

No. 616,071.

Patented Dec. 20, 1898.

D. BENNETT.

CAR DUMPING MECHANISM.

(Application filed July 18, 1896. Renewed Feb. 7, 1898.)

(No Model.)

2 Sheets—Sheet 1.

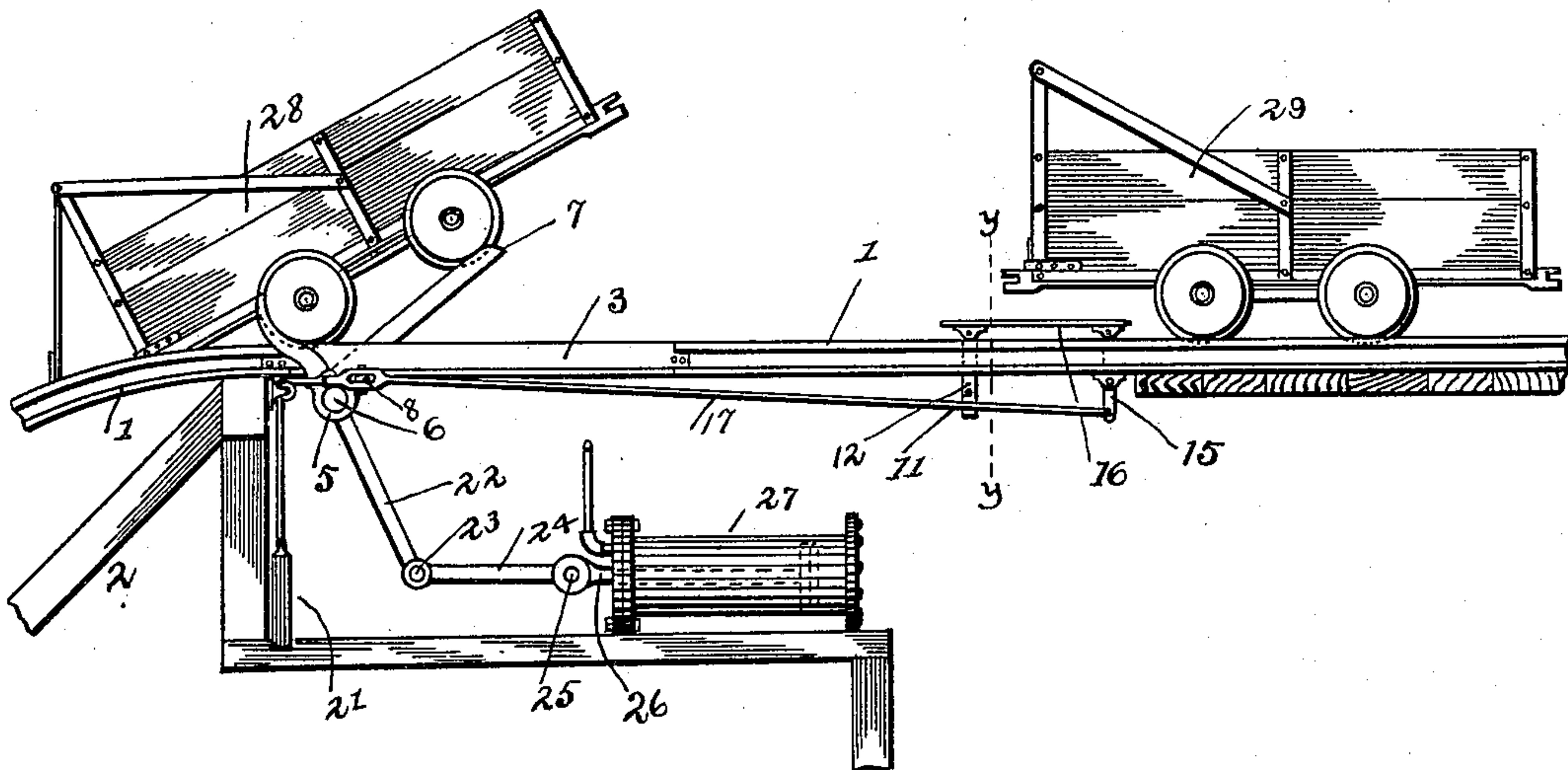


Fig. 1

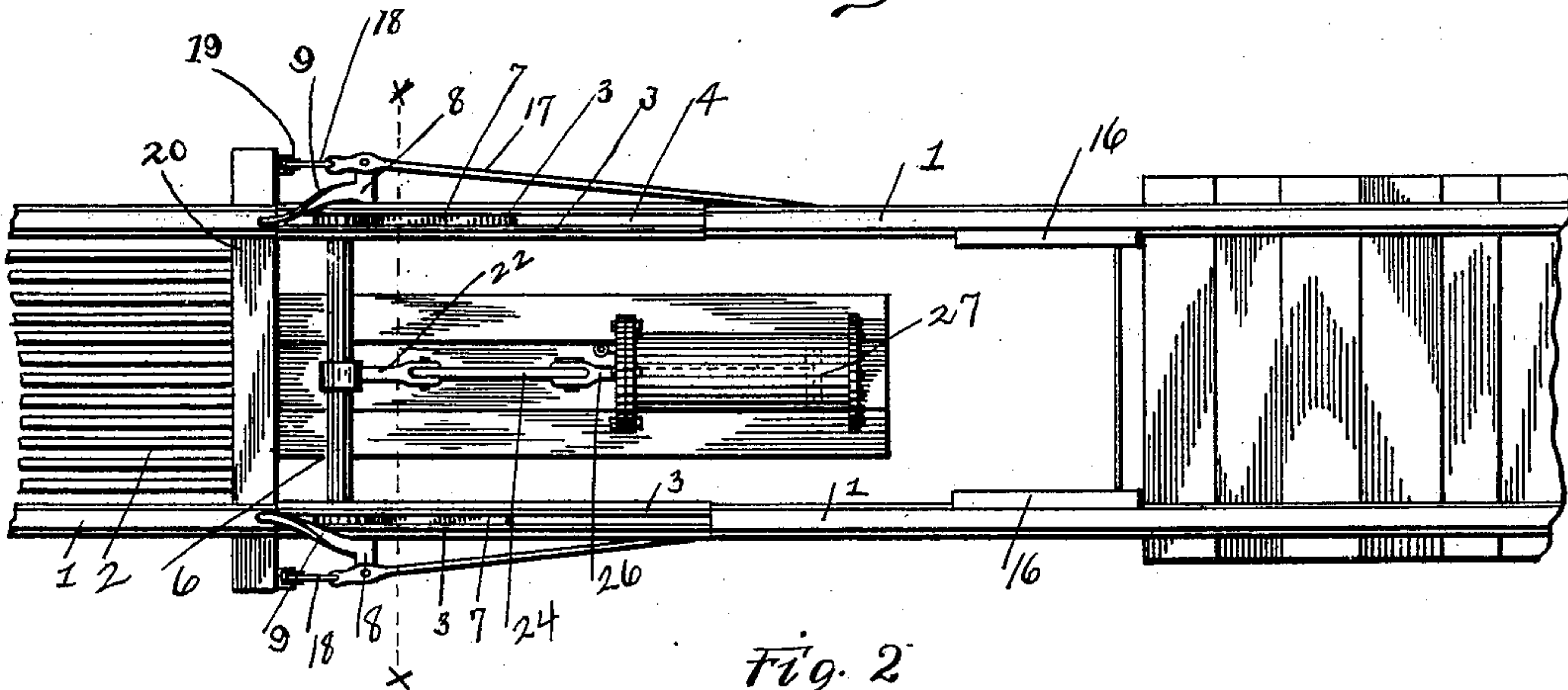


