A. P. LEE.

MOVABLE LOADING HOPPER.

APPLICATION FILED OCT. 29, 1912.

1,157,010. Patented Oct. 19, 1915.

Fig. 1.

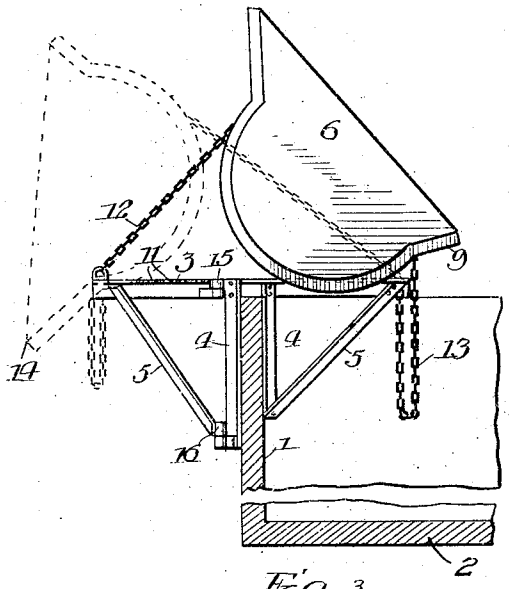


Fig. 2.

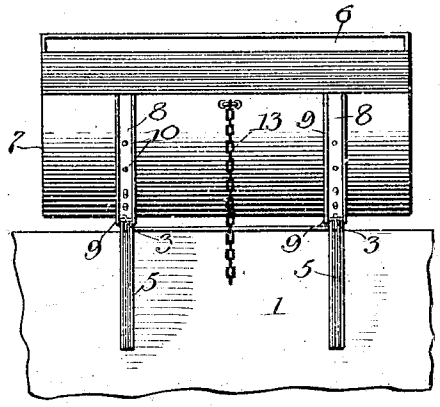


Fig. 3.

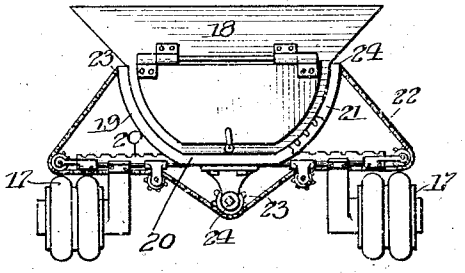


Fig. 5.

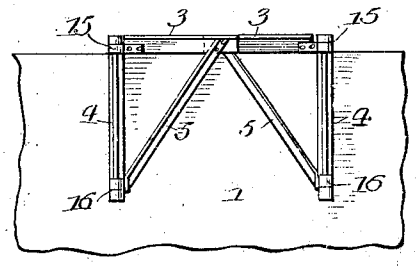
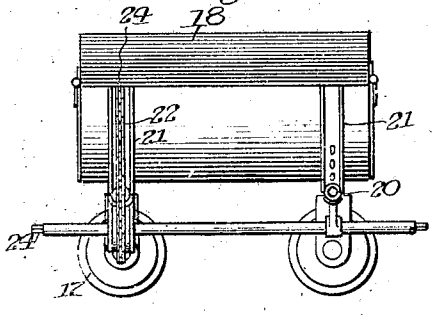


Fig. 4.



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MOVABLE LOADING-HOPPER.

1,157,010. Specification of Letters Patent. Patented Oct. 19, 1915.

Application filed October 29, 1912. Serial No. 728,398.

To all whom it may concern:

Be it known that I, ALBERT P. LEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Movable Loading-Hoppers, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to loading devices and has for its object the provision of a device of this character which may be readily and easily manipulated to take a load of material, to be thereupon moved into a discharge position, this movement taking place upon a suitable carrier or frame upon which this, what might be called movable hopper, may operate.

My invention will find various applications, and I will describe herein one form which it may take together with a modification.

In the particular form herein shown, I have what might be called a movable loading hopper which may roll upon a suitable framework, which framework is so arranged that it may for instance be placed upon the side of a gondola car, that is, a car of the ordinary flat car type having the necessary two sides and two ends. The device in this form is so arranged that this movable loading hopper may roll first into its charge receiving position and may thereafter be tilted to its alternate or load discharging position.

I will describe my invention more in detail by reference to the accompanying drawing illustrating the same in which—

Figure 1 is a side view of my improved loading device; Fig. 2 is an end view thereof; Fig. 3 sets forth an end view of a modification; Fig. 4 sets forth a side view of the modification in Fig. 3, and Fig. 5 sets forth the collapsible character of the framework.

