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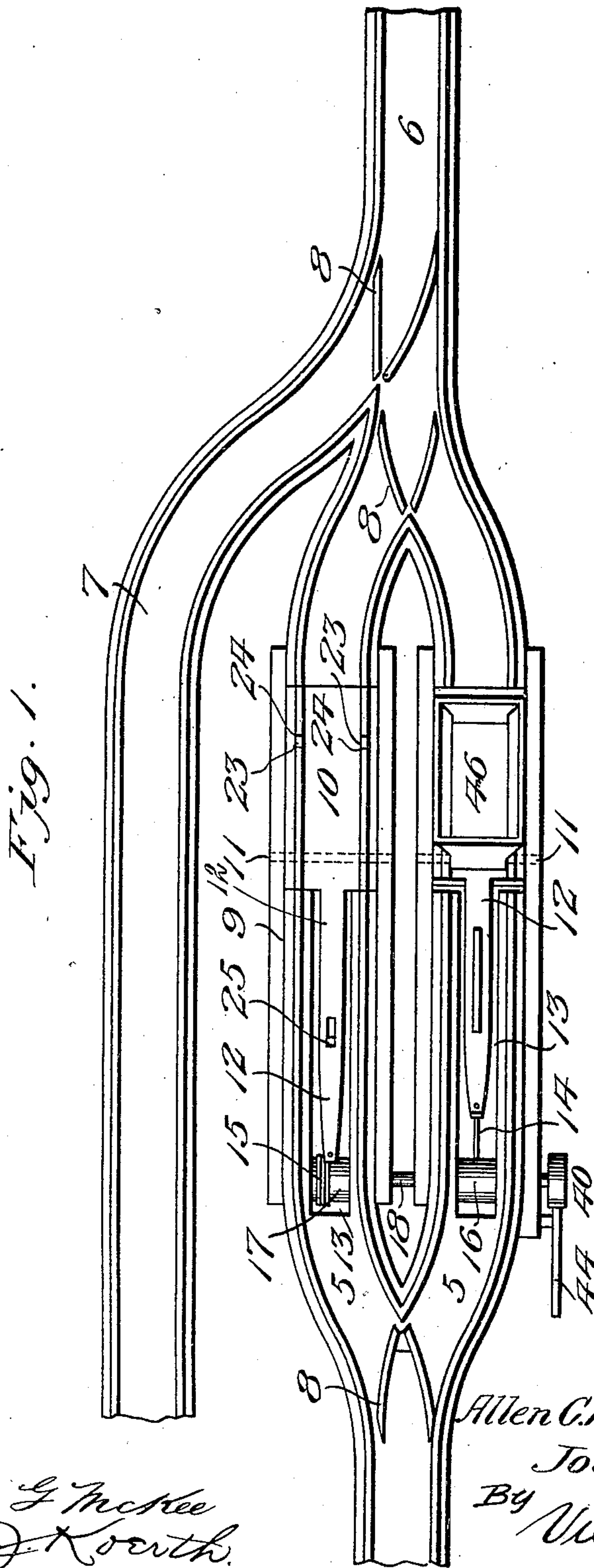
PATENTED NOV. 6, 1906.

J. G. BALL & A. C. HIGGINBOTHAM.

COAL DUMP.

APPLICATION FILED APR. 6, 1906.

