

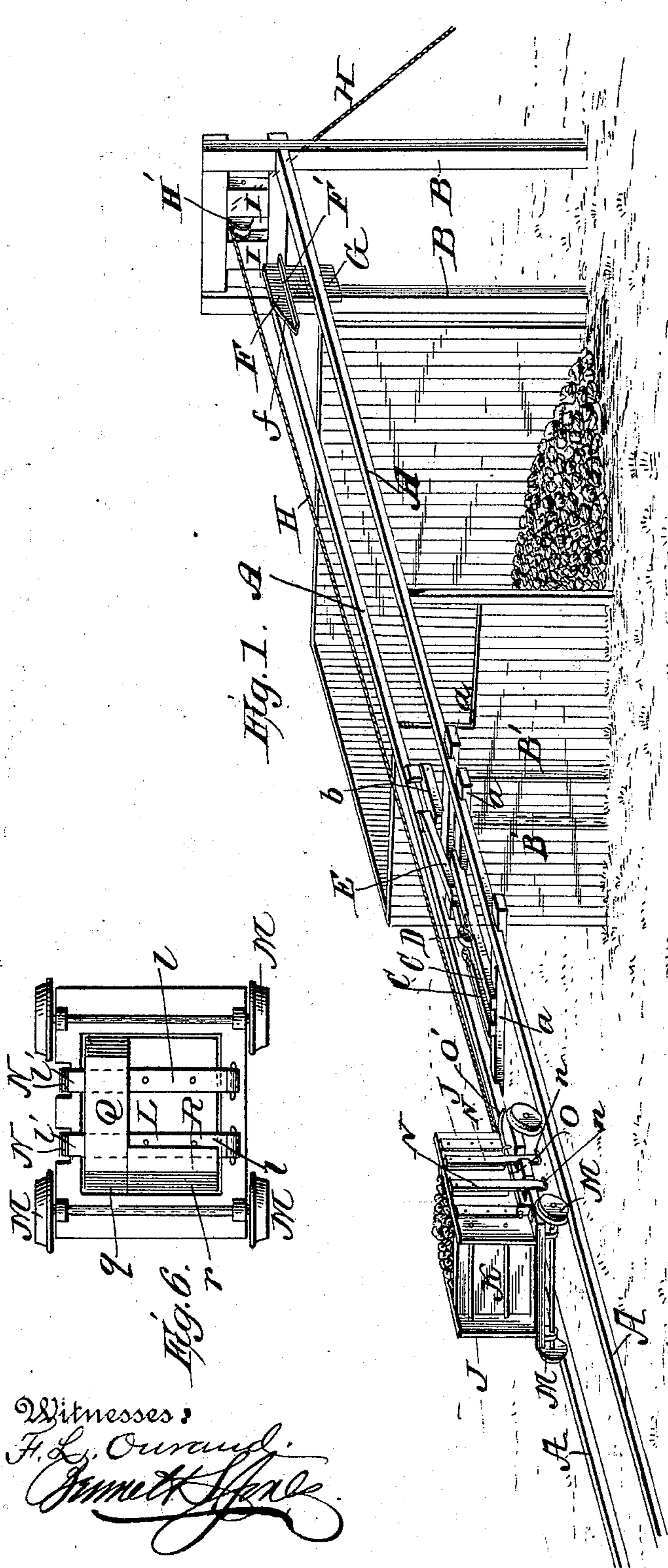
(No Model.)

