

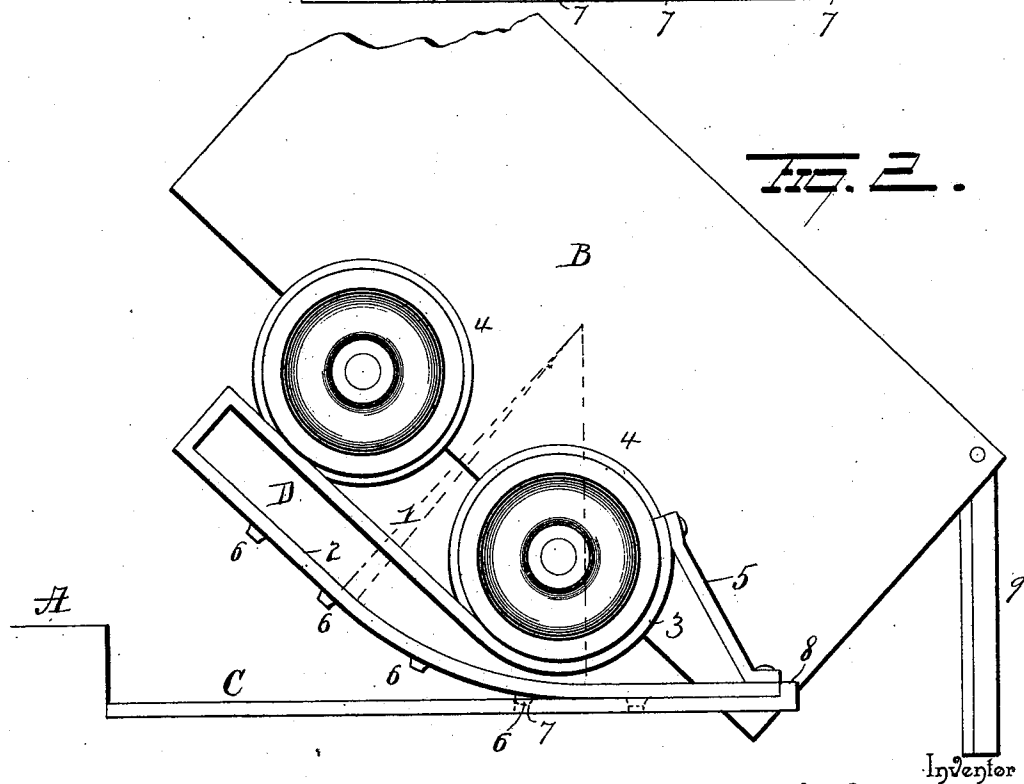
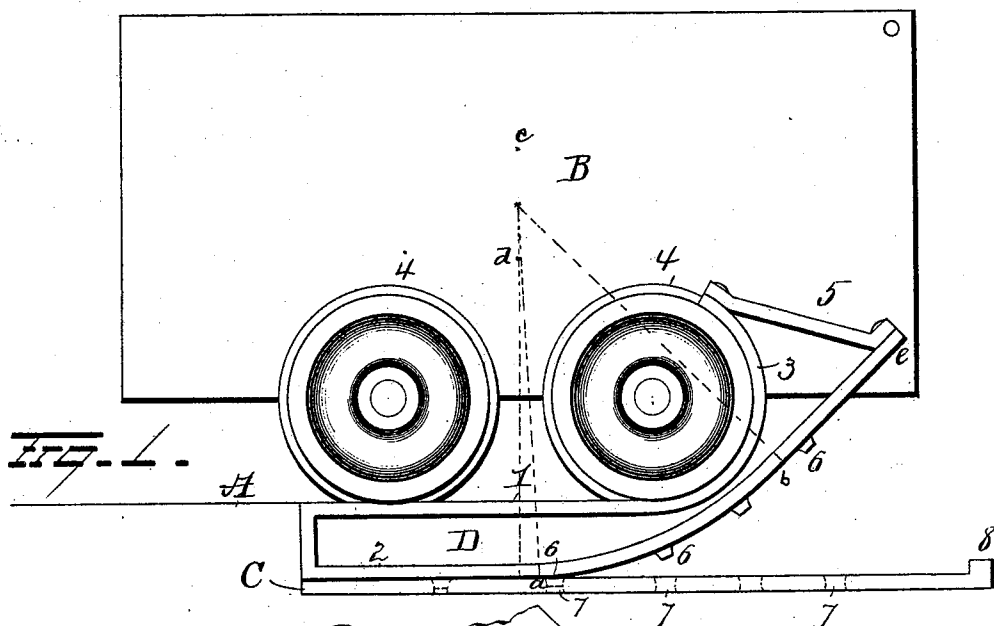
(No Model.)