3 SHEETS—SHEET 1.



Witnesses

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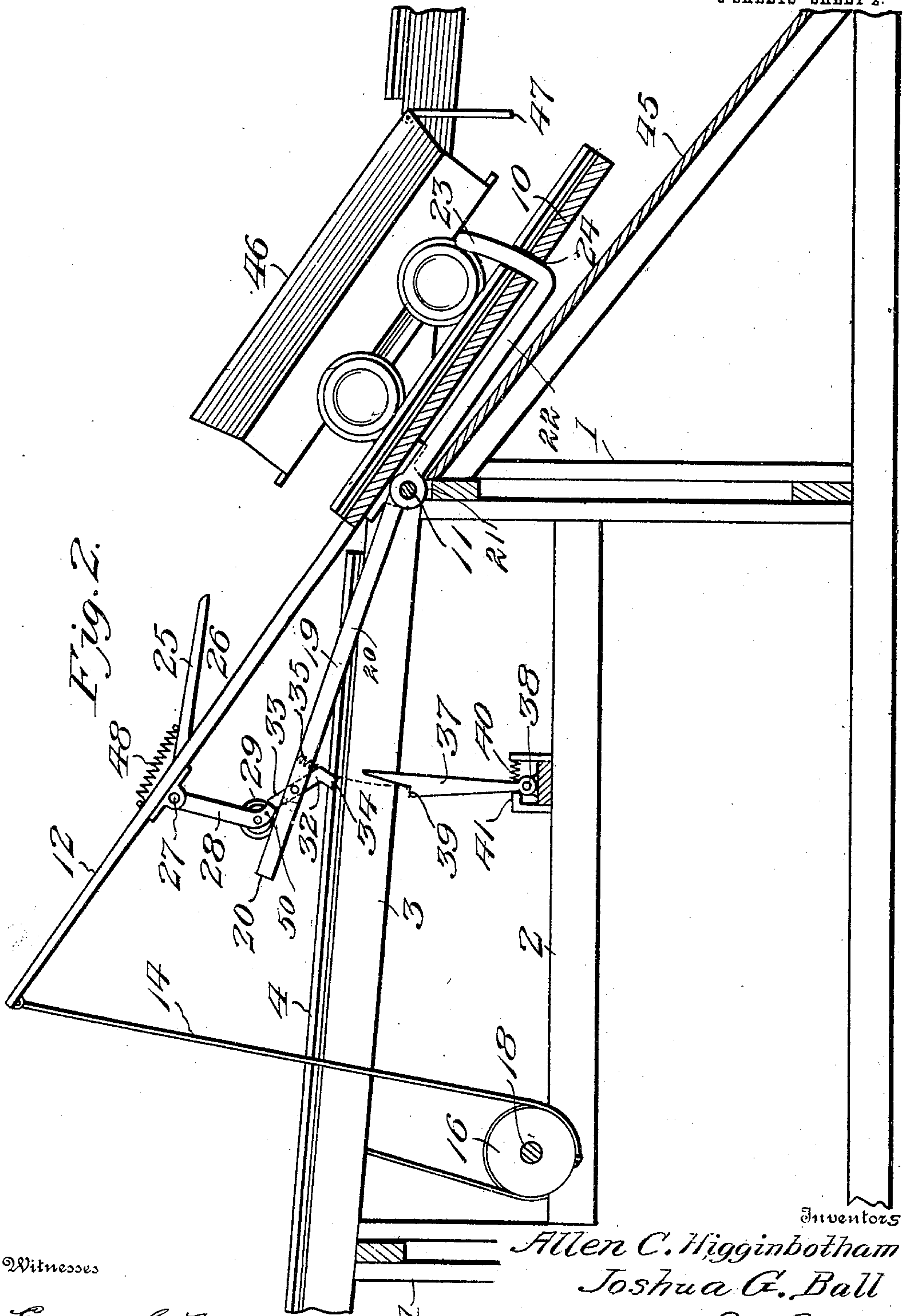
