

(No Model.)

3 Sheets—Sheet 1.

A. E. WILLIAMS.
CAR DUMPING APPARATUS.

No. 547,052.

Patented Oct. 1, 1895.

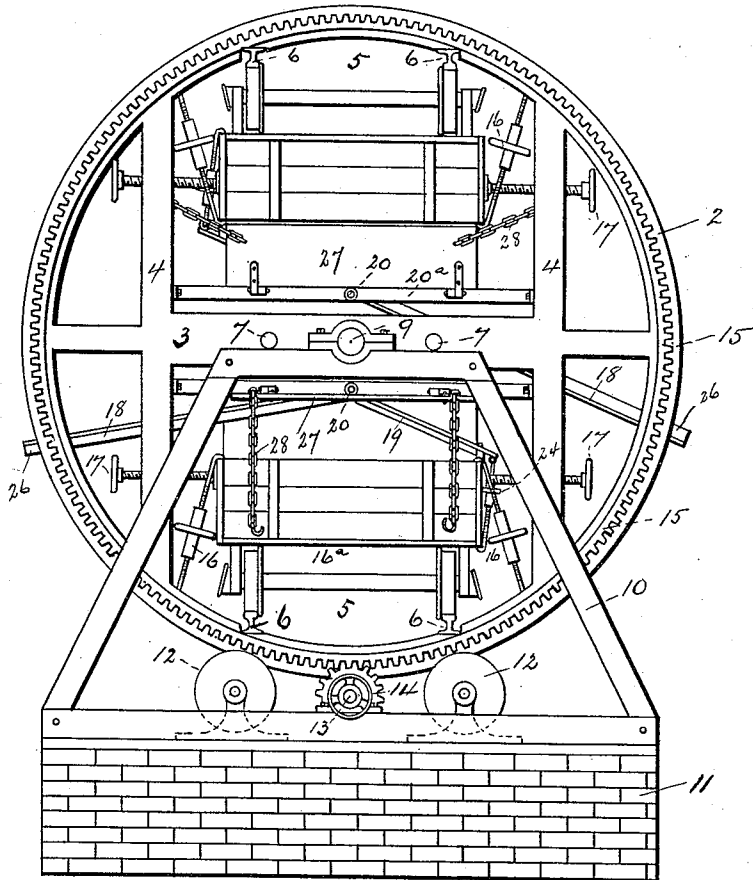


Fig. 1

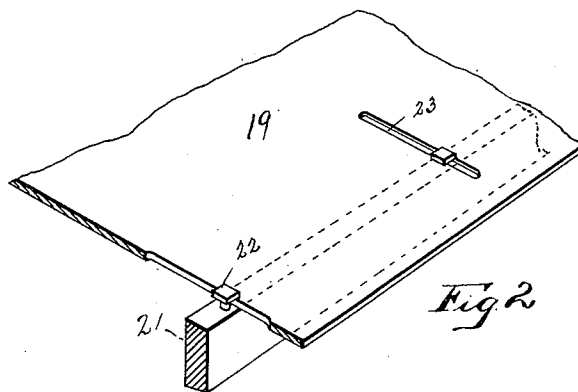


Fig. 2

Witnesses:

H. B. Bradshaw
Carl H. Kämpfmann

Inventor:

Abram E. Williams.
by *C. C. Shepherd*
Attorney.

