

(No Model.)

S. J. JOHNSON.
DUMPING CAR.

No. 571,483.

Patented Nov. 17, 1896.

Fig. 1.

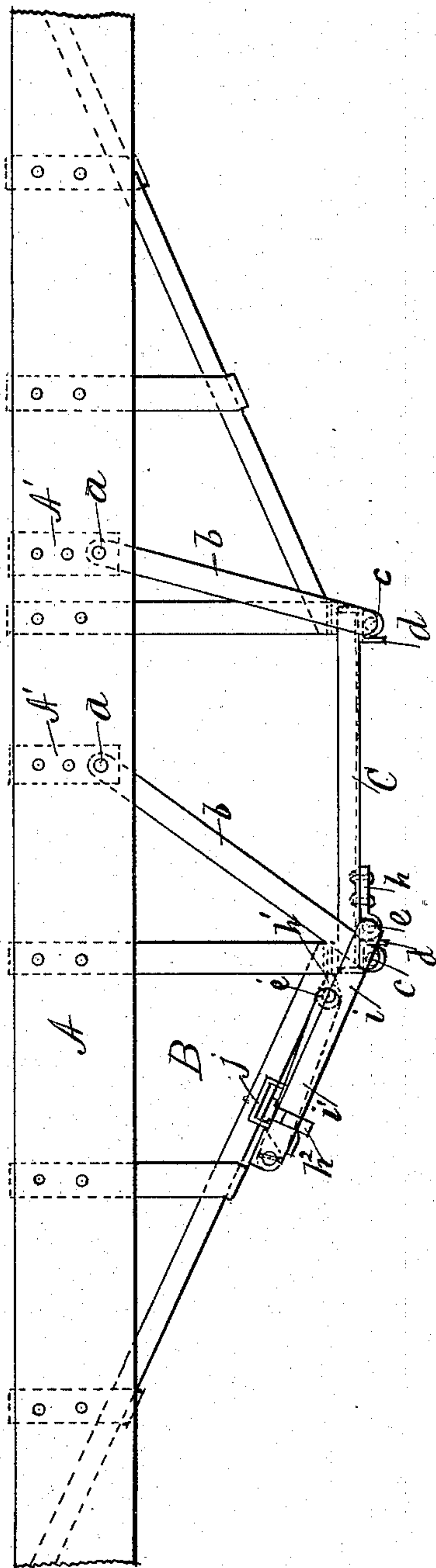
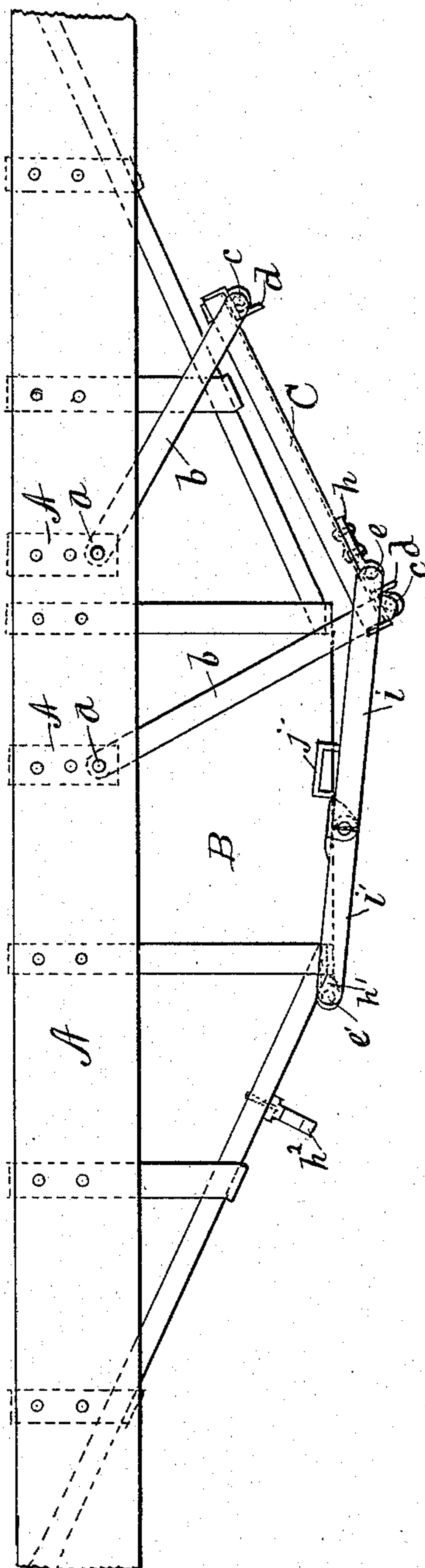


Fig. 2.



