

No. 645,587.

Patented Mar. 20, 1900.

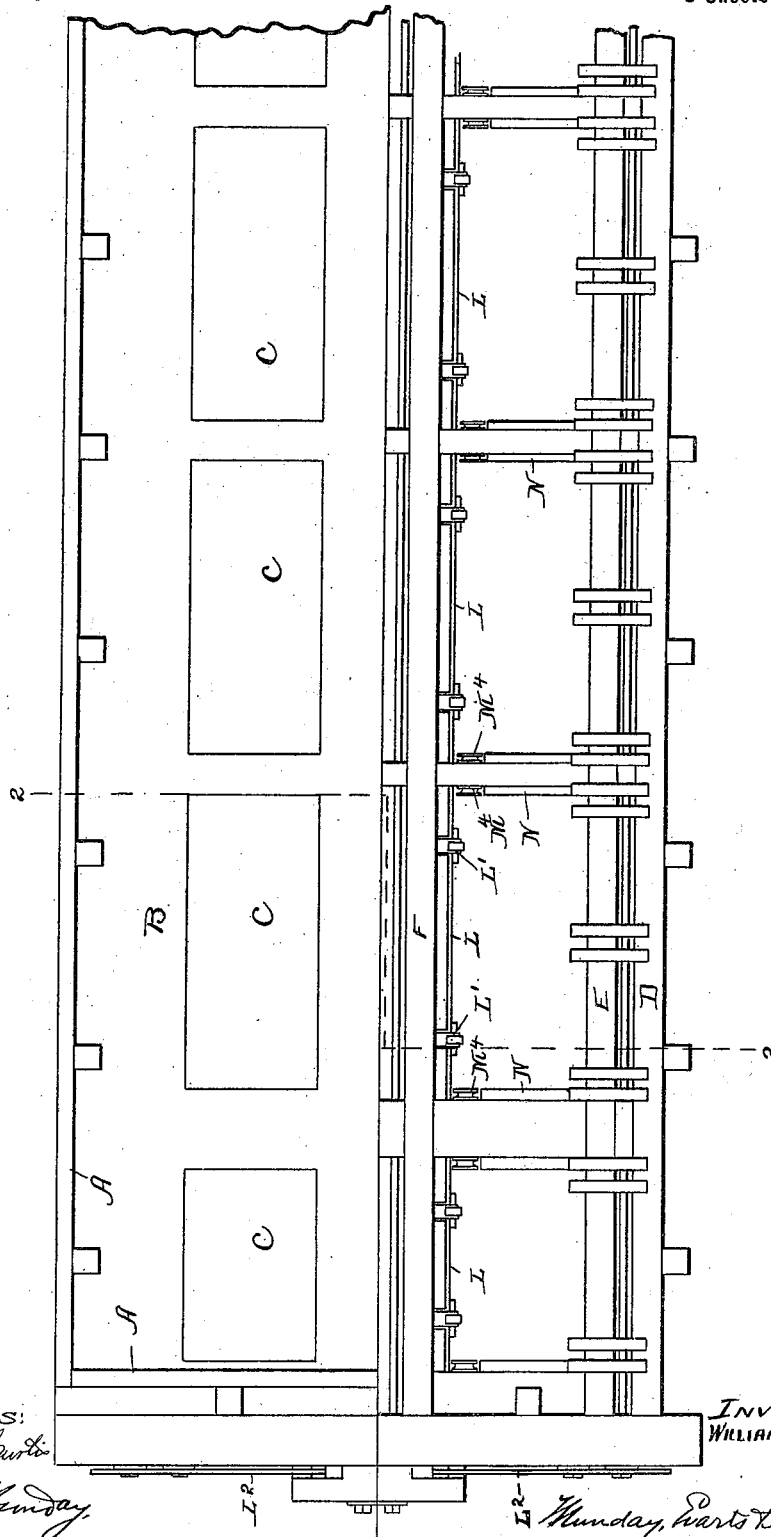
W. A. CASWELL.
DUMPING CAR.

(Application filed Aug. 23, 1899.)

(No Model.)

3 Sheets—Sheet 1.

FIG. 1.



