

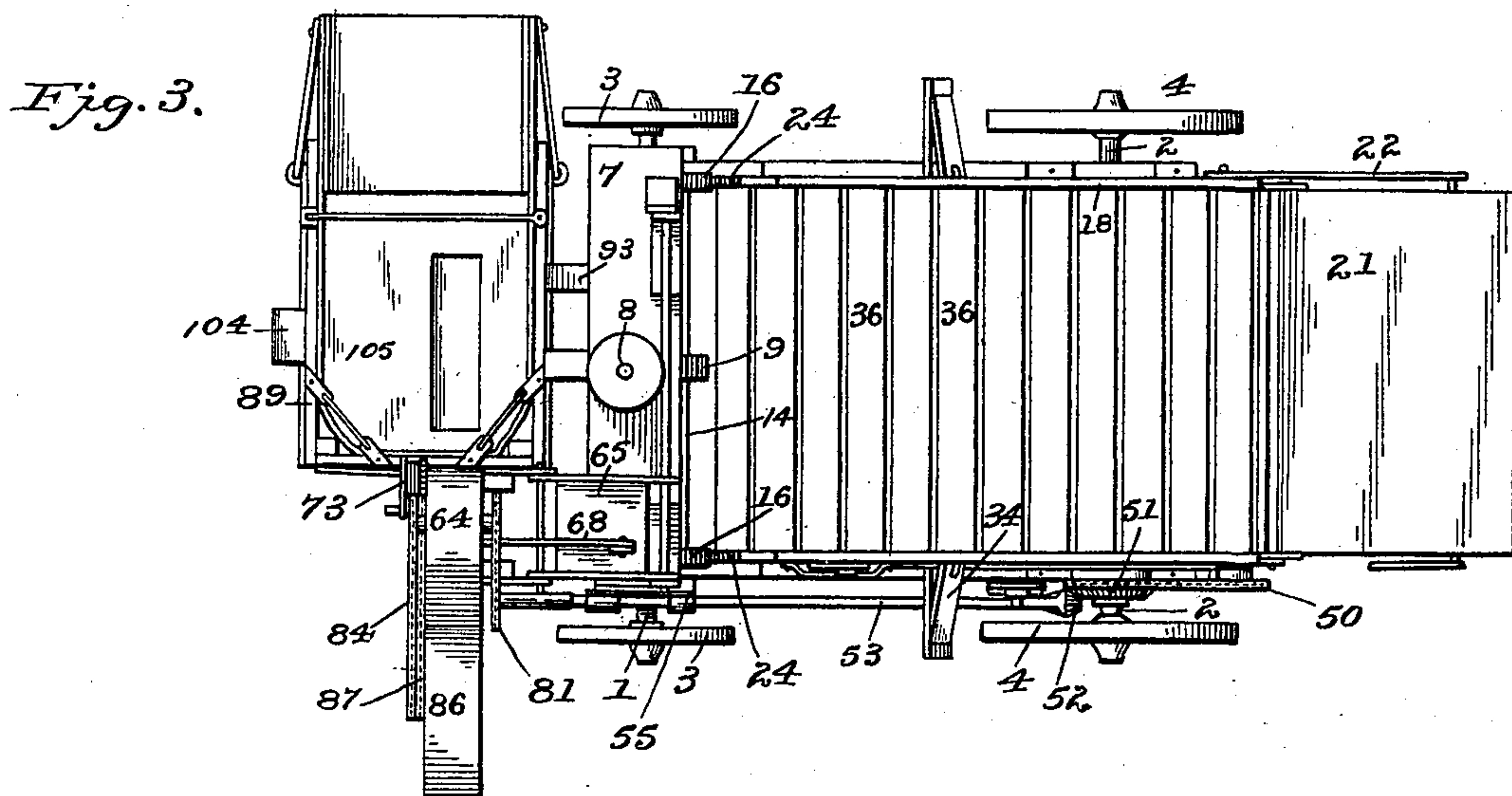
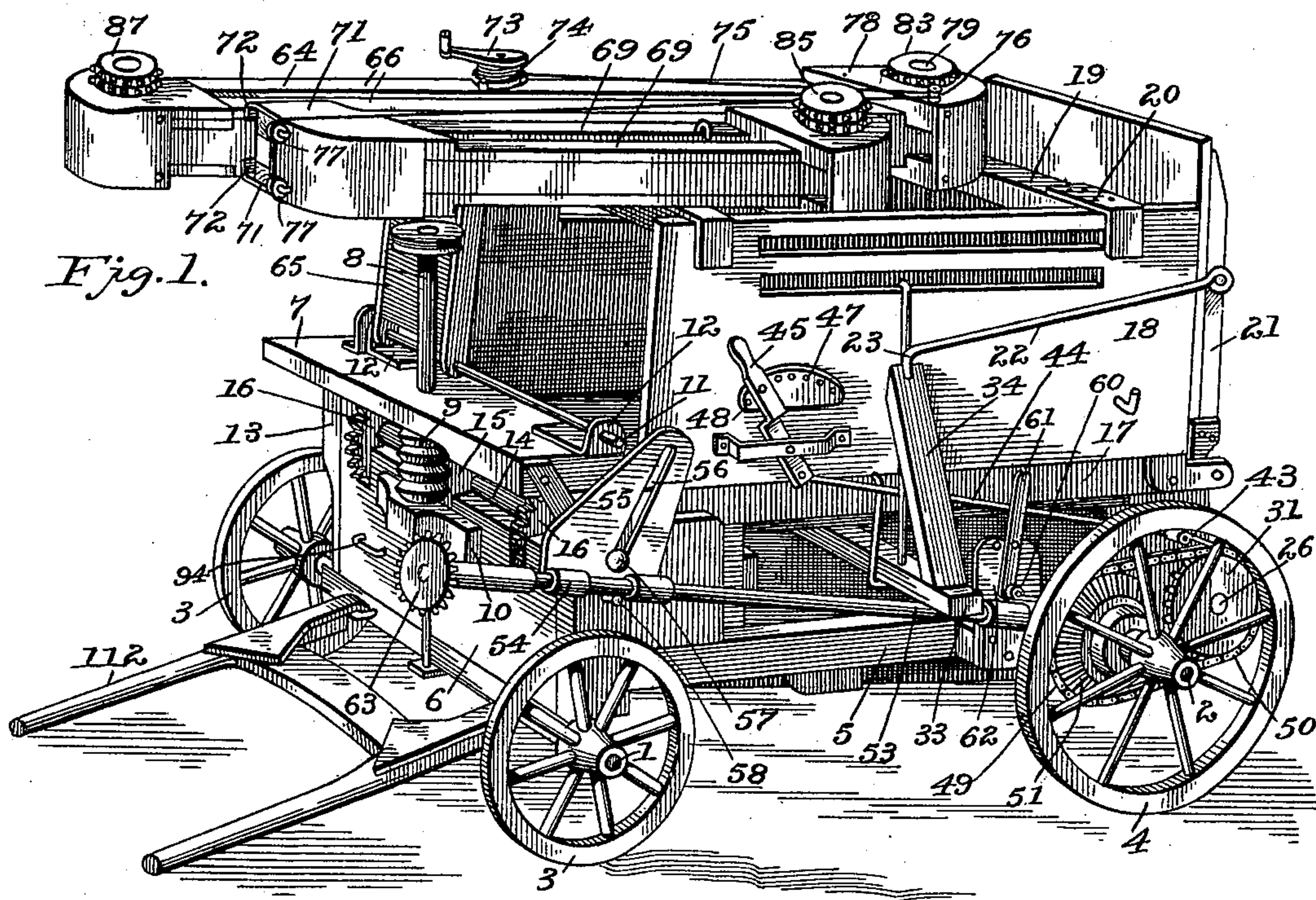
(No Model.)

5 Sheets—Sheet 1.

S. M. PETERSON.
GRAIN ELEVATOR.

No. 587,271.

Patented July 27, 1897.



Witnesses
E. G. McKee
H. A. Daw.

Inventor,
Samuel M. Peterson,
by John Theedebium
Attorney

(No Model.)

