

Dec. 12, 1933.

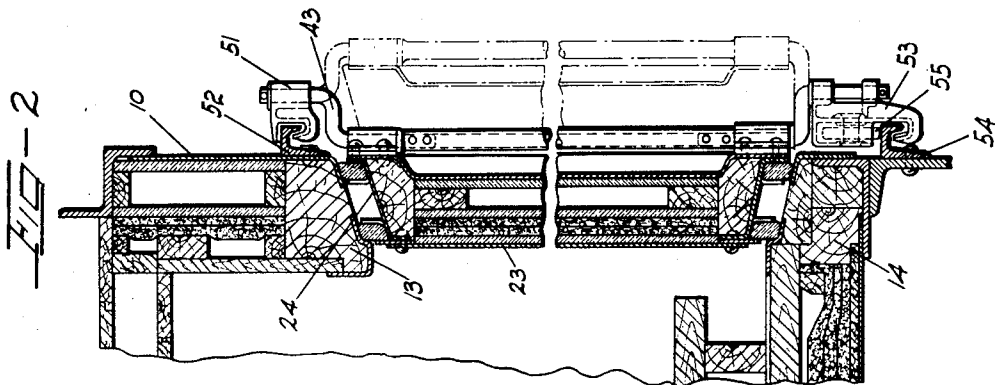
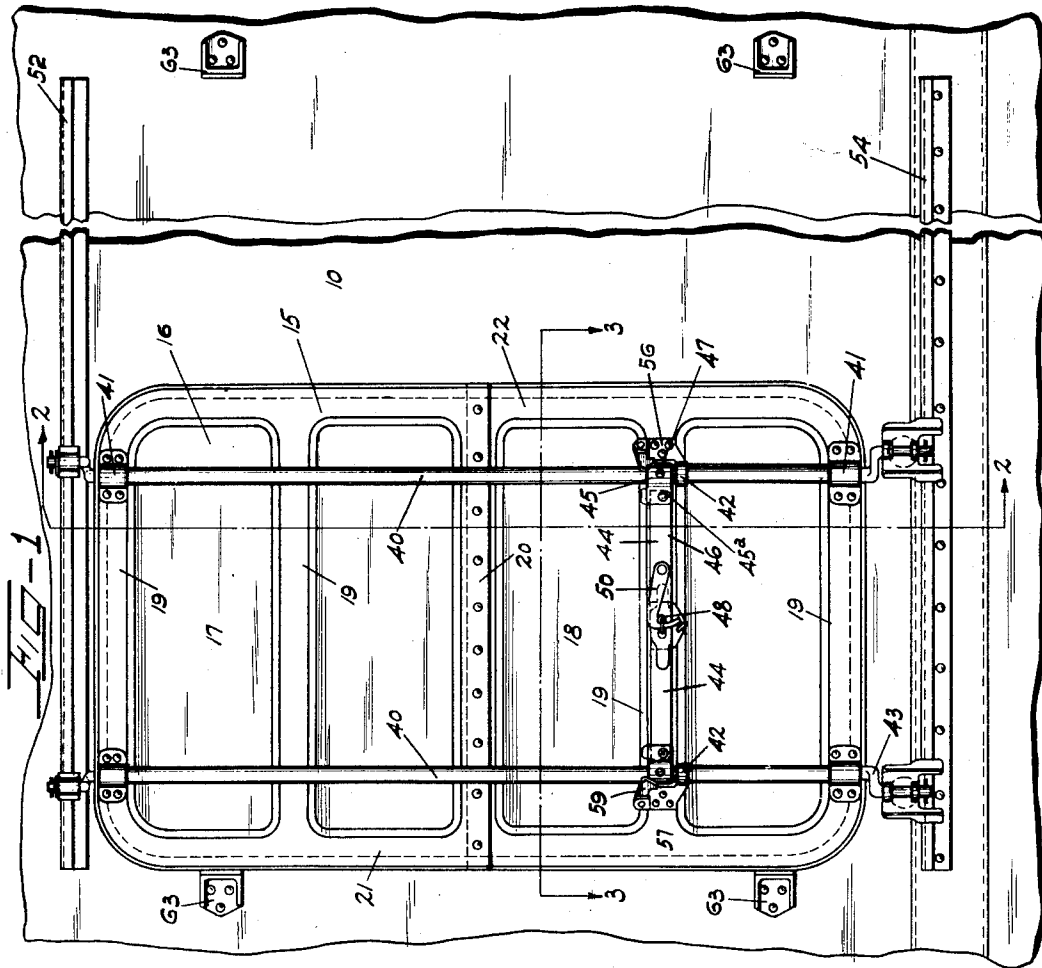
W. A. NEWMAN

