

July 15, 1958

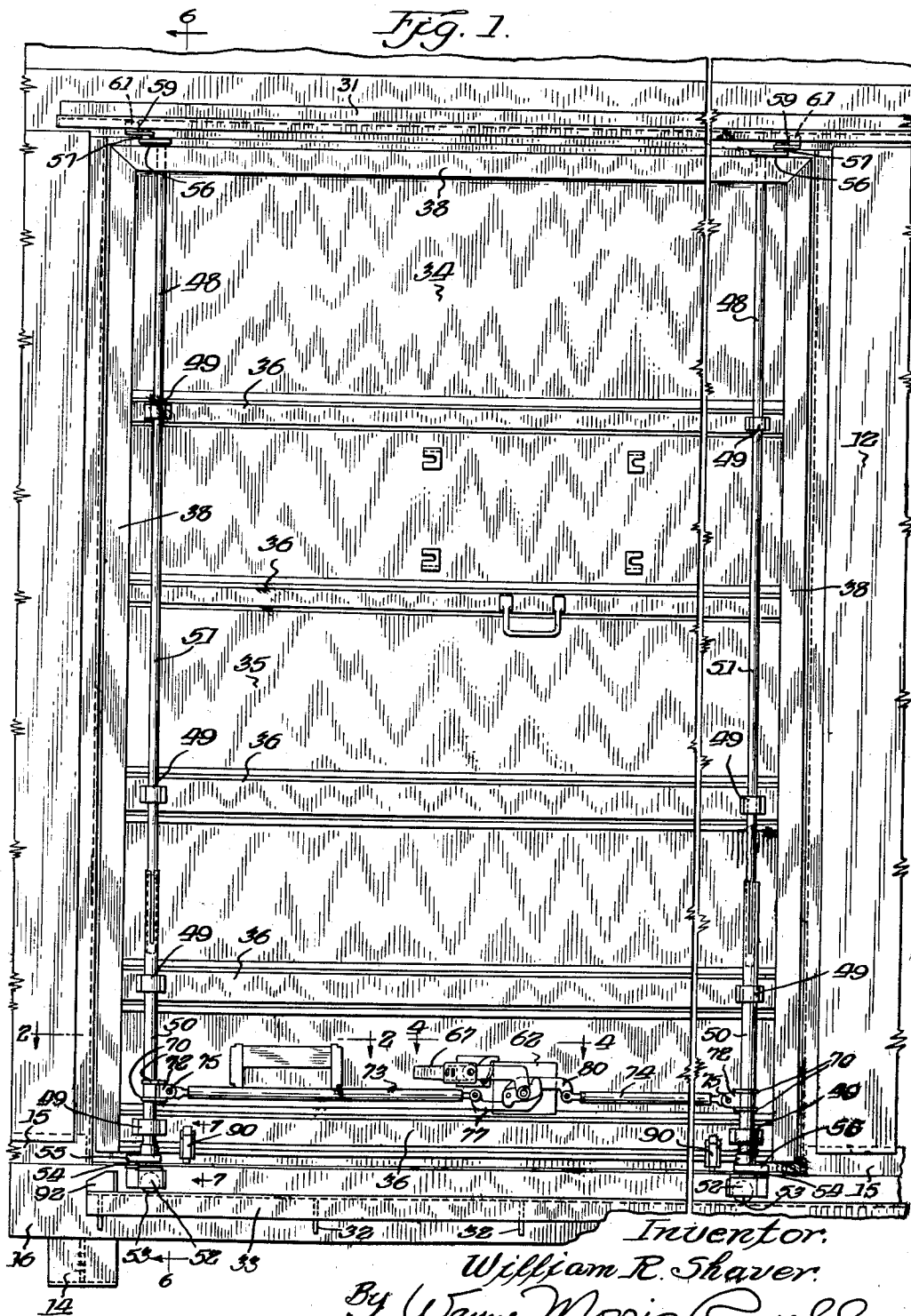
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LATERALLY MOVABLE DOOR ARRANGEMENT