5 Sheets—Sheet 2.

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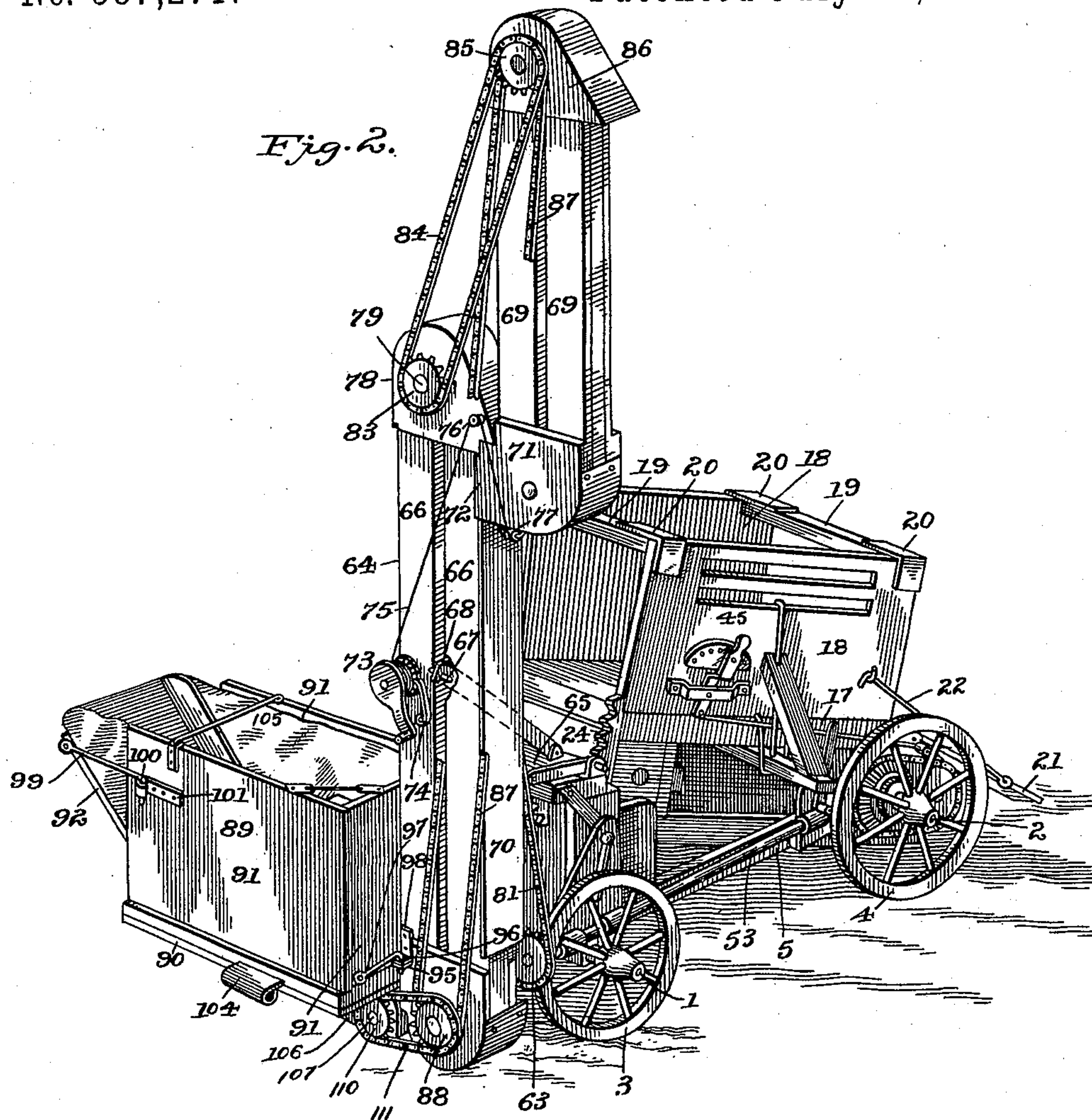


Fig. 11.

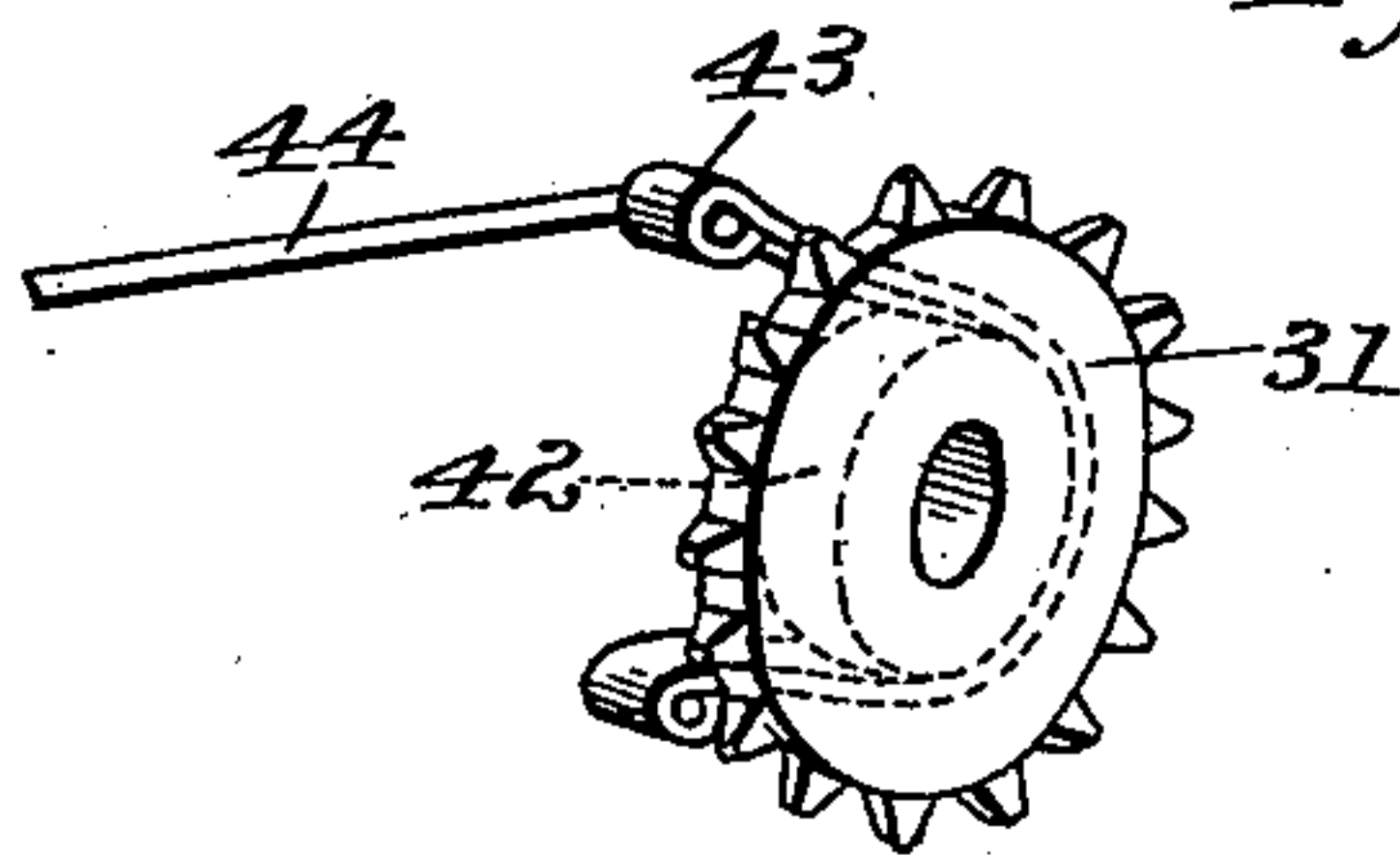
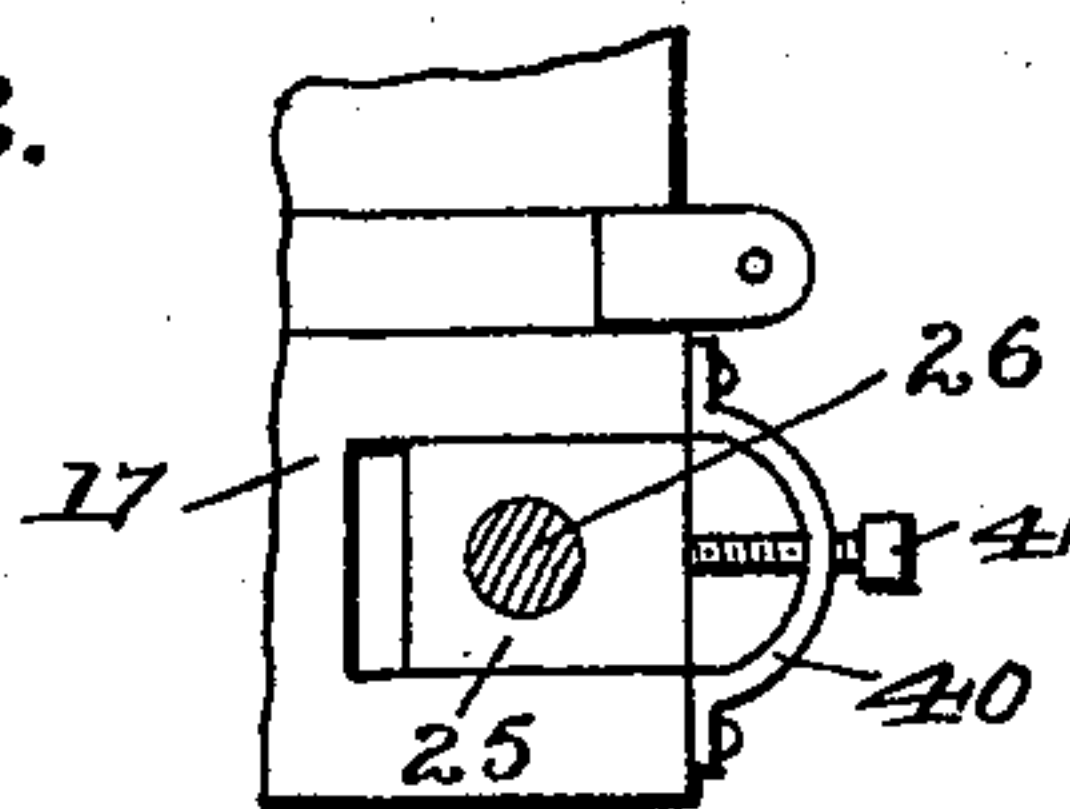


Fig. 12.



