



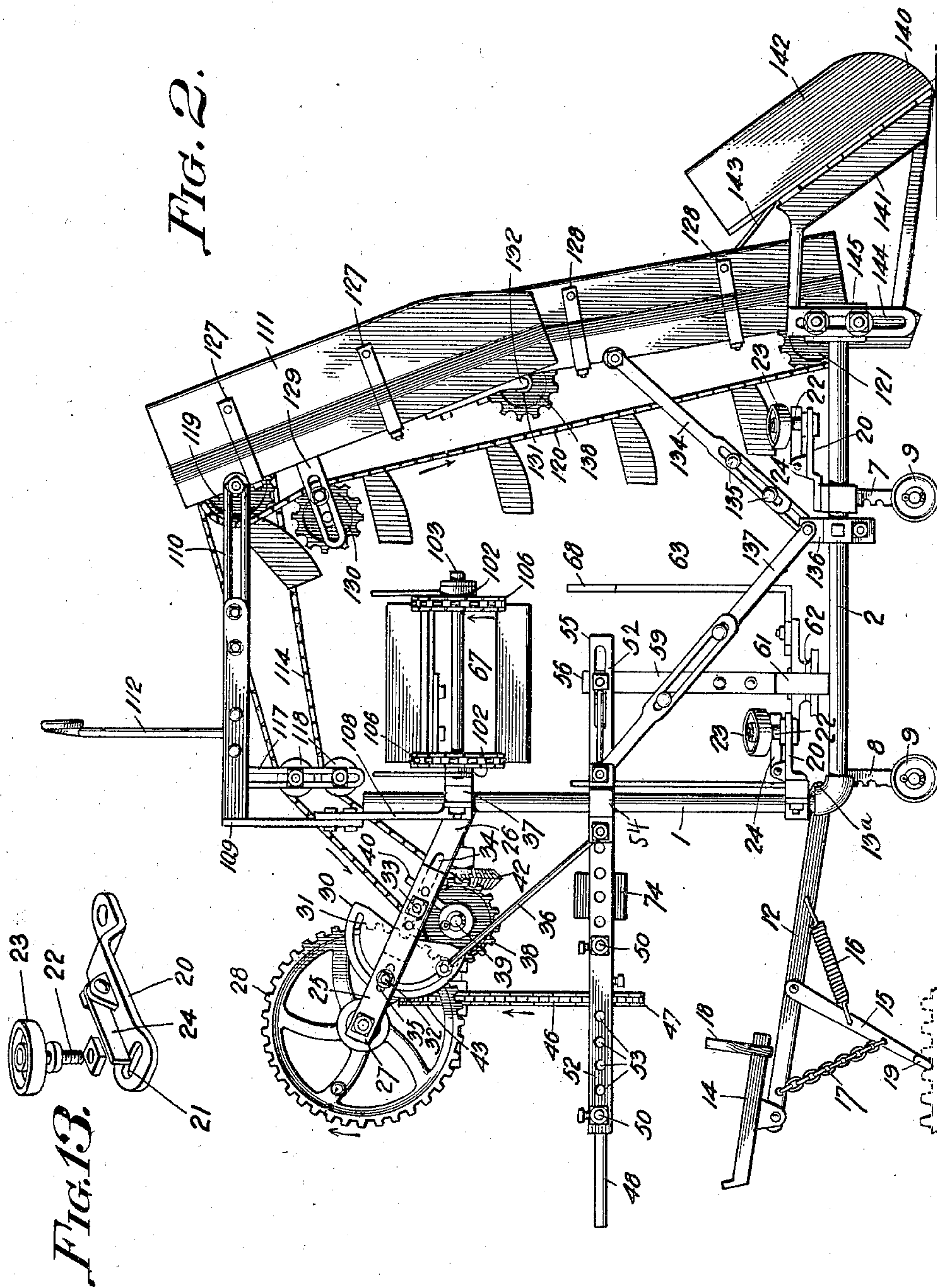


M. W. HEYENGA.  
GRAIN ELEVATING MACHINE.

(Application filed June 8, 1901.)

(No Model.)

7 Sheets—Sheet 2.



Witnesses  
*John Paulsenwell.*  
*J. J. Riley*

*Martin W. Heyenga,* Inventor.  
 by *C. A. Snow & Co.*  
 Attorneys

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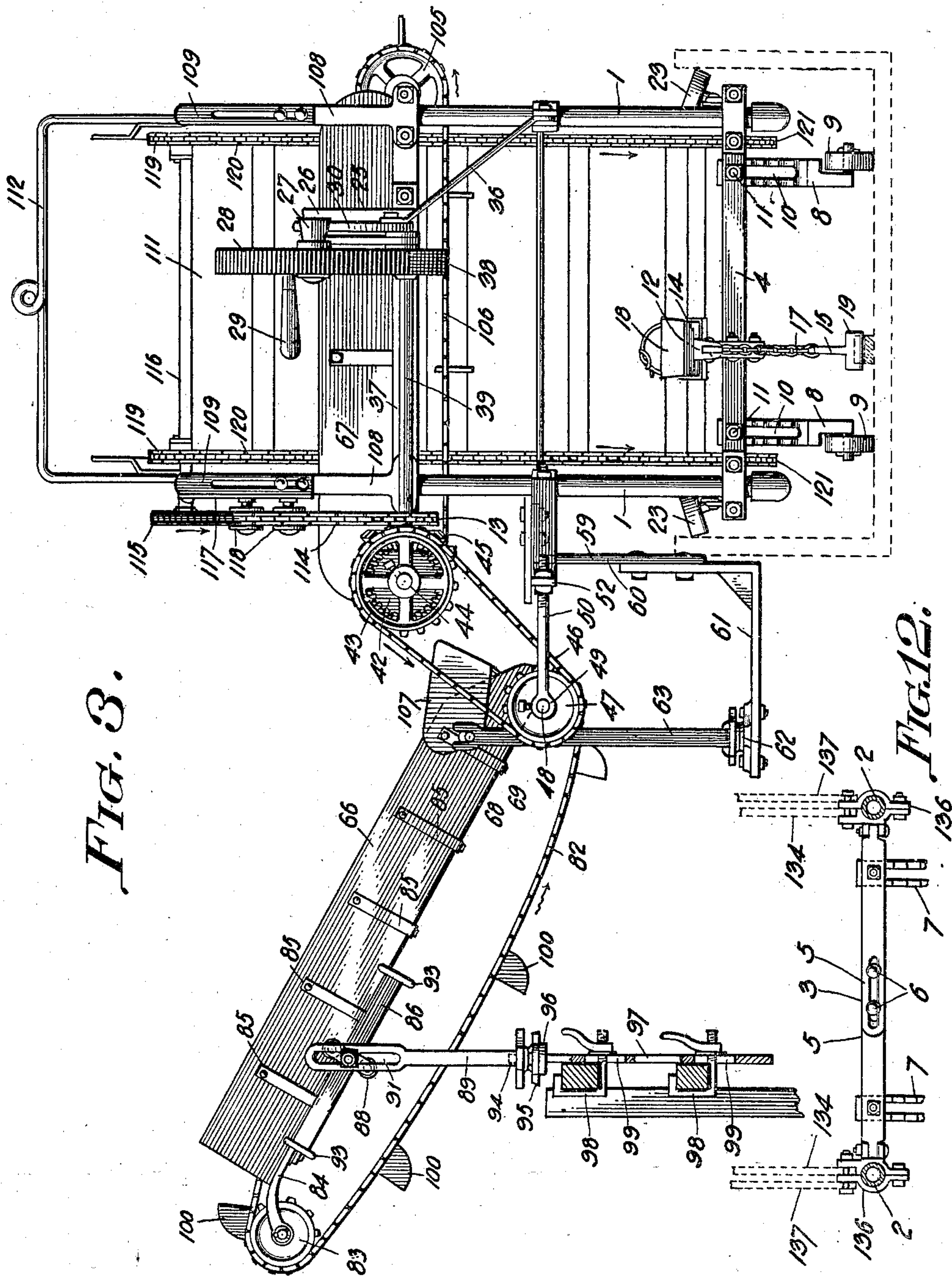


FIG. 3.

