No. 708,125. Patented Sept. 2, 1902.

G. CARLSON.

COATING MACHINE.

(Application filed May 9, 1901.)

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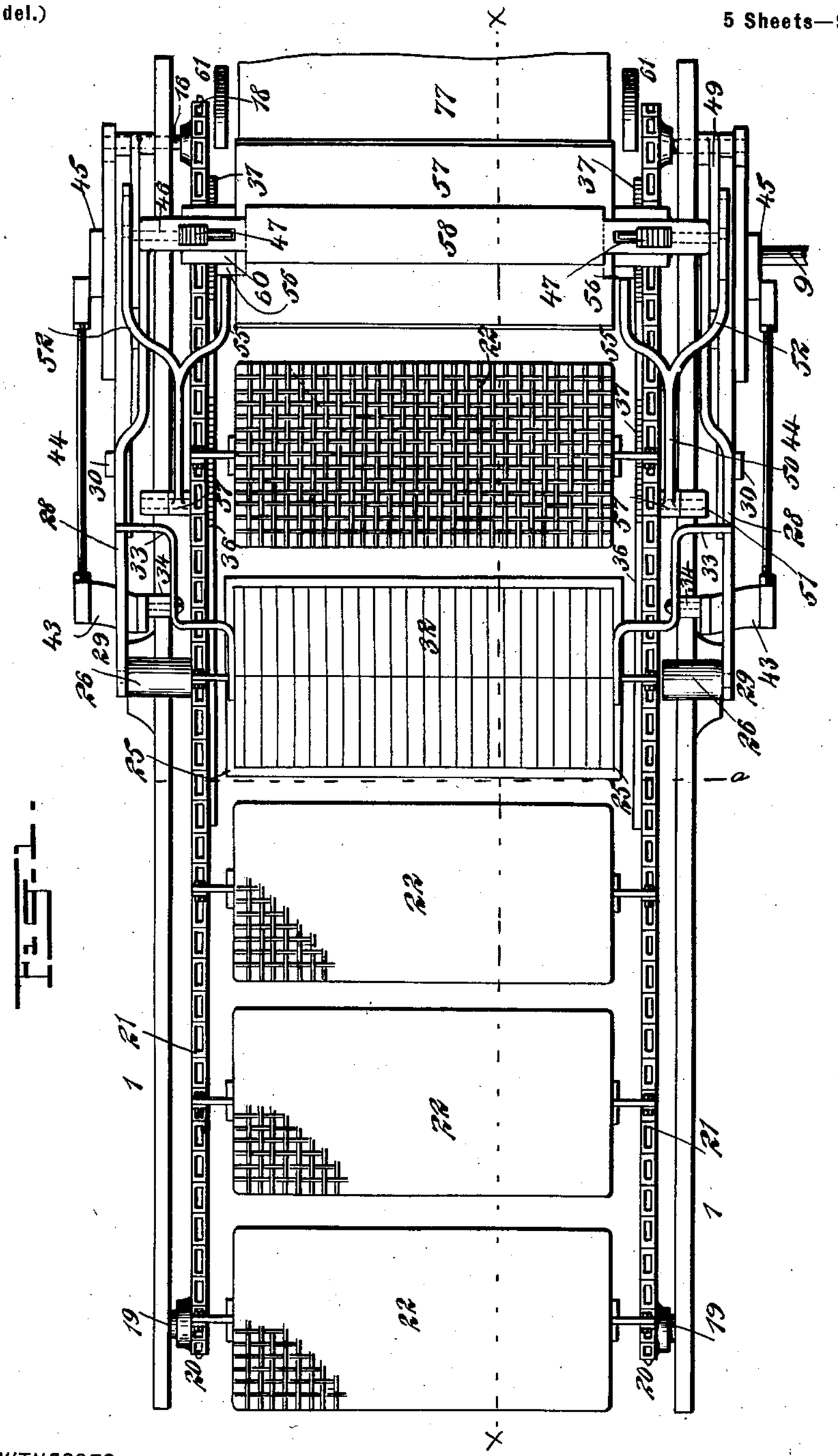

