

No. 640,249.

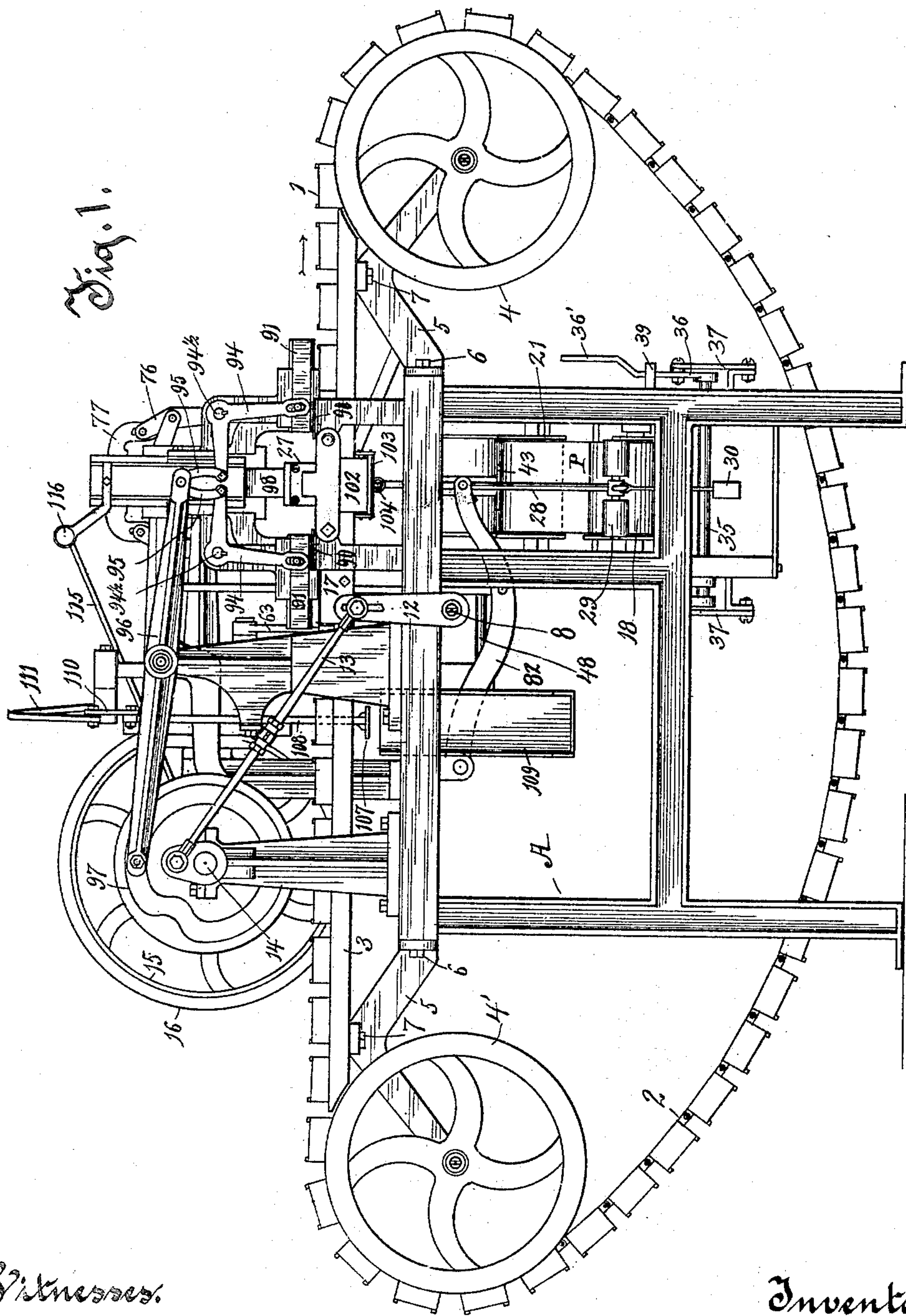
Patented Jan. 2, 1900.

W. H. WUSSOW.
BOX MACHINE.

(Application filed Dec. 23, 1898.)

(No Model.)

7 Sheets—Sheet 1.



Witnesses.

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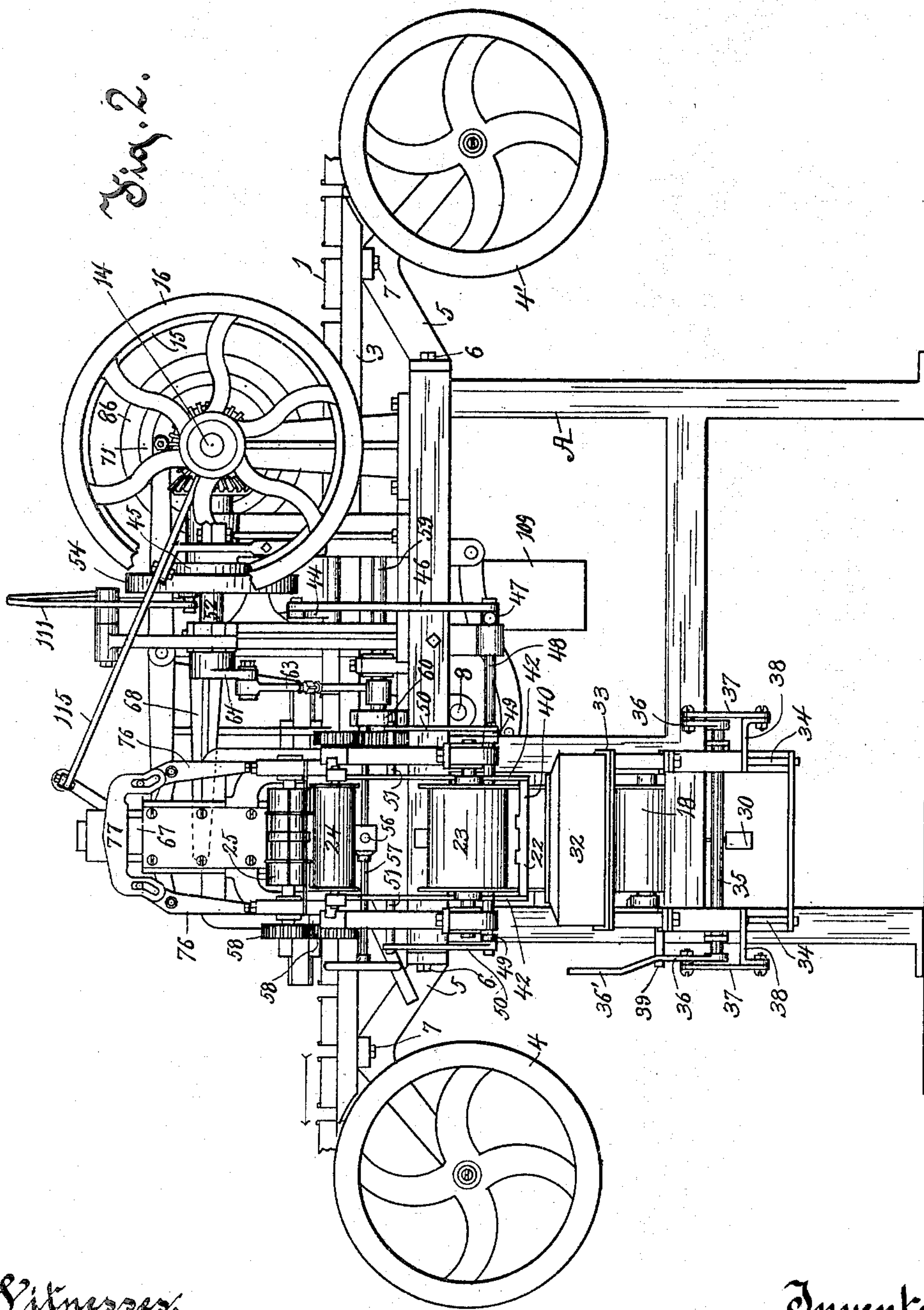
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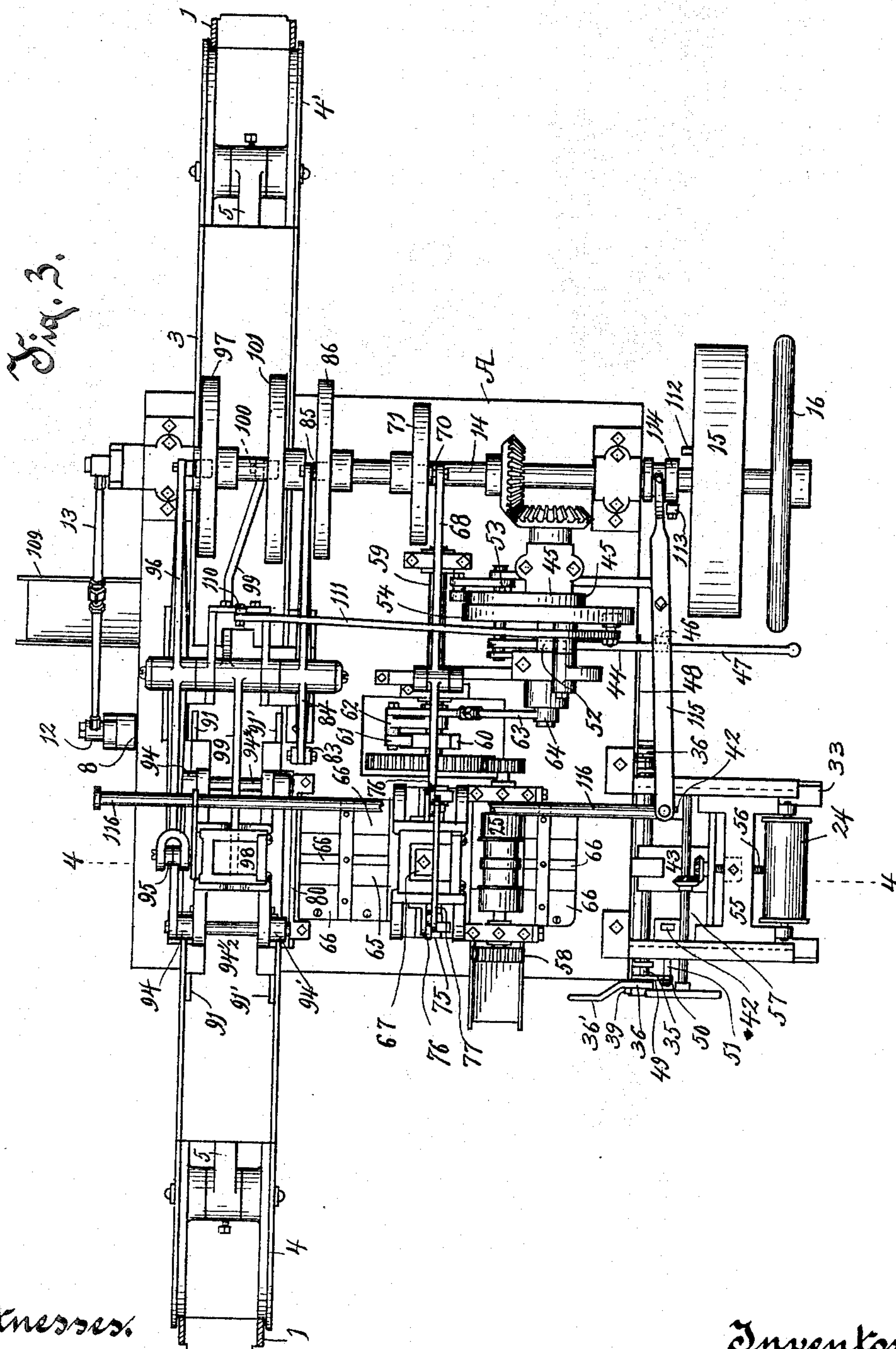
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Fig. 4.