FIG. 12.

Witnesses

*Frank Culverwell.*  
*H. J. Riley*

Martin W. Heyenga, Inventor.  
by *Chas. Snow & Co.*  
Attorneys

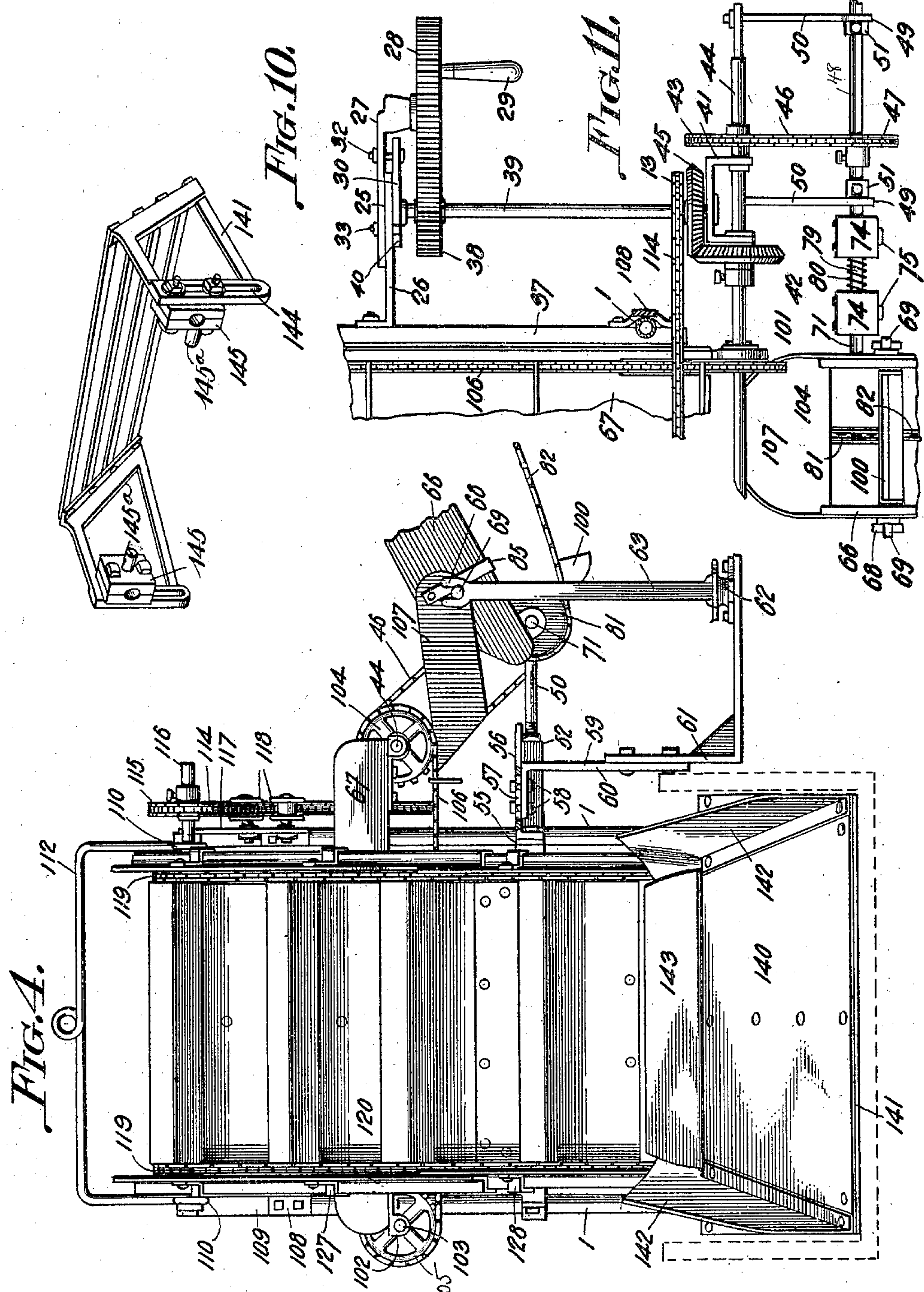


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7 Sheets—Sheet 4.



Witnesses

*J. H. Culverwell.*  
*J. F. Riley*

*Martin W. Heyenga,* Inventor.  
by *C. A. Snow & Co.* Attorneys

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7 Sheets—Sheet 5.

FIG. 5.

