

No. 708,576.

Patented Sept. 9, 1902.

W. M. McCAMMON & C. A. LEE.

GRAIN ELEVATOR.

(Application filed Apr. 15, 1902.)

(No Model.)

3 Sheets—Sheet 1.

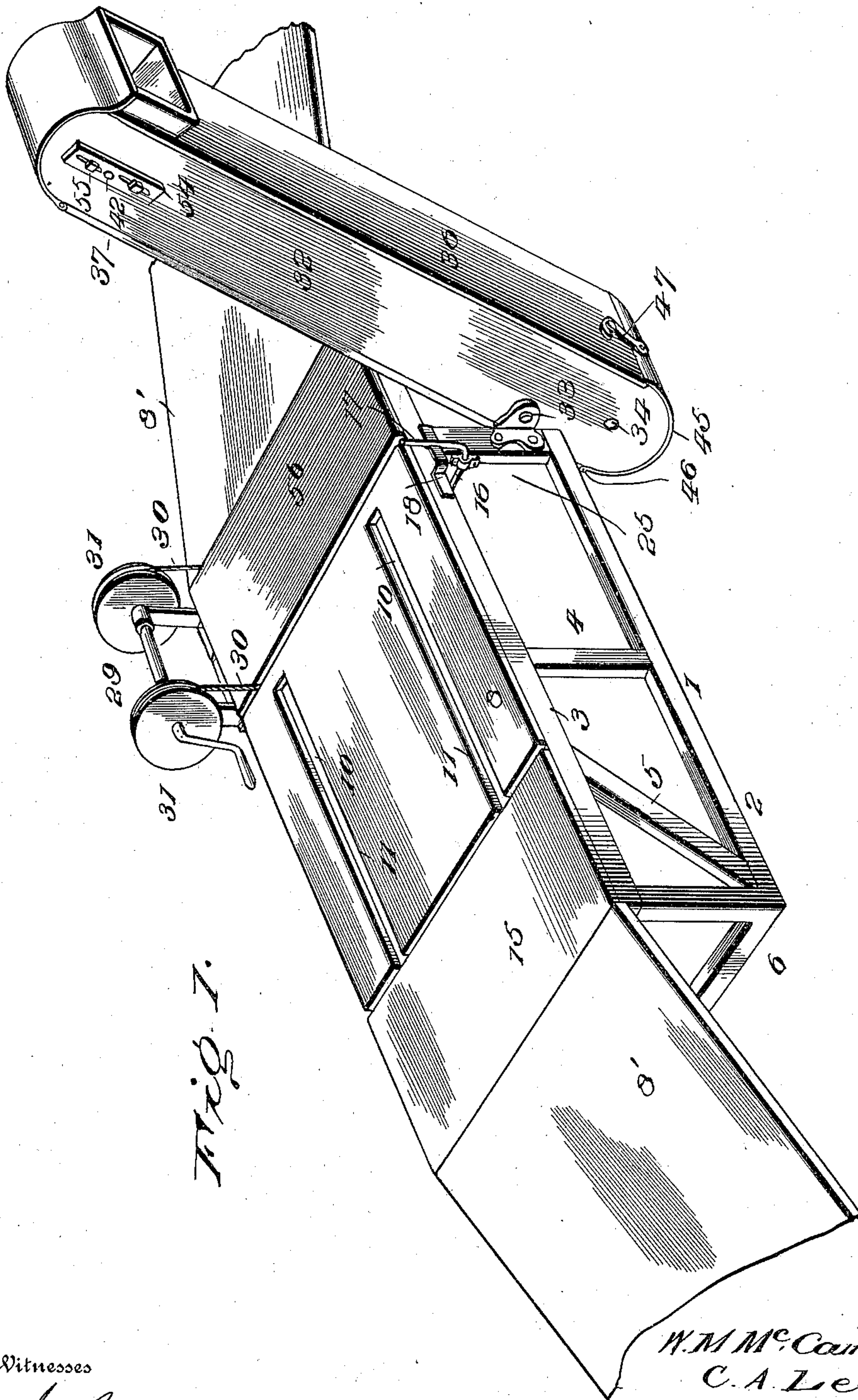


Fig. 1.

