

(No Model.)

2 Sheets—Sheet 1.

S. J. JOHNSON.  
DUMPING CAR.

No. 571,484.

Patented Nov. 17, 1896.

Fig. 1

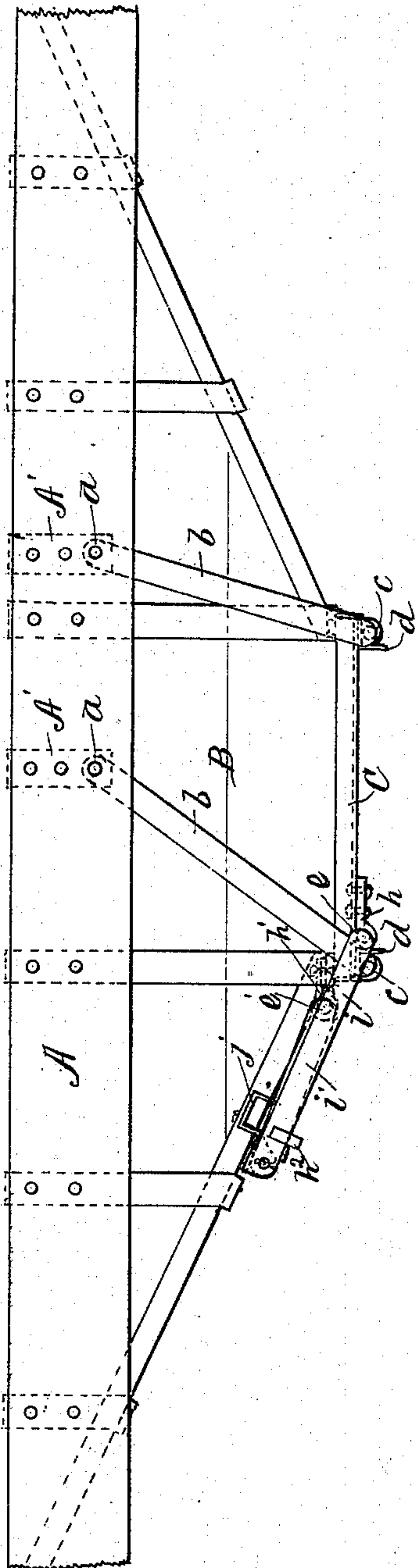
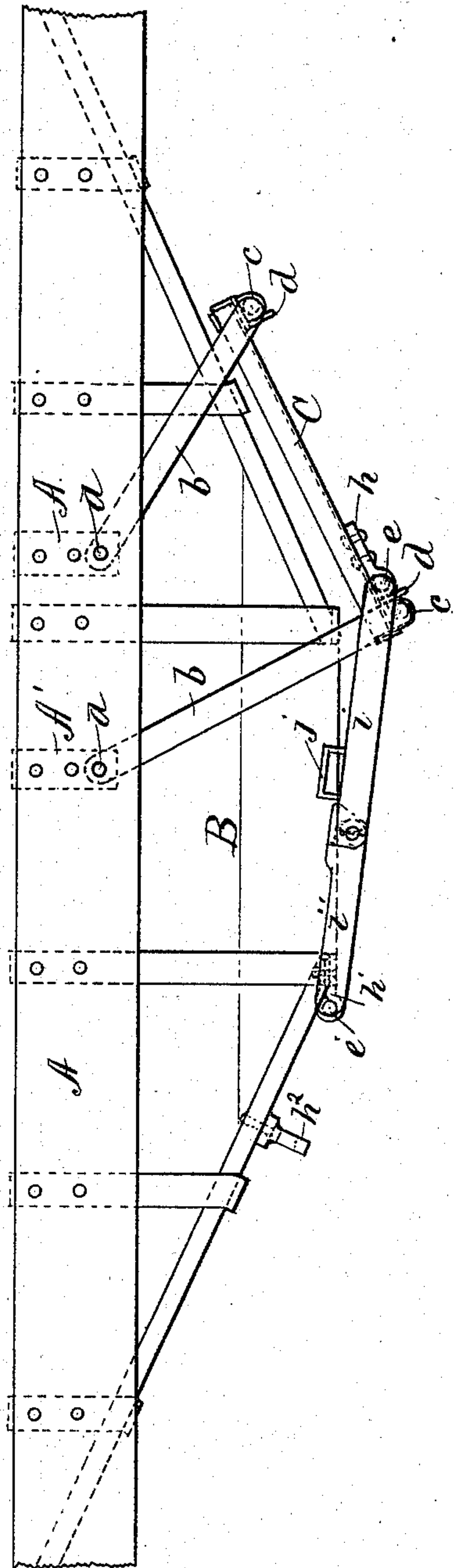


Fig. 2



WITNESSES:

*M. A. Cassidy*  
*Edward M. Bliser*

INVENTOR

*Sinclair J. Johnson*  
BY  
*Hubert A. Baunig*  
ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

S. J. JOHNSON.  
DUMPING CAR.

No. 571,484.