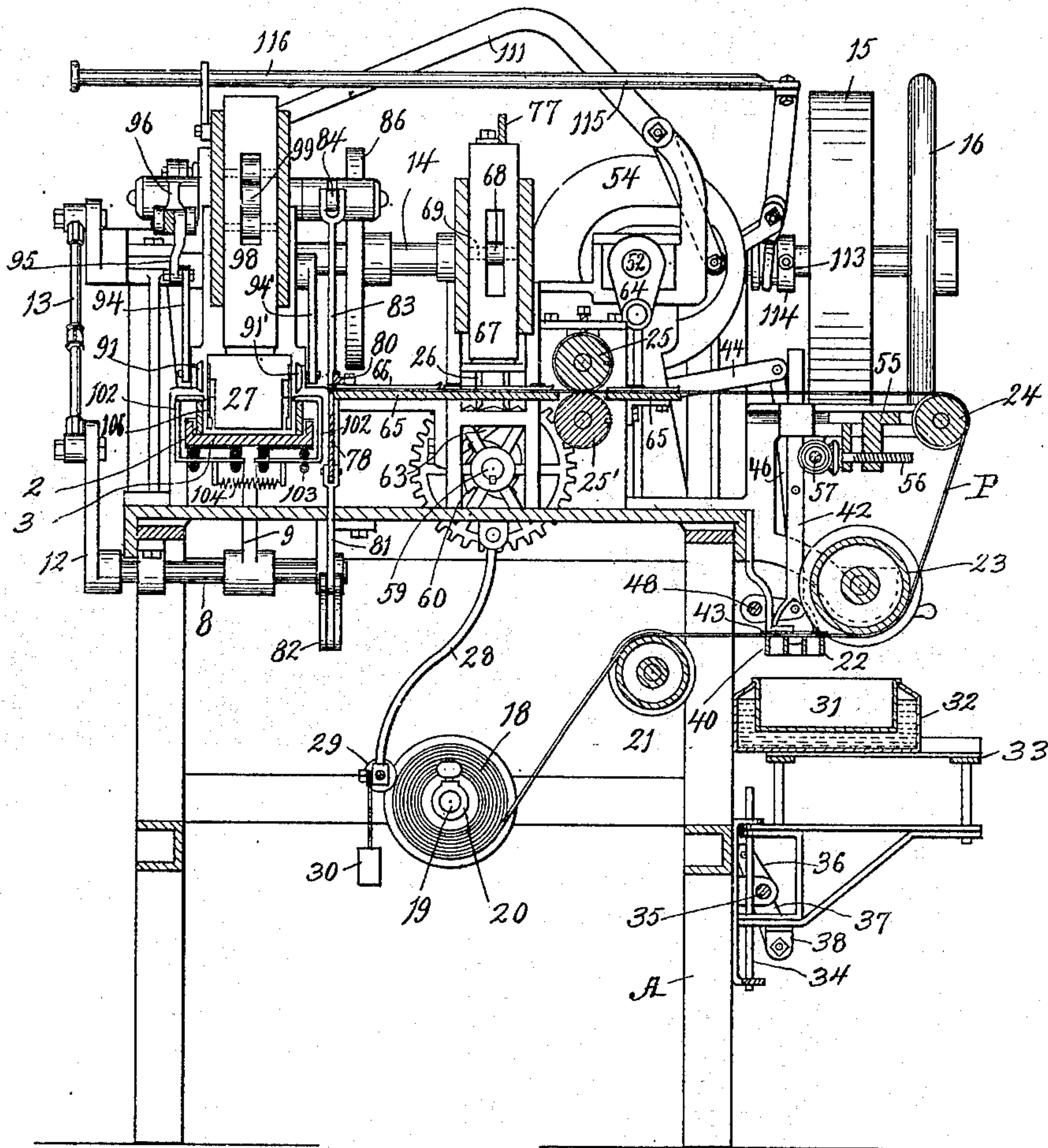


Fig. 5.

