

Sept. 11, 1951

R. E. JONES

2,567,604

MINE CAR SEALING DEVICE

Filed Oct. 11, 1948

2 Sheets-Sheet 1

Fig. 1.

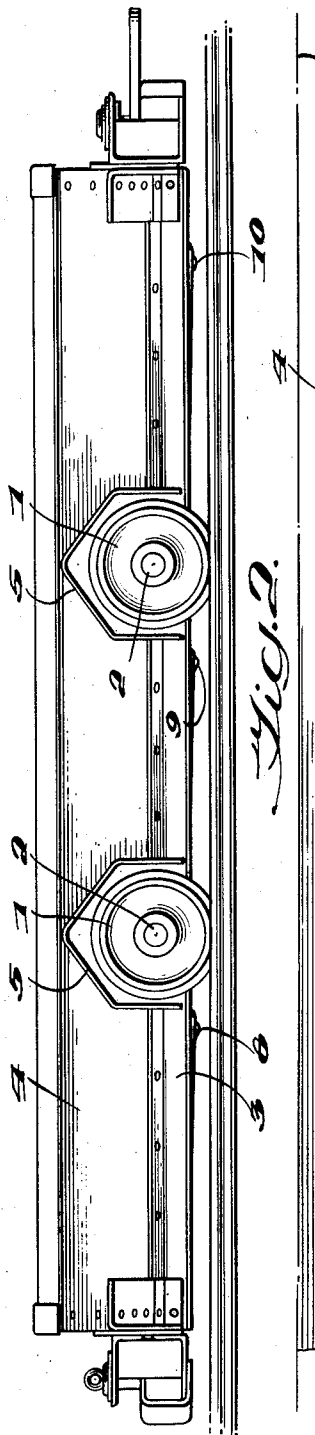
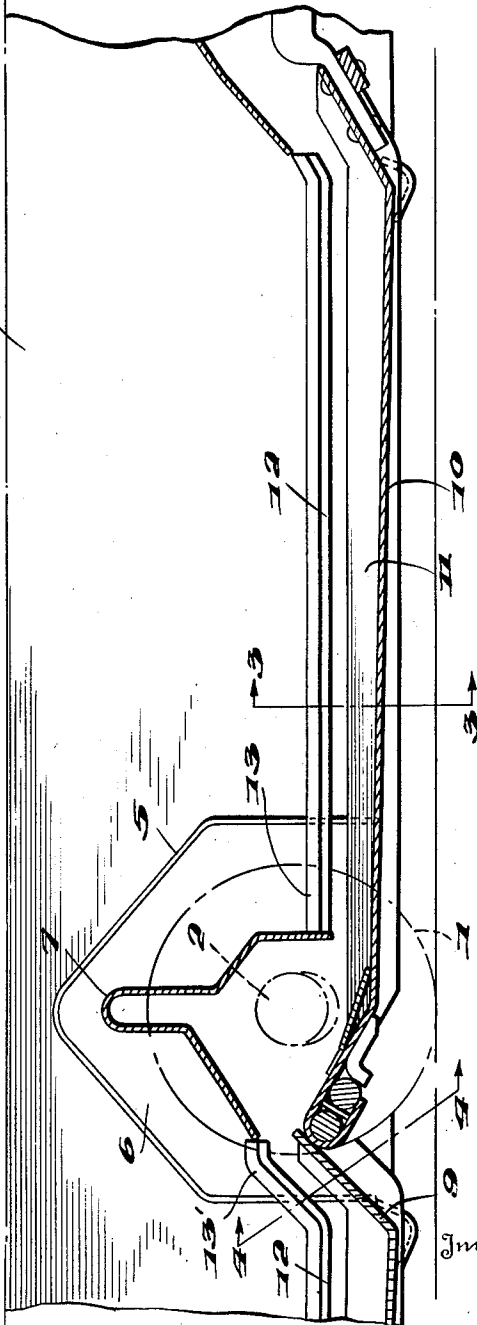


Fig. 2.



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Fig. 3.

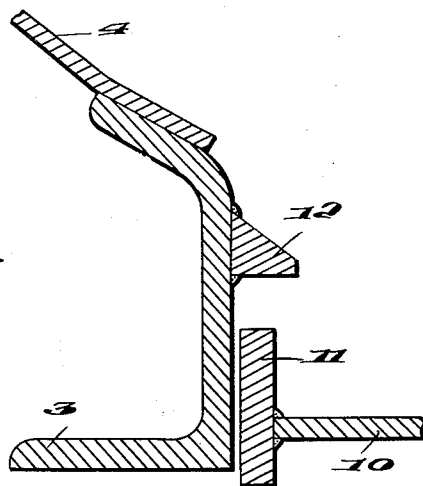


Fig. 4.

