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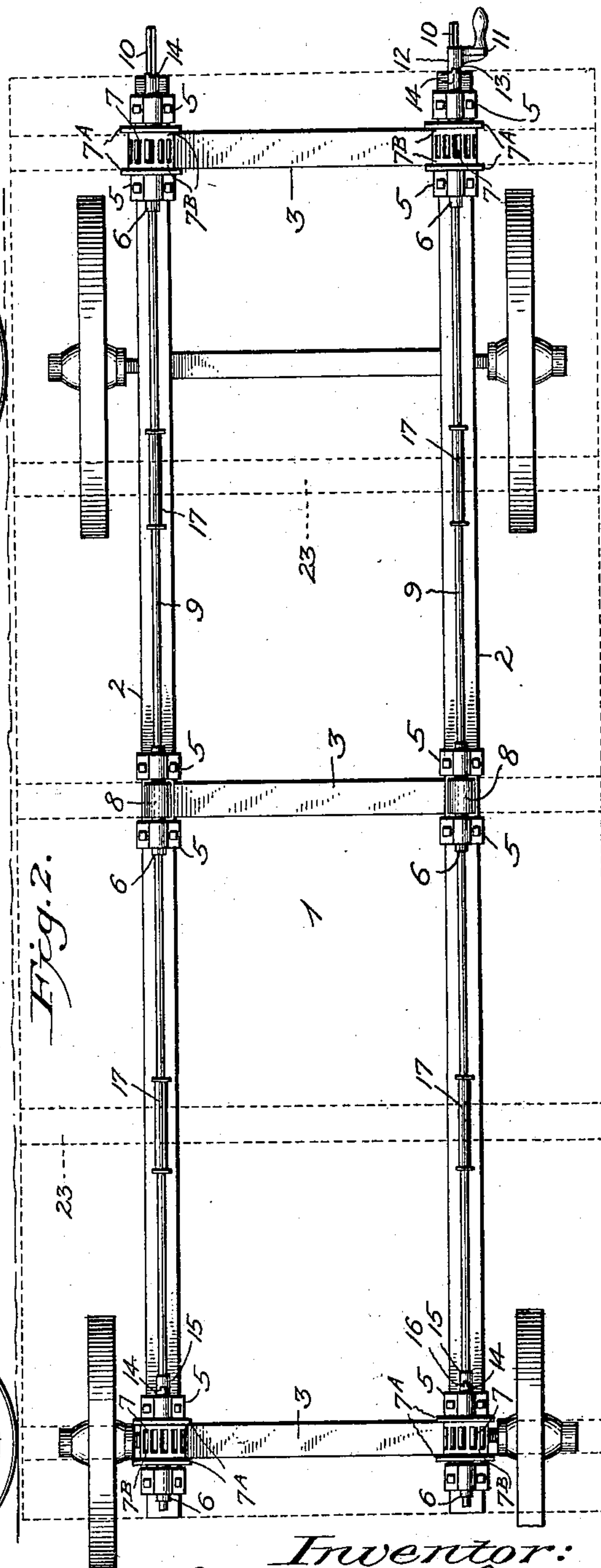
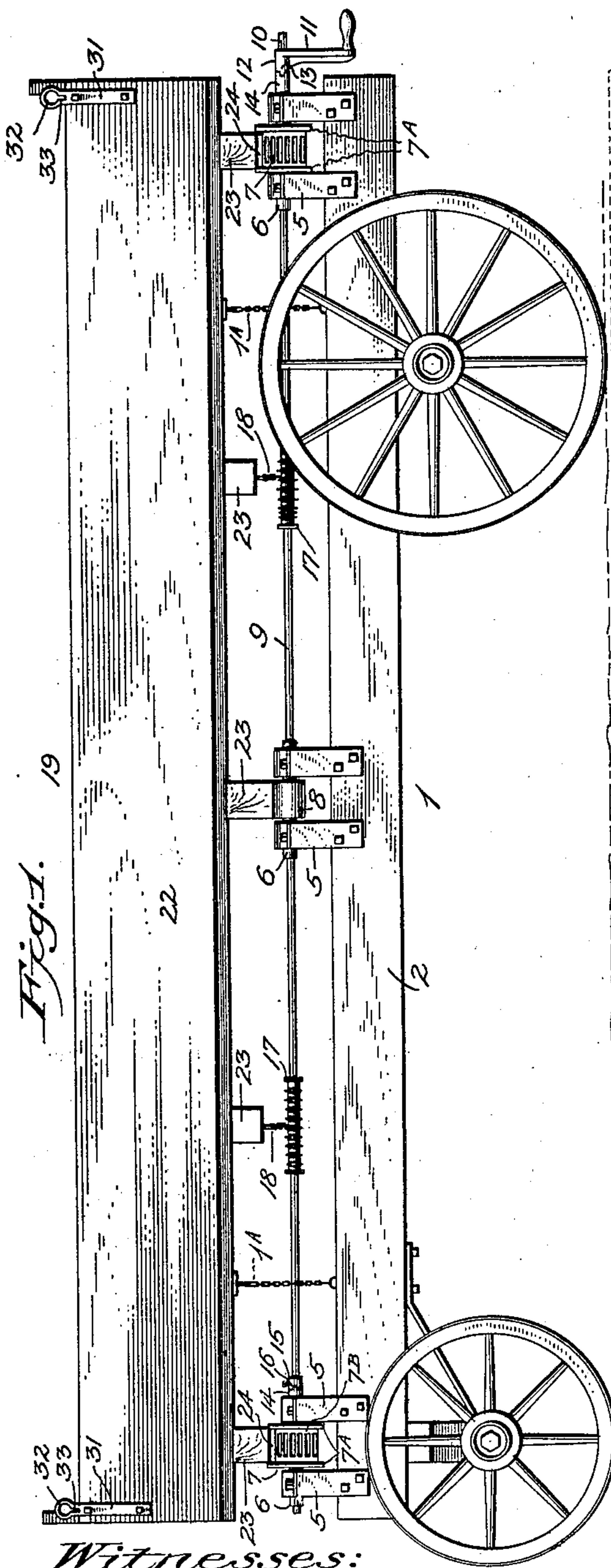
Patented Sept. 30, 1902.

