C. P. ASTROM.

LADLE CAR.

APPLICATION FILED NOV. 16, 1909.

954,561.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

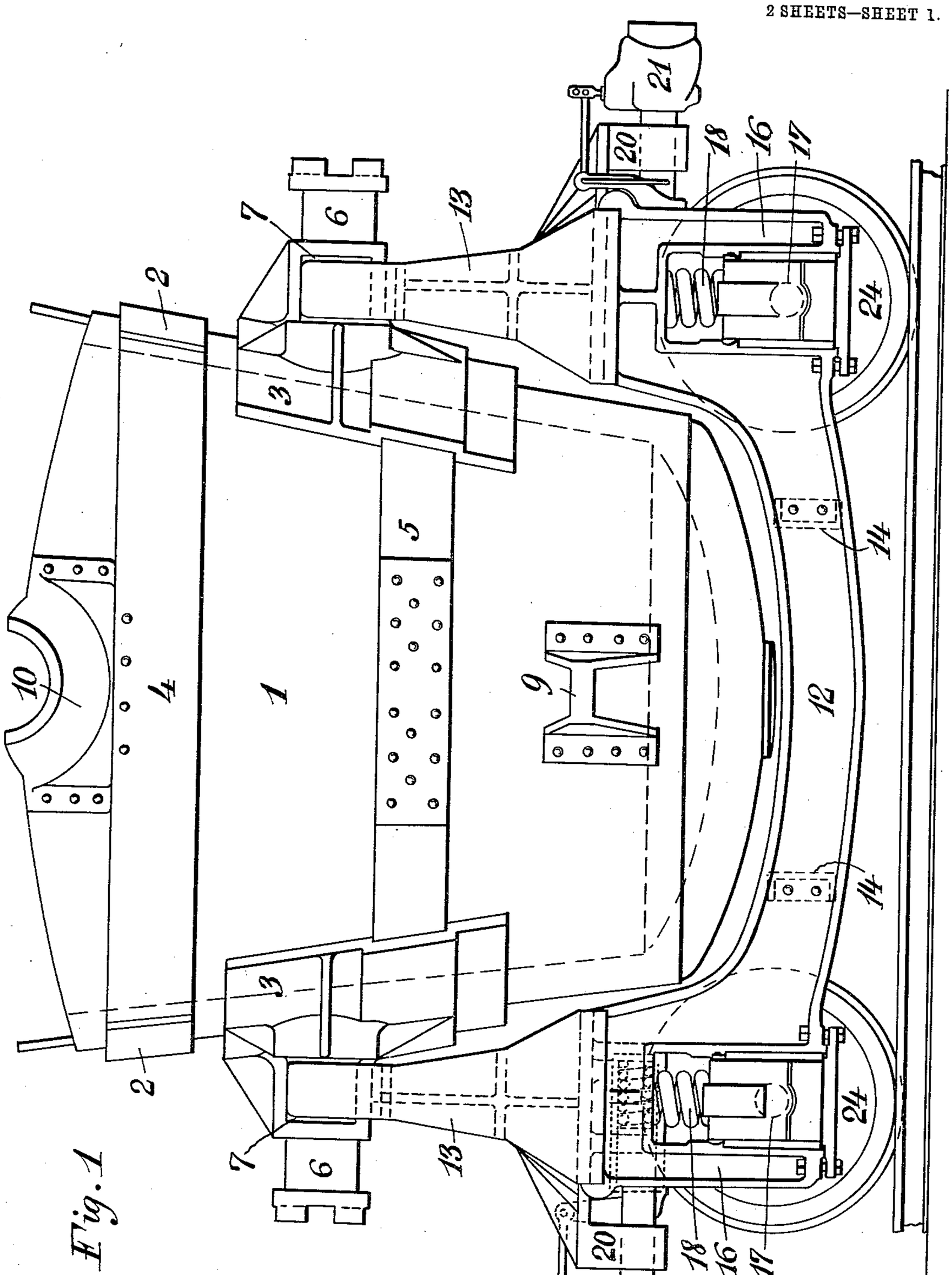

Fig. 1.

Witnesses:
A. F. Schneider
Edmund O. Dubocq

Inventor
Carl P. Astrom
By his Attorneys
Edwards, Sager & Wooster.