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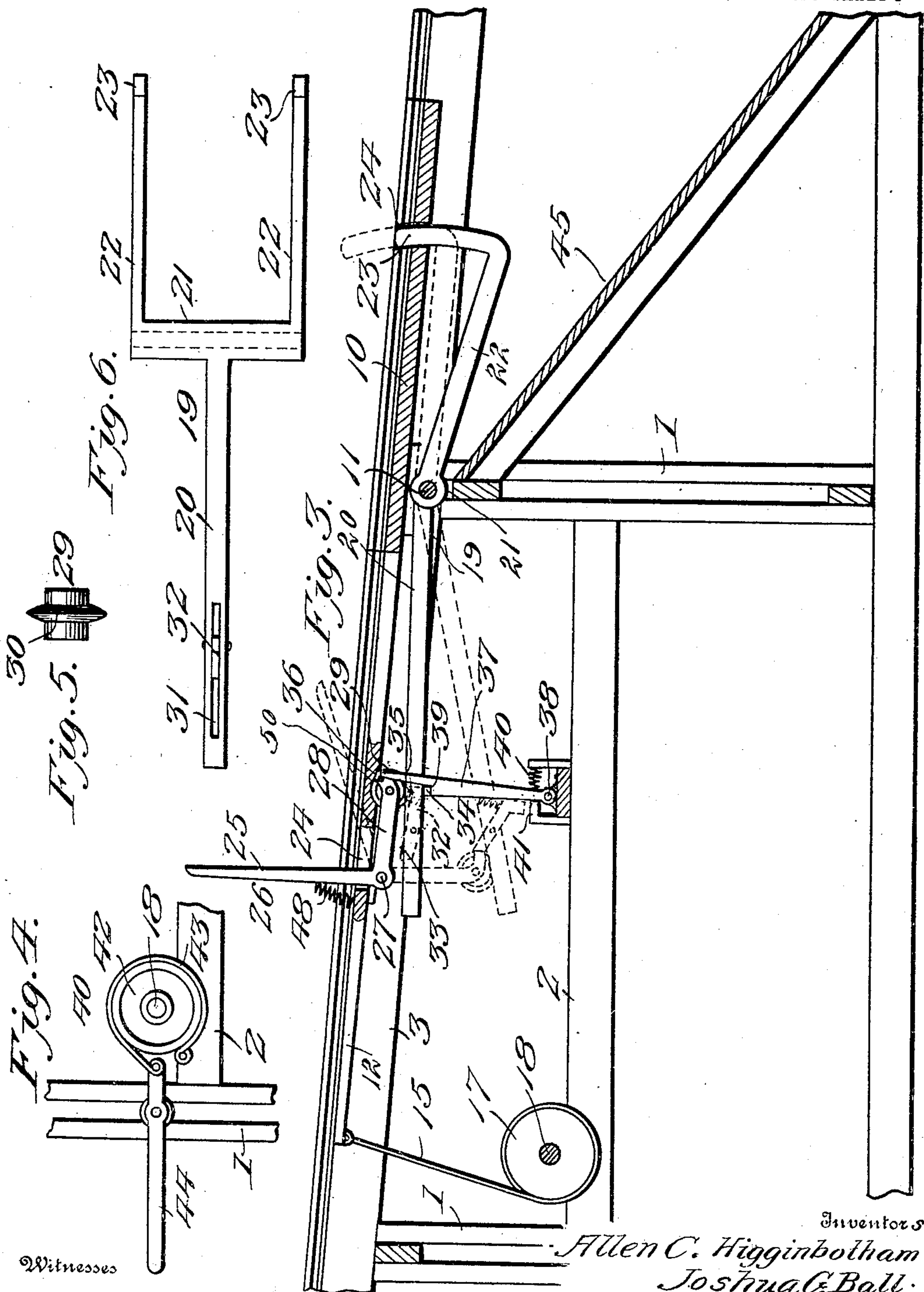
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