Witnesses

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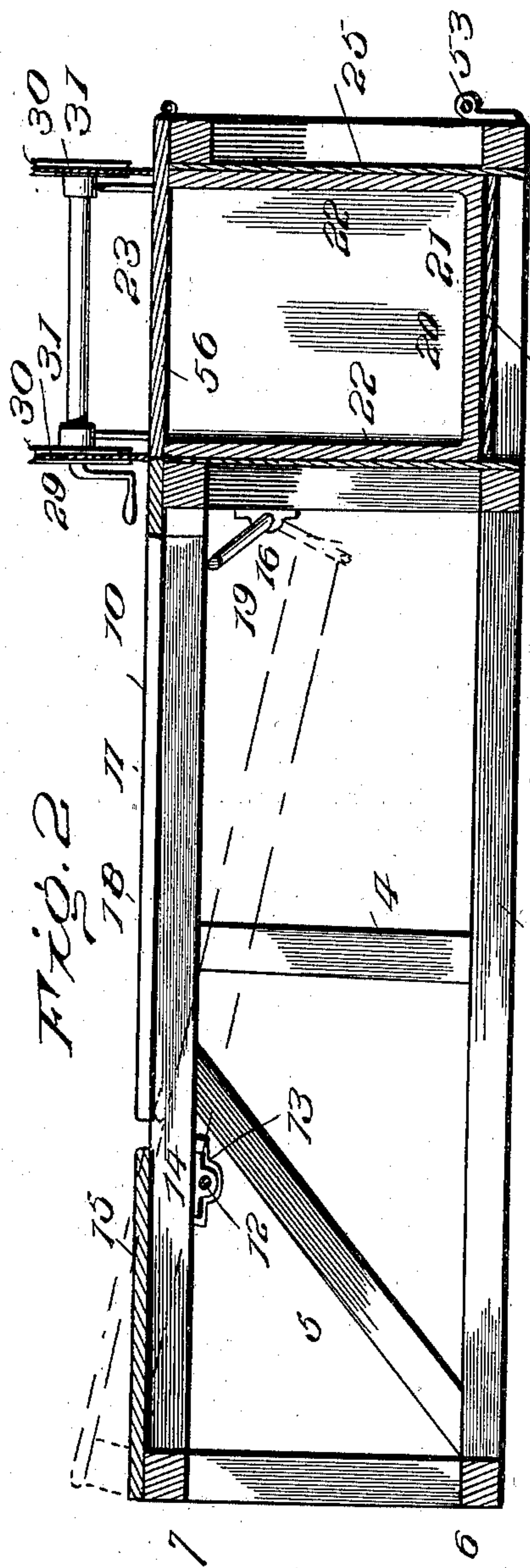
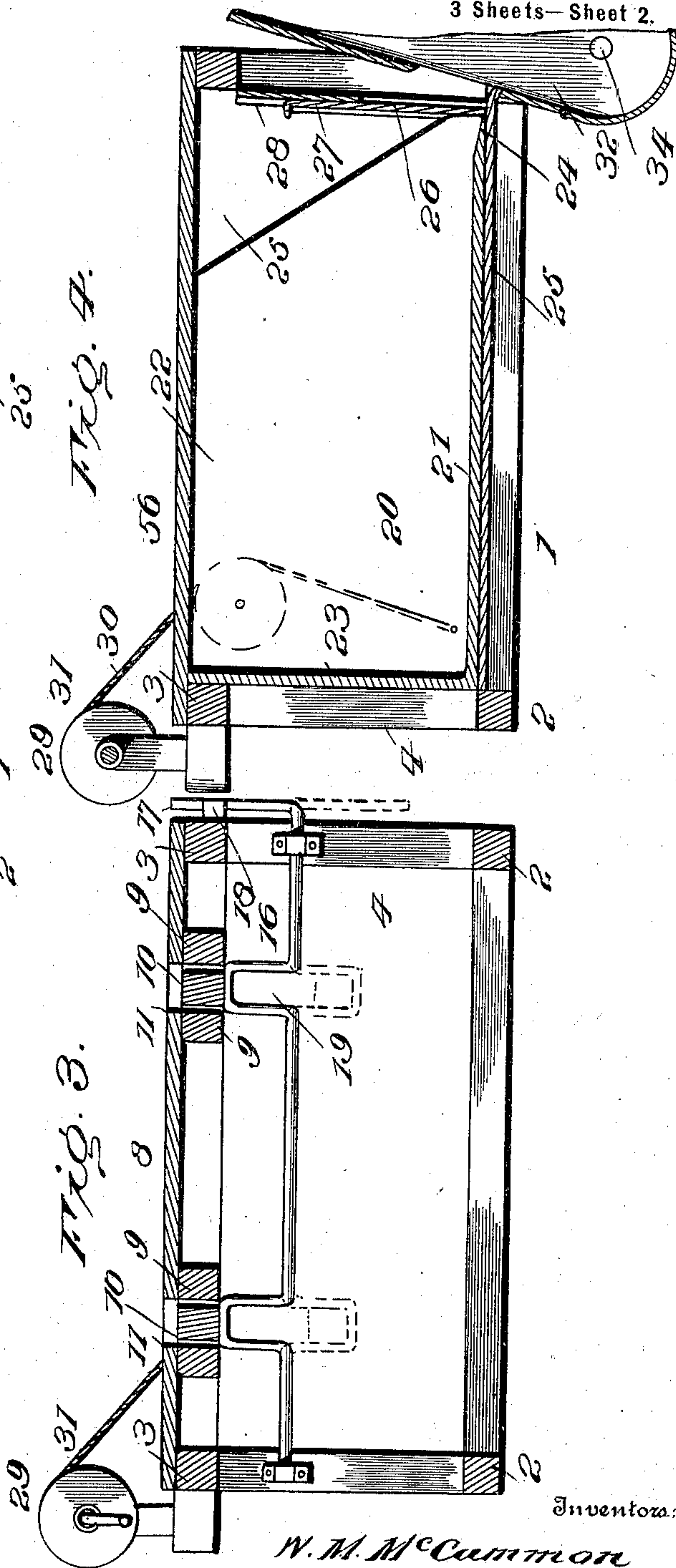