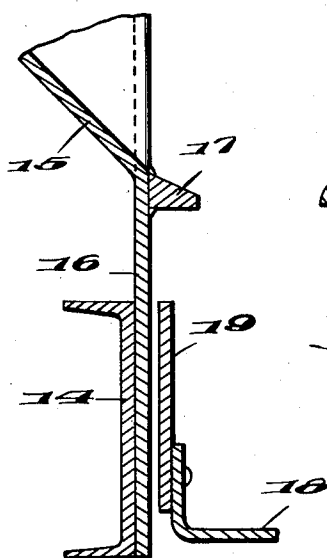
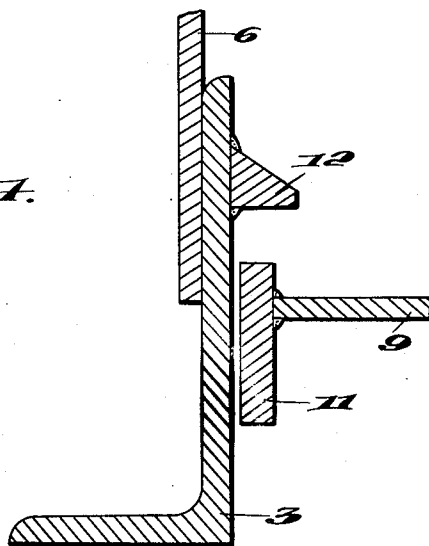


Fig. 5.

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MINE CAR SEALING DEVICE

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5 Claims. (Cl. 105—424)

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This invention relates to improvements in mine car sealing devices, particularly for sealing the drop bottom doors of mine cars used for transporting coal or other materials from a loading point to a point of discharge, where such materials are discharged through the bottom of the car upon release of the drop bottom doors therein.

In mine cars used for the transportation of coal and other loose lading, it is important that the drop bottom doors be sealed at the opposite edges thereof against the leakage of coal between the edges of the doors and the side sills of the car. It is difficult to form the doors so these will fit so closely to the inside faces of the side sills as to prevent the leakage of loose coal therebetween. Consequently, special provision should be made for sealing the space between the edges of the doors and the side sills against the leakage of coal therebetween.

It is one object of this invention to improve the construction of mine cars, especially of large capacity, by providing sealing means for the lateral edges of the doors which is in cooperating relation therewith even though applied to the side wall flare plates of the car close to the track gauge line. This provides a very wide door opening which is sealed effectively at its lateral edges and yet increases materially the capacity of the car.

A further object of the invention is to improve the sealing of the drop bottom door from end to end thereof, not only between the wheel hoods, but also along the inside faces or vertical walls of the hoods. All large capacity four-wheel drop bottom door cars have vertical walls on wheel hoods with respect to which the doors must be sealed, as well as between the hoods, for effective sealing of the doors.

This object may be accomplished by the wide spacing of the side sills close to the track gauge line, which will locate the flare plates below the tops of the wheels. A side bar eave strip may be attached to the side sill structures at the inner edges of the flare plates to provide extensions thereon which will project inwardly in overlapping relation with the lateral edges of the doors to seal said edges against the leakage of coal or other loose lading therebetween. These eave strips should extend between the wheel hood coverings, and preferably also along the inner faces of the coverings to the transverse tie plates that join together oppositely disposed wheel hood coverings if the latter terminate at their opposite edges inwardly of the opposite edges of the wheel hood coverings.

Certain embodiments of the invention are shown in the accompanying drawings in which:

Fig. 1 is a side elevation of a 4-wheel car to which the invention may be applied;

Fig. 2 is a longitudinal sectional view thereof;

Fig. 3 is a cross section thereof, on the line 3—3 in Fig. 2;

Fig. 4 is a similar view on the line 4—4 in Fig. 2; and

Fig. 5 is a cross section showing the invention applied to a modified form of car.

While the invention may be used as applied to any suitable form of vehicle, or conveyance, it is shown and described in connection with the 4-wheel mine car of the drop bottom type in which a series of doors are adapted to be interconnected for opening and closing movements. This is merely for purpose of illustration.

In this form, the wheels are designated generally by the numeral 1, mounted on axles 2, which axles support the body by being connected with side sills 3, extending longitudinally of the car and laterally spaced on opposite sides of a bottom opening therein.

Connected with the side sills 3 and extending upwardly and outwardly therefrom are side walls 4, which extend lengthwise of the car and have closed opposite ends formed by end walls in the customary manner. The side walls 4 are formed by flare plates which may be attached to the upper edges of the side sills 3 to discharge the lading in the body into the center opening formed between the side sills 3 that are spaced at opposite sides of the body.

The slope of the flare plates or side walls 4, is in a plane which intersects the wheels 1, appreciably below the upper edges thereof. Each of the wheels is enclosed within a wheel hood covering 5, that has an inner wall 6, attached to the adjacent side sill 3. Oppositely disposed wheel hood coverings 5 are connected together by transverse tie plates 7, that extend from side to side thereof over the axles 2.

The bottom opening of the car normally is closed by a series of interconnected doors designated generally at 8, 9 and 10, each of which is hinged about a transverse axis, and the rear door is latched for dropping to release the series of doors for opening movements. When latched the rearward door holds the other doors of the series in closed relation to confine the lading therein.

