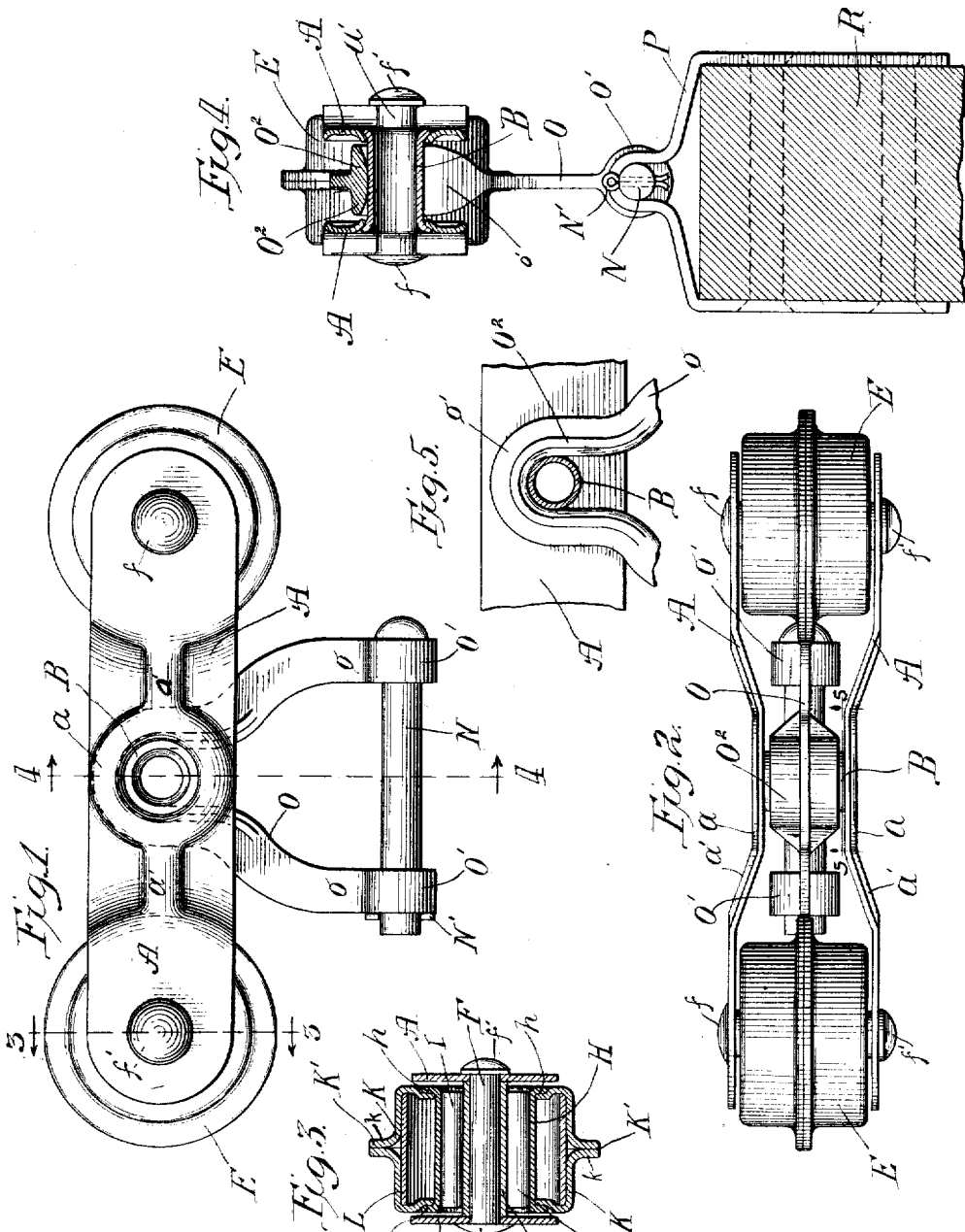


W. F. JACOBS.
SLIDING DOOR HANGER.
APPLICATION FILED JUNE 7, 1912.

1,053,399.

Patented Feb. 18, 1913.



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UNITED STATES PATENT OFFICE.

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SLIDING-DOOR HANGER.