Fig. 2.

Fig. 3.

Fig. 4.



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Fig. 5.

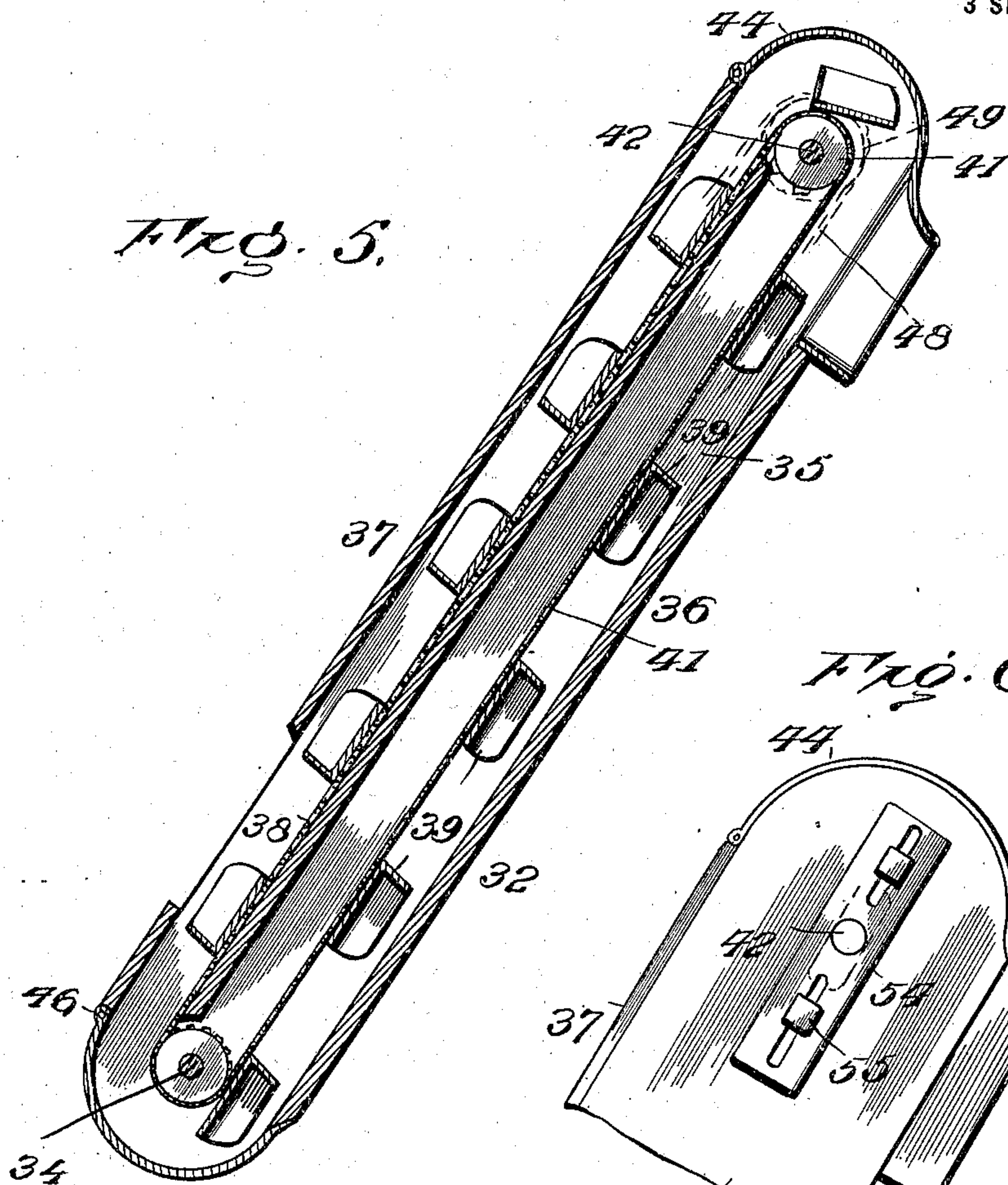


Fig. 6.