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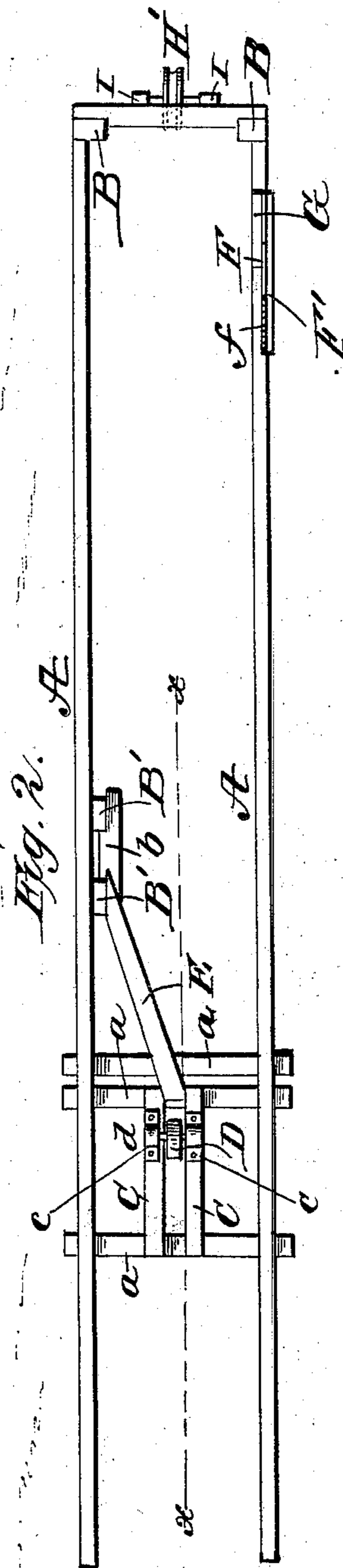
J. P. WHILDEN.
DUMPING CAR.

No. 547,309.

Patented Oct. 1, 1895.



Witnesses:
H. L. Ourand.
J. M. L. Spence.



Inventor:
Joseph P. Whilden,
by Louis Baggerly.
his Attorney.

