

W. W. McKELVEY.
HOT METAL CAR.
APPLICATION FILED JUNE 12, 1911.

1,004,548.

Patented Sept. 26, 1911.

Fig. 1.

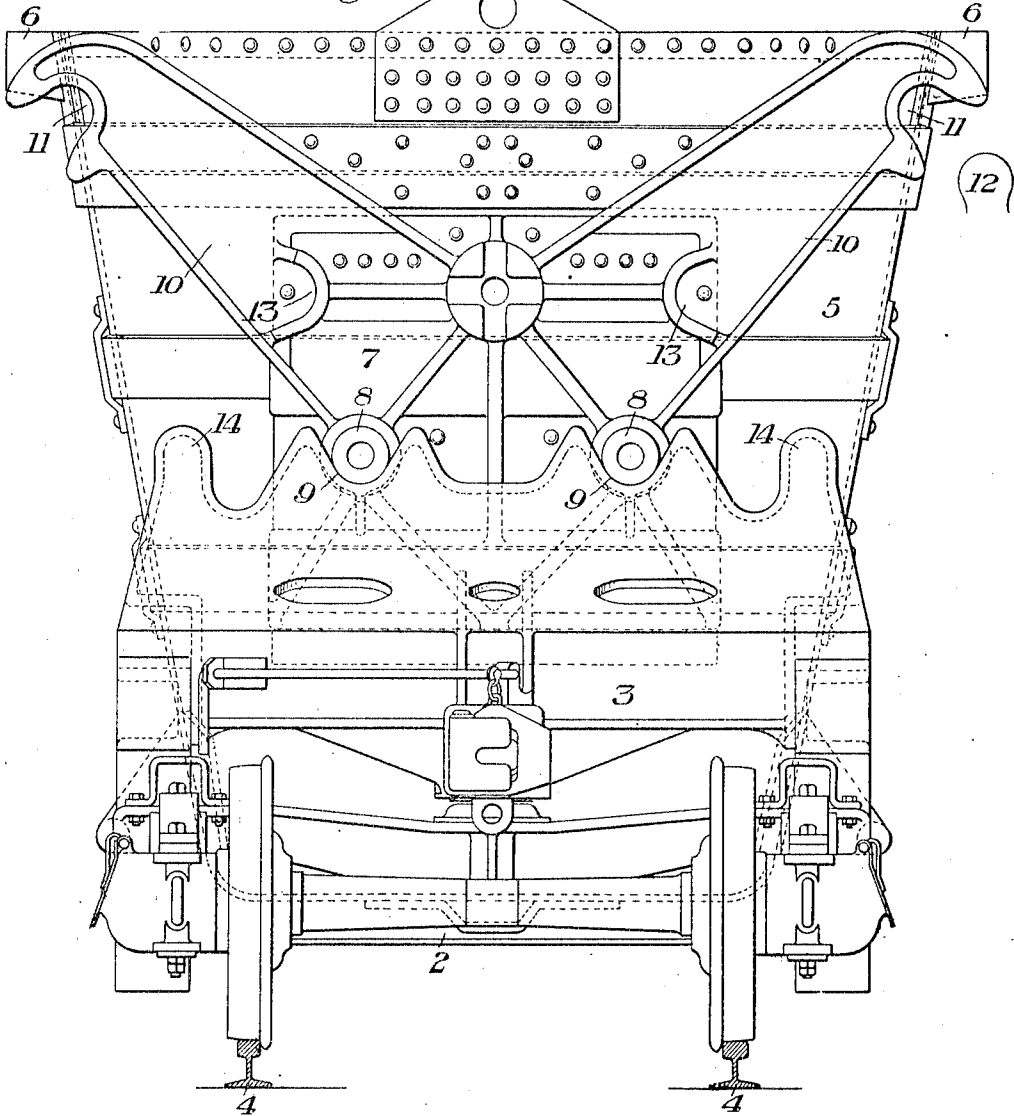
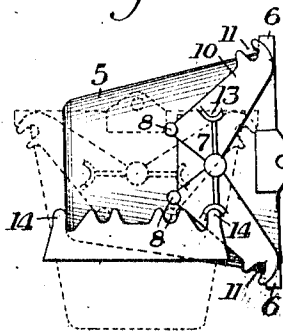


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM W. McKELVEY, OF YOUNGSTOWN, OHIO, ASSIGNOR TO THE WILLIAM B. POLLOCK COMPANY, OF YOUNGSTOWN, OHIO, A CORPORATION OF OHIO.

