

(No Model.)

2 Sheets—Sheet 1.

F. E. CANDA.

DUMPING CAR.

No. 396,140.

Patented Jan. 15, 1889.

Fig. 1.

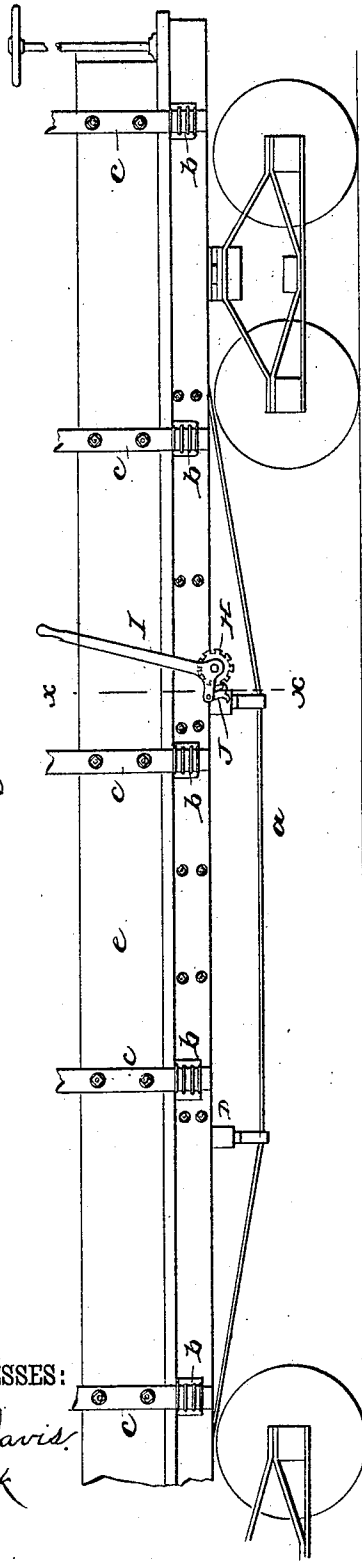
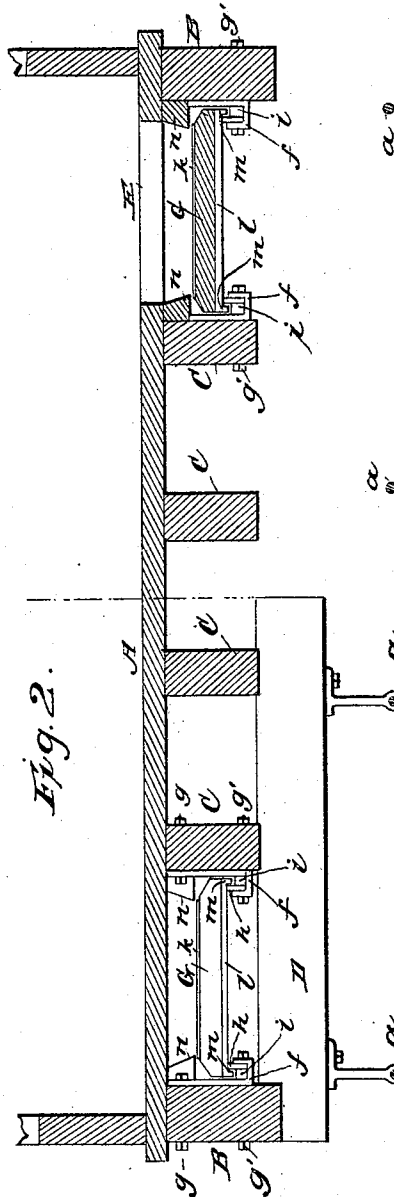


Fig. 2.



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(No Model.)