Filed Dec. 23, 1952

5 Sheets-Sheet 1



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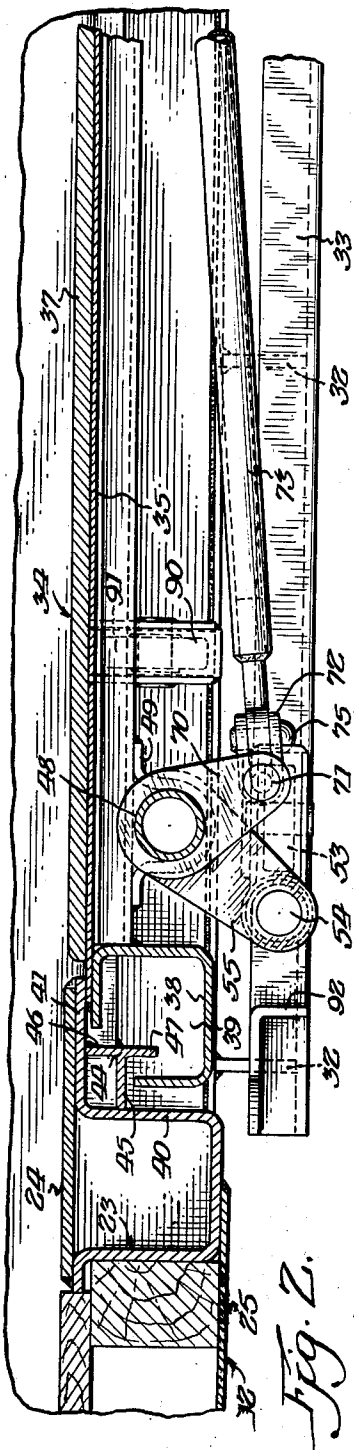
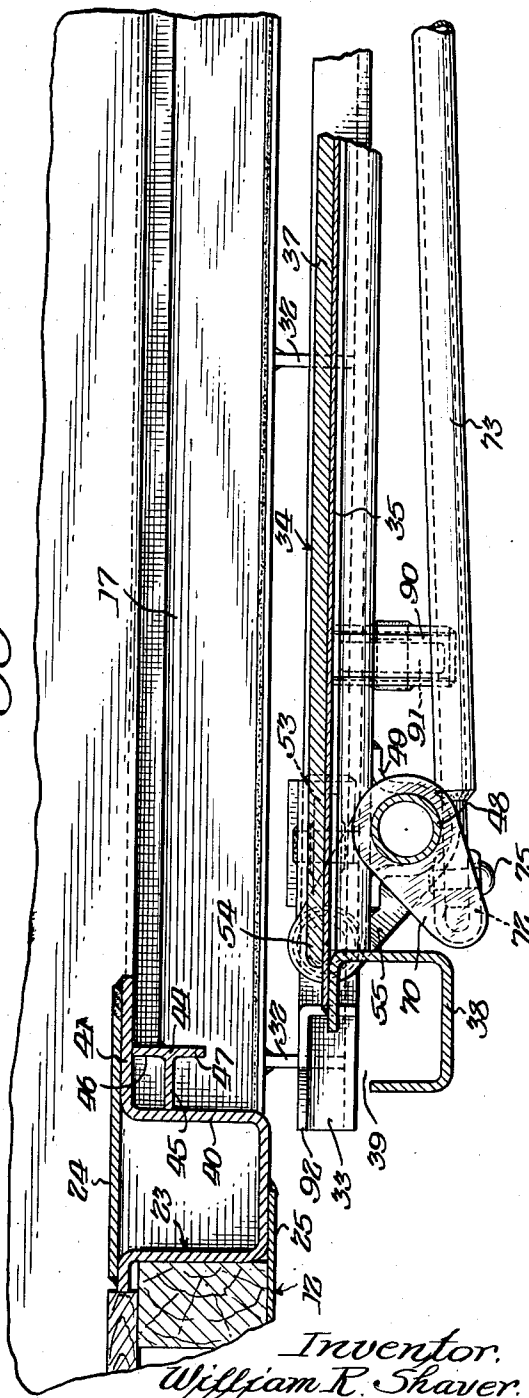
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LATERALLY MOVABLE DOOR ARRANGEMENT

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5 Sheets-Sheet 2



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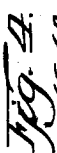
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5 Sheets-Sheet 3