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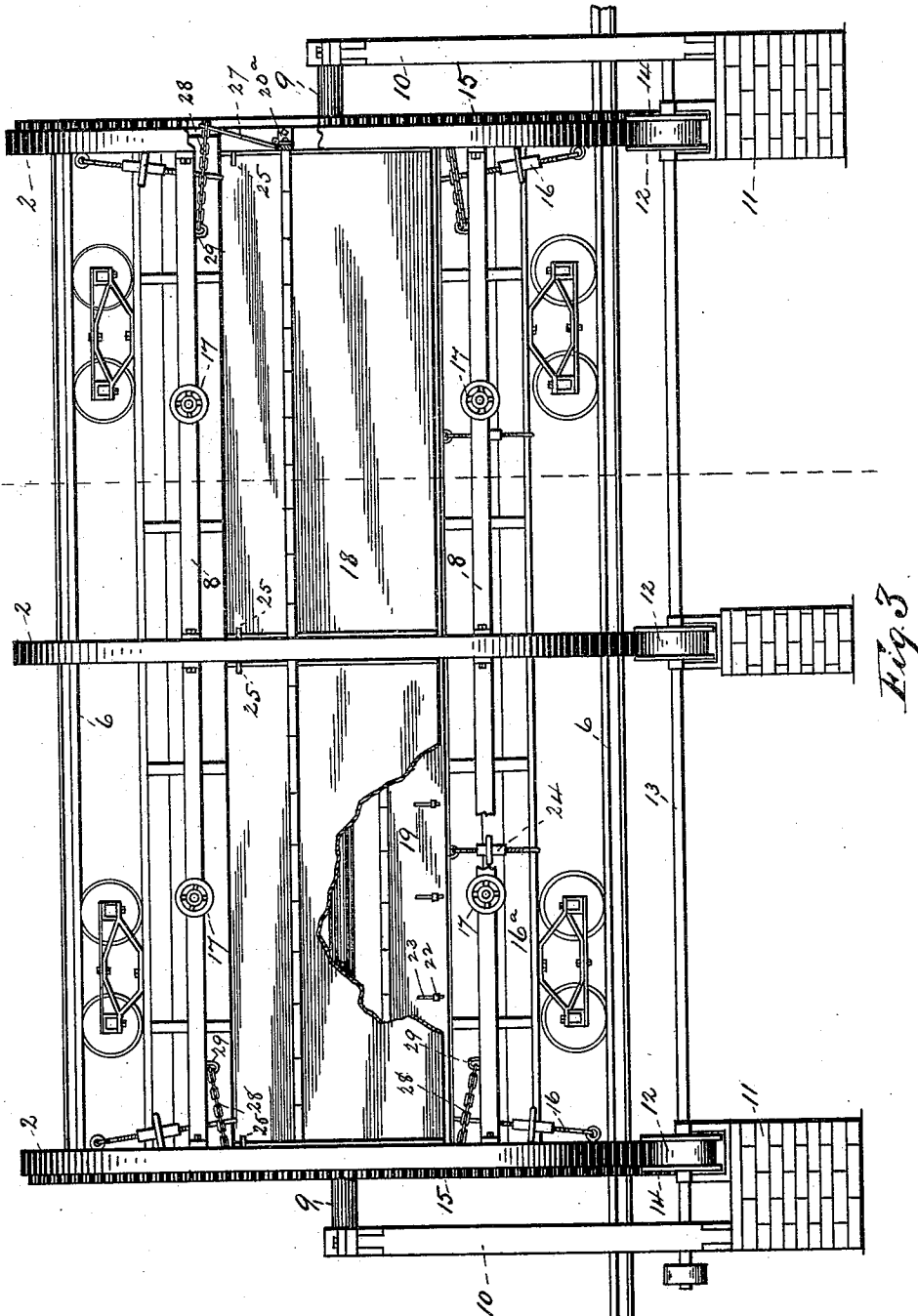


Fig. 3

Witnesses:

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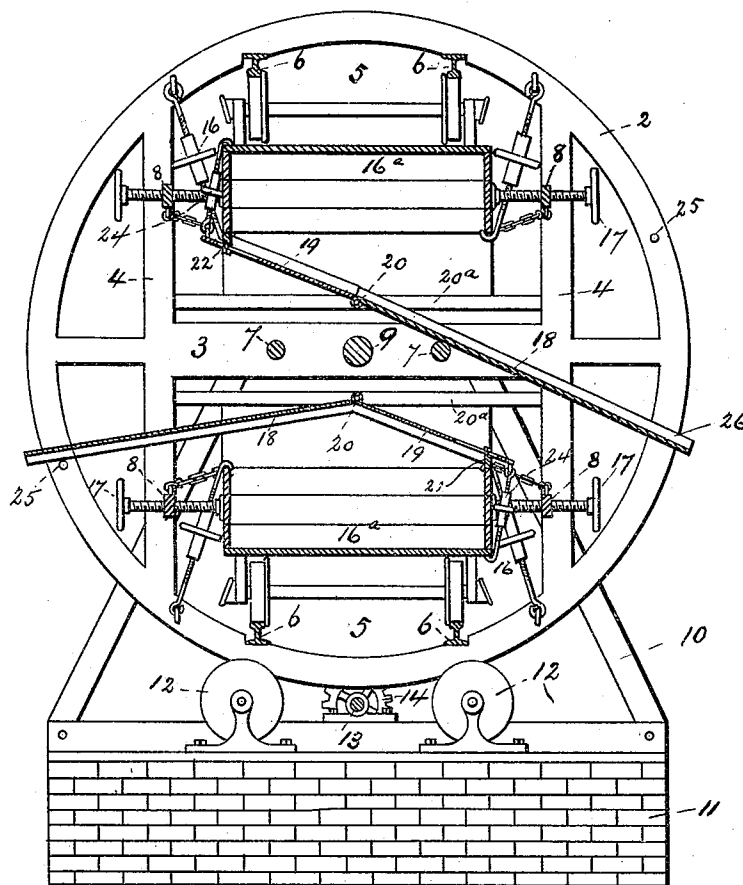