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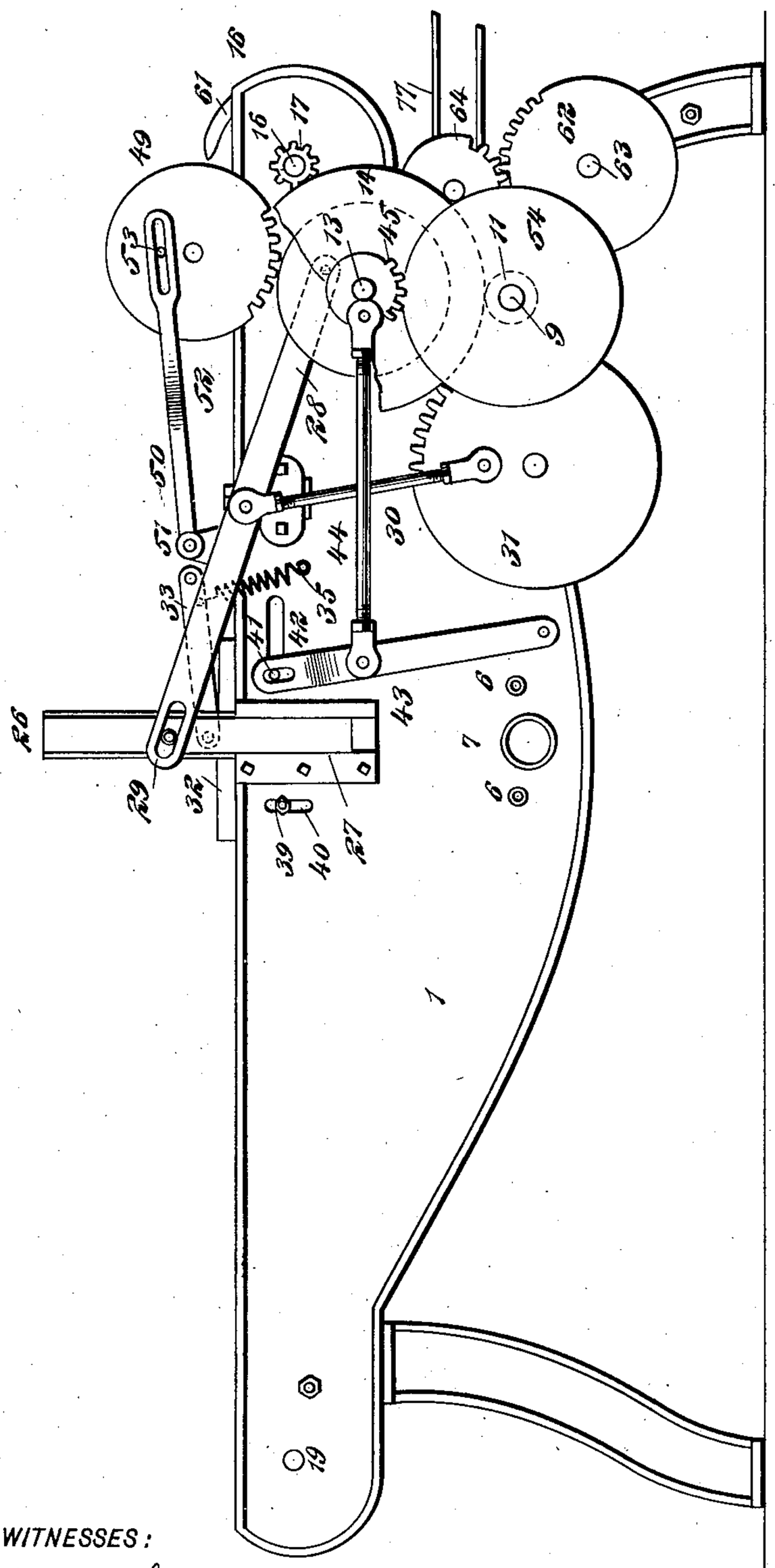

FIG. 2.

