

No. 740,609.

PATENTED OCT. 6, 1903.

G. D. WALKER.
COMBINED ELEVATOR AND DUMP.

APPLICATION FILED DEC. 6, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

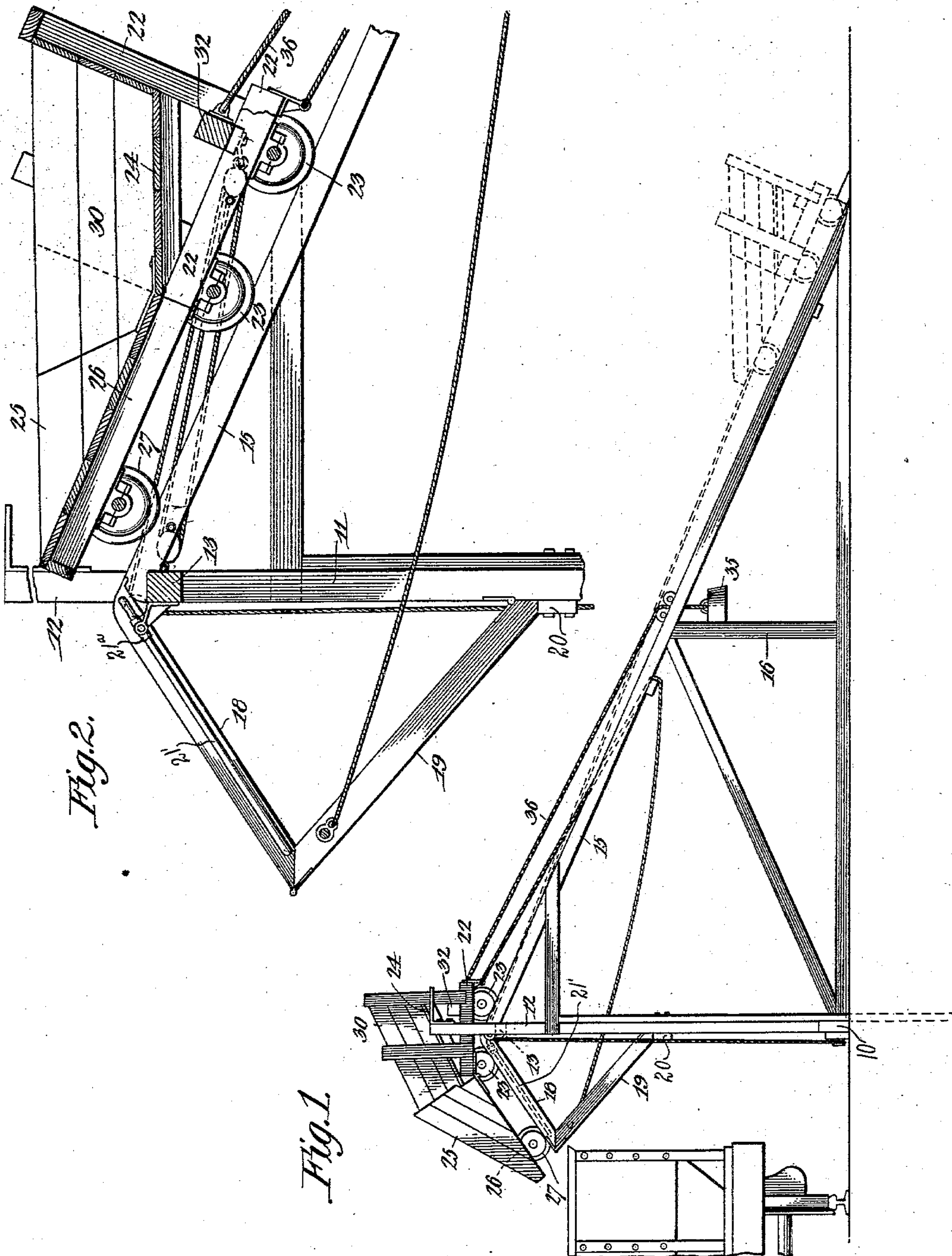


Fig. 2.

