L. L. PARSONS.

DOOR HANGER.

APPLICATION FILED NOV. 22, 1916.

1,329,326.

Patented Jan. 27, 1920.

2 SHEETS—SHEET 1.

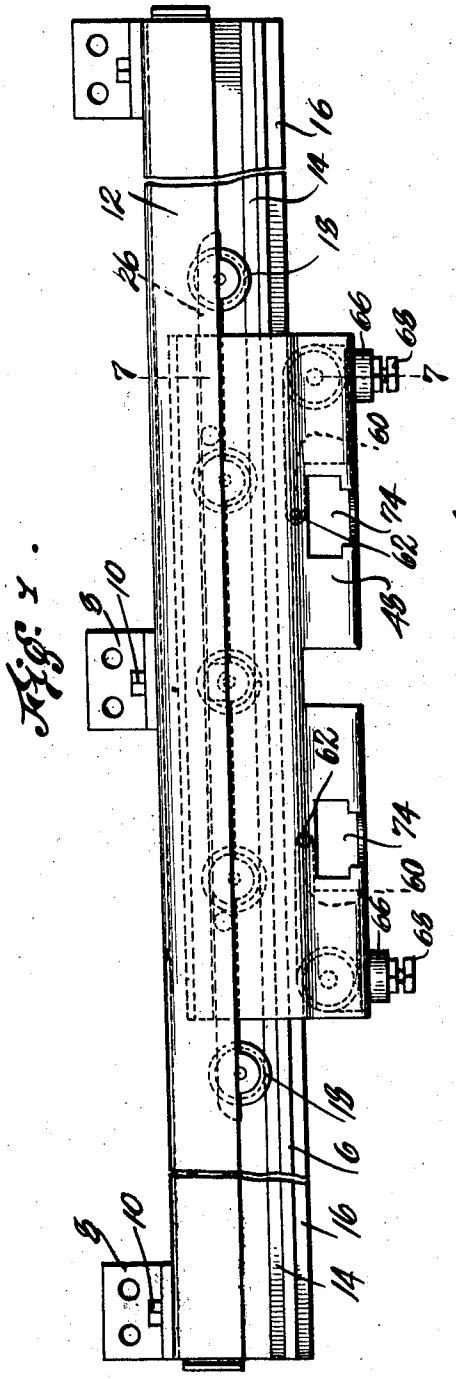


Fig. 1.

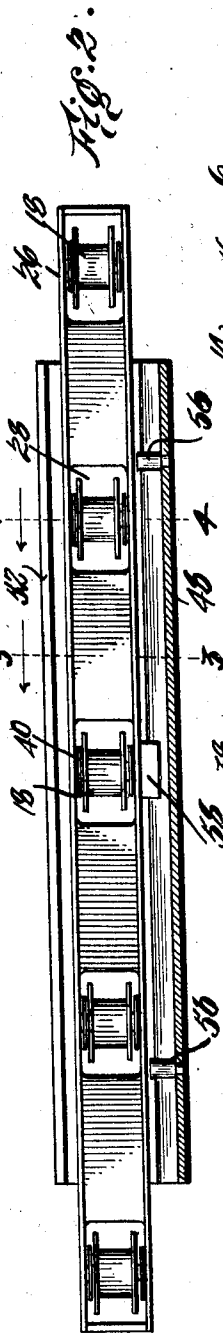


Fig. 2.

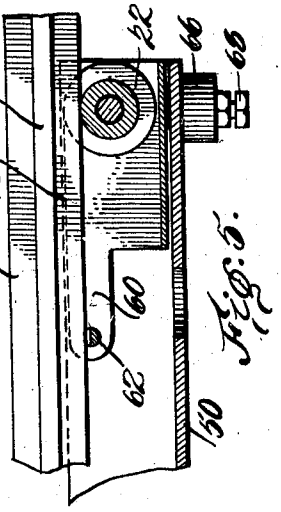


Fig. 5.