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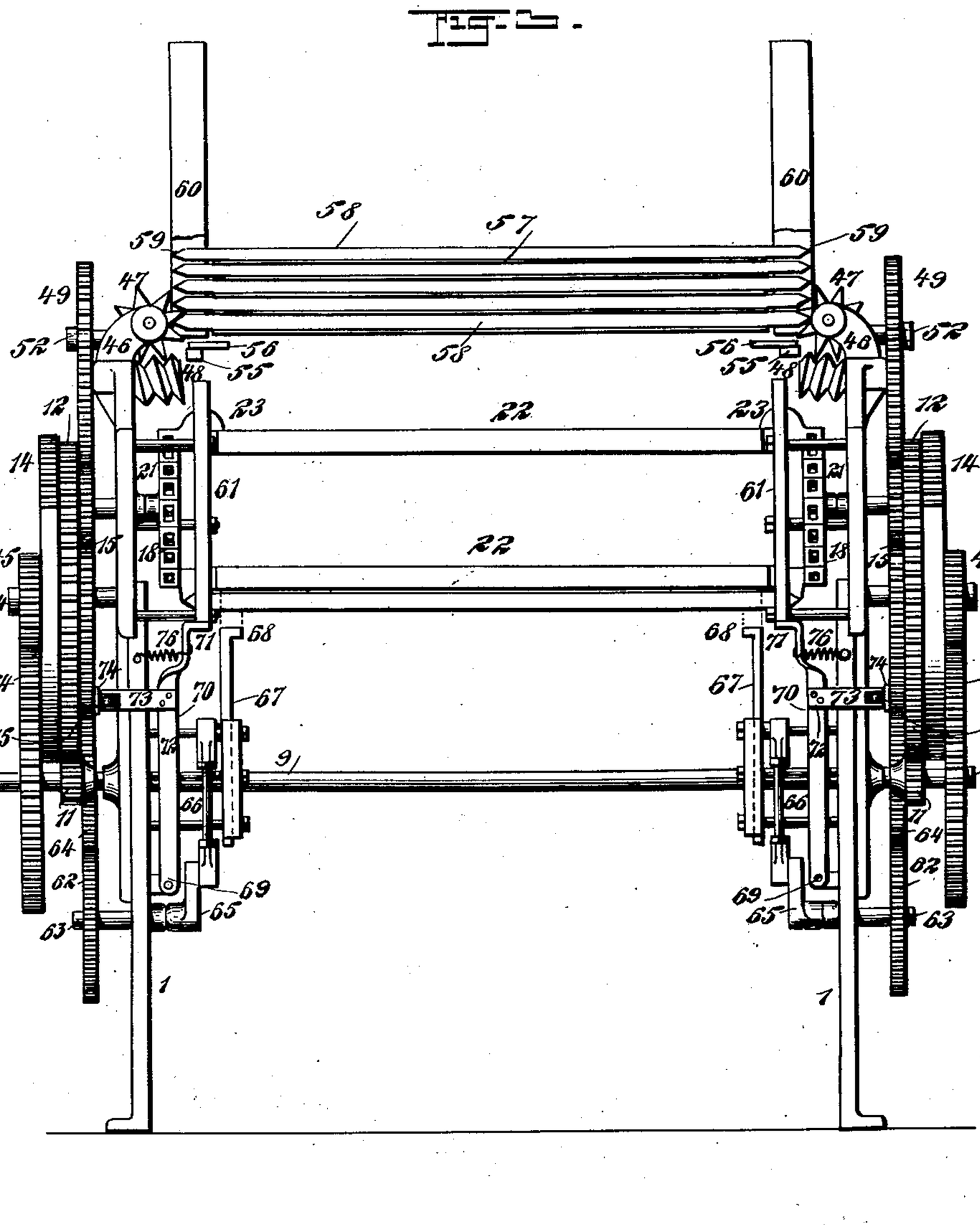
(No Model.) 5 Sheets—Sheet 3.



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(No Model.) 5 Sheets—Sheet 4.

