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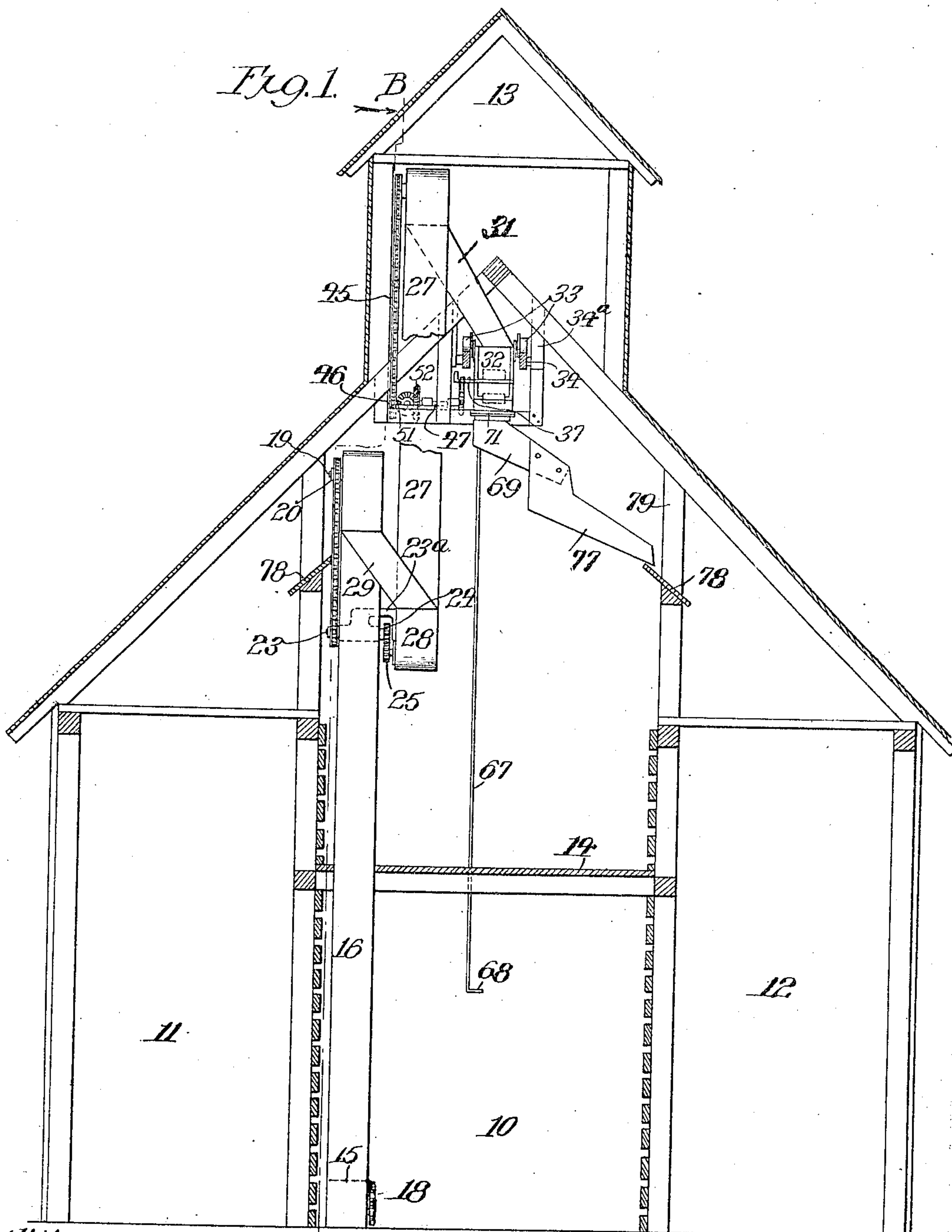
PATENTED NOV. 27, 1906.

J. H. GILMAN & A. J. BENNETT.

CONVEYING APPARATUS.

APPLICATION FILED AUG. 21, 1905.

4 SHEETS—SHEET 1.



Witnesses,
Edw. R. Barrett
M. S. Reeder

Inventors,
John H. Gilman
Albert J. Bennett
by John Howard McElroy their Atty

No. 337,053.