Witnesses
E. G. McKee
K. A. Hain

Inventor,
Samuel M. Peterson,
by John Wedderburn
Attorney

(No Model.)

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Fig. 4.

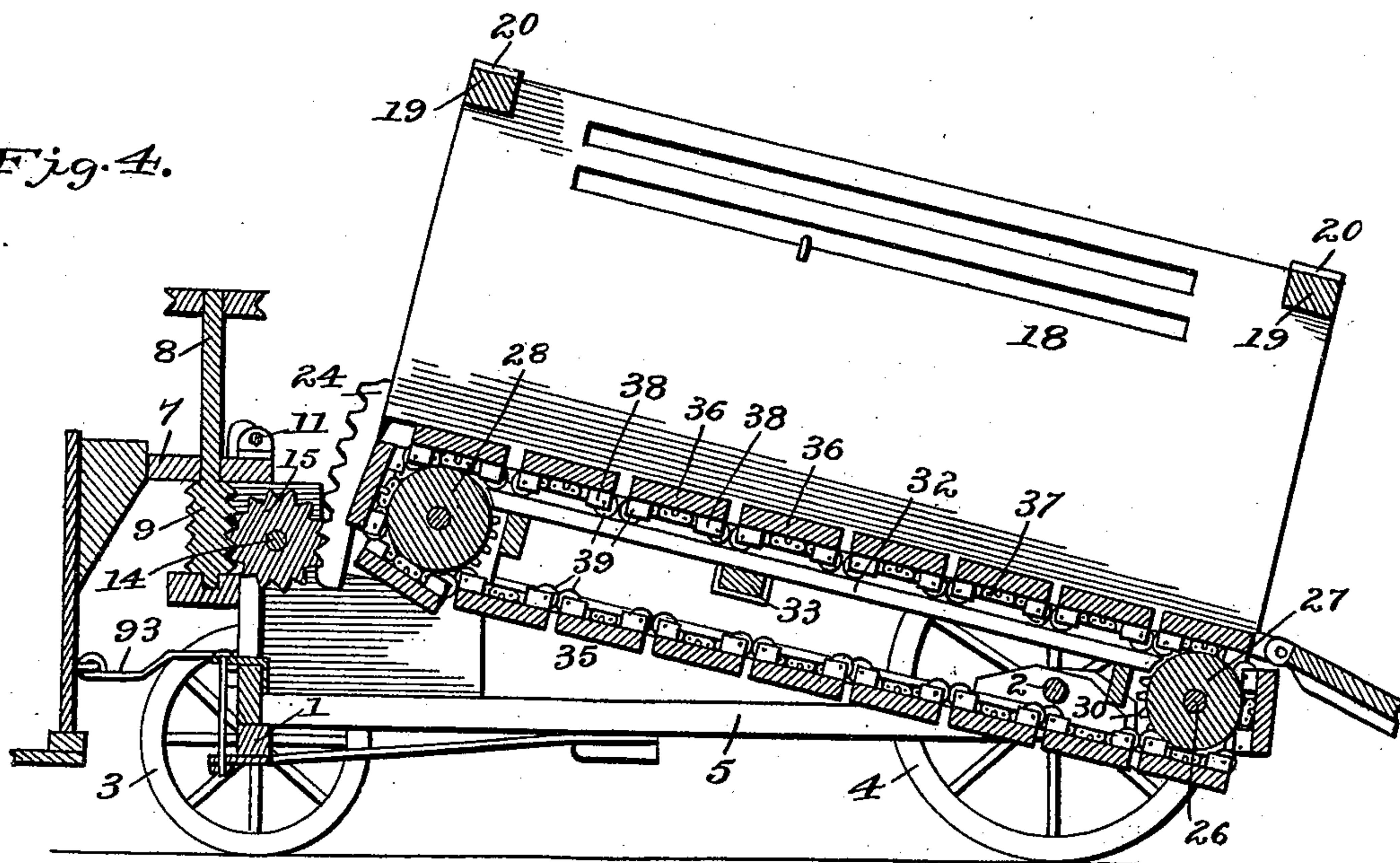
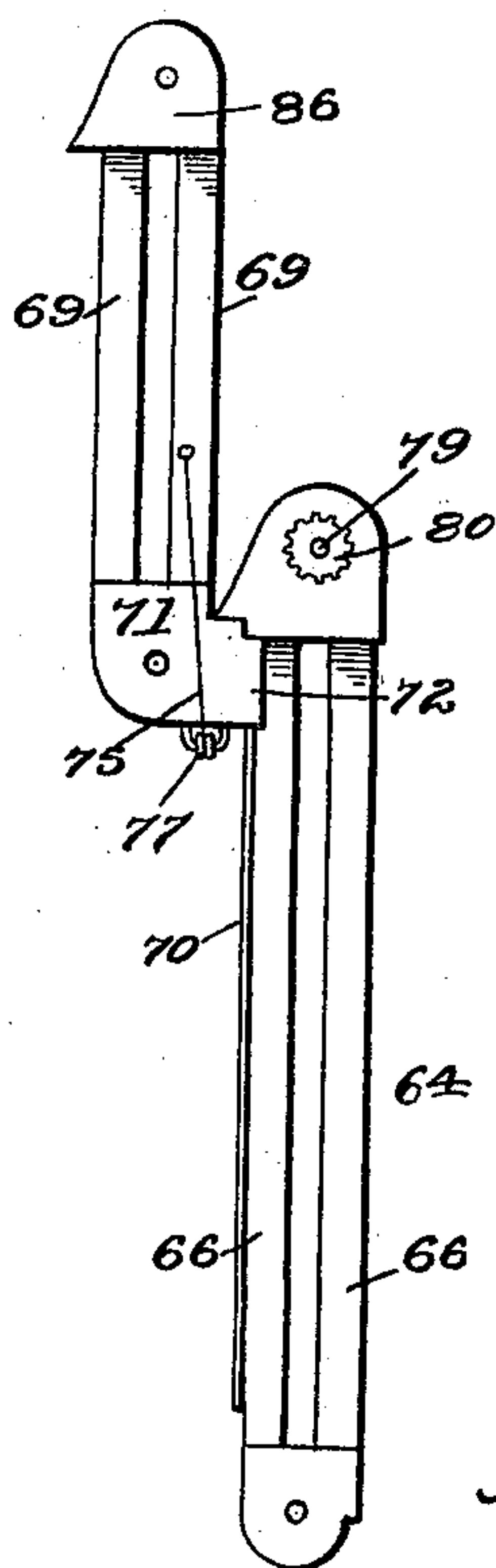


Fig. 5.



Witnesses
E. G. McKee
H. A. Hare

Inventor,
Samuel M. Peterson
by John Wedderburn
Attorney

(No Model.)

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Fig. 6.