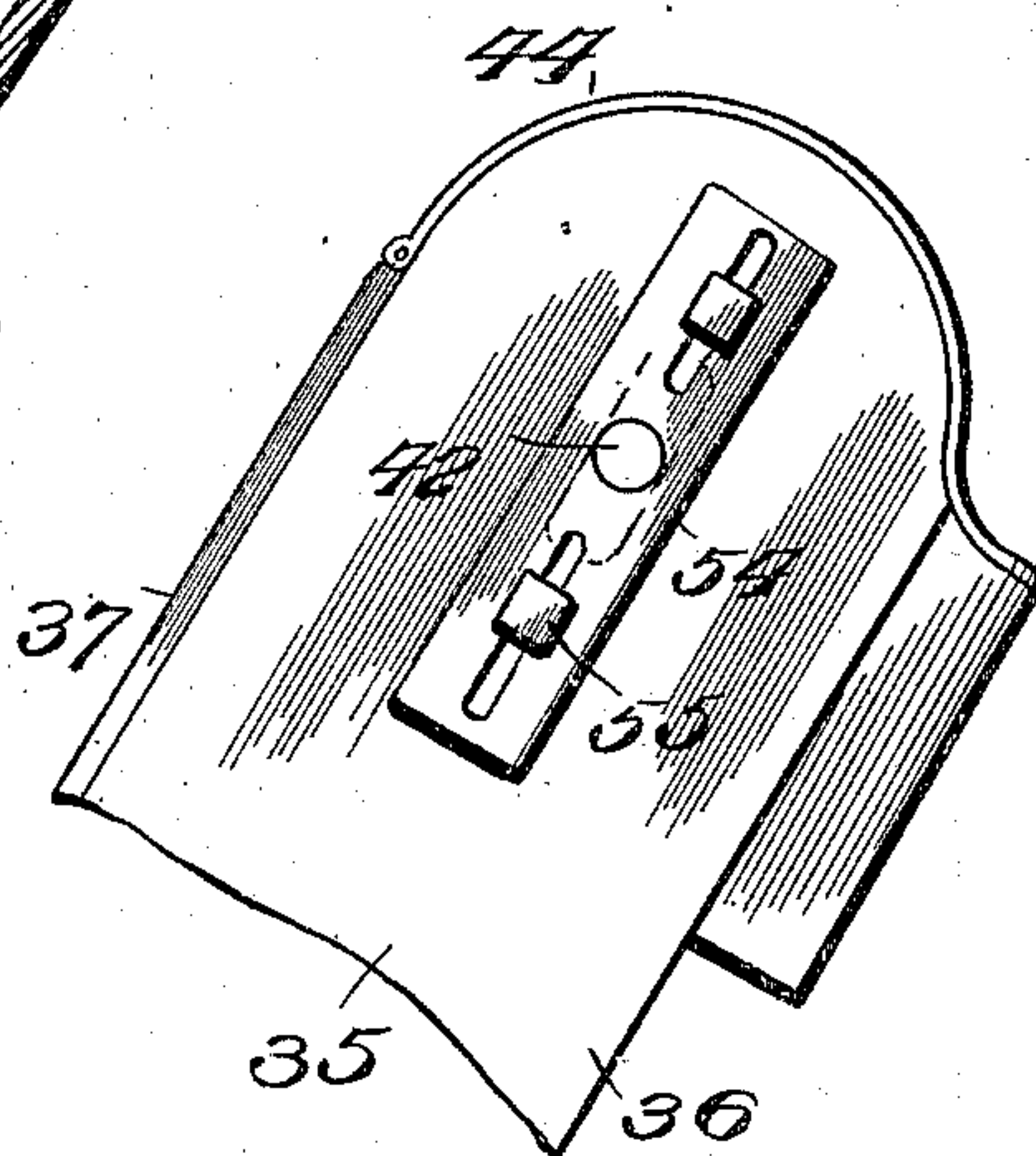