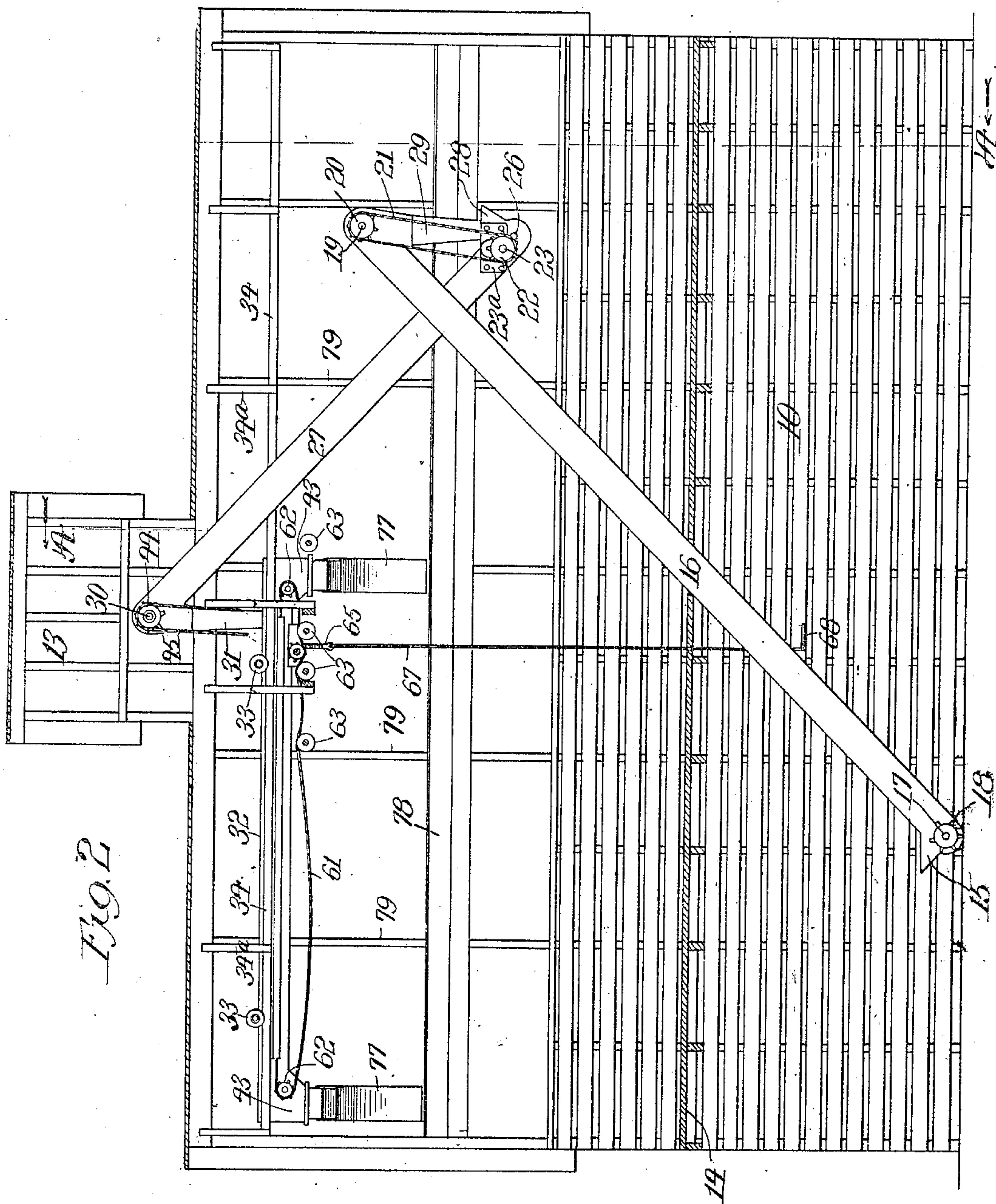
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Edw. J. Barrett
M. S. Reeder

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Inventors.

John H. Gilman
Albert J. Bennett.

Albert J. Bennett

by John Howard (McClary) their ally

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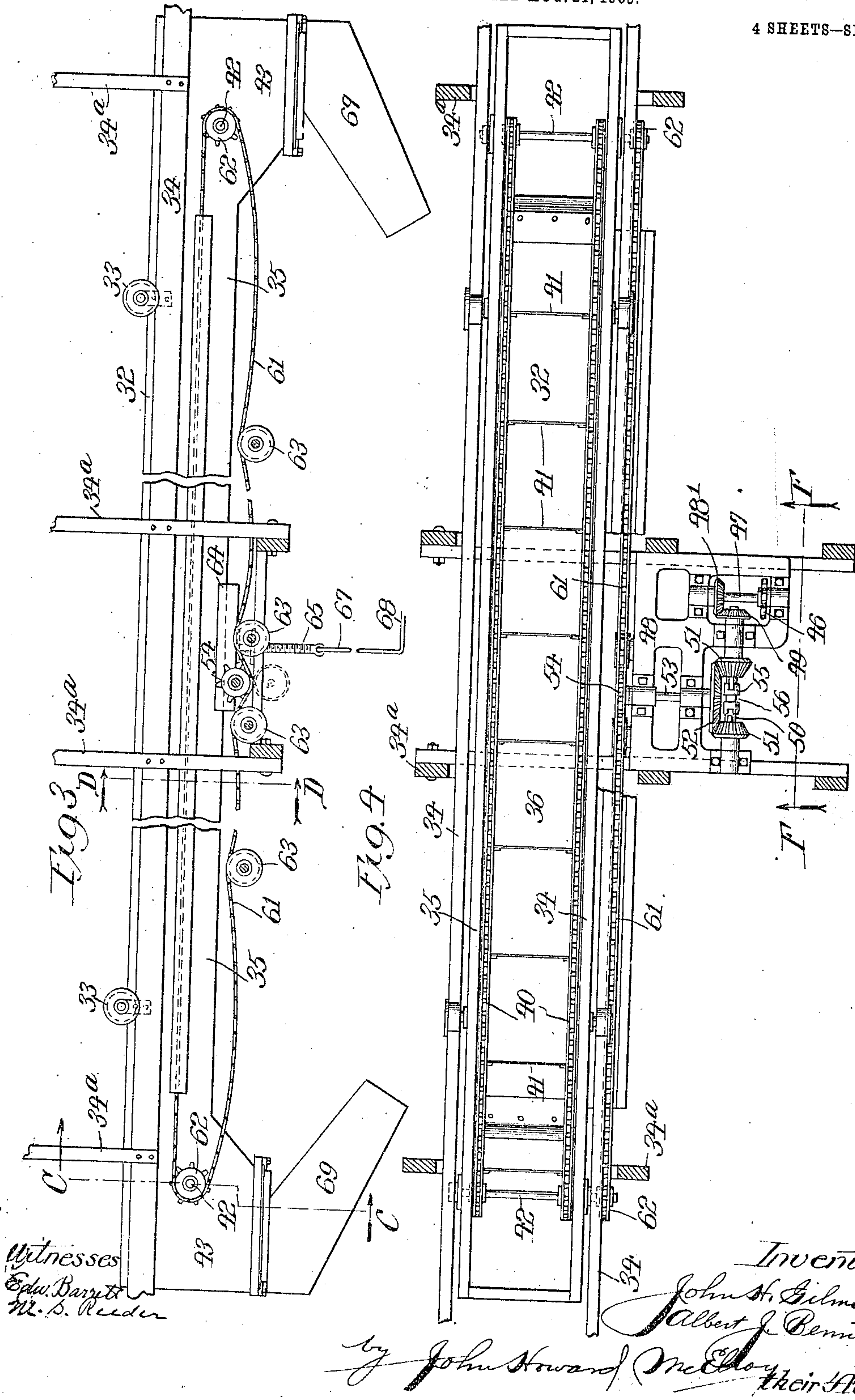
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4 SHEETS—SHEET 3.



