

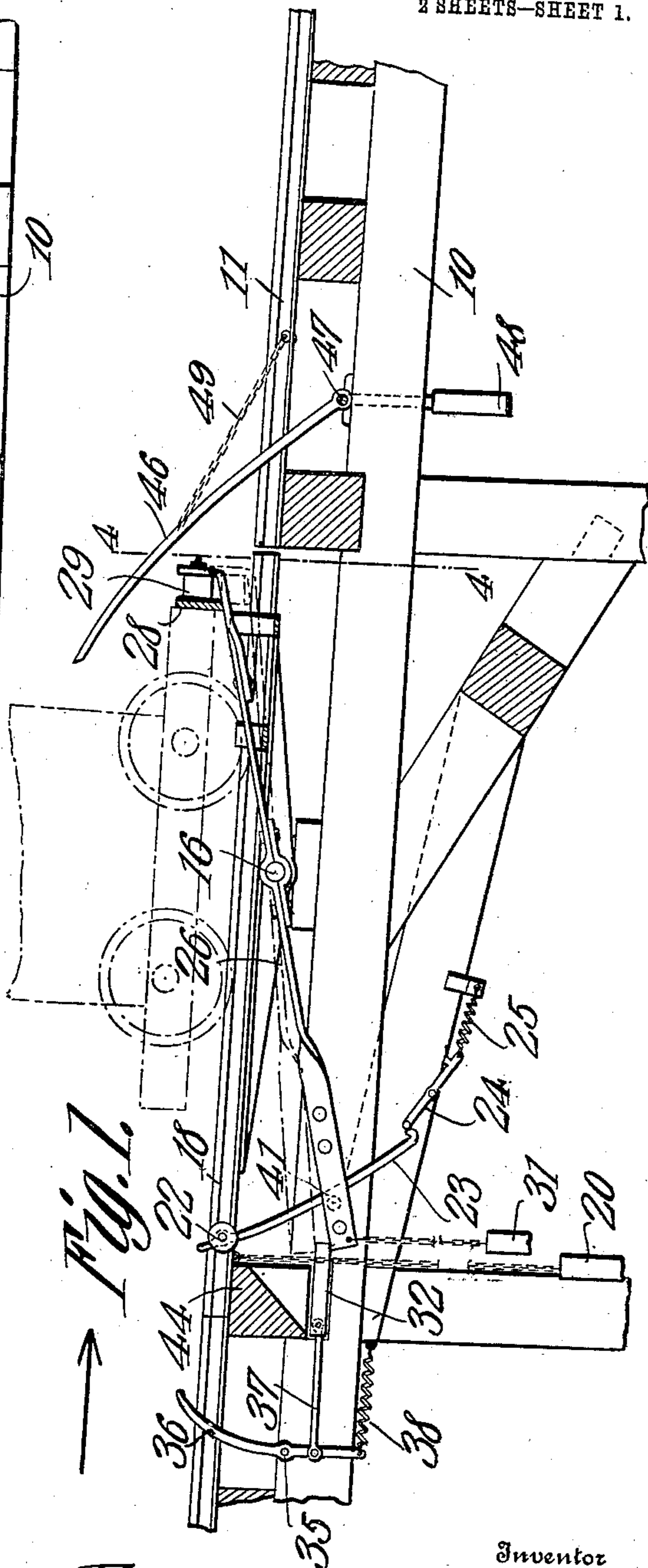
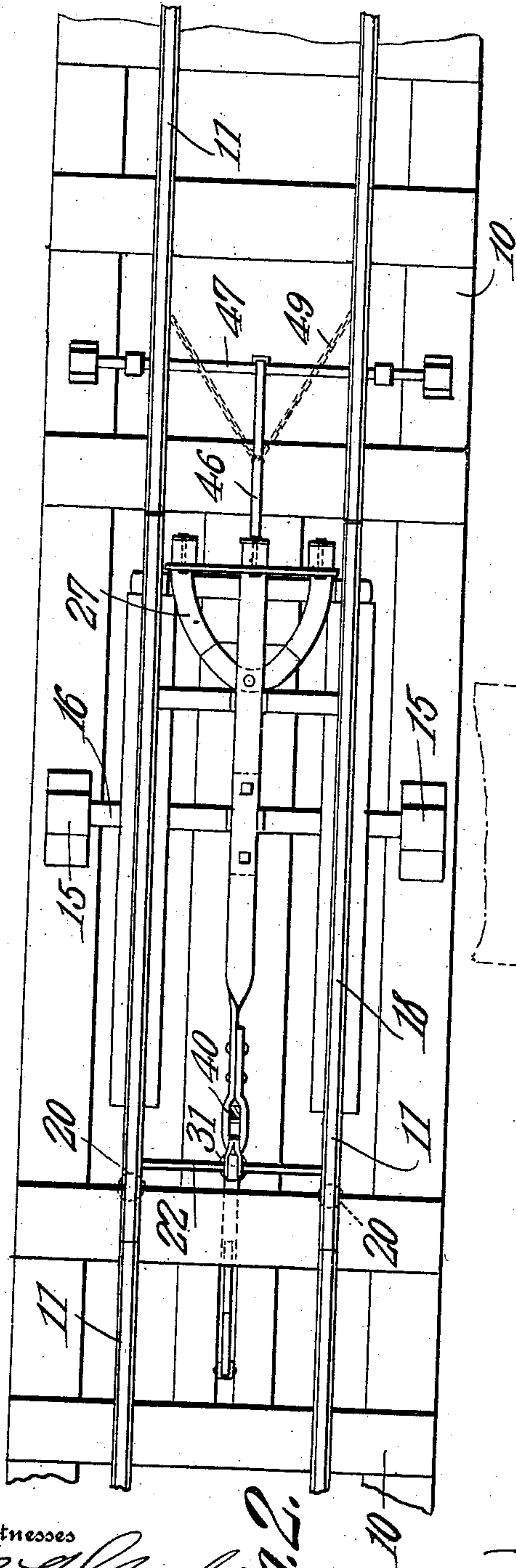
E. E. BULL.
COAL TIPPLE.

