Jan. 3, 1933. O. E. RAAEN 1,893,105

BOX CAR DOOR

Filed April 21, 1931 3 Sheets-Sheet 1

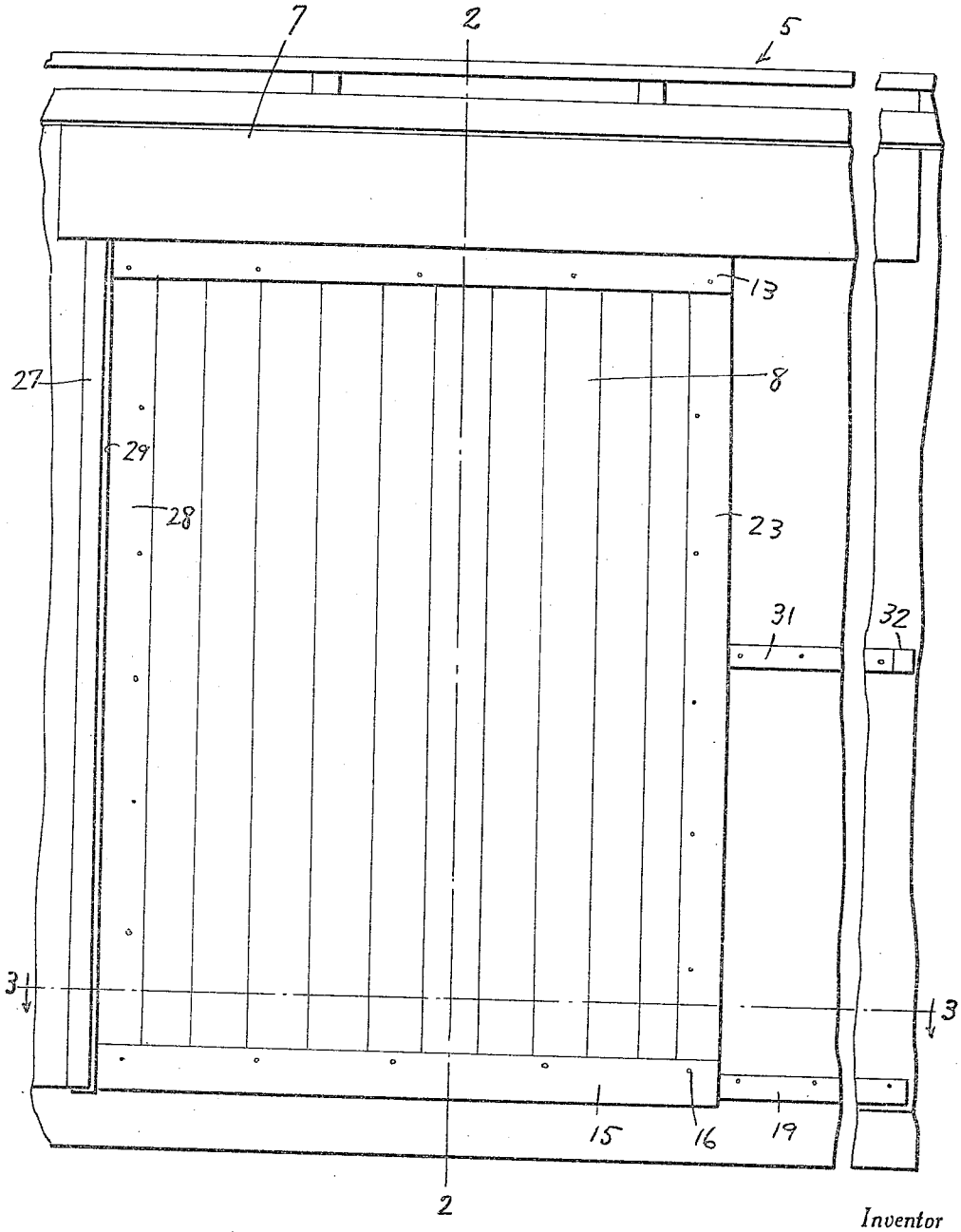

Fig. 1.

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Filed April 21, 1931 3 Sheets-Sheet 2