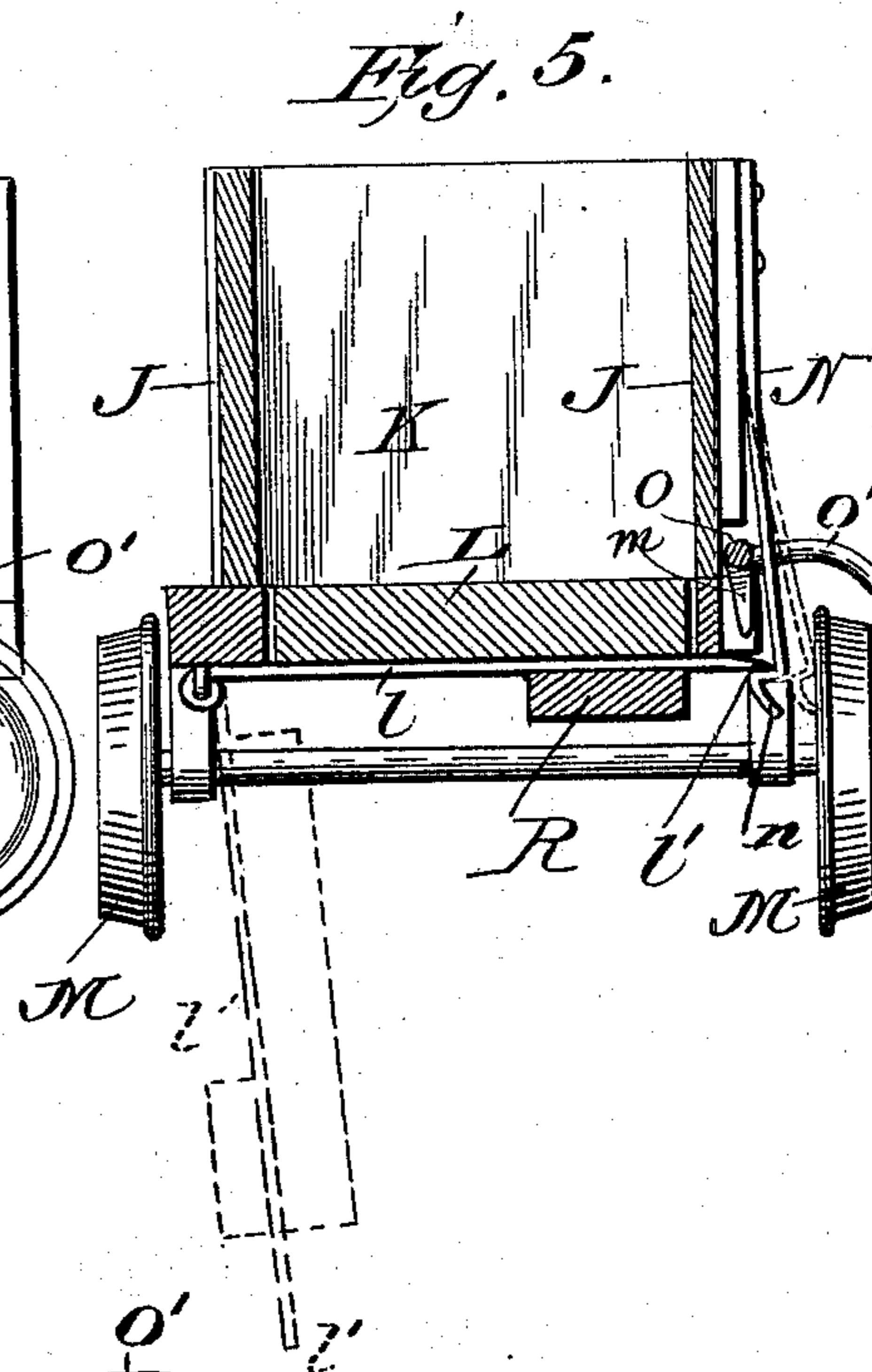
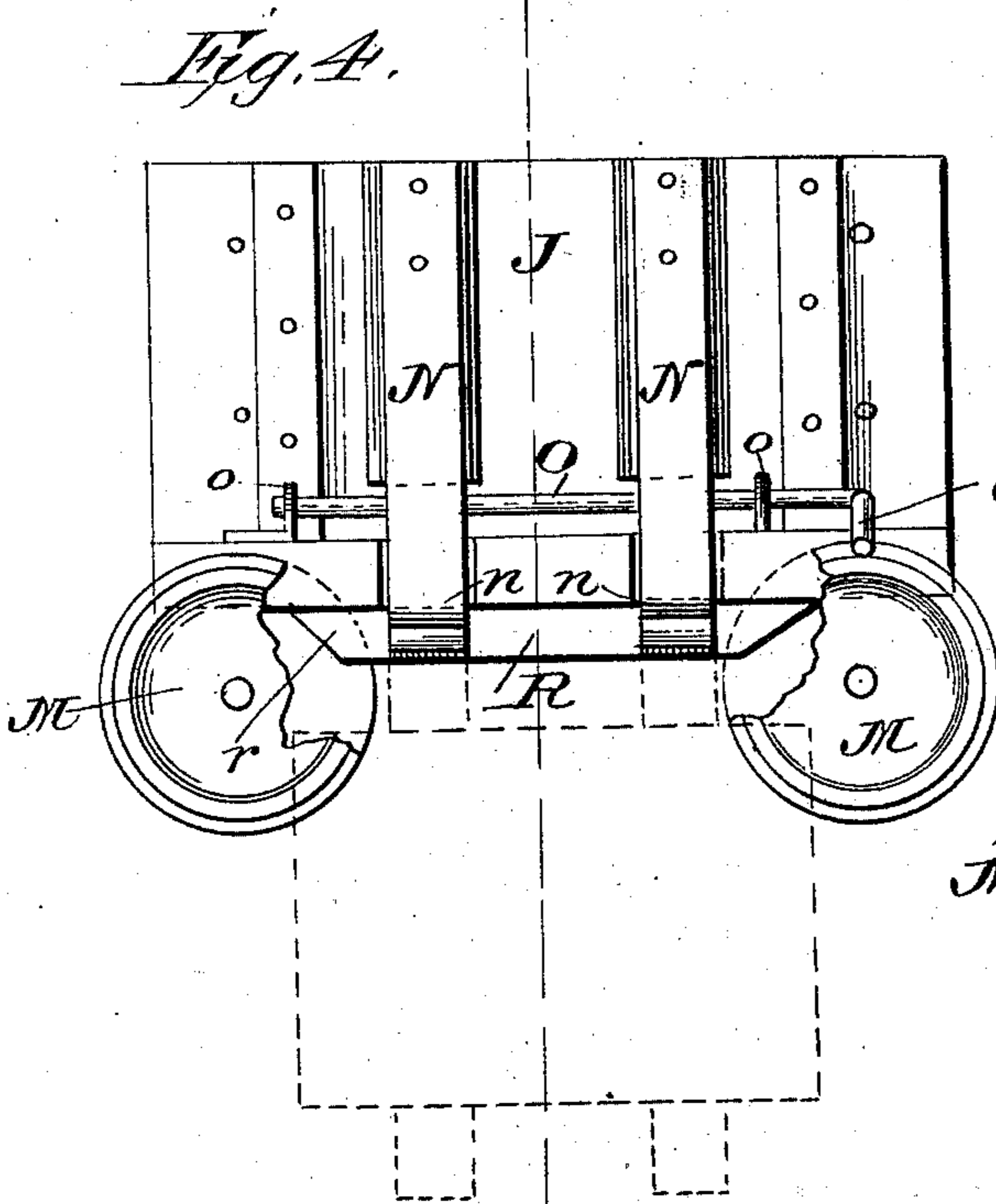