E. M. SANDY.
DUMPING WAGON.

(Application filed July 21, 1902.)

(No Model.)

3 Sheets—Sheet i.



Witnesses:

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By

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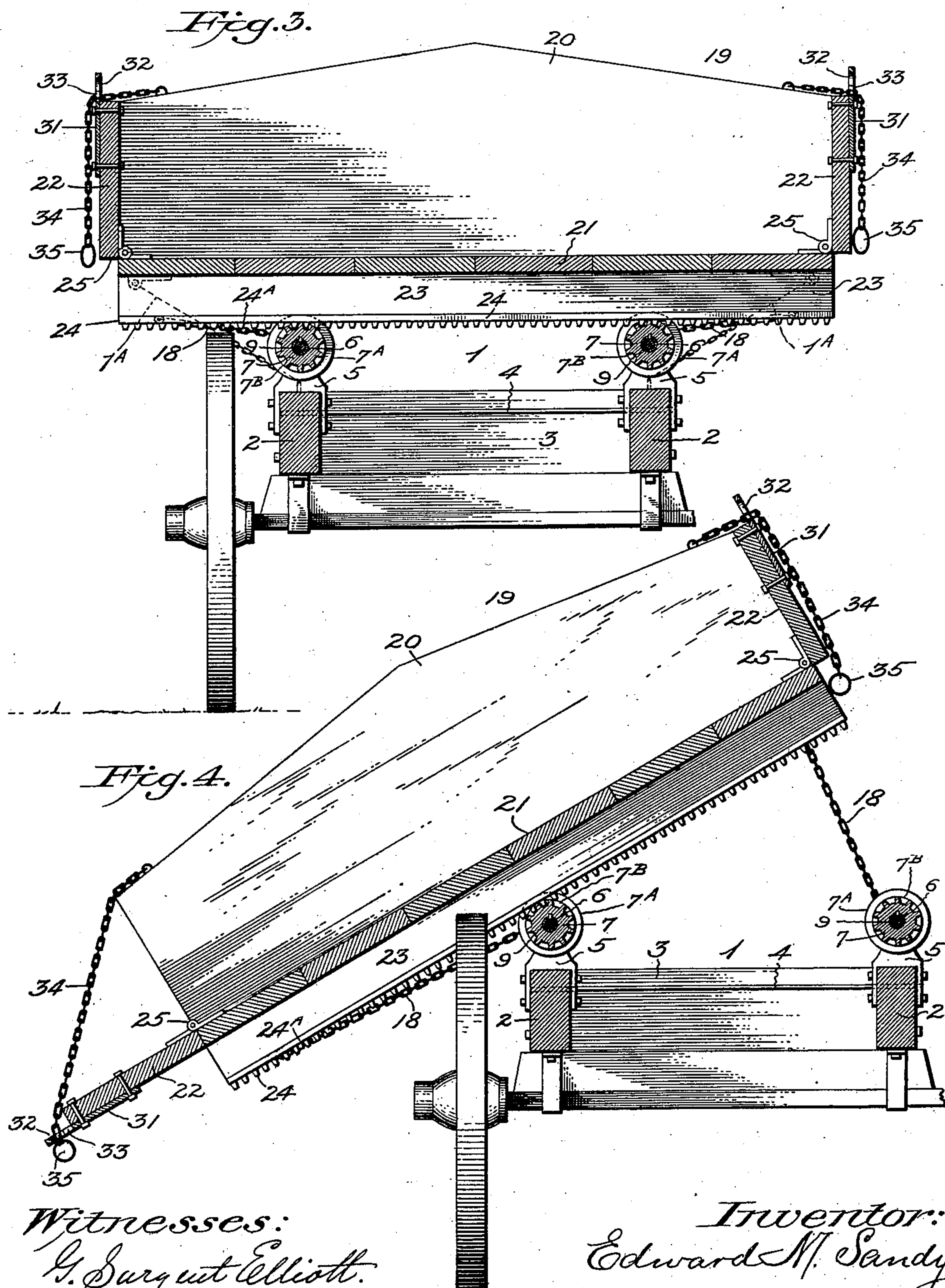
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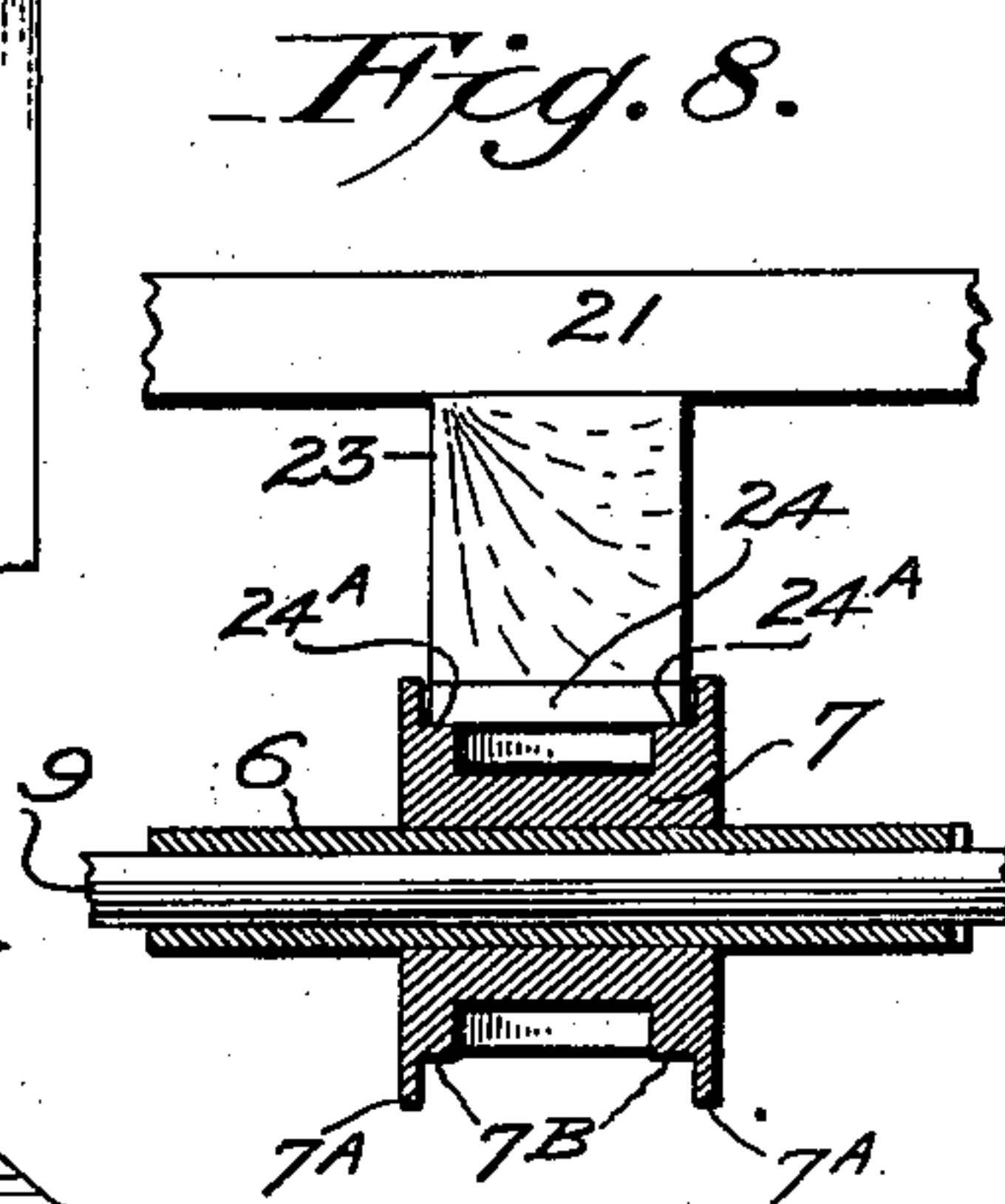
