P. B. WEIS.

FOLDING DOOR HANGER EQUIPMENT.

APPLICATION FILED FEB. 10, 1919.

1,349,398.

Patented Aug. 10, 1920.

2 SHEETS—SHEET 1.

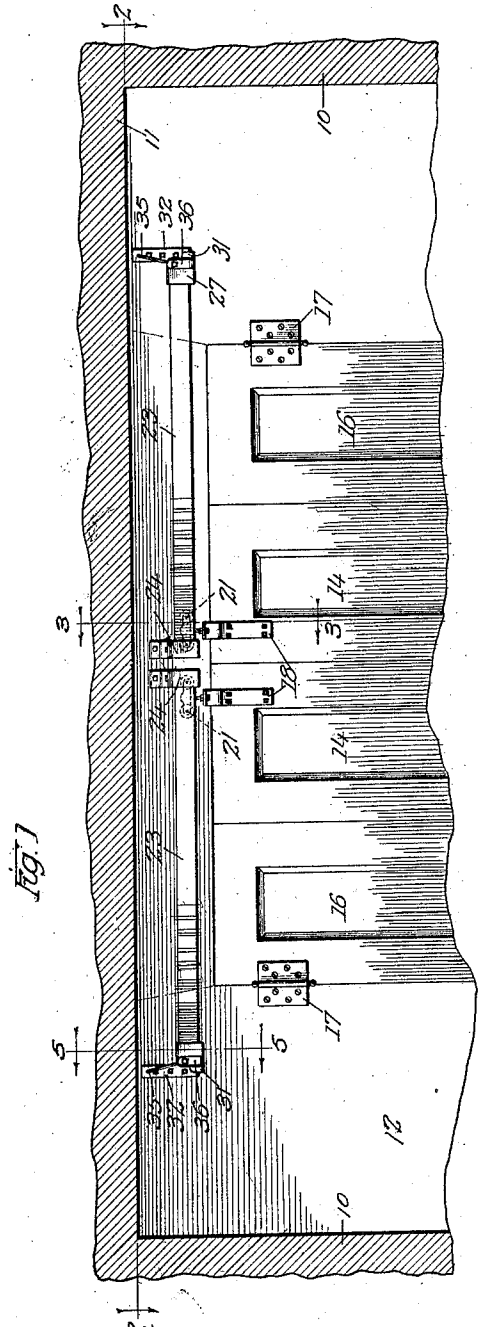


Fig. 1.

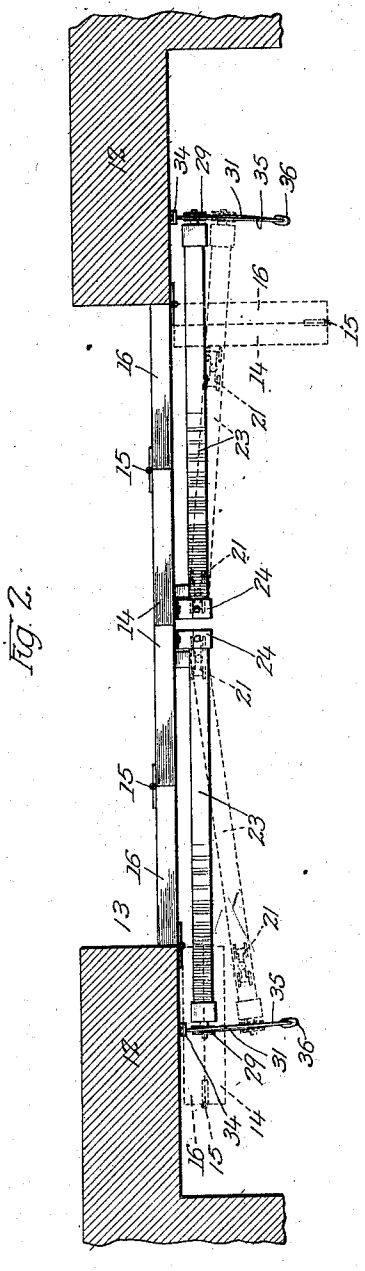


Fig. 2.

WITNESSES:

Robert H. Ewer

Arthur W. Cardozo

INVENTOR:

Paul Balthasar Weis,

BY

John Howard McElroy

his ATTORNEY

P. B. WEIS.

FOLDING DOOR HANGER EQUIPMENT.

APPLICATION FILED FEB. 10, 1919.

1,349,398.

Patented Aug. 10, 1920.

2 SHEETS—SHEET 2.

Fig. 3.

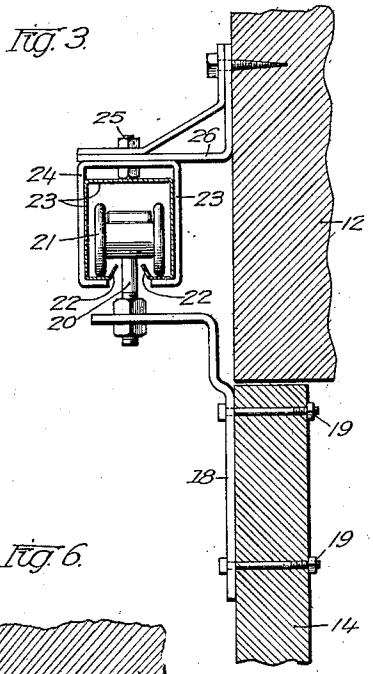


Fig. 4.

