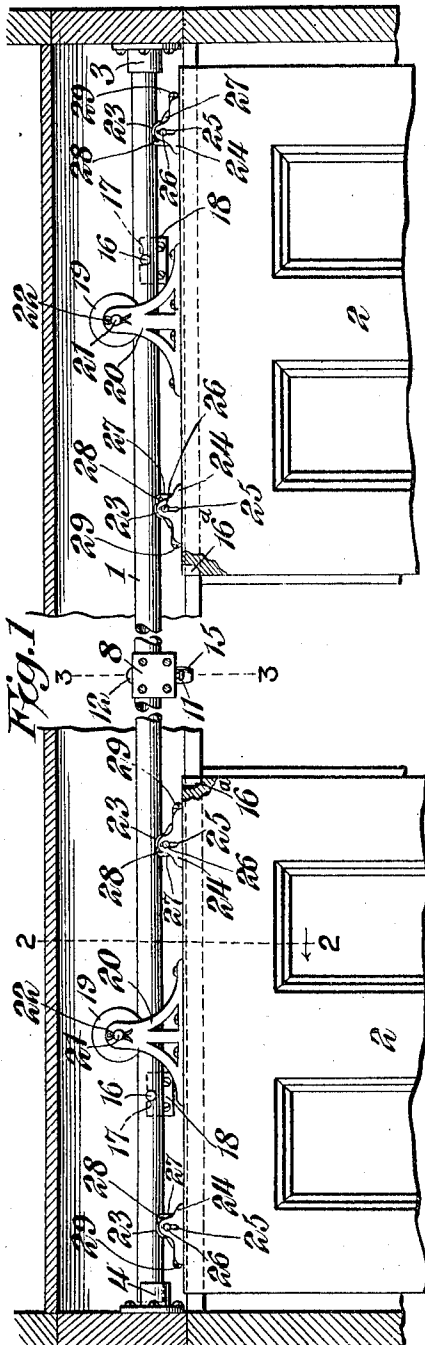


F. H. LANGE, JR.
SLIDING DOOR HANGER.
APPLICATION FILED FEB. 15, 1912.

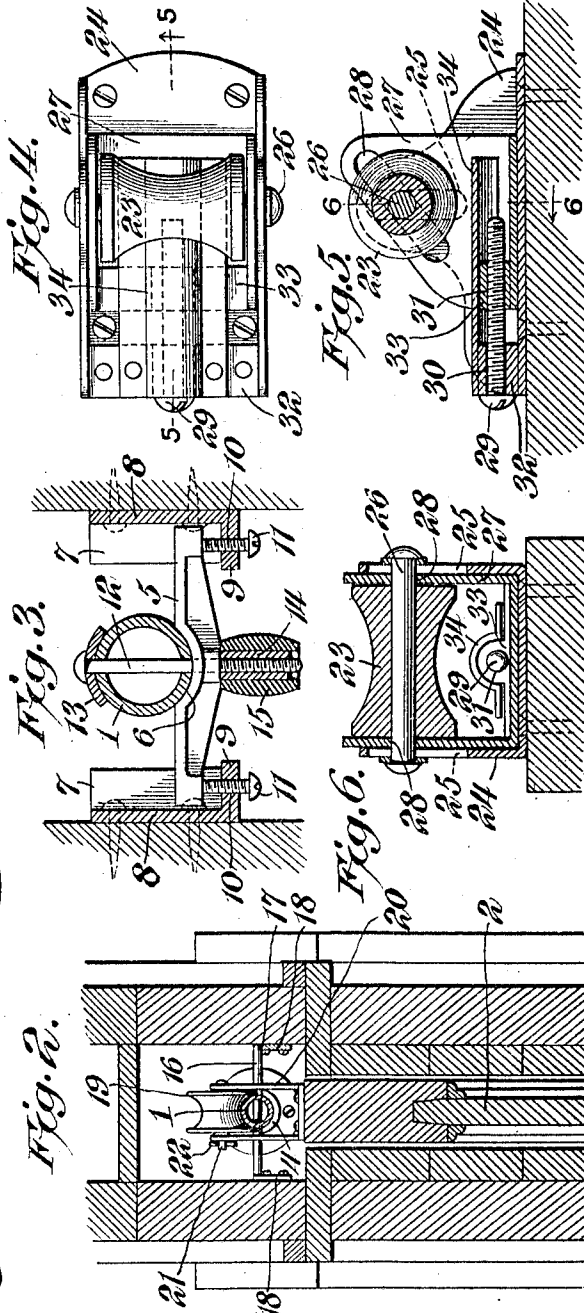
1,054,357.

Patented Feb. 25, 1913.



WITNESSES

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FERDINAND H. LANGE, JR., OF WILKES-BARRE, PENNSYLVANIA.

SLIDING-DOOR HANGER.

1,054,357.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed February 15, 1912. Serial No. 677,684.

To all whom it may concern:

Be it known that I, FERDINAND H. LANGE, Jr., a citizen of the United States, residing at Wilkes-Barre, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Sliding-Door Hanger, of which the following is a specification.

The invention relates to improvements in sliding door hangers.

