Sept. 16, 1958 J. B. PUCKETT 2,851,964

FREIGHT CAR

Filed May 2, 1956

Fig. 1

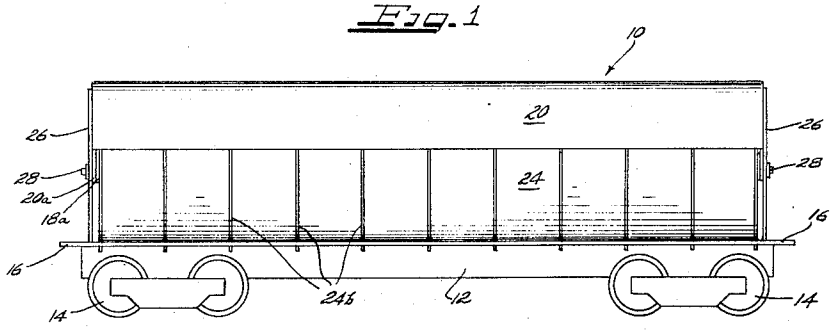


Fig. 4

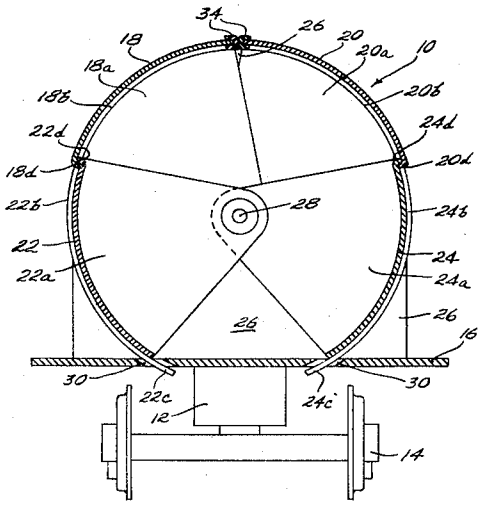


Fig. 2

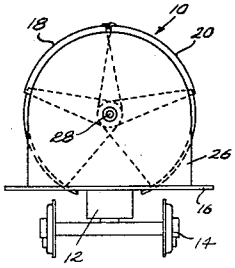


Fig. 3

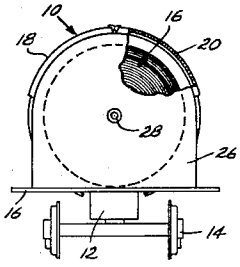


Fig. 7

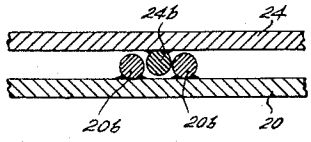


Fig. 6

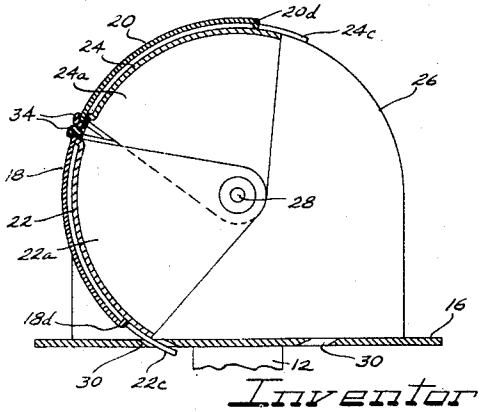
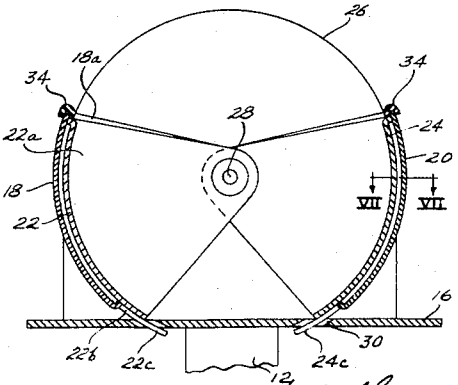


Fig. 5



Inventor

JOHN B. PUCKETT

By Hill, Sherman, Meroni, Gross & Simpson Attys.

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FREIGHT CAR

John B. Puckett, El Paso, Tex.

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8 Claims. (Cl. 105—377)

This invention relates to railway cars, with particular reference to freight cars, and has for an object the provision of a railway freight car having a novel construction and arrangement to provide versatility of loading characteristics, and particularly adapted to carry cylindrical objects or coils such as rolls, reels, and the like.