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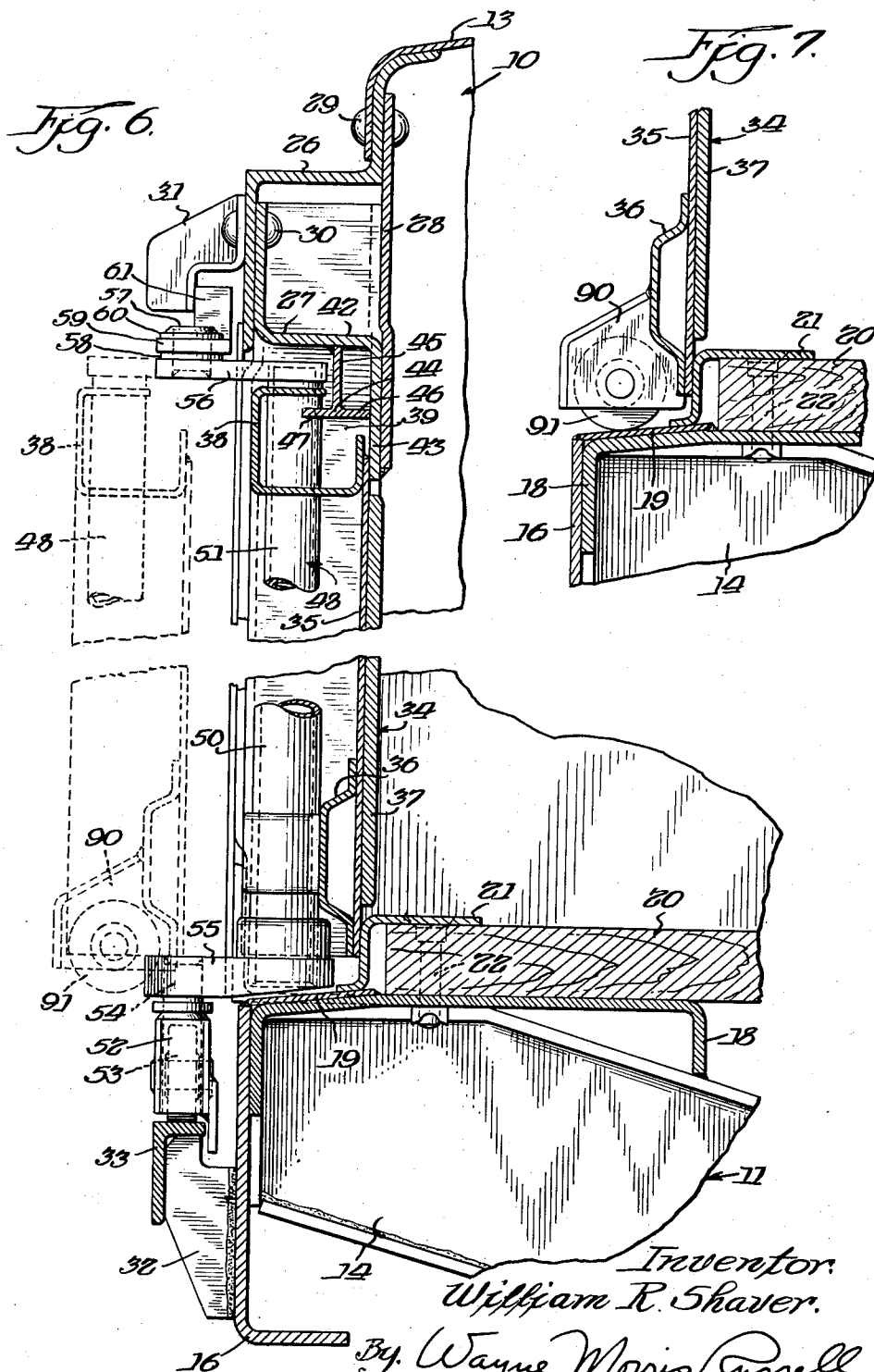
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LATERALLY MOVABLE DOOR ARRANGEMENT

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5 Sheets-Sheet 4



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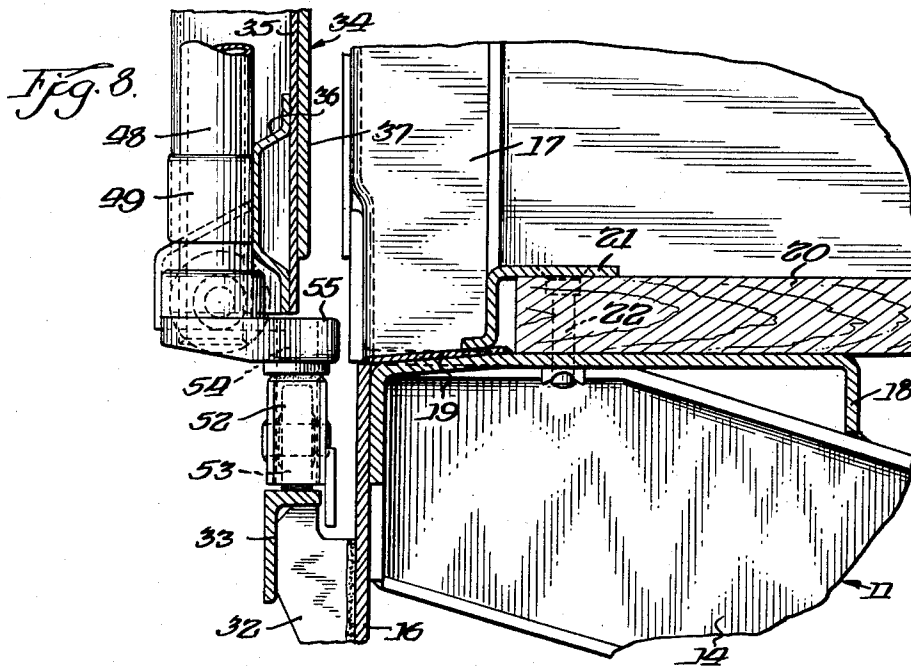
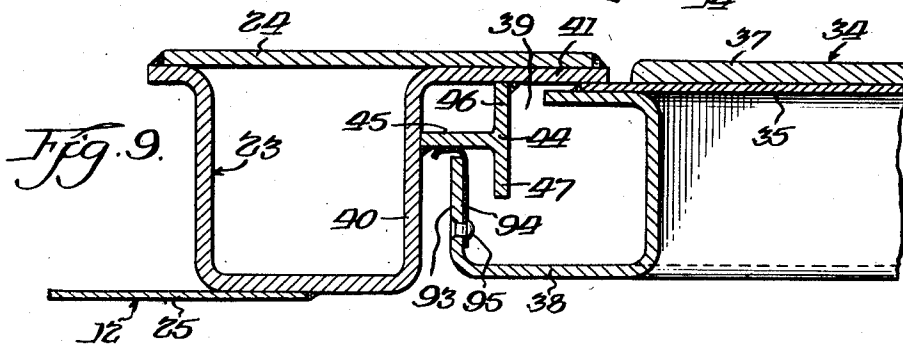
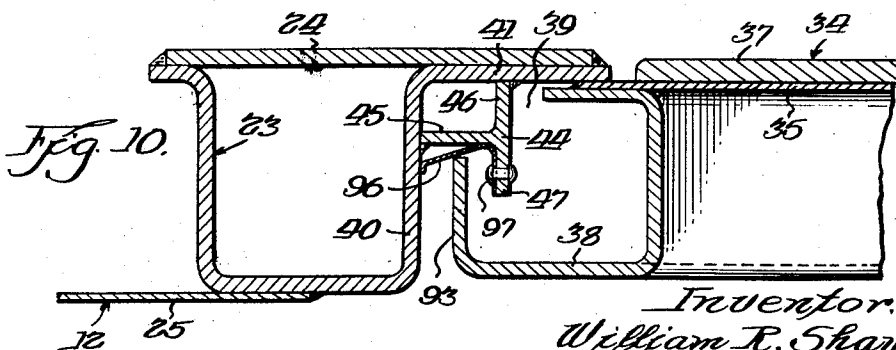
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LATERALLY MOVABLE DOOR ARRANGEMENT