2 Sheets—Sheet I.

B. S. RANDOLPH.
UNLOADING APPARATUS.

No. 568,369.

Patented Sept. 29, 1896.



Witnesses

E. J. Nottingham
G. F. Downing.

B. A. Randolph

By H.A. Symour Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

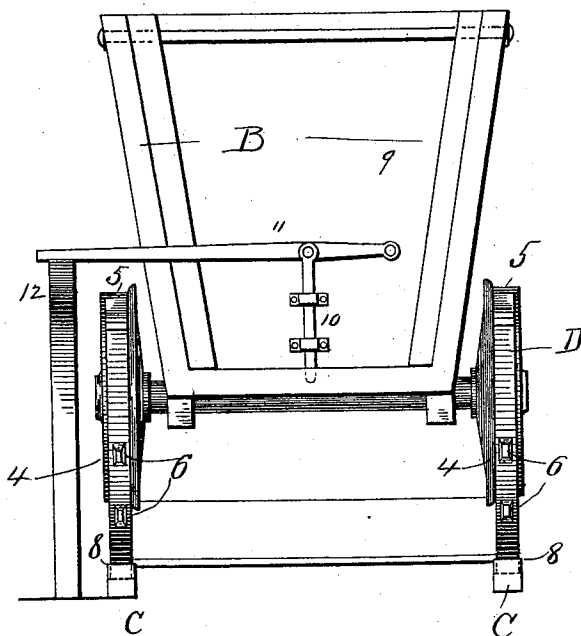
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Fig. 3.



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UNITED STATES PATENT OFFICE.

BEVERLEY S. RANDOLPH, OF FROSTBURG, MARYLAND.

UNLOADING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 568,369, dated September 29, 1896.

Application filed June 2, 1896. Serial No. 594,013. (No model.)

To all whom it may concern:

Be it known that I, BEVERLEY S. RANDOLPH, a resident of Frostburg, in the county of Allegany and State of Maryland, have invented certain new and useful Improvements in Unloading Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

My invention relates to an improvement in unloading apparatus, and more particularly to means for automatically dumping mining-cars, the object of the invention being to provide a simple and efficient apparatus by
15 means of which a loaded car can be automatically tilted for the purpose of discharging its contents and then cause the empty car to be automatically righted or brought to a horizontal position.

With this object in view the invention consists in a tilting cradle adapted to receive a car, said cradle being so constructed and arranged that the momentum of a car running
25 onto it will set it in motion and so that the position of the center of gravity of the car will be utilized to first effect the dumping of the contents of the car and then cause the cradle and car to be automatically righted.

The invention further consists in a tilting cradle adapted to receive a car and having an abutment for the car, the base of said cradle having a straight rear portion, a forward portion at an angle to the said rear portion, and
35 a curved intermediate portion, the said portions of the base being so arranged relatively to each other that after the cradle shall have been set in motion by the momentum of the car running onto it the position of the center of gravity of the car will be successively
40 shifted to effect the completion of the tilting of the cradle and car and afterward cause the cradle and car to be righted.