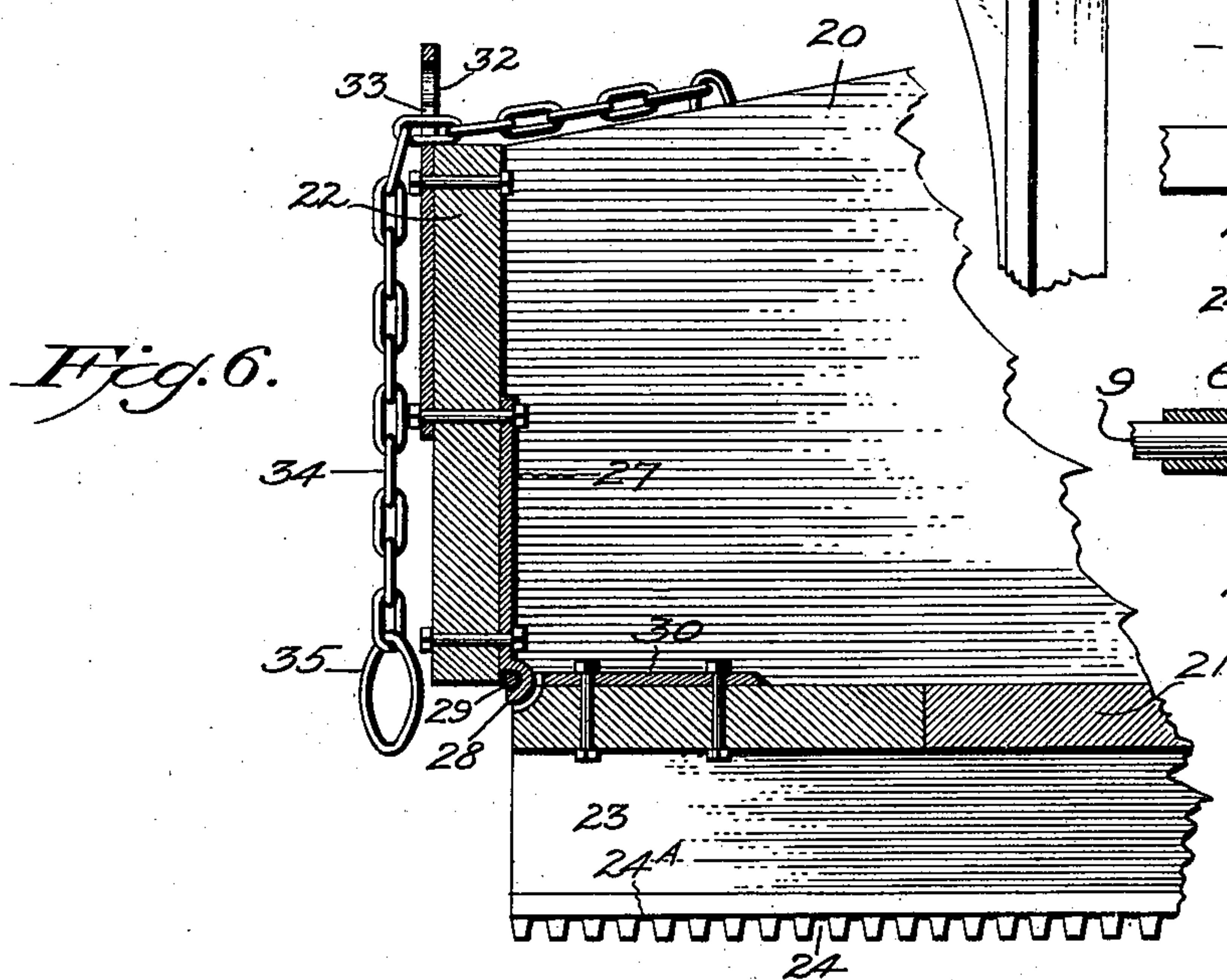
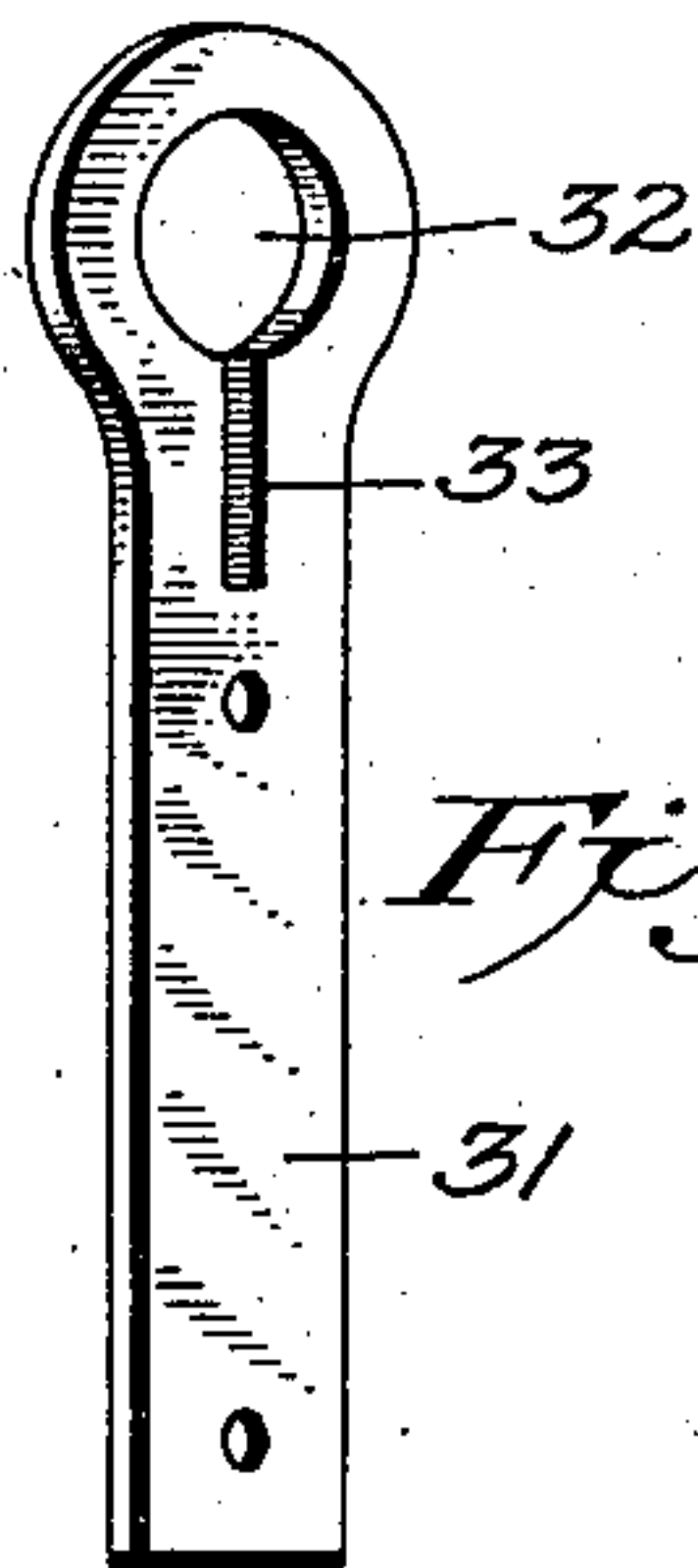
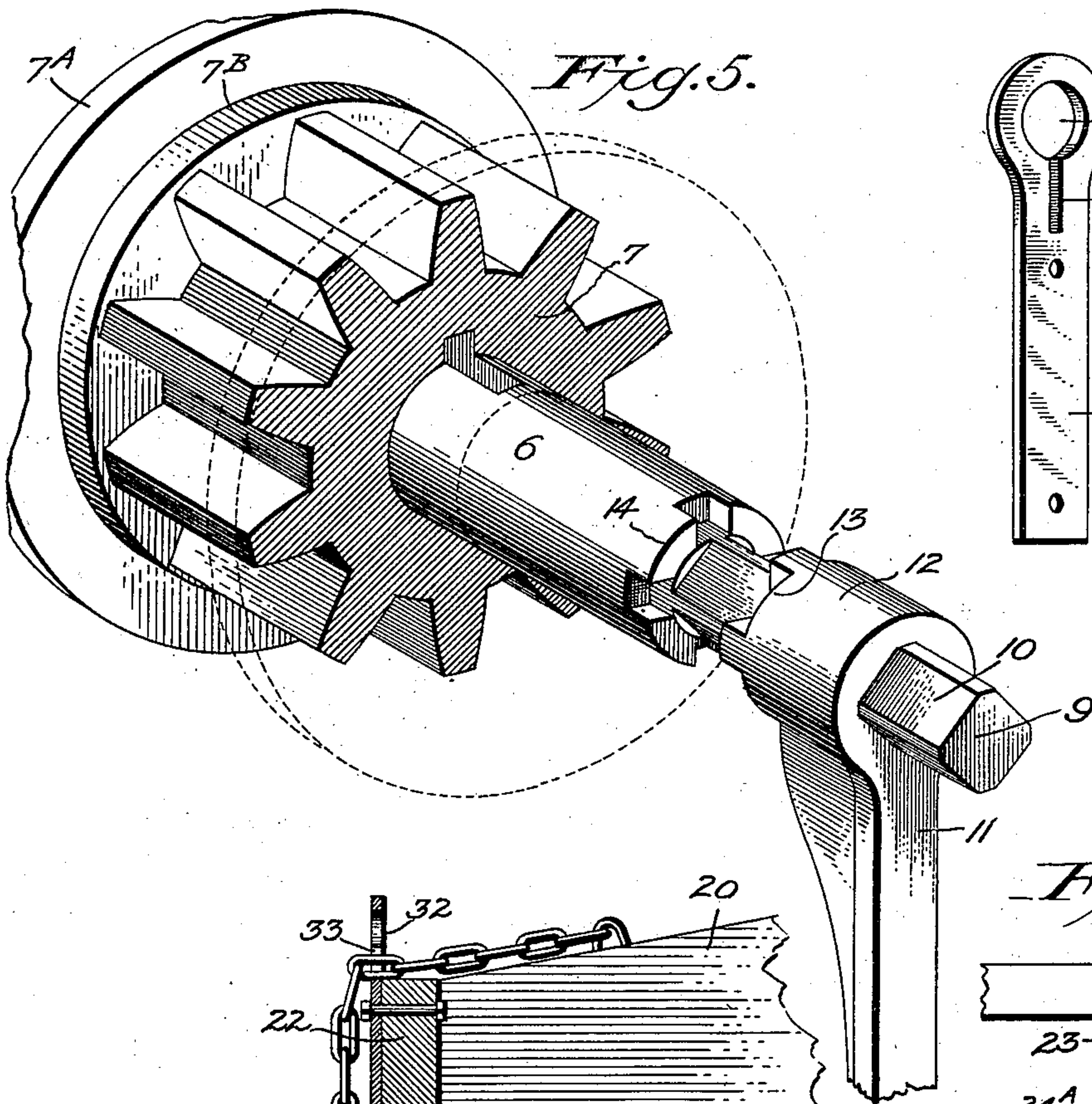
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3 Sheets—Sheet 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD M. SANDY, OF EATON, COLORADO.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 710,214, dated September 30, 1902.