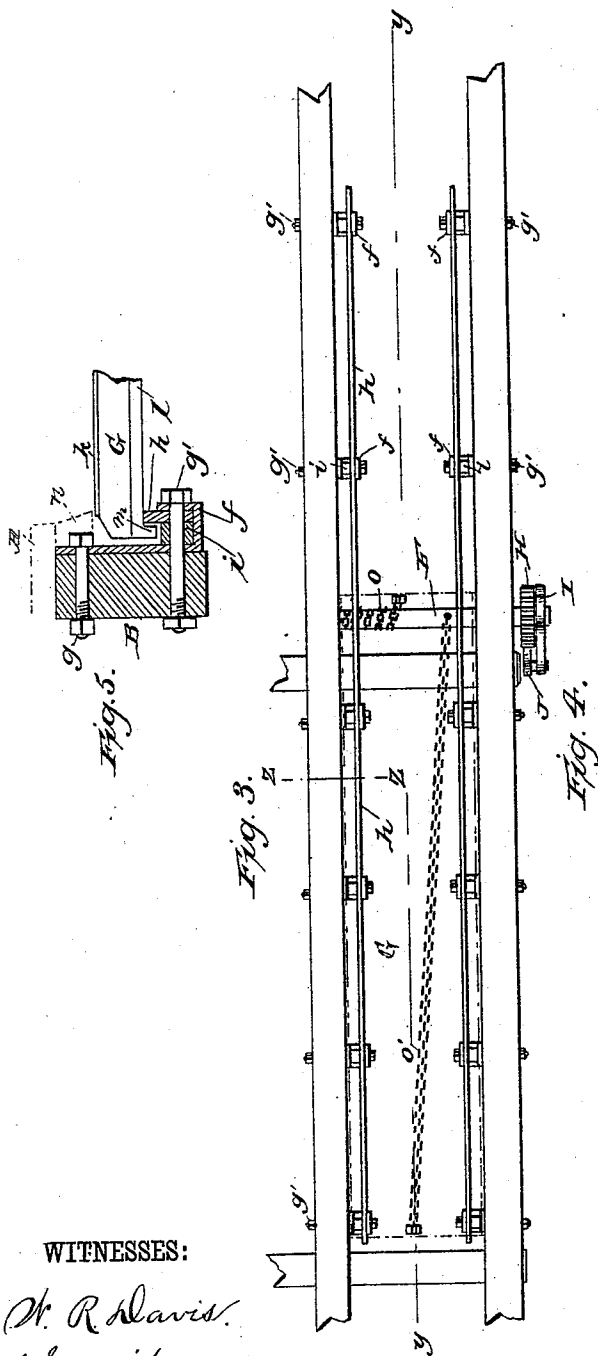
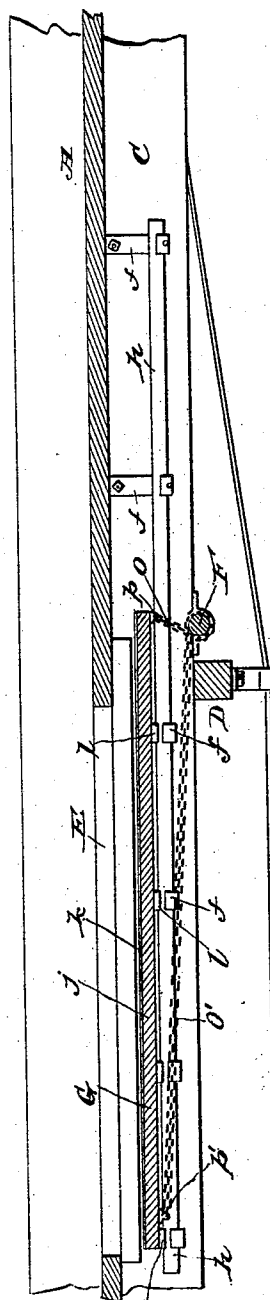
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

FERDINAND E. CANDA, OF NEW YORK, N. Y.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 396,140, dated January 15, 1889.

Application filed March 9, 1888. Serial No. 266,674. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND E. CANDA, of the city, county, and State of New York, have invented a new and Improved Dump-

ing-Car, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—
Figure 1 is a partial side elevation of a dumping-car to which my improvement has been applied. Fig. 2 is an enlarged vertical transverse section of the same, the section being taken on line *x x* in Fig. 1. Fig. 3 is a plan view of a portion of the car-bottom with the floor removed. Fig. 4 is a longitudinal section taken on line *y y* in Fig. 3, and Fig. 5 is an enlarged transverse section taken on line *z z* in Fig. 3.

