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Patented June 26, 1900.

G. H. HULETT.

MEANS FOR DUMPING CONTENTS OF CARS.

(Application filed Jan. 20, 1900.)

(No Model.)

2 Sheets—Sheet 2.

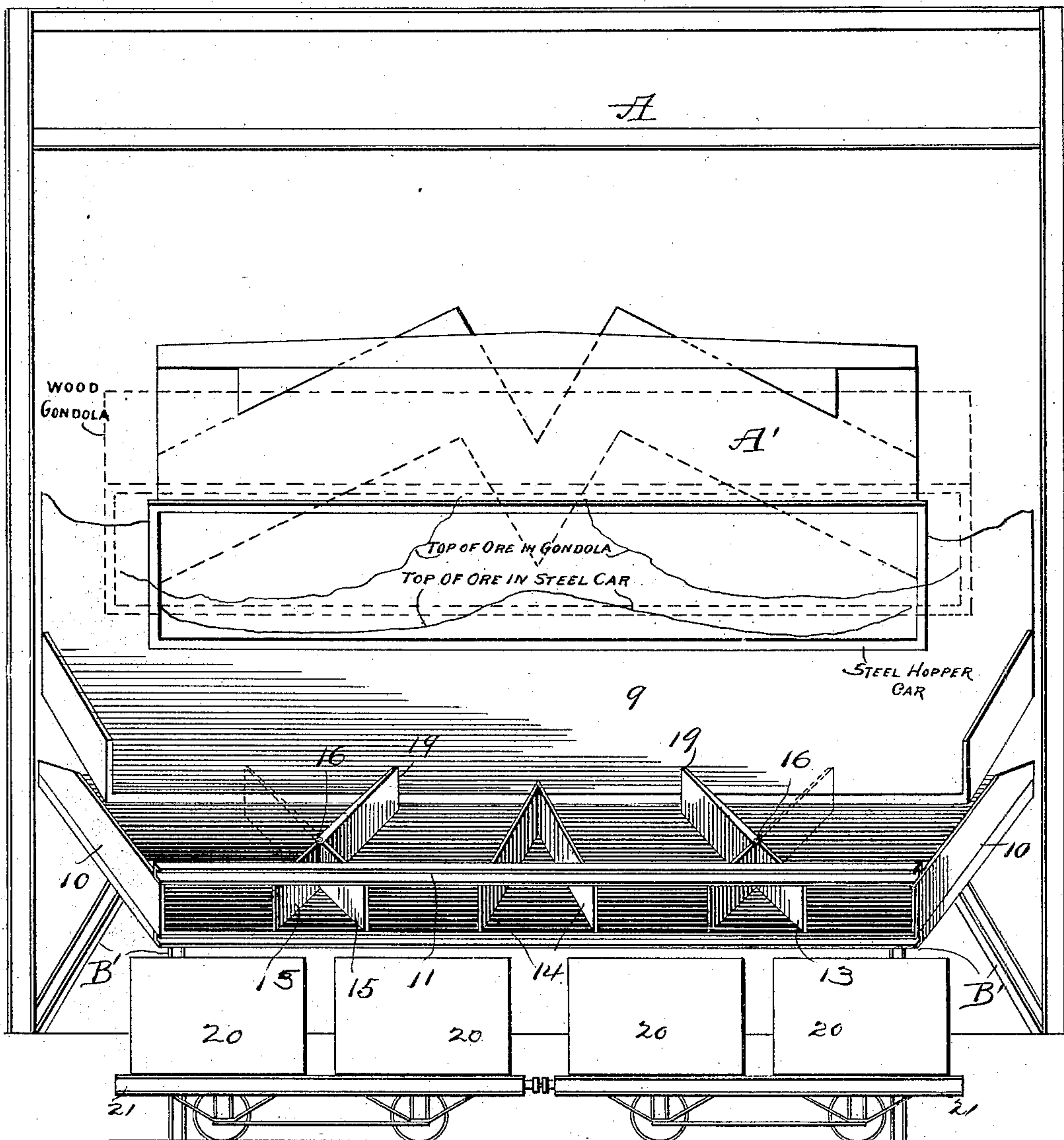


FIG. 2.

WITNESSES

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MEANS FOR DUMPING CONTENTS OF CARS.

SPECIFICATION forming part of Letters Patent No. 652,316, dated June 26, 1900.

Application filed January 20, 1900. Serial No. 2,133. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HULETT, a resident of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Means for Dumping the Contents of Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in loading and unloading apparatus, and more particularly to means for dumping the contents of cars.

It has heretofore been proposed to dump coal from cars into large buckets and to provide means for distributing the car-load of coal simultaneously in several buckets. Such apparatus has operated successfully to distribute the coal evenly among the several buckets, because the car from which it was dumped was filled evenly from end to end, and therefore the coal flowed at a uniform volume from the car throughout its entire length. In the employment of what are known as "gondola cars," such as now in common use for transporting ore, it has been found necessary to so load them that the maximum weight shall be normal from the center of the car and made to come more directly over the trucks. This is because such cars are not of sufficient stability to withstand the great weight of ore at a point centrally between their ends. Cars loaded with ore in the manner above indicated—viz., so that the load will be disposed at respective sides of the center of the car and each portion of the load will have a center of gravity between the center and one end of the car—cannot when bodily dumped be evenly distributed among a series of buckets by means of the fixed distributing devices heretofore employed.