1,938,926

DOOR HANGER

Filed June 26, 1931

2 Sheets-Sheet 1



~INVENTOR~

WILLIAM A. NEWMAN

By Samuel Reese

ATTY.

Dec. 12, 1933.

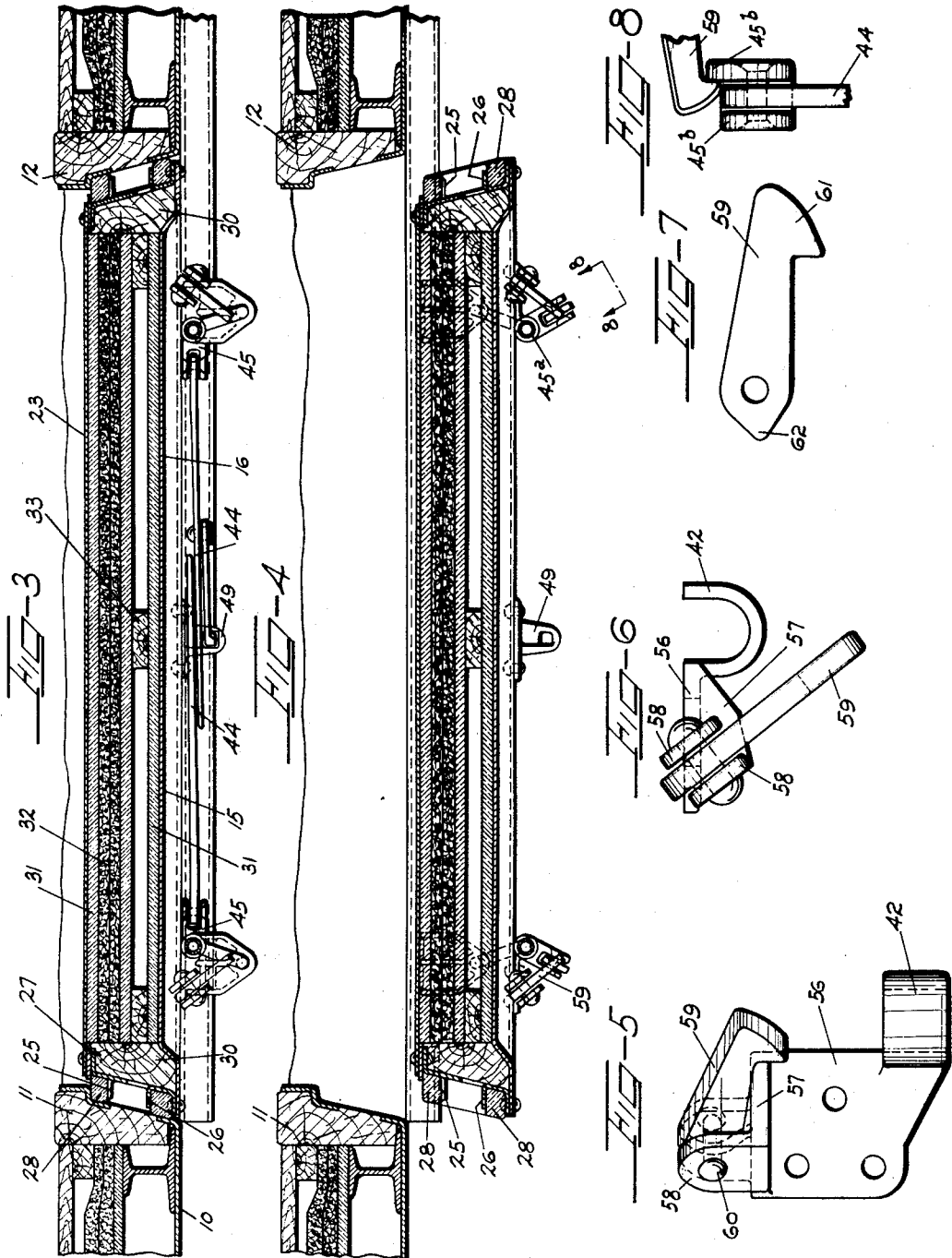
W. A. NEWMAN

1,938,926

DOOR HANGER

Filed June 26, 1931

2 Sheets-Sheet 2



INVENTOR

WILLIAM A. NEWMAN

By Samuel Reese

ATTY.

UNITED STATES PATENT OFFICE

1,938,926

DOOR HANGER

William A. Newman, Montreal, Quebec, Canada

Application June 26, 1931. Serial No. 547,068

5 Claims. (Cl. 16—87)

This invention relates to hangers for doors and concerns itself more particularly with hangers for use with sliding car doors of the flush type.

It is among the objects of this invention to provide a hanger for sliding car doors which shall have few and relatively simple parts and which shall be capable of seating said doors in their door openings substantially flush with the car sides and of removing said doors from said openings and support the same for sliding movement.

A further object of the invention is the provision of a door hanger comprising a plurality of vertical rods rotatably mounted upon said door, each of said rods having an operating lever adjustably secured thereto to insure proper seating of said door in its door opening.

Another object of the invention is the provision of a door hanger comprising a plurality of vertical bars rotatably secured to said door, each of said bars carrying an operating lever, and means mounted on said door for automatic engagement with said levers when the latter are operated to remove the doors from their openings to effect smooth unimpeded sliding movement of the doors.

Other objects will appear as the description of this invention proceeds.

In the drawings forming a part of this specification:

Figure 1 is a fragmentary elevation of a house car illustrating a door supported upon a hanger embodying this invention.

Figure 2 is a vertical sectional view taken on line 2—2 of Figure 1, the door being shown removed from its opening in dot and dash lines.

Figure 3 is a horizontal section taken on line 3—3 of Figure 1.

Figure 4 is a view similar to Figure 3 showing the door removed from its opening and in position for sliding movement.

Figure 5 is a detail in elevation of a combined bearing and latch member.

Figure 6 is a top plan view of Figure 5.

Figure 7 is a detail of a hook utilized in the combined bearing and latch member.

Figure 8 is an enlarged partial elevation looking in the direction of the arrows 8—8 shown in Figure 4 of the drawings.

Referring to the drawings in which a preferred embodiment of this invention is illustrated the numeral 10 indicates generally a house car. There is provided in the car 10 a door opening defined by the vertical door posts 11 and 12 and by a lintel 13 and threshold 14. As clearly shown

in Figures 2, 3 and 4, the car illustrated is preferably a refrigerator car.