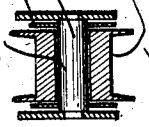


Fig. 4.



Fig. 3.

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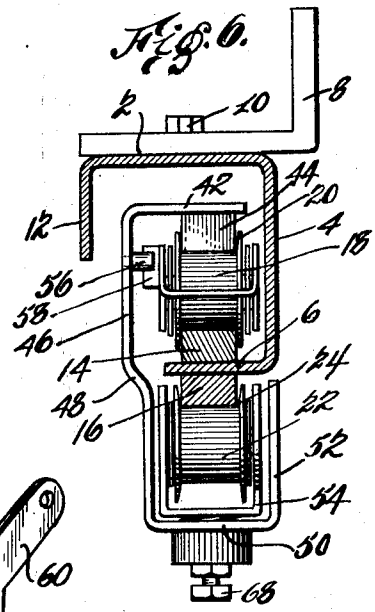
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2 SHEETS—SHEET 2.

Fig. 6.



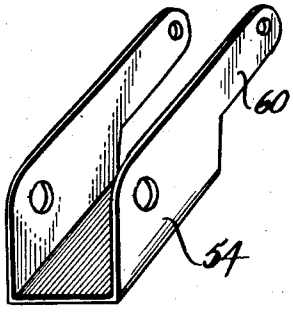


Fig. 8.

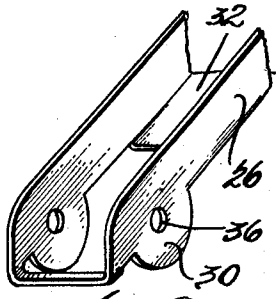


Fig. 9.

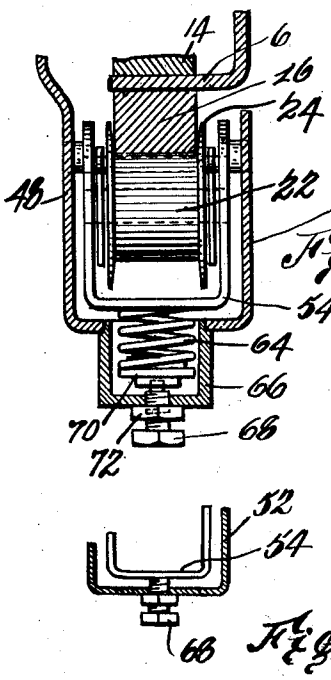


Fig. 7.

Fig. 10.

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UNITED STATES PATENT OFFICE.

LEVI L. PARSONS, OF NEW YORK, N. Y., ASSIGNOR TO ELEVATOR SUPPLY & REPAIR COMPANY, A CORPORATION OF ILLINOIS.

DOOR-HANGER.

1,329,326. Specification of Letters Patent. Patented Jan. 27, 1920.

Application filed November 22, 1916. Serial No. 132,726.

To all whom it may concern:

Be it known that I, LEVI L. PARSONS, a citizen of the United States, residing at 7 West 92nd street, New York, N. Y., have invented certain new and useful Improvements in Door-Hangers, of which the following is a clear, full, and exact description.

This invention relates to door hangers, and particularly to door hangers of the type disclosed in U. S. Letters Patent to J. Olman #947,930 granted February 1st, 1910, and #1,067,486 granted July 15th, 1913, but it will be understood that the invention is not restricted to the embodiment or uses herein illustrated and described, and that it is of general applicability in the art to which it relates.

A general object of the invention is to overcome several of the more common difficulties heretofore experienced in the construction of door hangers, particularly those suitable for elevator doors and the like, where certainty and ease of operation are essential and where elimination of as much noise as possible is particularly desirable.

More particularly, the invention aims to improve door hangers of the type disclosed in the Olman patents above identified, in order to overcome any liability to imperfect operation of these hangers through careless installation or improper manipulation, and at the same time to reduce as much as possible the friction and noise in the operation of such hangers.