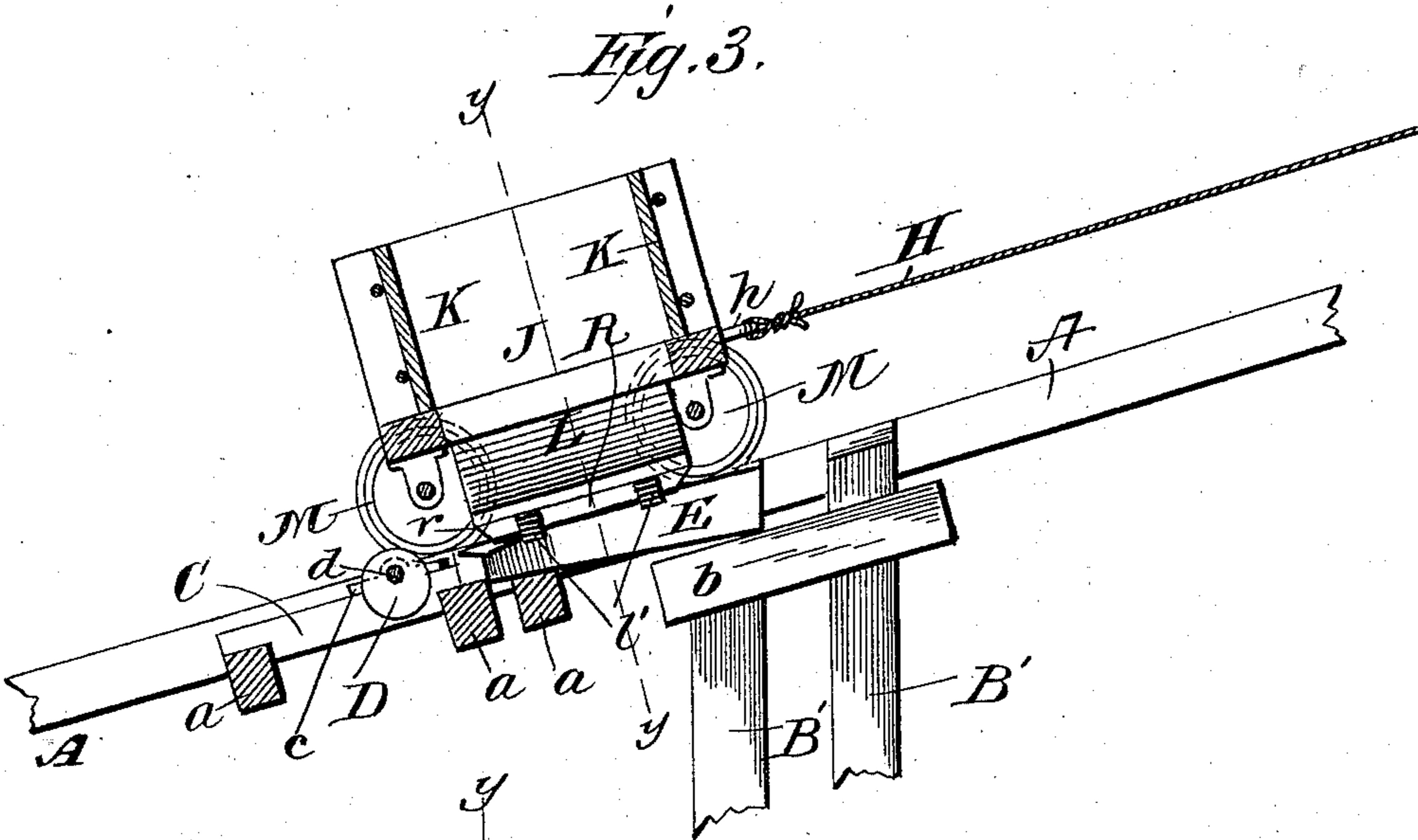
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J. P. WHILDEN.
DUMPING CAR.