What are known as "hopper-cars" are used quite extensively for transporting ore, and with these the center of gravity of the load is coincident with that of the car. These cars are built to withstand considerable weight, are much shorter than gondola cars, and are usually completely filled. When a hopper-car is bodily inverted to discharge the contents into several buckets, the latter would have to

be placed quite close together, and this is neither practicable nor feasible—no more so than to separate them in pairs, as would be necessary to receive ore dumped from gondola cars. It is therefore important that some means be provided for insuring an equal distribution of ore as it is being dumped from the car into buckets placed at predetermined distances apart regardless of the kind of car employed or the manner of loading.

It is the object, therefore, of my present invention to provide means for adjusting distributing devices mounted on a support independent of the cradle, by means of which the car is inverted, in accordance with the disposition of the load of ore in the cars, so that the even distribution of the ore among a series of buckets will be insured when the car is bodily inverted.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation illustrating my invention, and Fig. 2 is a front view.

A represents an upright framework or tower provided at points between its top and bottom with horizontal forwardly-projecting braces 1, the free end of each of which is connected with the upper and lower portions of the frame or tower by means of diagonal braces 2 3. The braces 2 3 are connected together and with the free end of the horizontal brace 1 by means of a suitable coupling 4, and to each of said couplings the upper end of a post or upright brace 5 is secured, the lower end of which rests on a suitable base. Posts 6 project upwardly within the front portion of the frame or tower and serve to pivotally support a cradle B, the rear end or edge of the latter being normally supported by short posts 7 in the frame or tower. The cradle B comprises a base 8, provided with tracks mounted on a movable platform 8^a for the accommodation of an ore-car A' and a normally-upright apron 9, pivotally connected with the posts 6 and projecting a distance above the same. Any suitable means may be employed for tilting the cradle for the purpose of in-

verting the car thereon, and when thus inverted the contents of the car will flow out over the apron and through a system of distributing devices by means of which it will be directed to a series of buckets.

A framework B' is disposed in front of the framework A and supports an inclined platform B², on which the apron of the cradle discharges when the latter is inverted. The ends of the platform are provided with fixed diagonal deflectors 10 to assist in the distribution of the ore discharged from the car when the cradle is tilted to invert the latter. At the free edge of the platform the ends of the deflectors 10 are connected by a beam or girder 11. Between this beam or girder and the platform the outer or forward ends of V-shaped fixed distributors 13 14 15 are secured, said distributors being disposed on the face of the platform and each member of each distributor is bolted to the platform. At the apex of each V-shaped distributor 13 15 a shaft 16 is mounted and passes through the platform.

An adjustable deflector 19 is secured to each shaft 16. These deflectors constitute an important feature of my invention and enable me to insure the even distribution of ore from the inverted car to a series of buckets 20, placed in certain predetermined positions and regardless of the character of the cars employed and the manner of loading the same. The buckets 20 are carried on suitable trucks 21, and it is very desirable and, in fact, quite necessary in the practical operation of transferring ore from cars to buckets when the cars are inverted for this purpose that the trucks and the buckets thereon shall be always placed in the same position with respect to the apparatus. Without the provision of the adjustable deflectors 19 this could not be accomplished, because of the different kinds and sizes and lengths of cars employed for carrying ore and the different methods of loading the cars. Thus when a gondola car having its load of ore divided between its ends is inverted to discharge such divided load a comparatively-small quantity of ore would flow into the central buckets of the series, while the end buckets would be overloaded if some means be not provided to operate in conjunction with the fixed distributors to regulate the even distribution of the divided load to all the buckets of the series.

When a hopper-car is used, it is apparent that when it is inverted and its contents made to flow over a platform having only the fixed distributors the conditions above described would be reversed and the major portion of the ore would pass to the central buckets of the series, and they would quickly overflow, while the end buckets would receive

little or no ore. By means of the deflectors 19 all of this inconvenience can be avoided by adjusting said deflectors according to the disposition of the load in the car being dumped—that is to say, when gondola cars having the load in two sections at respective sides of its center are being dumped the adjustable distributors will be so disposed as to cause an amount of ore to enter the central buckets of the series equal to the amount passing to the outer buckets. When a hopper-car is dumped, the deflectors 19 will be moved to a position opposite to that which they occupied for a gondola car, so as to distribute the ore in such manner as to cause the same amount to enter the outer buckets as flows to the inner or central buckets of the series.

The contents of the cars will be discharged (whether they be of the gondola or the hopper type) by inverting them, and this will be accomplished by turning the cradle or its pivotal support by any suitable means, and any approved devices (not shown) may be employed for holding the car in place on the cradle. The shafts 16 are provided with crank-arms 16^a, with which any suitable mechanism may be connected for adjusting the deflectors 19.

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

1. The combination with a cradle for inverting a car, of an inclined platform independent of the cradle and laterally-adjustable deflectors on said platform.

2. The combination with a cradle for inverting a car, and an apron carried by the cradle, of a fixed inclined platform independent of the cradle adapted to receive material from said apron and laterally-adjustable distributors on said platform.

3. The combination with means for inverting a car, of a fixed inclined platform independent of said inverting means and adapted to receive material from an inverted car, fixed distributors on said platform for deflecting the material in several buckets and adjustable deflectors attached to the platform and coöperating with the fixed deflectors to insure the even distribution of the material to several buckets, regardless of the character of the car being used and the disposition of the load therein.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE H. HULETT.

Witnesses:

FRANCIS SEIBERLING,
J. B. HUBER.