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H. S. HART

DUMP CAR CONSTRUCTION

Filed Nov. 14, 1923 2 Sheets-Sheet 1

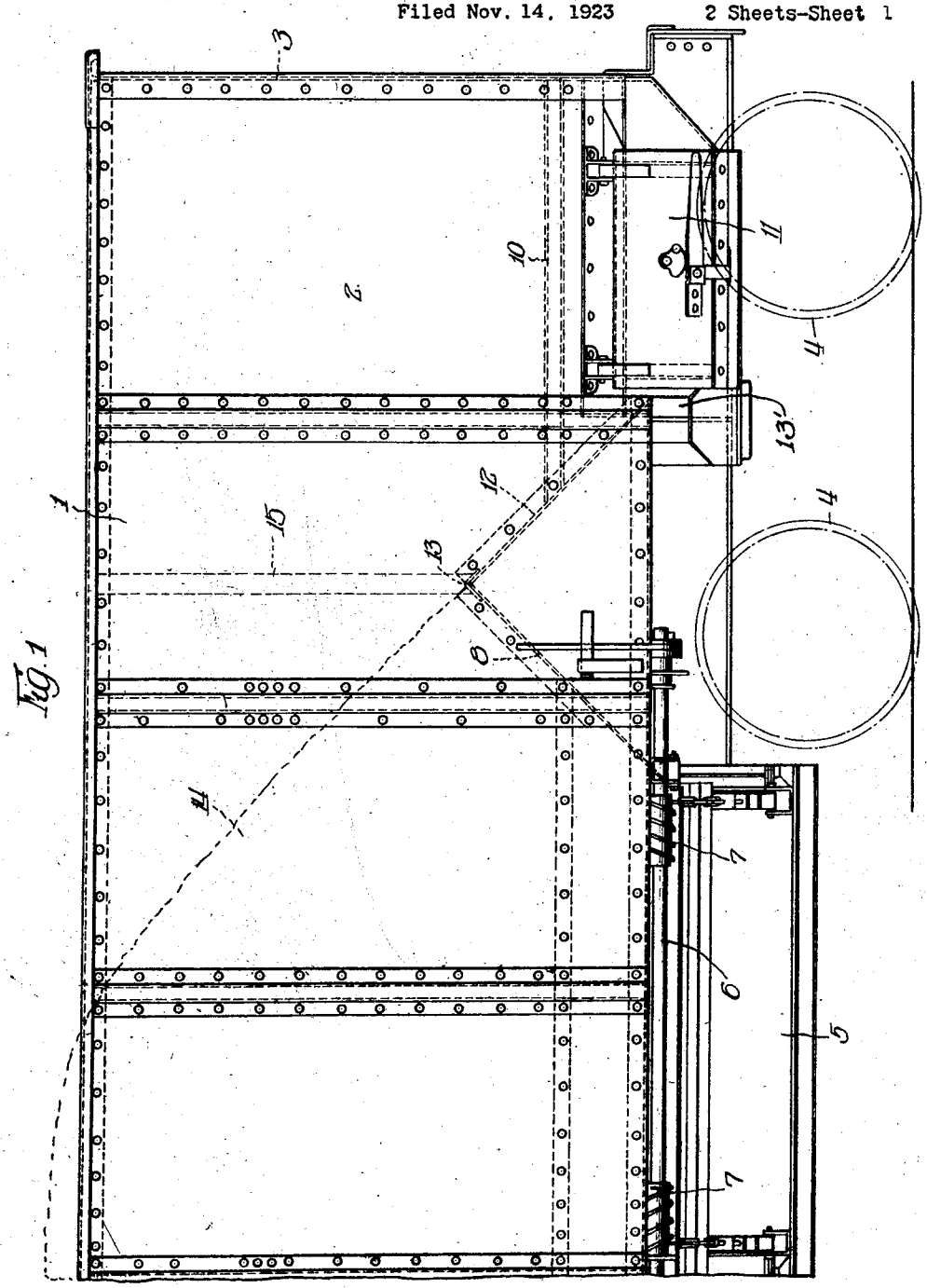


Fig. 1

Witness:
R. Burkhardt

Inventor:
Harry S. Hart,
By Wilkinson, Huxley, Bryant & Knight
attys.