Referring specifically to Figs. 1 and 2, I show a side wall 1 of a gondola car and the floor 2 thereof. The loading device consists of a framework which may be said to provide two rails 3, 3 preferably constructed of T iron. Two downwardly extending supporting members 4, 4 are secured to the rails 3 and are further held in place by the diagonal members 5, 5 respectively. The framework thus far described comprises the rail portion upon which the movable element may roll and of these rail portions there are two as is more readily apparent from an inspection of Fig. 2. These rail or frame portions are set over the side of the car as shown more in detail in Figs. 1 and 2. A movable hopper 6 has provided a lower circular wall 7 which is of such character in order to permit the said hopper to roll from one alternative position shown in dotted lines in Fig. 1 to its other alternative position shown in dotted lines in Fig. 1. The lower outside face of this circular portion of the hopper 6 is provided with two guide sections 8, 8 respectively having flanges 9, 9 so arranged that when this hopper is mounted upon the rails 3, 3 the flanges 9, 9 hold the frame portions in place and at the same time retain the hopper upon these rail portions so as to permit this hopper to roll freely from one alternative position to the other. In order further to guide the movement of the hopper over the rails 3, suitable pins 10 are provided adapted to engage openings or apertures 11 provided in these rails. Two chains 12 and 13 respectively are fastened to the opposite ends of the rail 3 and serve to limit the movement as shown in dotted lines in Fig. 1 to which said hopper may be subject.

In the operation of the device the hopper 6 is moved into the right hand position of Fig. 1 where it is loaded by operators within the car, whereupon this hopper is then moved into the left hand dotted position of Fig. 1 whereby it is permitted to discharge its contents over the chute 14 into possibly a waiting vehicle or otherwise as may be desired.

Normally when the hopper is upon the sides of the car it should occupy the right hand position of Fig. 1 so that the left hand extremities of the elements 3 and 5 may be swung about their pivots 15, 16 respectively against the sides of the car so that this car may be moved during the switching operations without having projections protruding from its sides which are liable to interfere with passing objects.

From what has been described it will be apparent as to what the invention herein comprises, the description herein setting forth one specific form which the invention may take.

Fig. 5 sets forth more in detail how the movable portions of the elements 3 and 5 may be swung inwardly as stated.

Referring more particularly to Figs. 3 and 4, I show a truck which may be of the ordinary automobile type having the wheels 17, 17 and having the hopper 18, which hopper has a bottom portion formed of a circular section 19, a straight section 20, and a further circular section 21. The straight section permits the hopper 18 to remain in its normal position. A chain 22 is attached at the points 23 and 24 to the sides of the hopper 18 and extends around suitable rollers to a driving wheel 23, which driving wheel through the agency of the shaft 24 may be suitably rotated to tilt the hopper 18 either to the right or to the left for discharging purposes as the case may be.

By referring to Fig. 4 it will be seen that the hopper 18 may also be tilted backwardly without interfering with the operation of he parts heretofore described as this tilting takes place along an axis lying in the plane of the chain 22.

Having thus set forth certain forms which my invention may take, what I claim as new and desire to secure by Letters Patent is:

1. A device of the character described having two elements comprising a framework, each element consisting of a rail and downwardly projecting portions adapted to straddle a wall, the protruding ends of each element being mounted to swing inwardly toward said wall, and a hopper adapted to ride upon said elements and to hold said elements in position.

2. A device of the character described having a framework including a rail and means for setting said framework to straddle a wall, a movable hopper movable upon said rail, the protruding end of said rail being mounted to swing toward said wall, and means for defining the throw of said hopper.

3. A device of the character described having a framework including a runway and means for setting said framework to straddle a wall, a movable hopper movable upon said runway, and means whereby the protruding end of said runway may be swung inwardly.

4. A device of the character described having a framework including a rail and means for setting said framework to straddle a wall, a movable hopper tiltable in opposite directions from its upright position movable upon said rail, and means whereby the protruding end of said rail may be collapsed.

5. A loading and unloading apparatus comprising a skelton framework, a movable hopper thereon, means whereby said hopper can roll unobstructedly on said framework from either side to the other of its central position, said opposite limiting positions representing respectively charge receiving and discharge positions, means to limit the movement of said hopper in one of its limiting positions so that it is tilted sufficiently to receive a charge, and means to automatically limit the movement of the hopper to its limiting alternative position whereby it is tilted sufficiently to discharge its load.

6. A loading and unloading apparatus comprising a framework, a movable hopper thereon, means whereby said hopper can roll unobstructedly on said framework from either side to the other of its central position, said opposite limiting positions representing respectively charge receiving and discharge positions, means to limit the movement of said hopper in one of its limiting positions so that it is tilted sufficiently to receive a charge, and means to automatically limit the movement of the hopper to its limiting alternative position whereby it is tilted sufficiently to discharge its load.

7. A loading and unloading apparatus comprising a framework, a movable hopper thereon, means whereby said hopper can roll unobstructedly on said framework from either side to the other of its central position, said opposite limiting positions representing respectively charge receiving and discharge positions, means to limit the movement of said hopper in one of its limiting positions so that it is tilted sufficiently to receive a charge, and means to automatically limit the movement of the hopper to its limiting alternative position whereby it is tilted sufficiently to discharge its load, said two last aforesaid means being interconnected between said hopper and said framework.

In witness whereof, I hereunto subscribe my name this 16th day of October A. D., 1912.

ALBERT P. LEE.

Witnesses:
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HAZEL JONES.