

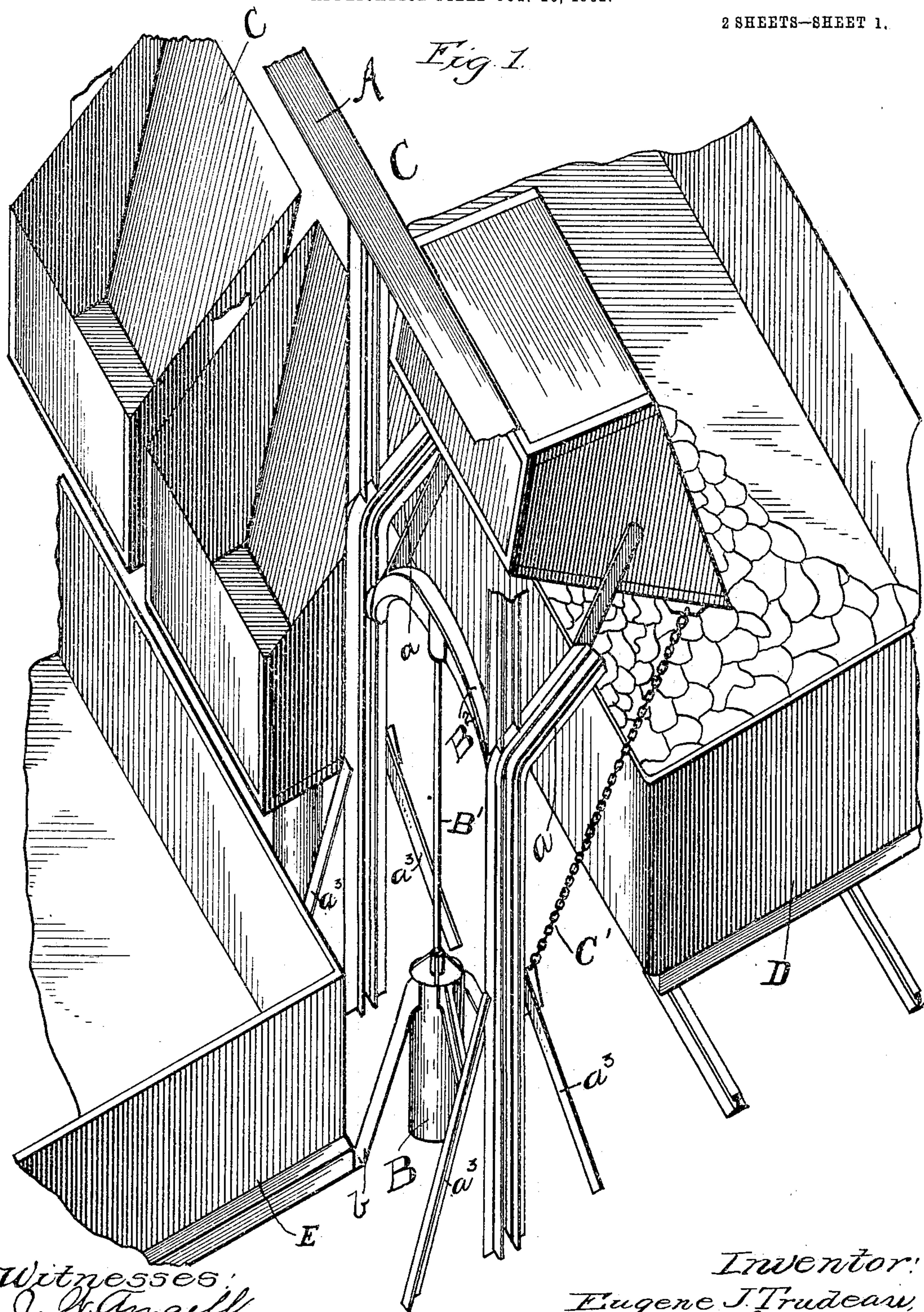
No. 787,998.

PATENTED APR. 25, 1905.