Witnesses
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W. B. Reeder

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by John Howard McElroy
their Atty

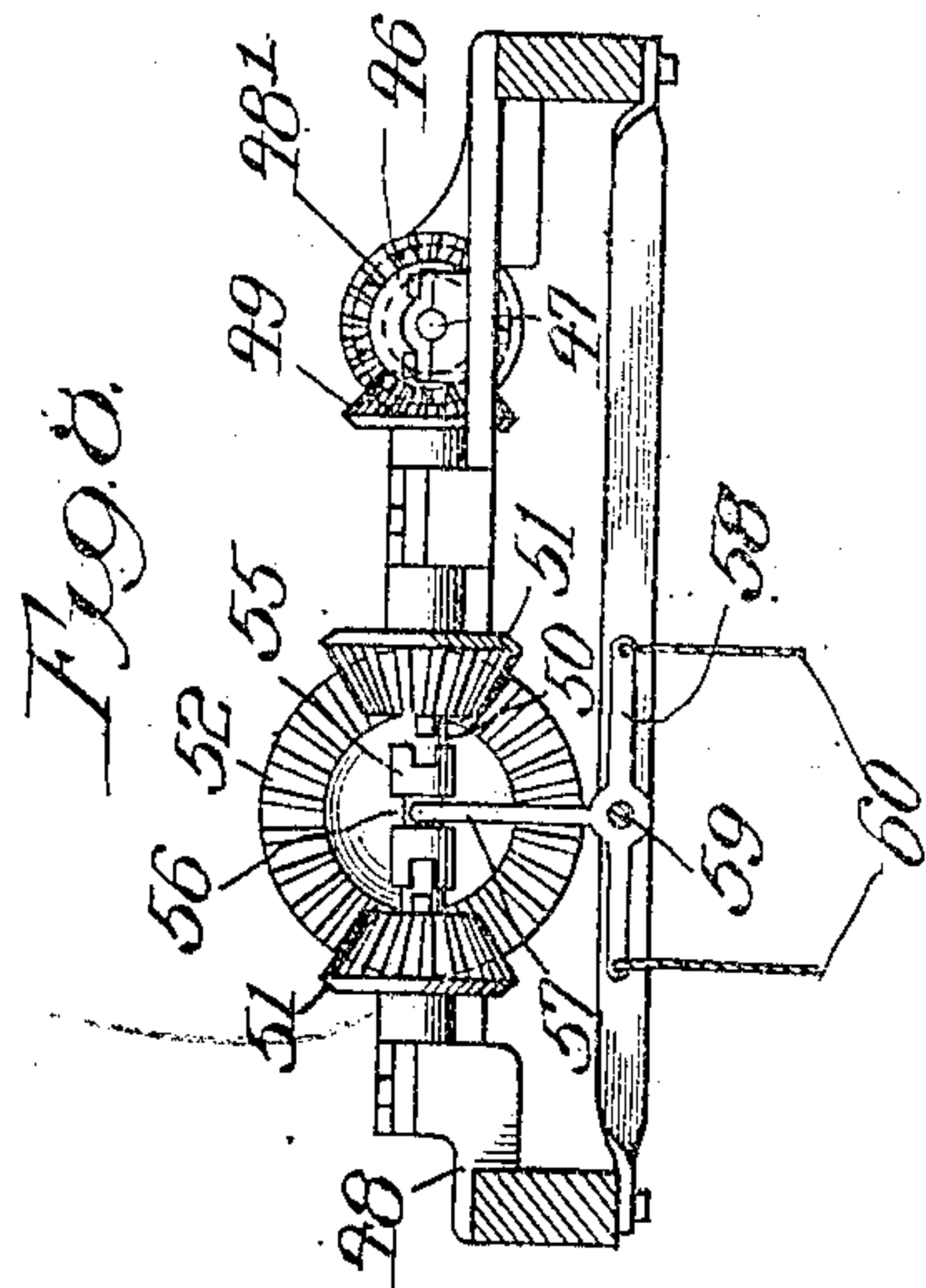
