

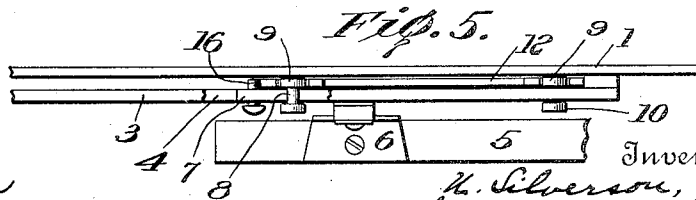
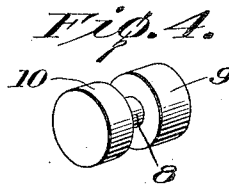
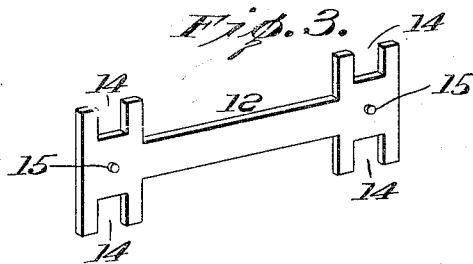
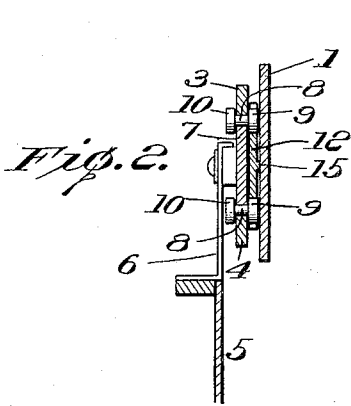
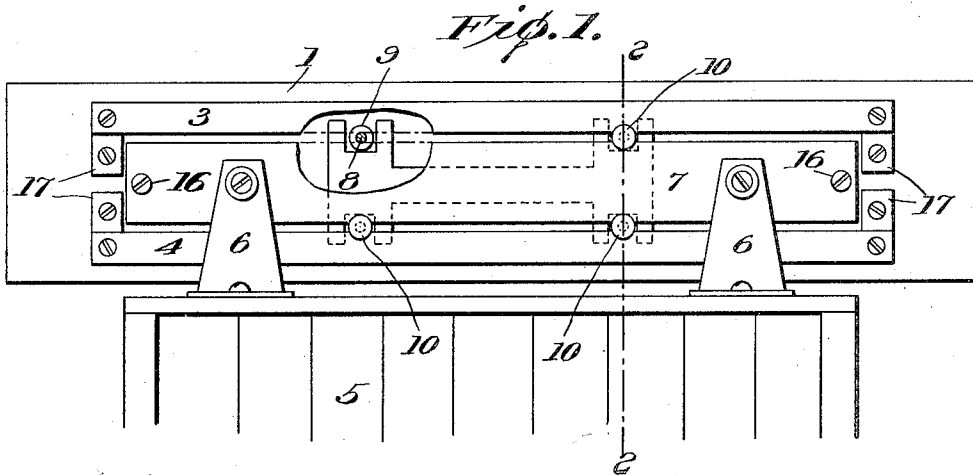
N. SILVERSON.

DOOR HANGER.

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1,057,290.

Patented Mar. 25, 1913.



Witnesses:
J. D. Jorgensen
M. L. Palfour.

Inventor
N. Silversen,
By his Attorney
Chas. H. Hill

UNITED STATES PATENT OFFICE.

NATHAN SILVERSON, OF NEW YORK, N. Y.

DOOR-HANGER.

1,057,290.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed December 14, 1911. Serial No. 665,868.

To all whom it may concern:

Be it known that I, NATHAN SILVERSON, of the city of New York, in the county of New York and State of New York, 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 appertains to make and use the same.

I provide improvements in roller bearings for doors which slide or move laterally, as distinguished from ball bearings and my object is to equip such doors with means for maintaining the rollers in the proper relative positions without creating undue friction.

In the accompanying drawing Figure 1 is a side elevation partly broken away. Fig. 2 is a cross sectional view on line 2—2 Fig. 1 and Fig. 3 is a detail view of the roller bearing plate. Fig. 4 is a detail view of one of the rollers. Fig. 5 is a plan view broken away.

Referring to the drawing 1 designates a suitable base plate adapted to be secured to a wall or door frame or the frame itself may constitute this base. It is shown supporting two parallel spaced apart bars 3, 4. The door 5 is hung upon brackets 6 carried by a rail 7 movable between the bars 3, 4.

