

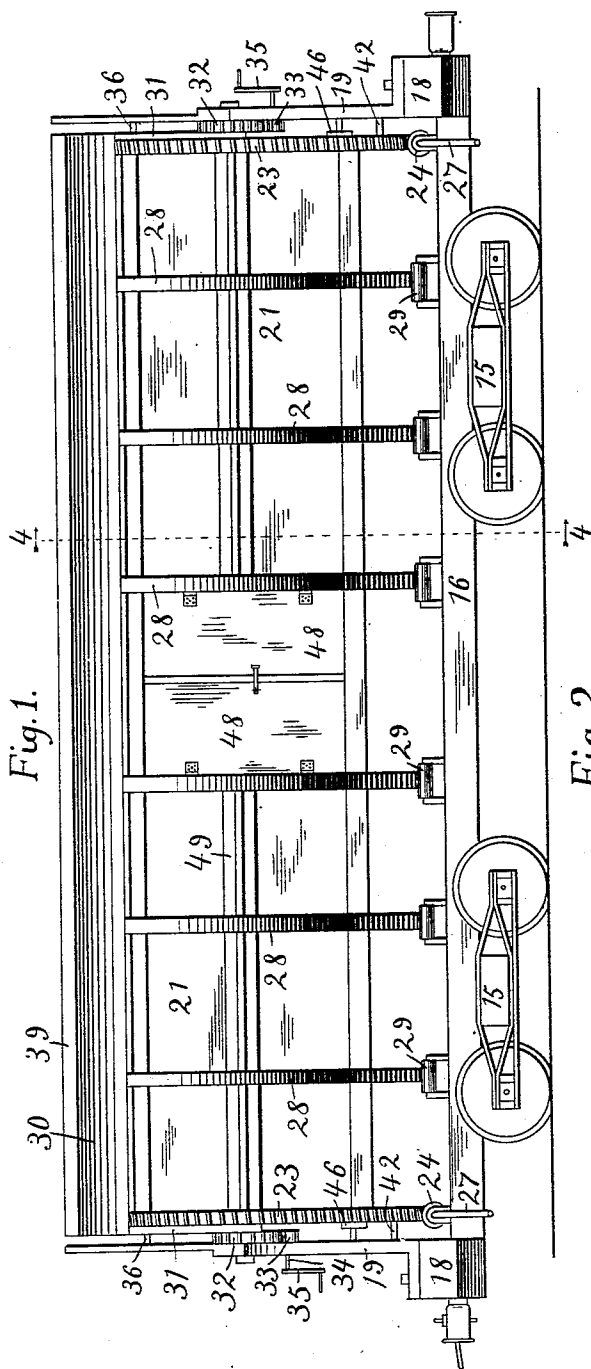
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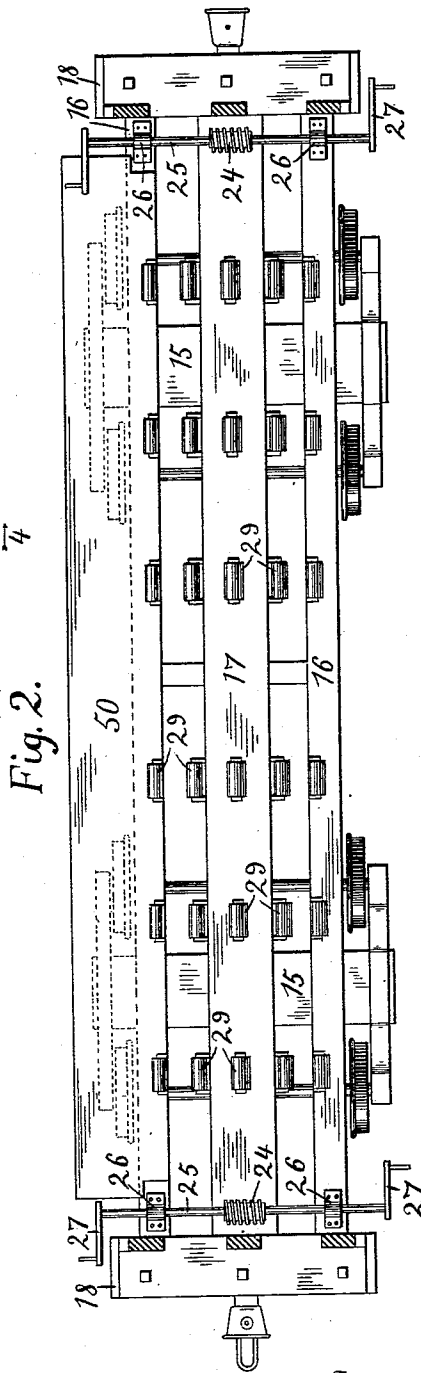
T. S. EASTERBROOK.
COMBINATION FREIGHT CAR.