A door 15 may be used to close the opening in the car. This door comprises essentially a metallic construction. It embodies an outer metallic plate 16 formed preferably of a plurality of dished panels 17 and 18. These panels provide horizontal corrugations 19 and 20 and vertical corrugations 21 and 22. The door construction further embodies an inner metallic plate 23 spaced from the outer plate 16. An angular reinforcing frame 24, substantially "Z" shaped in section, is employed to connect the inner and outer plates in order to constitute the main door structure. The inner and outer plates are preferably riveted to the flanges of the framing member 24 as clearly indicated in Figures 2, 3 and 4 of the drawings. The framing member 24 is preferably rounded at its corners and the inner and outer metallic plates follow the contour of the framing member. By this construction a substantially rigid door is produced. It is understood, of course, that the door opening is correspondingly rounded at its corners. It follows from this construction that all possibility of pinching of the door in the door opening due to the weaving and racking of the car is avoided. The great strength imparted at the corners of the door by this construction also avoids opening up of the joints at such corners. The framing member 24 is provided with a plurality of offset tongues 25 and 26 formed around the perimeter of said frame and extending outwardly therefrom. These tongues cooperate with a flange on the Z-bar frame and with a plate member 27 to provide grooves in which continuous sealing members 28 may be received. These sealing members in their operative position preferably contact with wear plates provided in the post, lintel and threshold members.

Positioned within the door is a wooden frame 30 conforming substantially to the contour of the reinforcing frame 24. The door 15 is insulated by means of a plurality of layers of compressed insulating material 31 between adjacent layers of which a plurality of layers of loose insulating material 32 is positioned. These layers of insulating material are maintained in position against the inner plate 23 by means of wooden spacers 33 which may be secured in position by any suitable means to the wood framing member 30. These wooden spacers also maintain the insulating layer 31 against the outer plate 16.

The construction of the door has been de-

scribed in some detail but no claim is made herein to this construction. The door structure will form the subject matter of another application.

The door is supported for lateral movement relative to the door opening and for sliding movement toward open and closed position by means of a hanger comprising a plurality of vertical bars 40. These bars are rotatably retained on the door by means of a plurality of bearings 41 and 42. The extremities of the bars 40 are provided with offset portions 43 known as goose necks. Secured to each of the vertical bars 40 is an operating lever 44 pivoted eccentrically as indicated at 45^a between the spaced flanges 45^b—45^b provided on a collar 45 adapted to be fixed upon a bar. The outermost of said flanges is of greater height than the innermost flange for a purpose hereinafter set forth. A set screw 47 is utilized to retain the portion 45 in the desired relationship upon the bar. By means of this construction it is evident that the wear of the weather or sealing strips 28 may be compensated for by varying the initial angular relationship of the levers 44 with respect to the bars 40. This variation is permitted by means of the set screws 47. It is observed that the levers 44 move toward each other when the door is being seated in its opening and that in the latter position these levers overlap. The overlapping portions are provided with aligned openings 48, through which a staple 49, carried by the door, is adapted to extend. A latch 50 may be utilized to retain the levers in their overlapped position as well as to provide means for sealing the door.

The goose necks of the bars 40 are journaled in upper carriages 51, these carriages being supported and guided during the sliding movement of the door by means of a retaining member 52 mounted upon the car above the door opening. The lower extremities of the bars 40 are journaled in carriages 53 which are adapted to have sliding movement upon a track 54 by means of rollers 55 provided in said carriages and having engagement with said track.

The bearings 42 utilized to rotatably maintain the bars 40 in position upon the door constitute preferably an integral portion of a bracket member 56 adapted to be secured to the door. This bracket member is provided, additionally, with a forwardly projecting flange 57 from which extend a plurality of spaced ears 58. Between these ears a hook member 59 is pivoted by means of a pin 60 extending through aligned openings in said ears. One end of the hook member 59 is provided with an engaging nose portion 61 while the opposite end thereof is formed with a lug 62 adapted for engagement with the flange 57 provided on the bracket in order to limit the upward movement of the hook member.

The door is limited in its sliding movement by a plurality of stops or brackets 63.