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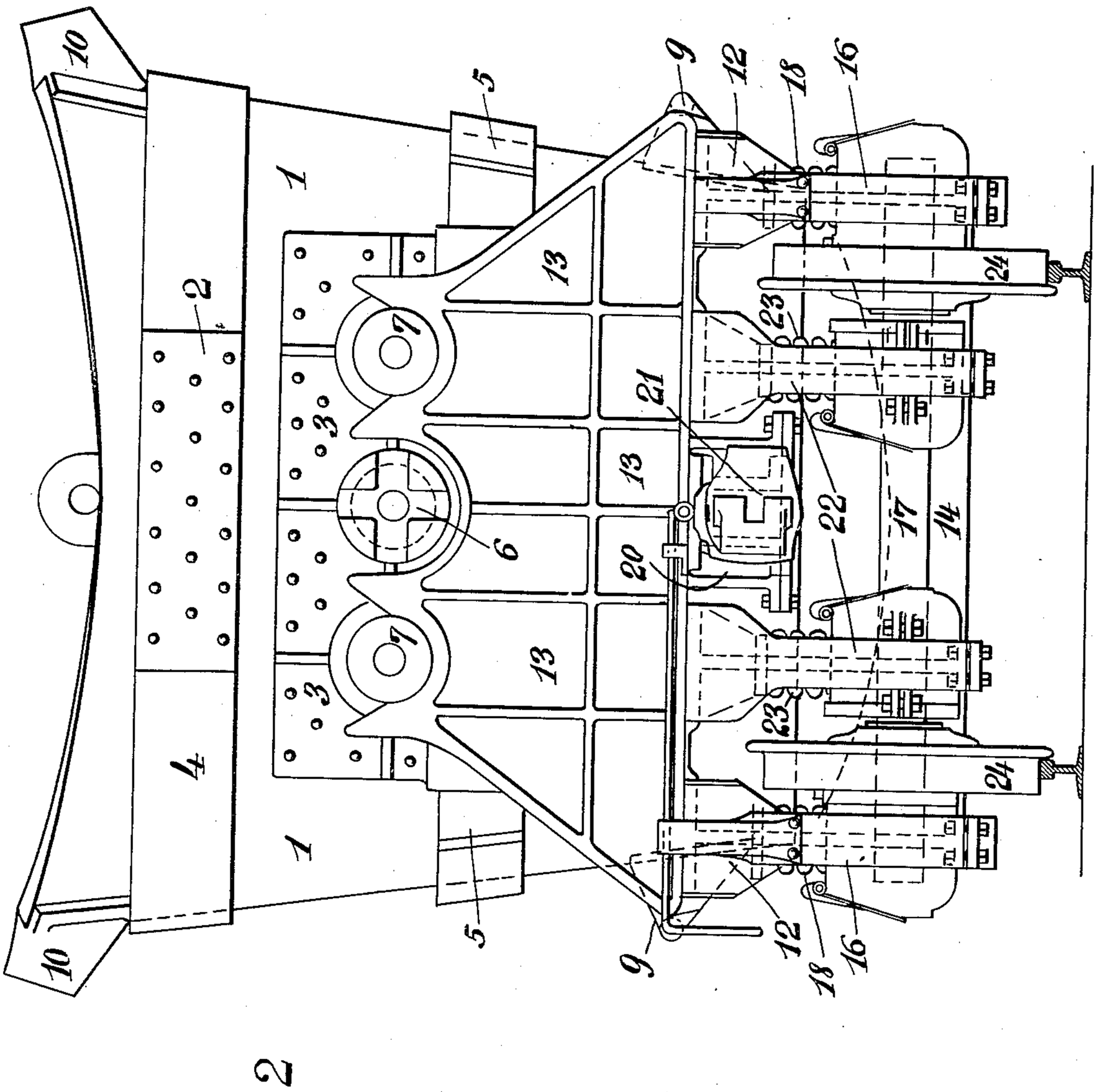

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

CARL P. ASTROM, OF HASBROUCK HEIGHTS, NEW JERSEY, ASSIGNOR TO M. H. TREADWELL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

LADLE-CAR.

954,561. Specification of Letters Patent. **Patented Apr. 12, 1910.**

Application filed November 16, 1909. Serial No. 528,271.

To all whom it may concern:

Be it known that I, CARL P. ASTROM, a citizen of the United States, residing at Hasbrouck Heights, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Ladle-Cars, of which the following is a full, clear, and exact specification.

This invention relates to dumping cars, and more particularly has reference to dumping cars of the type adapted to carry molten metal, cinders, slag and the like in foundries and around blast furnaces.

In cars of this type which are in common use the limit of capacity has heretofore been not over thirty tons, not by reason of the inability of handling larger ladles, but by reason of the imperfections in the design of the car frame, it having prior to this invention not been thought that larger cars could be built.

According to this invention, I have provided a construction of car-body whereby a ladle of fifty tons capacity or more can be constructed and successfully transported from place to place. Thereby, a considerable economy has been attained by reason of the practically double capacity of the car, together with less cooling by reason of the larger body of metal contained, and requiring a less number of cars to do the same work.

