A. H. NELLER & R. B. LOUDEN.

DOOR HANGER.

APPLICATION FILED DEC. 12, 1910.

1,028,900.

Patented June 11, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

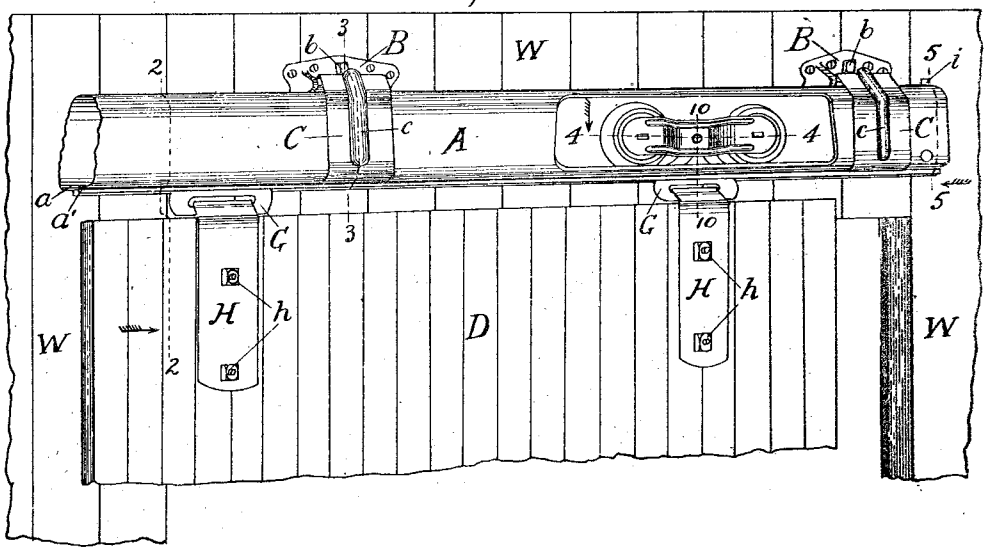


Fig. 5.

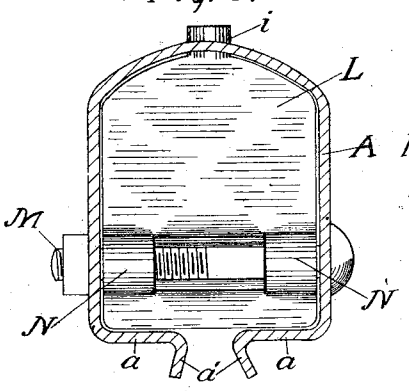


Fig. 10.

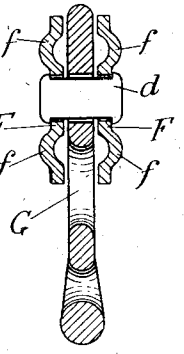


Fig. 7.

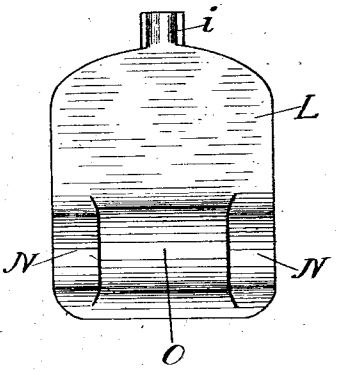


Fig. 8.

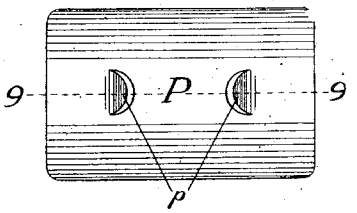
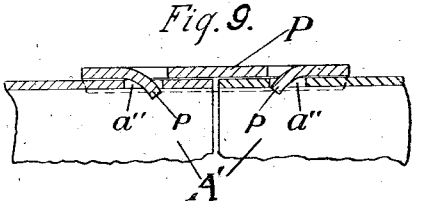


Fig. 9.



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2 SHEETS—SHEET 2.

Fig. 2.

