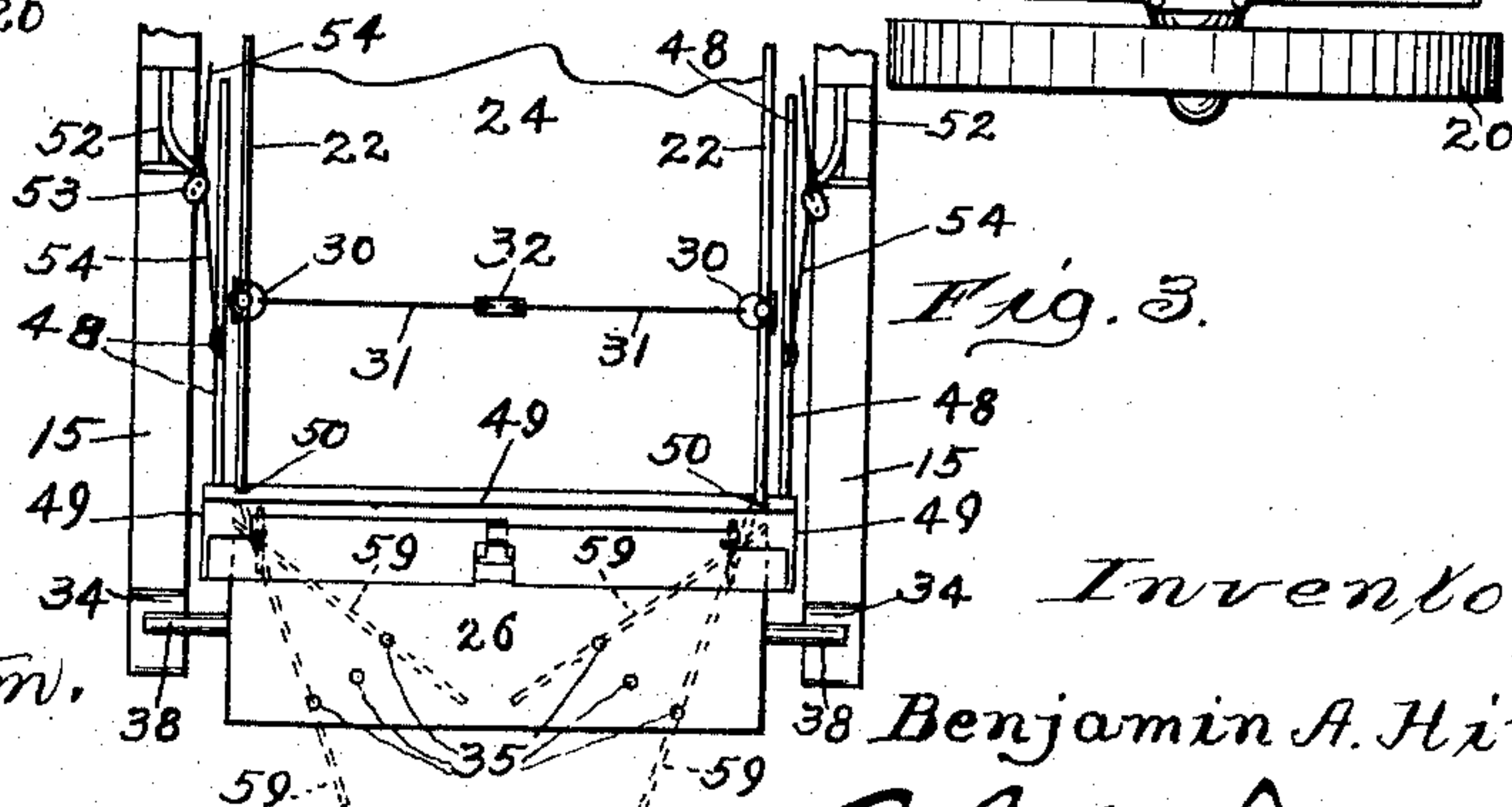
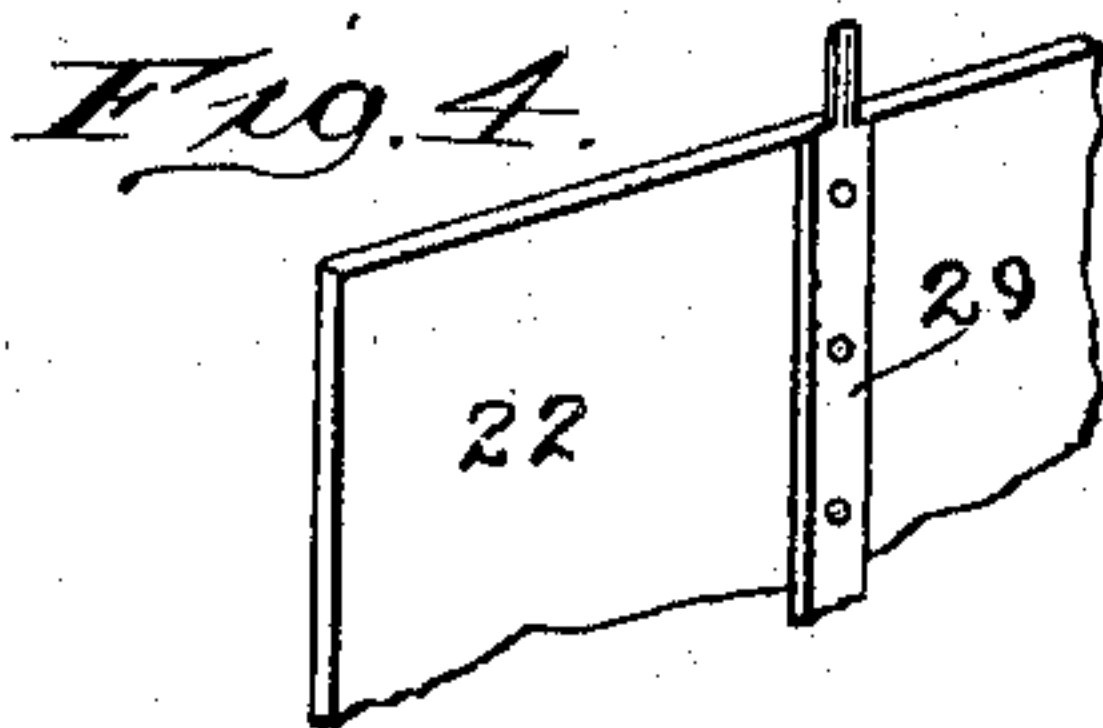