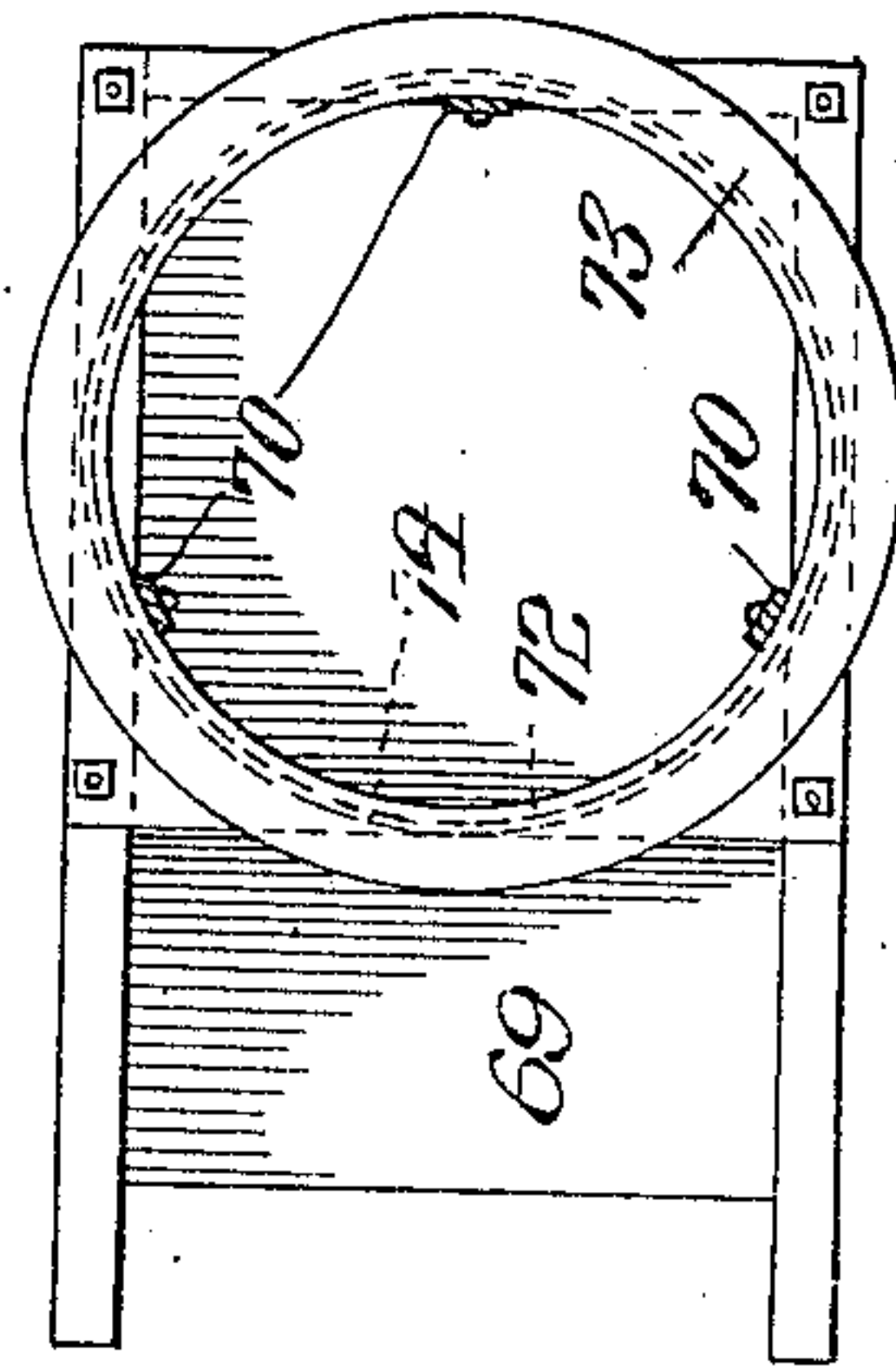
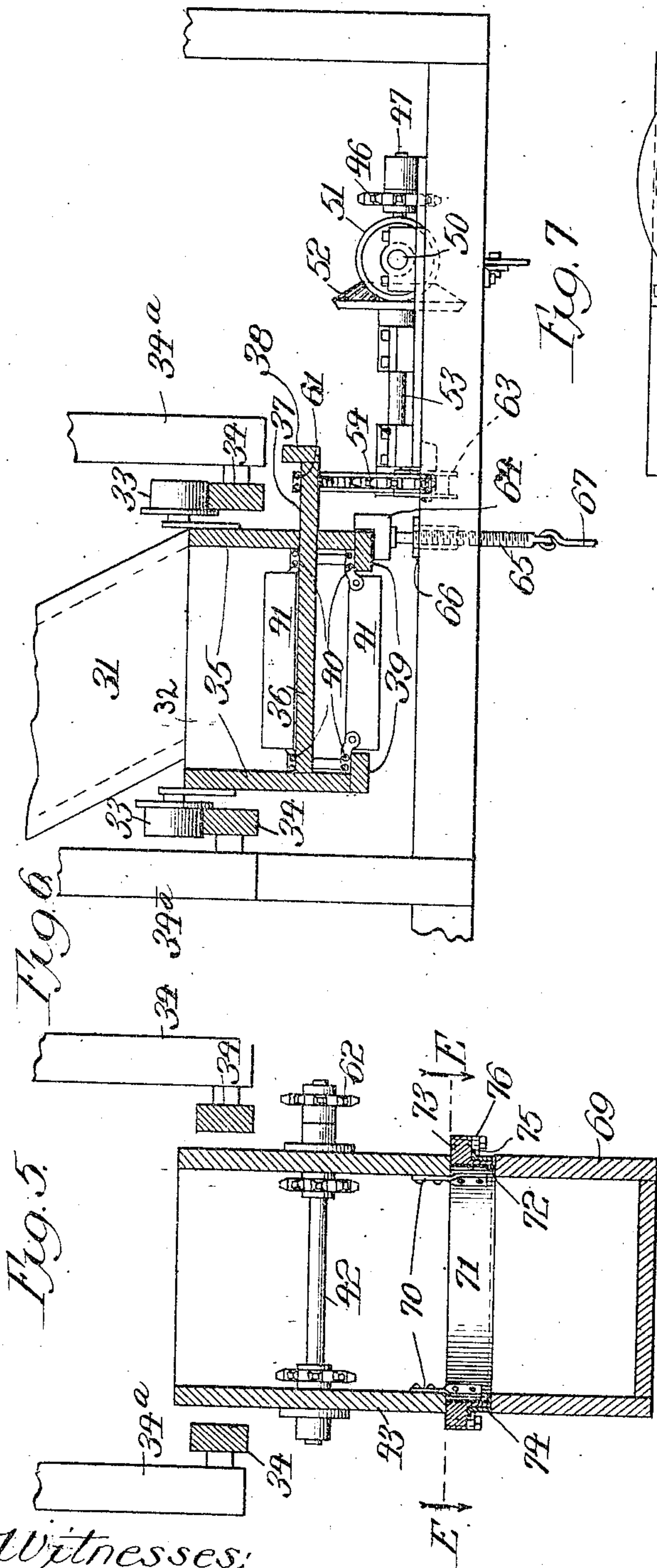
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by John Howard McElroy their Atty