An important feature of the invention is the novel construction of the roller carriage, whereby a strong, rigid support for the rollers is obtained, and whereby provision is made for such distortions as will ordinarily appear in the structure with which the hangers are to be used, either with use or with age.

Another important feature of the invention is the novel means for eliminating the noise incident to the lateral play provided for the rollers in the roller carriage, whereby sufficient lateral movement is permitted to the rollers to compensate for distortions either in the track or in the door hanger proper, without objectionably increasing the noise due to the relative looseness of the parts. Another important feature of the invention is the means for preventing undue vertical play of the hanger, this means being preferably yieldingly maintained in operative position, whereby the noise, ordinarily incident to such vertical play as is necessary to prevent binding, is eliminated.

Other objects and important features of the invention will appear from the following description and claims when considered in connection with the accompanying drawings, in which—

Figure 1 is an elevation of an assembled door hanger construction embodying the present invention;

Fig. 2 is a horizontal longitudinal section through the hanger and showing particularly the roller carriage construction;

Figs. 3 and 4 are transverse sections through the roller carriage on the lines 3—3 and 4—4 respectively, of Fig. 2;

Fig. 5 is a sectional detail showing the construction and arrangement of the swinging support for the lower roller and its connection to the hanger frame;

Fig. 6 is a transverse section through the track and its support, showing the hanger in end elevation;

Fig. 7 is a section on the line 7—7 of Fig. 1;

Fig. 8 is a perspective view of the swinging support for the lower guide roller;

Fig. 9 is a perspective view of the end of the roller carriage; and

Fig. 10 is a modification showing a positive adjustment for the lower roller in place of the yielding adjustment shown in Fig. 7.

The illustrated door hanger, like that shown in the patent to Olman #1,067,486, above identified, comprises a track presenting upper and lower roller guiding portions, a roller carriage in which the rollers are longitudinally spaced and laterally confined, and a hanger frame having a track member riding upon the upper rollers, said frame supporting a lower roller which bears against the lower roller guiding portion of the track. Each of the foregoing elements has been improved and other elements have been added to the construction, which contribute to the production of a substantially noiseless door hanger, which operates easily under all conditions.

In the illustrated construction, the track support comprises a top plate 2, having integral therewith a back plate 4, and a track-carrying flange 6, the brackets 8 by which the track support is connected to the wall upon which the door is to be hung, being

connected to the top plate 2 by bolts or screws 10 in any suitable manner. A protecting depending flange 12, also integral with the top plate 2, is preferably provided at the front.

The track comprises preferably upper and lower track members 14 and 16 connected to the respective sides of the track supporting flange 6. The tracks 14 and 16 each present flat roller engaging surfaces and substantially flat guiding sides, and the rollers 18, which travel upon the upper track 14, have preferably cylindrical rolling bodies and flanges 20 which fit closely the sides of the track, these flanges being preferably slightly beveled to reduce the friction along the sides of the track and also to provide for limited rocking movement of the rollers upon the track. The rollers 22, which engage the lower track portion 16, are substantially of the same construction as the rollers 18 and have flanges 24 corresponding to the flanges 20 of the rollers 18.

As hereinabove suggested, an important feature of the invention is the construction of the roller carriage and the mounting of the rollers in this carriage. The illustrated carriage 26 is formed from an iron channel in the bottom of which openings 28 have been stamped, a part of the material stamped from the bottom in forming the openings being bent outward to form roller guiding and supporting ears 30. By this construction a strong rigid carriage is obtained, having between the roller openings integral cross braces 32. Each roller is mounted to turn freely upon a pin 34 which is shown as having shouldered ends extending into openings 36 in the sides of the carriage and preferably riveted in place, see Fig. 4 of the drawings. As also shown in Fig. 4 of the drawings, the diameter of the bearing opening 38 in the center of each roller is somewhat greater than the diameter of the pin 34, thus providing for limited movement of the roller transverse to the pin. Moreover, the width of the roller, or its dimension along its axis, is preferably somewhat less than the space between the sides of the carriage, thus providing for limited axial or lateral movement of the roller. In order to reduce or practically to eliminate the noise incident to this lateral movement, the space between the sides of the carriage and the sides of the roller is made somewhat greater than the desired movement, and washers 40 are placed between the sides of the roller and the respective sides of the carriage. These washers have been found to be very effective for this purpose.