Application filed July 21, 1902. Serial No. 116,410. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. SANDY, a citizen of the United States of America, residing at Eaton, in the county of Weld and State of Colorado, have invented certain new and useful Improvements in Dumping-Wagons; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in dumping-wagons.

The object of the invention is to provide a wagon which can be dumped from either side, and to this end I provide a suitable frame, which is mounted upon wheels, the said frame being made up of a pair of longitudinal side beams, which are connected centrally and at each end by brace-beams, so as to form a rigid structure. At the center and at each end of each side beam I secure a pair of bearings. In the bearings at each end of each beam is journaled a sleeve, upon which is keyed a pinion, while a roller is keyed to each sleeve in the center bearings. A rod is passed through the sleeves on each side of the frame, said rods having a movement independent of the sleeves, but arranged to engage the sleeves when desired, so as to turn the pinions secured thereto, and a pair of chains is secured to each rod and to the under side of a suitable wagon-body, having a rack-bar at each end, each of which is engaged by a pair of the aforesaid pinions, by which the wagon-body may be moved to either side so as to be dumped, the sides of the wagon being hinged thereto, so as to be dropped down when the wagon is dumped, and the rear end of each rod having a squared portion, so as to be engaged by an ordinary crank-handle, all of which will be clearly set forth in the accompanying specification and claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved dumping-wagon. Fig. 2 is a plan view of the frame which supports the body of the wagon, the said body being shown in dotted lines. Fig. 3 is a transverse section through the wagon, the body being shown in its normal position. Fig. 4 is a

similar view, the body being shown in its tilted position, as when the load is dumped. Fig. 5 is a perspective view showing one of the rods with the crank-handle in position thereon and with the sleeve to which one of the pinions is keyed, the said pinion being shown in section. Fig. 6 is a detail sectional view of a portion of the wagon-body, showing a modified form of hinge for the side of the wagon. Fig. 7 is a perspective view of the chain-clip. Fig. 8 is a section through one of the pinions, the rack which is secured upon the under side of the wagon-body being in engagement therewith.

Referring to the accompanying drawings, the numeral 1 refers to the frame which supports the body of the wagon. This frame is made up of side beams 2, which are connected centrally and at each end with brace-beams 3, so as to form a rigid structure. The frame is further strengthened by brace-rods 4, which connect the side beams and are located, preferably, one on each side of each of the brace-beams. The frame is mounted upon wheels in the usual manner. At each end of each side beam 2 and also centrally of its length is secured a pair of bearings 5, in each of which is journaled a sleeve 6. To each of the end sleeves is keyed a specially-constructed pinion 7, and to each of the centrally-located sleeves is keyed a roller 8. Through the sleeves on each side of the frame a rod 9 is passed, so as to extend from one end of the frame to the other. The rear end of each of these rods is squared, as shown at 10, and a crank-handle 11, having a forwardly-projecting hub 12, provided with a square aperture, is slipped upon the squared end of either rod, so that the said rod may be turned thereby, as will hereinafter fully appear. The forward end of the hub 12 is formed with a clutch-face 13, and the rear end of each of the rear sleeves 6 is formed with a corresponding clutch-face 14. The rear end of each of the forward sleeves 6 is also formed with a clutch-face 14, and a collar 15, having a clutch-face 16, is rigidly secured upon each of the rods 9 adjacent to the clutch-face of the forward sleeves. The rods 9 fit loosely within the sleeves 6, so as to be turned independently of them, and when the said rods are moved slightly forward, causing the clutch-faces of

collars 15 to engage those of the forward sleeves, and when the crank 11 is moved on the squared end of the rod, so that the clutch-face of its hub 12 shall engage that of the rear sleeve, the rod and sleeves and pinions which are keyed to said sleeves are turned in unison, as will fully appear by reference to the drawings. The projections or shoulders forming the clutch-faces are square, so that the said faces shall engage whichever way the rod is turned. To each rod is keyed or otherwise secured a pair of spools 17, to each of which one end of a chain 18 is attached, the other end thereof being fastened to the under side of the body 19 for a purpose which will now be fully explained.