APPLICATION FILED JULY 6, 1908.

914,698.

Patented Mar. 9, 1909.

2 SHEETS—SHEET 1.



Witnesses

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Fig. 2.

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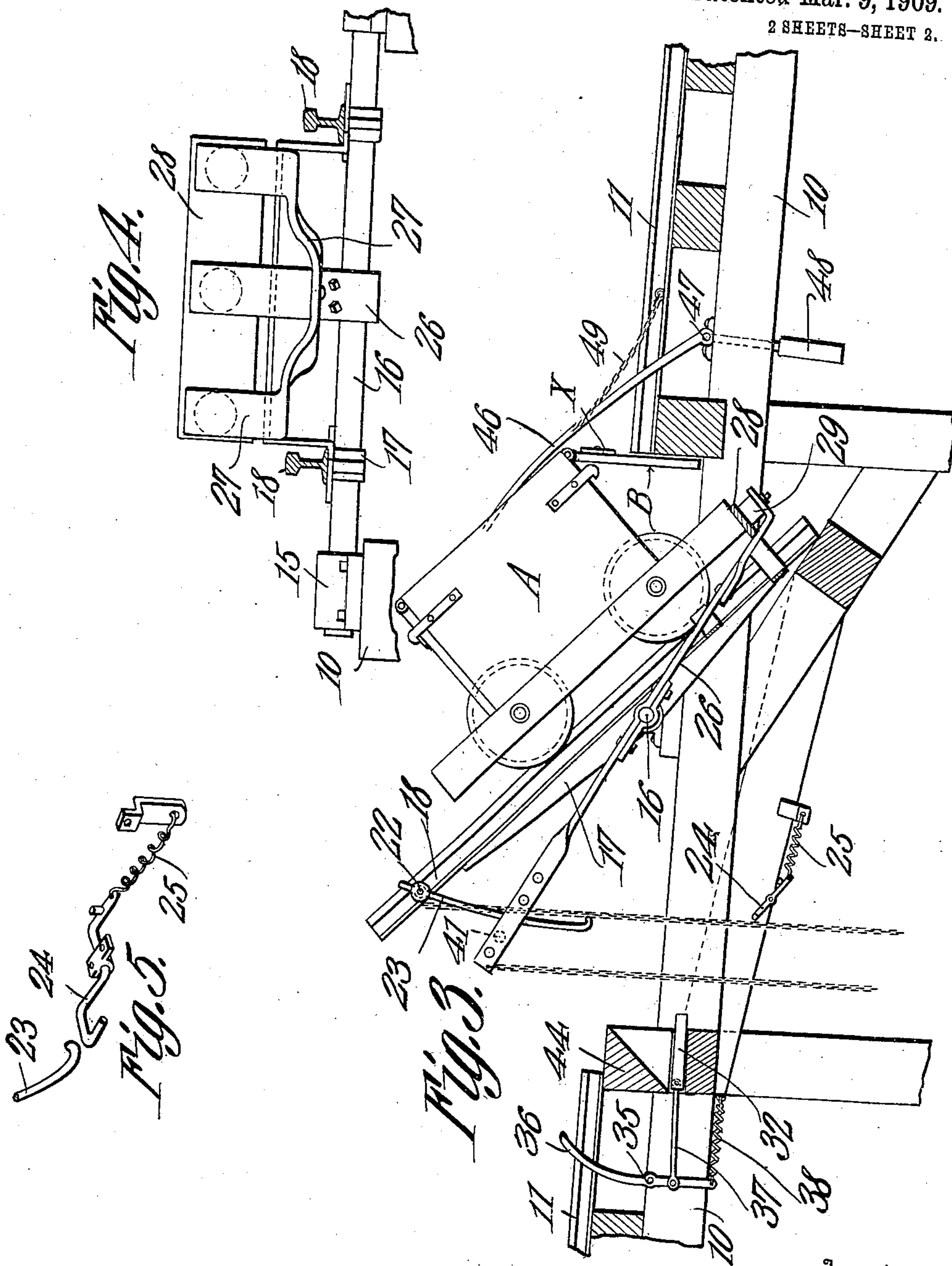
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Inventor
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UNITED STATES PATENT OFFICE.