The hanger frame consists preferably of a sheet of metal bent to form a top 42 carrying a track member 44, which rides upon the rollers 18, and a front side 46, offset slightly at 48, a bottom 50 and a rear side wall 52, the front, bottom and rear side wall forming a channel in which the swinging support 54 for the lower roller 22 is confined. Projecting rearwardly from the front wall 46 of the hanger frame are stops 56 which coöperate with a stop 58 upon the front of the carriage 26 to insure that the roller carriage 26 shall travel with the hanger frame.

In order to reduce the vertical play of the hanger and to prevent excessive endwise rocking of the door, a roller 22 is preferably provided near each end of the hanger. The swinging support 54 for each of these rollers is illustrated particularly in Figs. 5 and 8, and comprises a channel member having arms 60 connected by a pivot pin 62 to the front and rear walls of the channel part of the hanger frame, this pivotal connection to the hanger frame being at one side of the point at which the roller 22 is supported in its swinging support.

In order to keep the roller 22 pressed into engagement with the lower track member 16, a spring 64 is preferably arranged to bear upon the underside of the support 54, and preferably directly beneath the roller, this spring being confined in a socket 66 upon the underside of the hanger frame. A set screw 68 threaded through the bottom of the socket 66 and bearing against a movable spring abutment 70 is provided to vary the tension upon the spring 64, a lock nut 72 being provided to lock the screw in adjusted position. In the modification shown in Fig. 10, the set screw 68 bears directly against the underside of the swinging support 54 and is used simply to adjust the roller with respect to the lower track member 16, no provision being made in the modified construction for yieldingly maintaining the roller in engagement with said track member.

What I claim as new is:

1. Apparatus of the class described comprising, in combination, a track presenting upper and lower roller guiding portions, flanged rollers fitting the respective track portions and normally in engagement therewith, and a hanger frame having a track member riding upon the upper roller and an adjustable support for the lower roller pivotally connected to said frame at a point removed from said roller along the line of travel thereof.

2. Apparatus of the class described comprising, in combination, a track presenting upper and lower roller guiding portions, flanged rollers fitting the respective track portions, a hanger frame having a track member resting upon the upper roller and having means for yieldingly pressing the lower roller constantly up into engagement with the lower track portion.

3. In apparatus of the class described, a

track presenting upper and lower roller guiding portions, rollers bearing against the respective track portions, and means common to said rollers for yieldingly maintaining them pressed against the respective track portions.

4. Apparatus of the class described comprising, in combination, a track presenting upper and lower roller guiding portions, flanged rollers fitting the respective track portions, a hanger frame having a track member riding upon the upper roller, and a support for the lower roller pivoted at one side of the roller to said hanger frame and means operating on said support for maintaining the lower roller in contact with its track portion.

5. In apparatus of the class described, door supporting means comprising a track having a lower roller guiding portion, a flanged roller fitting said lower track portion, a hanger frame, a swinging support for said roller pivoted at one side of the roller to said hanger frame, and means for effecting an adjustment of said support and roller about said pivot.

6. In apparatus of the class described, a roller carriage comprising a channel iron having spaced roller receiving openings stamped from the bottom of the channel, the stamped bottom material being bent outward to the two sides to form integral roller supporting ears upon the sides of said channel, rollers supported by said carriage with their axes substantially in the plane of the bottom of said channel, and sound deadening washers located between said rollers and the out-turned ears.

Signed at New York, N. Y., this 21" day of November, 1916.

LEVI L. PARSONS.

Witnesses:
BEATRICE MIRVIS,
ABRAM BERNSTEIN.