Another object of the present invention is to provide a novel freight car having means to permit more ready and more convenient loading and unloading thereof.

Another object is to provide a freight car having enclosures optionally movable to facilitate loading and unloading, and to enclose the contents as to prevent them shifting about.

A further object is to provide a novel freight car having wall portions adapted to be manipulated in a plurality of optionally selectable arrangements of juxtaposition relative to each other to provide loading and unloading access openings of maximum magnitude and accessibility.

Another object is to provide a freight car having a plurality of wall panels that provide the side-walls and roof therefor, but which are adapted and arranged to optionally provide for access through the top or out either side of the car.

A further object is to provide a novel freight car having special means adapted for hauling such products as coils of ribbon steel, plates, skelp, terneplate, pipe, cable reels, and the like.

These and other objects, features, and advantages of the present invention will be readily apparent from the following description of an illustrative embodiment thereof, taken in conjunction with the accompanying somewhat schematic drawings, in which:

Figure 1 is a side elevational view of a railway freight car embodying concepts of the present invention;

Figure 2 is an end elevational view thereof;

Figure 3 is a view similar to Figure 2, with portions removed and with portions broken away for clarity of presentation;

Figure 4 is an enlarged transverse sectional view through the car of Figure 1, illustrating details of the wall construction;

Figure 5 is a view similar to Figure 4, but illustrating a condition wherein the walls have been adjusted to provide an upwardly-opening access for the car;

Figure 6 is a similar view, but showing the walls adjusted to a position providing a sidewardly-opening access for the car; and

Figure 7 is a fragmental section taken generally along the line VII—VII of Figure 5 to illustrate a preferred wall-rib or wall-bracing arrangement.

By way of example, a railway freight car **10** is shown, having a main frame **12** suitably supported by truck wheels **14**. Such a car **10** is desirably provided with a generally flat or shallow V-shaped cargo-supporting bed **16** suitably supported upon the frame **12**.

According to concepts and principles of the present invention, a plurality of interrelated wall panels are provided which may be swung open from the top or swung up from either side, and thus to co-operate to provide alternatively a cylindrical shell or enclosure, an open-top car having side walls, an open-sided car, or combinations thereof in which the car may be fully closed or may be provided an access opening at its top or along either of its sides. The overall cylindrical configuration as shown resembles that of a tank-type car, and is thus specially adapted to carry a plurality of coils or reels of sheet metal **16** (Fig. 3).

Accordingly, in the embodiment illustrated, there are shown four longitudinally extending wall panels comprising opposed upper panels **18, 20** and opposed lower panels **22, 24**, each formed as longitudinally extending arcuate partial-cylindrical sections.

End bulkheads **26** are shown provided adjacent each end of the car bed **16**, and extend upwardly therefrom transversely of the car. These bulkheads **26** provide end-closure means for the car, and provide a supporting bearing **28** for supporting the wall panels **18, 20, 22, 24.**

Supportingly connected to the bearings **28** at each end of the car are wall-supporting arms or plates **18*a*, 20*a*, 22*a*,** and **24*a*** which pivotally support the wall panels **18, 20, 22,** and **24** respectively, for rotation about the bearings **28.** As shown, the arms **18*a*, 20*a*, 22*a*,** and **24*a*** are in the form of generally sector-shaped plates.

The assembly and relationship of the various wall panels **18, 20, 22,** and **24** is best seen in Figs. 4, 5, and 6. As there shown, the bottom panels **22** and **24** are desirably arranged to lie along paths inwardly of the upper panels **18, 20** so that when the panels are manipulated into juxtaposed relation, as shown in Figs. 5 and 6, the bottom panels lie interiorly of the car with respect to the upper panels. To avoid interference when the panels are moved relatively to one another, the arms **18*a*** and **20*a*** which carry the exteriorly disposed upper wall panels **18** and **20** are located exteriorly axially with respect to other support arms **22*a*** and **24*a*.**

Bracing members or ribs are provided for the wall panels, desirably extending in planes transverse of the car. As shown, such ribs **22*b*** and **24*b*** provided for the bottom panels **22** and **24**, respectively, are provided along the exterior surface of those panels. Conversely, however, the ribs **18*b*** and **20*b*** provided for the upper wall panels **18** and **20** are provided along the interior surface of those panels. This provides, as is best illustrated in Figure 7, that the ribs of the upper and lower wall panels lie in closely adjacent paths extending between the paths through which the respective wall panels are carried. As there shown, each rib **24*b*** of the wall panel **24** is disposed between a pair of ribs **20*b*** of the upper wall panel **20.**

The ribs **22*b*** and **24*b*** of the lower wall panels extend in the embodiment illustrated below the lower edge of those panels, as at **22*c*** and **24*c*** respectively, to engage into stake pockets **30** provided in the bed **16**, thus supporting the lower wall panels **22** and **24** when in the lowered position.