Fig. 1.

Witnesses

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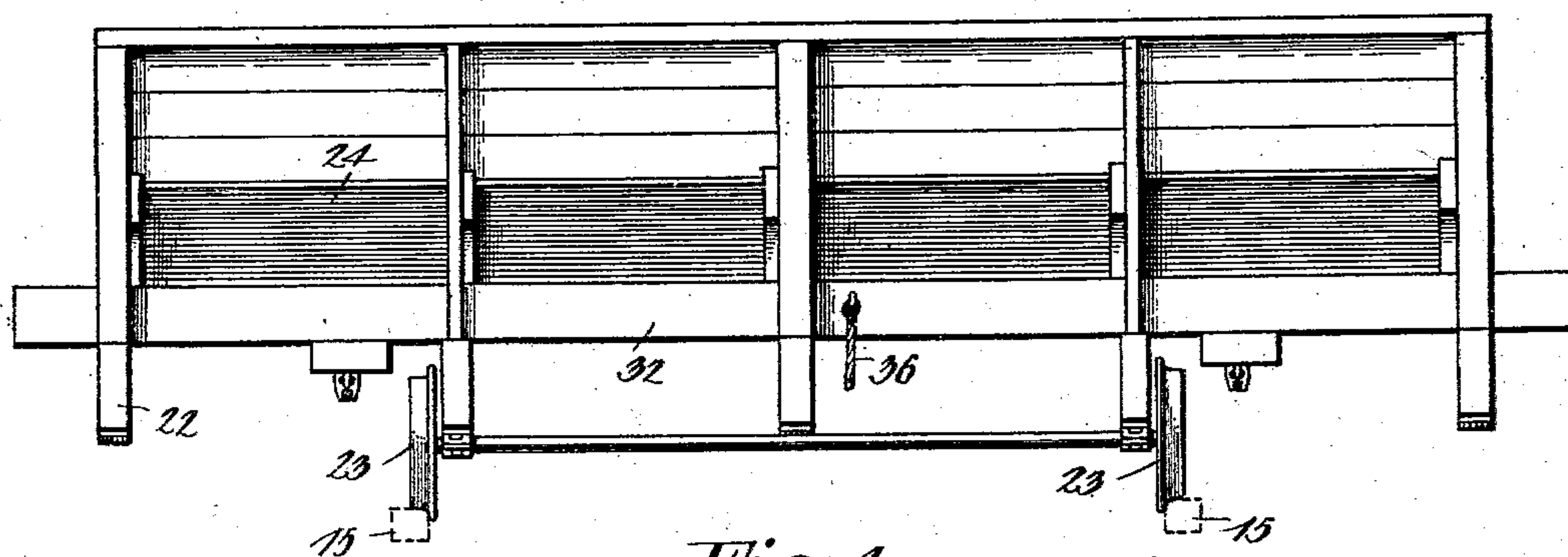
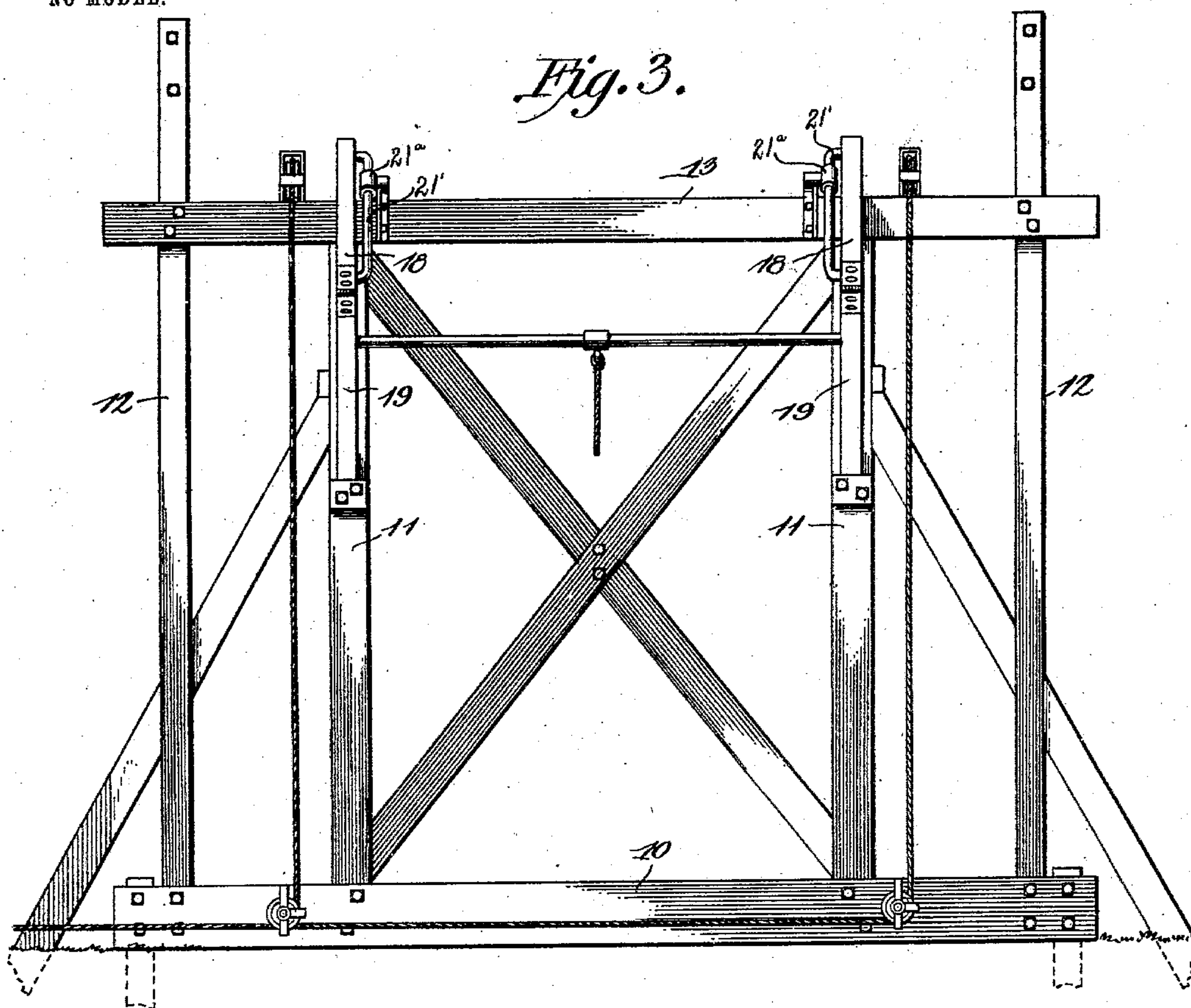