Fig. 2

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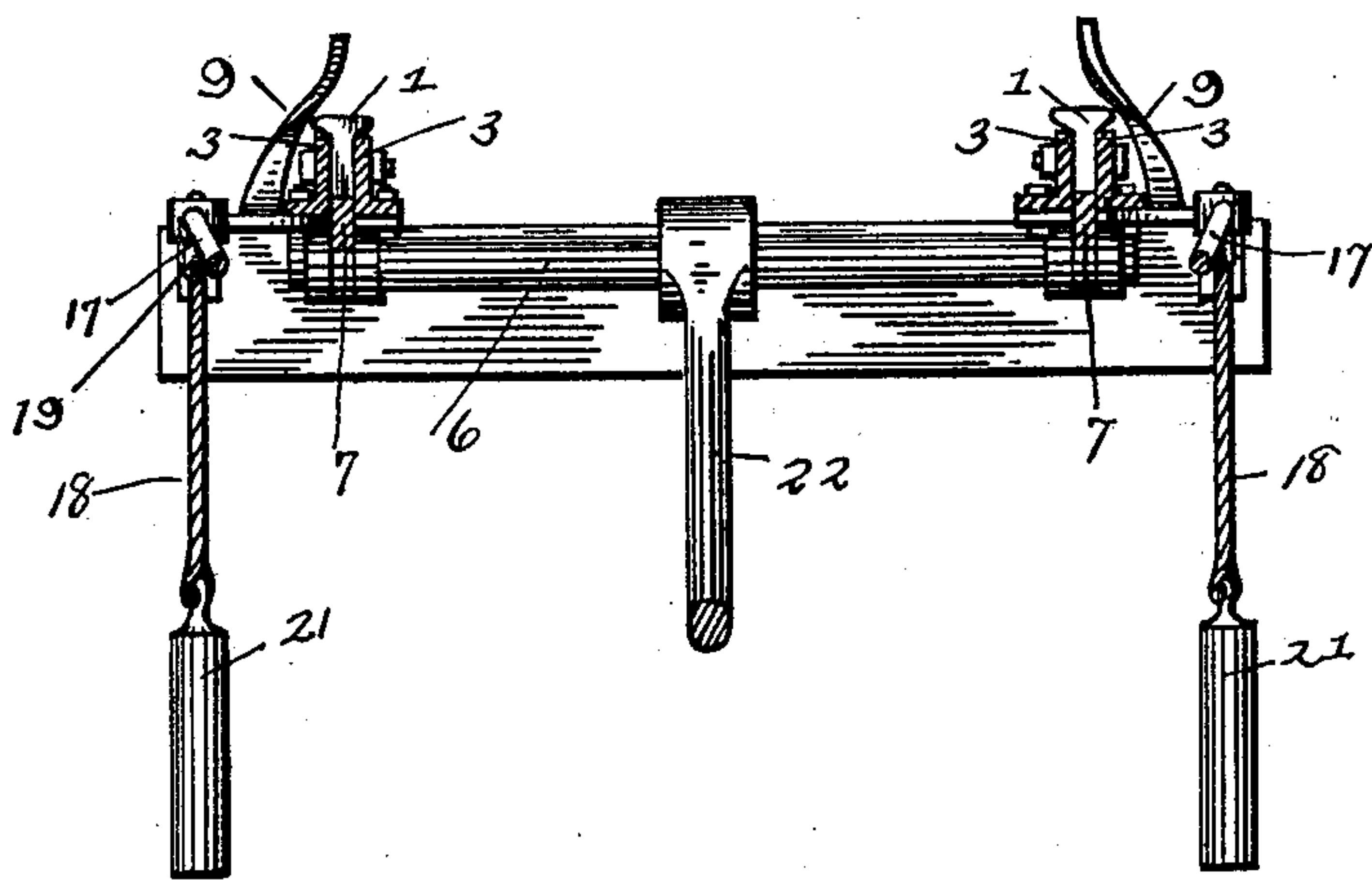