No. 563,026.

Patented June 30, 1896.



Witnesses
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E. C. Tamm.



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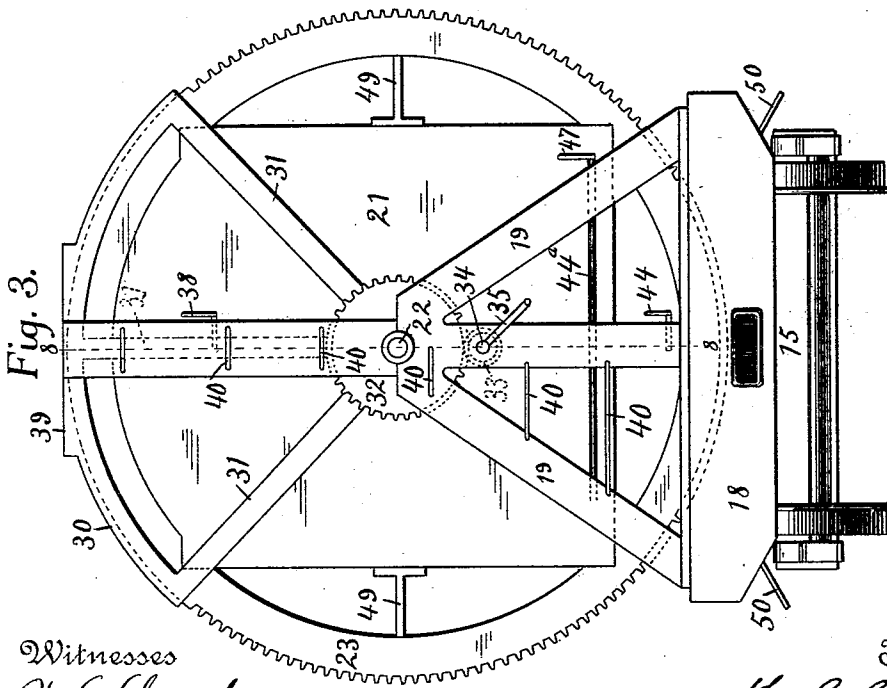
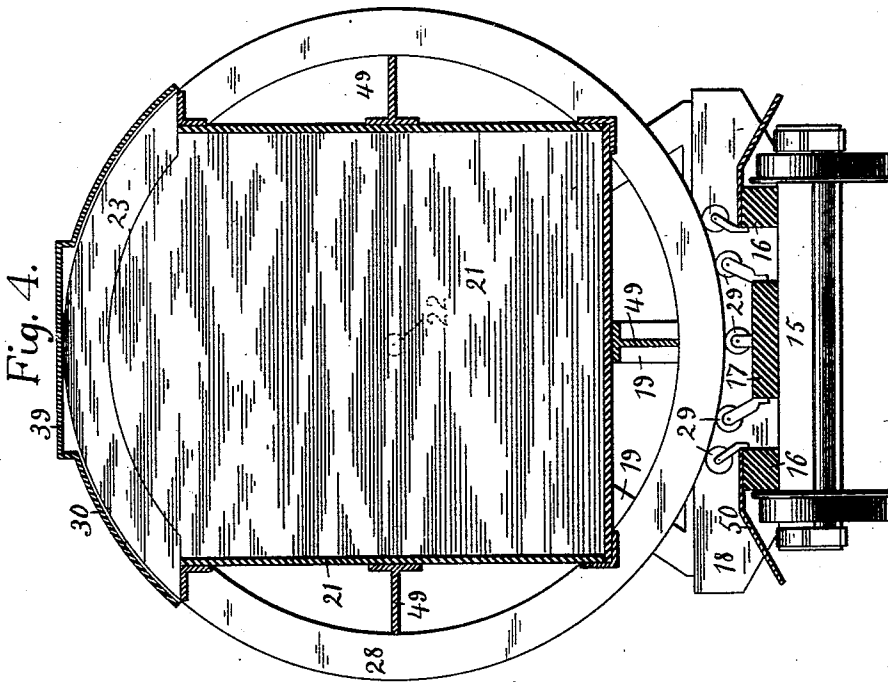
(No Model.)