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5 Sheets-Sheet 5



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LATERALLY MOVABLE DOOR ARRANGEMENT

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7 Claims. (Cl. 20—26)

This invention relates to railway freight car doors and is primarily concerned with an operating mechanism for sliding side doors of railway box cars of the type that are movable transversely of the car into and out of the door opening.

The primary object of the invention is to provide an operating mechanism for a railway freight car door of the type that is movable into and out of the door opening at right angles to the wall of the car.

An object of the invention is to provide in a railway freight car having a wall including a door opening, a door having a pair of rods rotatably mounted on the door and a pair of combined support and fulcrum elements held by means at one edge of the door opening with a link secured to one end of each rod pivotally mounted on the respective elements, a link secured to the other end of each rod having a part pivotally mounted thereon including a fulcrum projection adapted to be received by means at the other edge of the door opening and a lever operatively connected to both rods adapted to be rotated to cause the door to move transversely of the car.

Another object of the invention is to provide in a railway freight car having a wall including a door opening, a door having a pair of rods rotatably mounted on the door and a pair of combined support and fulcrum elements held by means at one edge of the door opening with a link secured to one end of each rod pivotally mounted on the respective elements, a pair of wheels rotatably mounted on one edge of the door in a plane at right angles to the plane of the door adapted to roll on said edge of the door opening, a link secured to the other end of each rod having a part pivotally mounted thereon including a fulcrum projection adapted to be received by means at the other edge of the door opening and an operating lever connected to both rods adapted to be rotated to cause the door to move transversely of the car.

An important object of the invention is to provide in a railway freight car having a wall including a door opening, a member secured to one edge of the door opening having legs disposed at an angle, a T-shaped weatherstrip having a first arm secured to one leg of the member and a second arm secured to the other leg and having a third arm, a door movable transversely of and toward the car and a member including a trough secured to one edge of the door adapted to receive the third arm of the weatherstrip when the door is moved transversely toward the car to closed position.

A further object of the invention is to provide in a railway freight car having a wall including a door opening, a channel structure secured to one edge of the opening facing toward the outside of the car, a door movable transversely of the car having a flange and a resilient element secured to the flange, the flange being adapted to project into the channel structure and the resilient element being adapted to abut the bottom of the channel

structure when the door is moved transversely of the car to closed position.

A further object of the invention is to provide in a railway freight car having a wall including a door opening, a channel structure secured to one edge of the opening facing toward the outside of the car, a door movable transversely of the car having a flange, a resilient element positioned in the channel structure, the flange on the door being adapted to project into the channel structure and contact the element and the free end of the element being adapted to contact the other flange of the channel structure when the door is moved transversely of the car to closed position.

The foregoing and other objects of the invention are attained by the construction and arrangement illustrated in the accompanying drawings wherein:

Fig. 1 is a side elevational view of the portion of the side wall of a railway box car at the door opening showing the door mounted in the opening and the operating mechanism on the door for moving the door transversely of the car;

Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1 showing the door in fully closed position;

Fig. 3 is a horizontal sectional view similar to Fig. 2 but showing the door moved transversely away from the car;

Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 1 showing the lever arrangement;

Fig. 5 is an enlarged side elevational view of the lever arrangement;

Fig. 6 is a vertical sectional view taken on the line 6—6 of Fig. 1 showing the door in fully closed position in solid lines and showing the door moved transversely away from the car in dotted lines.

Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 1;

Fig. 8 is a vertical sectional view through the lower portion of the door and through the bottom edge of the door opening showing the door moved transversely away from the car.

Fig. 9 is a horizontal sectional view through the front edge of the door opening and the front edge of the door showing a modified form of weatherstrip arrangement; and

Fig. 10 is a view similar to Fig. 9 showing another form of weatherstrip arrangement.