EDWARD EVERETT BULL, OF DAYTON, TENNESSEE.

COAL-TIPPLE.

No. 914,698.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed July 6, 1908. Serial No. 442,130.

To all whom it may concern:

Be it known that I, EDWARD EVERETT BULL, a citizen of the United States, residing at Dayton, in the county of Rhea and State of Tennessee, have invented a new and useful Coal-Tipple, of which the following is a specification.

This invention relates to coal tipples of that general class employed in automatically unloading mine cars and the like.

The principal object of the invention is to provide a tipple in which the cars will be halted and dumped by running over a straight track so that the empty car after dumping will be returned to the line and will proceed in the same direction as that in which it originally started.

A further object of the invention is to provide a dumping platform that is entirely automatic in its nature, the platform being arranged to receive the cars singly and to tilt to dumping position under the weight of the loaded car, while counter-balancing means are employed for the purpose of restoring the platform and the empty car to initial position in such a manner that the car may then proceed by gravity.

A still further object of the invention is to provide a normally locked tilting platform with a releasing means that is under the control of the approaching car, the platform being unlocked and ready to tilt before the car actually reaches same.

A still further object of the invention is to provide a tiltable dumping platform with a novel form of bumper or stop that normally occupies an inoperative position below the rails but which automatically moves into car-engaging position as the platform is unlocked.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings: Figure 1 is a longitudinal sectional elevation of a car tipple constructed in accordance with the invention, the parts being shown in the posi-

tions assumed immediately after the unlocking of the platform. Fig. 2 is a plan view of the same. Fig. 3 is a view similar to Fig. 1 showing the platform in dumping position. Fig. 4 is a transverse sectional elevation on the line 4—4 of Fig. 1.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawing.

On a suitable elevated trestle or frame are mounted traffic rails 11 that are arranged for the support of mine cars A of any ordinary construction, the cars being provided as usual with swinging end gates which, when released, will move outward for the purpose of allowing the discharge of the coal or other contents of the car.

The frame is provided with bearings 15 for the reception of a transversely disposed shaft 16 that forms the axis of a dumping platform. To this shaft are secured two spaced beams 17 that form supports for rail sections 18 that form a part of the car-supporting tracks. The shaft is arranged at some distance forward of the center of the platform so that the principal weight is at the rear end and maintaining the platform in the approximately horizontal car-receiving position, that is to say with the rail sections 18 in alinement with and forming a continuation of the rails 11. In order to assist in maintaining the platform in car-receiving position, a pair of weights 20 are secured to chains or other supports hanging from the end portions of the rails 18 and these weights, together with the superior weight of the entrance end of the platform will be sufficient to restore the platform and the empty car from the dumping position shown in Fig. 3 to the receiving position shown in Fig. 1.