Fig 4

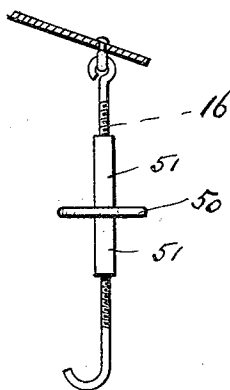


Fig 5

Witnesses:

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UNITED STATES PATENT OFFICE.

ABRAM E. WILLIAMS, OF NELSONVILLE, OHIO.

CAR-DUMPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 547,052, dated October 1, 1895.

Application filed December 8, 1894. Serial No. 531,197. (No model.)

To all whom it may concern:

Be it known that I, ABRAM E. WILLIAMS, a citizen of the United States, residing at Nelsonville, in the county of Athens and State of Ohio, have invented a certain new and useful Improvement in Car-Dumping Apparatus, of which the following is a specification.

My invention relates to that class of car-dumping apparatus which is designed for dumping coal or other material from cars by inverting the car, and is an improvement on the apparatus described in Patent No. 508,071, granted to me November 7, 1893.

The objects of my present invention are to improve the construction of the apparatus described in said patent in order that its capacity for handling cars may be increased without adding to the necessary rotation of the apparatus, to better support the apparatus whereby the crushing weight on the roller-bearings is relieved, to prevent any waste of the coal or other material while being dumped, and to otherwise add to the efficiency and usefulness of the apparatus. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is an end view of the apparatus, having one car elevated for dumping and another placed in position for elevation. Fig. 2 is a perspective view of a portion of the car cover or roof. Fig. 3 is a side elevation partly broken away to show some of the interior parts. Fig. 4 is a section taken on the line *xx* of Fig. 3, and Fig. 5 is a detail view of a device for holding the car and the car-cover in position.

Similar numerals refer to similar parts throughout the several views.

In the construction of the cage or framework which receives the cars I employ a series of vertical rings 2, arranged at a distance from each other in horizontal alignment. These rings are each provided with interior frame-bars 3 and 4, the former extending across the center of the horizontal ring and the latter extending vertically on opposite sides of the ring and intersecting the horizontal bar. By this arrangement two interior spaces 5 are formed in each ring, each space being of sufficient size to permit the passage of an ordinary coal-car and bounded by three straight sides and one curved side. Track-rails 6 are

supported on the curved side of each space, on which rails the car-wheels are adapted to run. The apparatus is thus adapted to accommodate two cars at the same time. Rods 7 pass through the frame-bars 3 of the rings and serve, in connection with the bars 8, secured to the vertical frame-bars 4 of the rings, to tie the series of rings together. The rods 7 and bars 8 serve other purposes, as will be hereinafter explained.

9 represents a shaft passing through the center of the cage and supported at each end in suitable boxes on the framework 10, which in turn are supported on the foundations 11. The shaft 9 serves to steady the apparatus when in motion and also to relieve the crushing weight of the rings on their supporting-rollers 12. These rollers are journaled in suitable frames built on the foundations 11. The power-shaft is represented by 13, and carries near each end of the cage a gear-wheel 14, each of the latter gearing with a circular rack 15, one of which is affixed to the outer face of each of the end rings 2 of the frame.