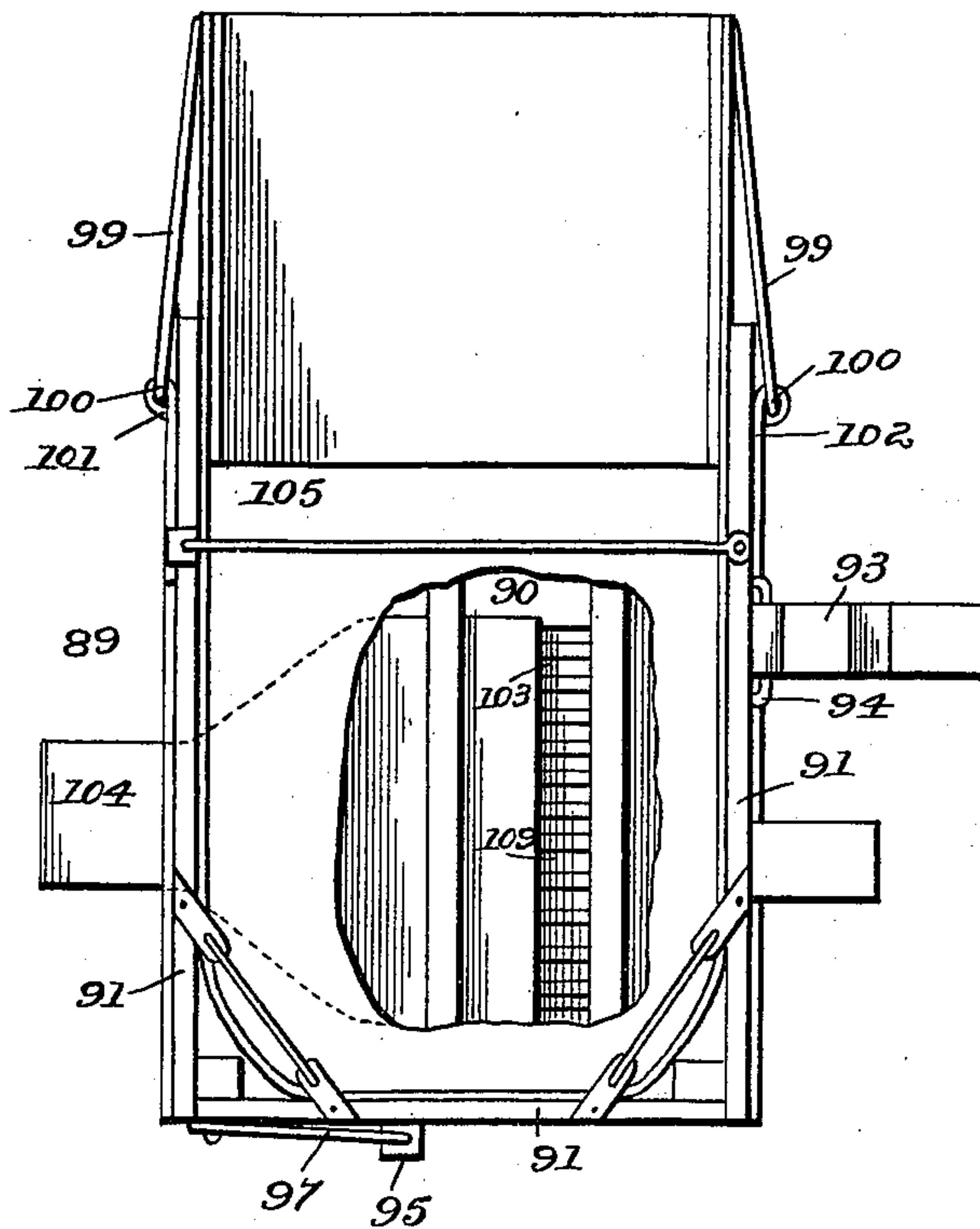
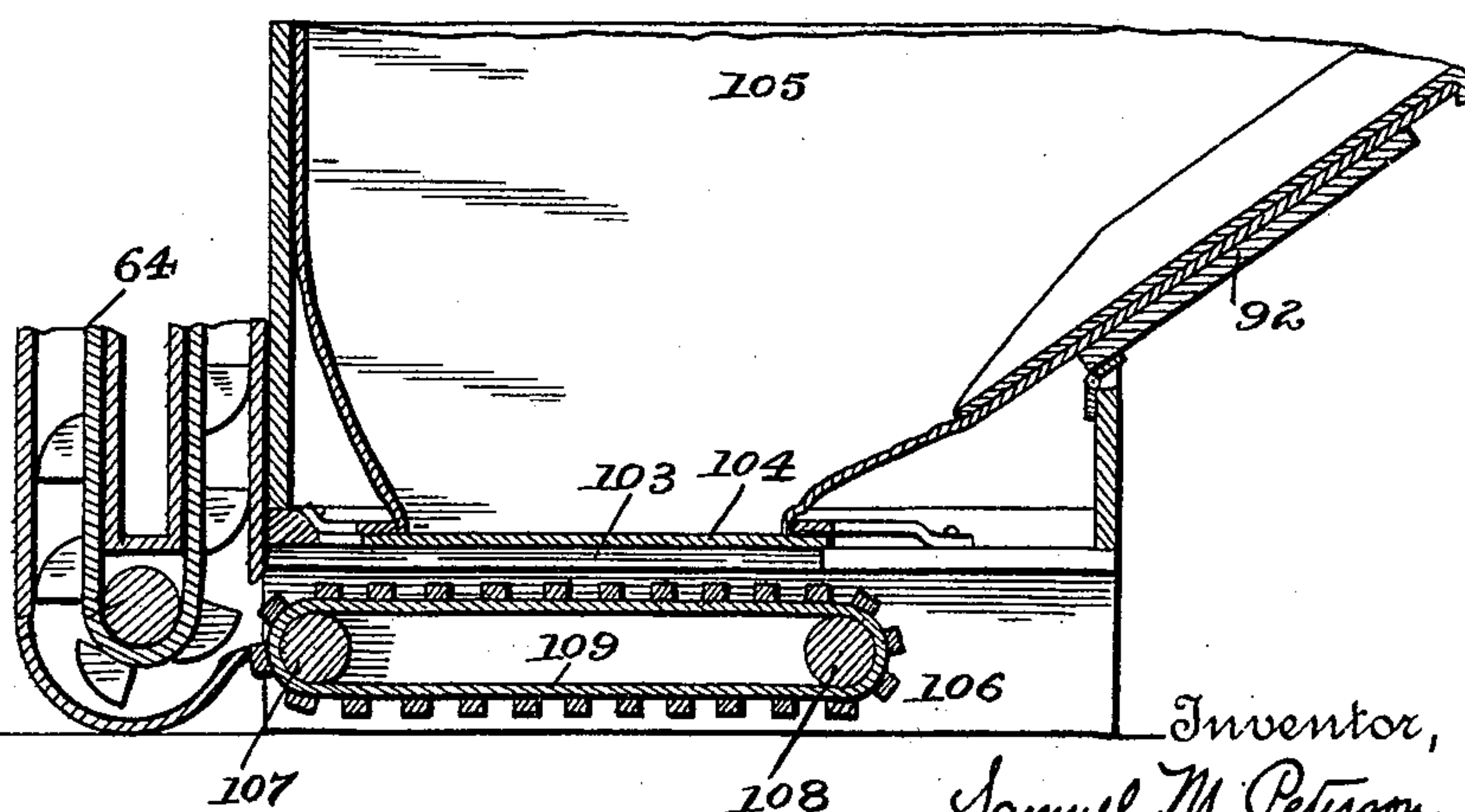


Fig. 7.



Witnesses
E. G. McKee
A. G. Haw

Inventor,
Samuel M. Peterson,
by *John Wedderburn*
Attorney

(No Model.)

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Fig. 8.

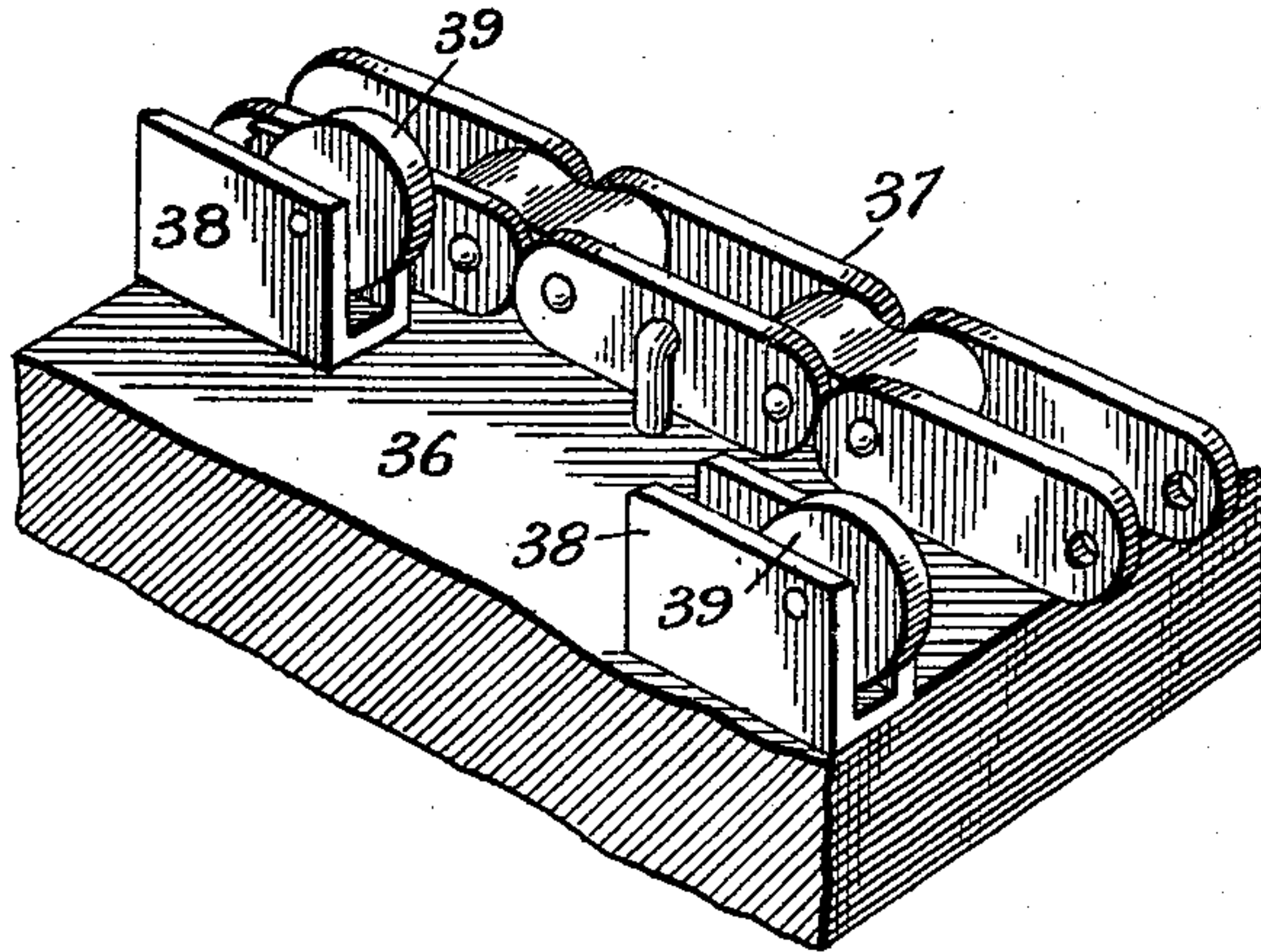


Fig. 9.