Near the entrance end of the platform, the rails 18 are connected by a small transverse shaft 22 on which is mounted a curved locking rod 23 having a hooked lower end that is arranged to engage a spring actuated catch 24 pivoted to the frame. The upper arm of the catch is arranged to be engaged by the hook and the lower arm thereof is acted upon by a helical tension spring 25 which maintains the catch in inoperative position. Pivoted to the central portion of the shaft 16 is a buffer lever 26 the rear end of which is provided with a yoke-like arm 27 and the ends of the yoke as well as the end of the

lever are turned up at a right angle and serve as supports for a buffer plate 28 with which the car bumper may engage. Between the blade and the several arms are yieldable blocks 29 which may be formed of rubber or metallic springs. The forward end of the buffer lever or that end adjacent the entrance end of the platform is provided with a weight 31 that tends to elevate the bumper plate into position to be engaged by the car but the bumper is normally held inoperative by a slidable bolt 32 that is guided in the frame and on the top of which the buffer lever rests.

Pivoted on a stud 35 on the main frame is a lever 36, the upper curved arm of which is arranged in such position as to be engaged by the front axle of a car approaching the platform. The lower arm of the lever is connected to the bumper lever locking bolt by means of a link 37 and the lever is acted upon by a spring 38 which serves to hold the bolt in operative position. The bottom of the bolt rests on the solid frame work so that it cannot yield downward under the weight of the buffer lever, but said bolt is free to swing upward with the pivot pin of the link as a center of movement so that when the end of the buffer lever swings upward as it does during the return to normal position the bolt will yield until the buffer lever has passed above the same.

Near the locking end of the buffer lever is an elongated slot 40 through which the locking rod 23 extends and this rod rests against an anti-friction roller 41 that is journaled in the slot. The locking rod or bar is curved and is so arranged that when the locking end of the buffer lever moves upward the roller will force the locking rod into engagement with the catch 24 and when the buffer lever moves down the rod will be free to move by gravity from engagement with the catch so that the dumping table or platform will be unlocked and free to swing to the dumping position shown in Fig. 3.

In order to prevent the entrance end of the dumping platform tilting downward as the loaded car passes thereon the rails at this point are arranged to extend over and rest upon a cross-beam 44 that forms a part of the frame work therefore cannot tilt except in the manner indicated in Fig. 3 and the tilting cannot start until the vertical plane of the center of gravity is shifted beyond the vertical plane of the axis of the shaft 16.

In all mine cars having end doors or gates, latches are employed for the purpose of holding the gates in closed position and usually these latches are moved to open position immediately in advance of the dumping operation. In the present instance the latch levers X are arranged to be met by a releasing lever 46 that is pivoted on a cross bar 47

carried by the frame and is normally maintained in operative position by a counterbalancing weight 48 carried by an arm that is rigidly secured to the lever 46, excessive forward movement being prevented by a stop chain 49.

In operation, a car approaching the platform in the direction indicated by the arrow in Fig. 1 will first strike the upper arm of the lever 36. This will act to withdraw the locking bolt 32 from under the forward end of the buffer lever so that the latter will move by gravity to the position shown in Fig. 1 with the buffer lever above the level of the tracks and in position to be engaged by the front of the advancing car. At the same time, the descent of the forward end of the buffer lever will allow the locking rod 23 to move by gravity from locking engagement with the catch 24 so that the platform is free for tilting movement. As the car passes on to the platform, its weight will be supported by the ends of the rails resting on cross-beam 44 of the frame. As the car advances further the door-latching members will be brought into contact with releasing lever 46 so that the end door of the car is free to swing to open position. The car continues to move until the vertical plane of the center of gravity of the car and platform is slightly beyond the vertical plane of the axis of shaft 16, whereupon the platform will move down by gravity to the dumping position shown in Fig. 3 and at the same time the end gate of the car will move to open position so that the coal or other contents may be freely discharged. When the car is empty, the superior weight of the entrance end of the platform together with the weights 20 will be sufficient to restore the platform and the empty car to the initial approximately horizontal position so that the car will then be free to move from the platform onto the discharge rails, the direction of travel being the same as that in which it traveled in reaching the platform. During the movement of the platform to its initial position, the forward end of the buffer lever will engage against the top of the bolt 32 and as said bolt cannot yield downward, the buffer lever will be swung with the shaft 16 as an axis until the buffer blade is out of engagement with the car so that there will be no obstruction to the movement of the latter as it leaves the platform. The car will run over the unlatching lever 46 and the latter will be restored to its initial position after the passage of the car by means of the counter-weight 48. Inasmuch as the downward movement of the buffer lever is checked in advance of the completion of the similar movement of the platform, the roller 41 will operate on the locking rod 23 and will force the hooked end of the latter to engagement with the catch 24 so as to positively lock the

platform in position and the parts will remain in this position until another car strikes against the releasing lever 36.