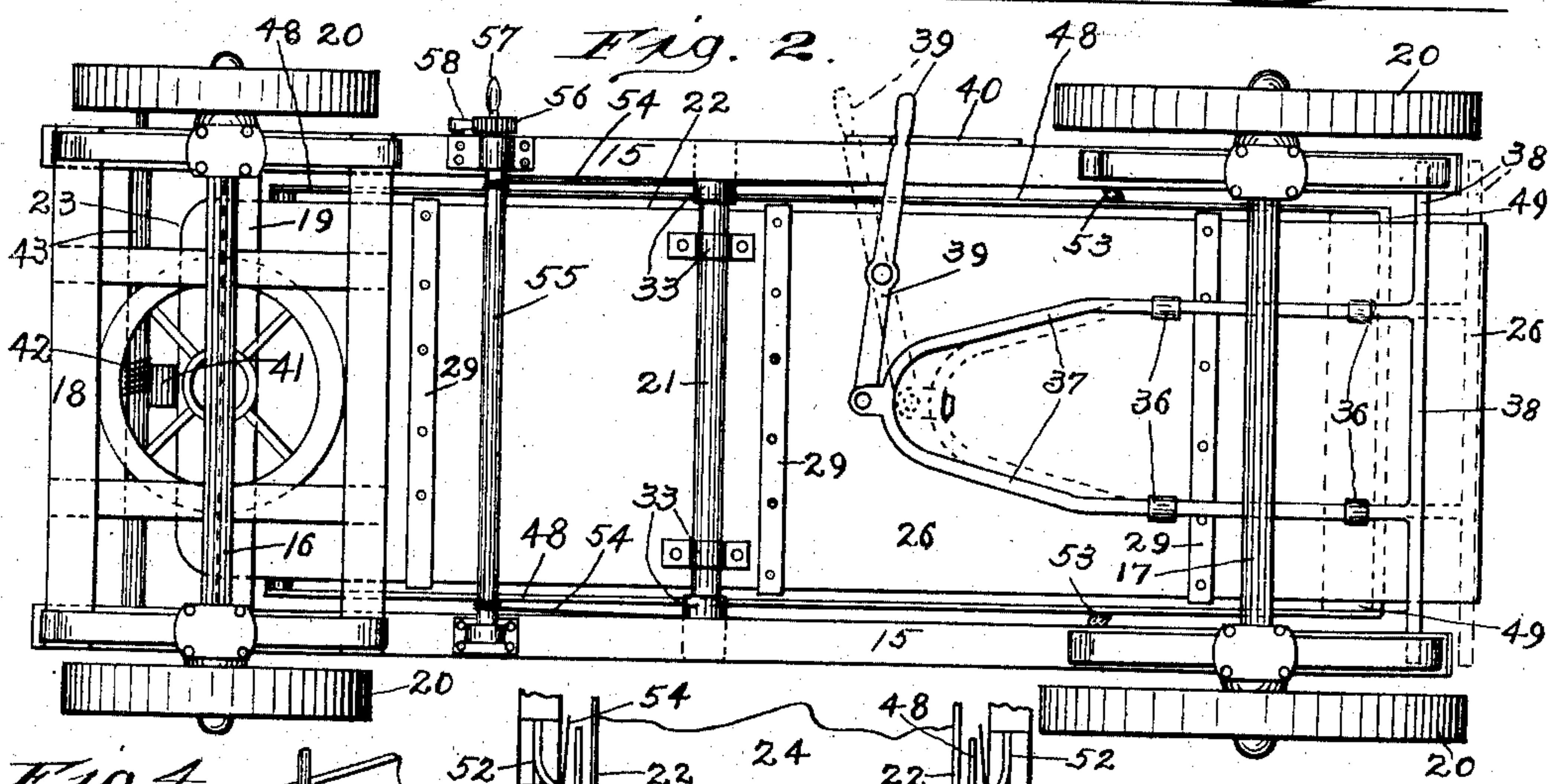
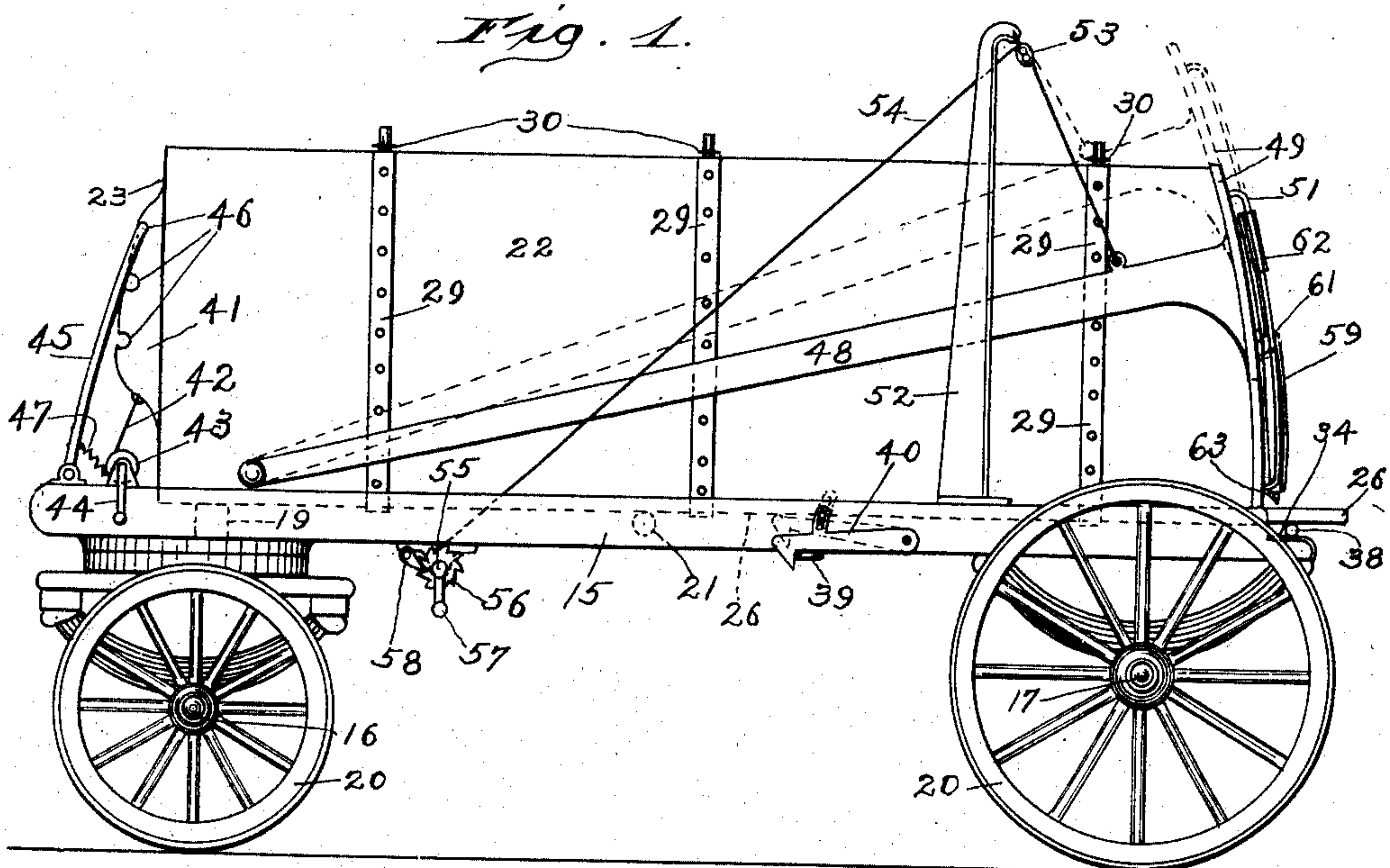