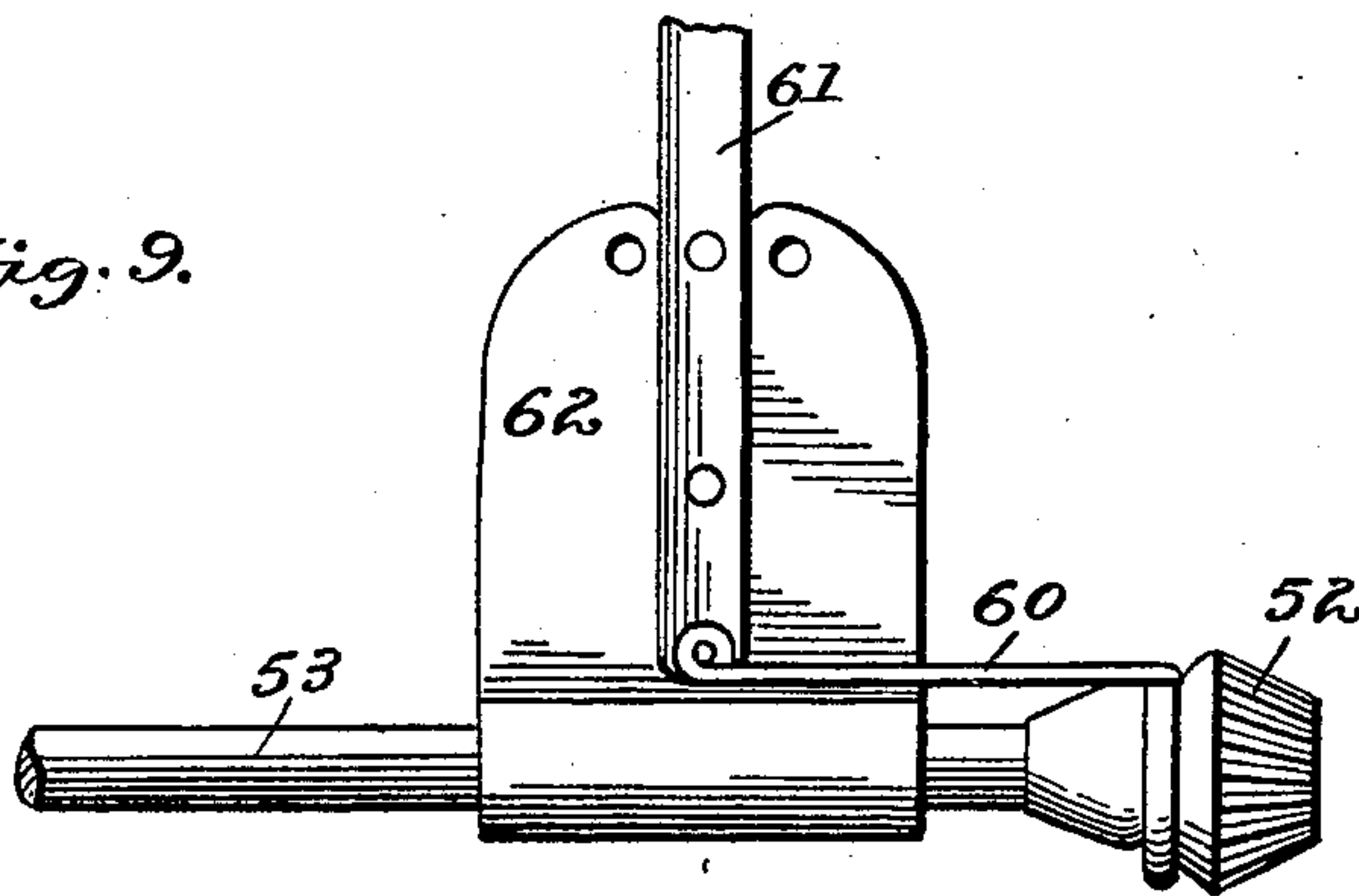
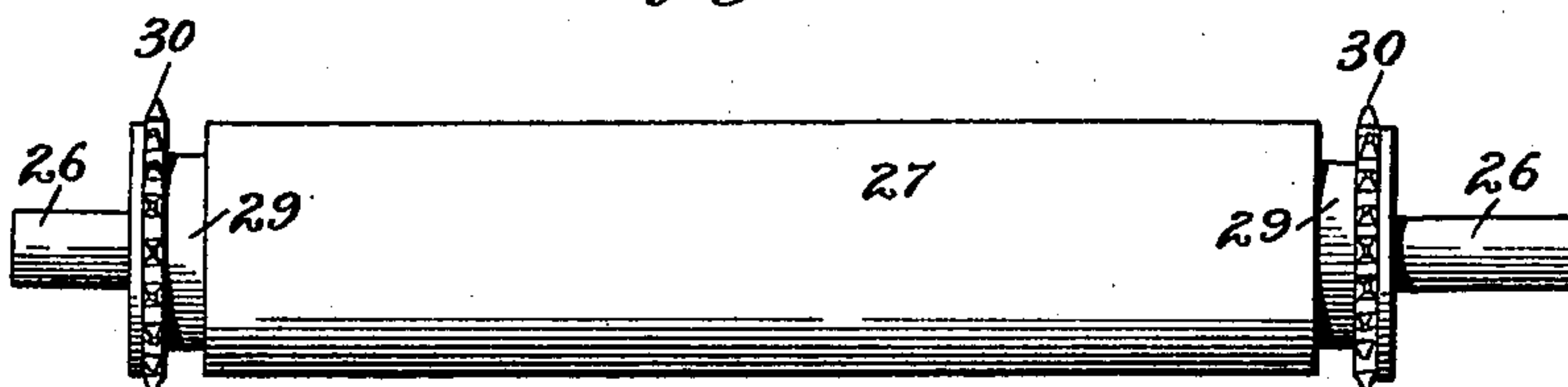


Fig. 10.



Witnesses
E. G. McKee
K. A. Nau

Inventor,
Samuel M. Peterson,
by *John Wedderburn*
Attorney

UNITED STATES PATENT OFFICE.

SAMUEL M. PETERSON, OF KENT, MINNESOTA.

GRAIN-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 587,271, dated July 27, 1897.

Application filed June 30, 1896. Serial No. 597,605. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. PETERSON, a citizen of the United States, residing at Kent, in the county of Wilkin and State of Minnesota, have invented certain new and useful Improvements in Grain-Elevators; and I do hereby 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.

My invention relates to improvements in grain-elevators, the object of the same being to provide a portable device whereby grain may be elevated from wagons in which it is placed loosely in tanks to a granary.

The invention resides particularly in an improved portable treadmill which can be readily raised and lowered from one end and means for transmitting the power from said treadmill to operate a feed-conveyer in a hopper located at the front of the machine or for any other purpose that it may be desired to use the same.

The invention consists of a main frame mounted upon suitable wheels, a tilting treadmill-frame mounted upon the rear axle of the machine, segmental racks at the forward end of said tilting frame, pinions mounted upon the opposite ends of a horizontal shaft engaging said racks, a worm gear-wheel on said shaft, and a worm acting in engagement with said worm-wheel, through which said shaft is turned for the purpose of raising or lowering said tilting frame. Mounted on suitable drums at the front and rear ends of said tilting frame is a tread belt or apron having sprocket-chains attached thereto, which engage corresponding sprocket-wheels on the rear-drum shaft, and a series of rollers on the inner side of said tread-apron, which are adapted to engage a metal track on the underside of said tilting frame. Suitable means are provided for lengthening the distance between the drum-shafts for tightening the sprocket-chain of said belt or apron. A brake is provided for stopping the rotation of one of said drum-shafts, and suitable connections are made between the rear-drum shaft and a sprocket-wheel on the rear axle, by means of which the power is transmitted from the tread apron or belt to said sprocket-wheel. Engaging beveled teeth on said sprocket-wheel

is a beveled pinion attached to the rear end of a shaft mounted in suitable bearings and extending to the forward end of the machine, a suitable clutch mechanism being provided for throwing said shaft into and out of engagement with the teeth on said sprocket-wheel. At the front of the machine is located a hopper for receiving the grain in bulk direct from the tanks in the wagons in which it is conveyed from the threshing-machine, which hopper is provided with an opening in the bottom thereof, with a suitable sliding cut-off therefor, and a conveyer belt or apron moving around suitable guides beneath said opening and driven through a belt or sprocket-chain meshing with the sprocket-wheel on the forward end of said longitudinal shaft. Adjacent to one end of said hopper, at the front of the device, is an elevator made up of two parts, by means of which it may be extended to accommodate it to different heights of granaries, with means provided for raising one of the parts and adjusting it at any desired elevation. The different parts are adapted to be folded up in compact form and loaded in on the top of the tilting frame for convenience in transporting the same from one point to another.

The invention also consists in other details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 represents a perspective view of my device with all the parts thereof shown in closed position, or the positions which they assume when the machine is to be moved from one point to another. Fig. 2 is a similar view showing the parts set up in operative position. Fig. 3 is a top plan view of the same. Fig. 4 is a central longitudinal section. Fig. 5 is a rear elevation of the elevator proper. Fig. 6 is a top plan view with parts broken away of the feed-hopper. Fig. 7 is a vertical longitudinal section through the hopper and the conveyer on the under side thereof. Fig. 8 is a detail perspective view of a section of the tread apron or belt, showing the sprocket-chain and antifriction-rollers connected thereto. Fig. 9 is a detail perspective view of the clutch mechanism used in connection with the shaft extending

from the rear axle to the front of the machine. Fig. 10 is a side elevation of the rear shaft and drum over which the tread-apron passes. Fig. 11 is a detail perspective view of the brake. Fig. 12 is a detail of one of the sliding boxes.