The invention proposes an operating mechanism for the side door of a railway box car of the type that is slidable longitudinally of the car and movable transversely of the car into and out of the door opening. A member having divergent leg portions is secured to the top, front and rear edges of the door opening and a T-shaped metal weatherstrip has a first arm secured to one leg of the respective members and a second arm secured to the other leg of the members and has a free third arm. A member having a trough therein is secured to the top, front and rear edges of the door. A pair of vertically disposed rods are rotatably mounted on the door and a pair of wheels are rotatably mounted in a pair of housings and are adapted for rolling movement on a track disposed below the door opening. A link is secured to the lower end of each rod and is pivotally connected to its respective wheel housing. A link is also secured to the upper end of each rod and a part is pivotally mounted on each link and includes a vertically disposed projection adapted to be received by the top retainer above the door opening. A lever is pivotally mounted on the door between the rods and a pair of horizontally disposed bars each has one end pivotally connected to the respective rods and its other end connected to the lever. A pair of spaced wheels

3

are rotatably mounted on the bottom of the door in a plane at right angles to the plane of the door and are adapted to roll on the bottom edge of the door opening. The door is adapted to slide from a position adjacent the door opening to a position over the door opening and the lever is adapted to be rotated in one direction to cause the door to move transversely toward the car at which time the trough receives the third arm of the weatherstrip as the door reaches fully closed position. The lever is adapted to be rotated in the opposite direction to cause the door to move transversely away from the car.

In drawings, 10 generally designates a railway box car having an underframe 11, side walls 12 and a roof 13. The underframe 11 is made up of crossbearers 14, side sills 15, and side sill reinforcements 16 secured to the side sills. Each of the side walls 12 is provided with a door opening 17 therein. An inverted U-shaped metal floor support 18 extends across the door opening 17 and is positioned upon the pair of crossbearers 14 adjacent the door opening. One flange of the floor support 18 is disposed between the vertical flange of the side sill reinforcement 16 and the ends of the pair of crossbearers 14 at the door opening 17 and the other flange of the floor support is secured to the tops of the crossbearers. A wear plate 19 is positioned upon the floor support 18 and extends across the door opening 17 and is secured to the vertical flange of the side sill reinforcement 16 and to the floor support. A floor made up of wooden boards 20 extending across the width of the car is positioned upon the floor support 18 and the underframe 11 and the ends of the boards are spaced from the door opening 17. A metal threshold 21 is positioned on the ends of the wooden boards 20 and extends across the door opening 17 and is secured to the floor by bolts 22 extending through the wooden boards and the floor support 18. It will be noted that the side sill 15 is completely cut away across the door opening 17. Door posts 23 are hat-shaped in cross section and a plate 24 extending substantially full height of the door opening 17 is secured to the flanges of each door post and side sheathing 25 is secured to the web of each door post. A substantially Z-shaped side plate 26 has an upper flange projecting under the roof 13 and another Z-shaped member 27 has one flange abutting the lower flange of the side plate 26 and a plate 28 extending across the door opening is disposed in abutting relation with the upper flange of the side plate 26 and the other flange of the member 27. Rivets 29 extend through the roof sheet 13 and the upper flange of the side plate and the plate 28 and rivets 30 extend through the top retainer 31 and the lower flange of the side plate and the one flange of the angle 27. The plate 28 is welded to the other flange of the Z-member 27.

Spaced gusset plates 32 are secured to the vertical flange of the side sill reinforcement 16 and a track 33 is positioned below the door opening 17 upon the gusset plates and is secured to the plates. A door 34 is positioned over the door opening 17 and is made up of a metal sheet 35 and horizontally disposed metal ribs 36 having the general shape of corrugations welded to the outer face of the metal sheet, and a plywood panel 37 secured to the inner face of the sheet 35. A member 38 generally square-shaped in cross section is positioned at the top edge of the door sheet 35, at the front edge of the sheet, and at the rear edge of the sheet and each member is welded to the outer face of the metal sheet. It will be noted that one of the metal ribs 36 extends across the bottom edge of the sheet 35. Each member 38 has one corner cut away so as to provide a trough 39 therein. The integral flanges 40 and 41 of the door posts 23, and the web 42 and the integral flange 43 of the Z-members 27, may be said to form members at the front and rear and top edges of the door opening 17 having divergent flanges or leg portions substantially at right

4

angles. A T-shaped metal weatherstrip 44 extends across the top edge of the door opening 17. An identical weatherstrip is disposed at the front edge of the door opening and extends substantially the full height of the door opening, and another identical weatherstrip is disposed at the rear edge of the door opening and extends substantially the full height of the door opening as best shown in Figs. 2, 3, and 6. At the top edge of the door opening the T-shaped weatherstrip 44 has a first arm 45 welded to the leg or web 42 of the member 27 and has a second arm 46 welded to the leg or flange 43 of the member and has a free third arm 47. At the front and rear edges of the door opening 17 the weatherstrip 44 has its first arm 45 welded to the leg or flange 40 of the respective door post 23 and has its second arm 46 welded to the leg or flange 41 of the respective door post.