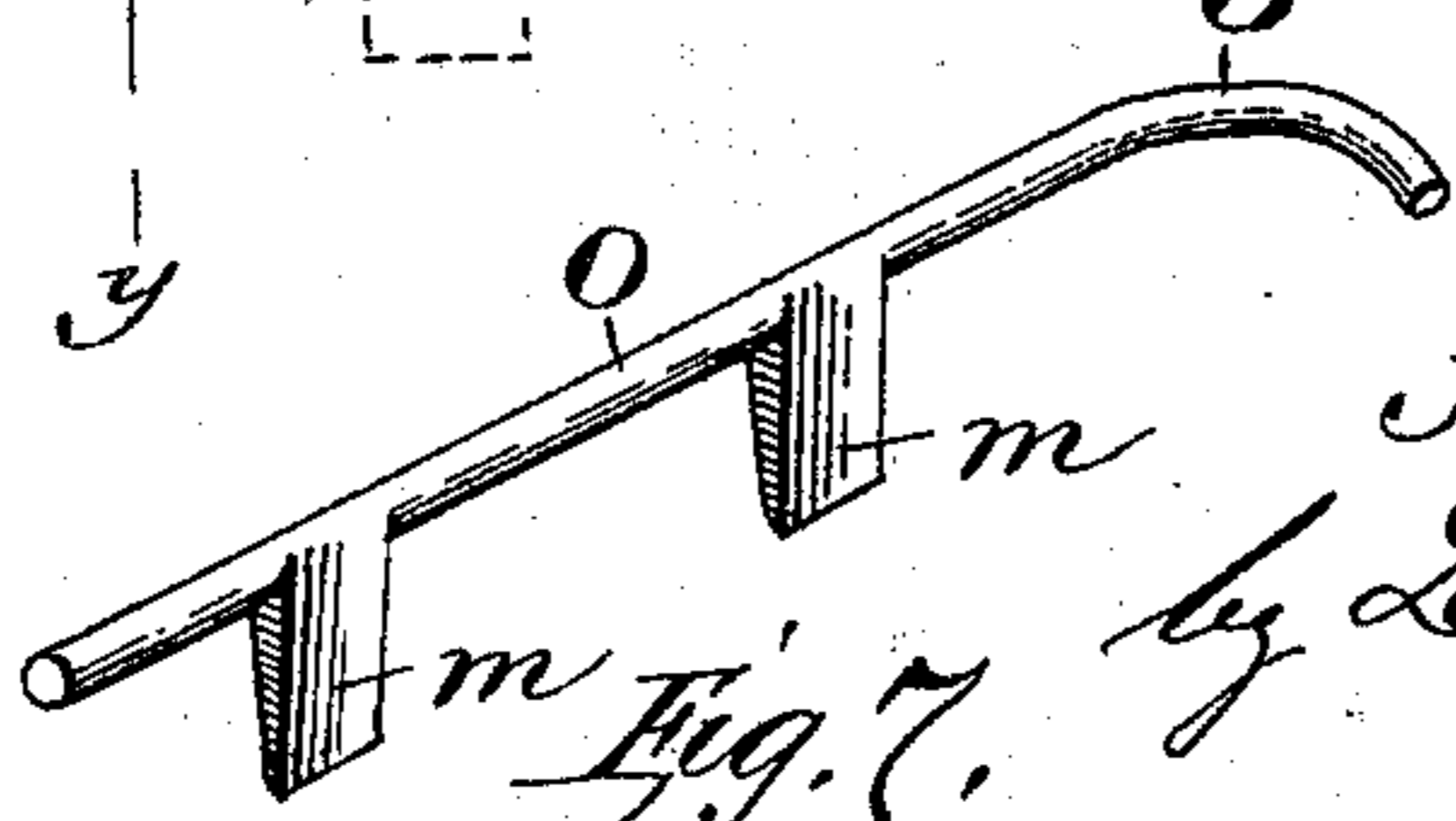
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Witnesses:

F. L. Ouraud.
J. M. H. H. H.



Inventor:
Joseph P. Whilden,
by Louis Bagger & Co.
his Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH P. WHILDEN, OF HIGH SPRINGS, FLORIDA.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 547,309, dated October 1, 1895.

Application filed April 30, 1894. Serial No. 509,576. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. WHILDEN, a citizen of the United States, and a resident of High Springs, in the county of Alachua and State of Florida, have invented certain new and useful Improvements in Dumping-Cars; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved dumping-car and the inclined track used in connection therewith for operating it automatically. Fig. 2 is a plan view of the inclined track with the dumping-car removed. Fig. 3 is a longitudinal sectional view through the middle of the inclined track and car placed thereon on the vertical plane indicated by the broken line marked *xx* in Fig. 2. Fig. 4 is a side elevation of the dumping-car, showing in dotted lines the position of the bottom when open. Fig. 5 is a transverse sectional view of the car on the vertical plane denoted by the broken line marked *yy* in Fig. 3, the dotted lines showing the position of the bottom when open for dumping the load. Fig. 6 is a plan of the under side of the car, showing the hinged bottom and its locking-springs; and Fig. 7 is a detail view of the rock-shaft which operates the locking-springs for holding the hinged bottom in its closed position.

Like letters of reference designate corresponding parts in all the figures.

This invention relates to dumping-cars of that type which are operated automatically in conjunction or combination with an inclined track in such a manner that when the loaded car reaches the top of the inclined track or platform its bottom will be opened automatically, so as to dump the load through an opening between the rails at the top of the inclined track down into a bin or pocket below the raised end of the track or into another car or wagon placed there to receive it. It is very desirable that the mechanism for operating the dumping-car automatically should be as simple as possible, so as not to get out of order if clogged up with coal dust or dirt

or when subjected to rough usage, and my improvement consists in the novel construction of the dumping-car and the co-operating track mechanism for operating the same, substantially as will be hereinafter more fully described and claimed.

In the accompanying drawings, the reference-letters *A A* denote the two parallel rail-beams which form the inclined track, one end of which rests upon the ground and is connected with the regular grade-track, forming a continuation thereof, while the elevated ends of the beams which form the inclined track are supported upon posts or uprights *B B* at such a height from the ground as to allow of a car or a wagon being placed below the elevated track to receive the load dropped into it from the dumping-car.