Likereference-numerals indicate like parts in the different views.

The main frame of my machine is suitably supported upon front and rear axles 1 2, respectively, having wheels 3 4 upon the outer ends thereof. The said main frame is made up of two parallel longitudinal beams 5 5, which are securely connected to the rear axle, and a front cross-beam 6, which is pivotally connected at its central point to the front axle 1. The cross-beam 6 has attached to its upper ends a horizontal beam or platform 7, through which extends a vertical shaft 8, having a worm 9 upon the lower end thereof, the said shaft having bearings at its extreme lower end in a projection 10 on the front side of the cross-beam 6. On the upper side of the horizontal beam 7 is a horizontal rod or bar 11, which is connected at its outer ends to brackets 12 12. The outer ends of the cross-beam 6 have connected to them upright beams 13 13, in the upper ends of which is mounted a horizontal shaft 14, provided with a worm gear-wheel 15, which meshes with the worm 9 on the shaft 8 and has connected to its outer ends pinions 16 16 for a purpose which will appear hereinafter.

Mounted in bearings on the rear axle 2 and extending to the forward end of the machine is a tilting tread-frame 17, having upright side pieces 18 18, which are adapted to be held in position by means of detachable connecting-bars 19 19, having flanged plates 20 20 on their outer ends, which fit over the top of said side pieces 18. At the rear of the tilting frame 17 is a hinged back piece 21, which is adapted to be held in closed position by means of rods 22 22, having hooked inner ends 23, which engage pins or openings in the side pieces 18. The said back piece 21 is also adapted to be folded down against the ground, as shown in Fig. 2, so that a horse may be driven up into the treadmill formed by the tilting frame 17. At the forward ends of the tilting frame 17 are segmental racks 24 24, which are engaged by the pinions 16 16 on the horizontal shaft 14. Mounted in sliding boxes 25 25 at the rear end of the tread-frame 17 is a shaft 26, upon which is mounted a drum or roller 27, a similar drum or roller 28 being provided at the forward end of the tilting frame 17. The drums 27 and 28 are provided with peripheral grooves 29 29 for a purpose which will hereinafter appear, and the drum 27 has secured to it sprocket-wheels 30 30 on the inside of the side bars thereof and a sprocket-wheel 31 upon its extreme outer end. On the under side of the tilting frame 17 is secured a pair of parallel metal tracks 32 32, which are supported by a cross-beam 33, extending to the outside of the machine,

the outer ends of said cross-beam being connected by bracing-beams 34, attached to the side pieces 18 18. Extending around the drums or rollers 27 28 is a tread apron or belt 35, made up of a series of slats 36 36, which are flexibly connected together by means of sprocket-chains 37 37 on the inner side thereof. The slats 36 are of such a width and the links of the chains 37 are of such a length that just three of said links will equal in length the width of said slats. The center link of the three is bolted to the inner side of each slat, so that the flexibility of the apron will not be affected and the chains will be free to move around the sprocket-wheels 30 30 on the rear drum 27. On the under side of each of the slats 36 of which the belt 35 is composed are secured, just within the chains 37 37, brackets 38 38, in which are mounted, two to each side of said slats, rollers 39 39, which are adapted to engage and form an antifrictional bearing with the upper surface of the metal tracks 32 32. These rollers also fit within the peripheral grooves or recesses 29 29 in the drums or rollers 27 28, so that they do not interfere with the said rollers or prevent the engagement of the sprocket-wheels 30 with the chains 37. At the ends of the two sides of the tilting frame 17, just in the rear of the sliding boxes 25, are brackets 40 40, having screws 41 therein, which engage threaded portions of the sliding boxes 25 for the purpose of drawing said boxes outwardly or forcing the same inwardly to tighten or loosen the sprocket-chains 37, passing around the drum or roller 27 on the shaft 26.

On the drum 27, between the sprocket-wheel 30 thereon and the side of the tilting frame 17, is a smooth pulley 42, around which passes a brake-strap 43, which is connected through a rod or pitman 44 with one arm of a lever 45, fulcrumed in one of the side pieces 18 and provided with a tooth or projection thereon, which is adapted to be inserted into perforations or openings 47 in a sector 48 on the side of the side bars 18. By this mechanism the rotation of the rear drum 27 may be stopped at any time. Mounted on the rear axle 2 just inside the rear wheel 4 is a sprocket-wheel 49, around which and the sprocket-wheel 30 passes a sprocket-chain 50 for the purpose of transmitting motion from the rear drum 27 to said sprocket-wheel 49. The said sprocket-wheel 49 has secured to or formed integral with it a beveled cog-wheel 51, which meshes with a beveled pinion 52 upon the rear end of a shaft 53, which extends forwardly to the front of the machine. This shaft 53 is mounted in suitable bearings 54, so that it is capable of receiving a rotary movement, and the front bearings 54 are situated at the lower end of a metallic plate 55, having an elongated slot 56 therein, through which passes a bolt 57 for securing said plate to one of the uprights 13 on the end of the cross-beam 6. A pin 58 is adapted to be inserted into and removed from an opening 59 in the upright 13, so that when

said pin is removed said plate 55 may be moved upwardly, carrying with it the shaft 53, and when said pin is inserted in place, with the plate 55 in its downward position, said plate
 5 is held stationary. The said shaft 53 is also adapted to be moved longitudinally in its bearing, this movement being provided for the purpose of disengaging the pinion 52 from the beveled cog-wheel 51. This movement is
 10 effected by means of a clutch 60, attached to one end of the shaft 53, adjacent to the pinion 52, and at its other end to an operating-lever 61, fulcrumed in a sector or bracket 62, secured to one of the longitudinal side bars 5
 15 of the main frame. The forward end of the shaft 53 has connected to it a sprocket-wheel 63 for a purpose which will presently appear.

At the front of my device is located the elevator 64, the rear side thereof being pivotally
 20 connected to a block 65, which is in turn pivotally connected to and slidingly mounted upon the horizontal rod 11 on the upper side of the horizontal beam 7. The elevator 64 is made up of a pair of upright beams 66 66, sup-
 25 porting the elevator proper. Between the beams 66 is a rod or bar 67, which is adapted to be engaged by a toothed bar 68, pivoted to the block 65 for the purpose of holding the uprights 66 66 securely in vertical position.
 30 In connection with the uprights 66 I may also employ a pair of uprights 69 69, constituting a second part of the elevator-frame, which is adapted to be moved up or down for the purpose of accommodating the elevator to differ-
 35 ent heights of granaries. The two parts of the elevator-frame are slidingly connected together. One part—that composed of the uprights 66—has secured to it a plate 70, which shall project slightly beyond the front and
 40 rear edges thereof.

To the uprights 69 are connected plates 71 71, having inturned flanges 72, which surround the edges of the plate 70. On the front of one of the uprights 66 is mounted a winch or
 45 windlass 73, which may be locked in any position by means of the pawl 74, and has a cord 75 wound thereon, which passes around a pulley 76 on the front side of one of the beams 66 and around pulleys 77 77 on the
 50 lower end of the uprights 69, being securely attached to the upper end of one of the uprights 69 on the rear side thereof. By this means the sliding part of the elevator-frame, made up of the uprights 69 69, may be raised
 55 or lowered by turning the windlass 73 in one direction or the other. In the cross-bar 78, which connects the upper ends of the uprights 66, moves a horizontal shaft 79, having a sprocket-wheel 80 upon the rear end thereof,
 60 around which passes a sprocket-chain 81, which at its lower end passes around the sprocket-wheel 63 on the forward end of the shaft 53. By this means the rotary motion of the shaft 53 is transmitted to the shaft 79.
 65 On the front end of said shaft 79 is secured a sprocket-wheel 83, which is geared, through a sprocket-chain 84, with a sprocket-wheel

85, secured to a shaft mounted in the cross-head 86 at the upper end of the uprights 69, constituting the movable part of the elevator-
 70 frame. The sprocket-wheel 85 is in turn connected, through a sprocket-chain 87, with a sprocket-wheel 88, mounted in the lower end of the elevator-frame 64.

Detachably connected to the front end of the
 75 machine is a hopper 89, which consists, essentially, of a box having a horizontal bottom 90 and vertical sides and end pieces 91 and 92, respectively. The rear side 91 has pivoted to it a clip 93, which is adapted to be inserted
 80 through a loop or staple 94 on the cross-beam 6 of the main frame, by means of which said hopper may be readily attached to and disconnected from said frame. It is also provided with a projecting plate 95, having an
 85 opening 96 therein, through which a pin 97 may be inserted for securing said hopper to a similar plate 98 on the lower end of the elevator-frame 64. One of the end pieces 92 is hinged to the main part of the hopper and
 90 is adapted to be folded outwardly, as clearly shown in Fig. 2. This is provided with pivoted bracing-rods 99, having flanges 100 at their inner ends, which are adapted to be inserted into loops or staples 101 and 102, se-
 95 cured to the side pieces 91 of said hopper, so that said end piece may be securely held either in its open or closed position. The bottom of the hopper is provided with an opening 103 and with a sliding cut-off 104,
 100 which is adapted to be moved back and forth from the outside of the hopper for the purpose of opening or closing the orifice 103. The inside of the hopper has a canvas lining
 105 105, which is secured to the bottom around the edges of the opening 103 and is loosely attached to other parts of the inside of said hopper. On the under side of the bottom of the hopper is secured a pair of parallel beams
 110 106 106, in which are mounted parallel horizontal shafts 107 108, around which passes a conveyer-belt 109, which is located directly beneath the orifice or opening 103 in the bottom of said hopper. The outer end of the shaft 107 has attached to it a sprocket-wheel
 115 110, around which passes a sprocket-chain 111, which also passes around and meshes with the sprocket-wheel 88 at the lower end of the elevator-frame 64.