No. 864,537.

PATENTED AUG. 27, 1907.

B. A. HILL,
DUMPING WAGON.
APPLICATION FILED FEB. 26, 1906.

2 SHEETS—SHEET 1.



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By

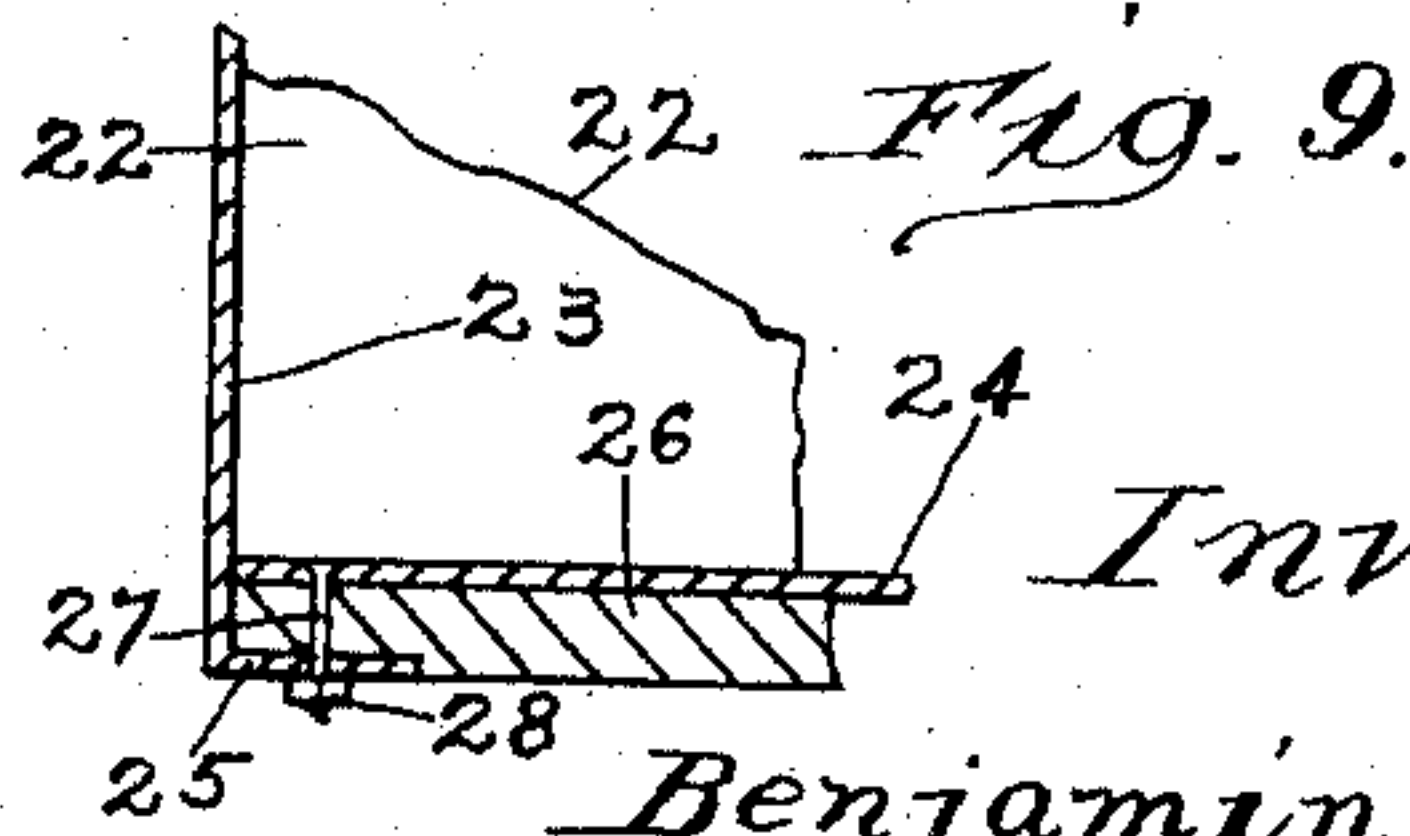
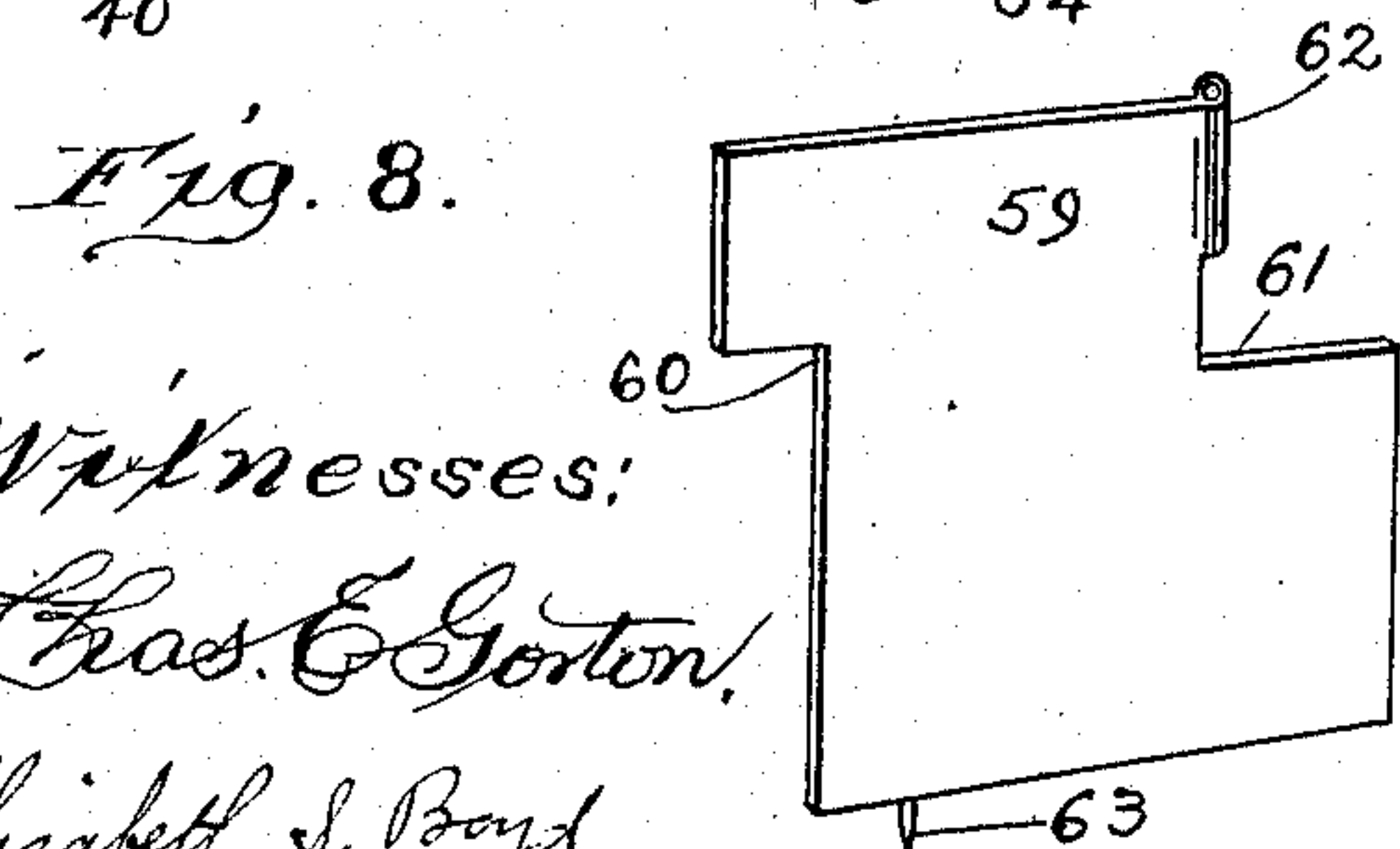
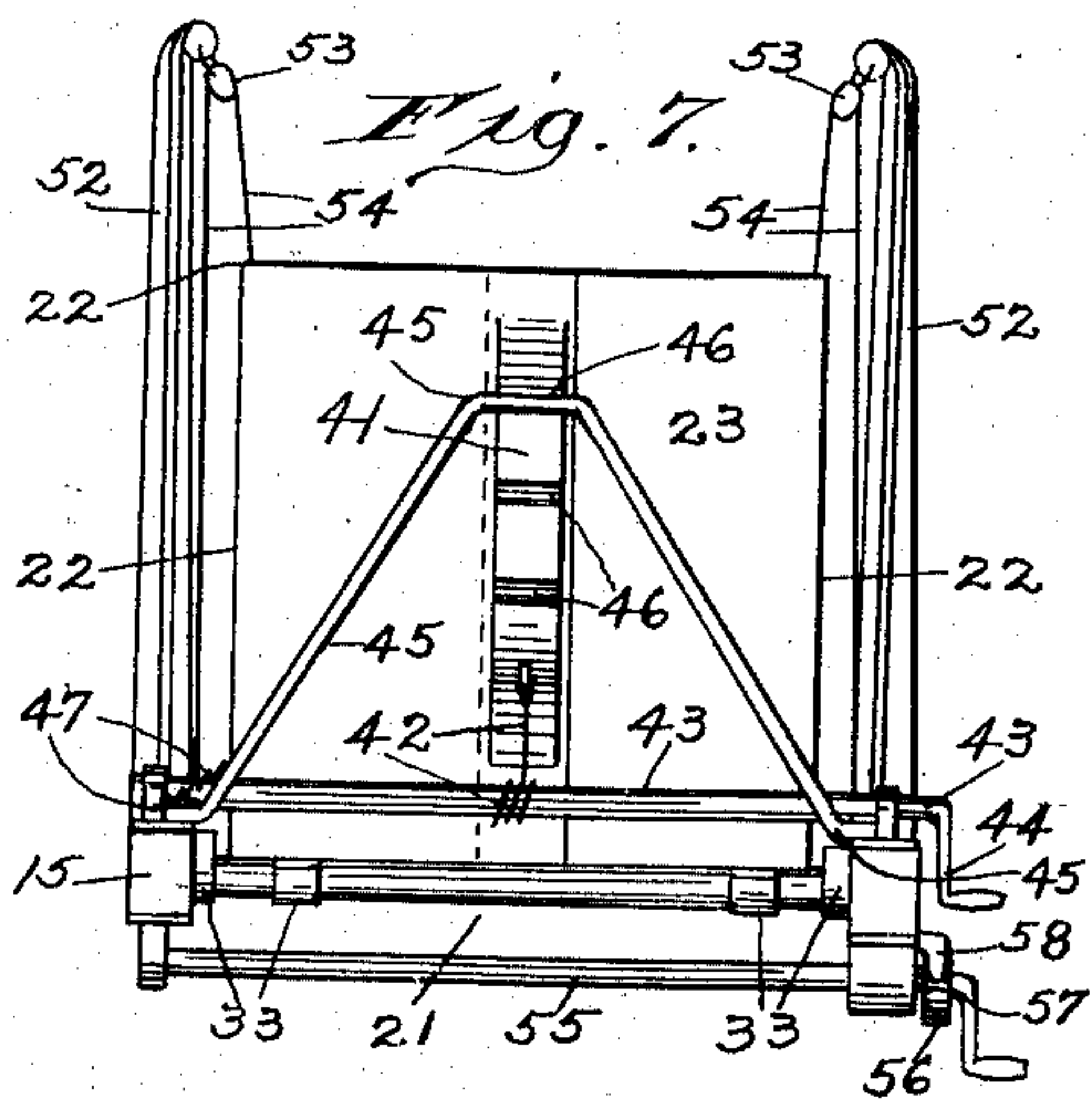