10 The object of the present invention is to improve the construction of sliding door hangers, and to provide a simple, efficient and comparatively inexpensive hanger of great strength and durability, designed for use on various kinds of sliding doors, such as house doors, car doors, barn doors, and the like, and adapted to adjustably suspend the sliding door from a track.

20 A further object of the invention is to provide means for adjustably supporting the track at an intermediate point to maintain the track in a horizontal position.

25 With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims here-to appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

30 In the drawing:—Figure 1 is a side elevation partly in section of a sliding door hanger, constructed in accordance with this invention and shown applied to a pair of sliding doors. Fig. 2 is a vertical sectional view, taken substantially on the line 2—2 of Fig. 1. Fig. 3 is a similar view on the line 3—3 of Fig. 1. Fig. 4 is a plan view of one of the lower rollers and the means for mounting and adjusting the same. Fig. 5 is a vertical longitudinal sectional view on the line 5—5 of Fig. 4. Fig. 6 is a transverse sectional view on the line 6—6 of Fig. 5.

35 Like numerals of reference designate corresponding parts in all the figures of the drawing.

40 In the accompanying drawing in which is illustrated the preferred form of the invention, 1 designates a horizontal track supporting a pair of sliding doors 2, said track preferably constructed of metal tubing and

supported at one end by a socket 3 and at its other end by an open socket or seat 4. The socket 3 consists of a disk or plate having an integral annular flange, which surrounds the end of the track. The open socket or seat consists of a plate having an integral arcuate flange, extending around the bottom and sides of the track, which is adapted to be lifted out at the top to enable it to be readily placed in and removed from its end supports.

45 The horizontal track when used in connection with a pair of sliding doors is supported at the center, such central supporting means being unnecessary, however, when only a single sliding door is suspended from the horizontal track. The central supporting means comprises a horizontal bar or member 5, preferably of flanged metal and provided in its upper face with a curved recess 6 to form a seat for the track and having its ends arranged in vertical guides 7. The ends of the transverse supporting bar or member 5 have flat sides and end faces to fit the guides 7 and flat bottom faces, which fit against adjustable supporting means hereinafter described, and the said guides consist of parallel vertical flanges, formed integral with attaching plates 8 and connected by lower integral end walls 9, having threaded perforations 10 for the reception of adjusting screws 11, engaging the threads of the perforations 10 and forming adjustable supports for the ends of the transverse bar or member 5 and fitting against the flat bottom face thereof. The adjusting screws enable the track to be supported in proper position and are adapted to counteract any sagging or sinking caused by the weight of the sliding doors.

50 The horizontal track is secured in the center of the transverse supporting bar or member by means of a vertical bolt 12, piercing the track and extending through registering perforations of the bar 5 and a top clamping plate 13. The top clamping plate 13 is curved to conform to the configuration of the track, and the bolt 12, which is provided at its upper end with a head, is threaded at its lower portion to receive a nut 14, which bears against the lower face of the transverse bar 5 at the center thereof. The nut 14, which is in the form of a sleeve, has mounted on it a tubular or hollow elastic buffer 15, constructed of rubber, or

other suitable material and arranged to form a stop for the sliding doors 2, and received in recesses 16* in the upper inner corners thereof when the said doors are closed. The buffer forms a stop to prevent either door from sliding beyond the center of the track. The track is also supported at intermediate points between its center and ends by transverse pins 16, piercing the track and seated in recesses 17 in the upper edges of opposite bracket plates 18. These transverse supporting pins are located beyond the inward limit of the movement of the central hangers, which suspend the sliding doors from the horizontal track 1. The central hanger consists of a grooved roller or wheel 19, arranged to run upon the horizontal track and mounted between spaced sides of an approximately U-shaped bearing bracket 20. The bearing bracket 20 is secured at the bottom to the upper edge of the door 2 at the center thereof, and its sides, which are located at opposite sides of the track 1, extend above the same and are provided with alined bearing openings for the reception of a transverse axle or spindle 21 on which the supporting roller or wheel 19 is mounted.

The supporting roller or wheel is designed to be constructed of any suitable material, such as wood, fiber, metal, etc., and the axle or spindle 21, which is provided at one end with a head, is preferably equipped at the other end with a split key or cotter pin 22, but any other means may be employed for retaining it in the bearing opening of the hanger bracket.

In order to maintain the doors steady and prevent them from tilting or oscillating on the spindle or axle of the supporting roller or wheel, each of the doors is equipped with lower anti-friction rollers 23, located in advance and in rear of the central hanger and constructed of metal, or other suitable material, and adjustably mounted in bearing brackets 24. The bearing bracket 24, which is approximately U-shape, is composed of a bottom and spaced sides, which are provided with vertical slots 25, arranged in transverse alinement and receiving and permitting a vertical adjustment of a horizontal axle or spindle 26, passing through a central opening of the anti-friction roller 23 and extending beyond the same and preferably consisting of a pin or rivet, provided at each end with a head. The latter is adjusted in the vertical slots of the bearing bracket by means of a slidable wedge 27, approximately U-shaped in cross section and arranged within and fitting the bottom and sides of the bearing bracket and provided at its sides with inclined slots 28, through which the axle or spindle 26 passes. The inclined slots 28 are arranged at an angle to and extend across the vertical slots of