The ordinary method of transferring grain
 120 from the thresher to the granary is to fill the same in bags at the thresher, load the bags of grain into wagons, and convey the same to the granary, afterward carrying or elevating the same by hand into said granary. This
 125 operation requires a large number of men, one being necessary at the bagger of the threshing-machine, one being necessary to transfer the bags to the wagon, one being necessary to operate each team, and others being
 130 necessary to transfer the bags from the wagon to the granary. Furthermore, the work that must be performed is the hardest kind of labor, and the time required is so great that

in order to house all the grain that can be threshed by a single machine a number of different teams are necessary. This adds greatly to the expense, and a further loss is met with by the fact that a great deal of grain is wasted in filling it into the bags and also through openings or holes in the bags themselves. By the use of my invention all this will be overcome and the expense of handling the grain will be materially decreased. I propose to transfer the grain at the threshing-machine directly into tanks on the wagons, the same being elevated by the elevator attached to the threshing-machine. I thereby dispense with the man at the bagger and the man who transfers the bags of grain from the thresher to the wagon, and, furthermore, by the use of the tanks prevent the waste of the grain, which is so common under the old method of procedure.

My improved elevator and portable treadmill is adapted to be transported with ease from place to place, and when set up adjacent to a granary the operation is as follows:

It will be assumed, of course, that the elevator 64 will be adjusted in vertical position, that the shaft 53 will be in engagement with the cog-wheel 51, and that the connections will be made through the forward end of the shaft 53 and the conveyer on the under side of the hopper 89. The grain from the tanks in the wagon is first dumped into the hopper 89, and the orifice 103 therein is closed by the cut-off slide 104. When the hopper has been filled, the tilting frame 17 having been raised, the treadmill is put into operation by the horse tread-apron 35, which, through the sprocket-wheels 30 on the rear drum 27, acting in engagement with the sprocket-chains 37 on the inner side of the belt or apron 35, transmits the motion through the sprocket-wheel 31 and the sprocket-chain 49 to the sprocket-wheel 50. The motion is further transmitted through the beveled cog-wheel 51 and the pinion 52 to the shaft 53, having the sprocket-wheel 63 on the forward end thereof. This, through the sprocket-chain 81, sprocket-wheel 80, shaft 79, sprocket-wheel 83, sprocket-chain 84, sprocket-wheel 85, and sprocket-chain 87, transmits the motion to the sprocket-wheel 88 at the lower end of the elevator-frame 64. The operation of the sprocket-wheel 88 causes a forward movement to be imparted to the conveyer-belt 109, which carries the grain from the hopper 89 admitted to said belt through the opening 103 to the elevator. It is then raised in the usual manner. The hinged outer end of the hopper 89 is provided so that the end of the hopper may be inserted directly beneath the opening in the grain-tank on the wagon to prevent the waste of the grain. The canvas lining 105 of the hopper is provided for the purpose of doing away with the necessity of shoveling the grain remaining in the corners of the hopper, it being necessary, in order to force the same through the opening 103, to

merely lift the sides of said lining, which throws the loose grain inwardly.

It should be stated in this connection that the sides and end pieces 91 92 of the hopper 89 are so connected together that they may be readily taken apart for the purpose of transporting the machine. If a machine is to be hauled a long distance, the hopper 89 will be knocked down and inserted between the sides 18 of the tilting frame 17, resting upon the top of the treadmill or apron 35. At the same time the hinged back piece 21 is folded up into the position shown in Fig. 1, and locked in said position by the engagement of the inturned ends 23 of the rods 22 with a loop or staple on the side piece 18. When the hopper 89 is disconnected from the front of the machine, the clip 93 is elevated out of engagement with the loop or staple 94 on the cross-beam 6, and the pin 97 is released from engagement with the plates 95 and 98. To fold up the elevator-frame, the pivoted bar 68 is thrown out of engagement with the cross-bar 67 and said frame turned rearwardly on the pivotal connection between the block 65 and the horizontal rod 11. The said frame is then shifted sidewise along its bearing upon said rod and folded rearwardly between the sides 18, resting upon the top of the knocked-down hopper. The detachable shafts 112 are then connected to the front axle 1 in the manner shown and the machine is in position for moving. Before the elevator-frame 64 is folded back, however, the sprocket-chain 81 should be disconnected from the sprocket-wheel 63, and the pinion 52 on the inner end of the shaft 53 should be thrown out of mesh with the beveled cog-wheel 51 by operating the clutch mechanism connected to said shaft 53. The pin 58 should also be removed from the upright 13, and the plate 55, in the lower end of which the bearings 54 of the shaft 53 are formed, should be elevated, as shown in Fig. 1.

When the horse is in the treadmill between the sides 18 18, the bracing-rods 19 19 should be adjusted at the extreme outer ends of said sides 18, but when the horse has been removed said brace-bars may be moved closer together, as shown in Fig. 1.

While I have described my invention as being particularly adapted to use for elevating grain, it is obvious that the portable treadmill may be utilized for any purpose that may be desired. For example, a farmer might use the same for pumping his water, cleaning his grain, or operating any other device or machine where power is required. The power of a treadmill is the most economical that can be used by a farmer, is always at hand, and where the treadmill is made portable it may be utilized for a variety of purposes for which it has never been employed heretofore.

One of the important features of my invention is the means of mounting the treadmill so as to make it portable and the mechanism

whereby one end of the treadmill may be elevated quickly and conveniently and as quickly and conveniently lowered into place. It is a well-known fact that it is more fatiguing to a horse to stand upon an inclined plane with his front feet raised than it is to walk. When, therefore, there is any delay or cessation of the work, my tilting frame may be readily and quickly returned to horizontal position, so that the horse is left just as comfortable as he would be in his own stall. This feature of construction I consider a most valuable one.

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

1. In a device of the character set forth, the combination of a pair of drums or rollers located at opposite ends of the machine and having peripheral grooves or recesses in their outer ends, a tread apron or belt passing around said drums or rollers made up of a series of slats, rollers mounted in brackets on the inner surfaces of said slats adapted to pass within the peripheral grooves or recesses in said drums, and longitudinal rails upon which said rollers bear.

2. In a device of the character set forth, the combination of a pair of drums or rollers located at opposite ends of the machine having peripheral grooves or recesses near their outer ends, sprocket-wheels upon said drums, a tread apron or belt made up of a series of slats extending transversely of the machine and connected together by sprocket-chains secured to the inner surfaces of said slats, the said sprocket-chains engaging the sprocket-wheels on said drums, longitudinal rails secured to a stationary part of the frame and located beneath the bands of said belt or apron and rollers mounted in brackets secured to the inner surfaces of said slats, the said rollers fitting within the peripheral grooves or recesses in said drums and bearing upon the top surface of said rails.

3. In a device of the character set forth, the combination with a main frame mounted upon wheels, of a tilting treadmill-frame mounted to rock in said main frame, means for raising and lowering one end of said tilting frame, the said tilting frame being made up of a pair of side pieces, a hinged back piece adapted to be folded down for the purpose described and a tread-apron mounted upon suitable drums or rollers at the front and rear ends of said tilting frame and located between the side pieces of said frame, substantially as and for the purpose described.

4. In a device of the character set forth, the combination with a main frame mounted upon wheels, of a tilting treadmill-frame mounted to rock in said main frame, means for raising and lowering one end of said tilting frame, the said tilting frame being made up of a pair of side pieces, a hinged back piece adapted to be folded down for the purpose described, a tread-apron consisting of a series of trans-

verse slats, passing around drums or rollers at the front and rear ends of said frame, antifriction-rollers upon the inner surface of each of said slats and a pair of longitudinal rails upon which said antifriction-rollers bear, a beam for supporting said rails, extending outwardly from the opposite sides of the tilting frame and brace-beams connecting the ends of said beams with the side pieces of said tilting frame.

5. In a device of the character set forth, the combination of a main frame secured to front and rear axles, having wheels upon the outer ends thereof, a tilting treadmill-frame mounted to rock on the rear axle of said main frame, means for raising and lowering said tilting frame, a pair of drums or rollers mounted at opposite ends of said tilting frame, a tread-apron passing around said drums for rotating the same, a sprocket-wheel upon the outer end of the drum at the rear of said tilting frame, a sprocket-wheel upon the rear axle of said main frame, a sprocket-chain connecting said sprocket-wheels, a beveled gear-wheel secured to or formed integral with the sprocket-wheel upon said rear axle and a longitudinal shaft extending to the front of the machine, mounted to rotate in suitable bearings, a beveled pinion upon the rear end of said shaft meshing with the gear-wheel upon said rear axle and means for transmitting power from the front end of said shaft, substantially as and for the purpose described.