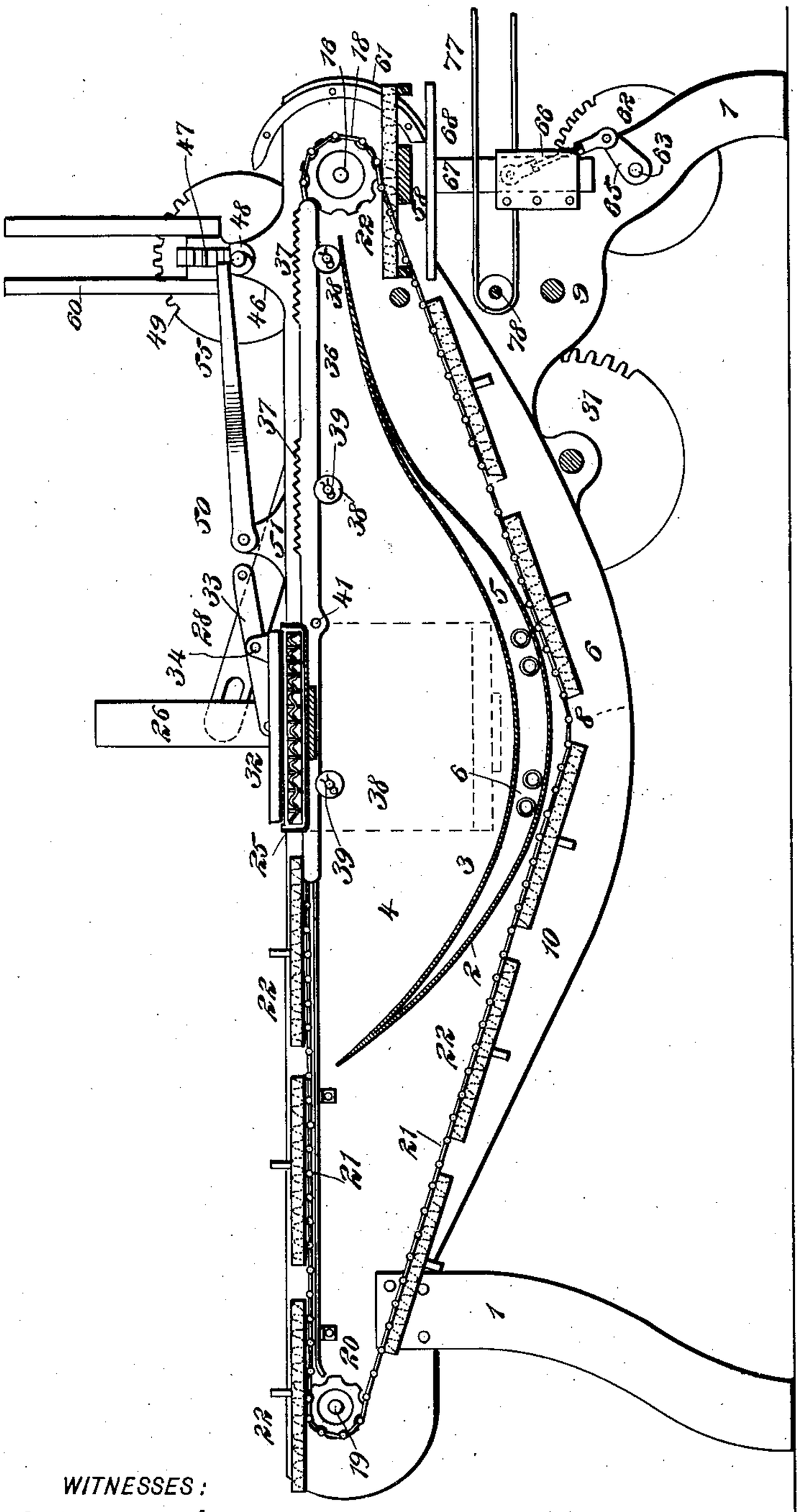

FIG. 4.