Fig. 4.

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3 SHEETS--SHEET 3

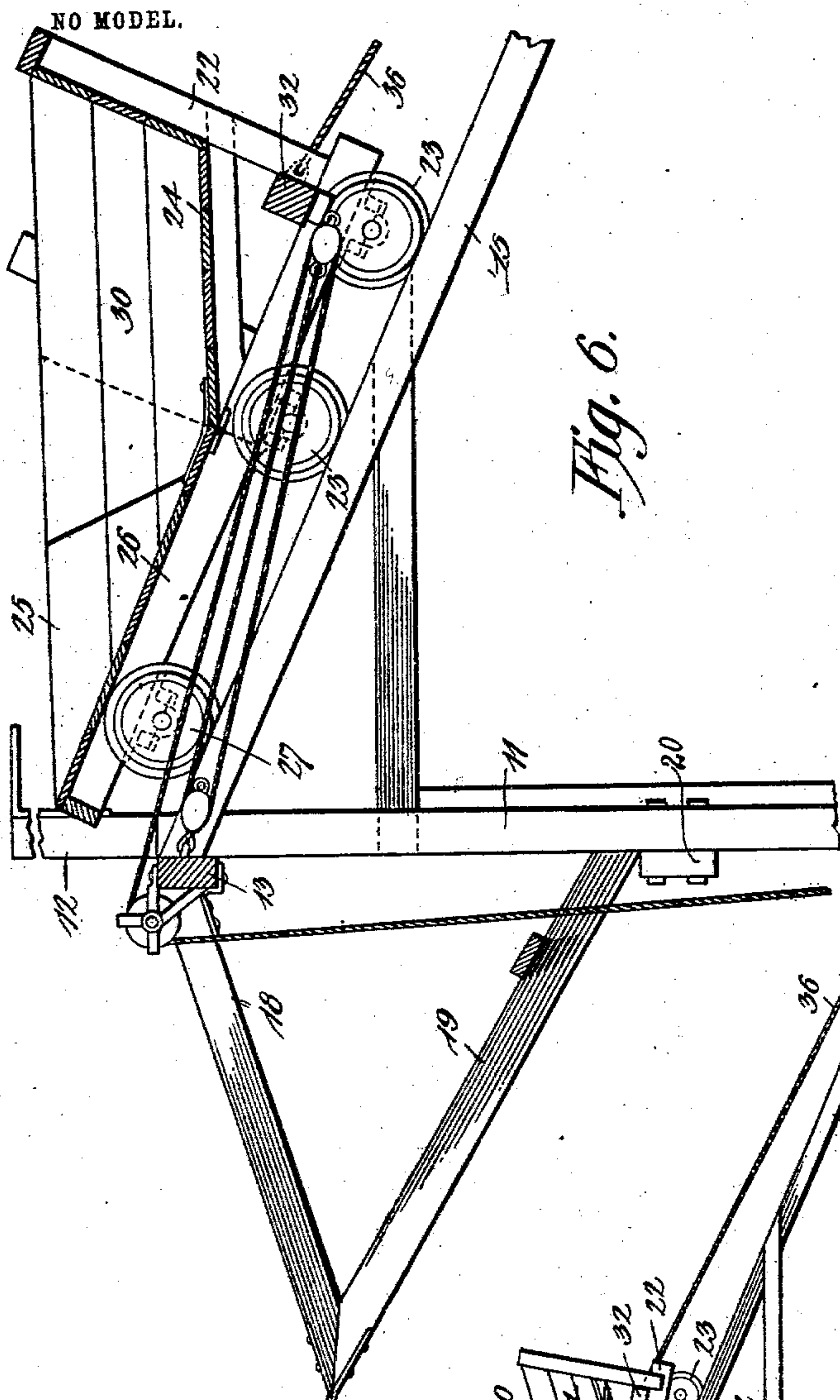


Fig. 6.