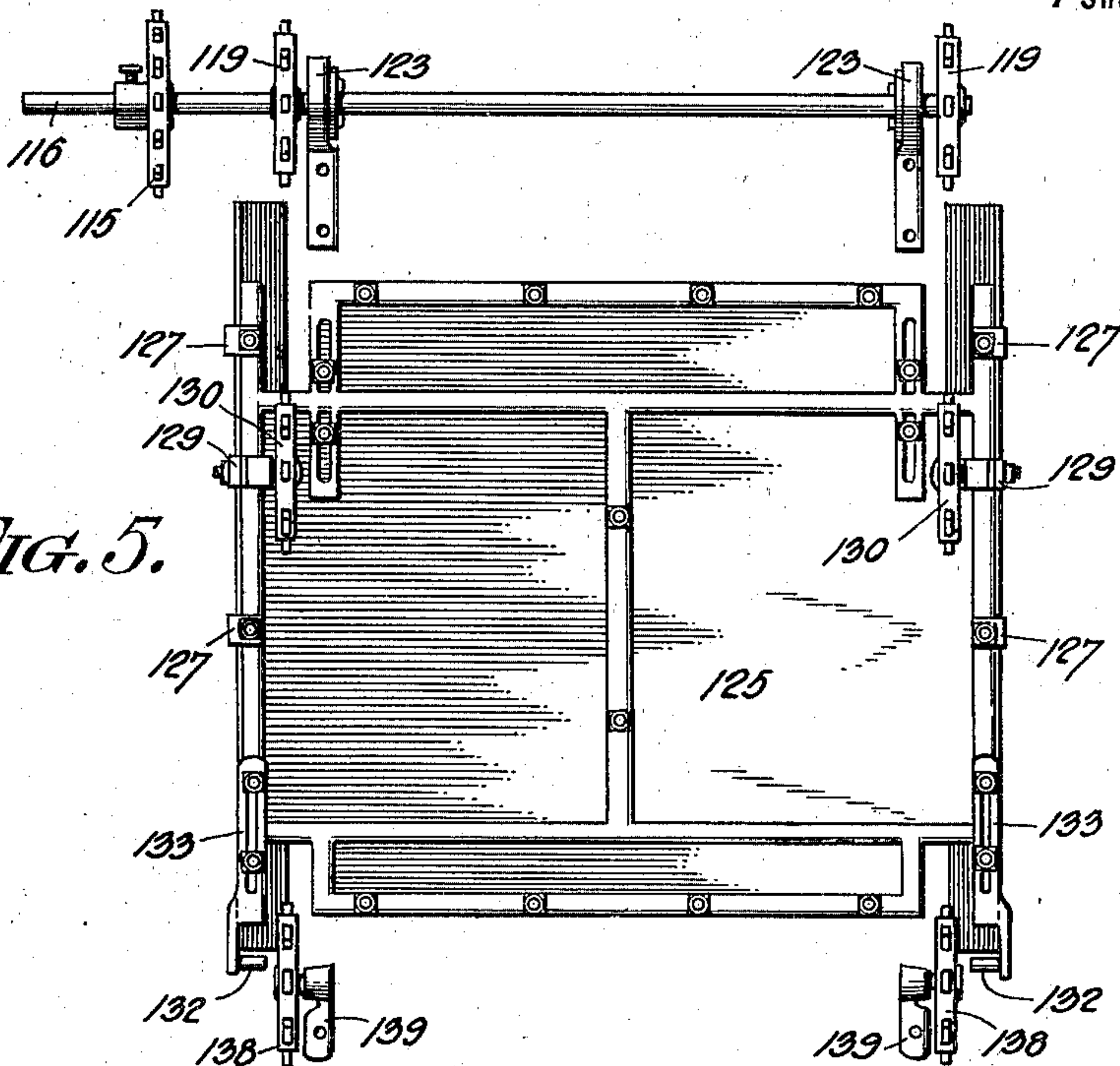
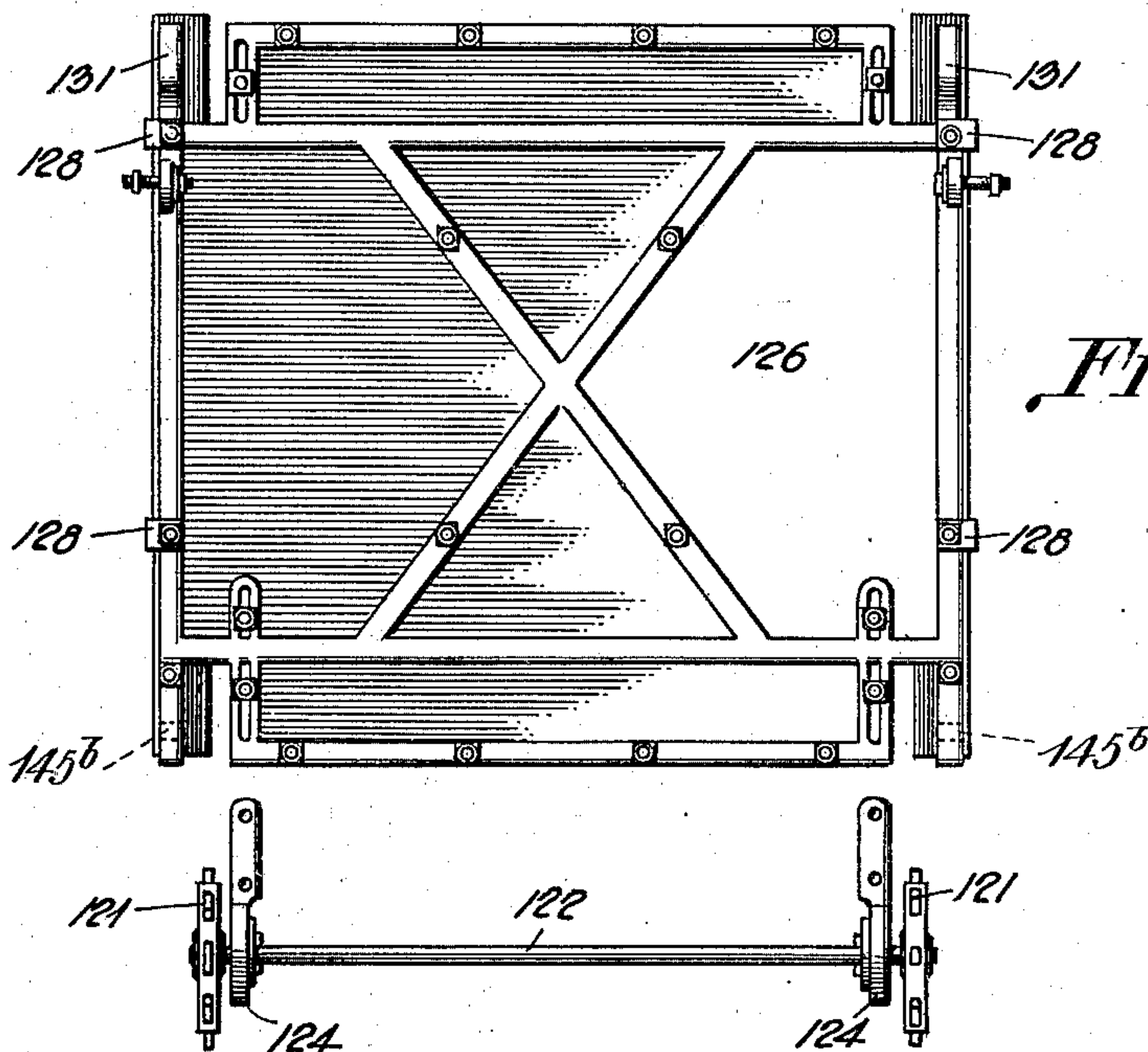


FIG. 6.



Witnesses

*J. Frank Culverwell.*  
*J. H. Riley*

*Martin W. Heyenga,* Inventor.  
by *C. A. Snow & Co.*  
Attorneys



No. 709,012.