A pair of vertically disposed rods 48 are arranged in spaced parallel relation and extend through the member 38 at the top edge of the door 34 and are rotatably mounted on the door in brackets 49 which are secured to the metal ribs 36. Each rod 48 is comprised of a hollow section 50 and a smaller section 51 inserted in the hollow section and welded thereto. A pair of spaced elements or housings 52 are positioned adjacent the track 33 and a pair of wheels 53 are rotatably mounted in the housings and are adapted for rolling movement on the track. A vertically disposed pin 54 is loosely and removably and rotatably mounted in an opening in each housing 52 and has its upper end projecting therefrom as best shown in Fig. 6.

A horizontally disposed link 55 is made integral with the lower end of each rod 48 by welding and is also fixedly secured to its respective pin 54 by welding, also as best shown in Fig. 6. A horizontally disposed link 56 is welded to the upper end of each rod 48 and a vertically disposed pin 57 is welded to each link and upstands therefrom as best shown in Fig. 6. A washer 58 is disposed on each pin 57 and seats upon the respective link 56 and a horizontally disposed part 59 is pivotally mounted on each pin 57 and a washer 60 is disposed on each pin 57 and is welded to the free end of the pin. A vertically disposed projection 61 is welded to each part 59 and the projections are adapted to be received by the guide or top retainer 31.

A mounting plate 62 is welded to the outer face of the sheet 35 of the door 34 and a pin 63 is welded to the mounting plate and a sleeve 64 is loosely and rotatably mounted on the pin. A pair of spaced plates 65 and 66 are mounted on the sleeve 64 and the plate 65 is welded to the sleeve and a lever 67 having an offset 68 therein has one end mounted on the sleeve and welded to the plate 66 and welded to the sleeve as best shown in Fig. 4. A washer 69 is disposed against the adjacent end of the sleeve 64 and is welded to the free end of the pin 63. Thus it will be seen that the pair of plates 65 and 66 are pivotally mounted on the door 34 between the pair of rods 48 and that the lever 67 is pivotally mounted on the door on the same axis as the pair of plates. A pair of extensions 70 are welded to each rod 48 adjacent the lower end thereof and a pin 71 extends through and is welded to each pair of extensions. A clevis 72 loosely embraces each pin 71 and one end of a first horizontally disposed bar 73 and one end of a second horizontally disposed bar 74 is disposed in the respective clevis with a pin 75 extending through the bar and the clevis and welded to the clevis as best shown in Figs. 2 and 3. Thus it will be seen that one end of the first bar 73 is pivotally connected to one of the rods 48 and that one end of the second bar 74 is pivotally connected to the other of the rods 48. The other ends of the bars 73 and 74 are in the shape of yokes 76. A generally U-shaped link 77 has one end disposed in the yoke 76 of the first bar 73 and a pin 78 extends through the link and the yoke and is welded to the yoke thus pivotally connecting said end of the link to the end of the first bar

5

as best shown in Figs. 4 and 5. The other end of the link 77 is disposed between the pair of plates 65 and 66 and a pin 79 extends through the plates and the link and is welded to the plate 65. It will be noted that the end of the link 77 is pivotally connected to the pair of plates 65 and 66 on the side of the point of pivotal connection of the plates to the door 34 adjacent the second bar 74. Another generally U-shaped link 80 has one end disposed in the yoke 76 of the second bar 74 and a pin 81 extends through the link and the yoke and is welded to the yoke thus pivotally connecting the link to the second bar. The other end of the link 80 is disposed between the pair of plates 65 and 66 and a pin 82 extends through the plates and the link and is welded to the plate 65. It will be noted that this end of the link 80 is pivotally connected to the pair of plates 65 and 66 on the side of the point of pivotal connection of the plates to the door 34 adjacent the first bar 73. A first spacer 83 is positioned adjacent the lever and is welded to the metal sheet 35 of the door 34 and a second spacer 84 of U-shape is welded to the first spacer and an upwardly facing channel 85 is welded to the second spacer. A pin 86 extends through the first spacer 83 and through the adjacent side of the channel 85 and is welded to the first spacer. A cam 87 is positioned between the first spacer 83 and the channel 85 and is pivotally mounted on the pin 86 and a stop 88 is made integral with the cam. Aligned holes 89 are provided in the lever 67 and the channel 85 so that a clasp or sealing means which is not shown in the drawings may be threaded through the holes. A pair of spaced housings 90 are welded to the metal rib 36 which is located at the bottom edge of the door 34 and a pair of wheels 91 are rotatably mounted in the housings for rotation in a plane at right angles to the plane of the door and the wheels are adapted to roll on the wear plate 19 as best shown in Figs. 1 and 7.

