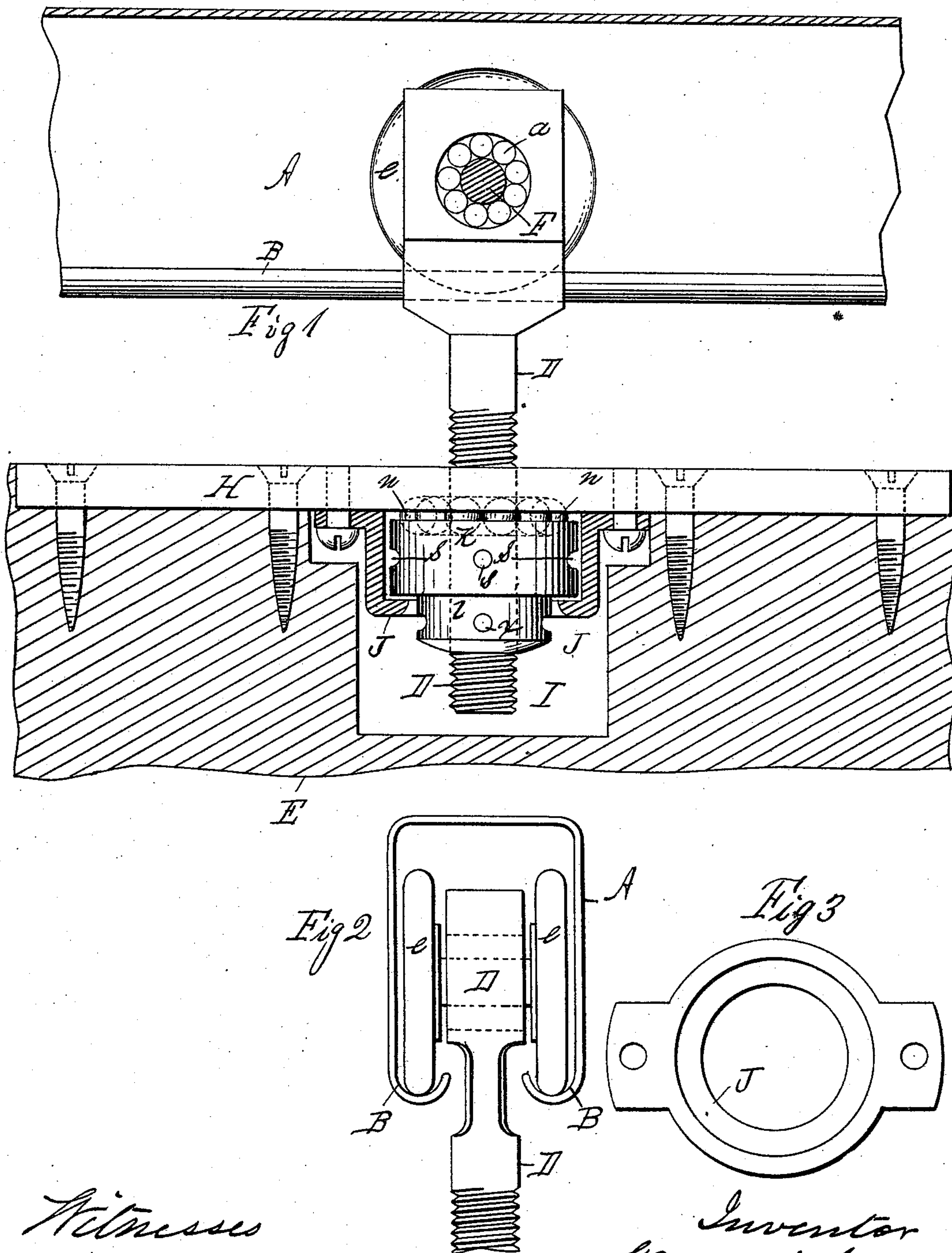


(No Model.)

W. J. SUMNER.  
DOOR HANGER.

No. 575,771.

Patented Jan. 26, 1897.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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COBURN TROLLEY TRACK MANUFACTURING COMPANY, OF SAME PLACE.

## DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 575,771, dated January 26, 1897.

Application filed March 25, 1896. Serial No. 584,783. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. SUMNER, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Adjustable Trolley-Hangers, of which the following is a specification.

This invention relates to trolley-hangers for supporting doors and similar objects on a track whereby they are easily moved to and fro, the object being to provide improved connections between said hanger and the supported object whereby the hanger is made self-adjusting axially and the trolley-wheel is constantly free to follow the direction of the track on which it runs, thereby avoiding frictional contact with said track; and the invention consists in the construction and arrangement of the devices connecting the hanger to said supported object, all as hereinafter fully described, and more particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation, partly in section, of a part of the upper end of a door and a part of a trolley-track having trolley-hanger devices applied thereto embodying my improvements. Fig. 2 is an end elevation of the trolley-track, showing the trolley-wheels and a part of the hanger connected therewith. Fig. 3 is a plan view of detail parts hereinafter described.

In the drawings, A indicates a longitudinal section of a trolley-track, of which B is one of the runways or track.

D is the trolley-hanger. *ee* are the trolley-wheels hung on the upper end of said hanger by a shaft F, on which said wheels are fixed. Balls or rollers *a* are preferably applied around said shaft to provide an approximately frictionless bearing therefor. Fig. 2 illustrates the position of the said trolley-wheels in the track A. The lower end of said hanger D is screw-threaded, as shown.

E indicates a part of the upper end of a door or similar object, and H a metal plate let into said end and there retained by screws, as shown. Under said plate is formed in the door a socket I. On the under side of said plate H are secured two lugs J J, each shown

in plan view in Fig. 3, and secured by screws, as shown, on opposite sides of a hole through said plate H. The said plate H is perforated, as aforesaid, to let the lower screw-threaded end of the hanger D pass freely through it. Within or between said lugs J and restrained from downward movement thereby is a circular bearing-nut K, having a concentric groove in its upper face, which groove is located opposite a like groove in the adjoining under side of said plate H. Bearing-balls *n* are placed between said nut and plate H and within said concentric grooves. These balls *n* prevent any upward movement of the nut K by bearing directly against it and the plate H, and the lugs J prevent either lateral or downward movement by catching against the nut on its edges and lower side. The consequence is the door is held with just sufficient rigidity to enable it to move freely and yet prevent it from having any unnecessary play. Said nut K is provided with spanner-holes *s* in its periphery, whereby it is, by the use of a suitable implement, turned on said hanger to adjust it properly toward said plate H and relative to said balls *n* therebetween. A circular set-nut *v* is screwed onto the lower end of said hanger and against the under side of said nut K by means of a suitable implement inserted into spanner-holes *x* in the periphery of said set-nut, and thereby said nut K is held against rotation on the said hanger, and is so engaged with the latter that it must take up such degree of rotary movement as may be imparted to said hanger by the action of the trolley-wheels against the sides of the tracks B in which they run. Thus if the track A be curved the hanger may freely turn, if need be, in its said connection with the door E, thereby causing the trolley-wheel shaft F to maintain a position constantly at right angles to the said tracks B B, thus avoiding friction. Thus all cramping of the trolley-wheels in their tracks is wholly avoided, the durability of the operative parts is greatly increased, and the suspended object is more free to adjust itself to its proper position.

It is obvious that many of the advantages of the above-described construction may be enjoyed if the said bearings-balls be omitted from between the nut K and plate H.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A trolley-wheel hanger consisting of a  
5 screw-threaded shank, bearing-wheels applied to the upper end of the shank, and the track upon which the wheels run, combined with a perforated plate applied to the top edge of the door, a nut applied to the screw-  
10 threaded shank after its end has been passed through the plate, the ball-bearings between the plate and the nut and the lugs for preventing any endwise movement of the shank and nut, substantially as shown.

15 2. A trolley-wheel hanger having a screw-

threaded shank, combined with a plate for connection with a door or similar object, through a perforation in which said shank passes freely, and having a concentric ball-groove surrounding said perforation therein, 20 a bearing-nut screwing onto said shank under said plate having a like ball-groove therein to that in said plate, balls applied in said grooves, and a set-nut on said shank screwing against said bearing-nut, substan- 25 tially as set forth.

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Witnesses:

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