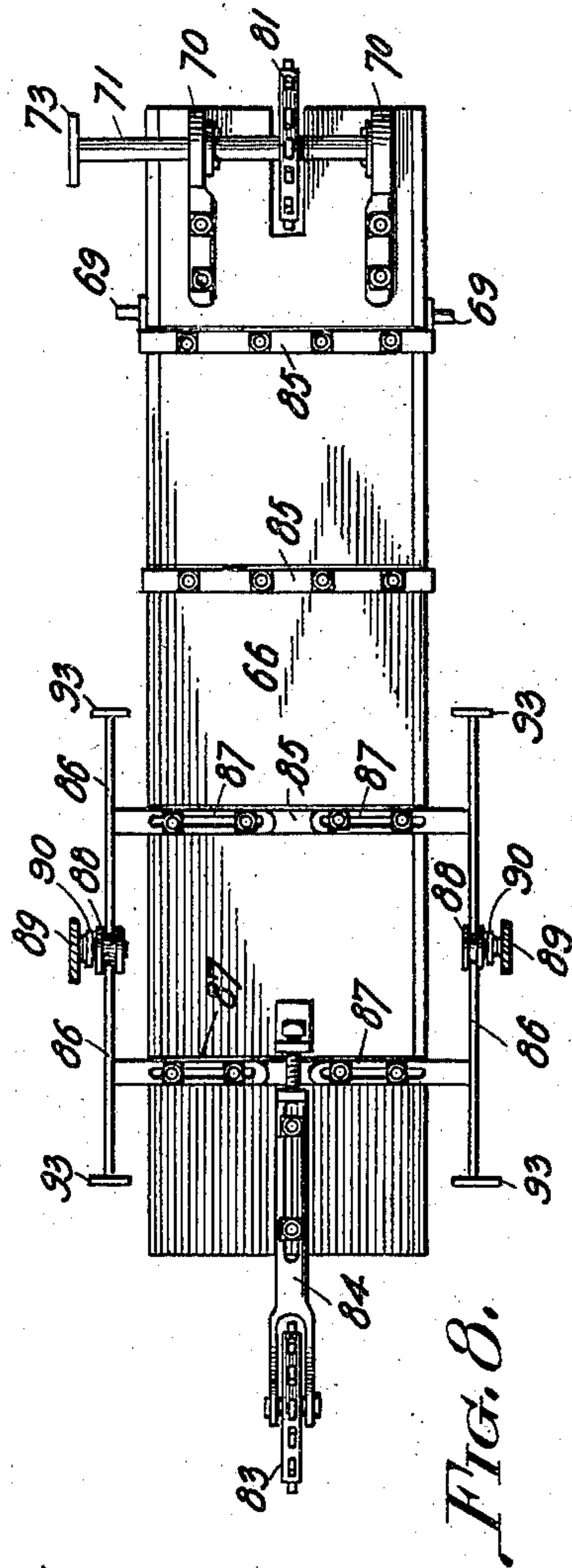
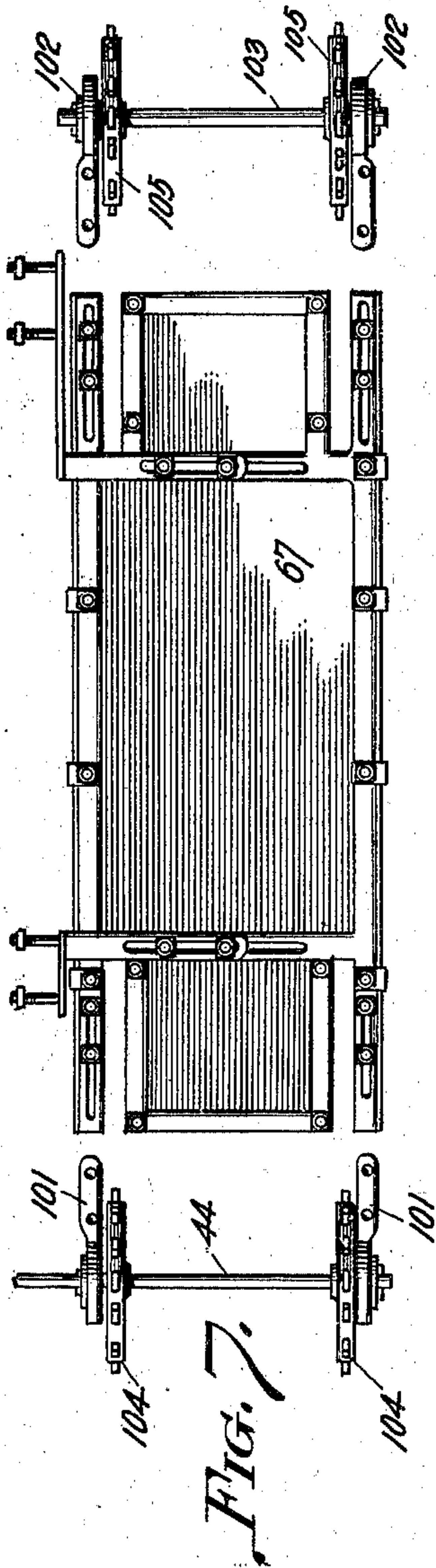
Patented Sept. 16, 1902.

M. W. HEYENGA.  
GRAIN ELEVATING MACHINE.

(Application filed June 8, 1901.)

(No Model.)

7 Sheets—Sheet 6.



Witnesses  
*J. Frank Coulterwell.*  
*J. F. Riley*

*Martin W. Heyenga,* Inventor.  
by *C. A. Snow & Co.*  
Attorneys

**No. 709,012.**

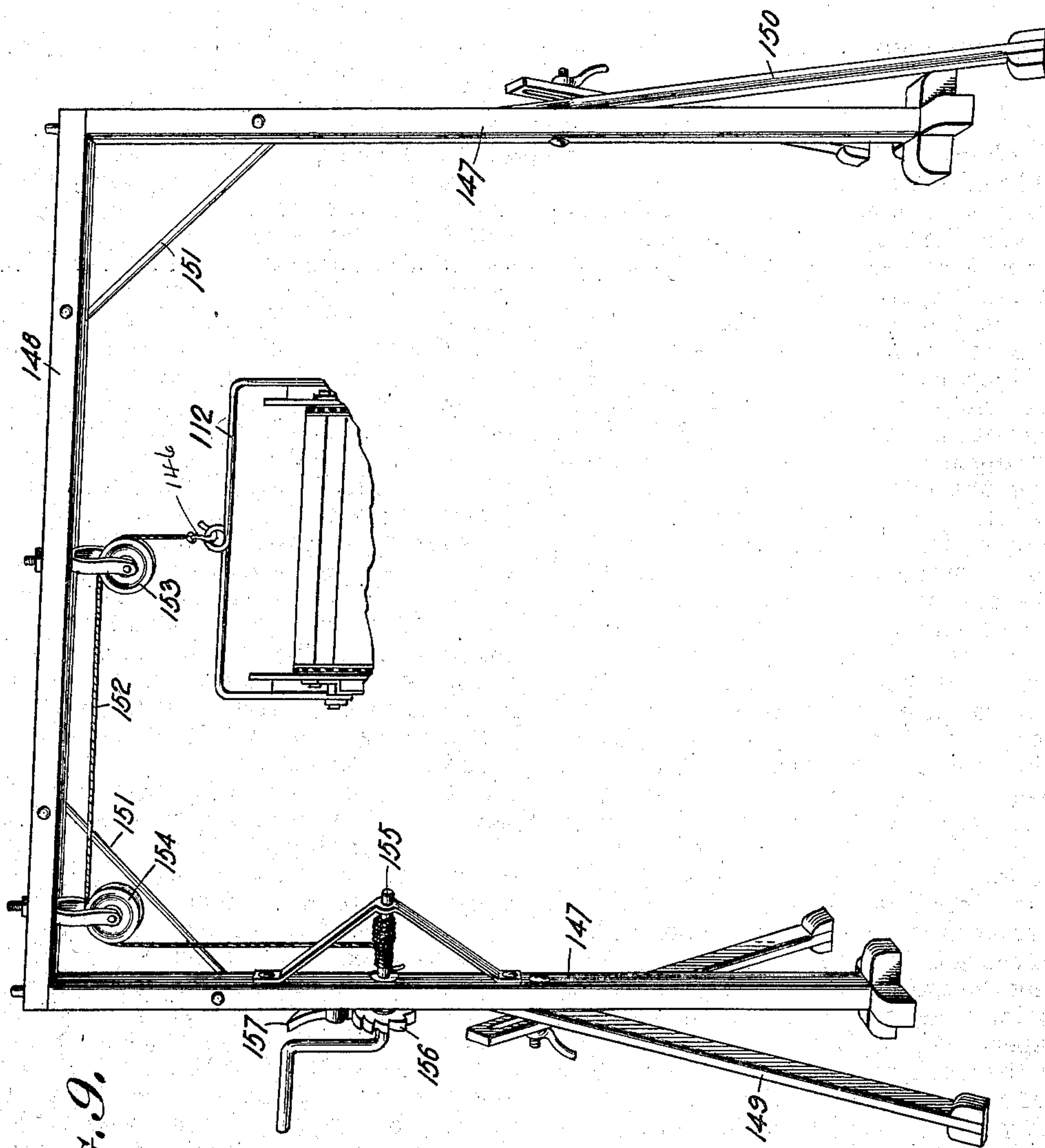
Patented Sept. 16, 1902.