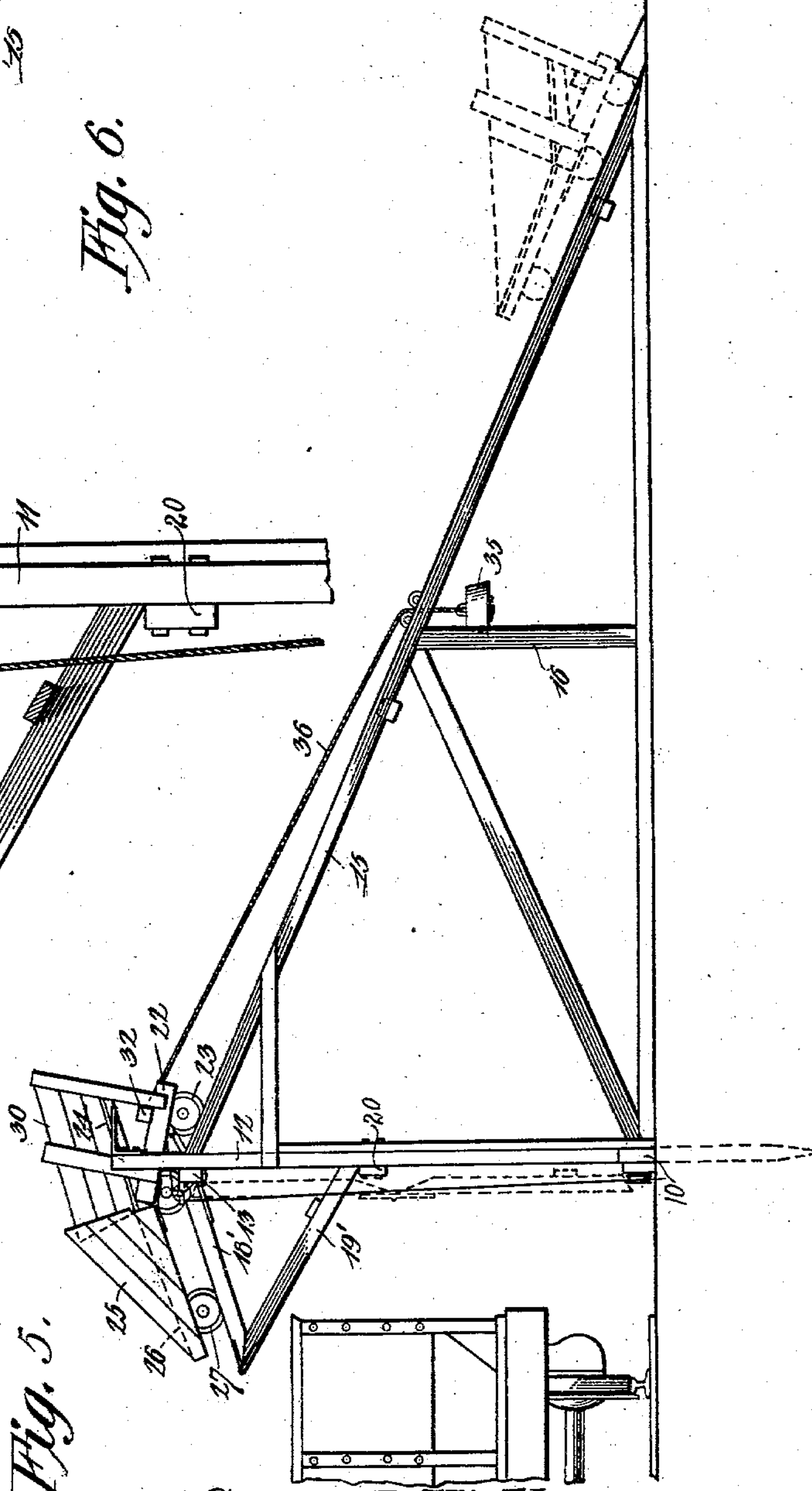


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE DANIEL WALKER, OF ORCHARD, COLORADO.

COMBINED ELEVATOR AND DUMP.

SPECIFICATION forming part of Letters Patent No. 740,609, dated October 6, 1903.

Application filed December 6, 1902. Serial No. 134,164. (No model.)

To all whom it may concern:

Be it known that I, GEORGE DANIEL WALKER, a citizen of the United States, residing at Orchard, in the county of Morgan and State of Colorado, have invented a new and useful Combined Elevator and Dump, of which the following is a specification.

The invention relates to certain improvements in mechanism for elevating material of any desired character and automatically dumping the same at a required point.

While the invention is applicable for loading and unloading purposes in general, it is particularly intended for use in loading railway-cars and the like with beets or other material at points along a railway-line where the amount of material handled is not sufficient to warrant the expense of elevators and other loading appliances.

The principal object of the invention is to provide an elevator and dumping apparatus in which a car loaded with any desired material is traveled up an inclined plane and on reaching the top of the plane automatically dumps its contents.

A further object of the invention is to provide an improved form of dumping-car in which at the dumping-point the forward section of the car is automatically moved to dumping position without necessitating the travel of the main car-body beyond the upper portion of the inclined plane.

A still further object of the invention is to provide a car-supporting frame capable of adjustment with relation to a line of railway-track to permit its ready removal when in use, and thus avoid danger of damage to passing trains.