The parallel rail-beams or track-beams *A A* are connected by transverse ties or cross-pieces *aa*, two of which form supports for two smaller parallel beams *C C*, between which is journaled an eccentric-disk *D*, the shaft *d* of which is boxed in bearing-plates *c c*, fastened upon the short beams *C C*. Another beam or brace *E* is placed obliquely or slantingly between the track-beams *A A*, so as to connect the upper ends of the short intermediate beams *C C* with one of the side beams *A*, said oblique beam *E* (the function of which will be described later on) resting at one end upon one or more of the transverse ties or cross-pieces *a*, and at the other end upon a block or bearing *b*, which is bolted to two short uprights *B' B'*. It will be obvious that the inclined track formed by the parallel rail-beams *A A* may be braced and supported along their entire length between their lowermost point on grade and most elevated point where they are supported upon the ends posts or uprights *B B*, so as to enable the inclined track to support the weight of one or more heavily-loaded cars without danger of collapsing or bending perceptibly under the weight.

Near the upper end of one of the side beams *A* is located a plate or device *F*, supported vertically upon a bearing *G* and having its front end cut off obliquely, as shown at *f*. The bottom edge of this plate *F* is turned out at right angles, so as to form a narrow bottom flange *F'*, parallel to and some distance above the beam *A* upon which it is placed, the bev-

eled or wedge-shaped end *f* of the plate projecting beyond its support G.

The propelling rope or chain H, by which the dumping-car is drawn (by any suitable power) up the inclined track, runs over a sheave H', which is journaled in supports or bearings I I at the upper end of the incline, said bearings I I also forming a stop or abutment for the car when it shall have reached the top of the incline where its load is dumped.

The dumping-car, which is specially constructed for use in combination with the inclined track which I have just described, consists of the sides J J, end pieces K K, and hinged bottom L. Its flanged wheels M are adapted to run upon the track-beams A A, and at one end is a stout hook or ring *h*, in which the propelling rope or chain H is fastened. The strap-hinges *ll* of the bottom L project beyond the free end of the bottom, so as to form beveled projections *l' l'*, adapted to engage or interlock with the free ends of a pair of spring-catches N N, fastened upon the adjacent side of the car, the downwardly-projecting ends of said side springs being bent, as shown more clearly at *n* in Fig. 5, so as to form catches with which the beveled projections *l' l'* will engage when the hinged door or bottom L is closed. Back of the side springs N N, a little above their lower bent ends *n n*, is journaled in staples *o o* a rod or rock-shaft O, the forwardly-projecting end of which is bent at right angles to form an elbow O', which overlaps the flanged front wheel M on that side of the car, while that part of rod O immediately back of the side springs N N is provided with laterally-projecting studs *m m*, (see Figs. 5 and 7,) which impinge against the inner sides of the side springs N. Normally when the bottom is closed and the projections *l' l'* interlock with the spring-catches *n n*, as illustrated in full line in Fig. 5, the studs *m m* will be in alignment with the adjacent inner sides of the springs; but when the rod or shaft O is tilted in its bearings *o o* by raising the outer end of the right-angled elbow O' the studs *m m* will be brought out at right angles to the side of the car, so as to push the lower ends of the springs N N outwardly, as represented in dotted lines in Fig. 5, and thereby disengage the catches *n n* at the lower ends of the springs from the interlocking-projections *l' l'*, which release the hinged bottom L and permit it to drop into the position shown in dotted lines, with the result that the contents of the car are dumped in a lump between the track-beams of the incline down into the car, wagon, or other receptacle placed underneath the car. This tilting or rocking of shaft O is caused by its arm or elbow O' striking against the incline *f* of the plate F as the car approaches the upper end of the incline. The projecting beveled or inclined end of plate F is kept rigid and prevented from bending or becoming deflected sidewise by means of its reinforcing-flange F', which stiffens the plate, so

as to always maintain its projecting pointed end in the proper position and alignment for striking the elbow O' when the car reaches it on its ascent up the incline, and thereby instantly tilt shaft O and release the hinged bottom.