1,053,399.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed June 7, 1912. Serial No. 702,193.

To all whom it may concern:

Be it known that I, WILLIAM F. JACOBS, a citizen of the United States, and a resident of Ottawa, in the county of LaSalle and State of Illinois, have invented certain new and useful Improvements in Sliding-Door Hangers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sliding door hangers, and more particularly to improvements in that class of such hangers comprising a frame adapted to support a connecting member which is attached to the door and provided with wheels adapted to have rolling contact with a supporting track.

The invention consists in the matters hereinafter described and more particularly pointed out in the appended claims.

In the drawing—Figure 1 is a view in side elevation of the improved door hanger; Fig. 2 is a plan view of the same; Fig. 3 is a view in cross-section taken on line 3—3 of Fig. 1; Fig. 4 is a view in cross-section taken on line 4—4 of Fig. 1 showing the method of attaching the door to the hanger. Fig. 5 is a detail section taken on line 5—5 of Fig. 2.

Referring to the said drawing, the frame of the door hanger comprises two similarly shaped side plates A, A, which are rigidly connected at their extremities by means of transversely extending axles, each consisting of a central cylindric bolt or pin F, which passes at its ends through both side plates, and a sleeve or bushing M, which fits closely upon the pin between said side plates. The ends of said bushing abut against the inner faces of the side plates, and the ends of the pin are provided with integral heads *f*, *f'*, which bear against the outer faces of the said side plates. One of said heads is formed by upsetting or riveting the end of the pin. The ends of the bushing form shoulders against which the plates rest or bear and the heads of the pins act to clamp or hold the plates rigidly against the ends of the bushing. On said axles, between the side plates A, A are mounted wheels or rollers E, E, hereinafter more specifically described. The side plates are also connected by means of a central,

transverse bearing member B rigidly attached at its ends to said plates. As shown and preferably made, said bearing member B has the form of a tube, the ends of which extend through oppositely arranged holes provided in the side plates A at the longitudinal and transverse centers of the same. The ends of said tubular bearing member are secured rigidly to the plates by being expanded, upset or riveted against the said plates.

The door P is supported from the bearing member B, by means of a U-shaped yoke O, provided with two depending arms *o*, *o*, and with a central connecting part or loop *o'* of inverted U-form, adapted to receive or fit over the said bearing member. In order that the said member B may be made no longer than necessary to receive the upper part of the yoke O, the central portion of each side plate A is offset inwardly in such manner that the frame is considerably narrower at its central part than at its ends. In order to stiffen and strengthen the side plates A, the same, which are preferably made of sheet metal, are formed to provide annular ribs *a*, *a* and longitudinal ribs *a'*, *a'*. The yoke O supported by and depending from said bearing member B, has its upper portion *o'* laterally widened by means of outwardly extending flanges *O*², *O*², and its inner downwardly facing surface, which rests on the bearing member, is made of convex shape or outwardly flaring from its central line, so that when the yoke is hanging in its normal or vertical position, it will be in contact with the bearing member at its center only. The purpose of the convex bearing surface is to allow the yoke to have rocking contact with the bearing member B, thereby permitting lateral oscillation or swinging movement in the lower end of the yoke. The lower ends of the arms *o*, *o* of the yoke O are provided with eyes or apertures through which is inserted a removable bolt N held in position by means of a head at one end and a cotter pin N' at its opposite end. The bolt N is engaged by a strap P' of U-form, the ends of which are rigidly secured to the opposite sides of the door R, as clearly shown in Fig. 4.

The wheels or rollers E, and the bearings therefor, are constructed as follows: The wheel comprises an inner tubular member H with outwardly turned flanges *h* adapted to

fit into a circular and inwardly offset portion of the two similar annular, tread members K. Said tread members K are provided at their meeting edges with outwardly extending flanges k, k , forming an annular projection K' on the center of the periphery of the wheel. It is to be understood that a hanger provided with wheels so made will be employed in connection with a track, such as has heretofore been commonly used, having two track members separated by a longitudinal opening or slot into which the flanges K, K of the wheels project. Within the wheel and adjacent to the bearing surface of the tread members is located an annular ring L adapted to reinforce and hold in line with each other the two tread members K. The interior diameter of the tubular member H of the wheel is considerably greater than the exterior of the sleeve or bushing M, so as to form an annular space between said tubular member and bushing. Within such annular space is located a plurality of cylindric, antifriction rollers I of a length substantially equal to the width of the wheel and arranged parallel with the axis of said wheel.