E. J. TRUDEAU.
AUTOMATIC HOIST AND DUMP.

APPLICATION FILED OCT. 16, 1902.

2 SHEETS—SHEET 1.

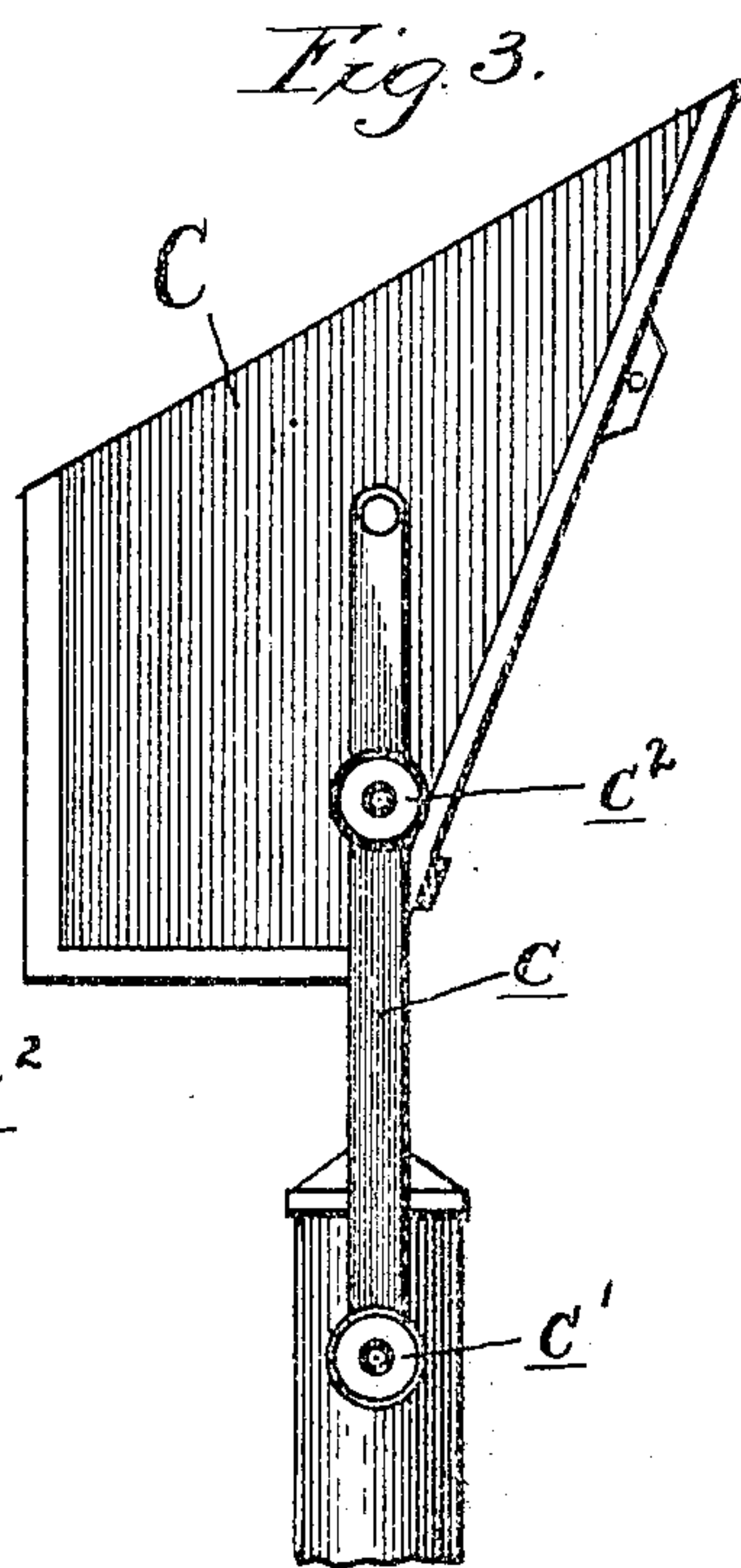