UNITED STATES PATENT OFFICE.

JOHN H. GILMAN AND ALBERT J. BENNETT, OF OTTAWA, ILLINOIS,
ASSIGNORS TO KING AND HAMILTON COMPANY, OF OTTAWA,
ILLINOIS, A CORPORATION OF ILLINOIS.

CONVEYING APPARATUS.

No. 837,053.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed August 21, 1905. Serial No. 274,975.

To all whom it may concern:

Be it known that we, JOHN H. GILMAN and ALBERT J. BENNETT, citizens of the United States, and residents of Ottawa, La-salle county, Illinois, have invented certain new and useful Improvements in Conveying Apparatus, of which the following is a specification.

Our invention is concerned with conveying apparatus of the type sometimes used in cribbing corn, &c., in which elevating mechanism delivers the material to a level above the bins onto a horizontal conveyer, from which it is to be discharged to bins located at various points along the length of the crib, and is designed to produce a device of the class described which shall be simple in its construction, efficient in its operation, and which is capable of being used entirely within the crib, where it is of the double type with a single roof and a central driveway.

We will first describe our invention in detail and then point out the novel features thereof in the annexed claims.

To illustrate our invention, we have annexed hereto four sheets of drawings, in which the same reference characters are used to designate identical parts in all the figures, of which—

Figure 1 is a cross-section of a crib provided with our apparatus, the section being on line A A of Fig. 2. Fig. 2 is a longitudinal section on the line B B of Fig. 1. Fig. 3 is a side elevation of the horizontal conveyer and a portion of the supporting-tracks detached from the rest of the apparatus. Fig. 4 is a top plan view of the mechanism shown in Fig. 3. Fig. 5 is a vertical section on the line C C of Fig. 3, but on a larger scale. Fig. 6 is a similar view on the line D D of Fig. 3. Fig. 7 is a top plan view in section on the line E E of Fig. 5, and Fig. 8 is a vertical section on the line F F of Fig. 4.

Referring first to Figs. 1 and 2, we have shown our invention as applied to a crib of the ordinary construction containing the central driveway 10 and the bins 11 and 12 at either side thereof. The crib is also preferably provided near the central portion thereof with the cupola 13, into which the upper portion of the elevating mechanism extends. The horizontal floor 14 may be pro-

vided above the driveway to furnish additional storage space. The wagon to be unloaded is driven into the driveway and its contents discharged by any suitable means into the hopper 15 of the lower section 16 of the elevating mechanism. This section 16 may be of the ordinary construction and provided with the driving-shaft 17 at the bottom, which has the sprocket 18, to which power may be applied for operating the entire system. At the upper end of the section 16, which is suitably supported in the crib at one side of the driveway in any desired manner, is the shaft 19, the shafts 17 and 19 serving to operate the customary conveyer belt or chain located inside of the trough. The shaft 19 has secured on the outside thereof the sprocket-wheel 20, which through the medium of the sprocket-chain 21 drives the sprocket-wheel 22, secured on a shaft 23, journaled in a suitable bearing 23^a and having on its other end the reversing-gear pinion 24, which meshes with a similar pinion 25, secured on the shaft 26, forming the driving-shaft of the upper conveyer-section 27, whose hopper 28 will be seen to be located beneath the upper end of the section 16, so that the spout 29 of said section will discharge into the hopper 28. The section 27 of course is provided with the customary conveyer inside, and its upper end extends up into the cupola, as shown, and has journaled therein the shaft 30, the shafts 26 and 30 serving to carry and operate the inclosed conveyer. The inclosed conveyer discharges through the spout 31 into the horizontal adjustable trough 32. (Best shown in Figs. 3 and 4.) This trough is provided toward its ends with the flanged rollers 33, which run on the horizontal tracks 34, suitably supported, as by the standards 34^a, from the crib structure. This trough 32 has the side pieces 35 and the bottom 36, the bottom 36 preferably being extended out at one side to form the supporting-ledge 37, which may be provided with the vertical flange 38, so as to, in effect, form a shallow auxiliary trough or support. The sides 35 are preferably extended beneath the bottom and provided with the inwardly-projecting flanges 39, upon which rest the lower half of the conveyer-chains 40, these chains being of the customary construction and be-