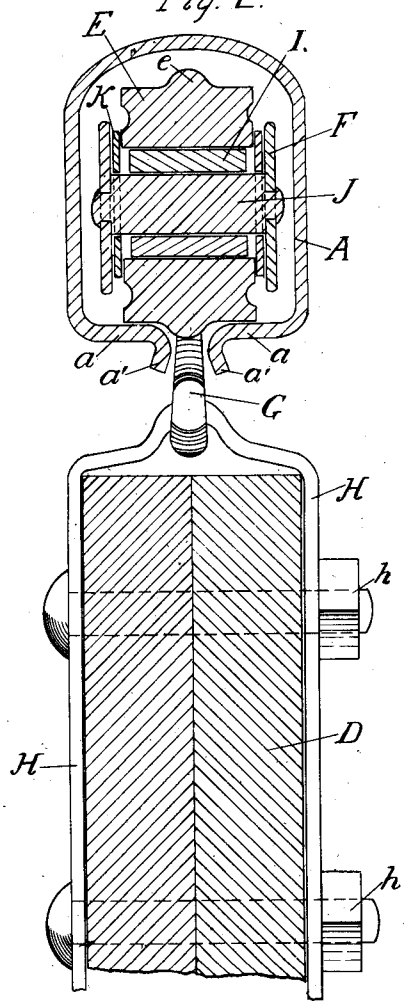


Fig. 3.

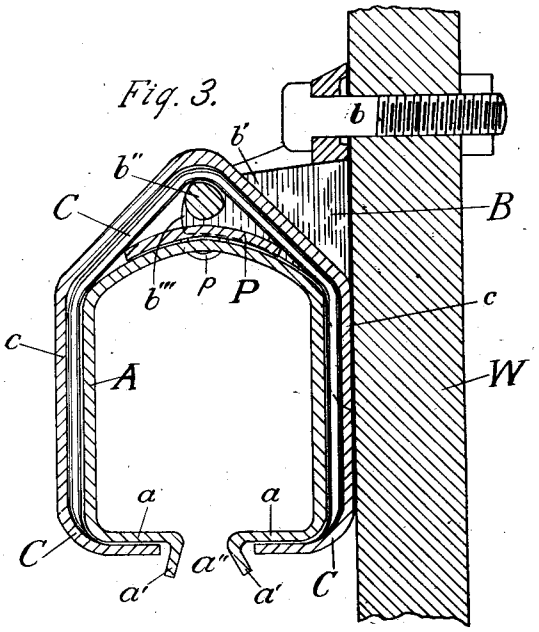


Fig. 6.

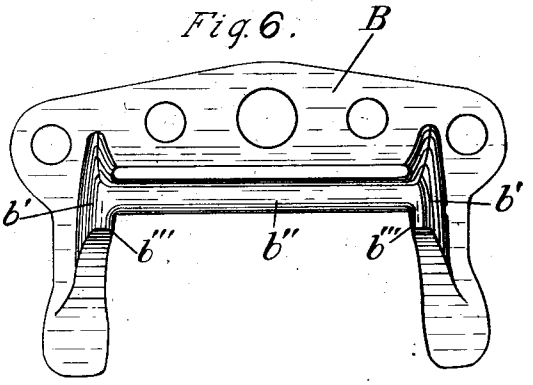
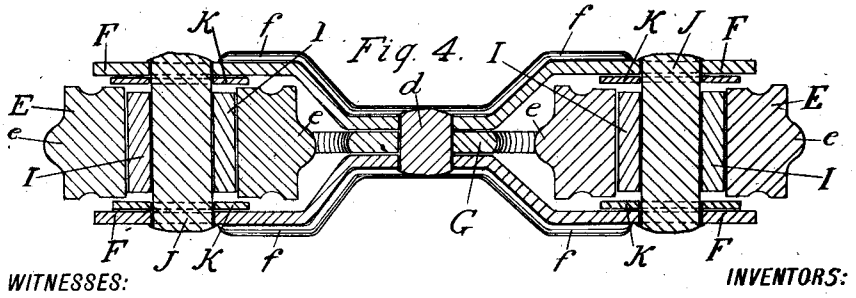


Fig. 4.



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DOOR-HANGER.

1,028,900. Specification of Letters Patent. Patented June 11, 1912.

Application filed December 12, 1910. Serial No. 596,949.

To all whom it may concern:

Be it known that we, ALBERT H. NELLER and ROBERT B. LOUDEN, citizens of the United States, residing at Fairfield, in the county of Jefferson and State of Iowa, have invented a new and useful Improvement in Door-Hangers, of which the following is a specification.

Our invention relates to door hangers designed to run in a tubular shaped track having a longitudinal slot extended along its lower surface, and it consists of certain improved features in its construction which are set forth in this specification and are more specifically pointed out in the claims.