the bearing brackets, as clearly illustrated in Fig. 5 of the drawings, and the sliding wedge is adjusted by means of a horizontal screw 29, passing through smooth and threaded openings 30 and 31 of bars 32 and 33, secured, respectively, to the bearing bracket and to the sliding wedge and extending across the said parts and provided at the openings 30 and 31 with enlargements. The brackets and the wedges are preferably constructed of sheet steel, and the transverse bars or pieces 32 and 33 are fastened to the bearing bracket and the wedge to obtain the desired thickness or amount of metal for mounting the adjusting screw, and the screw is adapted to be rotated to slide the wedge along the bearing bracket. The bearing bracket is equipped with a horizontally disposed shield 34, curved in cross section and secured at its outer end to the bar 32 at the enlargement thereof and extending inwardly over the bracket to a point beyond the inner end of the screw for excluding dust and dirt from the same. The sliding of the bracket through the screw raises and lowers the anti-friction roller with respect to the upper edge of the door, and by adjusting the anti-friction rollers, the door is maintained in proper position and is enabled to slide freely along the track without jar or vibration, which might result were the door permitted to have any pivotal movement on the shaft or axle of the central hanger.

What is claimed is:—

1. The combination with sliding doors, of a horizontal track, end supports, means for suspending the sliding doors from the track, a central supporting member arranged beneath the track and receiving the same, a bolt piercing the track and the supporting member and having a lower depending threaded portion, a nut consisting of a sleeve arranged on the threaded portion of the bolt or screw, and a tubular buffer of elastic material mounted on the nut and forming a stop for the sliding doors.

2. The combination with sliding doors, of a horizontal track, end supports, means for suspending the sliding doors from the track, a transversely disposed member arranged beneath and supporting the track at a point intermediate of the ends thereof, fixed vertical guides located at opposite sides of the track and receiving the ends of the said transverse member, and means for adjusting the ends of the said member in the vertical guides.

3. The combination with sliding doors, of a horizontal track, end supports, means for suspending the sliding doors from the track, a transversely disposed member arranged beneath and supporting the track at a point intermediate of the ends thereof, vertical guides located at opposite sides of the track

and receiving the ends of the said transverse member and provided at their lower ends with threaded openings, and adjusting screws mounted in the threaded opening and supporting the ends of the transverse member.

4. The combination with sliding doors, of a horizontal track, means for supporting the ends thereof, vertical guides located at opposite sides of the track at a point intermediate of the ends thereof, a transverse supporting bar provided with a central seat to receive the track and having its ends arranged in vertical guides, a clamping plate arranged upon the top of the track over the transverse member, a fastening device piercing the clamping plate, the track and the said member and having a lower threaded portion, a nut arranged on the threaded portion, and means for suspending the sliding doors from the track.

5. The combination with a sliding door, of a horizontal track, end supports for the same, a central hanger secured to the sliding door at the center of the upper edge thereof and having a supporting roller or wheel arranged on the track, a transverse pin piercing the track at a point beyond the central hanger, and bracket plates located at opposite sides of the track and having recesses in their upper edges to receive the transverse pin.

6. The combination with a sliding door and an overhead track, of a central hanger consisting of a bracket secured to the door at substantially the center of the upper edge thereof, and a supporting roller mounted in the bracket and arranged to run on the track and pivotally suspending the door therefrom, bearing brackets secured to the upper edge of the door at opposite sides of the central hanger, and lower anti-friction rollers mounted in the bearing brackets and bearing against the under side of the track, said bearing brackets being provided with means for raising and lowering the anti-friction rollers with respect to the upper

edge of the door to pivotally adjust the latter.

7. The combination with a sliding door, 50 and an overhead track, of a central hanger secured to the upper edge of the door and having a supporting roller arranged to run on the track, and anti-friction devices mounted upon the upper edge of the door at 55 opposite sides of the center of the same and each comprising an approximately U-shaped casing provided in its sides with vertical slots, a roller arranged to bear against the underside of the track and having an axle 60 extending through the slots, a slidable wedge of approximately U-shape fitting the bearing bracket and having inclined slots receiving the said axle, and means for adjusting the wedge. 65

8. The combination with a sliding door, and an overhead track, of a central hanger secured to the upper edge of the door and having a supporting roller arranged to run on the track, and anti-friction devices 70 mounted upon the upper edge of the door at opposite sides of the center of the same and each comprising an approximately U-shaped casing provided in its sides with vertical slots, a roller arranged to bear 75 against the underside of the track and having an axle extending through the slots, a slidable wedge of approximately U-shape fitting the bearing bracket and having inclined slots receiving the said axle, a screw 80 extending longitudinally of the bracket between the sides thereof and connected with the bracket and the wedge in adjusting the same, and a shield arranged above the screw and extending longitudinally of the bracket 85 to protect the screw from dust.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FERDINAND H. LANGE, Jr.

Witnesses:

J. F. McCABE,
W. H. GIBBS.