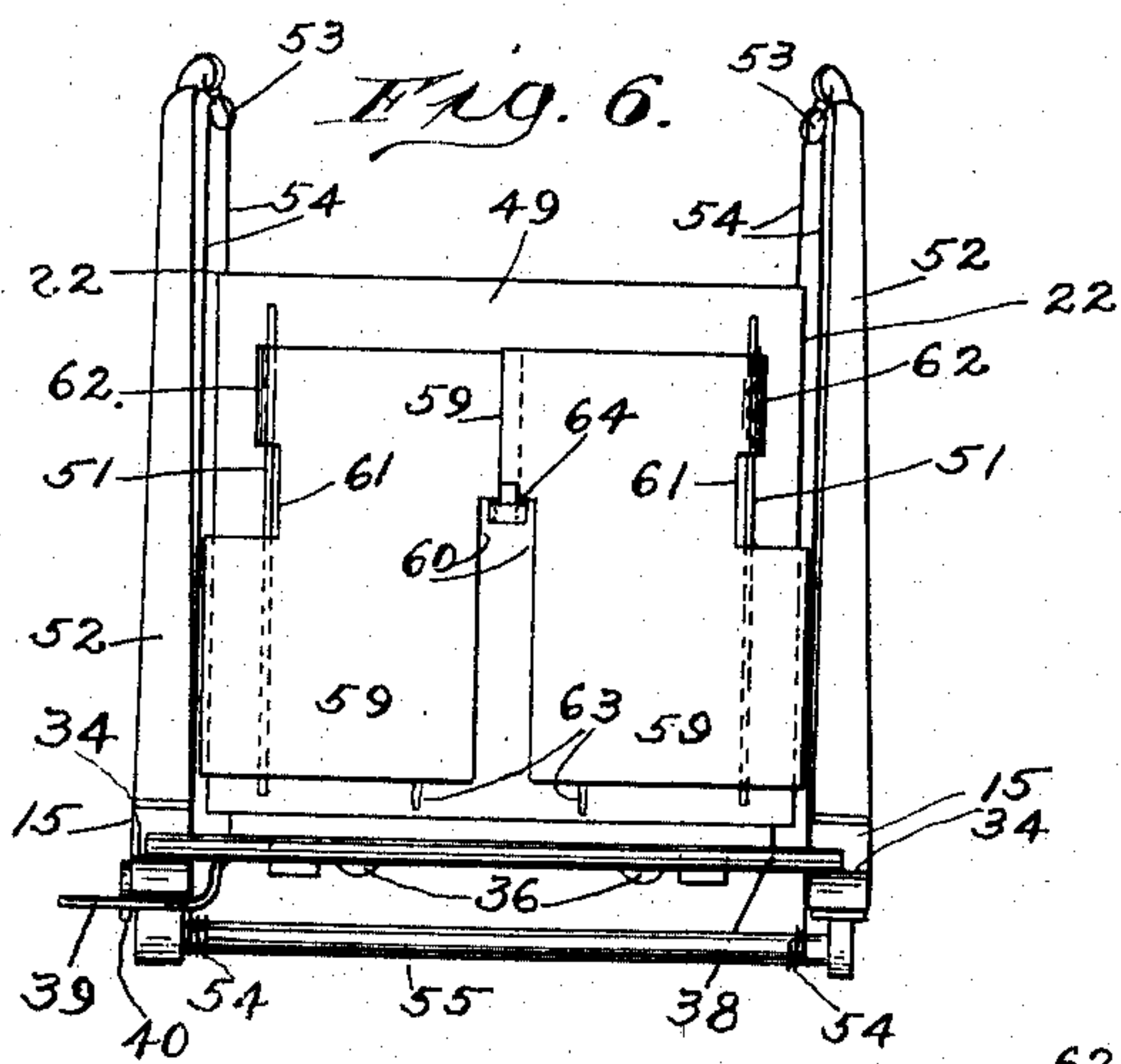
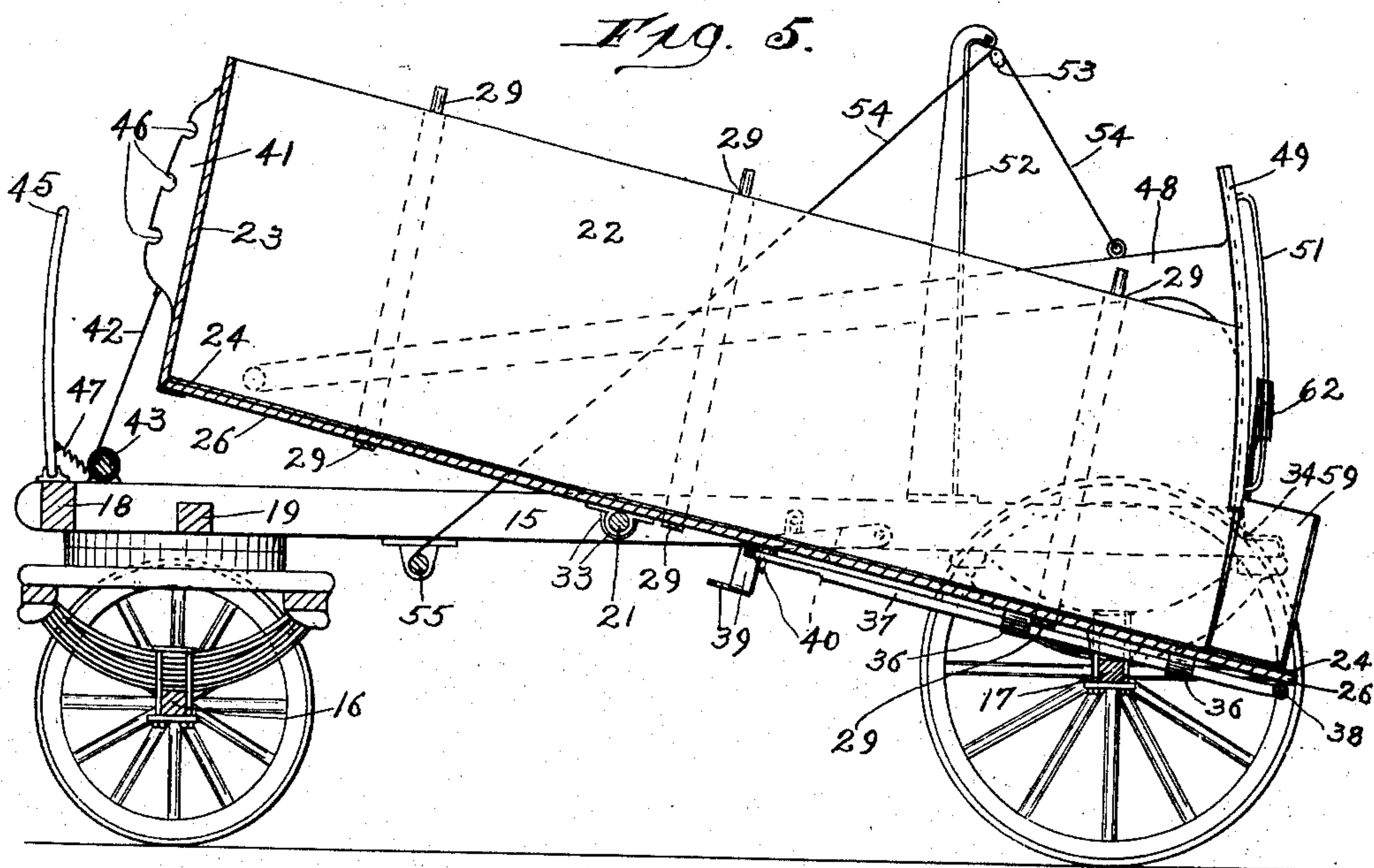
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