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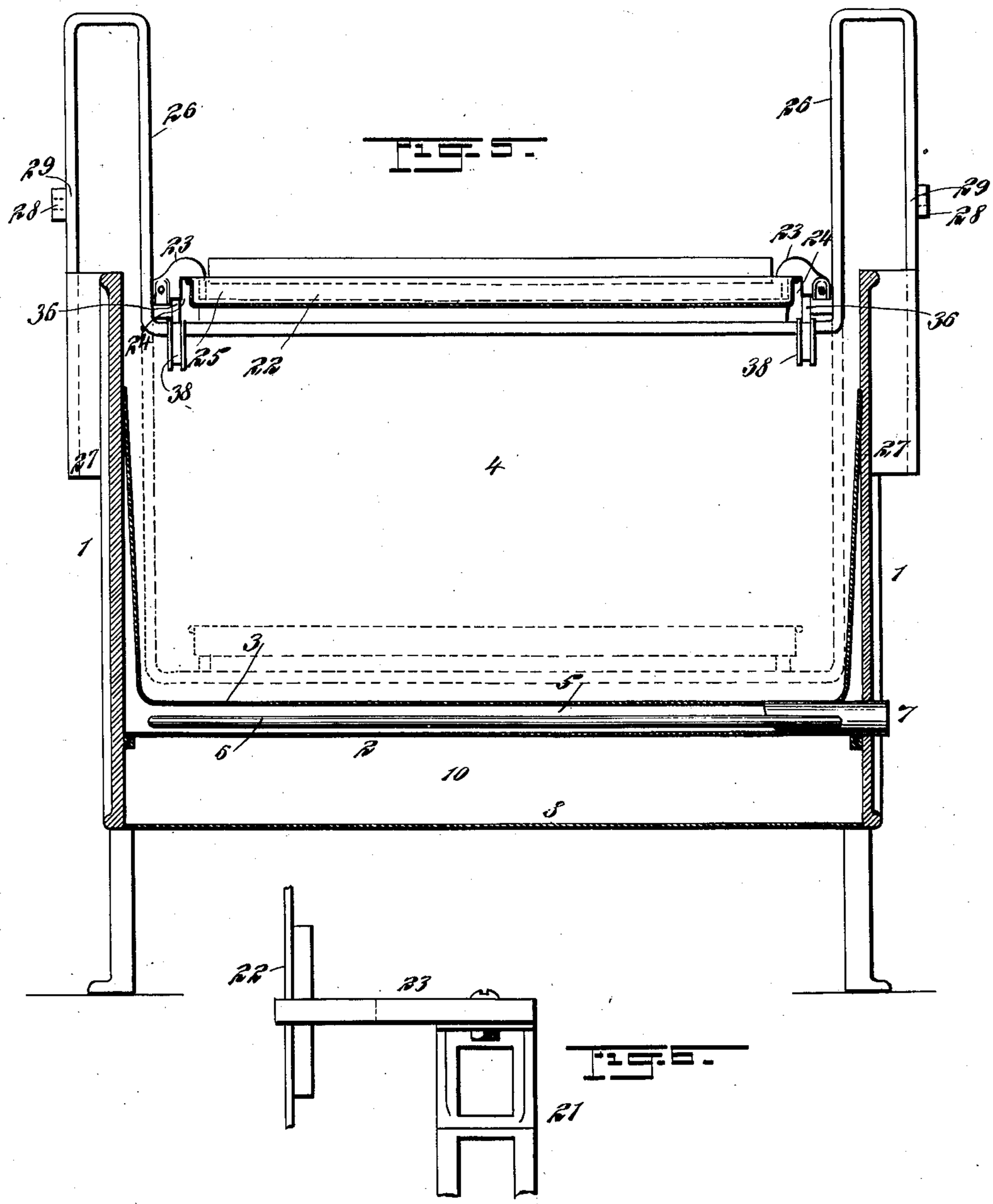

FIG. 5.

FIG. 6.

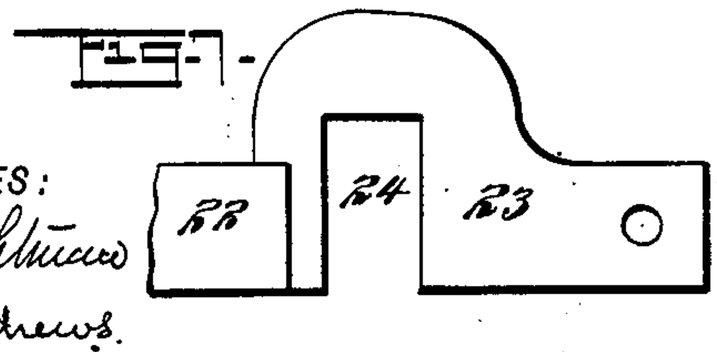

FIG. 7.

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UNITED STATES PATENT OFFICE.

GABRIEL CARLSON, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO CONFECTIONERS' MACHINERY AND MANUFACTURING COMPANY, OF SPRINGFIELD, MASSACHUSETTS.

COATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 708,125, dated September 2, 1902.

Application filed May 9, 1901. Serial No. 59,423. (No model.)

To all whom it may concern:

Be it known that I, GABRIEL CARLSON, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Coating-Machines, of which the following is a specification.

My invention relates especially to means and mechanism for coating confectionery-centers with an outside covering of different material from the center, and has for its object the provision of a coating-machine of simple construction and operation having a great capacity for the production of completed goods.