WITNESSES:

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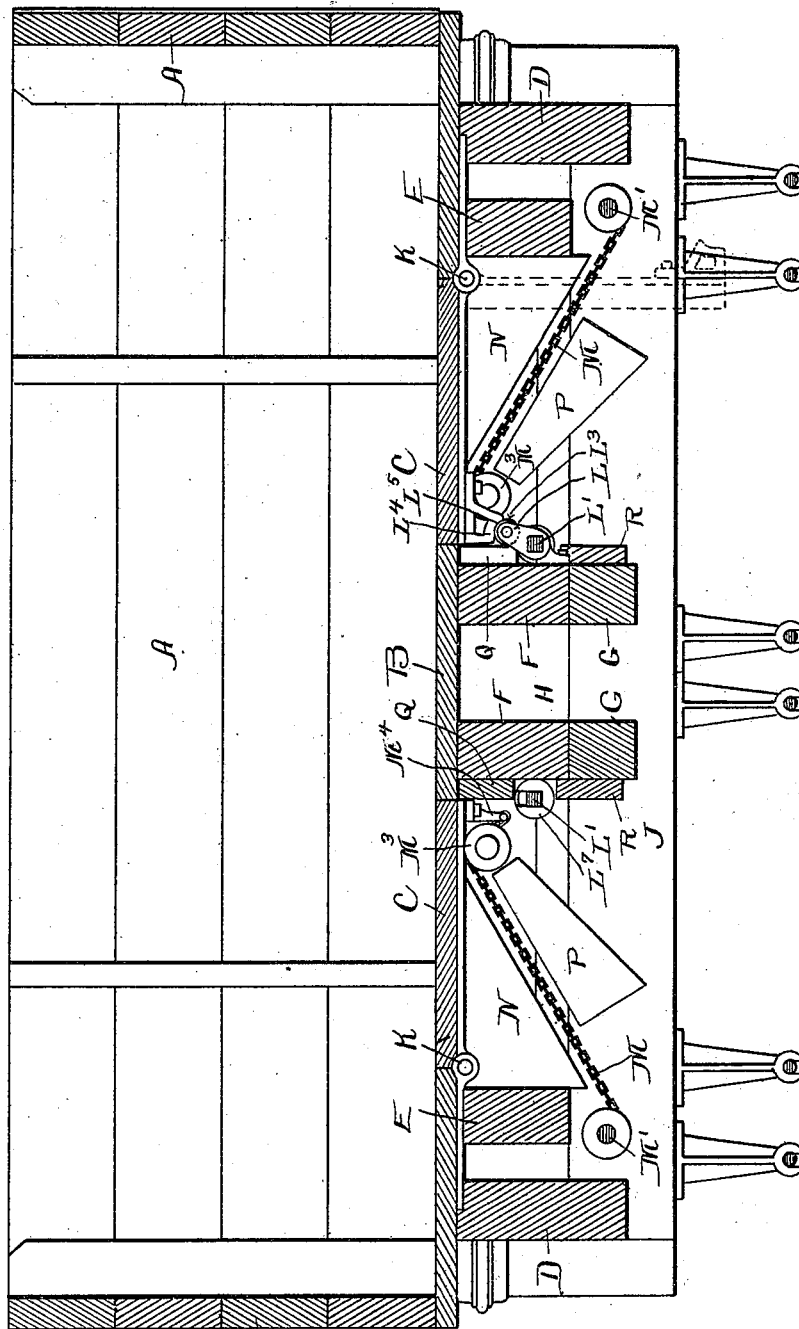
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3 Sheets—Sheet 2.

FIG. 2.



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FIG. 3.

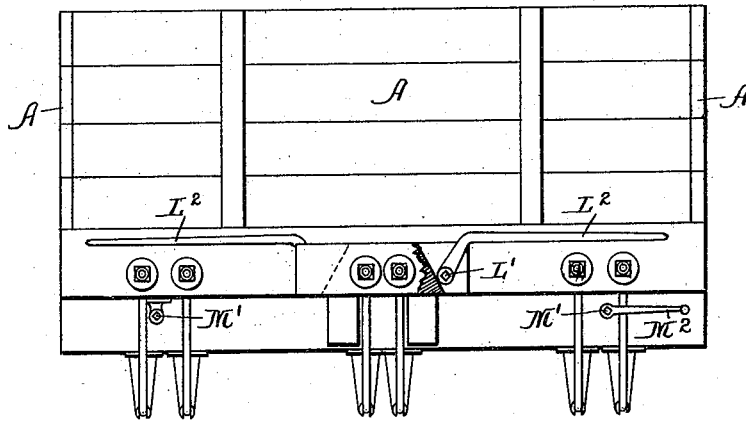


FIG. 4.