6. In a device of the character set forth, the combination of a main frame secured to front and rear axles, having wheels upon the outer ends thereof, a tilting treadmill-frame mounted to rock on the rear axle of said main frame, means for raising and lowering said tilting frame, a pair of drums or rollers mounted at opposite ends of said tilting frame, a tread-apron passing around said drums for rotating the same, a sprocket-wheel upon the outer end of the drum at the rear of said tilting frame, a sprocket-wheel upon the rear axle of said main frame, a sprocket-chain connecting said sprocket-wheels, a beveled gear-wheel secured to or formed integral with the sprocket-wheel upon said rear axle, a longitudinal shaft extending to the front of the machine and mounted to rotate and slide in suitable bearings, a beveled pinion upon the rear end of said shaft meshing with the beveled cog-wheel on said rear axle, and clutch mechanism for shifting said shaft longitudinally to throw said pinion into and out of gear, substantially as and for the purpose described.

7. In a device of the character set forth, the combination of a main frame secured to front and rear axles, having wheels upon the outer ends thereof, a tilting treadmill-frame mounted to rock on the rear axle of said main frame, means for raising and lowering said tilting frame, a pair of drums or rollers mounted at opposite ends of said tilting frame, a tread-apron passing around said drums for rotating

the same, a sprocket-wheel upon the outer end of the drum at the rear of said tilting frame, a sprocket-wheel upon the rear axle of said main frame, a sprocket-chain connecting said sprocket-wheels, a beveled gear-wheel secured to or formed integral with the sprocket-wheel upon said rear axle, a longitudinal shaft extending to the front of the machine and mounted to rotate and slide in suitable bearings, a beveled pinion upon the rear end of said shaft meshing with the beveled cog-wheel on said rear axle, a sector secured to said main frame adjacent to said shaft, an operating-lever fulcrumed in said sector and connections between one arm of said lever and said shaft, whereby the latter may be shifted longitudinally to throw the pinion of said shaft into and out of gear with said cog-wheel, substantially as and for the purpose described.

8. In a device of the character set forth, the combination of a main frame secured to front and rear axles, having wheels upon the outer ends thereof, a tilting treadmill-frame mounted to rock on the rear axle of said main frame, means for raising and lowering said tilting frame, a pair of drums or rollers mounted at opposite ends of said tilting frame, a tread-apron passing around said drums for rotating the same, a sprocket-wheel upon the outer end of the drum at the rear of said tilting frame, a sprocket-wheel upon the rear axle of said main frame, a sprocket-chain connecting said sprocket-wheels, a beveled cog-wheel secured to or formed integral with the sprocket-wheel upon said rear axle, a longitudinal shaft extending to the front of the machine and mounted to slide and rotate in suitable bearings near the front and rear ends thereof, a beveled pinion adapted to mesh with a beveled gear-wheel on said rear axle, means for shifting said shaft longitudinally to throw said pinion into and out of gear, a plate having an elongated slot therein to which the bearings at the front of said shaft are secured, whereby the front end of said shaft may be raised or lowered and adjusted in any position, substantially as and for the purpose described.

9. In a device of the character set forth, the combination of a main frame mounted upon wheels, a tilting treadmill-frame, means for raising and lowering one end of said frame, means for transmitting power from said treadmill to the front of the machine and an elevator-frame pivotally and slidingly mounted on the front of said main frame, whereby it may be folded back upon said tilting frame for convenience in transporting and may be thrown down and secured firmly in upright position when it is desired to put the same into operation, substantially as and for the purpose described.

10. In a device of the character set forth, the combination of a main frame mounted upon wheels, a tilting treadmill-frame, means for raising and lowering one end of said frame,

means for transmitting power from said treadmill to the front of the machine, a horizontal rod mounted in brackets upon the forward end of said main frame and an elevator-frame mounted to slide and rotate on said rod, substantially as and for the purpose described.

11. In a device of the character set forth, the combination of a main frame mounted upon wheels, a tilting treadmill-frame, means for raising and lowering one end of said frame, means for transmitting power from said treadmill to the front of the machine, a horizontal rod mounted in brackets upon the forward end of said main frame, a block pivoted to and slidingly connected with said horizontal rod and an elevator-frame pivoted to the forward end of said block, substantially as and for the purpose described.

12. In a device of the character set forth, the combination of a main frame mounted upon wheels, a tilting treadmill-frame, means for raising and lowering one end of said frame, means for transmitting power from said treadmill to the front of the machine, a horizontal rod mounted in brackets upon the forward end of said main frame, a block pivoted to and slidingly connected with said horizontal rod, an elevator-frame pivoted to the forward end of said block, a cross-bar connecting two of the parallel beams of said elevator-frame and a locking-lever pivoted to said block and having a hooked end which is adapted to engage the cross-bar in said elevator-frame, substantially as and for the purpose described.

13. In a device of the character set forth, the combination of a main frame mounted upon wheels, a tilting treadmill-frame, means for raising and lowering one end of said frame, means for transmitting power from said treadmill to the front of the machine, an elevator-frame pivotally and slidingly mounted on the front of said main frame, the said elevator-frame being made up of two parts, one slidingly connected with the other, means for raising one of said parts and means for adjusting it at any desired elevation, substantially as and for the purpose described.

14. In a device of the character set forth, the combination of a main frame mounted upon wheels, a tilting treadmill-frame, means for raising and lowering one end of said frame, means for transmitting power from said treadmill to the front of the machine, an elevator-frame pivotally and slidingly mounted on the front of said main frame, the said elevator-frame being made up of two parts, one of which is adapted to rest upon the ground when in operative position, a guide upon one edge thereof upon which the other part is adapted to slide, a windlass secured to the stationary part of said elevator-frame, pulleys mounted upon each part of said frame and a cord secured at one end to said windlass, passing around said pulleys and attached to the movable part of said frame, substantially as and for the purpose described.

15. In a device of the character set forth,

the combination of a main frame mounted upon wheels, a tilting treadmill-frame, means for raising and lowering one end of said frame, means for transmitting power from said treadmill to the front of the machine, an elevator-frame pivotally and slidingly mounted on the front of said main frame, the said elevator-frame being made up of two parts, one of which is adapted to rest upon the ground when in operative position, a plate secured to one edge thereof and projecting out beyond the sides, flanged plates secured to the movable part of said frame adapted to fit around and engage the projecting edges of the plate on said stationary part, a windlass secured to one part of said frame, pulleys mounted in both parts thereof and a cord attached at one end to said windlass, passing around said pulleys and connected at its opposite end to said movable part of the elevator-frame, substantially as and for the purpose described.

16. In a device of the character set forth, the combination with a main frame mounted upon wheels, a tilting treadmill-frame mounted to rock thereon, means for raising one end of said tilting frame, a longitudinal shaft for transmitting power from said treadmill-frame to the forward end of the machine, a sprocket-wheel upon the front end of said shaft and an elevator located at the front of the machine, of a hopper detachably connected to the front end of said main frame for receiving grain from the wagons in which it is conveyed from the thresher, having a flat bottom and an opening therein, a conveyer-belt mounted upon rollers on the under side of said hopper directly beneath the opening in the bottom thereof, a sprocket-wheel upon the outer end of one of the rollers upon which said conveyer-belt is mounted, and a sprocket-chain connecting said sprocket-wheel with the sprocket-wheel upon the forward end of said longitudinal shaft whereby the grain is conveyed from the hopper to the elevator, substantially as described.

17. In a device of the character set forth, the combination with a main frame mounted upon wheels, a tilting treadmill-frame mounted to rock thereon, means for raising one end of said tilting frame, a longitudinal shaft for transmitting power from said treadmill-frame to the forward end of the machine, a sprocket-wheel upon the front end of said shaft and an

elevator located at the front of the machine, of a hopper detachably connected to the front end of said main frame for receiving grain from the wagons in which it is conveyed from the thresher, having a flat bottom and an opening therein, a sliding cut-off for closing the opening in said bottom, and a conveyer-belt mounted upon rollers on the under side of said hopper directly beneath the opening in the bottom thereof, a sprocket-wheel upon the outer end of one of the rollers upon which said conveyer-belt is mounted, and a sprocket-chain connecting said sprocket-wheel with the sprocket-wheel upon the forward end of said longitudinal shaft, whereby the grain is conveyed from the hopper to the elevator, substantially as described.

18. In a device of the character set forth, the combination with a main frame mounted upon wheels, a tilting treadmill-frame mounted to rock thereon, means for raising one end of said tilting frame, a longitudinal shaft for transmitting power from said treadmill-frame to the forward end of the machine, a sprocket-wheel upon the front end of said shaft and an elevator located at the front of the machine, of a hopper detachably connected to the front end of said main frame for receiving grain from the wagons in which it is conveyed from the thresher, having a flat bottom and an opening therein, one end of said hopper being hinged to the main part thereof, a canvas lining for said hopper, secured to the bottom thereof around the edges of the opening therein and loosely attached at other points, and a conveyer-belt mounted upon rollers on the under side of said hopper directly beneath the opening in the bottom thereof, a sprocket-wheel upon the outer end of one of the rollers upon which said conveyer-belt is mounted, and a sprocket-chain connecting said sprocket-wheel with the sprocket-wheel upon the forward end of said longitudinal shaft, whereby the grain is conveyed from the hopper to the elevator, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SAMUEL M. PETERSON.

Witnesses:

FRANK MARCEK,
SAMUEL CRUIKSHANK.