In the accompanying drawings forming a part of this specification, Figure 1 is a perspective of a track and hanger embodying the features of our invention, being attached to the wall of a building and supporting a door, a portion of the outer side of the track being cut away to show the upper portion of one of the hangers. Fig. 2 is an enlarged transverse section on line 2—2 of Fig. 1, looking in the direction of the arrow and including the door, track and hanger but not the wall, the hanger carriage being moved along the track so that one of its wheels will occupy a position on the line 2—2. Fig. 3 is the same on line 3—3 of Fig. 1 including the track and wall but not the door. Fig. 4 is an enlarged transverse section on line 4—4 of Fig. 1, including the hanger only. Fig. 5 is the same on line 5—5 of Fig. 1, including the track only and looking in the direction of the arrow. Figs. 6, 7 and 8 are enlarged detail views. Fig. 9 is a longitudinal section on line 9—9 of Fig. 8, also showing a longitudinal section of a portion of the adjoining ends of the track sections, so as to show the manner of splicing the track sections together. Fig. 10 is a transverse section on line 10—10 of Fig. 1, showing the hanger but not the door or strap connected thereto.

Referring to the drawings, A represents the track which is essentially an irregular shaped tube having a longitudinal slot extended centrally along its underside. It will be seen that the upper central portion of the track is made rounding, its sides are flat and its lower portions *a*, are bent inwardly at substantially right angles to its sides and are provided with outwardly extended edges *a'* which are disposed at an acute angle to the portions *a*. The track is attached to the wall W of the building, by means of a bracket B secured to said wall by a bolt *b*. The bracket is made open in the center with outwardly projecting side arms *b'* and is provided with a horizontally disposed hinge-pin *b''* joining the projecting ends of the side arms together.

C is a sleeve made to embrace and fit the track on its sides and bottom, and having its upper end arched to a peak in the center so as to fit over the hinge-pin of the bracket. The sleeve being hung upon the hinge-pin, the track is pushed into it, as shown in Figs. 1 and 3, and is thus connected to the wall and held in position to support the door D.

The hanger proper is composed of two trolley wheels E mounted between the opposite ends of two horizontally disposed plates F, which are spaced apart to receive the wheels, and also, to receive a loop G, which is pivoted to the plates between the wheels E by means of a rivet *d*.

H is a strap which is adapted to hang in the eye of the loop G and to embrace the upper edge of the door and to be secured thereto by bolts *h*. It is preferable that the central portions of the plates F be inwardly bent or offset between the wheels so as to come close to the pivoted end of the loop G. To strengthen the plates, it is also preferable to have corrugations *f* located near their edges and running horizontally through their central portions, as shown in Figs. 1, 4 and 10. The wheels are preferably mounted on roller bearings I which surround an axle J and are prevented from rubbing endwise on the plates F by means of washers K, loosely mounted on the axles J. The wheels are fitted with central ribs or flanges *e* having rounded outer edges and filled where the lines of their sides intersect the face lines of the wheel so as to make the intersecting lines rounded instead of a sharp angle. The face of the wheel on the opposite sides of the rib *e* extends straight to the sides, ending with angular edges, and are adapted to run evenly on the horizontal portions *a* of the track, which may be known as the tread. Where the tread is merged into the outstanding edges *a'* the sheet of which the track is made is rounded so as to fit the rounded corners between the ribs *e* and the face of the wheel, thus presenting a broad surface for wear, whether the pressure is

directly downward or is exerted in a lateral direction. It is preferable that the slot in the track between the edges a' be made wide enough to allow some play for the passage of the loop G and also for the ribs e. The outstanding edges a' being set at an acute angle to the treads a and the edges of the loop G being rounded, the latter will always pass freely through the slot in the track whatever the direction of pressure, and the rounded part of the wheel between its face and the sides of the rib e will always fit the rounded portion of the track between the tread a and the outstanding edges a'.

The ends of the track are closed to keep out rain or snow, and also birds, as well as to form stops for the door hanger carriage, by the insertion of a block or plate L held in place by a bolt M passed through holes in the sides of the track. It is preferable that this plate should be made of sheet metal and be provided with a small arcuated extension i to project through a hole in the upper edge of the track, and that vertical slits be cut in its lower end and that the surface portions N of the sheet adjoining these slits be pressed in one direction while the central portion O is pressed in the other direction so as to form an opening for the passage of the bolt M.

The track is composed of sections of suitable lengths and are spliced together in the following manner. Holes a'' are made in the upper surfaces of the adjoining sections A′ of the track A (see Figs. 3 and 9) and a splice piece P having downwardly projecting points p is placed upon the adjoining ends of the track sections, so the points p will catch in the holes a''. The bracket B is provided with downwardly projecting shoulders b''' which are designed to catch on the ends of the splice piece P and hold it in place upon the track while its points p are in the holes a''.