**M. W. HEYENGA.**  
**GRAIN ELEVATING MACHINE.**

(Application filed June 8, 1901.)

(No Model.)

**7 Sheets—Sheet 7.**



**FIG. 9.**

Witnesses

J. Hunt & Co. Liverpool.  
J. F. Piley

*Martin W. Heyenga, Inventor.*  
by *C. A. Snow & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

MARTIN W. HEYENGA, OF NEAR EMDEN, ILLINOIS.

## GRAIN-ELEVATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 709,012, dated September 16, 1902.

Application filed June 8, 1901. Serial No. 63,861. (No model.)

*To all whom it may concern:*

Be it known that I, MARTIN W. HEYENGA, residing near Emden, in the county of Logan and State of Illinois, have invented a new and useful Grain-Elevating Machine, of which the following is a specification.

The invention relates to improvements in machines for elevating grain.

The object of the present invention is to provide a simple and comparatively inexpensive machine adapted to be readily handled and arranged on a wagon and capable of enabling the contents of the latter to be readily conveyed to a bin or crib.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation of a grain-elevating machine constructed in accordance with this invention. Fig. 2 is a similar view showing the opposite side of the machine. Fig. 3 is a rear end elevation of the same. Fig. 4 is a front elevation of the same. Figs. 5 and 6 are detail views of the sections of the front conveyer. Figs. 7 and 8 are detail views of the frames of the transverse conveyers. Fig. 9 is a perspective view of the hoisting apparatus for raising and lowering the grain-elevating machine. Fig. 10 is a detail view of the frame of the scoop or scraper. Fig. 11 is a plan view of a portion of the machine, illustrating the arrangement of a portion of the gearing. Fig. 12 is a detail view of a portion of the frame. Fig. 13 is a similar view illustrating the construction of the antifriction-rollers of the frame. Figs. 14 and 15 are detail sectional views illustrating the construction of the flexible coupling of the shafting.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

11 designate similar standards arranged at the back of the machine and provided with forwardly-extending horizontal portions 2 and connected by transverse braces 3 and 4, arranged at the base of the frame at the front and rear portions thereof. The front brace 3 is composed of two sections provided with

slotted inner ends 5 and connected by bolts 6 or other suitable fastening devices for enabling the lower bars or portions 2 of the uprights to be adjusted laterally. Secured to the transverse bars or braces 3 and 4 of the frame are vertically-adjustable legs 7 and 8, arranged at the front and back of the frame and provided at their lower ends with rollers or wheels 9. The upper portions of the legs are provided with slots 10 for the reception of bolts 11 and are corrugated to interlock with the adjacent portions of the transverse bars or braces, whereby the legs are effectually prevented from slipping. The rollers or wheels are detachably secured by split keys or other suitable fastening devices on journals which extend outward from the lower ends of the legs. The rollers or wheels are adapted to rest upon the bottom of a wagon-body and are also adapted to enable the machine to be readily advanced therein.

The forward movement of the machine is effected by means of a foot-lever 12, fulcrumed at its front end between depending ears 13<sup>a</sup> of a hanger or support secured to the rear transverse brace 4. The foot-lever, which is provided at its rear end with a plate 14, has a depending pawl 15, pivoted at its upper end to the lever and connected between its ends with the same by a front spring 16 and a rear chain 17. The plate, which is adapted to receive the foot of the operator, has a guard 18 arched over the plate and adapted to be readily engaged by the foot of the operator to enable him to lift the lever. The lower end of the pawl is provided with laterally-extending arms 19, and the chain limits the forward swing of the pawl, so that the lever after being raised will be adapted to be depressed for advancing the frame. When the pawl is at the limit of its forward swing, as illustrated in Fig. 2 of the accompanying drawings, it is arranged in an inclined position and extends downward and rearward, whereby when the lever is depressed by the foot of the operator the pawl in swinging downward with the lever will force the machine forward. This movement of the parts distends the coiled spring, which extends forward and upward from the pawl to the foot-lever and which when the lever is raised will swing the pawl



forward to the position shown in Fig. 2. The pawl is designed to engage a rack or ratchet which is mounted on the end-gate of a wagon-body, as illustrated in Patent No. 693,134, granted to me February 11, 1902, and by these means the machine can be advanced in a wagon-body until all of the contents thereof have been removed therefrom. The frame is provided at opposite sides with front and rear arms 20, arranged approximately horizontally and clipped or otherwise secured to the bottom bars 2 and uprights 1 and provided at their outer ends with slots 21, receiving spindles 22 of guide-wheels 23, adapted to engage the inner faces of the sides of a wagon-body and held in contact therewith by means of springs 24, secured at their inner or rear ends to the arms and having their outer or front portions free and engaging the spindles of the guide-wheels.

Secured to an upper transverse bar or brace of the frame is a slightly-inclined support 25, composed of inner and outer bars or members 26 and 27, adjustably connected to permit a gear-wheel 28 to be raised and lowered to arrange it in proper position to suit the operator. The machine is adapted to be conveniently operated by hand, and the operator is designed to stand at the back of a wagon-body with one foot on the lever. While in this position he is adapted to turn the gear-wheel 28, which is provided with a suitable handle 29. The machine is advanced by the operator as the material is removed from the wagon-body, and the forward movement of the machine is entirely under his control. The inner bar or member 26 is fixed to the frame of the machine and is provided with a segmental plate 30, arranged at the outer end of the bar or member 26 and provided with a curved slot 31 for the reception of a bolt 32 for securing the other bar or member 27 at that point. The bar or member 27 is also secured by a bolt 33, arranged in a longitudinal slot 34 of the bar or member 26. The bar or member 27, which carries the gear-wheel 28, is also provided with a slot 35, and the said bolt 32 passes through the same. By this construction the outer bar or member of the support is capable of being moved inward and outward and upward and downward to arrange the gear-wheel in the most advantageous position for the operator. The support is also braced by an inclined rod 36, extending from the adjacent upright of the frame to the lower portion of the segmental plate. The upper transverse bar or brace 37, upon which the support 25 is mounted, is suitably secured to the uprights 1, and the said support 25 is located adjacent to the center of the bar or brace 37 to position the gear-wheel 28 in a vertical plane adjacent to the vertical plane of the foot-lever, and the handle 29 of the gear-wheel 28 is of considerable length to enable the operator to conveniently grasp it with both hands. The gear-wheel 28 meshes with a pinion or gear 38, which is fixed to a

transverse shaft 39, and the latter is supported at one end by a bracket or hanger 40, which depends from the inner bar or member 26 of the support 25. The gear-wheel 38 is keyed or otherwise secured to one end of the said shaft 39, and the latter has its other end journaled in a suitable bearing of a bracket 41, which is approximately U-shaped and which has its sides or arms interposed between a bevel-pinion 42 and a sprocket-wheel 43 of a shaft 44. The shaft 39 has keyed or otherwise secured to it a bevel gear-wheel 45, which meshes with the bevel-pinion 42, whereby motion is communicated to the shaft 44, which extends longitudinally of the machine. The bevel-pinion 42 and the sprocket-wheel 43 are keyed or otherwise secured to the shaft 44 and are preferably provided adjacent to the arms of the bearing bracket with hub portions arranged in bearing-openings of the said bracket.