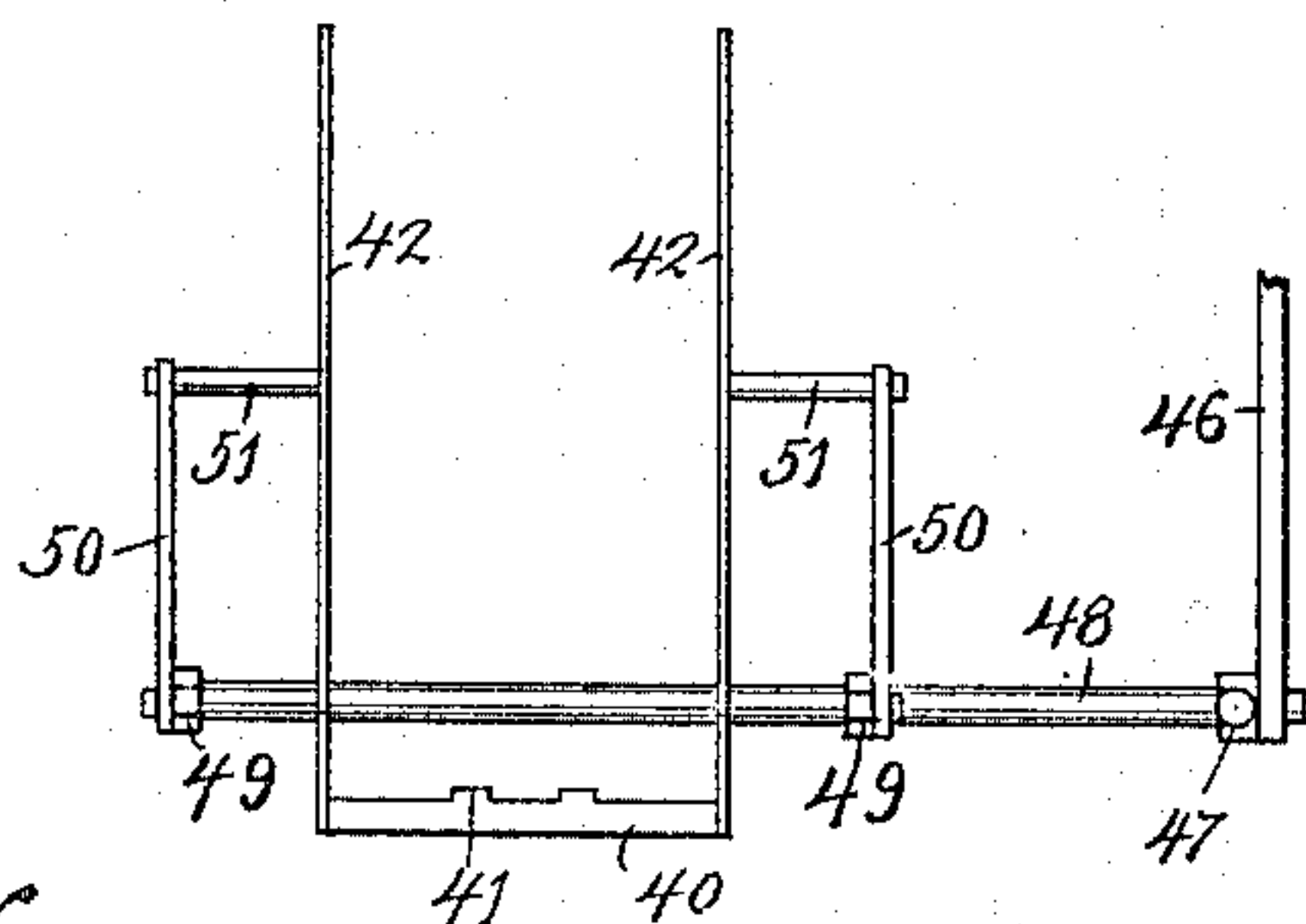
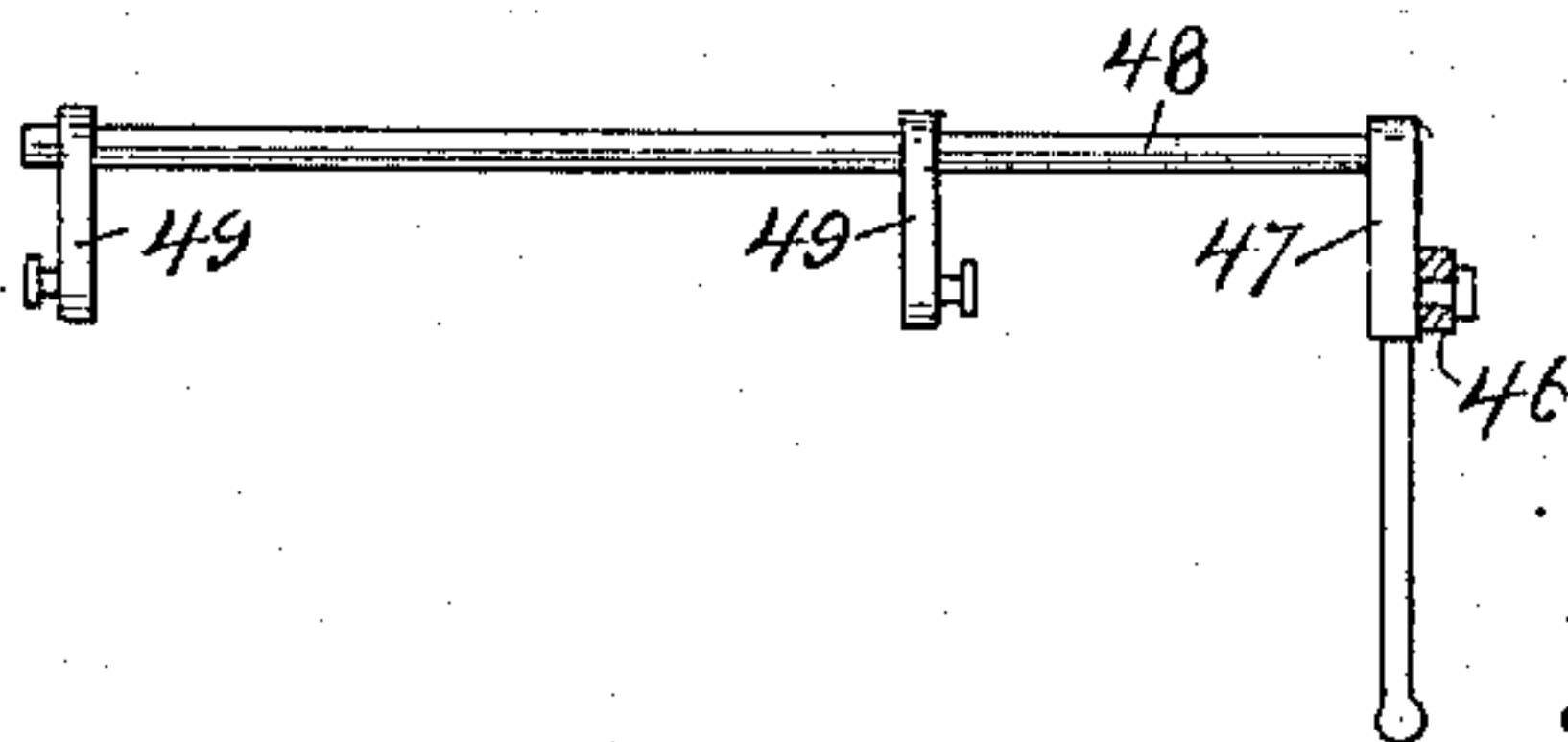


Fig. 6.



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Fig. 7.

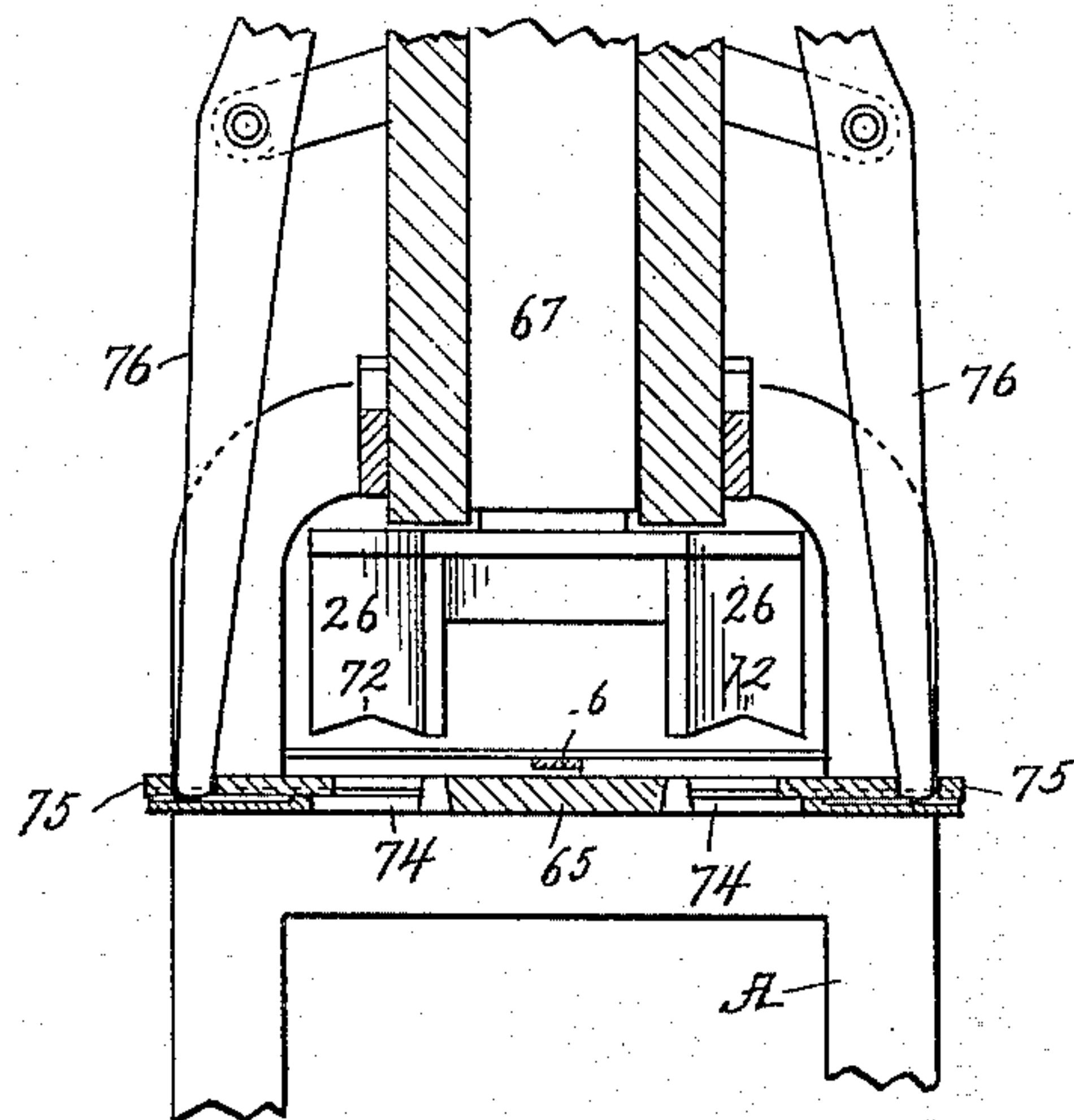


Fig. 8.