A still further object of the invention is to provide for the automatic adjustment of a portion of the car-supporting frame when the car has been moved therefrom and approaches the opposite limit of movement.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter 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 side elevation of an elevator and dump constructed in accordance with the invention, the car being shown in full lines in dumping position and in dotted lines in the loading position at the bottom of the inclined plane. Fig. 2 is a sectional elevation of the car and a portion of the supporting-frame on a somewhat-larger scale. Fig. 3 is a front elevation of the frame. Fig. 4 is a rear elevation of the car. Fig. 5 is a view similar to Fig. 1, illustrating a slight modification of the invention. Fig. 6 is a detail sectional view, on an enlarged scale, illustrating the arrangement of the forward end of the track when the same is to be adjusted to inoperative position by hand.

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

When the device is to be employed for loading railway-cars, the front portion of the supporting-frame of the inclined plane is disposed about six feet, more or less, from the railway-track, said frame comprising a lower sill 10 and two pairs of uprights 11 and 12, connected by an upper horizontally-disposed beam 13. The frame may be further strengthened by truss-braces 14 of any ordinary character. The inclined plane comprises a pair of beams or rails 15, extending rearwardly from the top of the front frame to the ground and preferably supported at an intermediate point by an auxiliary upright frame 16.

The structure thus far described may be formed of wood or metal and made permanent in character by the employment of suitable foundations, and if necessary a power plant may be installed in the form of a small explosive-engine or the like, although for ordinary purposes a team of animals will generally be found sufficient.

To the front of the main frame are hinged a pair of rail members 18 in alinement with the rail members 15 of the inclined plane and adapted to receive the forward wheels of the car when the latter reaches the top of the plane. The outer ends of the rail members 18 are hinged or pivoted to angularly-disposed strips or braces 19, the lower ends of which are piv-

oted or hinged to the uprights 11 and are further supported by blocks 20, carried by said uprights when the apparatus is in use. The struts or braces 19 are connected by a flexible rope or chain 21 to the movable car, so that when the car reaches its lowest position, or the position indicated by dotted lines in Fig. 1, the struts will be pulled upwardly and will force the auxiliary rail members 18 inward and over the top of the main structure, so as to be out of the way of passing trains. On the upward movement of the car as it approaches the top of the inclined plane the tension on the cord or chain will be relaxed and the struts and auxiliary rail members will fall to the position shown in Fig. 2 by gravity. In order to properly guide the rail members in moving to and from their two positions, each of said members is provided with an auxiliary bar 21', extending through a pivotally-mounted guide 21^a, carried by a bracket extending from the main portion of the frame, the pivoted guides serving as a means for preventing lateral displacement of the rail-sections during the movement.

The car is formed of two members hinged or pivoted together in such manner that they may separate at the top of the inclined plane to permit the dumping of the contents of the car without necessitating the travel of the rear or main section of the car beyond the end of the inclined plane. The rear section of the car comprises a strongly-braced frame 22, provided with supporting-wheels 23, which may travel on the track 15, and the floor 24 of this section of the car is arranged at an angle to the angle of the plane, so as to permit the ready discharge of the contents of the car. The front section of the car has a pair of sill members 26, pivotally connected to the corresponding members of the rear portion of the car and provided with a pair of supporting-wheels 27. The floor of the front section of the car is parallel with the inclined plane, so that when the car is in loading position at the bottom of the plane an inclined pocket is formed for the reception of the material to be elevated and dumped. The sides of the car-sections are formed of planks 30, those of the front section slightly overlapping the corresponding planks of the rear section, so as to preserve the continuity of the sides of the car when the latter reaches the dumping position.

The hoisting mechanism in the present instance comprises two sets of blocks and tackle, one block of each set being connected to the horizontal cross-bar 13 of the main frame and the other being connected to the under side of the car at a point near the rear end thereof. The ends of the tackles pass through suitable guiding-sheaves carried by the sill 10, and are thence conducted to a small engine or hitched to a team of horses or the like in order to haul the car to the top of the inclined plane.