The sprocket-wheel 43 is connected by a chain 46 with the sprocket-wheel 47 of a shaft 48. The shaft 48 is arranged in eyes 49 of rods 50 and it is held against longitudinal movement by collars 51, arranged at the inner sides of the rods and provided with clamping-screws for engaging the shaft 48. The rods 50 are adjustably mounted on an angularly-bent approximately horizontally disposed bar 52, secured to one of the uprights or standards 1 and provided at intervals with perforations 53 for the reception of the inner ends of the shaft-supporting rods, which are preferably threaded and provided with nuts. The bar 52 extends forward and rearward from the standard or upright, and its rearwardly-disposed portion upon which the shaft-supporting rods are mounted is bent approximately L-shaped to offset the perforated portion laterally from the frame of the machine to clear the vehicle upon which the machine may be mounted. The bar 52 is secured to the standard or upright 1 by means of a clamp 54, preferably consisting of a collar and a set-screw, the collar being fixed to the bar and the set-screw being mounted in a threaded perforation of the collar and engaging the standard or upright.

The forwardly-extending portion 55 of the bar 52 is slotted to receive a fastening device for adjustably securing to it a laterally-extending arm 56, which is provided at its inner end with a depending lug or ear to fit against the said portion 55 of the bar 52. The horizontal arm 56 is provided with a longitudinal slot 57 for the reception of fastening devices 58 for securing an adjustable bracket 59 to the arm 56. The adjustable bracket consists of reversely-arranged upper and lower approximately L-shaped sections or members 60 and 61, the upper section or member being provided at the top with an inwardly-extending horizontal arm and the lower section or member having an outwardly-extending horizontal arm at the bottom. The inwardly-extending arm of the upper section



or member is secured to the lower face of the laterally-extending arm 56, and the outwardly-extending arm of the lower section or member is provided at its outer end with a circular bearing-face 62 for the reception of an inner conveyer-supporting yoke 63, which is detachably secured at its bottom to an upwardly-extending pivot 64 by a key or other suitable fastening device 65. The inner yoke, which extends upward from the supporting-bracket, receives the inner end of an outer transverse conveyer 66, and the bracket is adapted to be moved inward and outward on the arm 56 to position the inner end of the outer transverse conveyer properly with relation to the adjacent end of the inner transverse conveyer 67; also, the pivotal connection between the yoke and the adjustable bracket permits the outer transverse conveyer to automatically adjust itself to the forward movement of the machine within a wagon-body, so that the grain will drop evenly from the inner transverse conveyer to the outer.

The upper ends 68 of the sides of the yoke or fork are bifurcated or slotted to receive pivots 69, which extend laterally from the sides of the outer transverse conveyer adjacent to the inner end thereof. These slots or bifurcations form open bearings and permit the outer transverse conveyer to be readily disconnected from the yoke or fork. The outer transverse conveyer is provided at the inner end with suitable ball-bearings 70 for the reception of a shaft 71, which is arranged in alignment with the shaft 48 and which is connected with the same by an adjustable coupling. The adjacent ends of the shafts 48 and 71 are provided with rectangular heads 72 and 73, which are arranged within the outer ends of sectional boxes 74, each composed of two sections hinged at one side and provided with a locking device 75 at the opposite side and adapted to be opened and closed to permit the shafts to be uncoupled. The boxes are provided at their outer ends with grooves 77, which receive the rectangular heads of the shafts 48 and 71. The inner ends of the casings or boxes receive rectangular plates or heads 78 of an intermediate coupling-rod or shaft-section 79, which connects the boxes and which extends through the slidable plates or heads 78. The slidable plates or heads 78 are retained on the intermediate shaft-section or coupling-rod by keys or other suitable fastening devices, and a coiled spring 80 is interposed between the slidable plates or heads 78 and is disposed on the coupling rod or section 79. The intermediate shaft-section or coupling-rod is rectangular in cross-section to conform to the configuration of the openings of the slidable head or plate, and when the shaft 48 is rotated the shaft 71 will be also rotated and will operate the outer transverse conveyer. The coupling is adapted to permit the shafting and gearing to yield to the forward movement of the machine within a

wagon-body, so that such forward movement will not interfere with the operation of the machine.

Mounted upon the shaft 71 is a centrally-arranged sprocket-wheel 81, receiving an endless-carrier chain 82 of the outer transverse conveyer, and the endless-carrier chain is supported at the outer end of the transverse conveyer by a sprocket-wheel 83, mounted in an adjustable bracket or hanger 84, having a slotted shank, which is bolted or otherwise secured to the lower face of the bottom of the frame or conveyer. The frame of the conveyer is composed of a bottom board and sides, which are secured to the bottom board by means of metal straps or bars 85, arranged at intervals, as clearly shown in Fig. 8 of the drawings.

The outer transverse conveyer is provided at opposite sides of its outer portion with longitudinal sides 86, having laterally-extending slotted arms 87, which are adjustably secured to the frame of the conveyer at the adjacent straps or bars 85. The slides 86, which are arranged at an inclination, are supported between grooved rollers 88, which are adjustably mounted on an outer fork or yoke 89 and which are journaled on the ends of brackets 90. The yoke or fork is arranged in a vertical position, and its sides or arms are provided with slots 91 for the reception of bolts or other suitable fastening devices for securing the brackets 90 to the sides of the yoke. The brackets, which are arranged at an angle to the sides of the yoke or fork, consist of short bars or pieces having their ends angularly bent to form arms which extend above and below the slides and which support the grooved rollers or wheels in position to receive the said slides. The brackets and rollers or wheels form adjustable ways to receive the slides, which are provided at their ends with stops 93 to prevent them from leaving the ways. The sides of the inner and outer fork or yoke are detachably secured to the bottom or transverse portions, and the bottom of the outer yoke or fork is provided with a central bearing-opening for the reception of a pivot 94, to which it is secured by a key or other suitable fastening device. The pivot 94 is mounted on a plate 95, which is secured to a head 96 of a bracket or bar 97, and the latter is provided with upper and lower clamps 98, consisting of rods having hooks and arranged in slots 99 of the bracket or bar. The clamps, which are vertically adjustable in the slots of the bracket or bar, are provided with nuts and are adapted to engage bars of a bin or crib. The clamping-nuts are preferably provided with handles, and the rods may be of any desired length to enable them to readily engage the bars of a crib or bin.

The bracket or hanger which carries the sprocket-wheel at the outer end of the outer transverse conveyer is adjustable to enable the chain to be readily stretched to the de-



sired tension. The chain is centrally arranged, and it is provided at intervals with cups 100, having bottom sides and back and having scoops for carrying the grain upward.