3 Sheets—Sheet 2.

T. S. EASTERBROOK.
COMBINATION FREIGHT CAR.

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Fig. 5.

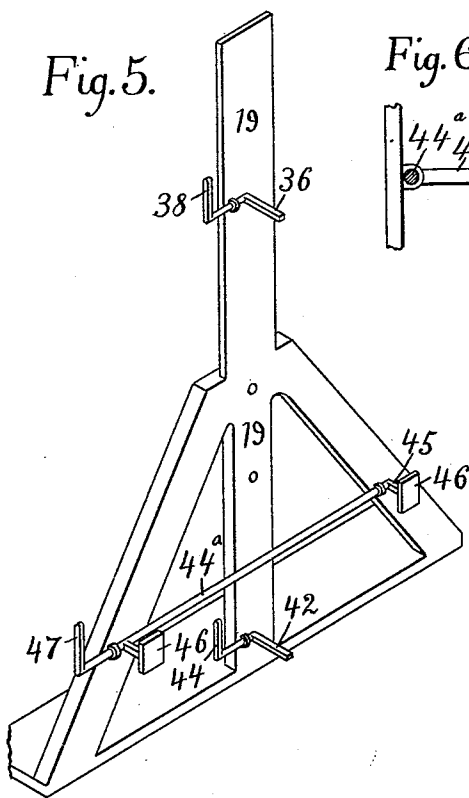


Fig. 6.

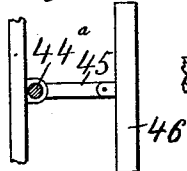


Fig. 7.

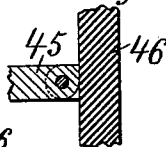


Fig. 8.

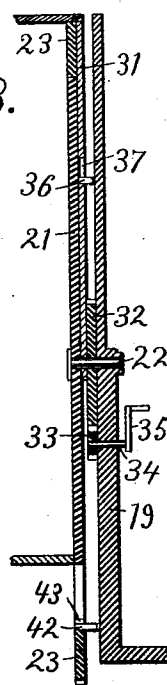
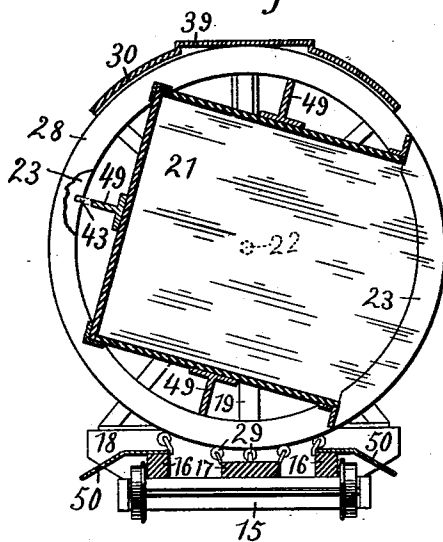


Fig. 9.



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UNITED STATES PATENT OFFICE.

THOMAS S. EASTERBROOK, OF ST. LOUIS, MISSOURI.

COMBINATION FREIGHT-CAR.

SPECIFICATION forming part of Letters Patent No. 563,026, dated June 30, 1896.

Application filed October 28, 1895. Serial No. 567,166. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. EASTERBROOK, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Combination Freight-Car, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a new and useful freight-car, and more particularly to a combination box, gondola, and dumping car. It often occurs that the bulk of the freight passing over a road in one direction can only be shipped in one of these types of car, while that returning requires the use of one of the other types of car. In such a case the cars after being used must be returned empty to their starting-point and new cars provided. So, also, during certain parts of the year, the cars of one type must be almost wholly idle because of the scarcity of freight of the kind they are adapted to haul.