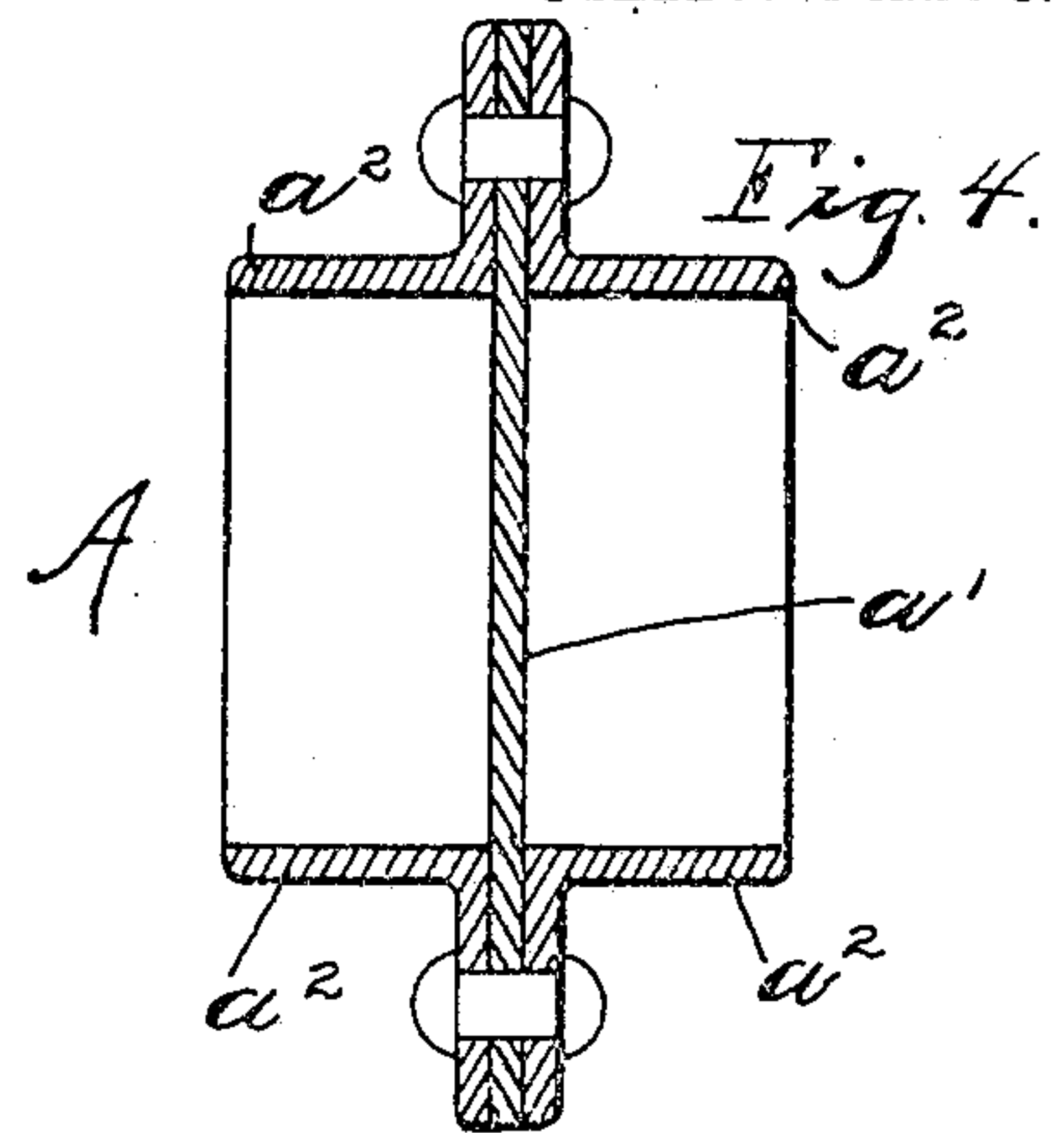
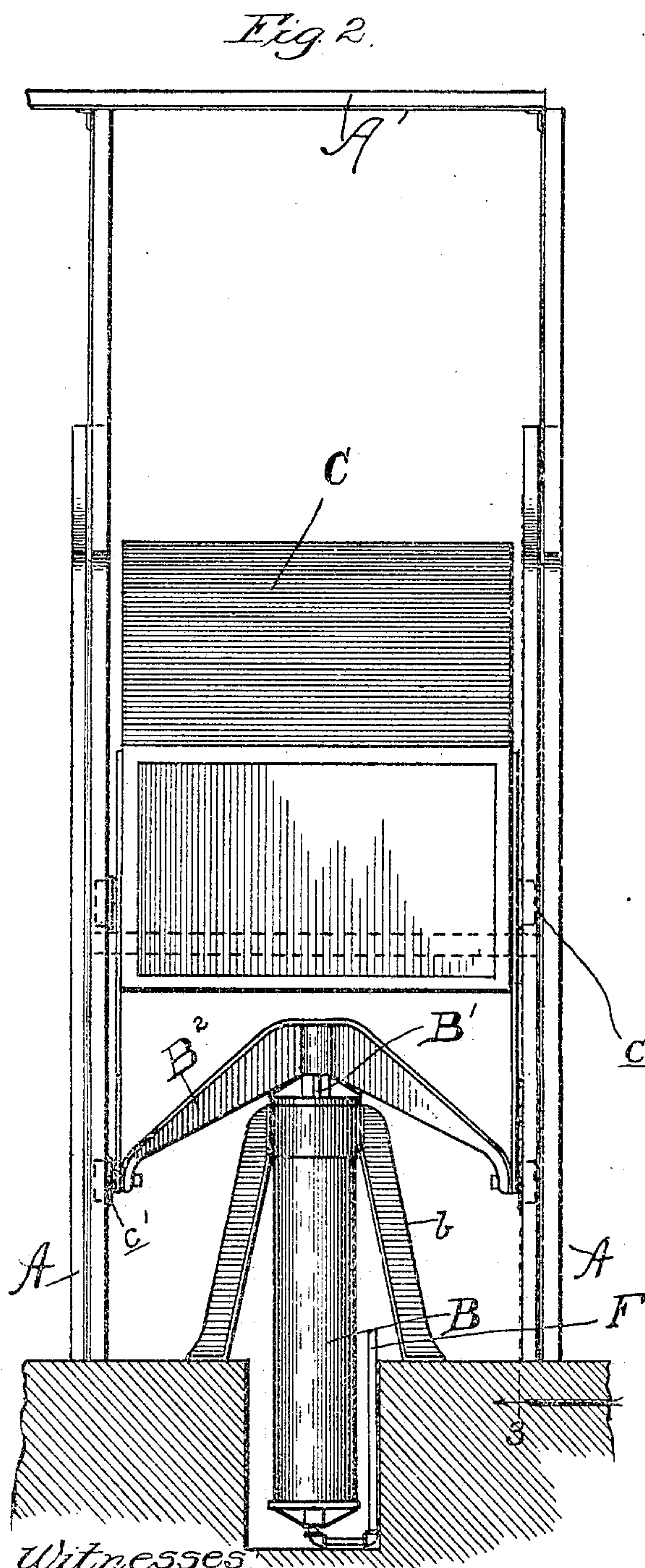