HOT-METAL CAR.

1,004,548.

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To all whom it may concern:

Be it known that I, WILLIAM W. McKELVEY, a resident of Youngstown, in the county of Mahoning and State of Ohio, have invented a new and useful Improvement in Hot-Metal Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end view of a car embodying my invention; and Fig. 2, is a diagrammatic view illustrating one of the movements of the car.

My invention has relation to hot metal or ladle cars of that type in which the ladles are emptied by pouring from a spout located at or near the top thereof.

One object of my invention is to provide a car or ladle having a plurality of supports arranged to come successively into operation in tipping or dumping it, to thereby reduce the amount of drop of the spout and in order to bring the forward portion of the spout in proper relation to the receptacle being poured into.

A further object of my invention is to provide a car or ladle of this character having still another bearing upon which it can be tipped to a still lower position for removing skull, slag, etc.

Referring to the drawings, the numeral 2 designates the truck of a ladle car and 3 the frame thereof, said truck and frame being, in general, of any well known or suitable character.

4 designates track rails upon which the car is mounted to travel, and 5 designates the ladle vessel having pouring spouts 6 at opposite sides.

Secured to each end of the car is a ladle casting 7, provided with trunnions 8, one at each side of the vertical center of the car and which normally rest in the open bearing recesses 9 of the frame 3. The casting 7 is also provided with the divergent upward extensions or arms 10, which are provided at their upper portions with outwardly facing open bearing recesses 11 and which are designed to engage suitable fixed bearing supports located along the track 4 adjacent to the dumping point. One of these bearing

supports is indicated at 12. Each trunnion casting is also formed at each edge with a laterally opening bearing recess 13, which, upon an extreme dumping movement of the car in either direction, are designed to engage fixed bearing projections 14 on the frame 3.

By means of the double trunnions 8, it will be seen that the car can be tipped in either direction, according as it is desired to dump to the right or to the left. One of the fixed bearing supports 12 is provided wherever dumping is to take place, being located either at the left or right-hand side of the track, according to the direction of dumping.

In dumping, the ladle is first turned on one of the trunnions 8 until such time as one of the open bearing recesses 11 engages the fixed bearing support 12. Further dumping movement then takes place on the bearings 11 and 12. As this center is located outside of the track rails at a point near the top of the ladle, it is obvious that the spout 6 will travel but a short distance in the complete tipping movement of the ladle.

When it is desired to remove skull or slag from the ladle vessel, the ladle is tipped to an extreme position on one of its trunnions 8 until one bearing recess 13 engages one of the bearing projections 14 when further movement is about this center. This bearing being at a relatively low point on the frame, it will be seen that the ladle can be tipped to an extreme position.

It will be obvious that instead of providing the several bearings on the separate ladle castings secured to the car, the car may be provided with such bearings in any suitable way.

Various other changes may be made in the details of construction and arrangement of the parts, without departing from the spirit and scope of my invention as defined in the appended claims.

The advantages of my invention will be apparent to those skilled in the art, since it provides a car ladle which can be tipped or dumped with a very short drop of the spout, and yet can be given an extreme tipped position when it is desired to remove the skull. It will be understood that with this latter

operation, the car is moved away from the support 12, which is not employed in this operation.

I claim:

5 1. A ladle car having three sets of bearings located in different vertical planes, substantially as described.

10 2. A ladle car having a tilting ladle, a track upon which the car is mounted, said ladle having a plurality of bearings located at different distances from its top, and a truck frame having a plurality of bearing portions adapted to come into successive operation, together with a fixed bearing located adjacent to the track on which the car moves, substantially as described.

15 3. A ladle car having a ladle provided with a lower bearing arranged at one side of the vertical center of the car, another bearing located near the top of the car, and another bearing located intermediate the upper and lower bearings, substantially as described.

20 4. A ladle car having a ladle provided

with a lower bearing arranged at one side 25 of the vertical center of the car, another bearing located near the top of the car, and another bearing located intermediate the upper and lower bearings, together with a truck upon which the car is mounted, said car having supports for two of said bearings, said supports being located at different distances from the vertical center line of the ladle, substantially as described.

5. The combination with a truck having bearing supports located at different distances from its center line, of a tilting ladle vessel having two sets of bearings at different vertical heights and adapted to successively cooperate with the bearing supports, substantially as described. 40

In testimony whereof, I have hereunto set my hand.

W. W. McKELVEY.

Witnesses:

EDGAR J. REILLY,
W. G. WILSON.