Patented Nov. 17, 1896.

Fig. 3

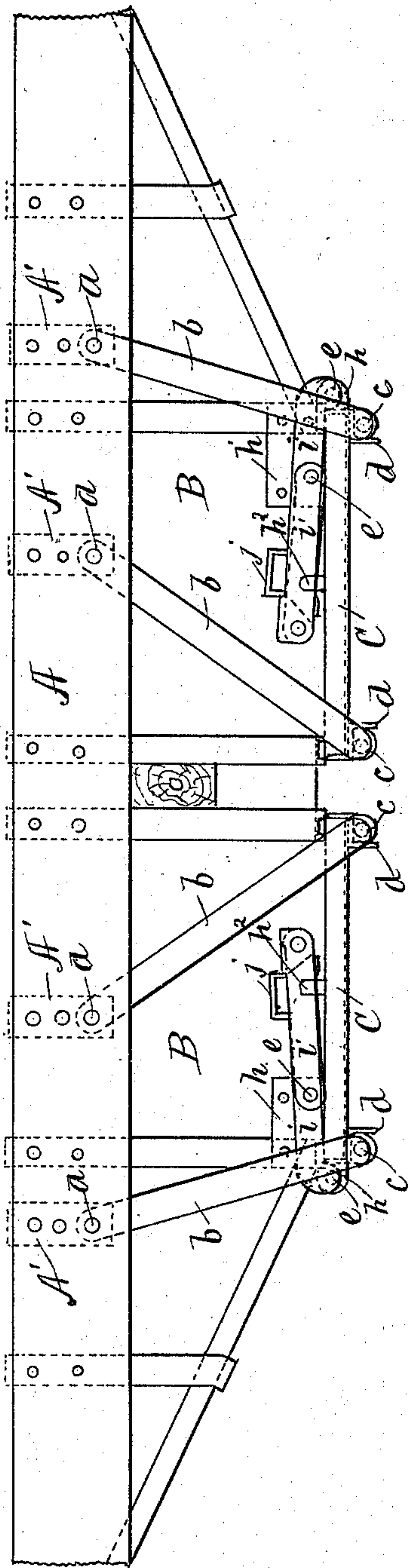
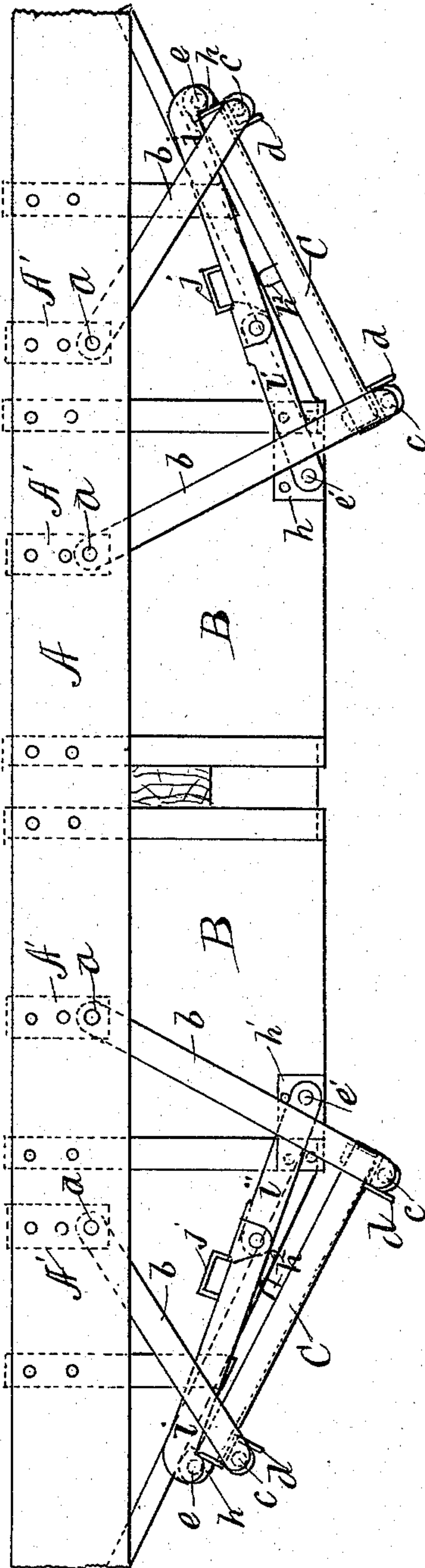


Fig. 4



WITNESSES:

*M. A. Cassidy*  
*Edward M. Blower*

INVENTOR

*Samuel J. Johnson,*  
BY  
*Hubert A. Manning,*  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

SINCLAIR J. JOHNSON, OF NEW YORK, N. Y.

## DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 571,484, dated November 17, 1896.

Application filed July 25, 1896. Serial No. 600,480. (No model.)