To attain the desired end, my invention consists, essentially, in certain novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully described and then pointed out in the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a side elevation. Fig. 3 is an end elevation looking from the right of Fig. 1. Fig. 4 is a vertical longitudinal section at line x x of Fig. 1. Fig. 5 is a vertical cross-sectional view at line a a of Fig. 1 looking from the left. Fig. 6 is an enlarged plan view, and Fig. 7 a side elevation, of a connection between a center holder or basket and the carrying-chain.

Like numerals of reference, wherever they occur, indicate corresponding parts in all the figures.

1 is the main frame of the machine. Within the frame are fixed a curved bottom piece 2 and an inner lining 3, this inner lining constituting the bottom of a coating-material tank 4, the space between the sides of the main frame and bottom piece 2 and the inner lining 3 making a water-chamber 5, which may be heated by means of steam-pipes 6.

7 is a draw-off leading from the material-tank 4 for the purpose of emptying the same when desired.

8 is a sheet-metal bottom piece located some distance below the hot-water chamber, leaving a hot-air space 10, which may be heated by means of steam-pipes.

9 is a driving-shaft journaled in the main frame, power being applied thereto in any preferred manner.

11 is a gear-wheel upon the shaft 9, which meshes with a wheel 12 upon a shaft 13. 14 is a segmental or broken gear, also mounted upon the shaft 13, being connected to the gear 12 and having teeth only for a small portion of its circumference. 15 is a gear, also mounted upon the shaft 13.

16 is a shaft journaled at the side of the main frame and bearing a gear 17, the teeth whereof mesh with the teeth of the segmental gear 14.

18 represents sprocket-wheels upon the shaft 16.

19 is a shaft mounted in the opposite extremity of the main frame and bearing sprocket-wheels 20.

21 represents chains which pass around the sprockets 18 and 20, over the top of the coating-material tank, and through the air-chamber 10.

22 represents center-carrying holders or baskets provided at each edge with an ear 23, connected to a chain 21, the construction of these ears being particularly illustrated in Figs. 6 and 7 of the drawings.

24 is a slot in the body of the ear, somewhat deeper than the side of the baskets 22.

25 is a coating-material lifter or pan supported upon vertical bent double arms 26, the outer members whereof are arranged to play in slideways 27 upon the exterior of the main frame. Pivoted at one end to the main frame are lever-arms 28, the other extremities of said arms being slotted and a pin 29 in an arm 26 engaging in such slot.

30 is a pitman connected to a lever-arm 28 and to a gear-wheel 31, the teeth whereof engage with a gear-wheel 12. At the top of the main frame above the pan 25 is a holding device 32, carried by curved arms 33, pivoted upon lugs 34, the outer ends of the arms 33 being arranged to come in contact with the le-

vers 28 when said levers are at the upper part of each stroke, the arms 33 being normally depressed at their outer ends by springs 35.

36 represents horizontal rack-bars provided at intervals with upwardly-projecting teeth 37. The bars 36 are movably supported upon wheels 38, journaled upon bolts 39, passing through slots 40 in the main frame, whereby the rack-bars may be raised or lowered, as required. To each bar 36 is fixed a pin 41, which projects through a slot 42 in the side of the main frame and engages a slot in a rock-arm 43, pivoted on the main frame.

44 is a connecting-rod passing from an arm 43 to a gear 45, loose on the shaft 13, said gear 45 being driven by the gear 54 upon the shaft 9. Mounted in arms 46 at each side of the main frame are star-wheels 47, the teeth whereof engage with worms 48, driven by gears 49, which mesh with the gears 15.

50 represents forked arms fulcrumed at 51, the outer members 52 of said arms being slotted and engaging with pins 53, fixed in the gears 49. The inner members 55 of the arms 50 are provided with plates 56.

57 represents placks provided at their centers with longitudinal cross-pieces 58, having their projecting ends beveled, as at 59, so as to engage with the star-wheels 47.

60 represents vertical guides forming a hopper, wherein the placks 57 are stacked.

61 represents semicircular guides fixed to each side of the main frame at the delivery end thereof.

62 is a gear-wheel upon the shaft 63 at each side of the main frame, said gears meshing with intermediate gears 64, which are driven by the gears 15. The inner ends of the shafts 63 bear cranks 65, from which rods 66 pass to vertical slides 67, provided at their upper extremities with cross-pieces 68. Pivoted at 69 are bars 70, each having at the upper end a finger 71 and at 72 a horizontal arm 73, carrying at its free end a friction-wheel 74, arranged to come in contact with a rib 75 upon the face of the gear 12, which extends partially around such face.