JOSHUA GRANT BALL AND ALLEN CLARENCE HIGGINBOTHAM, OF WAKE  
FOREST, WEST VIRGINIA.

## COAL-DUMP.

No. 835,386.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed April 6, 1905. Serial No. 254,177.

*To all whom it may concern:*

Be it known that we, JOSHUA GRANT BALL and ALLEN CLARENCE HIGGINBOTHAM, citizens of the United States, residing at Wake Forest, in the county of Kanawha and State of West Virginia, have invented new and useful Improvements in Coal-Dumps, of which the following is a specification.

The invention relates to an improvement in tipplers or car-dumps specifically arranged for the automatic dumping of the car.

The main object of the invention is the provision of a tipple in which the car advancing to dumping position operates to automatically restore to the normal or track level the car previously dumped.

Another object is the provision of means whereby the advancing car automatically operates the stop-lever, whereby to set the stops to properly position the car on the dumping-section of the track.

Other objects will be apparent from the following detailed description, with particular reference to the accompanying drawings, in three sheets, in which—

Figure 1 is a plan view of our improved tipple. Fig. 2 is a view in elevation, partly in section, showing the positions of the parts when a car is on the dumping-section of the track. Fig. 3 is a view in elevation, partly in section, showing the normal position of the parts in full lines, the operative position of the stop-lever, operating-lever, and holding-lever being shown in dotted lines. Fig. 4 is a view in elevation illustrating a braking mechanism for the platform-drums. Fig. 5 is a view in elevation of the guide-wheel for the operating-lever, and Fig. 6 is a plan of one of the stop-levers.

Referring to the drawings, wherein like parts are indicated by similar reference-numerals throughout the several views, our improved tipple is supported upon a framework comprising standards 1 and an intermediate longitudinal tie-bar 2 and track-beams 3, the latter being arranged to support the usual track-rails 4.

For the purpose of operation duplicate dumping-sections are provided, the tracks 5 of which branch from the main track and beyond the dumping position again communicate in a single track 6, and to the latter beyond the dumping-section of the track is connected a return-track 7 for empty cars. Suitable

switching devices 8 are arranged at the junction of the tracks 5 with the main track and with the track 6 and also at the junction of the track 6 with the return-track 7. These switches may be of automatic type or manually operated by any preferred construction, as such forms no part of our present invention. The track-sections 5, arranged in parallel relation, are supported upon a suitable platform 9, secured to the track-beams 3. The platform 9 and supported track is divided into two sections, one of which is fixed with relation to the supporting-framework, while the other comprises a tilting section 10, being pivotally supported at its forward end upon a transverse shaft 11, fixed in suitable bearings supported by the framework. Arm 12 projects from the forward end of the platform-sections 10, being arranged in the same plane therewith and normally lying within an opening 13 formed in the fixed section of the platform. The end of each of the arms 12 is connected, through the medium of flexible connections 14 and 15, to drums 16 and 17, fixed upon a transverse shaft 18, supported by the tie-bars 2 of the framework immediately beneath the free ends of the arms 12. The connections 14 and 15 are wound in reverse directions about the respective drums 16 and 17, whereby the winding of one connection about its drum tends to unwind the other connection.

The stop-lever 19 is also pivotally mounted upon the transverse shaft 11, but so arranged as to underlie the movable platform-section 10 and the arm 12. The lever 19 comprises an arm 20, arranged to directly underlie the arm 12, a transverse bearing 21, arranged to engage the shaft 11, the stop-arms 22, carrying stops 23, projecting upwardly at right angles from their free ends. The distance between the arms 22 is practically coextensive with the distance between the track-rails 4, whereby the stops 23 in the suitable operation of the parts are adapted to be projected through openings 24, formed in the platform-section 10. The arm 20 and stop-arms 22 of the lever 19 are not in the same horizontal plane, the stop-arms being in a plane inclined downwardly from the bearing 21 with relation to the plane of the arm 20, whereby to more effectively operate said stop-arms.

The arm 12 near its free end is formed with a longitudinal slot 24, through which pro-



jects the free end 25 of an operating-lever 26, pivotally secured at 27 in bearings affixed beneath the arm 12, the shorter arm 28 of the lever 26 being provided at its free end with a roller 29, having a V-shaped circumferential flange 30, arranged to move in a slot 31, formed in the arm 20 of lever 19. A holding-lever 32 is pivotally connected in the slot 31, having its short arm 33 working in said slot and above the plane of the arm 20, while its longer arm 34 projects below said arm 20 and is spring-pressed in a downward direction by spring 35. The end of lever 28, which is preferably bifurcated to receive the roller 29, is provided with stop ends 36, arranged when the parts are in operative situation to contact with the free ends of the arms 33 of the lever 32, as clearly illustrated in Fig. 2, whereby to maintain the arm 28 of lever 26 in a practically vertical position to support the arms 12 and 20. Immediately beneath the free end of the longer arm 34 of the lever 32 is arranged a catch or stop 37, pivoted at 38 to one of the tie-bars 2 and projecting upwardly therefrom, with its free end reduced or notched, as at 39. This stop is spring-pressed in a forward direction by a spring 40 and limited in its forward movement by a pin or other stop 41. One end of shaft 18 is provided with a fixed brake-disk 42, arranged to be encircled by a brake-band 43, connected to one end of the operating-handle 44, whereby movement of the shaft 18 and the drums thereon is controlled. A chute 45 of the usual or preferred construction underlies the free end of the dumping part of the platform.