BENJAMIN A. HILL, OF CHICAGO, ILLINOIS.

DUMPING-WAGON.

No. 864,537.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed February 26, 1906. Serial No. 302,903.

To all whom it may concern:

Be it known that I, BENJAMIN A. HILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Dumping-Wagon, of which the following is a specification.

This invention relates to improvements in that class of wagons in which the box or body is pivotally mounted on a wheeled supporting frame, to the end that it may be tilted rearwardly in order to dump its load, and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to furnish a dumping wagon which shall be simple and inexpensive in construction, strong, durable and efficient in operation, and so made that the parts constituting the box or bed, that is, the sides, front and bottom shall be free from projections on their inner surfaces, such as cleats, bands, bars or bolts, usually employed in wagons of the ordinary construction, thus furnishing a body with its interior surfaces smooth and without obstructions to prevent friction and to facilitate the sliding movement of its contents when being dumped, and also to so construct and arrange the parts of the wagon that the operation of dumping or tilting the box or body will be automatic.

A further object of the invention is to provide an adjustable and automatic end-gate for the rear portion of the box, which may be provided with means for directing or guiding the load as it is being dumped from the box to a chute, man-hole or other receptacle.

Another object is to provide means at the front of the wagon-frame and box to regulate the inclination of the latter, as well as to firmly hold it in its normal position, as well as to securely support it at any desired angle.