76 is a spring for drawing the bar 70 toward the wheel 12 when not held away by the rib 75.

77 is a carrier-belt passing around a roller 78 between the vertically-movable slides 67.

The operation of my improved coating-machine is as follows: Coating material of the proper consistency being within the tank 4, centers to be coated are supplied to the cavities in the baskets at the left of the machine and the driving mechanism is started. The pan 25 is automatically pushed downward within the coating material, as indicated by the dotted lines in Fig. 4, causing the material to flow to both sides, effectually stirring the same both in descending and ascending. The movement of the center carriers or baskets is made intermittent through the medium of the broken gears 14 and the gears 17, which drive the carrier-chains 21, bringing the baskets to rest when the pan 25 is in the position shown in Fig. 4, immersing the centers completely in the contents of the pan. When the baskets come to rest before the immersion of the centers, the levers 28 come in contact with the arms 33, depressing the holding device 32, preventing the movement of the centers from the cavities wherein they are located; but as the pan 25 begins its descent the holder is raised by the action of the springs 35. When the baskets reach the horizontally-reciprocatable bars 36, the teeth 37 thereon strike against the ears 23, giving the basket an upward-and-downward movement, in the first place insuring a thorough distribution of the coating material when the centers are immersed within the pan and then after the pan has receded and descends toward the bottom of the material-tank periodically shaking and jarring the baskets, removing all surplus coating material. When the baskets, with the coated goods, reach a point directly beneath the placks 57, the rotation of the worms 48 and star-wheels 47 releases the lowermost plack, which is carried downward by the arms 55 until it passes away from the plates 56 and rests upon the coated goods. The continued movement of the carrier-chains carries the basket, with the plack thereon, beneath the segments 61, said segments holding the plack in place until the plack and basket are reversed in position, as shown in Fig. 4. When this point is reached, the slides 67 have been carried upward until they are directly beneath the plack, and as it has now passed from the segments 61 it is held from dropping by the fingers 71 upon the bars 70. As the gear 12 continues to revolve the rib 75 thereon holds the bar 70 in the position shown in Fig. 3 until the wheel 76 passes from the rib to the face of the wheel, when the spring 76 retracts the fingers 71, permitting the plack and its load of coated goods to rest upon the carrier-belt 77 and be automatically borne from the machine.

It will thus be seen that the entire operation of the coater after the centers are placed within the baskets is automatic. The coating material is applied to the centers and the baskets are jarred or shaken at intervals, and by vertically adjusting the supporting-wheels beneath the rack-bars such jarring may be nicely regulated, making it very gentle or violent, in accordance with the requirements of temperature, atmosphere, or material. After jarring, placks are automatically placed over the goods, the placks and baskets reversed in position, the placks deposited upon the belt and removed from the machine, the amount of goods coated being practically limited only by the speed with which the baskets are filled.

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

1. In a coating-machine, an endless series of center carriers or baskets; means for moving the carriers over a coating-material tank;

means for applying coating material to the contents of the carriers, a series of placks and means for automatically removing the coated goods from the carriers and depositing the same upon the placks.

2. In a coating-machine, the combination with the coating-material tank, of a vertically-reciprocatable pan adapted and arranged to periodically raise coating material from the tank, and means for reciprocating the same.

3. In a coating-machine, an endless series of center carriers or baskets; means for moving the carriers over a coating-material tank; a vertically-reciprocatable pan for applying coating material to the contents of the carrier, and means for jarring or shaking the carriers at intervals.

4. In a coating-machine, an endless series of center carriers or baskets; a coating-material tank; means for passing the center carriers over the coating-tank and applying a coating to the contents of the carriers by means of a vertically-reciprocatable pan, and means for automatically removing excess of coating material from the contents of the carriers, substantially as shown and described.

5. In a coating-machine, an endless series of center carriers or baskets; means for moving the carriers over a coating-material tank; means for applying a coating to the contents of the carriers; means for jarring the carriers and their contents, and means for removing the coated goods, substantially as shown and described.

6. The combination with a series of center carriers or baskets and means for moving the same, of the horizontal, vertically-adjustable, reciprocatable rack-bars, and means for reciprocating said bars.

Signed by me at Springfield this 17th day of April, 1901.

GABRIEL CARLSON.

Witnesses:
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AGNES HIGGINS.