16^a indicates an ordinary car, which, when loaded and ready for dumping, is run from a railway-track onto one of the pairs of track-rails 6 of the apparatus. When the car is in position, it is secured against vertical displacement by means of the adjustable clamping-hooks 16. These hooks are made up of a hand-wheel 50, having elongated hubs 51, the interiors of the hubs being oppositely threaded, and two rods, one having a right-handed and the other a left-handed thread fitting the corresponding threads in the hubs of the hand-wheel. (See Fig. 5.) One rod is secured to the frame of the apparatus and the other provided with a hooked end, which fits over the top edge of the car. By turning the hand-wheel the hook can be lengthened or shortened to either release the car or clamp it firmly to the apparatus. In order to brace the car against lateral movement, I provide hand-screws 17, passing through threaded openings in the bars 8 and provided with enlarged ends to engage the sides of the cars.

The roof or cover for the car consists of a wide section 18 and a narrower section 19, hinged at their abutting sides to a rod 20, which extends throughout the length of the apparatus and is supported in cross-bars 20^a,

secured to the frame-bars 4 of the vertical rings 2. To the under side of the narrow section 19 of the roof, and near its outer edge, a beam 21 is adjustably connected by means of the bolts 22, passing through elongated openings 23 in the section 19 into the beam 21. The object of the beam is to give the section 19 a bearing when the coal or other material is higher than the sides of the car, the beam being intended to rest on the upper edge of the side of the car, and it is made laterally adjustable to suit cars of different widths.

The narrow section 19 is secured to the car by means of adjustable hooks 24, similar in construction to the hooks 16. One end of the hook is connected to the section 19 and its other end adapted to engage the under side of the car. The wide section 18 is not connected to the car, but is adapted to vibrate between the rods 7 and pins 25 on the vertical rings 2, which rods and pins support the section in its extreme positions. The pins 25 are so located that the section 18 is held up out of the way when the car is being run into the apparatus, and when the car is inverted the section 18 falls down onto the rod 7 and forms a chute down which the coal or other material is discharged. The end edges of the sections 18 and 19 are turned up, as indicated at 26, to prevent the coal or other material from falling off the ends of the chute while being discharged.

27 indicates a door or shutter, two of such doors being located at each end of the apparatus. These doors are hinged to the bars 20^a and are intended to close the ends of the roof or cover to prevent any of the material escaping while the car is being inverted. They are held in operative position by means of chains 28, attached at one end to the doors and adapted to hook into staples 29 on the frame. In Fig. 1 the door at the upper part of the machine is closed, while that at the lower part is elevated to permit the car to pass under it, and in Fig. 3 the framework of the apparatus is broken away to show the door 27 bearing against the end of the car.

The operation of the apparatus is as follows: A car is run into the apparatus and secured in position by means of the hooks 16 and hand-screws 17. The narrow section 19 of the cover is then secured in position by means of the hooks 24, and the end doors 27 closed and fastened by means of the chains 28. The apparatus is then rotated until the car is inverted, when the section 18 of the cover will fall by gravity and be supported

on the rod 7, thereby forming a chute down which the material will be discharged. Before further rotating the apparatus another car is placed within it and properly secured. The cover and end doors for this car are also secured in proper position. The apparatus is then given a further rotation and the loaded car elevated and inverted, while the empty car is returned to its proper position ready for removal from the apparatus. The empty car in its descent serves as a counterbalance for the loaded car in its ascent, and less power is required to rotate the machine. It will also be seen that two cars can be unloaded for each complete revolution of the apparatus.

Having described my invention, I claim—

1. In a car unloading apparatus, the combination with the cage framework and devices to secure the car therein, of a roof or cover consisting of a wide and a narrow section hinged at their abutting edges to the framework, devices to secure the free end of the narrow section to the car, suitable stops on the framework between which the wide section is free to vibrate said wide section forming a chute when the car is inverted down which the material is discharged, and means to rotate the framework, substantially as described.

2. In a car unloading apparatus, the combination with the cage framework and devices to secure the car therein, of a roof or cover for the car hinged to the framework and adapted to form a chute when the car is inverted, shutters hinged to the framework for closing the ends of the roof or cover, devices to secure the free ends of the shutters to the framework, and means to rotate the framework to invert the car, substantially as described.

3. In a car unloading apparatus, the cage framework and devices to secure the car therein, a roof or cover for the car consisting of a wide and a narrow section hinged at their abutting edges to the framework, the wide section being free to vibrate on its hinge, a beam adjustably connected to the under side of the narrow section near its outer edge, said beam being adapted to rest on the upper edge of the side of a car to support the narrow section, and means to secure the free end of said narrow section to the car, substantially as described.

ABRAM E. WILLIAMS.

In presence of—

C. C. SHEPHERD,
C. M. VOORHEES.