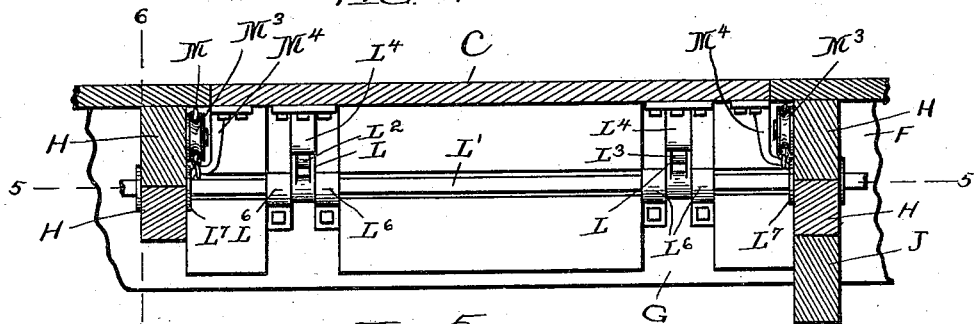


FIG. 5.

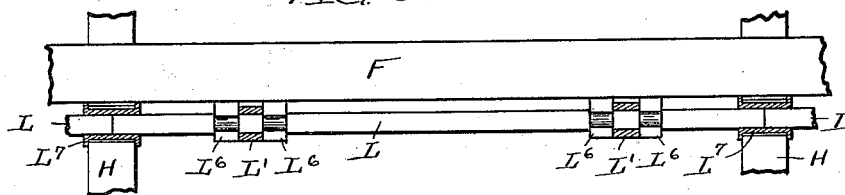
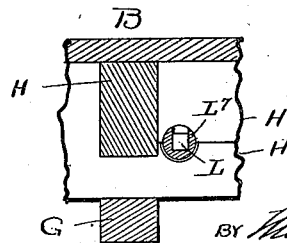


FIG. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM A. CASWELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CASWELL CAR AND IMPROVEMENT COMPANY, OF SAME PLACE.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 645,587, dated March 20, 1900.

Application filed August 23, 1899. Serial No. 728,183. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. CASWELL, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Dumping-Cars, of which the following is a specification.

This invention relates to the construction of flat-bottomed cars for carrying coal and other like materials in bulk and provided with trap-doors in the floor for the discharge of the load.

The invention lies more especially in the construction of the means for supporting and controlling the doors; and its main object has been to provide the doors with supports which can be easily and quickly operated to release the door with the weight of the load resting upon it.

The nature of the invention is fully set forth in the description given below and is also fully illustrated in the accompanying drawings, in which drawings—

Figure 1 is a partial plan of my improved car, the floor being omitted in part of the figure. Fig. 2 is a vertical section on the line 2 2 of Fig. 1. Fig. 3 is an end elevation. Fig. 4 is a partial vertical longitudinal section; and Figs. 5 and 6 are sections on the lines 5 5 and 6 6, respectively, of Fig. 4.

In said drawings, A represents the side and end walls of a gondola or similar car having a flat bottom B, in which are two series of trap-doors C C.

D D are the outer side sills, E E are intermediate sills, arranged close to the sills D D, and F F are center sills.

G G are the draft-timbers, H H are headers, and J is a cross-tie.

The doors are supported upon one side by hinges K and at the other or swinging side by swinging arms or catches L, mounted upon longitudinal rock-shafts L', operable by hand-levers L² at the ends of the car. The catches are provided at their upper ends with anti-friction-rollers L³, and the doors are provided in the case of each catch with a bearing-piece L⁴, having a slight recess L⁵ or seat adapted to receive the roller L³. The rock-shafts are preferably four in number, two on each side of the longitudinal center of the car, and they are supported by bearings L⁶, attached to the

center sills. The shafts are each also preferably made in short sections, extending only from one header to another, the sections being coupled together by coupling-sleeves L⁷. Said sleeves are made round exteriorly to enable them to rotate in the recesses in the headers and square interiorly to fit the shaft, which is also preferably square or angular. The sleeves have flanges at each end, whereby they are held in place in the headers, and they are also open upon the upper side to permit the insertion or removal of the shaft-sections sidewise instead of longitudinally, the bearings L⁶ being also open at the top to permit this. (See Fig. 5.) The latches have square openings, so they may be slid on the shafts and moved to place between the bearings L⁶, and thus be held in place without the aid of collars or set-screws.