After the load has been dumped the car is immediately started on its return trip down the incline, and when it reaches the oblique beam E the depending bottom L by striking edgewise against the same will be gradually lifted up again toward its closed position. To facilitate this operation and also in order to reinforce and strengthen the hinged bottom L the latter is provided on its under side with two beveled blocks or cushions Q and R, (see Figs. 4, 5, and 6,) one of which Q strikes with its beveled end *q* the oblique beam E, by means of which the open and depending bottom is gradually lifted up toward its closed position, while the beveled side *r* of the other block R, which is placed at right angles to block Q, will strike and ride over the eccentric-disk D. As the car on its descent down the incline passes over this eccentric D, it will be partly rotated, so as to bring its swell or bulge up under block R, thus further raising bottom L and pushing it up sufficiently high to have its beveled projections *l' l'* reach and interlock with the spring-catches *n n*. This again closes and locks the bottom, so that by the time the car reaches the bottom of the incline it is ready to receive another load of coal, lime, sand, or whatever other material is to be carried up the inclined track and dumped in bulk from the top of the same into a receptacle (either stationary or movable) placed below.

My object in using an eccentric-disk D, located in the inclined track between the rails and in the line of travel of the car, is to provide against this closing device interfering with the bottom of the car as it ascends the incline. Normally—that is to say, except at the precise moment when the car passes over it on its return trip down the incline—the swell or bulge of disk D will by its own gravity be on the under side in the open space between its parallel bearing-beams C C, so that it will be entirely out of the way; but on the down travel of the car the eccentric D, owing to the manner in which it is hung between its bearings, will be partly rotated by contact with the bevel *r* of the bottom cushion R, because the bottom of the car has not at this point been raised up high enough to clear the eccentric. On the ascent of the car, on the contrary, the bottom is raised up to its highest position and closed, so that the block or beveled cushion R on its under side cannot touch the adjacent periphery of the eccentric as the car passes over it. As will be seen in Fig. 1, the upper end of the near side of the car is cut away to allow the open bottom to clear the same on the downward travel of the car. I desire it to be understood, however, that other devices may be substituted for the eccentric

D for automatically closing the bottom of the car as it travels down the incline, and it will be obvious that the detailed construction both of the inclined track and of the car may
5 be changed or modified in various minor and unimportant particulars without departing from the spirit of my invention.

Having thus described my improvement, I claim and desire to secure by Letters Patent
10 of the United States—

1. The combination, with the track and the plate at one end thereof cut off obliquely at its front end, of the car the bottom hinged thereto, the extensions of the hinges project-
15 ing beyond one side of the car, the spring catches secured to the car having bends at their lower ends adapted to engage with said extensions, the rock shaft formed with an elbow at one end, and the laterally projecting
20 studs secured to said rock shaft, substantially as described.

2. The combination with the track, the transverse shaft the eccentric disk mounted thereon and the oblique beam, of the dump-
25 ing car, the bottom hinged thereto, the spring

catches secured to the car and the beveled blocks or cushions secured to said hinged bottom, substantially as described.

3. The combination with the track, the plate at one end thereof cut off obliquely at
30 its front end, the diagonal beam, the transverse shaft and the eccentric disk, mounted thereon, of the car the bottom hinged thereto, the extensions of said hinges projecting be-
35 yond one side of the car, the shaft journaled to the car having an elbow at one end, the lugs secured to said shaft, the spring catches secured to the car having bends at their lower
40 ends with which said extensions engage, and the beveled cushions secured to the under side of the hinged bottom, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOSEPH P. WHILDEN.

Witnesses:

S. P. THOMAS,
O. C. SMITH.