I have shown the roller bearings formed each with a reduced body portion 8 and end heads or flanges 9 and 10. The adjacent edges of the rail 7 and the bars are adapted to fit between the flanges and contact with the central portion 8, the flanges serving as guiding surfaces. In this way the roller, while securely held as against displacement, may rotate freely without undue friction. Not only do the flanges 9 and 10 maintain the rollers in the proper position but they also keep the rail 7 in its proper position intermediate the bars and they are the only means necessary to employ for this purpose. The length of the portion 8 of the roller is just sufficient to receive the edges of the rail and bars without causing friction and the flanges 9 and 10 co-act to prevent lateral displacement.

It is necessary to provide means for maintaining the anti-friction rollers in the desired relative positions so that they will be sufficiently spaced apart to properly distribute the weight of the door. At the same time it is highly essential that the means for

accomplishing this purpose shall not cause too much friction. I have provided a plate 12 adapted to lie wholly within the space between the base 1 and the bars and rail, that is to say, it does not project out over these parts or between them. As shown the retaining member consists of a flat piece of metal having a series of substantially U-shaped portions 14 adapted to receive the inner flanges 9 of the rollers. This guiding or retaining member 12 may be of appropriate size and its recesses may be formed at such points as will maintain the rollers properly spaced but it is desirable that it shall only contact with the flanges 9 of the rollers. As the bars and rail substantially fill the spaces between the flanges 9 and 10 the rollers cannot move laterally and hence it is only necessary to provide against lateral play of the retaining member 12 in order to cause it to rest upon the flanges 9. This may be accomplished by making the part 12 of such thickness as to just fill the space between the bars and the base plate or the retaining member may be formed as shown with lugs or projections 15 bearing against the base plate to maintain the guiding member in its proper position.

At each end of the rail 5 I have shown a threaded pin 16 passing through the rail and adapted to engage the retaining member 12 and carry it along with the door according to the direction in which the latter is moved, part 12 moving until its forward end contacts with stops 17 intermediate the bars at their ends. By removing the pins 16 or one of them the rail may be removed from its support.

I have found that a door hanger embodying my invention may be operated with ease and that the rollers show no tendency to create friction or become deranged. The apparatus may be cheaply constructed since no special formation of rails or bars is necessary. It is only essential to have them of the same or substantially the same thickness and to employ rollers the reduced portions 8 of which will receive them freely but without too much lateral play. The retaining member creates practically no friction as it may be made of very light material and has no contact with the rails or bars, resting only on the flanges 9.

I claim as my invention:—

1. In a door hanger, the combination with the fixed parallel bars and the intermediate

movable rail, of a series of roller bearings intermediate said bars and said rail, said rollers having reduced central portions of length slightly greater than the width of said bars and rail and adapted to receive the edges of the latter and having enlarged circular end flanges spanning the spaces intermediate said bars and rail, and means for maintaining said rollers spaced apart.

2. In a door hanger, the combination with the fixed parallel bars and the intermediate movable rail, of a series of roller bearings intermediate said bars and said rail, said rollers having central portions adapted to receive the adjacent edges of said bars and rail and having end flanges spanning the spaces intermediate said bars and rail, and a retaining plate back of said bars and having recessed portions resting on the inner flanges of said rollers.

3. In a door hanger, the combination with the base plate, the spaced apart bars mounted thereon, and the rail movable intermediate said bars, of roller bearings intermediate the adjacent edges of said bars and rail and having end flanges adapted to extend over the contiguous faces thereof, and a retaining member intermediate said base plate and

said bars and disposed wholly back of the latter and formed with recesses adapted to receive the inner flanges of said rollers, and means for maintaining said retaining member in a vertical plane.

4. In a door hanger, the combination with the base plate, the spaced apart bars mounted thereon, and the rail movable intermediate said bars, of roller bearings intermediate the adjacent edges of said bars and rail and having end flanges adapted to extend over the contiguous faces thereof, and a retaining member intermediate said base plate and said bars and consisting of a flat piece of metal disposed vertically between said bars and said base plate and formed with studs to engage the latter and prevent displacement, said plate having recesses to engage the inner flanges of said rollers, and threaded pins carried by said rail and adapted to engage said retaining member.

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

NATHAN SILVERSON.

Witnesses:

GRAFTON L. MCGILL,
MARION I. BALFOUR.

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