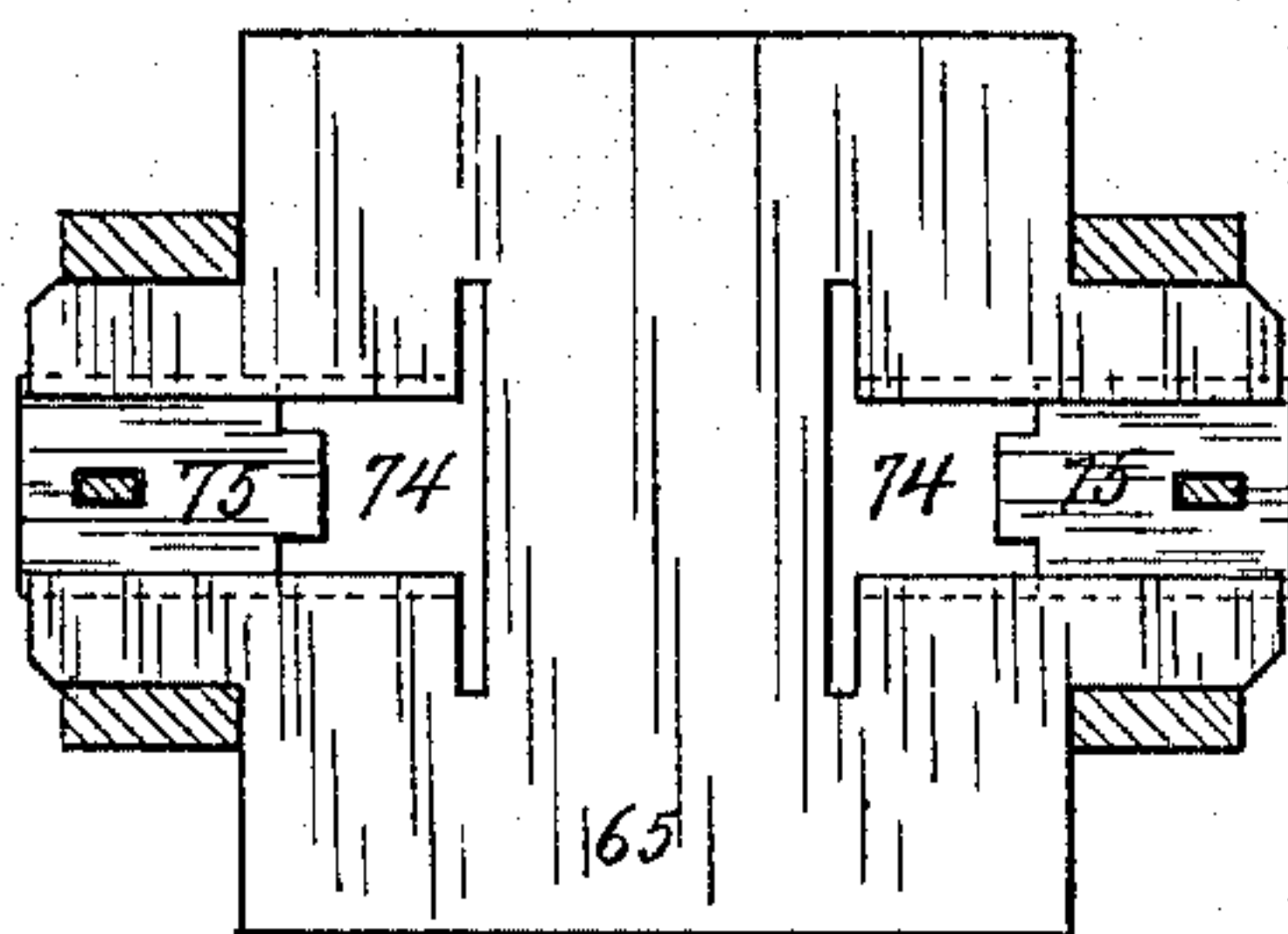


Fig. 9.

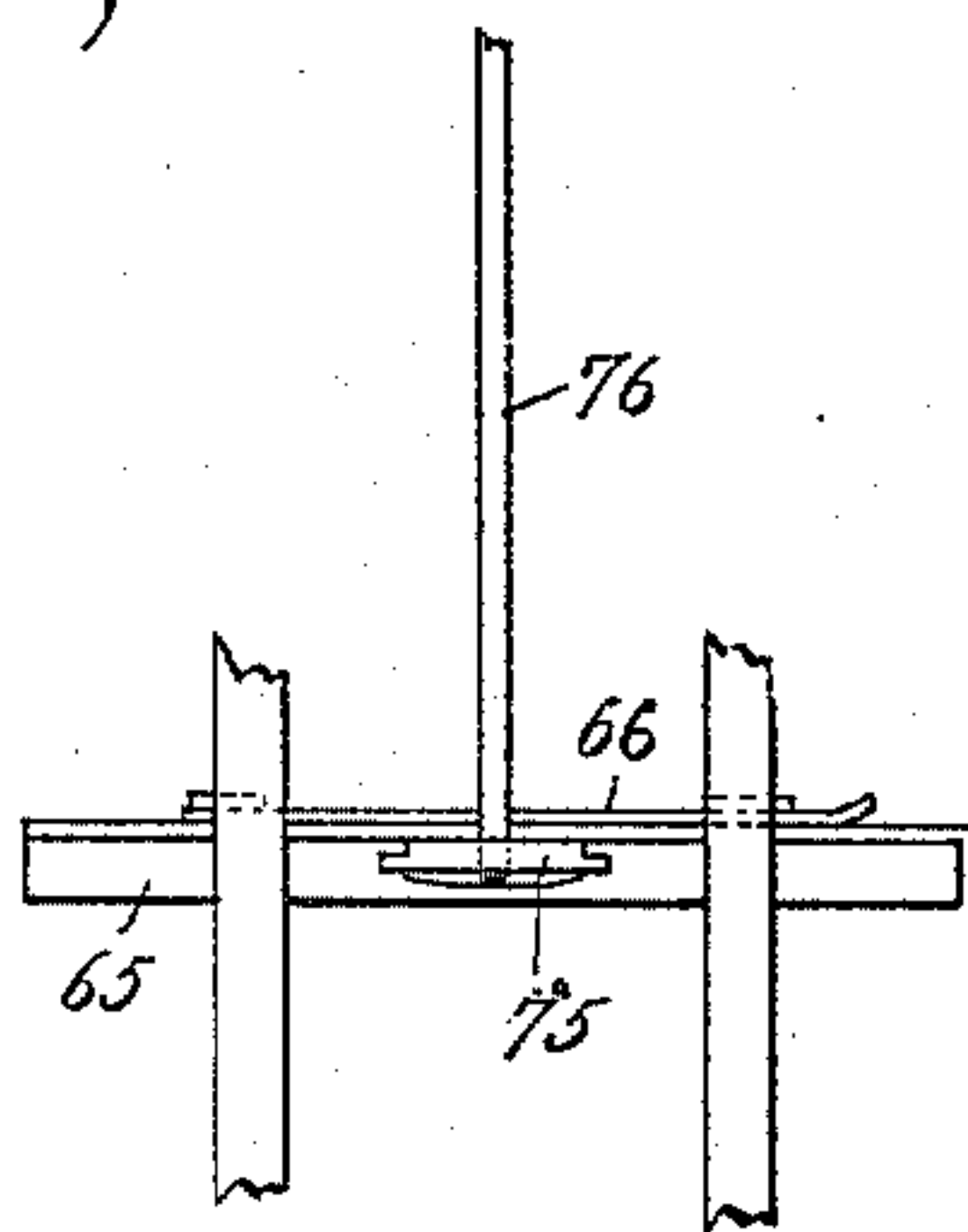


Fig. 11.