Each of the doors 8—10 comprises a plate which extends transversely between the side sills 3 and has upturned opposite edges, which may be formed by separate side bars 11, attached thereto, and which form the opposite edge portions of the door. These edge portions are disposed in relatively close relation to the inner faces of the side sills, as shown in Figs. 3 and 4,

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but with cracks therebetween where fine coal or other loose lading might sift out.

In order to prevent the leakage or sifting of the lading through these cracks, I have provided an eave strip 12, over each of the cracks, and secured to the inner face of the web of the adjacent side sill 3, in any suitable manner as by welding. The upper face of this eave strip should slope downwardly to shed the lading into the central opening. This eave strip 12 extends lengthwise of each side wall 4, substantially at the inner edge of the flare plate, and may be extended, if desired, as indicated at 13 and 13' over the inner face of the wall 6 on the wheel hood 5, to the adjacent lateral edges of the transverse tie plate 7, as shown in Fig. 2.

The eave strips 12-13 project inward sufficiently to overlap appreciably the cracks between the edges of the doors and the inner faces of the side sills to prevent the sifting of fine lading therebetween. These eave strips should be mounted substantially at the inner edges of the flare plates to form continuations thereof, for directing the material into the central opening of the car and yet are sufficiently high above the supported positions of the doors to permit the latter to move upward in their closing movements.

The invention is shown in Fig. 5, as applied to a modified form of car structure in which the side sill is designated at 14, and has a side wall flare plate 15 with a downward extension 16 attached to the inner face of the side sill 14. The eave strip is designated at 17, and is secured to the extension 16, adjacent the inner edge of the side wall flare plate 15. The drop bottom door is designated at 18, and has a plate 19 secured to each lateral edge and extending upwardly toward the eave strip 17 adjacent the inner face of the side sill 14. This arrangement may be provided in a car or vehicle having relatively high side wall flare plates that substantially clear the wheels.

While the invention has been illustrated and described in certain embodiments, it is recognized that variations and changes may be made therein without departing from the invention, except as specified in the claims.

I claim:

1. In a vehicle having a lading body with side wall structures separated and having a bottom opening therebetween for the discharge of lading therethrough, a drop bottom door for closing said opening and having opposite edges thereof in sealing relation with the opposite side sill structures with cracks therebetween, the combination of an eave strip extending lengthwise of each side sill structure and attached thereto and projecting laterally therefrom in overlapping relation with the adjacent crack, each eave strip including a solid bar having a downwardly inclined upper face for shedding lading and having an upright outer face bearing laterally against the side sill structure with said upright outer face projecting at least partially below the inclined upper face.

2. In a vehicle having a lading body with side wall structures separated and having a bottom opening therebetween for the discharge of lading therethrough, a drop bottom door for closing said opening and having opposite edges thereof in sealing relation with the opposite side sill structures with cracks therebetween, the combination of an eave strip attached to each of the side sill structures at the inner face thereof and extending lengthwise thereof in overlapping relation

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with said cracks, each eave strip comprising a bar separate from the side sill structure, said bar having a substantially flat face abutting against the side sill structure with said face extending substantially throughout the height of the bar.

3. In a vehicle having a lading body with side wall structures separated and having a bottom opening therebetween for the discharge of lading therethrough, a drop bottom door for closing said opening and having opposite edges thereof in sealing relation with the opposite side sill structures with cracks therebetween, the combination of an eave strip attached to each of the side sill structures at the inner face thereof and extending lengthwise thereof in overlapping relation with said cracks, each of the eave strips comprising a bar attached to the side sill structure, said bar having a substantially flat face abutting against the side sill structure with said face extending substantially throughout the height of the bar and having a downwardly sloping upper face and arranged adjacent the inner edge of the side walls of the body.

4. In a vehicle having a lading body with side wall structures separated and having a bottom opening therebetween for the discharge of lading therethrough, a drop bottom door for closing said opening and having opposite edges thereof in sealing relation with the opposite side sill structures with cracks therebetween, the combination of an eave strip extending lengthwise of each side sill structure and projecting laterally therefrom in overlapping relation with the adjacent crack, each eave strip including a solid bar having a downwardly inclined upper face for shedding lading and having an upright outer face bearing laterally against the side sill structure with said upright outer face projecting at least partially below the inclined upper face, said bar being welded at the top and bottom edges thereof directly to the inner face of the adjacent side sill structure.

5. In a vehicle having a lading body with side sill structures separated and having a bottom opening therebetween for the discharge of lading therethrough, wheels for supporting the lading body, longitudinally spaced wheel hood coverings in the lading body on opposite sides thereof over the wheels, said body having side wall flare plates between the wheel hood coverings, doors for closing the bottom opening and extending between the oppositely disposed wheel hood coverings and the side sill structures, said doors having upturned end portions thereon, the combination of eave strips separate from the side sill structures and side wall flare plates extending longitudinally thereof substantially throughout the major portion of the length of the doors, each of said eave strips comprising a solid bar welded at the top and bottom edges thereof directly to the inner face of the adjacent side sill structure, said bar having portions thereof upwardly inclined over the inclined end portions of the door, said eave strip projecting laterally in overlapping relation with the adjacent edge of the door.

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