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DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 571,483, dated November 17, 1896.

Original application filed February 24, 1896, Serial No. 580,557. Divided and this application filed July 25, 1896. Serial No. 600,479. (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 object the combination, with the gate which closes the exit for the load, of mechanism for opening and closing the same, so as to avoid some of the difficulties heretofore experienced, and afford a more convenient means for holding the gate open or closed; and the invention consists of the parts and combinations hereinafter more fully described, and pointed out in the claims.

This application is a division of one filed by me on February 24, 1896, Serial No. 580,557.

The drawings illustrate the invention in combination with a hopper-bottom gondola car having an oscillating gate, as more fully shown and described in an application filed by me on even date herewith, Serial No. 600,480, but it will be understood that the improvement is applicable to other styles of gate.

In the drawings, Figure 1 is a side view of a portion of a hopper-bottom gondola car having its hopper provided with a gate suspended by two hangers pivotally connected at each end and showing the mechanism for opening and closing the same in the position assumed when the gate is closed. Fig. 2 is a similar view showing the gate open and the mechanism in the position assumed at such time.

In the drawings, A represents the side sill, and B the hopper, of a hopper-bottom gondola car, in which the load passes out at the bottom of the hopper when the gate C is open. All cars are not, however, provided with a "hopper," technically so called, and hence this word is used in a broad sense for the purpose of designating thereby the part of the car which is provided with an exit for the

load and which exit is opened or closed by the gate.

The gate C is shown in the drawings as being suspended from the car by straps or hangers *b b*, pivoted at their upper ends to the side sill A by bolts *a a* passing through the same, or by passing through plates *a' a'* and the side sill, or in any other suitable way. These hangers, as shown, are also pivotally connected with the opposite edges of the gate by bolts or pivots *c c*, so that the gate may be made to oscillate on the pivotal connections when being opened or closed, though this movement is not essential to the operation of the mechanism for opening and closing them. Such mechanism is operated by a shaft secured to the gate or to the car and having lever connections therewith.

A shaft *e* is secured at each end of the gate C, underneath the same, by an iron *h*, or it may be secured on the hopper or a portion of the car, and preferably extends the length of the gate to receive the lever connections at each end for opening and closing. Each end of the shaft, or, if desired, a separate piece at each end, forms projections or bars *i* along or near the ends of the gate and crosswise thereof, and these bars are pivoted at their outer ends to another bar *i'*, a knuckle-joint being preferably formed at such union. The bar *i'* is in like manner secured by a shaft or pivotal connection *e'*, held in place by an iron or connection *h'*. I prefer also to provide a rest *h²* in such a position on the hopper 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. One of the levers or bars *i* or *i'* may also be provided with a handle *j* for operating the same, though this can be done by taking hold of one of the bars.

As seen in Fig. 1, the gate is closed and the bars *i* and *i'* are folded together. The operation of opening consists in separating the bars so as to cause the gate to swing away from the exit, and this is effected by swinging the bars up and over, so that they become spread, and when the limit of movement allowed by the knuckle-joint is reached they will form practically one continuous bar, held at one end by one of the shafts or pivotal connec-

tions *e* or *e'*, while the other has changed its position and moved the gate with it until open. A reverse movement and folding of the bars together will close the gate.

- 5 It is obvious that various applications of the mechanism for opening and closing the gates may be made to different styles of gate for dumping-cars and that changes may be made in the details and arrangements of parts
10 without departing either from the spirit or substance of my invention.

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

- 15 1. In a dumping-car, the combination of a gate adapted to close the exit for the load, a lever-arm having one end pivotally secured on the under side of said gate, a second lever-arm having one end jointed to the outer end
20 of the first, and the other end pivotally secured on the under side of the car, said lever-arms being adapted to be spread and open the gate and to be folded and close the same.

2. In a dumping-car, the combination of a

gate adapted to close the exit for the load, a 25 shaft having its bearings on the under side of said gate, a lever-arm projecting from said shaft, a second lever-arm jointed to the outer end of the first and pivotally secured at its other end on the under side of the car, said 30 lever-arms being adapted to be spread and open the gate, and to be folded and close the same.

3. In a dumping-car, the combination of a 35 gate suspended by hangers adapted to oscillate in opening and closing the exit for the load, a lever-arm pivotally secured to said gate, a second lever-arm jointed to the outer end of the first and pivotally secured at its other end on the under side of the car, said 40 lever-arms being adapted to be spread and open the gate and to be folded and close the same.

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