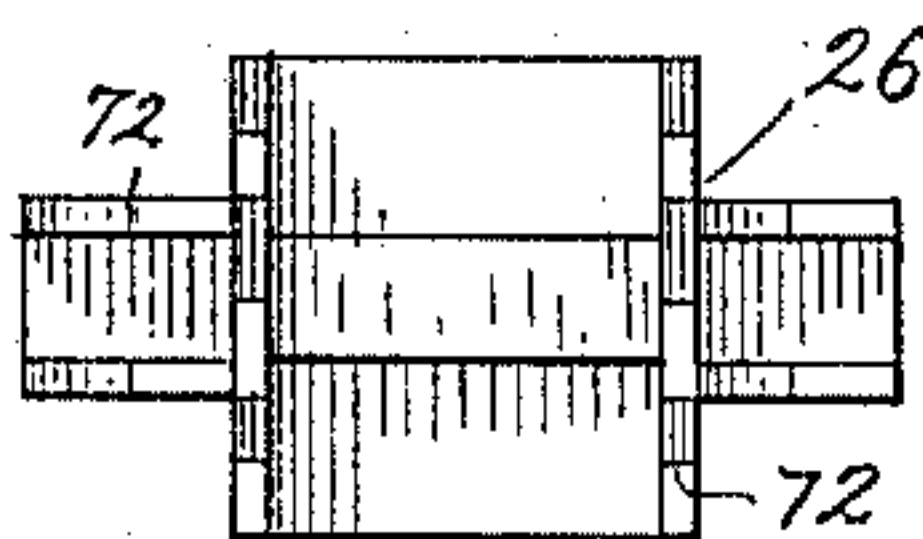


Fig. 10.

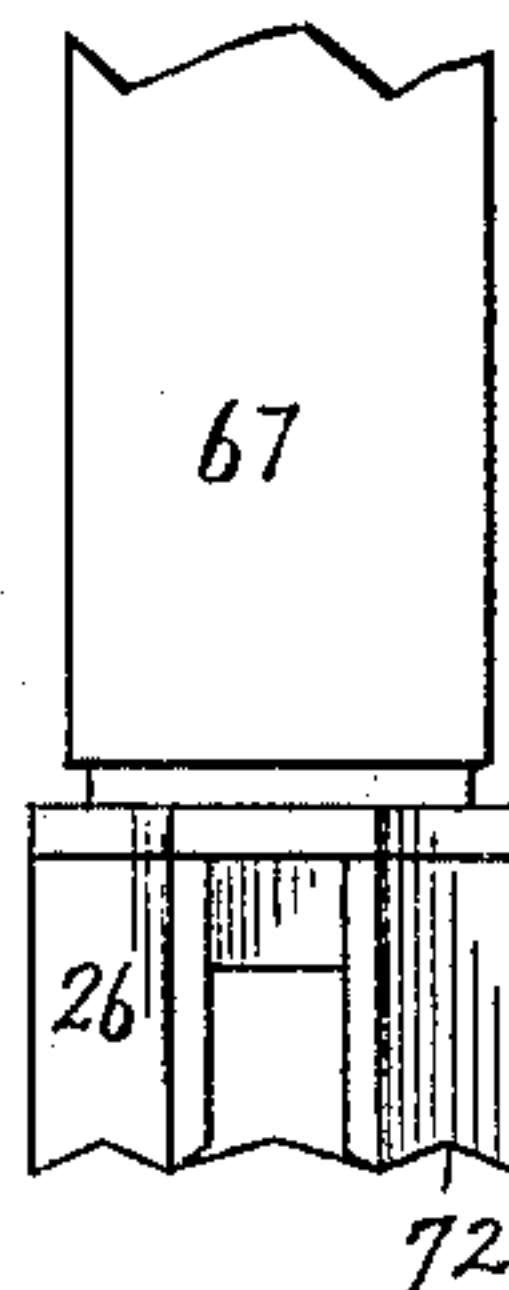
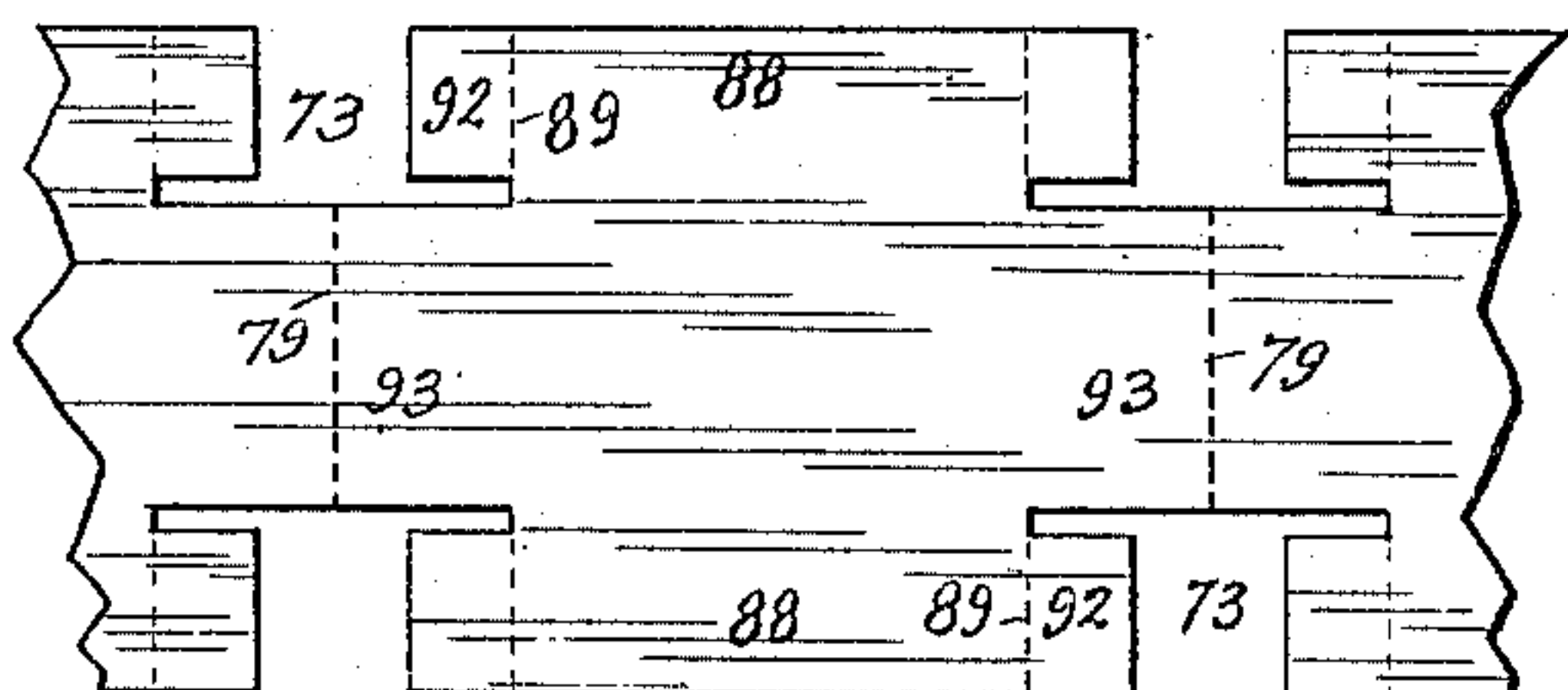


Fig. 12.



