This invention relates to car door construction and more particularly to a construction for the rear margin of sliding car doors which will render such margin weathertight.

It is an object of this invention to provide a construction for the rear margin of sliding car doors which will embody a forwardly facing pocket adapted to trap dust, cinders, rain, snow and the like and discharge these elements exteriorly of the car.

A further object is to provide a construction of the character set forth above which will embody a flexible sealing strip operable by a simple flexing action to obtain sealing contact.

Further objects are to provide a construction of the character described immediately above which will effectively protect the flexible sealing strip from damage during shipment and during closing movement of the doors; which will not require modification of any of the elements of the doors or additional processes to be performed thereon; and in which the flexible sealing means shall be fastened in place by the securing means used to fasten other door elements together.

Other objects of the invention will become clear as the description thereof proceeds.

In the drawings forming part of this specification:

Fig. 1 is a fragmentary elevation of a side wall of a railway box car equipped with a sliding door embodying the instant invention.

Fig. 2 is a horizontal section taken on line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 2 showing the position of the door just prior to the final closing movement thereof.

Referring to the drawings wherein a preferred embodiment of the invention is illustrated, reference numeral 10 indicates the portion of a side wall of a railway box car adjacent to the rear edge of a door opening 11 formed in the wall. The portion of the side wall referred to above embodies a substantially channel-shaped door post 12 which defines the rear edge of the door opening 11. Nailing blocks 13 and 14 are secured to the door post in any desired manner. Wooden lining 15 is nailed to the member 13. Metallic sheathing 16 is riveted upon the outer face of the door post 12 as by means of rivets 17 which additionally secure an angle member 18 to the outer face of the door post. Angle member 18 embodies an outwardly extending leg 19 to which a spark strip 20 having an outwardly and rearwardly directed flange 21 is fastened.

The instant invention is embodied in the rear portion of a sliding door 22 adapted to close the door opening 11. The rear portion of the door comprises a metallic panel 23 offset outwardly and rearwardly as indicated at 24 and terminating in a rearwardly extending flange 25. A substantially W-shaped vertical reinforcing member 26 is embodied in the door and has a rearwardly extending flange 27 disposed outwardly of and securing as by means of rivets 28 to the rearwardly extending flange 25 of the door panel.

Reinforcing member 26 also comprises an inwardly extending flange 29, a rearwardly extending flange 30 and an inwardly extending flange 31 spaced from the car wall 10. A backing plate 32 extends across the space between the outwardly and rearwardly offset portion 24 of the door panel and the inwardly extending flange 29 of the W-shaped reinforcing member and is secured to the panel and to the rearwardly extending flange 30 of the reinforcing member as by means of rivets 33 and 34.

The rivets 34 serve additionally to secure flange 35 of a substantially rigid Z-shaped sealing member 36 to the rearwardly extending flange 30 of the door reinforcing member. The other flange 37 of the sealing member extends forwardly and outwardly.

A relatively flexible sealing strip 38, which is substantially Z-shaped in section, has one of its flanges 39 disposed between and secured to the backing plate 32 and flange 35, this securing being obtained by means of the rivets 34. The other flange 40 of the flexible sealing strip extends forwardly and inwardly in spaced relationship to the forwardly and outwardly extending flange 37 of the sealing member. Flexible sealing strip 38 may be formed of any of the well-known ferrous alloys or of phosphor-bronze, or any flexible material which is suitable for the purpose of the invention.

In Fig. 3 of the drawings, the relationship between the flexible sealing strip and sealing member 36 and between the sealing member, flexible strip and the spark strip carried by the car wall is clearly shown at the instant of initial contact between the sealing member and spark strip.

It is apparent from this showing that the flexible sealing strip is at all times protected by the sealing member and that the engagement between the sealing member and the spark strip prevents the flexible sealing strip from fouling on the spark strip and insures proper sealing engagement therewith.

As the door moves in closing direction engagement between the sealing member 36 and the spark strip is first obtained. Continued movement of the door in closing direction causes the
door to move inwardly toward the carside and dispose the forwardly and inwardly extending flange of the sealing strip in position to engage the inner face of the rearwardly and outwardly inclined flange 21 of the spark strip. When the door is fully closed the relationship of the sealing member, the sealing strip and flange of the spark strip are as illustrated in Fig. 2 of the drawings. It will be clear from the drawings that the relationship between the sealing member and sealing strip provides a pocket 41 open at its forward end. Accordingly, when the door is in closed position, illustrated in Fig. 2 of the drawings, any foreign matter, such as dust, cinders, rain, snow, and the like, which may pass between flanges 21 and 31, will enter the pocket 41 and be trapped thereby. These elements will drop to the bottom of the pocket exteriorly of the car. These foreign elements will therefore be prevented from entering the car.

It will be apparent that numerous changes and modifications in the details of the invention will be clear to those skilled in the art. It is intended, therefore, that all such modifications and changes be comprehended within this invention, which is to be limited only by the scope of the claims appended hereto.

I claim:

1. In a railway house car having a wall provided with a door opening, a spark strip carried by said wall and having a rearwardly and outwardly inclined flange spaced from said wall, a sliding door for closing said opening, a member secured to the rear marginal portion of said door, said sealing strip having a forwardly extending flange lying between and in spaced relation to said door and said flange of said member, said flanges of said member and sealing strip forming portions of a forwardly opening pocket, said flange of said member extending forwardly of said sealing strip flange, said flanges of said member and sealing strip engaging the inner face of said spark strip flange during the final closing movement of said door, said flange of said member engaging said flange of said spark strip prior to the engagement of said sealing strip flange with said spark strip flange, for the purpose set forth.

2. In a railway house car having a wall provided with a door opening, a spark strip carried by said wall and having a rearwardly and outwardly inclined flange spaced from said wall, a sliding door for closing said opening, a member secured to the rear marginal portion of said door having a forwardly extending flange spaced inwardly of said door, and a flexible sealing strip secured to said margin of said door, said sealing strip having a forwardly extending flange lying between and in spaced relation to said door and said flange of said member, said flanges of said member and sealing strip forming portions of a forwardly opening pocket, said flange of said member extending forwardly of said sealing strip flange, said flanges of said member and sealing strip engaging the inner face of said spark strip flange during the final closing movement of said door, said flange of said member engaging said flange of said spark strip prior to the engagement of said sealing strip flange with said spark strip flange, for the purpose set forth.

3. A sliding door for railway cars comprising a rigid substantially Z-shaped member having a flange secured to and along the rear margin of said door and a forwardly and outwardly inclined flange spaced inwardly of said door, and a flexible substantially Z-shaped sealing strip having a flange disposed under said first mentioned flange of said member for securing said flexible sealing strip to said door and a forwardly and inwardly inclined flange disposed between and spaced from said door and said second mentioned flange of said member and cooperating with said rigid Z-shaped member to form a forwardly opening pocket, said inclined flange of said member extending forwardly of said inclined flange of said sealing strip.

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