The object of my invention is to provide a car which can readily be converted from one type to another, so that it can be used for any class of freight, and thus obviate the expense of hauling empty cars and also reduce the cost of equipping a road with rolling-stock by rendering a much smaller number of cars necessary.

Another object of my invention is to so construct the car that it can be easily and rapidly loaded and unloaded.

My invention consists in the various novel features and details of construction which are set forth in the following specification, and pointed out in the claims affixed hereto.

In the accompanying drawings, which illustrate one form of car made in accordance with my invention, Figure 1 is a side view; Fig. 2 a plan view, the body of the car being removed; Fig. 3, an enlarged end view; Fig. 4, an enlarged section on the line 4 4 of Fig. 1; Fig. 5, an isometric projection of one of the end frames; Fig. 6, an enlarged view of one of the devices for preventing the car-body from moving longitudinally independently of the frames; Fig. 7, an enlarged section

through a part of the same; Fig. 8, a section of one end of the car, taken on the line 8 8 of Fig. 3; and Fig. 9 is a cross-section showing the car in the position when being dumped.

Like marks of reference refer to similar parts in the several views of the drawings.

15 are two trucks, to which are secured two side pieces 16 and a central piece 17. To the pieces 16 and 17 are secured two end pieces 18. The pieces 16, 17, and 18 form the main frame of the car.

19 are two end frames, preferably of metal, which are bolted or otherwise suitably secured to the end pieces 18.

21 is the body of the car, which is provided with trunnions 22, which are pivoted in the end frames 19.

To each end of the car-body 21 is secured an annulus 23, which is provided with worm-teeth that engage with a worm 24, Figs. 1 and 2, mounted on a shaft 25, carried in brackets 26, which are secured to the side pieces 16 of the main frame. To each end of the shafts 25 is secured a crank-arm 27, Figs. 1 and 2, by means of which the worms 24 are rotated and the car-body 21 thus turned on the trunnions 22. As the weight of the car-body when loaded would be too great to be supported by the trunnions 22 alone, curved supports 28 are secured to the car-body at suitable intervals.

29 are rollers carried by the main frame and which form antifriction-bearings upon which the supports 28 rest. The supports 28 are similar to the annuli 23, except that they are not provided with teeth and only extend to the top of the car-body 21, thus leaving the top of said body unobstructed.

30 is a curved cover or roof, preferably made of sheet metal, which is carried by arms 31, that are secured to spur-wheels 32, loosely mounted on the trunnions 22 and between the end frames 19 and the body 21 of the car. Meshing with the spur-wheels 32 are two spur-wheels 33, which are rigidly mounted on shafts 34, that are journaled in the end frames 19. To the shafts 34 are secured crank-arms 35, Figs. 1, 3, and 8, by means of which the spur-wheels 33 are rotated and the roof 30 thus moved into or out of position to cover the car-body 21. On each of the end frames 19 is carried a detent 36, Figs. 1, 5, and 8, which en-

gages in a slot 37, Fig. 8, in one of the arms 31, which carry the roof 30. Each of the detents 36 is provided with a lever or handle 38, by means of which it is thrown into or out of engagement with the slot 37. The detents 36 and slots 37 serve to hold the roof 30 in position to cover the body 21 of the car.

The roof 30 is provided with a flattened portion 39 to give means for walking along the top of the car. The end frames 19 are provided with strips 40, Fig. 3, to give access to the top of the car. On each of the end frames 19 is carried a detent 42 similar to the detents 36. The detents 42 engage in slots 43, Figs. 8 and 9, in the annuli 23 and directly below the axis of the car-body 21. Each of the detents 42 is provided with a handle 44, by means of which it is thrown into or out of engagement with the slot 43.

On each of the end frames 19 is mounted a rod 44^a, Figs. 5 and 6, on which are carried two arms 45, to which are pivoted two metal plates 46. Each of the rods 44^a is provided with a handle 47, by means of which the plates 46 are lowered against the car-body 21 or raised out of contact with it. The end of the arm 45 which is pivoted to the plate 46 has only the lower corner rounded, so that the said arm can only drop to a horizontal position. The object of the plate 46 is to prevent any longitudinal motion of the car-body 21 which would tend to jam the car-body, wheel 32, and frame 19 together, and thus render it difficult to operate the car body or roof.