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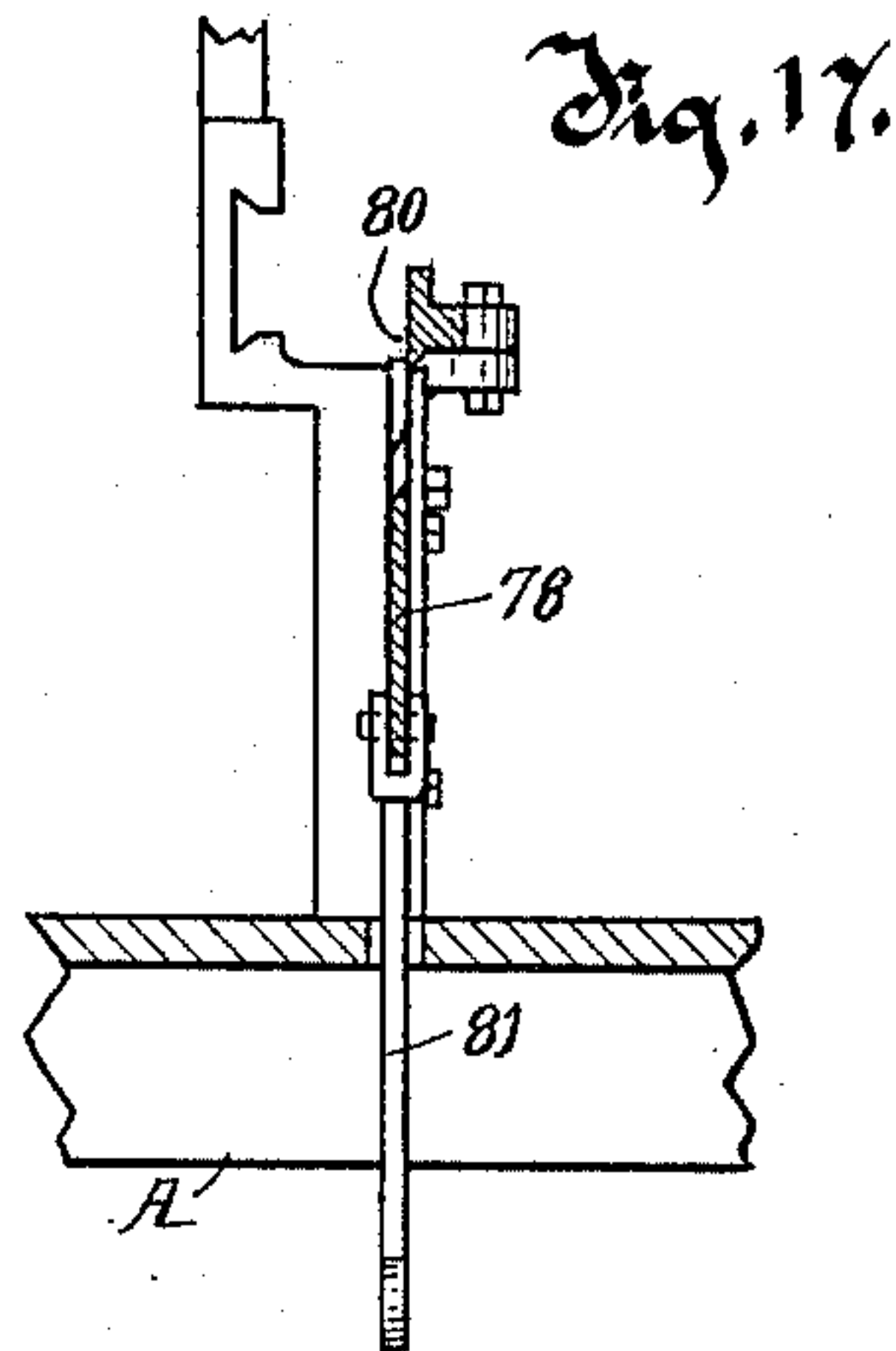
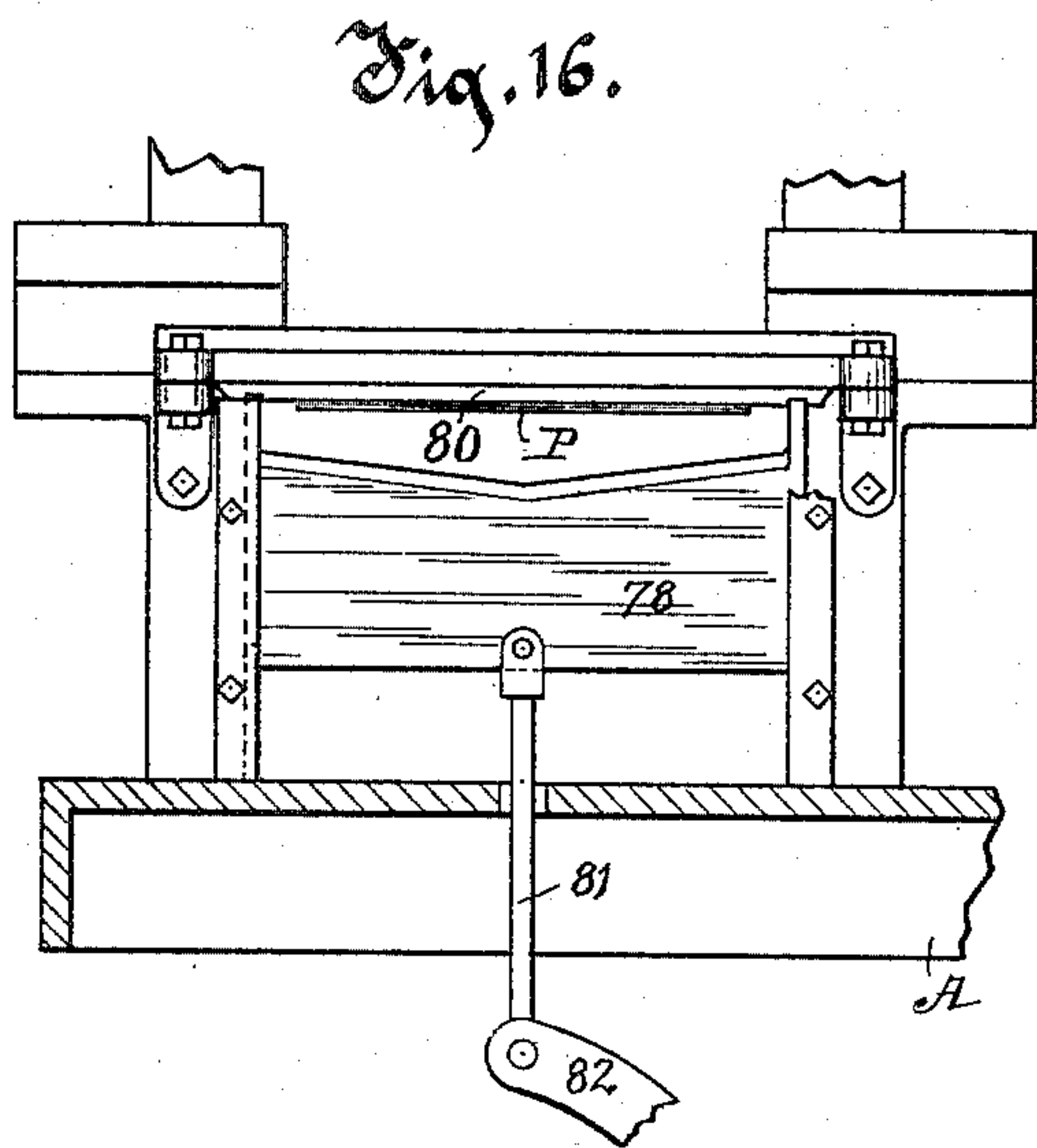
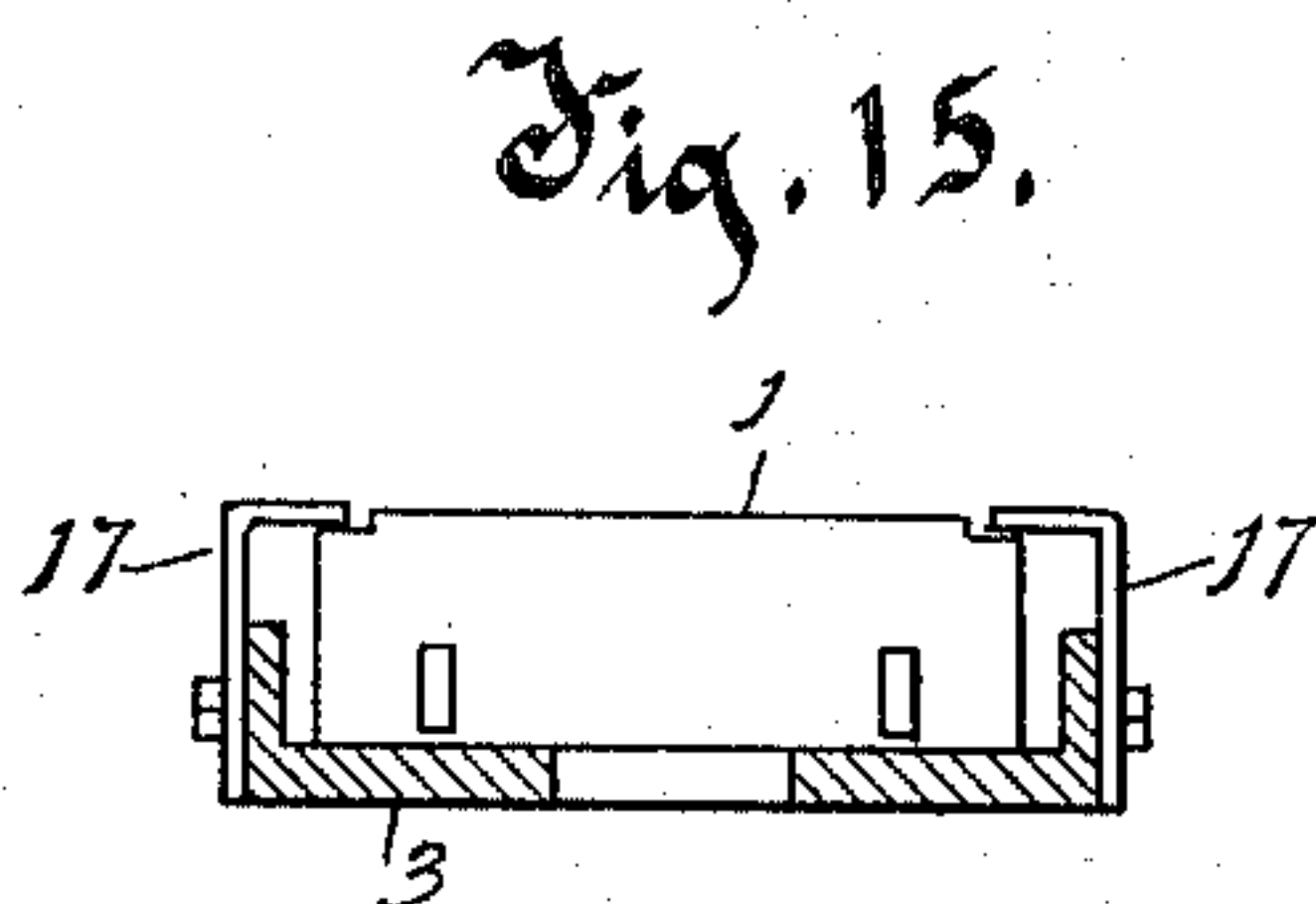