Fig. 3

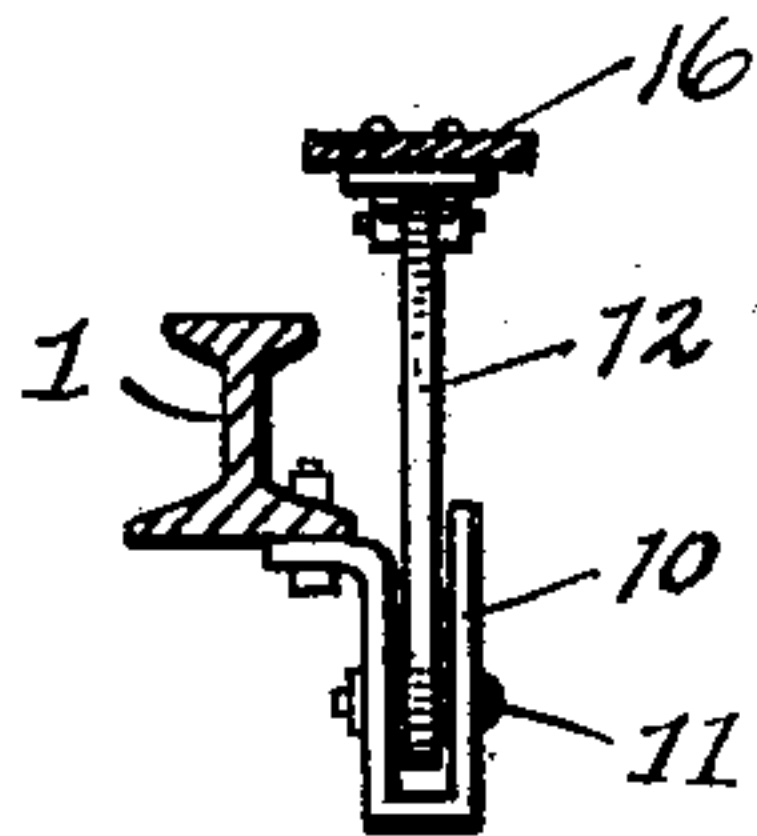


Fig. 4

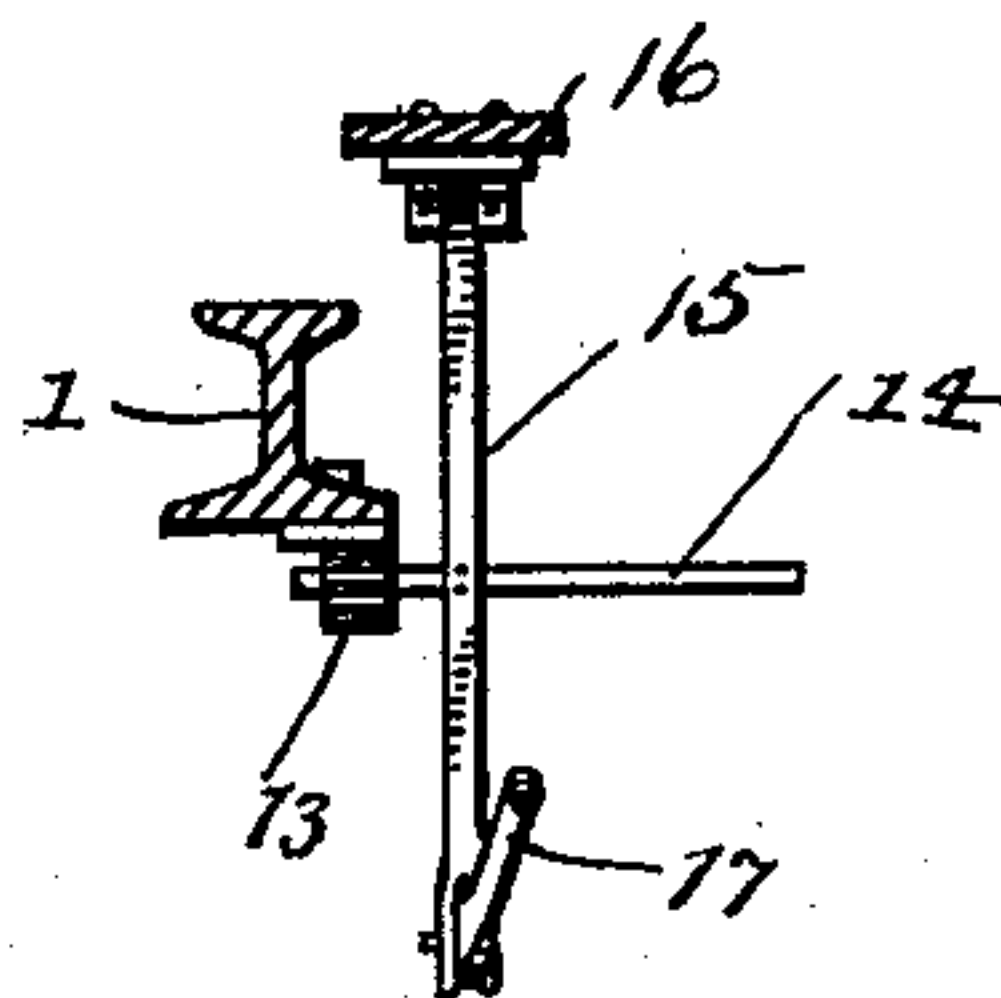


Fig. 5

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UNITED STATES PATENT OFFICE.

DARIUS BENNETT, OF NELSONVILLE, OHIO.

CAR-DUMPING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 616,071, dated December 20, 1898.

Application filed July 18, 1896. Renewed February 7, 1898. Serial No. 669,448. (No model.)

To all whom it may concern:

Be it known that I, DARIUS BENNETT, 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 Mechanism, of which the following is a specification.

My invention relates to the improvement of mine-car-dumping apparatus; and the objects of my invention are to provide an improved steam-operated mechanism whereby mine-cars may be effectively tipped and dumped and to produce other improvements in details of construction and arrangement of parts, which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved tippable or dumping apparatus, showing one car thereon in the tipping position and another car in rear of the operating trigger-plates. Fig. 2 is a plan view of the same with the cars removed. Fig. 3 is a sectional view on line *x x* of Fig. 2. Fig. 4 is an enlarged sectional view on line *y y* of Fig. 1 looking forward, and Fig. 5 is a similar view looking rearward.

Similar numerals refer to similar parts throughout the several views.

1 represents the track-rails, which may be supported on any suitable double trackwork, the trackway thus formed being at a point over the coal-receiving chute 2 inclined as shown. The inclined portion of the trackway may terminate in a "switchback," or other suitable arrangement may be made to return the cars to the mine or starting-point.