*To all whom it may concern:*

Be it known that I, SINCLAIR J. JOHNSON, a citizen of the United States, and a resident of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Dumping-Cars, of which the following is such a full, clear, concise, and exact description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention is applicable for use upon hopper-bottom gondola cars, ore-cars, and some other styles of dumping-cars. It has for its objects the construction and hanging of the gate or gates which close the bottom of the hopper or part from which the load is dumped in such manner as to facilitate opening and closing and avoid the objections to hinged gates when open, as well as other objections which have heretofore been experienced.

The invention consists in combining with the car one or more gates suspended by two hangers pivoted at each end and in such manner as to cause the gate to vibrate or swing open or shut by bodily receding or advancing, and also in so pivoting said hangers as to bring the gate out of the center of gravity when closed, thereby giving a leverage to assist in opening when the fastenings are released, all as hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of the hopper of a hopper-bottom gondola car having a single gate at the bottom of the hopper suspended by two straps or hangers at each end of the gate, so as to turn both on the pivots which are secured to the car and from those on the gates, the gate being shown as closed and out of the line of the center of gravity. Fig. 2 is a similar view, but showing the gate open instead of closed. Fig. 3 is a similar view showing the gates as applied to a divided or double hopper and both of them closed, while Fig. 4 shows the gates on a divided or double hopper, but open instead of closed.

The mechanism which is shown in the drawings and referred to herein as one means for opening and closing the gates is not the sub-

ject of the present application, the same being embraced in and covered by an application filed by me on even date herewith, Serial No. 600,479, as a division of an application filed by me on February 24, 1896, Serial No. 580,557.

In the drawings, A represents the side sill of a hopper-bottom car, and B the hopper for the same. The gate C is shown as being made to close the bottom of the hopper, and when opened the coal or other load passes out beneath the car. The gate C is pivotally secured at *c c* to hangers *b b*, which support each edge, such hangers being pivoted at their upper ends by bolts *a a*, passing through the side sill A and through plates A', or they may be secured in any other suitable way. The hangers *b b* are of unequal length and preferably placed to be at different angles to the gate when closed, the longer one having the greater incline and being made to support the front edge of the gate, and when closed the gate takes practically a horizontal position and lies beyond the center of gravity. In this arrangement the tendency will be for the front edge of the gate to drop away from the load, swinging down and back, so that such edge will move more rapidly and describe the arc of a greater circle than the rear edge. This movement not only enables the gate to clear the edge of the hopper, but it also greatly facilitates the opening when the car is loaded, and especially when the gate is frozen in the winter.

Of course a car having a single hopper may have double gates if desired, though in the drawings I have shown a single gate covering the entire exit for the load, the mechanism for opening and closing which, as before stated, is covered by another application, and is shown as consisting of a shaft *e*, secured to the gate by an iron *h* or otherwise, which shaft may be provided with a bar *i*, having a knuckle-joint at its end, with another bar *i'*, projecting from another shaft or pivot *e'*, secured to the under side of the hopper or car by an iron or connection *h'*. I prefer also to provide a rest *h<sup>2</sup>* in such a position on the hopper or on the gate that the knuckle-joint when the gate is closed will be on or below the line of dead-center of the pivot-points of the shafts *e* and *e'*, so as to make a secure



fastening. I may also provide a handle *j'* for operating the bars *i* and *i'*, which is done by a swinging or rotary movement, causing the separation of the bars, as in Figs. 2 and 4, in which cases the gate is open, or by the reverse movement folding them together, as in Figs. 1 and 3, where the gate is shown as closed.

It is obvious that variations in detail may be made without departing from the substance of my invention, and I do not therefore intend to confine myself too closely to matters of detail, nor is it my purpose in this application to claim a gate having less than two hangers separately pivoted at each end, though more than two may be used if found desirable for securing sufficient strength, as when a large gate is used.

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

1. In combination with a dumping-car, a gate for opening and closing the exit for the load, said gate being suspended by two hangers having one end of each pivotally connected therewith and the other end of each pivotally connected at different points above said gate, one of said hangers being placed to be at a different angle from the other with reference to the gate, and one of said hangers being longer than the other, whereby one edge

of said gate may be dropped lower than the other during the opening substantially as described.

2. In combination with a dumping-car, a gate for opening and closing the exit for the load, said gate being suspended by two hangers having one end of each pivotally connected therewith and the other end of each pivotally connected at different points above said gate, one of said hangers being longer than the other.

3. In combination with a dumping-car, a gate for opening and closing the exit for the load, said gate being suspended by two hangers having one end of each pivotally connected therewith and the other end of each pivotally connected at different points above said gate, one of said hangers being placed at a different angle to the gate when closed from the other hanger substantially as described.

4. In combination with a dumping-car, a gate for opening and closing the exit for the load, said gates being suspended by two hangers, one end of each pivotally connected therewith, and the other end of each pivotally connected at different points above the said gate.

SINCLAIR J. JOHNSON.

Witnesses:

R. J. MARSTON,

A. G. N. VERMILYA.