Assuming the parts constructed and arranged as described and in normal position, as illustrated in full lines in Fig. 3, a car, as 46, provided with the usual hinged end 47, advancing down one of the tracks 5 will contact with the long arm 25 of the lever 26, forcing the same downward in a rearward direction against the tension of the spring 48. This movement of the lever 26 causes the short arm thereof to be moved into practically vertical position, forcing the arm 20 of the lever 19 downward and the stops 23 upward through the openings 24 in the platform-section 10. In this movement of the lever 26 the flange 30 of the roller 29 is guided in the slot 31 of the arm 20, the movement continuing until said roller has passed the end of the short arm 33 of the lever 32, when the spring 35 will operate to project said short arm 33 upward and into position in rear of the ends 36 of the short arm 28, which operation acts to lock the parts in the position illustrated in dotted lines in Fig. 3, wherein it will be noted that the stops 23 project upward beyond the plane of the tracks. The car continuing to advance reaches and overbalances the dumping-section 10 of the

platform, at which time the wheels of the car have contacted with the stops 23 and further movement of the car is prevented. The tilting platform-section now turns downward on its pivot to discharge the contents of the car onto the chute 45, this movement of the tilting platform-section operating to unwind one of the flexible connections—say 14—from the drum 16, and thereby winding up the connection 15 on the opposing drum 17, it being understood that these connections are of such length that when one tilted platform-section is in dumping position the connection from the other tilting platform-section is wound about the drum to maintain the platform in normal position. A second car advancing to be dumped is switched onto the other section 5 of the track, advancing into contact with the lever 25, where the above-described operation to project the stops 23 into operative position is repeated. As this car tilts the section 10 of its platform it will operate, owing to the advantage of weight gained by its loaded condition, to tilt the dumping-section, thereby elevating the arm 12, connected with its tilting section, and drawing upon the connection 15 will wind up the connection 14, restoring the tilting section of the first-operated dump to normal plane, alining the tracks, and permitting the empty car previously dumped to travel onto track 6, from which it is immediately shifted onto return-track 7. Previous, however, to this movement of the car onto track 6 provision must be made to automatically move the stops 23, and this is accomplished in the following manner. As the arm 12 of the first-described dumping-section—that is, the one having the empty car—moves toward normal position under the influence of the rewinding of its connection 14 the free end of lever 34 will contact with the notch 39 of the stop 37, elevating this end of the lever and releasing and withdrawing its arm 33 from the end 36 of the lever-arm 28, releasing this latter lever-arm and permitting the roller 29 to move rearward along the arm 20, moving the arm 28 into a practically horizontal position and projecting the arm 25 into vertical position, which is its normal position, this movement of the lever being assisted by the spring 48. As the stop-arms 22 and stops 23 are heavier than the arm 20 of the lever 19, said stops will be withdrawn from operative position when the lever 26 has been returned to normal position, thus permitting the movement of the empty car onto the track 6.

As the arm 20 of the lever 19 in the initial operation of the parts is moved downward before the tilting section 10 of the platform is turned on its pivot, some accommodation must be made for the free end of the lever 25, as the latter in this position of the parts will



be forced below the free end of the stop 37. We arrange for this movement by making the stop 37 spring-pressed, whereby it may yield in a rearward direction, so that in the operation described a pin 50 on end 28 of the lever 26 moving rearward will contact with the stop above the shoulder and gradually force the stop in a rearward direction, permitting the free end 34 of the lever 32 to move freely in front of the stop, as illustrated in dotted lines in Fig. 3.