An important feature of my invention consists in the transverse bearing member, which is permanently and rigidly secured to the side plates and forms part of the frame, in connection with a door supporting member or yoke having separated arms and a central loop, which has loosely fitting engagement with the said bearing member, so that it may swing or oscillate thereon in a longitudinal and lateral direction. Said yoke, thus made, is adapted to be engaged with the said bearing member by slipping its arm through the spaces between the side plates, at opposite sides of the said bearing member. The transverse bearing member, so arranged to form part of the frame, affords, with the pins or axles on which the wheels are mounted, three transverse members extending between and rigidly connecting the side plates, thereby giving to the frame seat strength and stiffness.

Another important feature of the invention is the rocking bearing between the said yoke and the bearing member, affording lateral flexibility between the hanger frame and the supporting yoke, thereby allowing the door to adjust itself laterally to any irregularity in its movement and thus preventing binding of the door and possible breakage of the hanger.

The making of the axles or the bearing pins with a separate bushing, as described, not only affords a cheap and simple way of rigidly connecting the side plates at their ends, but has the advantage also that such bushing may be made of hard steel, when the pin is made of soft steel or iron, there-

by affording a durable bearing surface for the anti-friction rollers.

The mechanical structure of the parts may be variously modified without departure from the spirit of my invention, and I do not, therefore, wish to be limited to the specific construction described, except as pointed out in the appended claims.

I claim as my invention:

1. A sliding door hanger comprising two side plates, two wheels mounted between said side plates, bearing axles for the wheels rigidly attached at their ends to said side plates, a transverse bearing member located between the wheels and permanently and rigidly attached at its ends to said side plates, and means for supporting the door embracing a member which is connected with the door and is provided with a loop adapted for detachable engagement with the said transverse bearing member.

2. A sliding door hanger comprising two side plates, two wheels located between said side plates, bearing axles for the wheels rigidly attached at their ends to said plates, a transverse bearing member located between the wheels and rigidly attached at its ends to said plates, and a yoke for supporting the door, provided with separated depending arms adapted to pass through the spaces between the wheels and the central bearing member, and with a central loop adapted to engage said bearing member.

3. A sliding door hanger comprising two side plates, two wheels mounted between said plates, bearing axles for the wheels rigidly attached at their ends to said plates, a transverse, tubular bearing member located between the wheels; said side plates being provided with apertures to receive the ends of said bearing member, and the said ends extending through and being secured in the said apertures, and a yoke for supporting the door, having a central loop adapted for engagement with said tubular bearing member.

4. A sliding door hanger comprising two side plates, two wheels mounted between said side plates, bearing axles for said wheels rigidly attached at their ends to said plates, a tubular bearing member located between the wheels; said side plates being provided with apertures to receive the ends of said bearing member and annular ribs surrounding said apertures, and the said ends extending through said apertures and being outwardly flanged and in overlapping relation to the margins of said apertures, and a yoke for supporting the door having a central loop adapted for detachable engagement with said tubular bearing member.

5. In a sliding door hanger, the combination of a carriage, comprising two side plates, two wheels mounted between said side plates, bearing axles for said wheels, 1:

consisting of pins inserted at their ends
through said side plates, and sleeves sur-
rounding the pins, the ends of said sleeves
being in abutting relation with the inner
5 faces of the side plates, and said pins being
provided with integral heads at their outer
ends bearing against the outer faces of the
side plates, and a transverse bearing mem-
ber located between said wheels and rigidly
10 and permanently secured at its ends to the
side plates, and a door supporting member

having a loop adapted for detachable en-
gagement with said transverse bearing
member.

In testimony that I claim the foregoing 15
as my invention I affix my signature in the
presence of two witnesses, this third day
of June, A. D. 1912.

WILLIAM F. JACOBS.

Witnesses:

FRED A. GERDING,
E. J. CASSIDY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
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