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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EUGENE J. TRUDEAU, OF CHICAGO, ILLINOIS.

AUTOMATIC HOIST AND DUMP.

SPECIFICATION forming part of Letters Patent No. 787,998, dated April 25, 1905.

Application filed October 16, 1902. Serial No. 127,501.

To all whom it may concern:

Be it known that I, EUGENE J. TRUDEAU, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Hoists and Dumps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention is shown more particularly embodied as an automatic hoist and dump constructed for coaling locomotive-engines at terminals or elsewhere, though obviously the invention may be adapted for many other uses.

Heretofore in coaling engines a large expense for manual labor has been required or it has been necessary to build expensive coaling-stations into the coal pockets or bunkers of which the coal is first elevated and from which the coal passes to the engine-tender on an adjacent track through the chute. The expense for installation of a coaling-station at a terminal and the expense of repairs is very great, and in most of the devices in which chutes are used it is difficult to control the flow of coal after it has started, frequently much more being delivered to the tender than necessary, occasioning much inconvenience and delay.

The object of this invention is to provide cheap, simple, and durable means operated from the tender for hoisting and dumping directly into the tender or elsewhere, as preferred, a predetermined amount of coal.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a perspective view illustrating the installation and operation of devices embodying my invention. Fig. 2 is a front elevation of one of the buckets. Fig. 3 is a side elevation of the same. Fig. 4 is an enlarged cross-section of one of the uprights.

As shown in the drawings, A and A indicate uprights having the inner sides channeled and having the upper ends *a a* directed

or bent laterally and upwardly, as shown in Fig. 1, and providing ways on each side of each post or upright. As shown, said uprights are located between the main track of a railway and a switch parallel therewith and on which may be located the coal-cars. Located between the uprights and, if desired, extending partly below the tracks is a vertically-operating pneumatic cylinder B, which is held rigidly in a vertical position by means of the diagonal braces *b*, as shown in Figs. 1 and 2. Within said pneumatic cylinder is provided a piston, the rod B', of which is provided at its outer end with a yoke B², the ends of which extend laterally to near the uprights. A stud-shaft is secured in each of said ends, on each of which is journaled a track-wheel *c'*, as shown in Figs. 1 and 2. Metallic straps *c* are pivoted at their lower ends on the said stud-shafts and extend upwardly and at their upper ends pivotally engage the bucket C at a point above and at the rear of its center of gravity. Intermediate of their extremities said straps *c* are provided each with a track-wheel *c''*, which also engages in the channels of adjacent uprights, so that the track-wheels *c'* and *c''*, together with the strap C, afford a truck for the bucket upon which the bucket is moved vertically and laterally to dumping position. The buckets may be of any desired size and, as shown, are of a length approximately equal to the distance between the uprights and are rectangular in cross-section, though obviously may be of any desired shape and size. The rear or dumping side of the bucket or that adjacent to the main track is materially higher than the front of the bucket and serves as a chute therefor when the bucket is dumped, as shown in Fig. 1, while the comparatively low front side of the bucket permits of ready filling from a coal-car E or the like on the switch. A chain C' is secured at one end at the top of the bucket on its rear side and at its other end to any rigid portion of the frame. Said chain is of such a length as to necessitate the dumping of the bucket when moved upwardly to dumping position.

The uprights may be constructed of structural iron or steel in any desired manner. As

shown, however, a web of steel or iron a' is provided on each side with two oppositely-faced angle-bars a^2 , riveted thereto and spaced a sufficient distance apart to receive the wheels c' c^2 and the upper ends of which are turned outwardly. Said plate extends above the bends in the ways and is braced or stiffened by angle-bars rigidly secured thereon in any desired manner. A bar A' , of structural iron or steel or other suitable material, is secured at the upper end of the posts or uprights thus formed and acts to rigidly engage the same together. Each of the uprights is also securely braced by the diagonal braces a^3 , and, if preferred, may be connected with each other below the travel of the bucket.

The operation is as follows: The uprights, with inwardly-facing channels, are rigidly secured in position to carry the bucket, and, if preferred, a plurality of buckets may be arranged in alinement, as shown in Fig. 1, in which case each of the intermediate uprights provide a channel or way for a bucket on each side of the same. The buckets may be filled from a coal-car or other source of supply located in front of the same on the switch. The filled buckets when elevated dump their contents upon the tender D, located on the main track. As shown, a pipe F opens into the lower end of the pneumatic cylinder B and may lead to any source of pressure and to a convenient point for operation from the tender or elsewhere, as preferred, where any preferred operating-valve may be used. If preferred, compressed air may be supplied from the pressure-reservoir on the engine. The pressure within said cylinder forces the yoke and bucket upwardly along the uprights until the track-wheels c^2 are at the outermost limit of their movement in the laterally-directed ends of the guide a a , in which position the chain acts to partly invert the bucket, as shown in Fig. 1, dumping the contents upon the tender. After the bucket has dumped its contents it returns quickly by gravity to its filling position and may be operated rapidly and with slight expenditure of power. Obviously any desired power may be used. In the construction shown, however, pneumatic pressure is used, and obviously where compressed air is used for this purpose the cylinder may be located either above or below the bucket, as preferred.