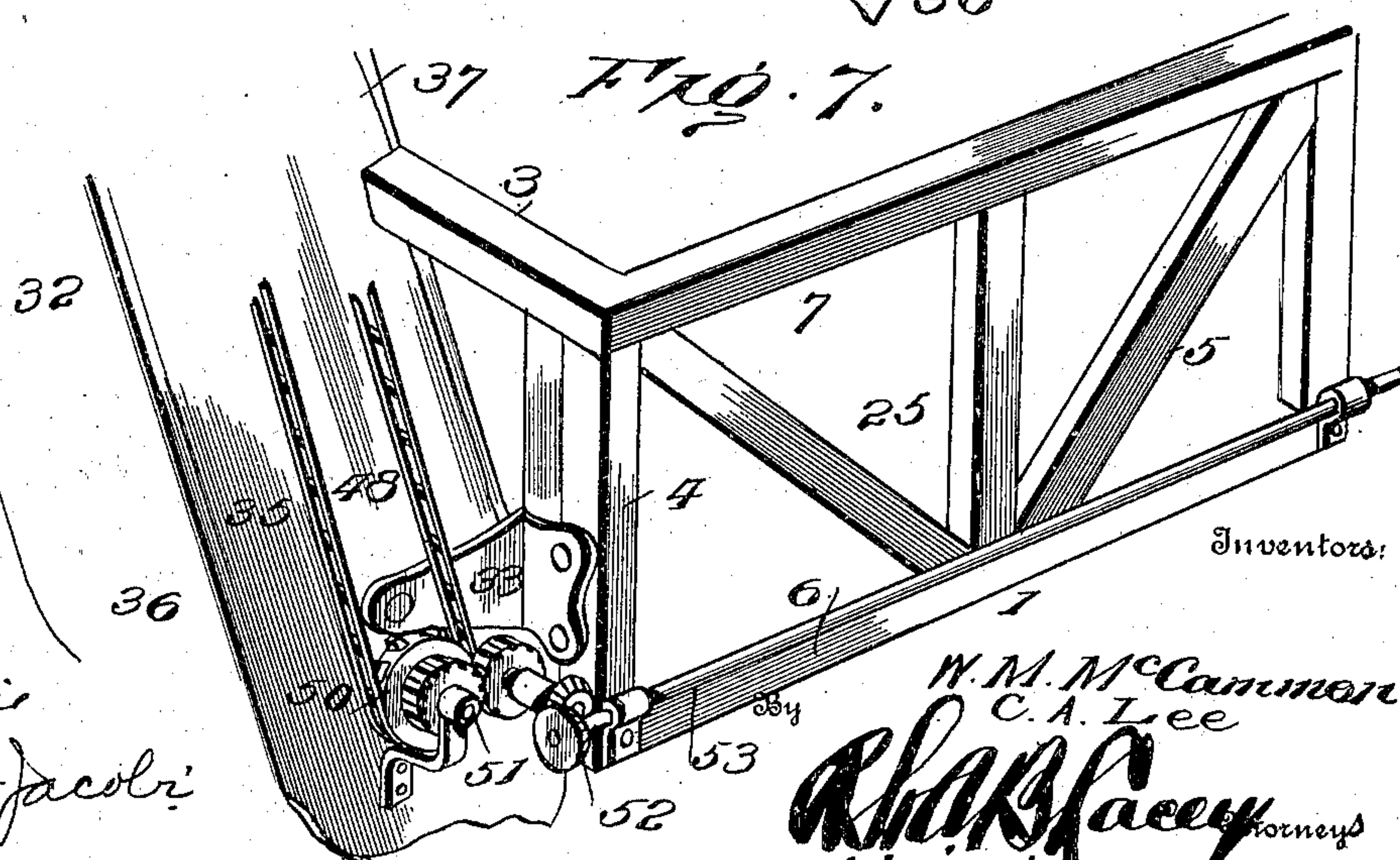