Numerous other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a view in side elevation of a dumping wagon embodying my invention, showing the parts thereof by continuous lines arranged in their normal positions, and illustrating by dotted lines one of the positions to which the adjustable rear end-gate may be placed. Fig. 2 is a bottom plan view. Fig. 3 is a top plan view of the rear portion of the box and a part of the supporting frame, showing by dotted lines some of the positions to which the directing or guiding wings on the rear end-gate may be adjusted. Fig. 4 is a fragmental perspective view of the outer surface of a por-

tion of one of the sides of the box and a part of one of its bracing bars or straps. Fig. 5 is a vertical longitudinal sectional view, taken through the middle of the wagon, showing the box in its tilted position. Fig. 6 is a rear end view of the supporting frame and the box, showing the parts in their normal positions. Fig. 7 is a similar view of like parts, seen from the front end of the wagon. Fig. 8 is a detached perspective view of one of the guiding or directing wings of the tail board;— and—Fig. 9 is a cross-sectional view of a portion of the box or body.

Like numerals of reference, refer to corresponding parts throughout the different views of the drawings.

The reference numerals 15 designate the side rails of the supporting frame, which are mounted on the front and rear axles 16 and 17, respectively, of the wagon, in the ordinary or any preferred manner, and may be transversely united by means of cross-pieces 18 and 19, located near their front ends. The axles 16 and 17 are mounted, as usual, on wheels 20, of the ordinary construction. Transversely connecting the sills or side rails 15 at a point somewhat in front of their middle is a shaft 21, on which the box or body is pivotally mounted, as is clearly shown in Figs. 2 and 5 of the drawings.

The box or body consists of two parallel side boards 22, a front end-piece 23, and a removable bottom 24, all of which are preferably made of plate or sheet metal. The lower edge of each of the side boards 22 of the box is provided with an inturned and horizontally extending flange 25, on which is located a wooden bottom or floor 26, which is secured by means of bolts 27 and nuts 28 to the metal floor or bottom 24, as is clearly shown in Fig. 9 of the drawings. The heads of the bolts 27 are located flush with the upper surface of the metal floor 24, so as to offer no obstruction to the movement of the load when it is being dumped. The sides 22 of the box are braced by means of straps or bars 29, which are located at suitable distances apart and are bent to form three sides of a rectangular figure, or to correspond with the shape of the box, and so that a portion of each of said bars will lie under and across the wooden floor 26, to which, as well as to the sides of the box, they may be secured by means of rivets. The upper portions of each of the bars 29 project slightly above the upper edges of the sides 22, for the purpose of engaging rings 30 on tie-rods or chains 31, which are preferably connected by means of a turn buckle 32 and which are used to prevent the sides 22 from bending outwardly when the box is loaded. The wooden floor or bottom 26 of the box is provided on its lower surface, somewhat in front of its middle, with hangers 33 which embrace the shaft 21 and thus pivotally secure the box on said shaft.

As is clearly shown in Figs. 1 and 5 of the drawings, the rear ends of the sides 22 are slightly curved and that the rear end of the bottom of the box projects rearwardly some distance therefrom. It will also be ob-

served by reference to said figures, as well as to Fig. 3, that the rear end of each of the rails 15 of the supporting frame is formed with a recess 34, and that the rearwardly extending portion of the bottom of the box is provided with a series of openings 35 located in groups or curved lines, for the purpose to be presently explained. The bottom 26 of the box is provided near its rear end with a number of hangers 36, which movably support the horizontally and forwardly extending members 37 of the bar or rod 38 which extends across the rear end of the supporting frame for the box, and has its ends projected beyond the sides of the box so as to rest in the recesses 34 of the side rails of the frame and beneath the rearward extension of the floor of the box so as to support the rear portion thereof, as will be readily understood by reference to Fig. 1 of the drawings. Fulcrumed on the bottom of the box, near the front ends of the members 37, is a lever 39, one end of which is pivotally connected to said members and the other end of which projects laterally from one side of the supporting frame, and is adapted to engage a locking-dog 40, pivoted on the frame. The front end-piece 23 of the box is provided at about its middle with a vertical rack 41, to the lower portion of which is secured one end of a chain or cable 42, the other end of which is secured to a shaft 43 transversely journaled on the front portion of the supporting frame and which shaft is provided at one of its ends with a crank 44, to be used for turning said shaft when it is desired to lower the front portion of the box. Pivotally secured at its ends on the front portion of the supporting frame is a bail 45, the upper portion of which is adapted to engage the recesses 46 of the rack bar 41, so as to hold the body at the desired inclination or to assist in holding it in its level or normal position. Connected at one of its ends to the lower portion of the bail 45 is a spring 47, the other end of which may be connected to the supporting frame for the box, and is used to normally hold the bail in engagement with the rack bar 41. Pivotally secured at its front end to each of the sides 22 of the box, near its front end, is a rearwardly extending arm 48, which carry on their rear ends the end-gate 49 for the rear end of the body, which end-gate is slightly curved to correspond with the curved rear ends of the sides 22, and has near its ends on its inner surface grooves 50 to receive said ends of the side pieces. The end-gate 49 has on its outer surface near each of its ends a vertically disposed rod 51, which rods have their ends bent inwardly and secured to the end-gate, so that the main portion of each of said rods will be located at a distance therefrom, as is clearly shown in Figs. 1 and 5 of the drawings.