As indicated in the drawings, a section of each of the track-rails at a point immediately in rear of the inclined portion thereof is removed and in place thereof are inserted two parallel track-bars 3, the latter forming a continuation of said track-rail. These track-bars 3 are, as indicated in the drawings, separated to form a longitudinal-slotted opening 4 between the same. Journaled in suitable brackets 5, which depend from the under side of the forward portions of the bars 3, is a transverse shaft 6, and on this shaft, between each pair of bars 3, is mounted the forward

end of a lifting-arm 7, the latter being designed to lie in the slotted openings 4 between the bars 3 or to be elevated to the inclined position indicated in Fig. 1 of the drawings in the manner hereinafter described.

Journaled on each of the track-bar arms 3, adjacent to the forward section of the track-rail, is the inner end of a short lever-arm 8, the outwardly-projecting portion of which has formed therewith an upwardly-extending and inwardly-curved horn 9, the latter being adapted, as indicated in the drawings, to project over the central portion of the track-rail.

Depending from the track-rail sections and from opposite points thereon in rear of the track-bars 3 are downwardly and thence upwardly extending or substantially U-shaped brackets 10, and within each of the latter is pivoted, as indicated more clearly at 11 in Fig. 4 of the drawings, the lower end of an upwardly-extending trigger-arm 12. At oppositely-located points in rear of the brackets 10 I cause to depend from the under side of each of the track-rails 1 a suitable boxing 13, and in these boxings are journaled the ends of a transverse shaft 14. Fulcrumed on this shaft adjacent to each of the track-rails is the central portion of a rear trigger-arm 15.

16 represents a trigger or trip plate, one of which has its forward and rear portions jointly connected with the upper sides of the arms 12 and 15, which are adjacent to each of the rails 1, said trigger-plates being thus caused to project above the plane of the track-rails and between the latter.