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM M. McCAMMON AND CHARLES A. LEE, OF FORMOSO, KANSAS.

GRAIN-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 708,576, dated September 9, 1902.

Application filed April 15, 1902. Serial No. 103,029. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM M. McCAMMON and CHARLES A. LEE, citizens of the United States, residing at Formoso, in the
5 county of Jewell and State of Kansas, have invented certain new and useful Improvements in Grain-Elevators; and we 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 ap-
10 pertains to make and use the same.

This invention relates to grain-elevators, the same comprising means for dumping the grain from wagons into a suitable receptacle
15 or bin, means for tilting the bin so as to discharge the grain into an elevator proper, and an elevator adapted to receive the grain from the bin and convey the same to the point of discharge.

20 The invention has for its object to provide, in connection with a raised platform having suitable approaches, a tilting platform-section combined with tripping mechanism for the purpose of giving the necessary inclina-
25 tion to the bottom or floor of the vehicle to effect a ready discharge of the grain into the bin. The platform also comprises a hinged section forming a cover for a bin, so as to enable wagons to be driven over the bin and
30 properly positioned for discharging grain into the bin. The bin has combined therewith means for tilting the same and for regulating and cutting off the flow of grain from the bin, thus enabling the grain to be fed into the
35 elevator in the proper quantity and avoiding consequent clogging or choking of the elevator mechanism.

With the above general objects in view the invention consists in the novel construction,
40 combination, and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the improved grain-elevator, showing the platform with its ap-
45 proaches, the elevator proper, and the bin-tilting windlass, &c. Fig. 2 is a vertical longitudinal section through the platform and bin, indicating by dotted lines the depressed
50 position of the bars or rails which support the wagon-wheels. Fig. 3 is a vertical cross-section taken adjacent to the rock-shaft and

trip-lever, showing the relation of said shaft to the depressible wheel-supporting bars or rails, said rails being shown elevated in full
55 lines and depressed in dotted lines. Fig. 4 is a vertical section taken longitudinally of the tilting bin and illustrating the cut-off, the windlass, and the connection between the windlass and tilting bin, said view also show-
60 ing in section the lower portion of the elevator proper. Fig. 5 is a vertical longitudinal section through the elevator proper. Fig. 6 is a detail side elevation of the upper por-
65 tion of the elevator proper, showing the chain adjustment. Fig. 7 is a detail perspective view of one end of the platform and a portion of the elevator proper, showing the driving mechanism for the elevator.