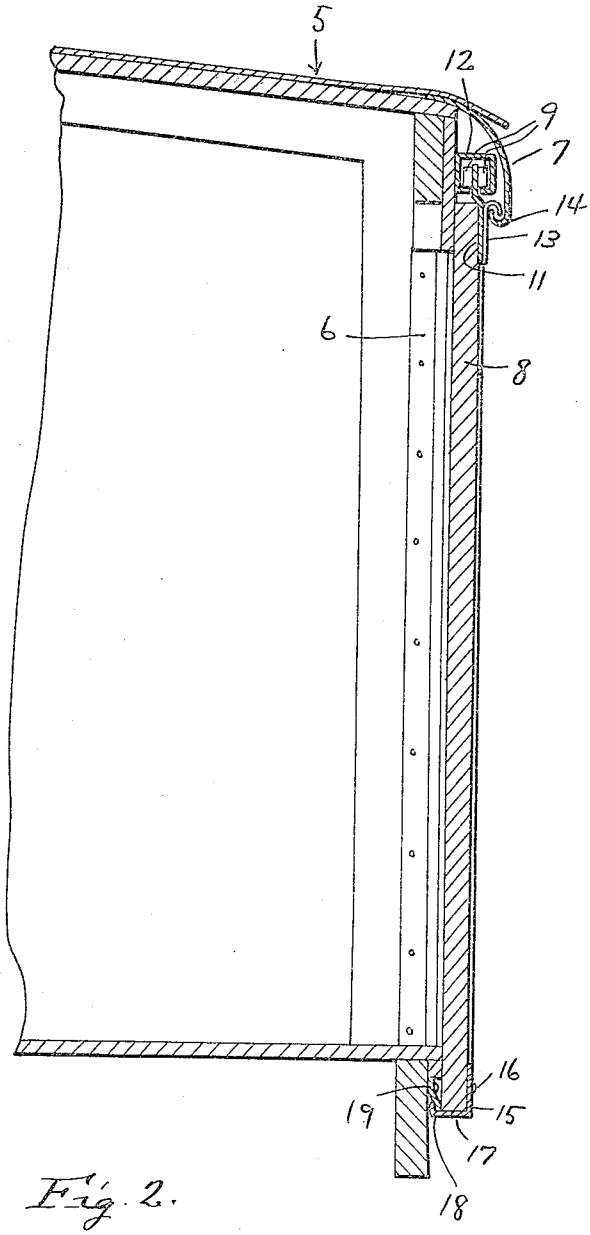

Fig. 2.

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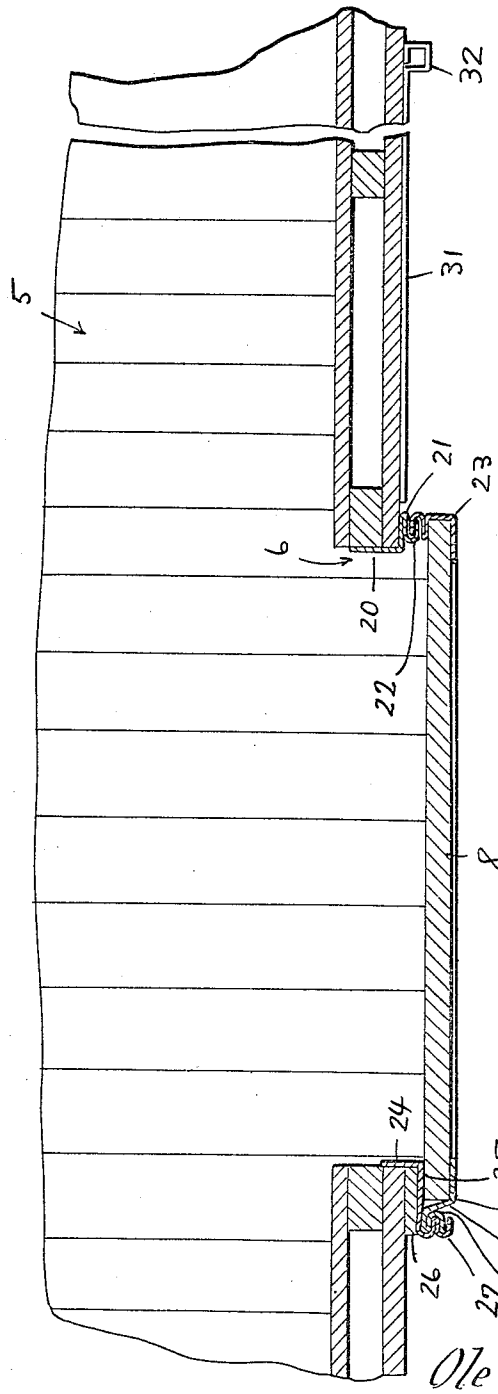

Fig. 3.

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UNITED STATES PATENT OFFICE

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BOX CAR DOOR

Application filed April 21, 1931. Serial No. 531,811.

This invention relates generally to an improvement in box car doors for railway freight cars and box bodies of motor vehicles of the freight carrying type, of new and novel construction which will be understood from the description and drawings set out below.

It is an object of this invention to provide a box car door which has improved means to keep out water, dust and dirt and in addition will be strong and serviceable and easily operated, and which forms a protective door which will not easily come loose or get out of order.

It is also an object of this invention to provide a box car door of the type described which will efficiently and effectively protect the contents of a box car particularly on long hauls, during which trouble is frequently developed in the ordinary type of box car doors which results in expensive delays for repairs and replacements.

These and other objects of the invention, its nature, and its combination and arrangement of parts will be readily understood by anyone acquainted with the art to which this invention relates upon consulting the following description of the drawings in which:

Figure 1 is a general front elevational view of a portion of a box car showing incorporated therein my improved door.

Figure 2 is a transverse vertical cross section approximately on the line 2—2 of Figure 1, and

Figure 3 is a horizontal cross sectional view taken approximately on the line 3—3 of Figure 1.