Means are provided for effectively sealing adjacent edges of the wall panels. As shown, the lower edges of the upper wall panels **18** and **20** are formed to provide longitudinally extending inward flanges **18*d*** and **20*d*** serving as stiffening lips and sealing and closure means. The upper edges of the lower panels are shown as provided with cooperating longitudinally extending outward lips **22*d*** and **24*d*.**

The upper edges of the upper panels **18, 20** are desirably provided with cooperating closure means, such as

the sealing strips 34 provided to longitudinally extend along those upper edges.

It will be observed that the paths in which the upper and wall panels are carried are closely spaced, desirably separated only an amount needed for clearance of the bracing ribs and the stiffening and sealing lips.

A freight car so constructed provides advantageous loading and unloading, for the wall panels may be selectively shifted to provide a variety of optional locations of access opening, according to the dock facilities available, to the type and nature of material handled, and to other factors encountered in any particular application.

For example, Figure 5 illustrates a condition in which the wall panels have been shifted to provide upwardly opening access. Such an arrangement may also be used to provide an open-topped car. Figure 6 shows an illustrative arrangement in which all four of the panels 18, 20, 22, 24 are arranged generally along one side of the car to provide an open-sided car.

The car is thus seen to be very versatile with respect to wall arrangement and location of access opening. This construction permits side-loading and unloading from either side, with the longitudinal openness of a flat car. It permits top-loading and unloading. With all these advantages of versatility, it yet provides for an enclosed arrangement giving protection from weather, dirt, dust, theft, etc., as a standard box car affords, and furthermore confines the contents to prevent from shifting about.

Accordingly, it will be seen from the foregoing description, considered in conjunction with the accompanying drawings, that the present invention provides a new and improved railway freight car with a novel construction and arrangement embodying selectively movable and arrangeable wall sections, having the desired advantages and characteristics, and accomplishing its intended objects, including those hereinbefore pointed out and others which are inherent in the invention as described.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. A freight car comprising: a main frame, a rigid flat car-bed disposed on said frame, a bulkhead secured adjacent each end of the flat car-bed and arranged transversely thereof, a supporting bearing mounted in and arranged centrally of each bulkhead, a plurality of vertically arranged wall supporting plates having an arc shaped outer edge portion, said plates pivotally mounted in said bearings in said bulkheads, a plurality of arcuate, partial-cylindrical, lower wall and upper roof panels extending lengthwise of the flat car-bed assembled to the outer arc shaped portions of said supporting plates to form a normally closed body structure of substantially cylindrical configuration with said flat car-bed, said lower wall panels arranged to occupy a position substantially flush with the upper surface of said flat car-bed when in normal lower position, said upper roof panels arranged to occupy a position substantially flush with each other when in normal elevated position, said bottom wall panels arranged to travel in a path interior of the body structure with respect to the upper roof panels, said supporting plates which carry said upper roof panels being located exteriorly axially with respect to the supporting plates which carry said lower wall panels; whereby said roof panels and said wall panels may rotate about their axis of rotation, extending through said bearings, without interference with each other and operating by rotation thereof to provide an opening substantially equal to the length and breadth of the car-bed for top access, or side access, respectively to the interior of the freight car.