5 The inner transverse conveyer is bolted or otherwise secured to the standards or uprights and is provided at its ends with detachable bearings 101 and 102, receiving the shaft 44 and the shaft 103, and mounted  
10 upon said shafts are sprocket-wheels 104 and 105, arranged in pairs and receiving sprocket-chains 106 of the endless carrier of the inner transverse conveyer. The chains 106 are connected by suitable transverse slats or bars  
15 which move over the bottom of the frame of the inner transverse conveyer and carry the grain or other material therefrom to the outer transverse conveyer. The outer transverse conveyer is provided at its inner end  
20 with a transversely-disposed rod or shield 107, approximately U-shaped in plan view and adapted to direct the grain into the outer conveyer and prevent the same from spilling.

25 Secured to the upper ends of the standards or uprights are vertical bars 108, which support brackets 109, and the latter, which are L-shaped, extend over the inner transverse conveyer and have approximately-horizontal  
30 arms secured to arms or bars 110 of the upper portion of a front longitudinal conveyer 111. The bars or arms of the front longitudinal conveyer are slotted to receive the fastening devices which secure them to the brackets  
35 109, whereby an adjustment of the conveyer 111 is effected. The brackets have also secured to them a hanger 112, adapted to be connected with a hoisting apparatus, hereinafter described. The hanger is approximately  
40 inverted-U shaped and is provided at the center of its top with an eye.

The shaft 39 carries a sprocket-wheel 13, which meshes with a sprocket-chain 114, and the latter extends upward and forward from  
45 the shaft 39 to the sprocket-wheel 115 of a shaft 116. The sprocket-chain is engaged by a tension device consisting of a slotted bracket or bar 117 and a pair of vertically-adjustable guide-wheels 118, receiving the  
50 upper and lower flights of the sprocket-chain 114 and mounted on shafts or spindles which are adjustably secured in the slot of the bracket or bar 117. The shaft 116 is arranged at the top of the front conveyer, and it carries a pair of sprocket-wheels 119, receiving  
55 endless sprocket-chains 120, which also pass around a pair of lower sprocket-wheels 121, mounted on a lower transverse shaft 122. The upper and lower shafts 116 and 122 are  
60 journaled in detachable ball-bearings 123 and 124, and the chains 120 are connected by transverse cups or buckets, which carry the grain upward to the top of the conveyer.

The frame of the front conveyer is composed of upper and lower sections 125 and  
65 126, which are supported by shafts or bars 127 and 128 and connected as hereinafter de-

scribed. The upper section is provided with slotted arms or bars 129, in which are adjustably mounted fastening devices or spindles for securing guide-wheels 130 to the  
70 back of the conveyer. The guide-wheels 130 are adapted to receive the rear flights of the sprocket-chains to prevent the buckets or cups from coming in contact with the inner  
75 transverse conveyer. The sides of the upper and lower sections of the front conveyer are angularly bent and inwardly offset to prevent the grain from working in between the side boards and the elevating buckets or cups.  
80 The lower section of the front conveyer is provided with suitable eyes 131 to receive pivots or pintles 132 of adjustable leaves or plates 133, mounted on the upper section and provided with longitudinal slots for the re-  
85 ception of bolts or other suitable fastening devices. The hinge-joint thus formed permits the lower section to be swung backward and forward to position it properly, and it is secured at the desired adjustment by oppositely-inclined braces 134, composed of upper  
90 and lower sections or members adjustably secured together by suitable fastening devices 135. The fastening devices 135 are arranged in slots of the sections or members of the  
95 braces, and the latter are pivoted at their upper ends to the lower section of the front conveyer and at their lower ends to plates 136 of the frame. One of the plates 136 also has secured to it an inclined brace 137, com-  
100 posed of slotted overlapped sections or members adjustably secured together, similar to the sections or members of the said inclined braces. The inclined brace 137 is connected at its upper end with the adjacent upright or  
105 standard 1.

The adjacent ends of the upper and lower section of the front conveyer-frame are provided with recesses forming openings in which  
110 are mounted sprocket-wheels 138, and the latter project forward and receive the front flights of the chains of the front conveyer. The sprocket-wheels 138 are mounted upon suitable shafts or spindles, which are carried by adjustable plates 139.  
115

The machine is provided at the lower end of the front conveyer with a scraper 140, mounted on a suitable frame 141 and provided with sides 142. Between the sides of the  
120 scraper at the top thereof is mounted a hinged section or apron 143 to prevent the grain from dropping between the cups or buckets and the scraper. The hinged section or apron also prevents the cups or buckets from becoming clogged when the machine is in operation.  
125

The frame 141 has an inclined front portion, and it has rearwardly-extending sides which are provided with vertical slots or openings  
130 144 for the reception of fastening devices for securing the frame to clamps 145. The clamps 145, which are sectional, are adjustably secured to the bottom bars or portions of the supporting-frame and are adapted to move backward and forward thereon. The inner



sections of the clamps 145 are provided with pivots or studs 145<sup>a</sup>, which are secured by keys or other suitable fastening devices in openings 145<sup>b</sup> of the lower section 126 of the front conveyer.

The eye of the hanger 112 is adapted to be engaged by a hook 146 of a hoisting rope or cable of a hoisting apparatus composed of uprights 147, a top cross-bar 148, and inclined braces 149 and 150, secured to and extending from the uprights at opposite sides thereof. The framework is braced at the top by rods 151, connecting the uprights and the top bar. The hoisting rope or cable 152 is arranged on central and side guide-pulleys 153 and 154, and it extends downward to a windlass-shaft 155, which is provided at its outer end with a crank-handle and which is supported by an inner brace. The windlass-shaft also carries a ratchet-wheel 156, which is engaged by a pawl 157. The hoisting apparatus, which may be of any desired dimensions, is adapted to elevate the machine and hold it in suitable position so that a load of grain may be conveniently driven under the machine. The machine is then lowered upon the wagon and engaged with the ratchet thereof, after which the machine may be operated to remove the contents of the wagon-body. After the wagon is unloaded the machine is hoisted clear of the same and the empty wagon is removed to enable another load to be operated on. When the machine is not in use, it may be left suspended from the hoisting apparatus, and the outer transverse conveyer and its shaft may be readily uncoupled from the rest of the machine. When the outer transverse conveyer is uncoupled in this manner, it is swung downward and is supported by the outer yoke or fork.

What I claim is—

1. In a machine of the class described, the combination of a frame provided at its bottom with wheels, a conveyer carried by the frame, said frame being adapted to be placed within a wagon-body, an operating-lever fulcrumed on the frame, and means carried by the operating-lever for engaging the wagon-body to advance the frame, substantially as described.

2. In a machine of the class described, the combination of a frame designed to be mounted within a wagon-body, and provided with means for engaging the same, whereby the frame is guided in its forward movement, a conveyer carried by the frame, and means for advancing the frame, substantially as described.

3. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a conveyer carried by the frame for removing the contents of the wagon-body, a ratchet-bar mounted on the wagon-body, a lever fulcrumed on the frame, a pawl depending from the lever and engaging the ratchet-bar, means for limiting the

forward movement of the pawl, and a spring for actuating the pawl for returning the same to its initial position, substantially as described.

4. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a conveyer carried by the frame and adapted to remove the contents of the said body, a foot-lever fulcrumed on the frame and provided with a pawl for actuating the same, a gear-wheel located above the foot-lever and having a handle, and gearing connecting the gear-wheel with the conveyer, substantially as described.