The wagon-body 19 is made up of ends 20, bottom 21, and sides 22, which are hinged to said bottom. The bottom is braced at each end and at intermediate points by suitable braces or battens 23, and upon each of the end battens is secured a rack 24, each of which is engaged by a pair of the pinions 7, as will be seen by reference to Figs. 3 and 4. The sides 22 may be hinged to the bottom by ordinary hinges 25, or, as shown in Fig. 6, metal strips 27 may be secured to the sides, the lower ends of which are formed into hooks 28, which engage the eyes 29 in the ends of strips 30, which are bolted to the bottom. The sides 22 are provided at each end with a clip 31, the upper end of which is formed into an eye 32, and from the lower side of the eye 32 a slot 33 extends downward a short distance into the shank of the clip. The ends of the wagon-body are provided on each side with a chain 34, having a ring 35 at the free end thereof, which is larger in diameter than the eye 32 in the clip. These chains serve to hold the sides in their closed position and are also just long enough to support the sides when open, so that the weight of the sides and of the load being dumped will not come upon the hinges, as would be the case if the sides were not supported, but upon the chains. In order to hold the sides closed, the chains are pulled through the eyes 32, and a link is passed edgewise into the slot 33, and the next link on the outside of the slot will lie in a reverse position or across the slot, and thus hold the side from falling down or dropping. Now when it is desired to drop either of the sides each of the chains is lifted, so that the link which is in the slot shall be withdrawn therefrom. The side is then lowered, the chains passing through the eyes 32 until it has reached a position nearly parallel with the bottom, when the rings 35 at the free end of the chain, contacting with the eye 32, will prevent further movement of the side and will support it, so that the strain will not come upon the hinges.

The pinions 7, as shown in Figs. 5 and 8, are provided with flanges 7^A, between which the racks 24 move and which prevent end-wise movement of the body of the wagon. Adjoining each flange is an annular tread portion 7^B, and between these tread portions

the teeth of the pinion are formed. The racks 24 have smooth ways or track portions 24^A on each side of their teeth, as shown in Fig. 8, which ride upon the annular treads 7^B of the pinions. By this construction the weight of the body and its load comes upon the annular tread portions of the pinions and not upon their teeth, thus preventing any binding of rack and pinion and rendering it easy to turn the pinions even when the wagon is heavily loaded.

When it is desired to dump the wagon—say from the left side—the rod 9 on that side is moved forward until the clutch-collar 15 at its forward end engages the clutch-face of the forward sleeve 6, to which the forward pinion 7 is keyed. The crank-handle 11 is then slipped upon the squared end of the rod until its clutch-face engages that of the rear sleeve 6, when the rod and both sleeves will be in locked engagement. By turning the crank-handle to the left the pinions 7 on the left side will engage the racks 24 and move the body to the left until it is limited by the chains 18 on that side, when the body will be balanced upon the said pinions, and the side of the wagon-body may be lowered in the manner before described. While the body has been moving to the left the chains 18 on the right side of the wagon have been wound around their spools 17, as will be understood by reference to Fig. 3. The crank-handle is now transferred to the right-hand rod and the body is tilted. As the right side of the wagon rises the chains 18 on that side are paid out, so that a too-sudden movement of the body is prevented, and the frame 1 and pinions are relieved of unnecessary strain. The chains 18 on the left side will thus prevent the body from going too far to the left, while the corresponding chains on the right side will prevent excessive tilting of the said body. When the contents of the wagon have been discharged, the right-hand rod is turned to wind the chains 18 upon their spools, which will draw the right side of the body down until it rests upon the pinions on that side. The rod is then turned in a reverse direction until the body is brought to a central position, where it is held against lateral movement in any preferred way, as by chains 1^A, which are fastened to the frame and hook to the body on each side.

From the foregoing description it will be seen that my improved dumping-wagon is simple in construction, easily and quickly operated, and the hinged sides and manner of shifting the body permits the load to be discharged from either side, thus rendering the device thoroughly practical in all respects.

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

1. In a dumping-wagon, the combination of a body having sides which are hinged thereto at their lower edges; catches which are se-

cured to the sides; flexible connections attached to the ends of the body, which engage the said catches so as to hold the sides closed, or to support them when they are lowered; 5 ways secured to the under side of the body; a frame having revoluble supports, upon which said ways rest; means which operate in connection with the revoluble supports, for shifting the body laterally in either direction so as to tilt the same, and means for limiting both the lateral and tilting movement of the body, substantially as shown. 10

2. In a dumping-wagon, the combination of a body having hinged sides with catches secured thereto; chains attached to the ends of the body which engage said catches to hold the sides closed, or to support them when they are lowered; racks secured to the under side of the body; a frame for supporting the 20 body, having flanged pinions mounted thereon, which engage the said racks; rods which extend lengthwise of the frame and through the pinion for turning the same, so as to shift the body laterally in either direction, in order to tilt the same, and flexible connections 25 secured to the rods and to the body, which limit both the lateral and tilting movement of said body, substantially as shown.