From the construction described it will be noted that we have provided a double tipple in which the loaded car automatically operates to restore the previously-dumped car to the normal track plane, the operation being secured merely by the additional weight of the contents of the operating-car, and that each succeeding car being of course moved upon that section of the tipple not occupied will automatically return the previously-emptied car to the normal track plane. The operation of the tipple is therefore automatic in all respects and requires no manual assistance, it being understood that the tipple-track may be inclined toward the receiving-track 6, and the latter slightly beyond its connection with the return-track 7 may be inclined upwardly to a slight degree. By this arrangement if the switch 8 between the return-track and the track 6 is of the usual automatic spring type the empty cars will automatically move from the dumping-section of the platform onto the track 6 and from there automatically to the return-track for refilling.

The construction is illustrated and described in its preferred form; but we wish it understood that various changes and modifications may be made therein without departing from the spirit and scope of the invention.

Having thus described the invention, what is claimed as new is—

1. A tipple comprising a plurality of dumping-sections, and means operated by a weighted car on one section to restore the previous-operated section to normal position.

2. A tipple comprising duplicate dumping-sections, and means operative in the tilting of one section to restore the other section to normal position.

3. A tipple comprising a plurality of parallel-arranged dumping-sections, a drum arranged below the sections, and connections between the sections and the drum, said connections being reversely wound about the drum, whereby the operation of one section tends to restore the other to normal position.

4. A tipple comprising a dumping-section, a car-stop for the dumping-section and normally inoperative, and means operated by the passage of a car on the section for moving said stop into operative position.

5. A tipple comprising a dumping-section, a car-stop therefor and normally in inoperative position, and the lever carried by the dumping-section operative by the passage of the car thereon to force the car-stops to operative position.

6. A tipple comprising a dumping-section, car-stops therefor and normally in inoperative situation, means operated by the car for moving said stops to operative position, and means for moving said stops to inoperative position in the return of the dumping-section to normal position.

7. A tipple comprising a plurality of dumping-sections, car-stops carried by each section and normally in inoperative situation, means operated by the car for moving said stops to operative position, means operated by a car upon one of the sections to restore the other previously-operated section to normal position, and means for moving the car-stops of the previously-operated section to inoperative position in the return of said section to normal position.

8. A tipple comprising a plurality of dumping-sections, car-stops carried by each section and normally in inoperative situation, means operated by the car for moving said stops to operative position, means operated by a car upon one of the sections to restore the other previously-operated section to normal position, and means for automatically moving the car-stops of the previously-operated section to inoperative position in the return of said section to normal position.

9. A tipple comprising a dumping-section, a car-stop therefor and normally in inoperative position, and a right-angled lever carried by said section, one arm of the lever bearing against said car-stop, the other arm of the lever projecting above the tipple-section, whereby the car will move the car-stop to operative position.

10. A tipple comprising a dumping-section, a stop-lever carrying car-stops at one end, a right-angled lever carried by the dumping-section, one arm of the lever being provided with a roller to travel in the slot formed in the stop-lever, the other arm of the lever normally projecting at right angles to the dumping-sections, and means to lock said right-angled lever in normal position.

11. A tipple comprising a dumping-section, a stop-lever carrying car-stops at one end, a right-angled lever carried by the dumping-section, one arm of the lever being provided with a roller to travel in the slot formed in the stop-lever, the other arm of the lever normally projecting at right angles to the dumping-sections, and a lever to engage said right-angled lever.

12. A tipple comprising a dumping-section, a stop-lever carrying car-stops at one end, a right-angled lever carried by the

dumping-section, one arm of the lever being provided with a roller to travel in the slot formed in the stop-lever, the other arm of the lever normally projecting at right angles to the dumping-sections, a lever to engage said right-angled lever, and a stop supported by the tipple-frame to automatically disengage said latter lever from the right-angled lever.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSHUA GRANT BALL.  
ALLEN CLARENCE HIGGINBOTHAM.

Witnesses:

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FLOYD JACKSON.