The lower end of each of the trigger-arms 15 is by means of a rod 17 jointedly connected with the outwardly-projecting end portion of the horn-carrying arm 8, which is on the corresponding side of the trackway. Beyond its pivotal connection with said arm 8 each of the rods 17 is provided with a short extension, with which is connected one end of a cord or chain 18, the latter extending forwardly and passing over a pulley 19, secured from a lateral projection of a tie or other frame-piece 20. The downwardly-extending portion of each of these cords 18 carries, as indicated more clearly in Fig. 1 of the drawings, a weight 21.

Connected centrally with the shaft 6 is one

end of a lever-arm 22, which, extending downwardly, is jointedly connected at 23 with the forward end of a driving-arm 24. This driving-arm 24 is connected at 25 with the forward end of a piston-rod 26, which works in a horizontally-placed steam-cylinder 27 beneath the trackway, said piston-rod carrying a piston-head thereon within said cylinder in the usual manner. This steam-cylinder is connected with any suitable source of steam-supply.

In illustrating my improved apparatus I have shown two mine-cars, which are indicated, respectively, at 28 and 29. In order to illustrate the operation of my improved car-dumping apparatus, we will assume that the wheels of the car 28 are resting on the track-bars 3 and lever-arms 7, the latter being closed between said track-bars, and that the car 29 is approaching the rear ends of the trip or trigger plates 16. These trigger-plates being in the elevated position indicated in Fig. 1 of the drawings, it is obvious that the forward pull on the arms 8, caused by the weights 21, must result in the horns 9 being held in their forward positions over the track-rails and in the pathway of the front wheels of the car 28. The parts being in the above-described position, the inward or rearward movement of the piston 26 must result through the connection of said piston with the shaft 6 in a raising of the lever 7 to the inclined position shown in Fig. 1 and in a consequent forward tipping of said car 28, the front wheels of the latter being caught by the curved horns 9. In this manner the car 28 is, as indicated in Fig. 1, tipped to a discharging position. The contents of the forward car having been discharged, the forwardly-moving car 29 comes into contact with the trigger-plate 16, depressing the latter, thereby resulting in a rearward movement of the lower ends of the arms 15, which, through their connections with the horns 9, causes an outward movement of said horns and a consequent release of the car 28, admitting of the latter running down the inclined rail-sections 1. The car 29 having passed the trigger-plates, it is obvious that the latter will assume their upright positions and that the horns 9 will be again returned to their positions over the track-rails ready for engagement with the front wheels of said car 29. During the above-described forward movement of the car 29 the piston 26 is driven outward, resulting in the levers 7 again dropping to their horizontal positions between the track-bars 3, thereby admitting of the car

29 being tipped and discharged in the manner described for the car 28.

From the construction and operation which I have described it will readily be seen that simple, reliable, and effective means are provided for tipping and discharging the contents of mine-cars successively and that improved automatic means are provided for the release of the cars after tipping and holding the same in place during the tipping process.

It will be observed that the levers or lifting-arms 7 when in their place between the track-bars 3 form substantially track-rail sections, which serve the double purposes of assisting in the support of the car and tilting the same.

It will also be observed that the parts of the apparatus herein described are of simple construction, easily operated, and can be produced and put into use at a reasonable cost.

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

1. In a car-dumping apparatus the combination with parallel track-rails, the latter having oppositely-located slotted sections and means for temporarily stopping a car over said slotted sections, of steam-actuated levers fulcrumed adjacent to and adapted to close within said track-rail section-slots, substantially as and for the purpose specified.

2. In a car-dumping mechanism the combination with a trackway consisting of parallel rails and oppositely-located interposed steam-actuated track-sections or levers 7 fulcrumed therein, of horns arranged adjacent to the track and adapted to normally project within the path of the car-wheels and means for automatically throwing said horns off said track as a car approaches the same, substantially as and for the purpose specified.

3. In a car-dumping apparatus the combination with the track-rails, interposed steam-actuated and fulcrumed levers 7 in the lines of said rails and horns fulcrumed adjacent to the track and adapted to normally project within the track of the car-wheels at the dumping-point, of trigger-arms 12 and 15 fulcrumed adjacent to the track-rails, trigger-plates carried on said arms and rods jointedly connecting said trigger-arms with said horns, substantially as and for the purpose specified.

DARIUS BENNETT.

In presence of—
E. W. BRINKER,
A. L. PHELPS.