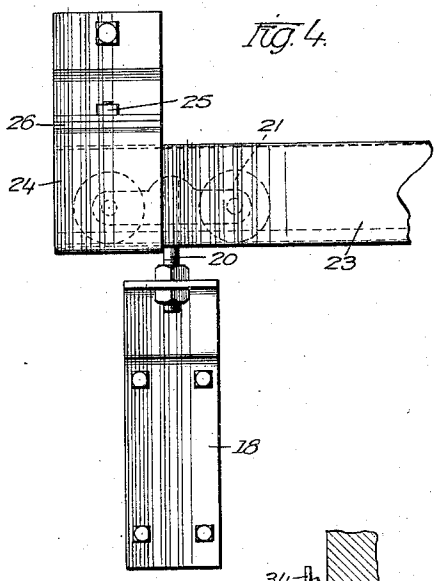


Fig. 6.

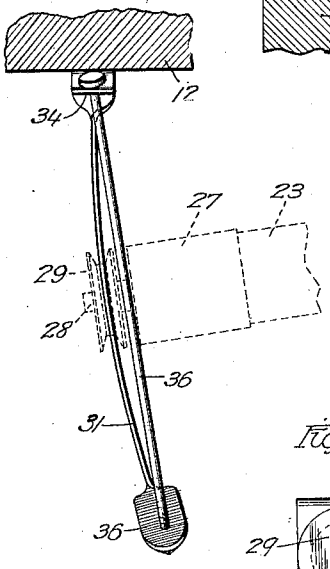


Fig. 5.

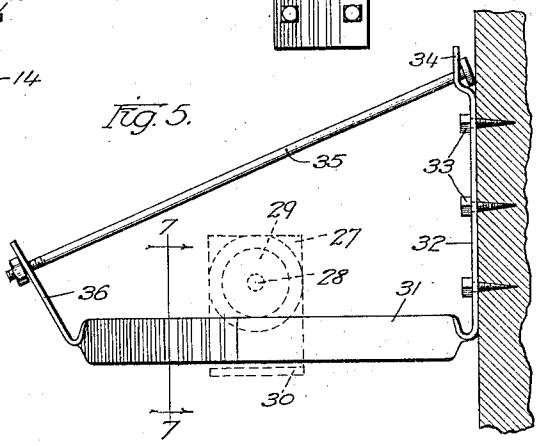


Fig. 8.

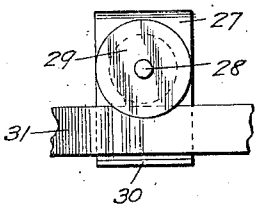
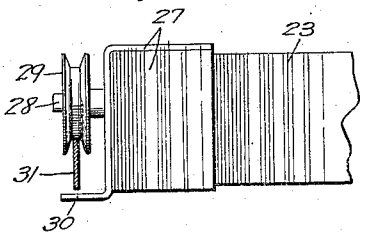


Fig. 7.



WITNESSES:

Robert H. Weir

Arthur W. Carlson

INVENTOR:

Paul Balthasar Weis

BY

John Howard McElroy

ATTORNEY

UNITED STATES PATENT OFFICE.

PAUL BALTHASAR WEIS, OF AURORA, ILLINOIS, ASSIGNOR TO AURORA DOOR HANGER & SPECIALTY COMPANY, OF AURORA, ILLINOIS, A CORPORATION OF ILLINOIS.

FOLDING-DOOR HANGER EQUIPMENT.

1,349,398. Specification of Letters Patent. **Patented Aug. 10, 1920.**

Application filed February 10, 1919. Serial No. 276,082.

To all whom it may concern:

Be it known that I, PAUL BALTHASAR WEIS, a citizen of the United States, and a resident of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Folding-Door Hanger Equipments, of which the following is a full, clear, and exact specification.

My invention is concerned with folding door supports of the type in which a track is employed for the door, upon which runs a hanger secured to an inner leaf of the door so that as it is opened and folded, the hanger moves from the inner to the outer end of the track, thus permitting the door to open and relieving the racking strain on the hinges. Prior to my invention, so far as I am aware, these supports were of two types.

In the older type, the track was directly above and parallel to the doors when they were closed, but this location of the tracks had the objection that although the doors could be opened and folded, they could not be swung out of the doorway, and this necessitated employing an unnecessarily wide doorway to get the desired effective width.

In a later type developed to overcome this objection, the tracks were placed outside of the doorway and at an angle to the doors in their closed position so that they could be opened, folded and swung entirely outside of the doorway. This type is open to the very serious objection that the position of the outer end of the tracks has to be carefully adjusted for different thicknesses of doors, or the number of the leaves of the door, or for varying positions to which the folded and open doors are finally swung.