The invention further consists in certain
45 novel features of construction and combinations and arrangements of parts, as herein-after set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating my improved apparatus
50 in its normal position and showing a car thereon. Fig. 2 is a view showing the appa-

ratus and car tilted, and Fig. 3 is an end view.

A represents a portion of the main track, on which the mining-car B is adapted to run, 55 and C represents the support for my improved cradle D, said support being disposed below the main track A a distance equal to the thickness of the rear end of the cradle, so that when the latter is in its normal position
60 the tracks 1, which constitute the upper portion thereof, will aline with the main tracks A. The cradle D is made in the form of a frame, of which the tracks 1 constitute the upper portion and a plate (or plates) 2 the
65 base, the forward ends of the tracks being curved upwardly to constitute abutments 3 for the front wheels 4 of the car B, the free extremities of said abutments being connected with the base 2 by means of braces 5. 70

The base 2 is provided on its under face with a number of lugs or projections 6, adapted to enter sockets 7 in the support C, whereby to prevent the cradle from slipping, and the forward end of the base is provided
75 with a lug or lugs 8 to prevent the cradle from possibility of longitudinal movement when tilted, as shown in Fig. 2.

The form and construction of the base 2 of the cradle is a matter of much importance in the successful operation of the cradle. From the rear end of the base 2 to a point *a* (slightly in advance of the center of gravity of the car on the cradle) said base is parallel with the tracks or upper portion 1 of the cradle. From
85 the point *a* on the base 1 to the point *b* said base of the cradle is curved in the arc of a circle struck from a point between the center of gravity *c* of the loaded car and the center of gravity *d* of the empty car. From the
90 point *b* to the point *e* at the forward end of the base 2 said base is disposed at such angle to the rear straight portion of the base as may be required to cause the car to discharge its load. 95

The forward end of the car is provided with a door or gate 9, hinged at its upper edge and normally locked at its lower edge by means of a latch 10. A latch-lever 11 is pivoted at one end to the door or gate 9 and projects laterally beyond the side of the car and in line
100 with a curved tripping-arm 12, so that when

the car assumes its position for dumping the engagement of the latch-lever with the tripping-arm will cause the latch to be raised and the door or gate to open.

- 5 The impetus of the car when it is run onto the cradle will cause the latter to begin to turn on the point *a* of the base 1 as a fulcrum until the weight comes on the curved portion of the base. The position of the center of gravity will thus be shifted in advance of the point *a* and the cradle will therefore rock forwardly on the curved portion of the base 1 until checked by the forward portion of the base (between the points *b e*) coming into contact with the support C, when the car will be in position to have its contents discharged, the door or gate having been released while the car is assuming its dumping position, in the manner above explained.
- 20 When the contents of the car shall have been discharged, the center of gravity will have been lowered behind the point of support and the cradle be thereby caused to rock back to its normal position and bring the car to its normal horizontal position.

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

- 30 1. A tilting cradle adapted to receive a car, a portion of the base of this cradle curved in the arc of a circle struck from a point between

the center of gravity of the loaded car and the center of gravity of the empty car on the cradle, substantially as set forth.

2. A tilting cradle adapted to receive a car and having an abutment for the car, the base of said cradle having a straight rear portion, a forward portion at an angle to the said rear portion and a curved intermediate portion, the said portions of the base being so arranged relatively to each other that after the cradle shall have been set in motion, the gravity of the car will effect the completion of the tilting of the cradle and car and afterward cause the cradle and car to be righted, substantially as and for the purpose set forth.

3. A tilting cradle adapted to receive a car, the base of the cradle having a straight rear portion, a forward portion at an angle to the rear portion and an intermediate curved portion, said curved portion marking the arc of a circle struck from a point between the center of gravity of the loaded car and the center of gravity of the empty car on the cradle, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

BEVERLEY S. RANDOLPH.

Witnesses:

DUNCAN SINCLAIR,
J. M. ZIMMERLY.