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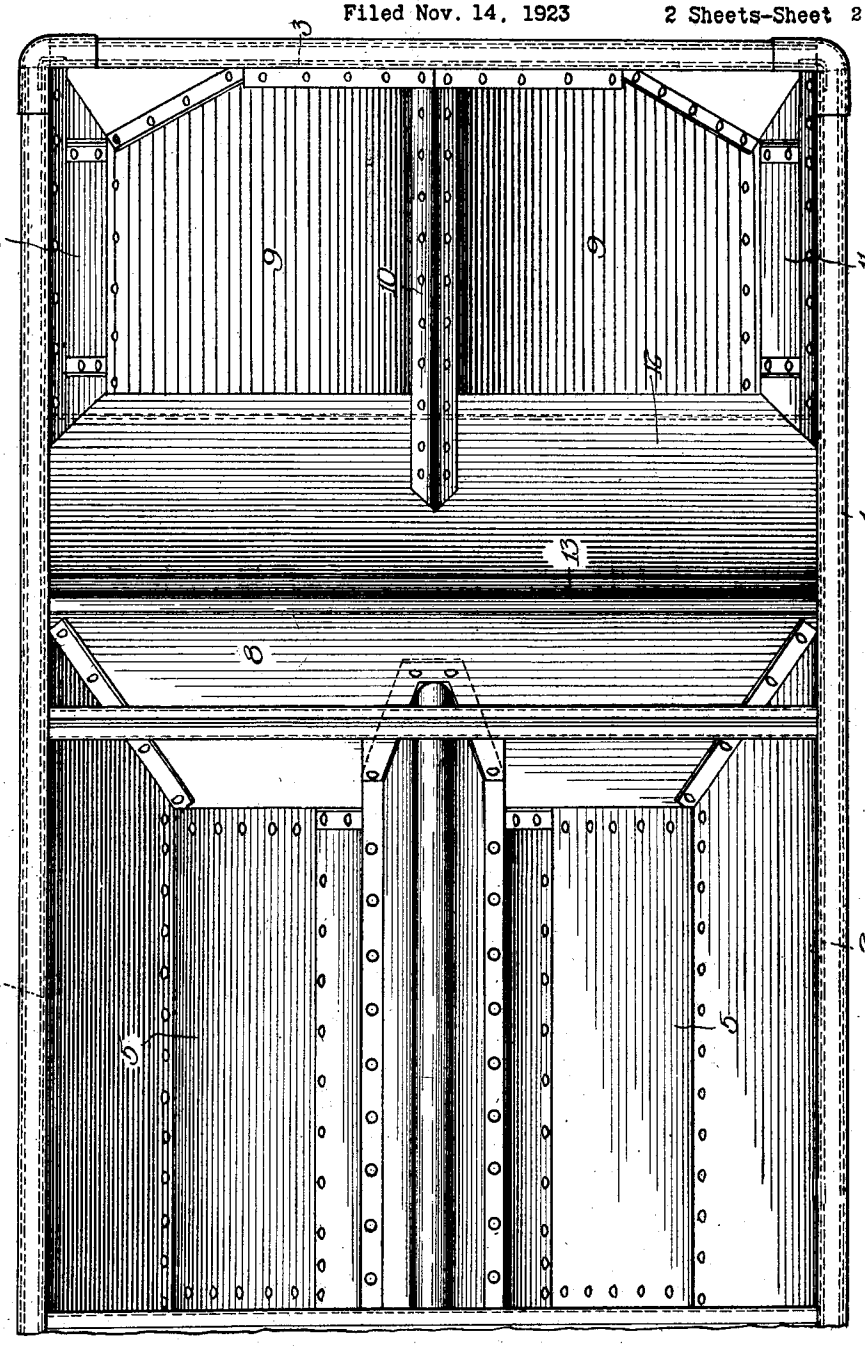


Fig 2.

Witness:
R. Burkhardt.

Inventor:
Harry S. Hart,
By Williamson, Hurley, Byron & Knight
Attys.

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UNITED STATES PATENT OFFICE.

HARRY S. HART, OF CHICAGO, ILLINOIS.

DUMP-CAR CONSTRUCTION.

Application filed November 14, 1923. Serial No. 674,606.

To all whom it may concern:

Be it known that I, HARRY S. HART, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dump-Car Constructions, of which the following is a specification.

This invention relates to dump car construction.

Cars of this sort are commonly designed to deposit lading between the trucks at the two ends of the car. If the lading to be deposited is relatively heavy, such, for example, as rock ballast, the carrying capacity for such lading is limited not by the bulk thereof but by the weight. Ballast cars in common use limit the amount of rock ballast or other heavy ballast to that which may be carried by said car at regions from which dumping may be conveniently accomplished between the trucks. When it is desired to carry other lading such as coal, which is lighter in weight, certain types of ballast cars are quite inefficient inasmuch as they do not economically utilize the space over the trucks.