The car-body 21 is provided at the outside with doors 48, Fig. 1, at each side of the car, which are preferably made to swing instead of slide, so as not to interfere with the supports 28. When the car is to be used for grain or the like, the doors 48 may be supplemented by inner sliding doors, such as grain-cars are commonly supplied with.

49 are T-shaped strengthening-bars, which are placed between the supports 28 and the sides and bottom of the car-body 21 to brace the said sides and bottom. 50 are two metal guards, which are secured to the side pieces 16 of the main frame to guide the grain or other material over and away from the wheels when the car is used as a dumping-car.

The operation of my car is as follows: When it is desired to convert the car into a gondola-car, the detents 36 are raised out of the slots 37 by means of the handles 38 and the crank-arms 35 rotated until the roof 30 is lowered to one side of the car, leaving the top of the car open. To dump the car, the plates 46 are raised out of contact with the body 21 by means of the handles 47, the detents 42 disengaged from the slots 43 by means of the handles 44, and the crank-arms 27 rotated until the car-body 21 is moved in the position shown in Fig. 9. In righting the car-body, the detents 42 are lowered against the annuli 23 when the car has neared an upright position. When the car-body reaches an exactly upright position, the said detents will drop

into the slots 43, thus quickly and accurately determining the proper position.

From the foregoing description it will be seen that my car can be easily and rapidly adapted to haul any class of freight, and also that it affords special facilities for the loading and unloading of lumber, structural material, &c., which cannot readily be passed through the doors of an ordinary box-car.

Besides being convertible and easily loaded and unloaded, my car has another advantage. After freight which cannot be loaded in an ordinary box-car has been placed in my car, the roof can be secured in position over the car. The freight will then have the same protection from injury from exposure to the weather and loss by theft (to both of which it would be exposed in a gondola-car) as it would have in an ordinary box-car.

Another advantage of my car is the ease with which freight can be transferred from one car to another. By running the loaded car on an elevated track above the car to which the freight is to be transferred, the transfer can be made by simply moving the roof out of position over the car and dumping the contents of the upper car into the lower car.

I know that it is not broadly new to make a car capable of being dumped by rotating the body of the car, and also that it is not broadly new to provide a car with a movable roof, so I do not claim either of these features alone.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a railway-car, the combination of end frames suitably mounted on trucks, a car-body rotatively carried by said end frames, curved supports for said car-body, antifriction-bearings upon which said curved supports rest, and means for rotating said car-body.

2. In a railway-car, the combination of end frames suitably mounted on trucks, a car-body rotatively carried by said end frames, a roof for said car supported independently of said car-body, and means for rotating said car-body.

3. In a railway-car, the combination of end frames suitably mounted on trucks, a car-body rotatively carried by said frames, suitable devices interposed between said end frames and car-body for preventing the longitudinal movement of said car-body relatively to said frames, means for moving said devices into and out of position, and means for rotating said car-body.

4. In a railway-car, the combination of a main or bottom frame mounted on trucks, end frames carried by said main frames, a car-body carried by said end frames, worm-wheels carried by said car-body, worms engaging with said worm-wheels and carried by said main frame, suitable supports interposed between said car-body and main frame

between and independent of said end frames, and means for rotating said worms.

5 In a railway-car, the combination of a main or bottom frame mounted on trucks, end frames carried by said main frame, a car-
body rotatively carried by said end frames, curved supports carried by said car-body, antifriction-rollers between said curved sup-
ports and main frame, and means for rotating
10 said car-body.

6. In a railway-car, the combination of a car-body rotatively mounted on trucks, a roof pivoted to rotate about said car-body, means for moving said roof into and out of position
15 over said car-body, and means for rotating said car-body.

7. A combination gondola, box and dumping car consisting of a substantially rectangular car-body of about the usual length

mounted to rotate about its longitudinal axis 20 on suitable trucks, a roof movable independently of said car-body, and means for rotating said car-body.

8. A combination gondola, box and dumping car consisting of a substantially rectangular 25 car-body mounted to rotate about its longitudinal axis, curved supports intermediate the ends of said car-body, doors in the sides of said car-body and between said supports, a roof movable independently of said car-
body, and means for rotating said car-body. 30

In testimony whereof I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses.

THOMAS S. EASTERBROOK. [L. S.]

Witnesses:

J. F. WESTON,

A. C. FOWLER.