Similar letters of reference indicate corresponding parts in all the views.

This invention relates to dumping-cars the floors of which are provided with one or more discharge-apertures that are closed, when required, by a sliding door or doors, as distinguished from a hinged door or doors, which are objectionable. Such dumping-cars are superior in many respects to those in which the entire floor has been arranged for inclination at a suitable angle for dumping, as also those in which the car has been provided with a hopper-shaped bottom having doors at the point of discharge.

My invention consists in certain novel constructions and combinations of parts in a dumping-car of the description above referred to, substantially as hereinafter described, and pointed out in the claims, and whereby not only great strength and perfect efficiency are secured, but the sills which support the floor of the car are kept intact, and also virtually serve to carry or support the sliding door or doors that control the dumping aperture or apertures in the floor of the car.

In carrying out my invention I may apply any required number of the sliding doors to the car, and may arrange them in any desired position in the floor of the car. In the present case I have shown two such doors in the bottom of the car, and as the said doors and fittings are precisely alike a description of one of them will answer for both.

The platform of the car is of the usual con-

struction, consisting of the floor A, laid upon the longitudinal sills B C, the said longitudinal sills being in turn supported by the cross-sills D, and the entire structure of the car-platform being stiffened by longitudinal truss-rods *a*, in the usual way. The side sills, B, are provided with stake-pockets *b* for receiving stakes *c*, which support the side boards, *e*. Above the space between two of the longitudinal sills, preferably the exterior sill, B, and the adjacent intermediate sill, C, in the floor A, is formed a discharge-opening, E, whose width is a little less than that of the space between the said sills, and whose length is as great as may be desired. To adjacent sides of the said sills B C are secured hooks or brackets *f*, preferably formed of bars of iron or steel bent twice at right angles, the arms thus made being parallel with each other, the longer arm of each hook or bracket being secured to the sills by bolts *g g'*. Within the shorter arms of the hooks or brackets, and resting upon the horizontal part thereof, is a bar or rail, *h*, which extends parallel with the inner face of the sills B C and with the floor A. The bars or rails *h* are held in place in the hooks or brackets *f* by distance-pieces *i* and by the bolts *g'*, which pass through both arms of the hook or bracket, through the bar or rail *h*, and through the said distance-pieces. The bars or rails *h* are prolonged beyond one end of the opening E in the car-platform to support the sliding door G when open.

The sliding door G is formed of planks *j*, either with or without an iron covering-plate, *k*. To the under surface of the door are fitted the metallic cleats *l*, having the angled ends *m*, which extend a short distance downward over the outer surfaces of the bars or rails *h*, thus forming a complete guide for the sliding door G. The edges of the door G are beveled from the upper surface, and above the opposite edges of the door and surrounding same are arranged beveled cleats *n*, which are secured to the sills B C and extend over the edges of the door beyond the beveled parts thereof. The door may be moved horizontally in both directions upon or along the bars or rails by any suitable operating mechanism—such as windlass and chain, endless screw, or

rack and pinion, or other well-known devices—and therefore I do not limit myself to any particular form of operating mechanism; but for the purpose of illustration I will now
 5 describe a windlass and chain used by me and shown in my said drawings for said purpose.

Near one end of the opening E, and near the mid-length of the bars or rails *h*, a windlass, F, is journaled in boxes secured to the sills B C. To the windlass are attached two chains, *o o'*, arranged to be wound in opposite directions upon the windlass F, so that as one chain is wound upon the windlass the other
 5 will be unwound. The chain *o* is attached by an eye, *p*, to the end of the door G, which is to be drawn when the said door is closed, and the chain *o'* is attached by an eye, *p'*, to the opposite end of the door. The axle of the windlass is prolonged beyond the side of the car and furnished with a ratchet-wheel, H, secured thereto, and an angled lever, I, mounted loosely upon the said axle. To the shorter arm of the lever I is pivoted a double
 5 pawl, J, which is adapted to engage the ratchet-wheel H, so as to move it in either direction, according as the door G is to be opened or closed. When the pawl and ratchet is arranged so as to wind the chain *o'* and allow the chain *o* to unwind as the lever I is oscillated, the door G will be moved along the bars or rails *h* as far as is necessary for the dumping of the load. When the pawl and ratchet is arranged to wind the chain *o* and
 5 unwind the chain *o'*, the door G will be closed when the lever I is oscillated.