By my invention, I obviate the difficulties of both of these old types by placing the hanger track outside of the doorway and parallel to the door, and employing a transverse track upon which the outer end of the hanger track moves when the door is opened and folded so that no adjustment whatever is required as the outer end of the hanger track automatically moves out on the transverse track when the door is opened and folded just as far as may be necessary and without having to take into consideration either the thickness of the door, the number of leaves, or the position to which the folded and open door is finally swung.

To illustrate my invention, I annex hereto two sheets of drawings in which the same reference characters are used to designate identical parts for all the figures of which

Figure 1 is an elevation of a pair of folding doors mounted upon my novel supports, showing the doors in their closed position;

Fig. 2 is a top plan view in section on the line 2—2 of Fig. 1, showing the doors and tracks in their closed position in full lines and in their open position in dotted lines;

Fig. 3 is a detail of the inner end of the support on an enlarged scale, seen in section on the line 3—3 of Fig. 1;

Fig. 4 is a detail of the same mechanism as seen from the left hand side of Fig. 3;

Fig. 5 is a detail showing the transverse track as seen in section on the line 5—5 of Fig. 1, but on an enlarged scale;

Fig. 6 is a top plan view of the same;

Fig. 7 is a detail as seen in section on the line 7—7 of Fig. 5; and

Fig. 8 is a view of the mechanism shown in Fig. 7 as seen from the left hand side.

In the drawings, I have indicated the customary side walls 10 and ceiling 11 of a room diagrammatically, together with the end wall 12 having the doorway 13 in which are mounted a pair of folding doors made up of the inner leaves 14 mounted by the hinges 15 on the outer leaves 16 which in turn are supported by the hinges 17 secured to the sides of the doorway in the customary manner.

Near the inner edges of the inner leaves 14 are the brackets 18 secured by the bolts 19 and having the hangers 20 adjustably mounted thereon in the customary manner so that the wheels 21 of the hanger may center accurately on the track flanges 22 of the customary track 23, which is pivotally supported at its inner end by the yoke 24 in which it is secured which is pivoted by the bolt 25 to the supporting bracket 26 secured to the end wall 12 above the doorway 13.

The outer ends of the tracks 23 have secured thereon the sockets 27, which are provided with the outwardly projecting axle 28 for the grooved roller 29 mounted thereon to coöperate with the transverse track 31, which may be conveniently made of a bar of iron having the track proper standing vertically and the securing web 32 twisted at right angles thereto and secured by the screws 33 to the wall 12. The socket 27 is

provided with a flange 30 extending under the track 31 so as to prevent the roller 29 from being lifted off of the transverse track 31 during its movement thereon. This track 31 is curved on the arc of a circle of which the bolt 25 is the center, and its main portion is preferably inclined downward slightly from the outer to the inner end so that when the door is closed, the roller 29 will tend to move by gravity back to the normal full line position shown in Fig. 2 where the track is parallel to the closed door. To brace the transverse track 31, I form on the upper end of the web 32 the offset eye 34 through which passes the brace rod or bolt 35, the lower end of which passes through an aperture in the twisted and turned up end 36 of the transverse track 31 and is secured thereto by a nut.

The operation of my improved support will be readily apparent. When the doors are closed, the tracks 23 are in the full line position shown parallel to the closed doors, and as the doors are opened and folded the hangers 20 run out in the tracks 23, which swing out to the dotted line position shown in Fig. 2, and which position will be just as far as is necessary to accommodate the opened and folded doors, irrespective of their thickness, the number of leaves or the position to which they are moved. To illustrate this, the door on the right hand side of Fig. 2 is shown as opened less than the door on the left hand side with the result that the coöperating track 23 is not swung out so far as is the track 23 on the other side. When the doors are closed, the tracks swing back to their normal parallel position, and it will be obvious that in equipping folding doors with these supports, it is not necessary to supply various sizes of the transverse tracks or make any adjustment therein, as all that is necessary is to mount the tracks in position to receive the rollers 29 when the inner ends are properly adjusted.

While I have herein disclosed a generic invention, the claims are specific, the generic claims being included in my application No. 317,662, filed August 15, 1919, the patent for which I expect to have issued simultaneously with this patent.

While I have shown and described my invention as embodied in the form which I at present consider best adapted to carry out its purpose, it will be understood that it is capable of modifications, and that I do not desire to be limited in the interpretation of the following claims except as may be necessitated by the state of the prior art.

What I claim as new, and desire to secure by Letters Patent of the United States is—

1. In an apparatus of the class described, the combination with a hanger secured to a door, of a horizontal track therefor pivotally supported at its inner end, an antifriction roller mounted on the outer end of said track, and a curved transverse track upon which the roller runs as the horizontal track swings outward when the door is folded and opened.

2. In an apparatus of the class described, the combination with a hanger secured to a door, of a horizontal track therefor pivotally supported at its inner end, an antifriction roller journaled on the outer end of said track, a curved transverse track upon which the roller runs as the horizontal track swings outward when the door is folded and opened, and a flange projecting from the outer end of the horizontal track beneath the transverse track.

In witness whereof, I have hereunto set my hand and affixed my seal this sixth day of February, A. D. 1919.

PAUL BALTHASAR WEIS. [L. S.]