2. A freight car comprising: a main frame, a rigid flat car-bed disposed on said frame, a bulkhead having a semi-circular top edge portion and a flat bottom edge portion secured adjacent to each end of the flat car-bed and transversely thereof, a supporting bearing mounted in and arranged centrally of each bulkhead, a plurality of segmental wall supporting plates, vertically arranged and each plate having an outer arc shaped edge portion and two side edge portions, said side edge portions meeting at a junction, each of said plates mounted on said bearings in said bulkheads by means located adjacent said junction of the side edges of said plates, a plurality of arcuate, partial-cylindrical, lower wall and upper roof panels extending lengthwise of the flat car-bed assembled to the outer arc shaped portions of said supporting plates to form a normally closed body structure of substantially cylindrical configuration with said flat car-bed, said lower wall panels arranged to occupy a position substantially flush with the upper surface of said flat car-bed when in normal lower position, said upper roof panels arranged to occupy a position substantially flush with each other when in normal elevated position, said bottom wall panels arranged to travel in a path interior of the body structure with respect to the upper roof panels, said supporting plates which carry said upper roof panels being located exteriorly axially with respect to the supporting plates which carry said lower wall panels; whereby said roof panels may be rotated in opposite directions about their axis of rotation without interference with each other and operating by rotation thereof to provide a top opening substantially equal to the length and breadth of the car-bed for top access to the top surface of said flat car-bed.

3. A freight car comprising: a main frame, a rigid flat car-bed disposed on said frame, a bulkhead secured adjacent each end of the flat car-bed and arranged transversely thereof, a supporting bearing mounted in and arranged centrally of each bulkhead, a plurality of vertically arranged wall supporting plates having an arc shaped outer edge portion, said plates pivotally mounted in said bearings in said bulkheads, four substantially quarter-sections providing two lower wall panels and two upper roof panels extending lengthwise of the car-bed and pivotally connected to the outer arc shaped portions of said supporting plates to form a normally closed body structure of substantially cylindrical configuration with said flat car-bed, the lower edge portions of each wall panel being arranged to occupy a position substantially flush with the top of the flat car-bed when in closed position, the upper edge portions of each roof panel being arranged to occupy a position substantially flush with each other, the supporting plates assembled with said roof panels being of greater length than the plates supporting said lower wall panels so that the roof panels may be rotated without interference of said wall panels, said supporting plates which carry said upper roof panels being located exteriorly axially with respect to the supporting plates which carry said lower wall panels; whereby said roof panels and said wall panels may rotate about their axis of rotation, extending through said bearings, without interference with each other and operating by rotation thereof to provide an opening substantially equal to the length and breadth of the car-bed for top access, or side access, respectively to the interior of the freight car.

4. A freight car comprising: a main frame, a rigid flat car-bed disposed on said frame a bulkhead secured adjacent each end of the flat car-bed and arranged transversely thereof, a supporting bearing mounted in and arranged centrally of each bulkhead, four substantially quarter sections forming two roof panels with end sectors and two lower wall panels with end sectors said panels extending lengthwise of the flat car-bed, said sectors pivotally connected to the bearings in said bulkheads, said sections forming a cover for said flat car-bed, the radii of the sectors embodying the lower wall panels being made smaller than the radii of the sectors embodying the upper wall panels, whereby said sections may rotate about their axis of rotation without interference with each other to provide an opening substantially equal to the length and

breadth of the car-bed for top access, or side access, respectively to the interior of the freight car.

5. A freight car comprising: a main frame, a rigid flat car-bed disposed on said frame, a bulkhead secured adjacent each end of the flat car-bed and arranged transversely thereof, a supporting bearing mounted in and arranged centrally of each bulkhead, a plurality of vertically arranged wall supporting plates have an arc shaped outer edge portion, said plates pivotally mounted in said bearings in said bulkheads, a plurality of arcuate, partial-cylindrical, lower wall and upper roof panels extending lengthwise of the flat car-bed assembled to the outer arc shaped portions of said supporting plates to form a normally closed body structure of substantially cylindrical configuration with said flat car-bed, said lower wall panels arranged to occupy a position substantially flush with the upper surface of said flat car-bed when in normal lower position, said upper roof panels arranged to occupy a position substantially flush with each other when in normal elevated position, said bottom wall panels arranged to travel in a path interior of the body structure with respect to the upper roof panels, said supporting plates which carry said upper roof panels being located exteriorly axially with respect to the supporting plates which carry said lower wall panels; said lower wall panels having bracing members extending in planes transverse of the freight car-bed and secured to the exterior surface thereof, said upper roof panels having bracing members extending in planes transverse of the freight car-bed and secured to the interior wall thereof, said bracing members on said panels arranged to lie in closely adjacent paths extending between the paths through which the respective panels are carried and giving suitable support, whereby said roof panels and said wall panels may rotate about their axis of rotation, extending through said bearings, without interference with each other and operating by rotation thereof to provide an opening substantially equal to the length and breadth of the car-bed for top access, or side access, respectively to the interior of the freight car.