ing provided at considerable intervals with the cross-bars 41, so that as the chain is run in either direction over the sprocket-wheels secured on the shafts 42, journaled in the ends of the trough, any material discharged from the spout 31 into the trough will be carried to one end or the other, as the case may be, and delivered into the discharge-hopper 43. The shaft 30 at the upper end of the upper section of the elevating mechanism is provided with the sprocket-wheel 44, which, through the medium of the sprocket-chain 45 and the sprocket-wheel 46, rotates the shaft 47, journaled in suitable bearings in the casting 48, suitably supported from the crib structure at one side of the conveyer-trough. The shaft 47 has secured thereon the bevel gear-wheel 48', which meshes with a similar bevel gear-wheel 49, secured on the shaft 50, likewise journaled in suitable bearings in the casting 48 and having loosely mounted thereon the bevel gear-pinions 51, meshing with the bevel gear-wheel 52, secured on the shaft 53, likewise journaled in suitable bearings in the casting 48 and having secured on its other end the sprocket-wheel 54. The clutch member 55 is splined on the shaft 50 and is adapted to engage with either or neither of the pinions 51, so that the shaft 53 can be held from rotating or rotated in either direction by means of the shaft 47. This clutch member 55, as best seen in Fig. 8, is provided with the annular groove 56, with which coöperates the forked end 57 of the three-armed lever 58, suitably pivoted, as at 59, from the crib structure and provided with the ropes 60, depending to the floor of the crib, so that the movement and direction of rotation of the driving-sprocket 54 can be readily controlled from the floor. This driving-sprocket 54 meshes with the driving-chain 61, which is preferably supported on its upper run upon the flange 37 and which engages the sprocket-wheels 62, secured on the outer ends of the shafts 42, and which has its return run preferably supported by the stationary bearing-pulleys 63, which are suitably supported from the crib structure. The innermost pair of pulleys 63 are preferably arranged immediately adjacent to the driving-sprocket 54, as shown in Fig. 3, so as to hold the chain securely in engagement with said sprocket no matter what position of adjustment the trough 32 may assume. We may employ other means for holding the chain in engagement with the sprocket-wheel 54—such, for instance, as a single wheel located directly beneath the same and as indicated by the dotted circle in Fig. 3.

From the foregoing it will be apparent that the conveyer in the trough 32 can be driven in either direction, and by adjusting the trough back and forth along the crib the entire length of the crib can be readily filled. As the driving movement of the chain 61

would have a tendency to move the trough 32, we provide means for holding the trough from movement in any desired position of adjustment, and for this purpose we preferably employ the clamping-block 64, (best shown in Figs. 3 and 6,) which extends beneath one edge of the trough 32 and is supported so as to be prevented from turning therewith by the screw 65, which is passed through the nut 66, which is suitably secured in the crib structure. The block 64 is preferably located immediately beneath the spout 31, whose edge extends over the edge of the trough 32, as seen in Fig. 6, so that when the block 64 is screwed up the trough is consequently clamped between said clamp and the spout 31. To conveniently manipulate this screw 65 from the driveway, we extend the rod 67 down through the floor 14 and provide it at its lower end with a handle 68, by which it may be manipulated.

The structure as thus far described would be effective for discharging the contents of the trough 32 at any point in the crib directly beneath the conveyer; but we desire to construct our apparatus so that it will be capable of filling the bins 11 and 12 at the side thereof, and for this purpose we provide the swiveling spouts 69, the details of which are best shown in Figs. 5 and 7, where it will be seen that the hopper ends 43 have secured on the inner faces thereof the straps 70, which in turn have secured to their lower ends the annular castings 71, which are provided with the vertical webs 72 and the horizontal flanges 73. Mounted to turn on the outside of the vertical web 72 and beneath the horizontal flange 73 is the annulus 74, having the horizontal flange 75, adapted to extend beneath the flange 73 and supported by the clips or lugs 76, secured to the under surface of the flange 73. The annulus 74 is secured to the top of the spouts 69, as seen, so that as a result of this swiveling union it is possible to direct the spout 69 at any angle, so as to discharge directly beneath the trough or at either side thereof. As shown in Fig. 1, for the purpose of discharging corn into the bins 11 and 12 the spouts 69 have the extensions 77 secured thereto and adapted to extend over the edge of the incline boards 78, which are secured over the edges of the bins 11 and 12, so that the extension 77 of the spout can discharge the material into the bins and at the same time be free to move lengthwise of the crib without striking the posts 79.

From the foregoing the mode of operation of our improved invention will be readily apparent, and it will be seen to be a compact mechanism entirely inclosed within the crib, so that the wagons can be unloaded from one point therein to any desired portion of the crib.

While we have shown and described our

invention as embodied in the form which we at present consider best adapted to carry out its purposes, it will be understood that it is capable of modifications and that we do not desire to be limited in the interpretation of the following claims except as may be necessitated by the state of the prior art.

What we claim as new, and desire to secure by Letters Patent, is—

10 1. In a device of the class described, the combination with the horizontal conveyer capable of delivery therefrom at various points within its range, of the elevator having the spout adapted to discharge onto said conveyer, the elevator consisting of the two sections extending in opposite directions from a vertical, means for driving the conveyer, and mechanism for delivery from said conveyer.

20 2. In a device of the class described, the combination with the horizontal conveyer capable of delivery therefrom at various points within its range and adapted to discharge from the ends thereof, of the elevator having the spout attached to discharge onto said conveyer, said elevator consisting of the two sections having their ends crossed substantially as described and having the spout delivering from the top of the lower section to the bottom of the top section, means for driving the conveyer and elevator, and mechanism for delivering from the ends of the said conveyer.