The headers are made in two parts or beams, one part arranged directly over the other, as clearly shown in the drawings, this feature, together with the open-top couplings and bearings, being adopted in order that any one of the shaft-sections may, by first removing the floor and upper part of the headers at each end of the section, be lifted bodily from its position, together with the latches borne by it, without displacing any of the other sections. This gives full opportunity for the repair or replacing of the latches, as well as the shaft.

The doors are closed by chains M, attached at one end to a winding-shaft M' and passing over pulleys M³, supported by the headers, and from thence to the arms M⁴, attached to the under surface of the swinging side of the doors. Two of these chains are employed with each door; but they are not expected to sustain any part of the load on the door, but instead thereof merely act to close the door after it has been opened, and consequently do not need to be strong or heavy. The pulleys are located as near the floor as may be, and the arms M⁴ extend some distance below the pulleys, so that the chains are enabled to force the doors upward to a position in which they will be perfectly flush with the floor of the car. The winding-shafts are operated by cranks M², of which one is shown at Fig. 3.

As clearly shown in Fig. 4, the pulleys M³

are located in planes adjacent to but just outside the doors and under ledges of the floor projecting over the headers. I also secure to the headers filling-blocks N, covering the chains. These features prevent the coal from lodging on the pulleys or chains when it is being discharged from the car. Filling-blocks P are also preferably employed under the chains to prevent the latter from sagging between the pulleys and the winding-shaft. The rock-shaft may be similarly protected against the lodgment of the coal upon it or between it and the sill by a longitudinal strip of planking Q, attached to the sill just above it, and other planking R may be secured to the sill or draft timber below the shaft, as shown at Fig. 2.

By the construction set forth the doors are rendered very secure under the load, as the weight coming thereon is sustained by the sills F at one side and by the sill E at the other, one leaf of each hinge being supported directly by said sill E. The doors also when closed are flush all around with the floor of the car, thus enabling the use of the car with other kinds of freight, and the doors are released instantly and entirely by the latches, so that no injury is likely by reason of the door beginning to open before the fastenings are entirely withdrawn and out of the way.

I claim—

1. The car having a dumping-door in its bottom supported at one side by hinges and at the other side by latches mounted on a support located outside the path of the door and below the bottom of the car, said latches setting under the free edge of the door and having a short movement past said edge in a direction away from both the free and the hinged edges of the door so that they are enabled to move instantly out from under the door and thereby avoid interference with it, substantially as specified.

2. The car having a dumping-door in its bottom supported at one side by hinges and at the other side by latches mounted on a support located outside the path of the door and below the bottom of the car, both the hinges

and the support being directly sustained by floor-sills of the car, said latches setting under the free edge of the door and having a short movement past said edge in a direction away from both the free and the hinged edges of the door so that they are enabled to move instantly out from under the door and thereby avoid interference with it, substantially as specified.

3. The combination with the hinged dumping-door of a flat-bottomed car, of the latches having rollers in their upper ends, the rock-shaft supporting and operating the latches and the bearing-pieces beneath the door and having recessed seats for the rollers, substantially as specified.

4. The combination with the hinged dumping-doors, of devices for supporting the doors in their closed position, and a shaft for operating said supporting devices, said shaft being made in sections coupled together, substantially as specified.

5. The combination with the hinged dumping-doors, of devices for supporting the doors in their closed position, and a shaft for operating said supporting devices, said shaft being made in separately-removable sections detachably coupled together, substantially as specified.

6. The combination with the rock-shaft for operating the door-supporting devices of a dumping-car, said shaft being made in sections detachably coupled together, of bearings for the shaft open at the top and headers made in two parts, substantially as specified.

7. The combination with the rock-shaft for operating the door-supporting devices, said shaft being made in sections, of coupling devices for uniting the sections and made open at the top, headers supporting said coupling devices and made in two parts, and bearings for the shaft intermediate of the headers and open at the top, substantially as specified.

WILLIAM A. CASWELL.

Witnesses:

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H. M. MUNDAY.