Similar numerals of reference designate cor-
70 responding parts in all figures of the drawings.

Referring to the drawings, 1 designates the framework of a suitable platform, which is shown to comprise longitudinal base-timbers
75 2 and floor-timbers 3, connected with each other by vertical posts 4 and inclined braces 5 and also connected by cross-bars 6 and 7, arranged, respectively, at the base and top of
80 the platform. The platform-frame is covered at the top by a flooring 8 to enable a wagon and team to be driven thereover, suitable approaches or inclines 8' being arranged at opposite ends of the platform to enable a
85 team to mount the platform.

Between the upper longitudinal timbers 3 are arranged sets of intermediate and parallel longitudinal bars 9, and between the bars
9 are arranged a pair of depressible bars or rails 10, running lengthwise of the platform
90 and having their upper surfaces exposed through openings 11, formed in the floor 8. The bars or rails 10 are pivotally mounted upon a shaft 12, which extends transversely across the platform-frame and beneath the
95 bars 9, said shaft being supported by suitable hangers or bearings 13, while the rails 10 are provided with bearings or straps 14, which embrace the shaft 12 and hold the rails in proper position on the shaft. At one end
100 a section 15 of the flooring 8 is fastened upon the rails 10, so as to tilt simultaneously with the rails. The rear wheels of the wagon rest directly on the rails 10, while the front wheels

may rest either upon said rails or upon the tilting section 15 of the floor, according to the size of the platform and the length of the wagon.

5 Located beneath the depressible rails 10 is a combined trip-lever and rock-shaft 16, which extends transversely across the frame and is journaled in suitable bearings mounted thereon. At one end the rock-shaft is provided
10 with a lever 17, which may be operated at one side of the platform and which when thrown upward is adapted to be engaged by the keeper 18 for holding the lever in that position. Intermediate its ends the shaft
15 16 is provided with cranks or offsets 19, which are located in vertical alinement with the rails 10, so as to operate directly on the end portions of the rails for the purpose of raising the rails and restoring the tilting
20 platform-section to its normal horizontal position. When the rock-shaft is tripped and the lever 17 moved downward, the rails 10 under the weight of the wagon also move downward, but are limited in their downward
25 movement by the cranks or offsets 19, in which the end portions of the wheel-supporting rails rest, as indicated in dotted lines in the drawings. When the lever 17 stands upright and is in engagement with the keeper 18, the
30 cranks 19 stand vertical and form effective supports for the rails 10.

Located just beyond the extremities of the wheel-supporting rails and beneath the platform-flooring is a tilting bin 20, comprising
35 a bottom 21, sides 22, and end wall 23, the opposite end of the bin being left open, as shown, while the edges of the sides are inclined and also chamfered, as shown at 24, the edge of the bottom 21 being also beveled
40 or chamfered to give a ready egress to the grain. The tilting bin is arranged in a bin-chamber which has both its sides, bottom, and discharge end closed by a lining 25, which serves to prevent the escape of grain when
45 deposited in the bin. The lining 25 forms one end of the bin-chamber and is provided with a discharge-opening 26, the said opening being controlled by a sliding cut-off or gate 27, which is movable within guiding
50 strips or cleats 28. By means of the cut-off the flow of grain from the bin may be controlled and regulated. The closed or rear end of the bin is adapted to be raised and lowered by means of a windlass 29, mounted on
55 the platform and having connected therewith ropes or cables 30, which pass over guide-pulleys 31 within the bin-chamber and downward on the sides of the bin, where they connect with the bin at points near the bottom of the
60 latter. It will be seen that by operating the windlass, which is provided with a suitable crank for that purpose, the rear end of the bin may be raised and lowered, so as to give the proper inclination to the bottom of the
65 bin to enable the latter to discharge the grain into a suitable elevator 32, which is connected to the platform at the discharge end of the

bin by means of suitable brackets 33, fastened to the platform-frame and projecting outward from the frame sufficiently to receive a shaft 70 34 at the inner or lower end of the elevator.