30 3. In a device of the class described, the combination with the horizontal conveyer capable of delivery therefrom at various points within its range, of the elevator cooperating therewith and having the spout adapted to discharge onto said conveyer, said elevator consisting of the two sections extending in opposite directions from the vertical, means for driving one section of said elevator from the other and the horizontal conveyer from the latter, and mechanism for delivering from said conveyer.

40 4. In a device of the class described, the combination with the horizontal conveyer capable of delivery therefrom at various points within its range, of the elevating mechanism having the spout adapted to discharge onto said conveyer, said elevating mechanism consisting of the two sections extending in opposite directions from a vertical and having their ends crossed, the spout delivering from the top of the lower section to the bottom of the top section, means for driving one section from the other including the reverse pinions, means for driving the horizontal conveyer from one of said sections, and mechanism for delivering from said conveyer.

50 5. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of delivery

therefrom at various points within its range, mounted lengthwise of the crib near the top thereof and over said driveway, the spout adapted to discharge onto said conveyer, the elevator delivering to said spout and consisting of the two sections extending in opposite directions from a vertical and located at one side of the driveway, means for driving the elevator and conveyer, and mechanism for delivering from said conveyer to said bins.

60 6. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of delivery therefrom at various points within its range, mounted lengthwise of the crib near the top thereof and over said driveway, of the elevator having the spout adapted to discharge onto said conveyer, said elevator consisting of two sections having their ends crossed and a spout delivering from the top of the lower section to the bottom of the top section, said lower section being adjacent to one side of the driveway, means for driving the conveyer and elevator, and mechanism for delivering from said conveyer to the bins.

70 7. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of delivery therefrom at various points within its range, the spout adapted to discharge onto said conveyer, means for driving the conveyer, mechanism for delivering from said conveyer at either side thereof, and the inclined deflecting-bars located over the inner edges of the bins.

80 8. In a device of the class described, the combination with the trackway, of the conveyer-trough adjustable longitudinally thereon, the conveyer-shafts journaled in each end of the trough, the sprocket-wheels secured on the outer ends of said shafts, the chain cooperating with said sprocket-wheels outside of the trough, a support for the upper run of the chain, stationary supports for the under run of the chain, a driving sprocket-wheel engaging the chain between two of the stationary supports, a shaft mounted in stationary bearings to which the driving sprocket-wheel is secured, and means for rotating the shaft in either direction.

90 9. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, of the elevator having the spout adapted to discharge onto said conveyer in any position of adjustment, the elevator consisting of the two sections extending in opposite directions from a vertical, means for driving the conveyer, and mechanism for delivery from said conveyer.

100 10. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment and

adapted to discharge from the ends thereof, of the elevator having the spout attached to discharge onto said conveyer in any position of adjustment, said elevator consisting of the two sections having their ends crossed substantially as described and having the spout delivering from the top of the lower section to the bottom of the top section, means for driving the conveyer and elevator, and mechanism for delivering from the ends of the said conveyer.

11. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, of the elevator cooperating therewith and having the spout adapted to discharge onto said conveyer in any position of adjustment, said elevator consisting of the two sections extending in opposite directions from the vertical, means for driving one section of said elevator from the other and the horizontal conveyer from the latter, and mechanism for delivering from said conveyer.

12. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, of the elevating mechanism having the spout adapted to discharge onto said conveyer in any position of adjustment, said elevating mechanism consisting of the two sections extending in opposite directions from a vertical and having their ends crossed, the spout delivering from the top of the lower section to the bottom of the top section, means for driving one section from the other including the reverse pinions, means for driving the horizontal conveyer from one of said sections, and mechanism for delivering from said conveyer.

13. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of longitudinal adjustment, mounted lengthwise of the crib near the top thereof and over said driveway, the spout adapted to discharge onto said conveyer in any position of adjustment, the elevator delivering to said spout and consisting of the two sections extending in opposite directions from a vertical and located at one side of the driveway, means for driving the elevator and conveyer, and mechanism for delivering from said conveyer to said bins.

14. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of longitudinal adjustment, mounted lengthwise of the crib near the top thereof and over said driveway, of the elevator having the spout adapted to discharge onto said conveyer in any position of adjustment, said elevator consisting of two sections having their ends crossed and a spout delivering from the top of the lower section to the bottom of the top

section, said lower section being adjacent to one side of the driveway, means for driving the conveyer and elevator, and mechanism for delivering from said conveyer to the bins.

15. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, of the spout adapted to discharge onto said conveyer in any position of adjustment, means for driving the conveyer, and means operable from beneath the conveyer to clamp it in any desired position of adjustment.

16. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of longitudinal adjustment, the spout adapted to discharge onto said conveyer in any position of adjustment, means for driving the conveyer, and means operable from said driveway to clamp the conveyer in any desired position of adjustment.

17. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, of the spout adapted to discharge onto said conveyer in any position of adjustment, means for driving the conveyer, means operable from beneath the conveyer to secure it in any desired position of adjustment, and consisting of a brake-block adapted to engage the body of the conveyer and means for operating the block.

18. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, of the spout adapted to discharge onto said conveyer in any position of adjustment, means for driving the conveyer, means operable from beneath the conveyer to secure it in any desired position of adjustment consisting of a brake-block adapted to engage the body of the conveyer, and a screw-rod for moving the block.

19. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of longitudinal adjustment, the spout adapted to discharge onto said conveyer in any position of adjustment, means for driving the conveyer, the brake-block adapted to engage the body of the conveyer, the screw-rod for moving the block, and a rod extending down into said driveway and provided therein with a handle for operating the screw.

20. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, of the spout adapted to discharge onto said conveyer in any position of adjustment, means for driving the conveyer, means operable from beneath the conveyer to secure it in any desired position of adjustment consisting of a brake-block adapted to engage the

body of the conveyer, and means for operating the block to clamp the conveyer between the block and the spout.

21. In a device of the class described, the combination with the crib having the central driveway and bins on either side thereof, of the horizontal conveyer capable of longitudinal adjustment, the spout adapted to discharge onto said conveyer in any position of adjustment, means for driving the conveyer, mechanism for delivering from said conveyer at either side thereof, and the inclined deflecting-bars located over the inner edges of the bins.

22. In a device of the class described, the combination with the trackway, of the conveyer-trough adjustable longitudinally thereon, the conveyer adapted to move in said trough, a chain outside of the trough connected with the conveyer, a sprocket-wheel engaging the chain, a shaft mounted in stationary bearings to which the sprocket-wheel is secured, and means for rotating the shaft in either direction.

23. In a device of the class described, the combination with the trackway, of the conveyer-trough adjustable longitudinally thereon, the conveyer-shafts journaled in each end of the trough, sprocket-wheels on the ends of said shafts, the conveyer adapted to move in said trough and driven by said shafts, a chain outside of the trough cooperating with the sprocket-wheels on said shafts, a driving sprocket-wheel engaging the chain, a shaft mounted in stationary bearings to which the sprocket-wheel is secured, and means for rotating the shaft in either direction.

24. In a device of the class described, the combination with the trackway, of the conveyer-trough adjustable longitudinally thereon, the conveyer-shafts journaled in each end of the trough, sprocket-wheels on the ends of said shafts, the conveyer adapted to move in said trough and driven by said shafts, a chain outside of the trough cooperating with the sprocket-wheels on said shafts, a driving sprocket-wheel engaging the chain, a shaft mounted in stationary bearings to which the sprocket-wheel is secured, a support for the upper run of the chain, and means for rotating the shaft in either direction.

25. In a device of the class described, the combination with the trackway, of the conveyer-trough adjustable longitudinally thereon, the conveyer adapted to move in said trough, a chain outside of the trough connected with the conveyer, a sprocket-wheel engaging the chain, stationary roller-supports for the chain on each side of the driving sprocket-wheel, a shaft mounted in stationary bearings to which the sprocket-wheel is secured, and means for rotating the shaft in either direction.

26. In a device of the class described, the combination with the trackway, of the con-

veyer-trough adjustable longitudinally thereon, the conveyer-shafts journaled in each end of the trough, the sprocket-wheels secured on the outer ends of said shafts, the chain cooperating with said sprocket-wheels outside of the trough, a support for the upper run of the chain, stationary roller-supports for the under run of the chain, a driving sprocket-wheel engaging the chain between two of the roller-supports, a shaft mounted in stationary bearings to which the driving sprocket-wheel is secured, and means for rotating the shaft in either direction.

27. In a device of the class described, the combination with the trackway, of the conveyer-trough adjustable longitudinally thereon, the conveyer adapted to move in said trough, a chain outside of the trough connected with the conveyer, a sprocket-wheel engaging the chain, a shaft mounted in stationary bearings to which the sprocket-wheel is secured, means for rotating the shaft in either direction, and supports for the lower half of the chain operating in whatever adjustment the trough may be placed.

28. In a device of the class described, the combination with the trackway, of the conveyer-trough adjustable longitudinally thereon and comprising the bottom, the side extension, the sides, and the inwardly-projecting flanges beneath the bottom, the conveyer adapted to move in said trough, consisting of the chains connected by conveyer-bars and cooperating with the bottom of said trough and said inwardly-projecting flanges, a chain outside of the trough connected with the conveyer and having its upper half running on the extension, a sprocket-wheel engaging the chain, a shaft mounted in stationary bearings to which the sprocket-wheel is secured, and means for rotating the shaft in either direction.

29. In a device of the class described, the combination with the elevator-trackway, of the conveyer-trough adjustable longitudinally thereon, the conveyer adapted to move in said trough, a driving-shaft for said conveyer mounted in stationary bearings, driving connections between said shaft and conveyer, a transverse shaft having a pair of beveled pinions loose thereon, a clutch mechanism adapted to connect either or neither of said pinions to the shaft, a bevel gear-wheel on the first driving-shaft meshing with the pinions, a three-armed shifting-lever for the clutch, and ropes depending from two of the arms of the lever.

30. In a device of the class described, the combination with the horizontal conveyer capable of longitudinal adjustment, said conveyer consisting of the trough provided with the bottom and the flanges 39, and the movable carrier member running on said bottom and flange, of the elevator having the spout adapted to discharge onto said conveyer in

any position of adjustment, means for driving the conveyer, and mechanism for delivery from said conveyer.

31. In a device of the class described, the
5 combination with the crib, of the horizontal conveyer capable of longitudinal adjustment relative thereto, the swiveling discharge-spout connected to the conveyer, means for driving the conveyer, and an inclined de-

flecting-bar located over the edge of the crib. 10
upon which the spout discharges.

In witness whereof we have hereunto set
our hands this 12th day of August, 1905.

JOHN H. GILMAN.

ALBERT J. BENNETT.

Witnesses:

ARTHUR E. REES,
ALBERT G. REES.