6. A freight car comprising: a main frame, a rigid flat car-bed disposed on said frame, a bulkhead secured adjacent each end of the flat car-bed and arranged transversely thereof, a supporting bearing mounted in and arranged centrally of each bulkhead, a plurality of vertically arranged wall supporting plates have an arc shaped outer edge portion, said plates pivotally mounted in said bearings in said bulkheads, a plurality of arcuate, partial-cylindrical, lower wall and upper roof panels extending lengthwise of the flat car-bed assembled to the outer arc shaped portions of said supporting plates to form a normally closed body structure of substantially cylindrical configuration with said flat car-bed, said lower wall panels arranged to occupy a position substantially flush with the upper surface of said flat car-bed when in normal lower position, said upper roof panels arranged to occupy a position substantially flush with each other when in normal elevated position, said bottom wall panels arranged to travel in a path interior of the body structure with respect to the upper roof panels, said supporting plates which carry said upper roof panels being located exteriorly axially with respect to the supporting plates which carry said lower wall panels; each of said lower wall panels having a rod type bracing member secured to the exterior surface thereof and extending transversely of the car-bed, said upper roof panels having rod type bracing members secured to the interior surface thereof and extending transversely of the car-bed, each of said bracing members on said lower wall panels arranged to lie in a path extending between the paths of the bracing members on said upper roof panels and giving suitable guidance and support, whereby said roof panels and said wall panels may rotate about their axis of rotation, extending through said bearings, without interference with each other and operating by rotation thereof to provide an opening substantially equal to the length and breadth of the car-bed for top access, or side access, respectively to the interior of the freight car.

7. A freight car comprising: a main frame, a rigid flat car-bed disposed on said frame, a bulkhead secured adjacent each end of the flat car-bed and arranged transversely thereof, a supporting bearing mounted in and arranged centrally of each bulkhead, a plurality of vertically arranged wall supporting plates have an arc shaped outer edge portion, said plates pivotally mounted in said bearings in said bulkheads, a plurality of arcuate, partial-cylindrical, lower wall and upper roof panels extending lengthwise of the flat car-bed assembled to the outer arc shaped portions of said supporting plates to form a normally closed body structure of substantially cylindrical configuration with said flat car-bed, said lower wall panels arranged to occupy a position substantially flush with the upper surface of said flat car-bed when in normal lower position, said upper roof panels arranged to occupy a position substantially flush with each other when in normal elevated position, said bottom wall panels arranged to travel in a path interior of the body structure with respect to the upper roof panels, said supporting plates which carry said upper roof panels being located exteriorly axially with respect to the supporting plates which carry said lower wall panels; said wall structure substantially wholly comprising a plurality of coaxial rotatable longitudinally extending side wall panels and roof panels therefor having an enclosing position in which they co-operate to provide an enclosure for said bed and any contents carried thereon and preventing shifting of any contents carried thereon but said panels selectively movable therefrom to provide an access opening to the interior of said body.

8. A freight car adapted to carry generally cylindrical objects, said freight car comprising a main frame, a car-bed disposed on said frame for supporting said cylindrical objects, a bulkhead secured adjacent each end of the car-bed and arranged transversely thereof, a suitable supporting bearing mounted in said bulkheads, a plurality of vertically arranged panel supporting sector plates mounted on said bearings in said bulkheads, a body having a substantially cylindrical wall structure providing an enclosure for said bed, said wall structure substantially wholly comprising four coaxial rotatable longitudinally extending panels having their ends assembled upon the outer ends of said supporting sector planes, two of said panels forming roof panels and two of said panels forming lower wall panels, the radii of the sectors embodying the lower wall panels being made smaller than the radii of the sectors embodying the roof panels, said panels having an enclosing position in which they cooperate to provide a generally cylindrical enclosure for said bed and confine objects carried by said bed but movable to provide an access opening for said car optionally above or at either side of said bed by selective manipulation of two relatively lower and two relatively upper ones of said panels, said two lower panels giving side support to objects carried on said bed and further preventing shifting thereof, and said two upper panels forming roof enclosure means therefor.

References Cited in the file of this patent

UNITED STATES PATENTS

296,810	Wyman	Apr. 15, 1884
312,786	Wyman	Feb. 24, 1885
1,035,245	Sanders	Aug. 13, 1912
1,125,056	Buchanan	Jan. 19, 1915
1,628,543	Jonsson	May 10, 1927