Vertically mounted on the rear portion of each of the rails 15 of the supporting frame is an upright 52, which is provided at its upper end with a pulley 53, over which a chain or cord 54 is passed, one end of each of which is connected to the rear portion of each of the arms 48 and their other ends to a shaft 55, transversely journaled on the supporting frame in its forward portion. Mounted on one end of the shaft 55 is a ratchet wheel 56 and a crank-handle 57, the latter being used to turn said shaft when it is desired to adjust the position of the end-gate 49 with respect to the rear end of the body. Pivoted to one side of the supporting frame is a pawl 58, which is adapted to engage the ratchet wheel 56 so as to prevent the accidental movement of the shaft 55 on which

said wheel is mounted. On the outer surface of the end-gate 49 are located two directing or guide wings 59, which are counterparts of one another, as shown in Fig. 6, and each is provided in its inner and outer edges with recesses 60 and 61, respectively, the recesses in the inner edges of said wings terminating below their upper portions and the recesses in their outer edges terminating above their lower portions. The vertical portion of the outer recess of each of the wings 59 is preferably formed into a tube 62 to receive the rods 51 on the end-gate 49, thereby hinging yet movably securing said wings to the rods. The lower edge of each of the wings 59 is provided with a pin 63, which are adapted to fit in the openings 35 of the rearward extension of the floor or bottom of the box when said wings are used to direct or guide the contents of the box when it is being dumped. The rear portion of the end-gate 49 is provided at about its middle with a projection or clip 64, which is used to support the wings 59 in their normal positions, which projection will pass through the recesses 60 when the wings are turned to rest against the end-gate, as will be clearly understood by reference to Fig. 6 of the drawings.

From the foregoing and by reference to the drawings it will be seen and clearly understood that when the box is in its normal or level position, as shown in Fig. 1, the bail 45 engaging the recesses 46 of the rack 41 will hold the front end of the box firmly in position while the rear end will be supported by means of the cross-bar 38 which rests on the recessed ends 34 of the rails of the supporting frame. When in the above named position, the end gate 49 which closes the rear end of the box, will rest on the bottom thereof, the cables 54 being adjusted by means of the crank shaft 55 to this end. When it is desired to dump the box, the bail 45 should be disengaged from the rack 41 and the cross-bar 38 removed from under the rear end of the bottom of the box, which may be done by releasing the locking-dog 40 from the lever 39 and moving said lever in the proper direction to remove the bar 38 from under the bottom of the box. After this has been done, it is apparent that, as the box is rearwardly overbalanced on the shaft 21 that the operation of dumping or tilting will be automatic. When tilted to the position shown in Fig. 5, it is evident that the end-gate 49 will remain stationary, thus permitting the contents of the box to pass out between the lower edge of the end-gate and the bottom of the box. If it is desired to direct the discharging contents to a chute or other receptacle, the wings 59 may be slightly raised so as to release their adjacent edges from the hook 64, when by turning them on the rods 51 and allowing them to slide down thereon, they may be adjusted to the desired angles and there held by means of the pins 63 engaging the openings 35 in the rear extension of the bottom of the box, as will be clearly understood by reference to Fig. 3 of the drawings. If it is desired to increase or diminish the space between the lower edge of the end-gate 49 and the bottom of the box when dumping, it is apparent that this can be done by either winding up or loosening the cords or cables 54 by means of the crank-shaft 55 on which they are wound.

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 with a wheeled supporting frame having an upright on the rear portion of

each of its sides, of a box or body pivotally mounted on the frame between the side rails and uprights thereof, a pulley on the upper portion of each of said uprights, an arm pivotally secured at one of its ends to the lower front portion of each side of the body and extending at its other end to the rear end of the body, an end-gate mounted on the rear ends of said arms to open and close the rear end of the body, a crank-shaft transversely journaled on the lower front portion of the supporting frame, a connection secured at one of its ends to the rear portion of each of said arms and at its other end to the crank-shaft, said connections passing over the pulleys on the uprights of the frame, substantially as described.

2. In a dumping wagon, the combination with a wheeled supporting frame having an upright on the rear portion of each of its sides, of a box or body pivotally mounted on the frame between the side rails and uprights thereof, a pulley on the upper portion of each of said uprights, an arm pivotally secured at one of its ends to the lower front portion of each side of the body and extending at its other end to the rear end of the body, an end-gate mounted on the rear ends of said arms to open and close the rear end of the body, a crank-shaft transversely journaled on the lower front portion of the supporting frame, a connection secured at one of its ends to the rear portion of each of said arms and at its other end to the crank-shaft, said connections passing over the pulleys on the uprights of the frame, a vertical rack located on the front portion of the box, and a bail pivotally secured on the front portion of the frame to detachably engage said rack, substantially as described.

3. In a dumping wagon, the combination with a wheeled supporting frame having its rear end recessed on its upper surface, of an upright secured on each side of the supporting frame, a pulley on the upper portion of each of said uprights, a box pivotally mounted on the supporting frame between its side rails and the uprights thereon and having a portion of its floor extending over

the recesses in the rear end of the supporting frame, a crank-shaft transversely journaled on the supporting frame, an arm pivotally secured at one of its ends to the lower front portion of each of the sides of the box and extending at its other end to the rear end of the box, an end-gate mounted on the rear ends of said arms and across the rear end of the box, connections united at one of their ends to the rear portion of said arms and at their other ends to said crank-shaft, said connections passing over the pulleys on the uprights, a lever fulcrumed on the bottom of the box, a cross-bar movably located on the lower portion of the rear end of the box and having its ends projecting from the sides thereof to engage the recesses in the rear end of the supporting frame, forwardly extending members connected at one of their ends to the cross-bar and at their other ends to said lever, substantially as described.

4. In a dumping wagon, the combination with a wheeled supporting frame, of a box pivotally mounted thereon, an upright on the rear portion of each side of the supporting frame, a pulley on the upper portion of each of said uprights, an arm pivoted at one of its ends to the lower front portion of each of the sides of the box and extending at its other end to the rear end of the box, an end-gate mounted on the rear ends of said arms, a rod secured vertically at each of its ends to the outer surface of the end-gate near each of its ends, a wing pivotally and movably secured on each of said vertical rods, means on the rear portion of the end-gate to hold said wings in their raised positions, a crank-shaft journaled on the lower portion of the supporting frame, and a connection united at one of its ends to the rear portion of each of the aforesaid arms and at its other end to the crank-shaft, substantially as described.

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Witnesses:

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CHAS. C. TILLMAN.