With my improved construction the clogging of the door is prevented by allowing the dust and smaller particles of material to escape between the beveled cleats *n* and beveled edges of the door G and fall between the bars or rails *h* and the sills B C. This provides a free or open space between the edges of each door and its supports for the escape of small
 5 particles which could otherwise clog the door.

It will be observed that the portion of the load lying upon the door G is supported by the bars or rails *h*, each securely held in position by the supporting hooks or brackets *f*, and that the said door is capable of sustaining as much weight as any portion of the car-floor of like area. For this reason the car is
 5 able to carry a greater load than a car provided with hinged doors for dumping.

Another advantage secured by my improvement is, that the application of the sliding doors does not necessitate the cutting of the sills or any change in the arrangement of the longitudinal truss-rods. The car may, therefore, have the full strength of a platform-car of the best construction.

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

5 1. In a dumping-car having a substantially flat bottom or floor, and which dumps directly

through one or more discharge-apertures in said floor, the combination, with said floor and the sills which support it on opposite sides of the discharge aperture or apertures therein, of the horizontally moving or sliding door or
 70 doors adapted to close said aperture or apertures below the level of the floor and arranged for support by said sills, substantially as specified.

2. In a dumping-car, the combination, with the car-floor and the sills which support said floor on opposite sides of one or more dumping or discharge apertures therein, of one or more horizontally-sliding doors adapted to close said aperture or apertures below the level of the floor and above the bottoms of the sills and arranged for support by and between the sills, and suitable operating mechanism for opening and closing said door or doors,
 80 substantially as specified.

3. In a dumping-car, the car-floor provided with a discharge-orifice, in combination with a horizontally-moving door to open and close said orifice, and constructed, in connection
 90 with its supports, to leave, when the dumping-orifice is closed, a free or open space between the edges of said door and its supports for the escape of small particles which could otherwise clog the door, essentially as described.

4. In a dumping-car, the combination, with a car-floor provided with a discharge-aperture, of beveled cleats fixed at the sides of the aperture and a horizontally-moving door arranged to operate below the beveled cleats
 100 and adapted to close the said discharge-aperture, substantially as specified.

5. In a dumping-car, the combination, with the car-floor A, provided with the discharge-aperture E, of the beveled cleats *n*, arranged
 105 at the side of the said aperture and below the car-floor, the horizontally-moving door G, provided with beveled edges, the bars or rails *h*, adapted to support the said door, and series of hooks or brackets *f*, secured to the car-sills and carrying the bars or rails *h*, substantially as specified.

6. In a dumping-car, the combination, with the horizontally-moving door G, of the door-supporting bars or rails *h* and the hooks or brackets *f*, the said door G being arranged
 115 with an intervening space between its edges and its supports for the escape of dust or particles which could clog the door, substantially as specified.

7. In a dumping-car, the combination, with the horizontally-moving door, of the metal cleats *l*, provided with angled ends *m*, and the supporting bars or rails *h*, substantially as specified.
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8. The combination, with the horizontally-moving door G, of the metal cleats *l*, provided with angled ends *m*, the supporting bars or rails *h*, the hooks or brackets *f*, and the distance-pieces *i*, substantially as specified.
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9. In a dumping-car, the combination, with the horizontally-moving door G, adapted to
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close the opening in the car-floor, of the plate
k, secured to the upper surface of the said
door, substantially as specified.

5 10. In a dumping-car, the combination of
the car-floor A, provided with an aperture, E,
the beveled cleats n, arranged at the sides of
the aperture, the hooks or brackets f, the bars
or rails h, the distance-pieces i, the horizon-

tally-moving door G, provided with the me-
tallic cleats l and with the metallic covering 10
k, and suitable mechanism for operating the
same, substantially as described.

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Witnesses:

E. M. CLARK,
EDGAR TATE.