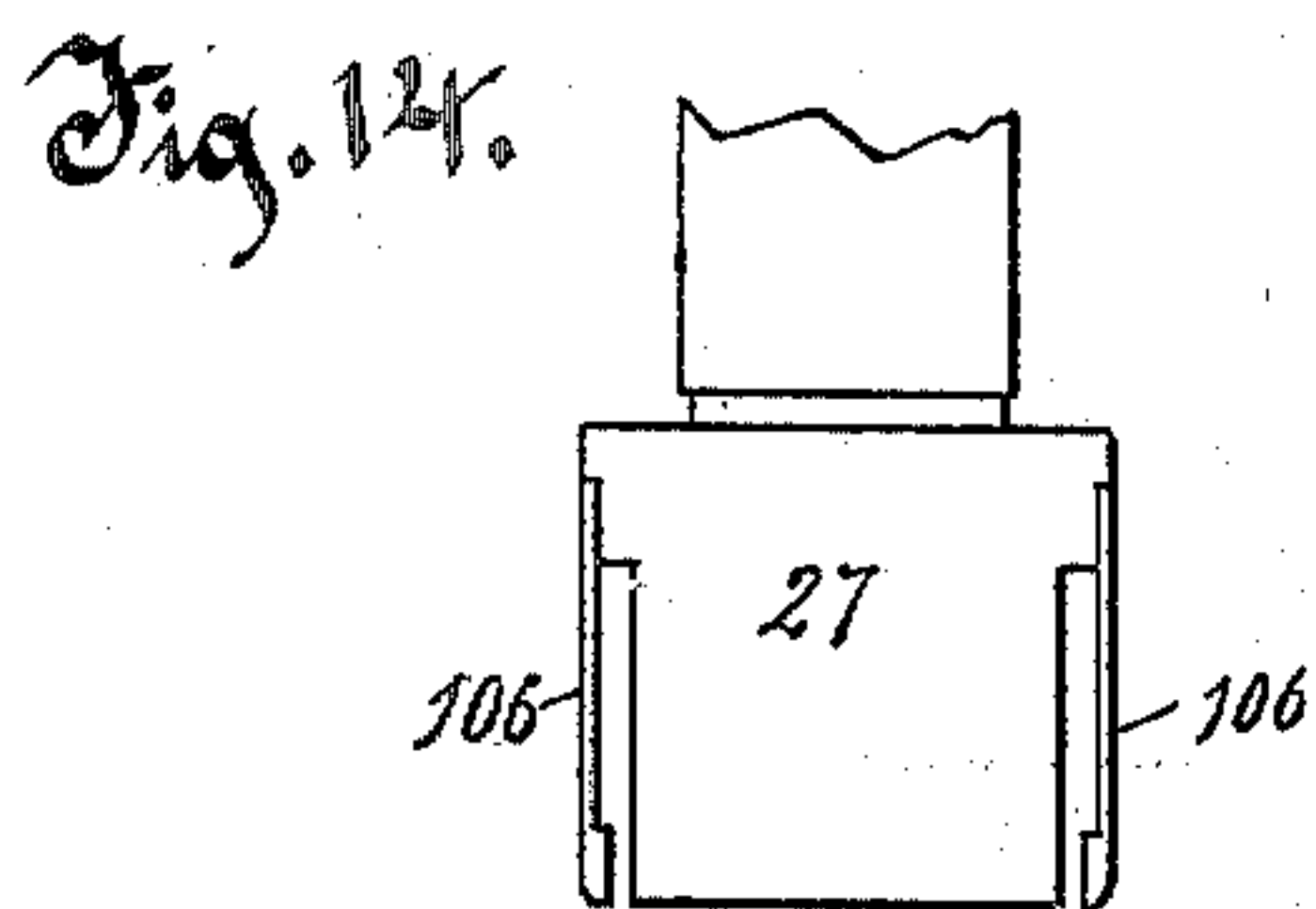
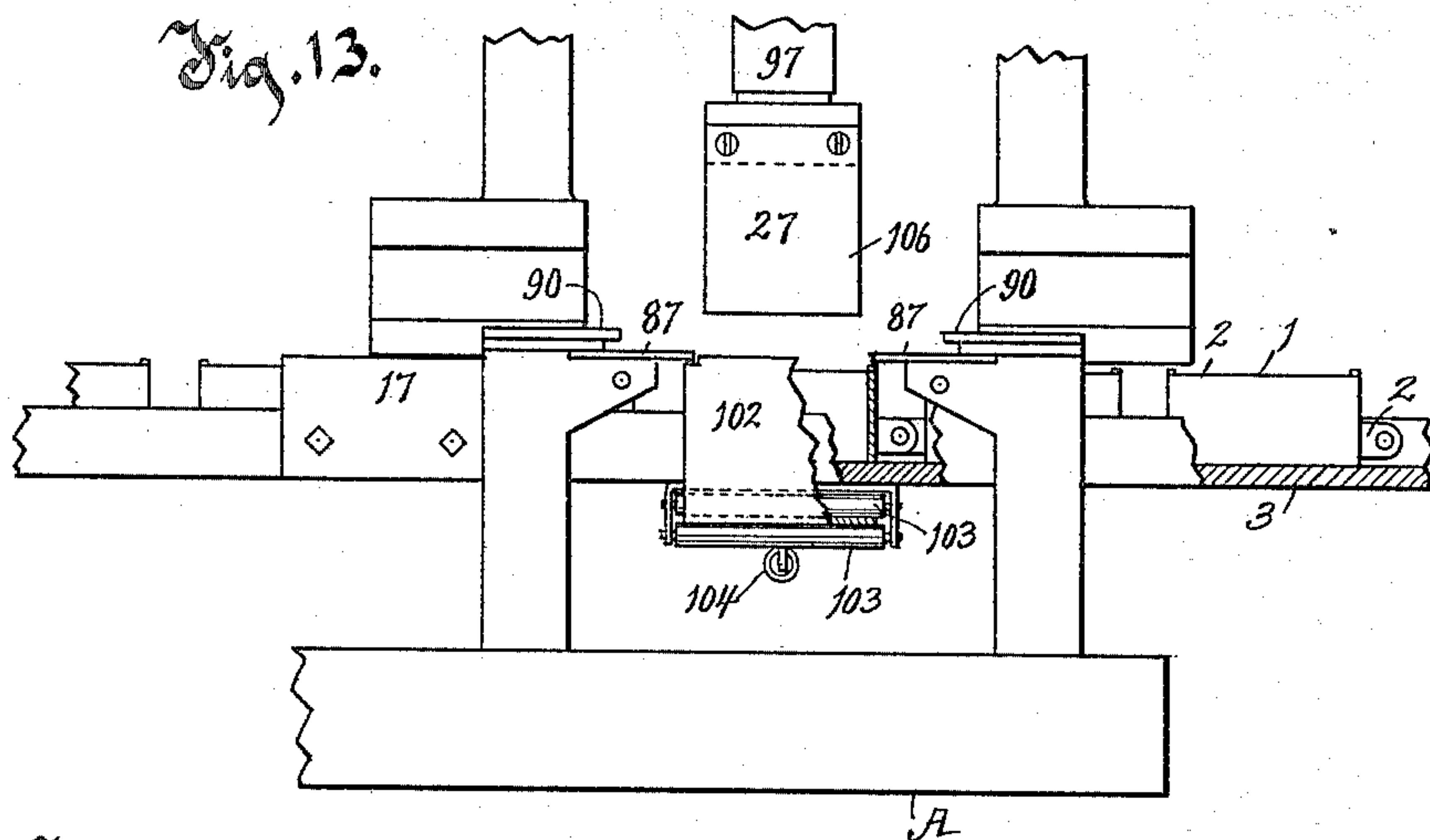
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Fig. 18.