3. In a dumping-wagon, the combination of 30 a supporting-frame which is mounted upon wheels; bearings secured upon each side of the said frame; sleeves journaled in said bearings; flanged pinions keyed to said sleeves; rods which extend through the said sleeves, and means for locking the rods and sleeves, so that they may turn either in unison or independently; a body having racks secured 35 upon its under side, which lie upon the said pinions, between the flanges thereof, and are engaged thereby, so that the said body may be moved laterally in either direction in order to tilt the same; flexible connections secured at one end to the rods and at the other end to the body, which limit both the lateral and tilting movement of the body, the said 40 body being provided with hinged sides, and with means for holding the sides closed and for supporting them when they are open, substantially as shown.

4. In a dumping-wagon, the combination of 45 a supporting-frame which is mounted upon wheels; bearings secured upon each side of said frame; sleeves journaled in said bearings having a clutch-face formed upon one of their ends; flanged pinions keyed to the sleeves; rods, one of which is passed through the sleeves on one side of the frame, while the other is passed through the sleeve on the opposite side of the frame; collars having 50 clutch-faces, one of said collars being secured upon the forward end of each rod, in proximity to the clutch-face of the forward sleeves; a crank-handle which is adapted to be slipped upon the rear end of either of the rods, the 55 hub of said handle being formed with a clutch-face which engages the corresponding face of the rear sleeves, said rod and sleeves being

adapted to turn independently or in unison; a body having racks secured to its under side, which lie upon the said pinions, between the 60 flanges thereof, and are engaged thereby, so that the body may be moved laterally in either direction in order to tilt the same; flexible connections, as chains, secured at one end to the rods, and at the other end to 75 the body, which limit both the lateral and tilting movement of the body, the said body being provided with hinged sides, and with means for holding the sides closed and for supporting them when lowered, substantially 80 as shown.

5. In a dumping-wagon, the combination of a supporting-frame which is mounted upon wheels; bearings secured upon each side of said frame; sleeves journaled in said bearings and pinions keyed to said sleeves, the 85 said pinions being flanged, and having an annular tread portion adjoining each flange between which the teeth are formed; rods which pass loosely through the sleeves, and 90 means for locking the rods and sleeves together, so that they may turn independently or in unison; a body having racks secured upon its under side which lie upon the pinions, between the flanges thereof, and are engaged 95 thereby, so that the said body may be moved laterally in either direction in order to be tilted, said racks having a smooth surface or track on each side of its teeth, which ride on the annular tread portion of the pinion, and 100 prevent the weight of the body from coming upon the teeth thereof; flexible connections which are secured to the rods and to the body which limit the lateral and tilting movements; sides in hinged engagement with the body, and 105 flexible attachments for holding the said sides closed, and supporting them when open, substantially as shown.

6. In a dumping-wagon, the combination with a frame having pinions mounted thereon, and a body having hinged sides and racks 110 secured upon its under side which are engaged by the said pinions, and means for turning the pinions so as to shift the body laterally, and for limiting its movement; of a combined fastening and supporting device 115 for the said hinged sides, consisting of metal strips secured to the sides so as to extend above the upper edges thereof, the extended portion being formed into an eye which has 120 a slot extending downward from the lower side of its periphery; and of a chain secured to the end of the body and passed through the eye of the said metal strip, said chain having at its lower end a ring of greater diameter than the aforesaid eye; a link of the 125 chain being passed edgewise into the said slot when it is desired to hold the sides closed, and the ring contacting with the eye when the side is lowered, so as to support the weight 130 of the side upon the said chain, substantially as shown.

7. In a dumping-wagon, the combination with a frame having pinions mounted there-

on which are flanged and provided with annular tread portions adjoining the innersides of the flanges; and of a body having hinged sides; of racks secured upon the under side
5 of said body, said racks having a smooth way or track on each side of their teeth, which, when the racks are in position upon the pinions, will ride upon the annular tread portions of said pinions; and means for turning
10 the pinions so as to convey movement to the racks, substantially as shown.

8. In a dumping-wagon, the combination of a body having hinged sides, and flexible connections which hold said sides closed and
15 support them when they are opened; racks secured to the underside of the body; a frame

having pinions mounted thereon which engage the said racks; means for revolving the pinions so as to shift the body laterally in either direction, in order to tilt the same; 20 means for limiting both the lateral and tilting movement of the body, and means as chains, which are secured to the sides of the frame and have a hooked engagement with the body of the wagon, for holding said body in its normal position, substantially as shown. 25

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD M. SANDY.

Witnesses:

G. SARGENT ELLIOTT,
JOSEPH WILKINSON.