The mode of operation of the door is as follows: With the door 34 in open position parallel to the side wall 12 in a location away from the door opening 17 it is moved longitudinally of the car along the side wall in parallel relation therewith toward the door opening 17 during which movement the wheels 53 roll on the track 33 and the projections 61 are guided between the top retainer 31 and the adjacent portion of the side wall 12. When the door 34 has moved to a position over the door opening 17 the wheel housing 52 engages a stop 92 fixed to the track to prevent further movement of the door in a longitudinal direction. The lever 67 is then rotated in a counterclockwise direction as viewed in Fig. 1 causing the bars 73 and 74 to be drawn toward each other and causing the rods 48 to be rotated and the door 34 is swung about the pins 54 at the lower ends of the rods and about the pins 57 at the upper ends of the rods to move transversely of the car into the door opening. When the door moves transversely of the car to closed position, the top edge of the metal sheet 35 abuts the leg 43 of the Z-member 27 and the trough 39 of the member 38 at the top edge of the door receives the third arm 47 of the T-shaped weatherstrip, and the front and rear edges of the sheet 35 abut the leg 41 of the respective door posts and the troughs of the members at the front and rear edges of the door receive the third arm of the respective weatherstrips. Counterclockwise movement of the lever 67 is continued until the lever is in a horizontal position where it is received in the channel 85. The cam 87 is then engaged with the offset 63 of the lever 67 and is pushed downwardly until the stop 88 comes into contact with the lever thus holding the lever 67 in a horizontal position in the channel 85. Sealing means may also be applied to the holes 89 in the lever 67 and channel 85. The door 34 is now in fully closed position. To move the door away from the door opening 17 the lever is rotated in a clockwise direction as viewed in Fig. 1 resulting in the reverse operation of all of the parts to move the door transversely of the car

6

and out of the door opening. The door may then be moved in a direction longitudinally of the car parallel with the side wall at which time it will move on the track 33 and in the top retainer 31 in a direction parallel with the side wall until the door opening 17 is exposed.

In Fig. 9 there is shown a modification of the weatherstrip arrangement. In this construction the first arm 45 and the third arm 47 of the T-shaped weatherstrip and the adjacent portion of the leg 40 of the door post 23 may be said to form a channel structure at the front edge of the door opening 17 facing toward the outside of the car. The member 38 includes an inwardly directed flange 93. A resilient metal element 94 is secured to the inner face of the flange 93 by rivets 95. The flange 93 is adapted to project into the channel structure and the resilient element 94 abuts the bottom of the channel structure when the door is moved transversely of the car to closed position. The weatherstrip arrangement at the rear edge of the door 34 and at the top edge of the door is identical.

In Fig. 10 there is shown another modification of the weatherstrip arrangement. Again, the first arm 45 and the third arm 47 of the weatherstrip and the adjacent portion of the leg 40 of the door post 23 form a channel structure at the front edge of the door opening 17, and the member 38 is provided with a flange 93. A resilient metal element 96 is positioned in the channel structure and is secured to the inner face of one flange 47 of the channel structure by rivets 97. The flange 93 on the door projects into the channel structure and contacts the resilient element at about its center causing it to deflect and the free end of the resilient element to slidably contact the other flange 40 of the channel structure when the door is moved to closed position. The weatherstrip arrangement at the rear edge of the door 34 and at the top edge of the door is identical.

This door has the advantage that an operation arrangement of starter, closer and lock is incorporated into one assembly. The lever turns through an angle of approximately 180° when moving the door transversely of the car to fully closed position or away from the car as far as it will go and in the fully closed position of the door the lever goes past center and accordingly locks itself in place. It is to be noted that only one lever is used to move the door transversely toward and away from the car instead of a series of levers. The weight of the door in the fully closed position is supported by the wheels mounted on the bottom of the door and adapted to roll across the wear plate thereby relieving the operating arms of vertical forces during impact and normal service. Ample clearance is provided between the edges of the door and the door opening so that the door operation is not hampered in any way even though the door opening may go out of square. It is to be noted that the inner face of the door is flushed with the inside lining of the car as best shown in Fig. 2. All car and door parts in the open position are closer to the car side than all other similar types of side doors being manufactured at the present time which will eliminate considerable damage from side swiping. With the present arrangement the door is within the AAR clearance line in all positions which constitutes a great improvement over flush side doors presently in use.

The weathersealing means which is composed of surface contact between one leg 41 or 43 of the member at the edge of the door opening and the corresponding edge of the metal sheet on the door and baffles formed by the flange on the edge of the door and the free arm of the T-shaped weatherstrip provides an effective seal against the entrance of foreign matter. In Fig. 9 a resilient element is added and this resilient element is secured to the member at the edge of the door so that four different pockets are formed which tend to deflect foreign matter and cause it to fall to the ground. In Fig. 10 a resilient element is secured to the free arm of the

T-shaped weatherstrip so that four different pockets are formed.

From the foregoing it will be seen that there has been provided a structurally new operating mechanism and a new weatherstrip arrangement for sliding side doors of railway box cars of the type that are movable transversely of the car in and out of the door opening.

What is claimed is:

1. In a railway freight car, a wall having a door opening, a channel structure positioned at one edge of the door opening and facing toward the outside of the car and secured to the car, a door positioned over the door opening and movable transversely of and toward the car and transversely of and away from the car, a flange secured to one edge of the door and extending toward the car, and a resilient element secured to the flange, the flange being adapted to project into the channel structure and the resilient element being adapted to abut the bottom of the channel structure when the door is moved transversely of and toward the car to closed position.