An object of the present invention is to provide an efficient car for carrying heavy lading such as rock ballast which should be deposited selectively between the rails or outside of the rails and for carrying lighter lading such as coal which need not be dumped between the rails.

A further object is to provide a car utilizing materials which are no heavier than ordinarily provided in car construction which will operate efficiently as a ballast car for depositing ballast either between the rails or outside of the rails and will present a maximum capacity for lighter lading.

A further object is to provide a dump car conforming to standard practice which will have an increased carrying capacity over what has been known and used before.

Further objects will appear as the description proceeds.

Referring to the drawings:—

Figure 1 is a view in side elevation of a railway dump car illustrating one embodiment of the present invention; and

Figure 2 is a top plan view of the construction shown in Figure 1.

Numeral 1 illustrates a dump car having side walls 2—2 and end walls, one of which is indicated by the numeral 3. The trucks at the two ends of the car 1 are illustrated diagrammatically by the wheels thereof which are indicated by the reference numerals 4—4. According to the illustrated embodiment of the present invention the car 1 is provided with dumping mechanism located between the trucks, said dumping mechanism comprising doors 5—5 which are mounted for swinging movement about axes disposed longitudinally of the car. Referring to Figure 1, a shaft 6 is provided carrying chains 7—7 for operating the doors 5—5. The details of construction of the dumping mechanism between the trucks need not be described herein inasmuch as such details are well known to those skilled in the art and inasmuch as such details form no part of the present invention.

Adjacent to each end of the car is a floor 8, which floors slope toward the adjacent ends of the doors 5—5. That is to say, said floors 8 are so sloped that lading located above said floors will tend to move toward the doors 5—5 when said doors are opened. Said floors 8—8 should be disposed at such an angle relative to a horizontal plane that such lading as rock ballast will flow therefrom. That is to say, the angle should be such that the force of gravity acting upon rock ballast located above said floors will be sufficient to overcome the resistance to flow due to contact between said floors 8—8 and the ballast resting thereon. For this purpose it has been found by experiment that the angularity of the floors 8—8 relative to a horizontal plane may be approximately 45° when the car is designed for the carrying of rock ballast.

At each end of the car above the trucks is a floor, indicated by the numeral 9. According to the embodiment illustrated in Figure 2, each of the floors 9 may comprise sloping portions for directing lading laterally of the car, said sloping portions having their apex along the line marked by the angle 10. Swinging side doors 11—11 may be provided, controlled in any preferred way, for permitting lading to flow from said floors 9 to the sides of the car.

Each sloping floor 8 extends to a line disposed transversely of the car, which line lies above the corresponding truck illustrated by wheels 4—4. Cooperating with each sloping floor 8 is the reversely sloping floor 12, each pair of said sloping floors 8 and 12 having their apex protected by the angle 13.

Thus the apex of the sloping floors 8 and 12 at each end of the car is between the bolsters 13'. This location of the apex makes it possible to provide sloping floors which will be at the proper angle for efficiently discharging the load either through the end dumping portions of the car, or through the center dumping portions. The sloping floor 12 at each end of the car will direct lading disposed above said sloping floor 12 toward the corresponding floor 9 and doors 11—11 whereby lading at the ends of the car may be discharged through said doors 11—11 laterally of the car. It will be obvious that the angle 13 and sloping floors 8 and 12 at each end of the car will form shedding means for directing lading either to a region between the trucks to be dumped by the doors 5—5 or to a region over the trucks to be dumped by the doors 11—11. Described in other language, it may be stated that each of the floors 9 is a longitudinally extending A-shaped floor having its apex extending inwardly, along a medial plane of said car, from the ends of said car to a point beyond the adjacent bolster 13'; that is to say, the apexes of said A-shaped floors extend to points between said bolsters. The floors 8 and 12 at each end of the car also provide A-shaped floors extending transversely of the car between the dumping mechanism 5 and the longitudinally extending floors 9. The transversely extending floor at each end of the car and its corresponding longitudinally extending floor form a T-construction, the head of which T-construction lies between the bolsters 13'. The construction described and illustrated increases the capacity of a dump car a material amount over prior practice.