Before the bracket B is secured to the wall it is turned over and away from the side next to the wall so the lips b''' will stand to the side toward the wall and out of the way of the splice piece P. When in this position, the track sections having the splice piece in position are pushed into the sleeve C until the ends of the splice piece are between the shoulders b'''. The bracket B is then turned back to its regular position to bring the shoulders b''' against the ends of the splice piece P and hold it in position and the bracket is then secured to the wall. In this way the track sections will be securely held together. The bracket B is provided with downwardly projecting ends b^4 which form braces to bear against the wall.

This track and hanger is exceedingly simple and inexpensive to manufacture; it will readily accommodate itself to inequalities of the wall, and is rain proof, snow proof and bird proof. The sleeve C being pivotally hung on the hinge-pin b'' and the strap H being pivotally connected to the eye of the loop G, makes a double joint which will permit the door to be swung out in any direction necessary and to conform closely to an uneven wall.

What we claim is:

1. In door hangers, the combination with a tubular track having a central slot in its lower surface, the lower portions adjoining the slot being inwardly and horizontally disposed in cross-section, and having rounded portions adjoining the slot terminating in downwardly and outwardly projecting edges set at an angle to said horizontal portions, of a door carriage comprising a truck frame and wheels rotatively mounted therein and wheels provided with a central rib mounted in the carriage, the edges of the rib adjoining the face of the wheels being grooved to correspond with said rounded portions of the track, and means to connect a door to the carriage.

2. In door hangers, a tubular shaped track having a central slot in its lower surface, a carriage adapted to run in the track and support a door, a bracket adapted to be secured to a wall and having an outstanding horizontally disposed hinge-pin, a sleeve adapted to embrace and support the track and having its upper end arched and forming a peak in its center adapted to hang on the hinge-pin and means to connect a door to the carriage.

3. In door hangers, a tubular shaped track having a central slot in its lower surface, a carriage adapted to run in the track and support a door, a bracket adapted to be secured to a wall and having an open center with outwardly projecting side arms, and a hinge-pin joining the ends of the arms together, a sleeve adapted to embrace and support the track and having its upper end arched and forming a peak in its center adapted to hang on the hinge-pin and means to connect a door to the carriage.

4. In door hangers, a tubular shaped track having a central slot in its lower surface, a carriage adapted to run in the track and support a door, a bracket adapted to be secured to a wall and having an open center with outwardly projecting side arms and downwardly projecting ends forming braces to bear against the wall, and a hinge-pin joining the ends of the arms together, a sleeve adapted to embrace and support the track and having its upper end arched and forming a peak in its center adapted to hang on the hinge-pin and means to connect a door to the carriage.

5. In door hangers, a tubular shaped track having a central slot in its lower surface, a carriage adapted to run in said track and support a door, and a sheet metal plate

having an upwardly extending point projecting through a hole in the track and a bolt passed through holes in the sides of the track and through openings in the lower end of the plate.

6. In door hangers, a tubular shaped track having a central slot in its lower surface, and consisting of two or more sections abutting each other and having holes in their adjoining upper surfaces, a splice plate having downwardly projecting points adapted to enter and catch in the holes in the track when placed on the outside thereof and means to hold the splice plate in position on the track.

7. In door hangers, a tubular shaped track having a central slot in its lower surface, and consisting of two or more sections abutting each other and having holes in their adjoining upper surfaces, a splice plate having downwardly projecting points adapted to enter and catch in the holes in the track when placed on the outside thereof, a bracket having side arms with a hinge-pin connecting the outer ends of the arms, and a lip on each arm adapted to admit and release the splice when the bracket is turned up and to hold it in position when the bracket is turned down to attach to the wall.

8. In door hangers, a tubular shaped track, a carriage adapted to run in said track and support a door, said carriage consisting essentially of two horizontally disposed plates spaced apart and having a wheel mounted between each of their opposite ends, and door connecting means secured to the plates between the wheels, said plates being provided with corrugations extending lengthwise horizontally through their central portions.

9. In door hangers, a track composed of a tubular shaped section having a slot in its under side, a carriage having one or more rotatively mounted wheels adapted to run in said track, means to connect said carriage to a door, a bracket adapted to be secured to a wall and a sleeve pivotally hung on the bracket, and embracing and supporting the track.

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ROBERT B. LOUDEN.

Witnesses:
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ROBERT L. FULTON.