In the operation of the apparatus the car, being at the bottom of the inclined plane, is loaded with the material to be elevated and the car is hoisted to the top of the plane. The front section 25 of the car first passes from the rails 15 of the inclined plane onto the rails 18 beyond the frame, and the contents of the car are moved by gravity toward the front end thereof to fall into a suitable receptacle, as a railway-car or vessel, the angular position of the bottom portion 24 of the rear section of the car insuring the discharge of the material from the rear section. In some cases, depending on the class of material being handled, it may be desirable to travel the rear section of the car for the greater distance or until its forward wheels are resting on the track members 18, thus increasing the angle of the floor of the car and insuring the discharge of its contents. Excessive movement of the car is prevented by extending one of its rear frame members 32 laterally from each side of the car to form stops for engagement with the upper ends of the uprights 12, this being clearly illustrated in Fig. 1.

In order to provide for the return of the car from the track members 18 to the inclined plane, I preferably employ a weight 35, secured to a rope 36, having one end connected to the rear end of the car, the weight being sufficient to return the empty car to the inclined plane and the latter thence traveling by gravity to loading position at the bottom of the plane.

The arrangement of the auxiliary rails and their supporting-struts may be modified in the manner shown in Figs. 5 and 6, wherein similar numerals of reference designate parts corresponding to those already described.

To the front of the main frame are hinged the inner ends of a pair of rail members 18', in alinement with the rail members 15 of the inclined plane and adapted to receive the forward wheels of the car when the latter reaches the top of the plane. The outer ends of the rail members 18' are hinged to angularly-disposed struts or braces 19', the lower ends of which rest on blocks 20 when the apparatus is in use. When not in use, the braces 19' are removed from engagement with the blocks 20 and the braces and rail members 19' then fall into a vertical line in parallel relation with the front frame, as shown by dotted lines in Fig. 5, thus preventing danger of contact with passing trains.

It will be understood that the apparatus may be employed in connection with the loading of cars or vessels of any character and that any suitable power may be employed for operating the device without departing from the invention.

Having thus described the invention, what is claimed is—

1. The combination with an inclined track, of an auxiliary track-section extending from the highest point thereof and inclined in a

direction opposite thereto, a car having a plurality of pivotally-connected floor-sections disposed at an angle to each other, each section having independent wheels, the sections being adjustable to dumping position by the movement of the wheels of the front section and the front wheels of the rear section onto the auxiliary tracks.

2. The combination with an inclined track having an auxiliary section extending from the highest point thereof and inclined in a direction opposite to the main track, of a car having a plurality of pivotally-connected floor-sections disposed at an angle to each other, the rear floor-section being normally maintained in an approximately horizontal position, and both sections being adjusted to dumping position when moved onto the auxiliary tracks.

3. The combination with an inclined trackway, of an auxiliary track-section extending from the highest point of said track, and a sectional car having a plurality of pivotally-connected floor-sections arranged at an angle to each other, each section having supporting-wheels adapted to the trackway and the car being adjusted to dumping position when the wheels of the front section are moved onto the auxiliary tracks.

4. The combination with an inclined track, of an auxiliary track extending from the highest point thereof, a car formed of front and rear pivotally-connected sections each of which is provided with supporting-wheels, a supporting-floor forming a part of the rear section of the car and normally in an ap-

proximately horizontal plane, a floor-section forming a part of the front section of the car and inclined at an angle to the floor of the rear section, the car being adjusted to dumping position by the movement of the wheels of the front section onto said auxiliary track.

5. The combination with an inclined trackway, of an auxiliary track extending from the highest point thereof, a car formed of front and rear pivotally-connected sections having overlapping side members, supporting-wheels for each of the car-sections, and a stop carried by the track-supporting frame for engagement with the rear section of the car.

6. The combination with a supporting-frame, of an inclined track, auxiliary tracks, pivoted brace members for said auxiliary tracks, a car, and means for connecting the car to said brace members to thereby automatically move the auxiliary tracks to inoperative position.

7. The combination with a supporting-frame, of an inclined track, auxiliary tracks, brace members pivotally connected to the frame and to the auxiliary tracks, a flexible connecting means between the brace members and a moving car, and guiding devices for said auxiliary tracks.

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

GEORGE DANIEL WALKER.

Witnesses:

L. C. STEPHENSON,
JAS. H. WALKER.