employing for this purpose pivot-pins (shown in Fig. 2) which extend axially through the rollers or sheaves and are headed or swaged at the outer surfaces of the overlapping extremities of the connected links. This provides for the independent rotary movement of the rollers or sheaves and avoids frictional contact of the journals or trunnions with the eyes of the links.

By flexibly connecting the rollers or sheaves in series, as above described, I dispense with the use of a casing for the latter, and hence I am able to construct a light hanger of the requisite strength.

In operation the rotary movement of the rollers or sheaves caused by their contact with the track provides a linear movement of the series of rollers upon the bearing-plates, and hence materially diminishes the friction due to the operation of the device and facilitates the movement of the door supported thereby.

From the above description it will be seen that the essential feature of the invention resides in the fact that I have dispensed with the use of a casing or shell to contain the rollers and have flexibly connected the latter to hold them in contact with a guiding device and out of contact with each other, said guiding device serving to resist the inward movement of the rollers during their contact with the track. Thus the construction of the device is rendered simple, and the friction due to the contact of oppositely-moving surfaces, as in a construction employing antifriction rollers or balls in a casing, is avoided.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A door-hanger having an endless series of flexibly-connected rollers adapted to traverse a track, and a guiding device encircled by said series to hold the peripheries of contiguous rollers out of contact and resist the inward movement of the rollers during their contact with the track, substantially as specified.

2. A door-hanger having a body portion provided with spaced continuous bearing edges, bearing rollers or sheaves, to traverse a track, arranged between the planes of the bearing edges and having coaxial bearing-hubs to traverse the bearing edges, and an endless flexible connection between the rollers consisting of inflexible links each of which is terminally connected to coaxial journals or trunnions of contiguous rollers, substantially as specified.

3. A door-hanger having a body portion provided with parallel continuous bearing edges, rollers or sheaves, to traverse a track, arranged between the planes of the bearing edges and having coaxial bearing-hubs to traverse the bearing edges, pivot-pins extending concentrically through the rollers, and endless flexible connections between the rollers consisting of continuous series of links attached at their extremities to the projecting ends of the pivot-pins, substantially as specified.

4. A door-hanger having parallel-spaced bearing-plates provided with endless bearing edges, a hanger bracket or bow having its arms looped and arranged in contact with the exterior surfaces of said plates, shouldered rivets extending transversely through the bearing-plates to hold them at the desired relative positions and also engaging the opposite portions of the arms of the bracket or bow, and a flexibly-connected series of bearing rollers or sheaves arranged between the planes of the bearing-plates and provided with lateral coaxial bearing-hubs to traverse the bearing edges of said plates, 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.

NATHAN MARIUS GUSTAV SYVERSON.

Witnesses:

TOBIAS HOGENSON,

AUSTIN KNUDTSON.