When it is desired to move the door from its closed position within the door opening toward its open position, the latch 50 is disengaged from the staple 49 and the levers 44—44 are swung outwardly. During this movement of the levers the bars 40—40 will be rotated and because of the goose neck formations thereon the door will be moved bodily out of its opening. During this movement of the door the outer flange 45^b will engage the nose on each of the hook members 59 automatically elevating said member until engagement between the nose portion and said outer flange 45^b has occurred. This engagement,

because of the connection between the levers 44—44 and the operating bars 40—40, will maintain said bars and consequently the carriages in which they are journaled in fixed position during the sliding movement of the door. The carriages, consequently, have a steady unimpeded movement along the retaining bar 52 and the track 54. Without this rigid positioning of the bars 40—40 during the sliding movement of the door it has been found that this movement has been jerky and undesirable. In addition to providing a steady, regular movement of the door the hanger mechanism described insures such movement at all times in view of the fool-proof and automatic construction provided.

It will be observed that the nose of each hook member 59, when said portion is in engagement with the outer flange 45^b, will lie in the space between said outer and inner flanges 45^b. It is also apparent that when the door has been moved out of its opening the levers will gravitate to vertical position. When it is desired to force the door into its opening each of the levers is grasped and moved to horizontal position. During this movement and because of the eccentric pivotal connection of the levers engagement between the levers 44 and the nose 61 of the hook members 59 will occur and bring about automatic disengagement of said hook members with the outer flange 45^b provided on the collars 45. It is noted, furthermore, that the levers are utilized merely for swinging the door into and out of its opening but are not employed during the sliding movement of the door. It is manifest, therefore, that not only is the engagement between the members 59 and the levers 44 automatic, but that the disengagement of these parts occurs automatically as well.

It is apparent that numerous changes and modification in the details of this invention may be made. It is to be understood that all such changes and modifications are comprehended within the perview of this invention, which is to be limited only by the scope of the claims appended hereto.

I claim:

1. A hanger for a flush sliding door comprising in combination with vertical bars journaled upon said door, crank ends provided on said bars, means swivelly retaining said bars for sliding movement, a collar secured to each of said bars and an operating lever pivotally secured to each collar, a pivoted latch member carried by said door adjacent each bar, said collars being automatically engaged by said latch members when said bars are operated to position said door for sliding movement, said latch members being automatically disengaged by said levers when the latter are actuated to move said door to flush position.

2. A hanger for a flush sliding door comprising in combination with vertical bars journaled upon said door, said bars having crank ends, means swivelly retaining said bars for sliding movement, a collar secured to each of said bars, spaced flanges extending from each collar and an operating lever pivotally secured between said flanges, a pivoted latch member carried by said door adjacent each bar, one of said flanges of each collar having a projection for automatically engaging a latch member when said bars are operated to position said door for sliding movement, said latch members being engaged by said operating levers to release said engagement when said levers are actuated to move said door to flush position.

3. In a railway house car, the combination

with a flush door having vertical bars rotatably journaled thereupon, members swivelly retaining said bars for sliding movement upon said car, a flange secured to each of said bars for rotation therewith and levers for rotating said bars to move said door away from said car, of a latch member pivotally mounted upon said door adjacent each of said flanges, said latch members automatically engaging said flanges during said rotation of said bars for the purpose set forth.

4. In a railway house car, the combination with a flush door having vertical bars rotatably journaled thereupon, members swivelly retaining said bars for sliding movement upon said car, a flange secured to each of said bars for rotation therewith and levers pivotally secured to said flanges for rotating said bars to move said door away from said car, of a latch member secured to said door adjacent each of said flanges, said latch members automatically engaging said flanges during the rotation of said bars for the purpose set forth, said levers upon

their release gravitating to a vertical position, and said levers engaging and releasing said latch members from said flanges when moved to horizontal position to actuate said bars for moving said door to flush position.

5. In a railway house car, the combination with a flush door having vertical bars rotatably journaled thereupon, members swivelly retaining said bars for sliding movement upon said car and a flange secured to each of said bars for rotation therewith, of a latch member secured to said door adjacent each of said flanges, levers pivoted eccentrically to said flanges for rotating said bars to move said door away from said car, said latch members automatically engaging said flanges during the rotation of said bars for the purpose set forth, said levers automatically releasing said latch members from said flanges during the actuation of said levers to move said door to flush position.

WILLIAM A. NEWMAN.

25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150