Referring in detail to the drawings the numeral 5 designates generally a conventional box car having a door opening 6 over which is suspended a hood or door track protector 7. A sliding door 8 carries rollers 9 on each side of an upstanding flange 10 attached to the upper end portion, and on the outside of the door as at 11. The rollers 9 are supported in the tubular track which is slotted longitudinally in its under side to permit the passage of the flange 11, and position the rollers to run on the said bottom of the tubular track 12, one on each side of the slot therein. Supported upon and outward of the upstanding flange 11 is an upstanding hook 13 which has its hooked portion directed outwardly and downwardly to engage over but not to contact, a hook portion 14 upwardly and inwardly formed on the lower edge of the hood 7.

The lower edge of the door is encased in an L-shaped bracket 15 which is secured as at 16 at the outside of the lower end portion of the door and runs downwardly and then under the door as at 17, and then has a hook portion 18 upwardly directed to hook behind the runner 19 secured to the body of the car, whereby the lower end of the door is retained from lateral movement from the car body, and guided in its travel to the various positions in which it may be adjusted.

Reference to Figure 3 will disclose that on each side of the door opening 6 and attached to the door post on each side of the door opening is an L-shaped bracket 20 which is attached to the face of the door post, and then reaches laterally to the outside of the car body and then is directed in a direction away from the door opening and in abutment with the outside of the car body. A hook, formed by a flat return bend 21 and a round return bend 22 engages a hook in an exactly similar bracket 23 on the contiguous end of the door which is adapted to so engage, when in closed position.

On an opposite door post of the opening is disposed another bracket 24 very similar to the bracket 20. The bracket 24 as seen in Figure 3 has a longer portion 25 engaged with the outside of the car body, or rather is supported outwardly from the side of the car body by a support 26. The bracket 24 has a double hook formation 27 extending laterally of the terminal of the portion 25 of the bracket. The end of the door contiguous to the bracket 24 when in closed position is provided with the bracket 28 secured to the outside of the contiguous edge portion thereof and inwardly directly as at 29 where a hook formation 30 is adapted to engage both of the hooks 27.

Since the brackets 20 and 24 extend the full height of the door opening, and cooperate with the brackets 23 and 28 on the door, the

door when in closed position is practically proof against the entry of dirt, dust and the contents of the car is protected against contamination or other injury by substances which ordinarily are not prevented from entry therein by other types of box car doors.

It will be observed that the bracket 15 likewise protects the door and together with the formation of the hook 13 cooperating with the formation of the hood 7, the upper and lower edges of the door are rendered practically dirt and dust proof. Thus all of the points of entry of dust and dirt and other contaminating substances are cut off in a practical manner, which at the same time gives an added ruggedness and operative efficiency to the door which it would otherwise not have were it constructed in the conventional manner and suspended for cooperating with the door opening in the presently practiced methods.

The numeral 31 denotes one of a plurality of straps or bands having the quadruple bent portion 32 and supported on the side of the car and particularly well shown in Figures 1 and 2, for constituting limit stops for the movement of the door in its travel from closed position.

The brackets, the tracks, the hood, and the guide runner 19 may be constructed of suitable iron or the like, though it is not desired to limit the invention to any particular material or method of assembly or attachment of one part to the other. It is to be definitely understood that I do not desire to limit the application of this invention to the particular modification set out herein to illustrate the principles thereof and any change or changes may be made in material, arrangement and combination of parts consistent with the spirit and scope of the invention.

Having thus described my invention, what I claim as new is:

1. A box car door of the slidable type described comprising a conventional door body adapted to be moved into closed and opening position with respect to a door opening of a box car, comprising plates attached to and extending the length of the top, bottom, and side edge portions of the door and projecting therefrom and arranged to cooperate with channeled flanges attached about the door opening so as to seal the opening against the ingress of moisture and foreign particles when the door is in closed position, and rollers on each side of a vertically rising flange on the upper end of the door for riding upon the bottom within a tubular track carried over the door opening for supporting the door, the bottom having a slot for accommodating said vertical flange and a guide means on the lower end of the door for engaging a guide plate secured to the car below said door opening, and a hood over said track, a lower edge channel formation, a plate attached to the upper part of the door, a hooked formation on the upper edge thereof for engaging in said channel formation, said hood being extended to cover the door when in opened position.

2. The combination with a box car having a portion of its floor extended through its door opening, of a sliding door adapted to abut the outward edge of said portion of the floor when in closed position, a vertical double channelled plate secured adjacent one side of the door opening carrying a lateral flange secured within the opening, a vertical single channelled plate secured adjacent the opposite side of the door opening carrying a lateral flange received within the door opening, said plates being extended substantially the full length of the door opening, a double channelled bracket secured to extend from one end of the door for cooperation with said double channelled plate, a single channelled bracket secured to extend from the opposite end of the door for cooperation with the said single channelled plate, when the door is in closed position, the channels of said double channeled plate and bracket being arranged successively outward, and the channeled portion of said single channeled bracket being arranged to project from the inward side of the door, so that in the closed position with the flanges and plates in engagement, the door will be maintained parallel to and outward of the side of the box car and in engagement with said outward edge of the floor.

In testimony whereof I affix my signature.

OLE E. RAAEN.