I claim:—

5 1. In a coal tippie, a tilting platform arranged to assume a dumping position under the weight of a loaded car and counter-balanced to resume normal position when the car is empty, a bumper normally dis-
10 posed out of the path of movement of the car and movable with the platform, means under the control of an approaching car for releasing the bumper and allowing the same to move into car engaging position, said
15 bumper serving to engage and stop the car and hold the same during the dumping operation, means for moving the bumper out of engagement with the car as the platform resumes normal position, and a platform
20 locking device under the control of the bumper.

2. In a coal tippie, a pivotally mounted platform arranged to move to dumping position under the weight of a loaded car and
25 counter-balanced to return to normal position when the car is empty, a bumper movable with the platform and arranged to engage and stop the car and to hold the same during the dumping operation, a means for
30 engaging said bumper during the return movement of the car and platform to normal position to effect the release of the car, and a locking means normally holding the bumper in inoperative position.

35 3. In a coal tippie, a pivoted platform arranged to receive the cars and to tilt by gravity to dumping position under the weight of a loaded car, counter-balancing means for restoring the platform and empty
40 car to normal position, a pivotally mounted bumper arranged to move into car-engaging position and to hold the car during the dumping operation, a bumper releasing means under the control of the car, means
45 for automatically restoring the bumper to inoperative position as the platform returns to normal position, and a platform locking device under the control of said bumper.

4. In a coal tippie, a pivotally mounted
50 dumping platform movable to dumping position under the weight of a loaded car, counter-balancing means for restoring the platform and empty car to normal position, a pivotally mounted bumper movable into
55 position to engage the car, said bumper serving to hold the car on the platform during the dumping operation, a locking means normally holding the bumper in inoperative position, a car controlled releasing device
60 for said locking means, and a platform locking means under the control of said bumper.

5. In a coal tippie, a pivotally mounted dumping platform arranged to move to

dumping position under the weight of a loaded car, counter-balancing means for
65 restoring the platform and empty car to normal position, a car engaging bumper arranged to retain the car on the platform during the dumping operation, a locking device normally holding the bumper in
70 inoperative position, said locking device being under the control of an approaching car, and means for moving said locking device into the path of movement of the bumper during the return movement of the
75 platform to thereby effect release of the car.

6. In a coal tippie, a pivotally mounted dumping platform movable under the weight of a loaded car to dumping position, counter-balancing means for restoring the platform
80 and empty car to initial position, a pivotally mounted bumper movable into position to engage and stop the car, the bumper serving to hold the car during the dumping operation, a latch-bolt normally holding the bumper in
85 inoperative position, a car actuated releasing means for withdrawing the bolt, and a means for moving the bolt into the path of the bumper during the return of the platform, and a platform locking device under
90 the control of the bumper.

7. In a coal tippie, a pivotally mounted platform arranged to receive a loaded car, counter-balancing means for restoring the platform and empty car to initial position, a
95 hooked locking rod pivoted to the platform, a spring actuated latch arranged to engage said rod, a pivotally mounted bumper having at its rear end a yieldable buffer to be engaged by the car, a bolt engaging the for-
100 ward end of said bumper and acting to normally retain the bumper in inoperative position, a car actuated lever connected to the bolt and serving to withdraw the same to allow the bumper to move to car engaging
105 and holding position, and a rod actuating roller carried by the bumper and controlling the engagement and disengagement of the platform locking rod with the latch.

8. In a coal tippie, an elevated vessel or
110 frame for a straight away track, a tiltable dumping platform carrying sections of the track and movable under the weight of a loaded car to dumping position, and a pivotally mounted car unlatching lever car-
115 ried by the frame and arranged to engage and unlatch the door holding devices of the cars said lever being free to yield downward to allow the cars to pass thereover.

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

EDWARD EVERETT BULL.

Witnesses:

CLAUD ABEL,
ALBERT WHITENER.