While I have described the invention as embodied in a coal-handling device, it is obvious that it may be used for any other material which it is desired to elevate and dump laterally.

Obviously many details of construction may be varied without departing from the principles of this invention.

I claim as my invention—

1. The combination with upwardly and laterally extending ways, of a yoke movable therein, upwardly-extending arms pivoted on

said yoke, a bucket pivotally secured on the upper end of said arms and flexible means engaged thereon adapted to dump the contents at a predetermined point.

2. The combination with vertical ways, of a truck movable therein, a bucket pivoted on the upper end of the truck and normally in an upright position, a yoke pivoted on the lower end of the truck, and means engaged on the bucket acting to dump the same laterally as the bucket is moved upwardly and outwardly.

3. The combination with a source of power, of a pivotally-supported truck operated therefrom and movable upwardly and laterally, a bucket pivoted on the truck, and a flexible connection engaged on said bucket and acting to dump the same when at the limit of its movement.

4. The combination with uprights provided on their inner faces with parallel ways which at their upper end extend obliquely upward and laterally from the uprights, a truck movable in said ways, a bucket pivoted at the upper end of the truck, means for moving said truck and bucket upwardly and outwardly in said ways and a chain or the like engaged at one end at one side of the bucket and at the other end engaged on the frame and acting when the bucket is at the limit of its movement to invert the bucket.

5. The combination with a bucket having an elongated rear side, of a truck pivoted near the top thereof for elevating the bucket and carrying the same laterally and means for arresting the movement of the forward end of the bucket while the rear end is elevated.

6. The combination with uprights, of a pneumatic cylinder located between the same, a piston movable thereby, a bucket pivotally engaged on the piston and movable upwardly and laterally between the uprights, means for controlling the admission of air to the cylinder and a chain or the like engaged on the top of the bucket and acting when the bucket is elevated to invert the same laterally.

7. The combination with uprights provided on their inner side with parallel upwardly and laterally directed channels, of a truck movable in the channels, pneumatic means for operating said trucks, a bucket pivoted at the upper end of the truck out of engagement with said uprights and moved upwardly and outwardly by said truck and a positive connection between the top of the bucket and a rigid part of the frame whereby the bucket is partly inverted when elevated.

8. The combination with a supporting-frame comprising vertical channeled uprights, of vertically and laterally movable buckets between the uprights, a chain on each bucket and connected with an adjacent upright acting to partly invert the same when in its most elevated position.

9. The combination with a main track, of a bucket pivoted adjacent to the track and mov-

able upwardly and toward the track, pneumatic means for actuating the bucket, and a chain engaged on the side of the bucket adjacent to the track and acting to partly invert the same when moved upwardly and over the track.

10. The combination with a railway-track, of a frame located adjacent to the track, a bucket pivoted in the frame and movable upwardly therein and toward the track and having the side of the same adjacent to the track elongated and flexible means engaged on the long side of the bucket and to the frame below and acting to invert the same over the track when at the limit of its upward and outward movement.

11. The combination with a plurality of railway-tracks, of a frame located between the tracks provided with upwardly and later-

ally directed ways, a bucket pivoted in each pair of ways and having one comparatively low side and a high side forming a chute, means for moving the bucket upwardly and outwardly above the respective tracks and means attached to the bucket and to the frame acting to partly invert each bucket when at the limit of its upward movement whereby the chute side of the bucket acts to direct the material therein into receiving means supported upon the track.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

EUGENE J. TRUDEAU.

Witnesses:

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A. C. ODELL.