In operation, when it is desired to use the car for carrying rock ballast or other heavy lading, said heavy lading will be deposited in the car centrally thereof, being carried by the bottom portion between the trucks and by the sloping floors 8—8. According to the illustrated embodiment of the present invention the limit of such heavy lading longitudinally of the car will be marked by the angles 13—13 located over the trucks. Said heavy lading may assume an angle of repose illustrated by the dashed line 14. It will be clear, however, that if it is desired to carry lading all of which is to be directed between the trucks, the capacity for such lading may be increased by providing a barrier comprising a transverse wall indicated by the numeral 15. Said wall may be of boards or similar material which may be supported in any preferred way. When the car is to be used for the purpose of carrying lading which need not be dumped between the rails, the entire car between the end walls 3—3 may be filled with such lading, only a small portion of the car between the sloping walls 8 and 12 being unused at this time.

By reason of the present construction a railway dump car is provided which has a maximum carrying capacity for light weight lading and sacrifices none of the advantages attached to the ordinary type of selective dump car.

Though a preferred embodiment has been described in detail, many modifications will occur to those skilled in the art. It is intended in this patent to cover all such modifications that fall within the scope of the invention as defined by the appended claims.

I claim:

1. A car of the class described comprising a car body having ends and bolsters, load discharging means between an end of said car and one of said bolsters, an A-shaped floor construction at said end of said car having its apex disposed longitudinally of said car for directing lading to said load discharging means, other load discharging means between said bolsters, and sloping floors for directing lading toward said first mentioned floors and to said other load discharging means, said sloping floors having an apex located between said bolsters.

2. A car of the class described comprising a car body having ends and bolsters, load discharging means between an end of said car and one of said bolsters, an A-shaped floor construction at said end of said car having its apex disposed longitudinally of said car for directing lading to said load discharging means, other load discharging means between said bolsters, and sloping floors for directing lading toward said first mentioned floors and to said other load discharging means, said sloping floors having an apex located between said bolsters, said A-shaped floor construction being disposed in T relation with said sloping floors.

3. A car of the class described comprising a car body, trucks mounted at the two ends of said body for supporting same, dumping mechanism between said trucks for discharging lading from said car body, an A-shaped dumping floor construction over each of said trucks and extending longitudinally of said car, said A-shaped construction providing sloping portions arranged to deposit lading laterally of said car body, bolsters extending transversely of said car body, said A-shaped floor constructions being located between the regions of said bolsters and the ends of said car body, and other A-shaped floor constructions arranged transversely of said car body, the apexes of said transversely disposed floor constructions being located between said bolsters.

4. A car of the class described comprising a car body, trucks mounted at the two ends of said body for supporting same, dumping

mechanism between said trucks for discharging lading from said car body, an A-shaped dumping floor construction over each of said trucks and extending longitudinally of said car, said A-shaped construction providing sloping portions arranged to deposit lading laterally of said car body, bolsters extending transversely of said car body, said A-shaped floor constructions being located between the regions of said bolsters and the ends of said car body, and other A-shaped floor constructions arranged transversely of said car body, the apexes of said transversely disposed floor constructions being located between said bolsters, said longitudinally extending A-shaped floor constructions being disposed in T relationship with the corresponding transversely disposed A-shaped floor constructions.

5. A car of the class described having sides and ends, longitudinally extending A-shaped floors having their apexes extending inwardly from the ends of the car to points beyond the bolsters of said car, dumping mechanism between the trucks of said car, and A-shaped floors extending transversely of the car and located between said dumping mechanism and said longitudinal A-shaped floors, the apexes of said transverse A-shaped floors being disposed between said bolsters.

6. A car of the class described having sides and ends, trucks at the two ends of said car and bolsters located over said trucks, an A-shaped floor located at each end of said car, said floor having an apex located longitudinally of said car and having downwardly and laterally sloping portions, said apex extending from the end of said car to a point adjacent to and beyond the bolster of said car, and a transverse A-shaped floor adjacent to each end of said car extending across said car and connected to the inner end of the adjacent longitudinally extending floor, said transverse A-shaped floor having its apex between said bolsters.

7. A car having sides and ends, bolsters arranged transversely of said car adjacent to the ends thereof, a longitudinally disposed A-shaped floor extending from each end of said car, the apex and upper part of said floor extending beyond the corresponding bolster and the lower part of said floor ending adjacent to said bolster, and a transverse A-shaped floor mounted adjacent to the inner ends of said longitudinal A-shaped floors, the apexes of said transverse A-shaped floors being between said bolsters, said longitudinal A-shaped floors being connected in T relationship with said transverse A-shaped floors.

Signed at Chicago, Illinois, this 7th day of November, 1923.

HARRY S. HART.