2. In a railway freight car, a wall having a door opening, a member positioned at one edge of the door opening and secured to the car and having legs substantially at right angles to each other, a T-shaped metal weatherstrip positioned against the member and having a first arm secured to one leg of the member and having a second arm secured to the other leg of the member and having a third arm, a door positioned over the door opening and movable transversely of and toward the car and transversely of and away from the car and comprising a metal sheet and a member having a trough therein positioned at one edge of the metal sheet and secured thereto, and a resilient metal element secured to the second named member, said one edge of the metal sheet being adapted to abut said other leg of the first named member and the trough being adapted to receive the third arm of the weatherstrip and the resilient element being adapted to abut the first arm of the weatherstrip when the door is moved transversely of and toward the car to closed position.

3. In a railway freight car, a wall having a door opening, a channel structure positioned at one edge of the door opening and facing toward the outside of the car and secured to the car, a door positioned over the door opening and movable transversely of and toward the car and transversely of and away from the car, a flange secured to one edge of the door, and a resilient element positioned in the channel structure and secured to one flange of the channel structure, the flange on the door being adapted to project into the channel structure and contact the resilient element and the resilient element having a free end adapted to contact the other flange of the channel structure when the door is moved transversely of and toward the car to closed position.

4. In a railway freight car, a wall having a door opening, a member positioned at one edge of the door opening and secured to the car and having legs substantially at right angles to each other, a T-shaped metal weatherstrip positioned against the member and having a first arm secured to one leg of the member and having a second arm secured to the other leg of the member and having a third arm, a door positioned over the door opening and movable transversely of and toward the car and transversely of and away from the car and comprising a metal sheet and a member having a trough therein positioned at one edge of the metal sheet and secured thereto, and a resilient metal element secured to the third arm of the weatherstrip, said one edge of the metal sheet being adapted to abut said other leg of the first named member and the trough being adapted to receive the third arm of the weatherstrip and the second named member being adapted to contact the resilient element and the free end of the resilient element being adapted to contact said one leg of the first named

member when the door is moved transversely of and toward the car to closed position.

5. In a railway freight car, a wall having a door opening, a member positioned at one edge of the door opening and secured to the car and having a leg disposed in the general plane of the wall and having another leg disposed in a plane at right angles to the wall and secured to the first named leg, a T-shaped weatherstrip positioned against the member and having an arm secured to the second named leg and another arm secured to the first named leg and having a third arm disposed in a plane at right angles to the wall, a door positioned over the door opening and movable transversely toward and away from the car, a member positioned at one edge of the door and secured thereto and having a trough facing toward the inside of the car, the trough being adapted to receive the third arm of the weatherstrip when the door is moved transversely of and toward the car to closed position.

6. In a railway freight car, a wall having a door opening, a member positioned at one edge of the door opening and secured to the car and having a straight leg disposed in the general plane of the wall and having another leg disposed in a plane at right angles to the wall and secured to the first named leg, a T-shaped metal weatherstrip positioned against the member and having an arm secured to the second named leg and having another arm secured to the first named leg and having a third arm disposed in a plane at right angles to the wall, a door positioned over the door opening and movable transversely toward and away from the car and comprising a metal sheet and a member positioned at one edge of the metal sheet and secured thereto and the member having a trough facing toward the inside of the car, said one edge of the metal sheet being adapted to abut the first named leg of the first named member and the trough being adapted to receive the third arm of the weatherstrip when the door is moved transversely of and toward the car to closed position.

7. In a railway freight car, a wall having a door opening, a member positioned at the top edge and at each side edge of the door opening and secured to the car and having a straight leg disposed in the general plane of the wall and having another leg disposed in a plane at right angles to the wall and secured to the first named leg, a T-shaped metal weatherstrip positioned against each member and having an arm secured to the second named leg of the respective member and having another arm secured to the first named leg of the respective member and having a third arm disposed in a plane at right angles to the wall, a door positioned over the door opening and movable transversely toward and away from the car and comprising a metal sheet and a member positioned at the top edge and at each side edge of the metal sheet and secured thereto and each of the second named members having a trough facing toward the inside of the car, said one edge of the metal sheet being adapted to abut the first named leg of the respective one of the first named members and the respective trough being adapted to receive the third arm of the respective weatherstrip when the door is moved transversely of and toward the car to closed position.

References Cited in the file of this patent

UNITED STATES PATENTS		
65	1,066,908	Jones ----- July 8, 1913
	1,156,884	Burnett ----- Oct. 19, 1915
	1,400,699	Test ----- Dec. 20, 1921
	1,697,108	Conrad ----- Jan. 1, 1929
	2,062,757	Moore et al. ----- Dec. 1, 1936
70	2,075,558	Tobin ----- Mar. 30, 1937
	2,143,226	Loneragan ----- Jan. 10, 1939
	2,563,178	Madland ----- Aug. 7, 1951
	2,596,913	Mystrom ----- May 13, 1952
	2,614,294	O'Connor ----- Oct. 21, 1952
75	2,629,901	Madland ----- Mar. 3, 1953