The elevator comprises a frame consisting of sides 35, bottom 36, and top 37. Between the top and bottom is arranged an intermediate longitudinal partition 38, upon opposite 75 sides of which are arranged a series of buckets 39, connected with chains 40, which run around sprocket-wheels 41 on shafts 34 and 42 at opposite ends of the elevator, the said buckets being adapted to receive the grain 80 as it is discharged from the bin and carry the same upward and discharge it from a suitable spout 43 at the upper end of the elevator. The upper end of the elevator is rounded and closed by a curved end wall 44, while the 85 lower end of the elevator is also curved and is closed when in operation by a curved end door 45, hinged at 46 to the elevator-frame and held closed by means of a latch or button 47. The door 45 gives access to the bottom 90 of the elevator for cleaning the same.

The elevator is driven by means of a sprocket-chain 48, which passes around a sprocket-wheel 49 on the outer elevator-shaft 42 and around another sprocket-wheel 50 on 95 the short shaft 51, journaled on the platform-frame and connected by beveled gears 52 with a counter-shaft 53, extending along one end of the platform-frame, the last-named shaft being adapted to be driven by any suitable 100 motor. The upper shaft 42 of the elevator extends through slots in the sides 35 of the elevator-frame and is journaled in a pair of plates or castings 54, arranged at opposite sides of the elevator and slotted to receive 105 securing bolts or screws 55, by means of which the plates or castings 54 may be adjusted lengthwise of the elevator for taking up slack in the chains located within and upon the outside of the elevator. A hinged cover 56 110 is connected with the platform and arranged to extend over the entire top of the tilting bin and bin-chamber. The cover 56 constitutes a section or portion of the platform-flooring 8, being flush therewith when closed, so that 115 teams and wagons may be driven directly over the bin until the wagon rests on the tilting section of the platform, whereupon the hinged cover 56 is thrown open, so that the grain in the wagon may be dumped directly 120 into the bin.

From the foregoing description it will be seen that wagons containing grain or other material may be driven upon the platform until the wheels rest on the depressible rails 125 10. The bin-cover may then be thrown open and the trip-lever and rock-shaft operated, so as to release the wheel-supporting rails, which has the effect of dropping the rear wheels of the wagon and inclining the wagon- 130 floor, so that the grain will discharge readily into the bin. The bin is then tilted by the mechanism described, which causes the grain to be discharged into the lower end of the ele-

vator, the rapidity of discharge being controlled by the cut-off. The elevator receives the grain and carries the same upward to the point of discharge. The elevator may of course be made in any suitable length, according to the distance the grain is to be carried or elevated.

We do not desire to be limited to the details of construction and arrangement hereinabove described, and accordingly reserve the right to change, modify, or vary the construction within the scope of the appended claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a grain-elevator, the combination with the elevator proper, and a raised platform to which the elevator is connected, of a bin-holding chamber arranged beneath the top of the platform, a hinged cover for the bin, a tilting bin located within said chamber and means for elevating one end of the bin through the top of the bin-chamber so as to discharge into the elevator, substantially as described.

2. In a grain-elevator, the combination with the elevator proper, and a raised platform to which the elevator is connected, of a tilting bin arranged beneath the top of the platform, means for raising and lowering one end of the bin, and a cut-off at the discharge end of the bin for regulating the flow of grain from the bin to the elevator, substantially as described.

3. In a grain-elevator, the combination with a raised platform and the elevator proper connected therewith, of a tilting bin located below the top of the platform and in line with the elevator, a cut-off at the discharge end of the bin, and a windlass and connections for raising and lowering one end of the tilting bin, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM M. McCAMMON. [L. S.]
CHARLES A. LEE. [L. S.]

Witnesses:

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M. H. BURNHAM.