As herein shown the car body comprises a frame of a special construction adapted for supporting heavy loads, and the particular form of ladle herein shown is of the built-up type having lifting trunnions and also steadying trunnions whereby the ladle can be placed on the car body and lifted therefrom by cranes, having the usual tackle and arrangements for tilting and loading the ladle.

A particular difficulty which has heretofore existed in constructing cars of this type has been in respect to the bearings for the wheels, which have not been successful practically when designed to carry above ten to fifteen tons' weight per bearing. In a slag or hot metal car it is objectionable to provide a long car frame so designed as to carry bogie trucks, for the reason that such cars are hard to handle in the yards and buildings on account of their length. The problem has therefore been to provide a car having a sufficient number of bearings so that they would not run hot when fully loaded, and at the same time to provide a car frame which would be very little, if any, longer than the ladle, and of standard construction so as to be used with other standard equipment, and permitting the wearing parts subject to breakage or deterioration to be easily replaced where necessary. These objects I have attained in the construction exemplified in the accompanying drawings, wherein—

Figure 1 is a side view of a car built according to the invention; and Fig. 2 is an end view.

1 represents a ladle built up of plates, and suitably lined with a refractory material, having at opposite sides re-enforcing plates 2, 3, bands 4, 5, lifting trunnions 6, and tilting trunnions 7, 7, together with tilting bails 9 at opposite sides, and spouts 10, 10.

The car body comprises cast steel outside under frames 12, 12 on each side rigidly connected to cast steel end frames 13, which latter extend upwardly a sufficient distance to receive the trunnions 6, 7, 7, and bring the bottom of the ladle sufficiently above the side frames 12, in order that it will clear when the ladle is being tilted. Beneath the bottom of the ladle transverse cross braces 14 extend, rigidly connecting the side frames 12. The side frames 12 are provided at the ends with pedestals 16, in which are mounted wheel axles 17, and standard M. C. B. bearings and brasses are contained in these boxes, between which and the frame are interposed springs 18. Connected to the end frames 13, which have forwardly projecting drawheads 20 is a standard draft rigging 21, including couplings and the usual draft gear, not necessary to be particularly described. The bearings heretofore described carried by the side frames are outside of the wheels and the ends of the axles, and inside the wheels in similar pedestals 22 secured to the end frames are additional standard M. C. B. bearings, also spring supported by springs 23. In all of these bearings, standard brasses are used and the brasses can be replaced by simply jacking up the cars to relieve the boxes of pressure, and then removing the brasses.

From the foregoing description it will be seen that at each end of a four-wheeled car are four bearings, all of the heaviest standard construction oppositely disposed rela-

tively to the wheels 24. The inside pedestals 22 are similar to the outside ones 16, except that the inner ones are not connected to each other by separate longitudinal bars, though this could be done, if desired. It has been found in practice that the end frames 13, together with the side frames 12, render the frame rigid, while the bearings are so disposed as to equally distribute the load. By this construction and arrangement of parts, a four-wheeled car is provided having a short wheel base and capable of carrying double the amount of metal heretofore considered practicable to carry, without overloading the bearings, and requiring fewer cars and less space to do the same or more work. At the same time, as above pointed out, a larger ladle has advantages in that the amount of cooling is not so great as where a number of smaller ladles are used.

The specific construction herein shown is capable of being modified, without departing from the scope of the invention.

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

1. A ladle car having a frame comprising two lower side frames connected at the ends by end frames adapted to carry a ladle, draft rigging carried by said end frames, wheels journaled within said side frames in pedestals carried thereby, and interior journals and pedestals carried by said end frames inside the wheels whereby a tiltable car-body is carried by and between said end frames on journals at opposite sides of said wheels, said car-body being tiltable over said side frames.

2. A ladle car having an under frame comprising two lower outside frames connected to transverse end frames, bearing box pedestals in said side frames, axle end bearings in said pedestals, wheels inside said side frames, a second set of inside pedestals and bearings for each axle carried by said end frames, and a sidewise tiltable ladle having trunnions carried by said end frames, the bottom of said ladle being between said side frames and clearing the latter in tilting.

3. A ladle car having an under frame comprising two longitudinal frames connected at each end to transverse end frames, supports for a ladle, a bearing box pedestal in each end of said longitudinal frames, axle bearings in each pedestal, axles journaled therein, additional bearing pedestals carried by said end frames and having bearings therein for said axles, and wheels carried by said axles.

In testimony whereof I affix my signature in presence of two witnesses.

CARL P. ASTROM.

Witnesses:
J. A. WOOSTER,
GEO. N. KERR.