5. In a machine of the class described, the combination of a frame provided with wheels and designed to be mounted in a wagon-body, the spring-actuated antifriction-wheels located at opposite sides of the frame and arranged to engage the sides of the wagon-body, a conveyer carried by the frame, and means for advancing the frame in the wagon-body, substantially as described.

6. In a machine of the class described, the combination of a frame designed to be arranged on a wagon-body and provided with a conveyer, and a hoisting device connected with the frame and adapted to support the same in an elevated position to permit a wagon to be driven to and from the same, substantially as described.

7. In a machine of the class described, the combination of a frame designed to be arranged on a wagon-body and provided with a conveyer, and a hoisting device connected with the said frame and adapted to support the same in an elevated position and provided with a frame composed of uprights spaced apart to permit a wagon to be driven between them, and a connecting top portion, substantially as described.

8. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing the frame therein, a front conveyer mounted on the frame, an inner transverse conveyer carried by the frame and arranged to receive material from the front conveyer, and an outer conveyer extending from the inner conveyer and designed to be mounted on a bin or crib, substantially as described.

9. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing the frame on the same, a conveyer carried by the frame, an outer conveyer designed to be mounted on a crib or bin and adjustably supported, whereby it is adapted to accommodate itself to the movement of the frame, and means for connecting the said conveyers, substantially as described.

10. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing it thereon, a front conveyer carried by the frame, a scoop arranged at the lower end of



the front conveyer, and a hinged apron or section arranged at the top of the scoop, substantially as described.

11. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing the frame on the same, a front conveyer carried by the frame and provided with upper and lower adjustable sections, and a scoop arranged at the bottom of the conveyer and adjustably mounted on the said frame, substantially as described.

12. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing the frame thereon, a conveyer carried by the frame, an inner pivoted fork or yoke connected with and carried by the frame, an outer fork or yoke designed to be pivotally mounted on a crib or bin, and an outer conveyer hinged to the inner fork or yoke and slidably and pivotally connected with the outer fork or yoke, substantially as described.

13. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing the frame thereon, a conveyer carried by the frame, an inner pivoted support carried by the frame, an outer pivoted support designed to be mounted on a crib or bin, and an outer conveyer connected with the said supports, substantially as described.

14. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing the frame thereon, a conveyer carried by the frame, an inner pivoted support also carried by the frame, an outer pivoted support designed to be mounted on a crib or bin, and an outer conveyer mounted upon the said supports and slidably connected with the outer support, substantially as described.

15. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a conveyer carried by the frame, an outer pivoted support designed to be mounted on a crib or bin, an inner pivoted support carried by the frame, and an outer conveyer hinged to the inner support and slidably and pivotally connected with the outer support, substantially as described.

16. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a conveyer carried by the frame, an inner pivoted support also carried by the frame, an outer pivoted support designed to be mounted on a crib or bin, and an outer conveyer mounted on the inner support and having a slide arranged on the outer support and capable of longitudinal movement, substantially as described.

17. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a conveyer carried by the frame, an inner pivoted fork or yoke carried by the frame, an outer pivoted fork or yoke designed to be mounted on a crib or

bin and provided at opposite sides with anti-friction-wheels arranged in pairs, and an outer conveyer mounted on the inner fork or yoke and provided with slides arranged between the anti-friction-wheels of the outer fork or yoke, substantially as described.

18. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a conveyer carried by the frame, an inner pivoted fork or yoke carried by the frame, an outer pivoted fork or yoke provided with means for securing it to a crib or bin and having slots or openings at its sides, brackets adjustably secured at the slots or openings by fastening devices arranged therein, said brackets being provided with wheels arranged in pairs, and an outer conveyer provided with slides arranged between the said wheels said outer conveyer being also provided with pivots arranged in bearings of the inner fork or yoke, substantially as described.

19. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, means for advancing it on the same, an inner upright front conveyer, a scoop arranged at the bottom thereof, an inner transverse conveyer carried by the frame and arranged to receive material from the front conveyer, an outer transverse conveyer pivotally connected with the frame, gearing connecting the conveyers, and a flexible connection constituting a portion of the gearing and adapted to accommodate itself to the movements of the frame and the outer conveyer, substantially as described.

20. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a front conveyer carried by the frame, an inner transverse conveyer, a bracket adjustably secured to the frame and extending laterally therefrom, an inner fork or yoke pivotally connected with the bracket, a bar provided with clamps, an outer fork or yoke pivotally mounted on the bar, and an outer conveyer supported by the inner and outer forks or yokes, substantially as described.

21. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body and adapted to be moved longitudinally thereof, a conveyer carried by the frame, an outer conveyer designed to be connected with a crib or bin and provided with a shaft having a head, a shaft carried by the frame and connected with the conveyer thereof and provided with a head, casings receiving the heads of the shafts, a coupling-rod slidably connected with the casings, and a coiled spring disposed on the coupling-rod and interposed between the casings, substantially as described.

22. The combination of a frame designed to be mounted on a wagon-body, means for advancing the frame thereon, a front conveyer mounted on the frame, an inner transverse conveyer arranged in rear of the front



conveyer, an outer transverse conveyer, the shaft 39 journaled in suitable bearings of the frame and disposed transversely thereof, sprocket-gearing connecting the shaft 39 with the front conveyer, the shaft 44 forming a part of the inner transverse conveyer, gearing connecting the said shafts for operating the inner transverse conveyer, and sprocket-gearing connecting the shaft 44 with the outer transverse conveyer, substantially as described.

23. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a front conveyer mounted on a frame, an inner transverse conveyer carried by the frame and having a shaft 44 extending from one end of it, the shaft 39 disposed transversely of the frame, gear-wheels connecting the said shafts, the outer transverse conveyer having a shaft 71, the shaft 48 arranged in alinement with the shaft 71, a flexible coupling connecting the shafts 48 and 71, sprocket-gearing connecting the shaft 39 with the front conveyer, means for operating the shaft 39, and gearing connecting the shafts 44 and 48, substantially as described.

24. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body, a front conveyer carried by the frame, an inner transverse conveyer having an extended shaft 44, a bracket or bar extending rearward from the frame, rods ad-

justably mounted on the bracket or bar and provided with bearings, the shaft 48 journaled in the said bearings, gearing connecting the shafts 44 and 48, an outer conveyer having a shaft flexibly connected with the shaft 48, a transverse shaft 39 connected with the shaft 44 and provided with a gear-wheel 38, a gear-wheel 28 meshing with the gear-wheel 38 and provided with a handle, and gearing connecting the shaft 39 with the front conveyer, substantially as described.

25. In a machine of the class described, the combination of a frame designed to be mounted on a wagon-body and adapted to be moved longitudinally thereof, a front conveyer carried by the frame, an inner transverse conveyer mounted on the frame, an outer transverse conveyer pivotally connected with the frame and slidably connected with a suitable support, the shaft 48 carried by the frame and flexibly connected with the outer transverse conveyer, operating mechanism, and gearing for connecting the same with the shaft 48 and with the front and inner transverse conveyers, substantially as described.

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

MARTIN W. HEYENGA.

Witnesses:

CLAUS VAN GERPEN,  
FRED. J. WIEBERS.