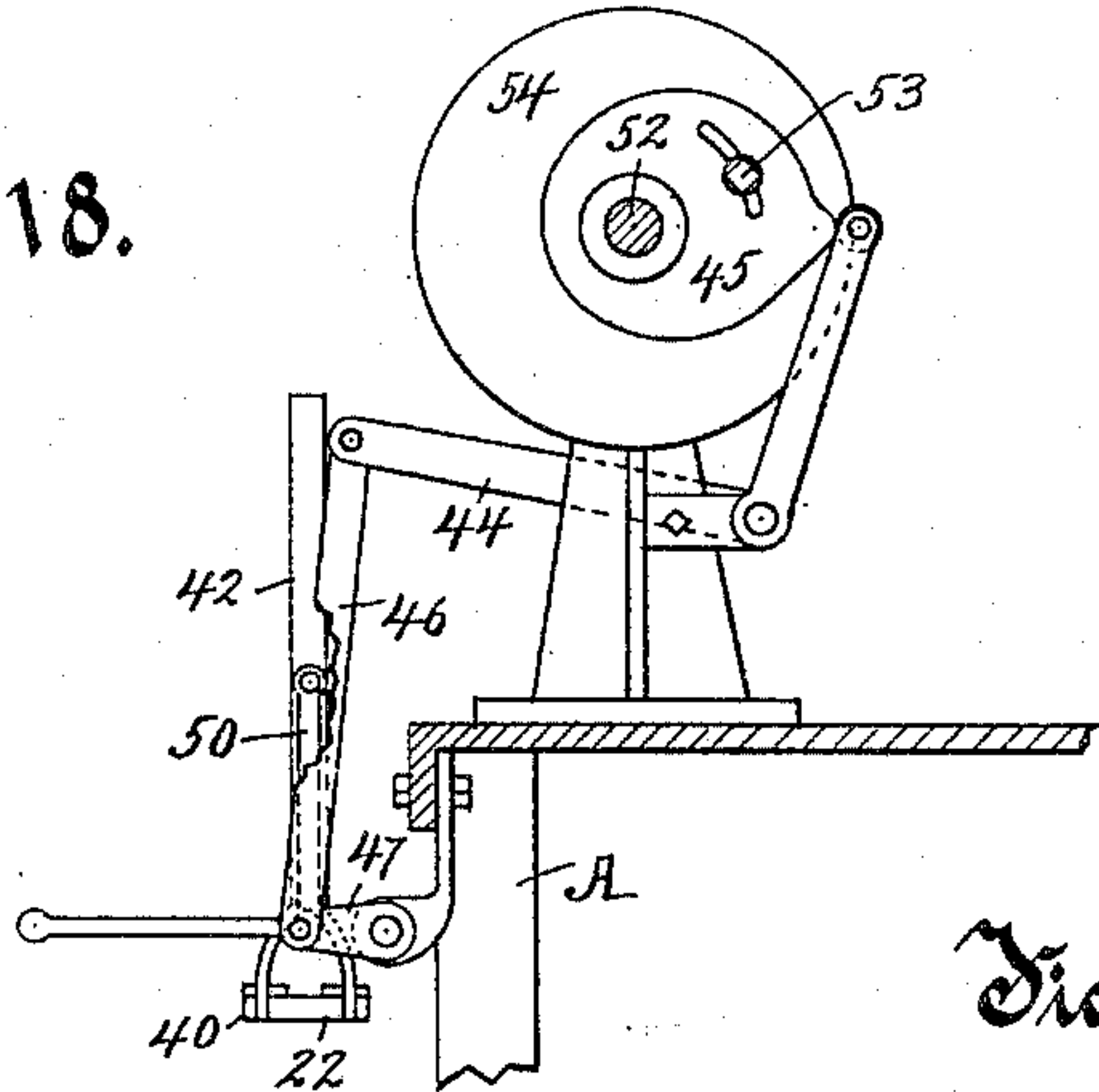


Fig. 19.

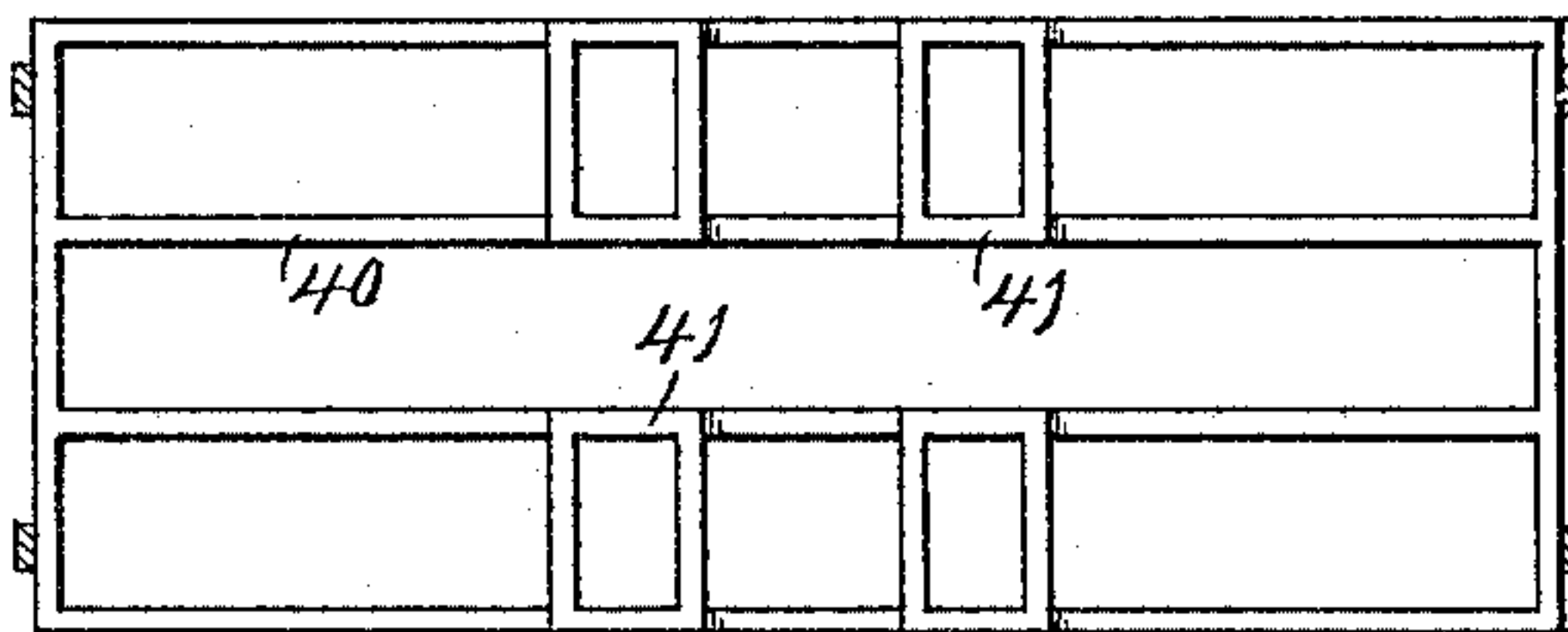


Fig. 20.

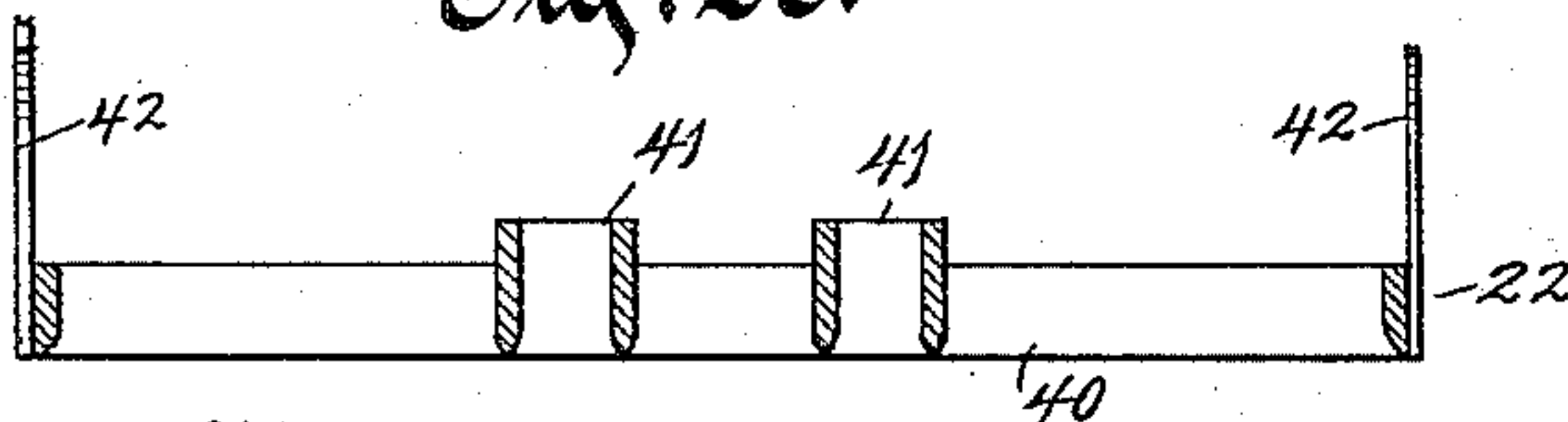


Fig. 21.

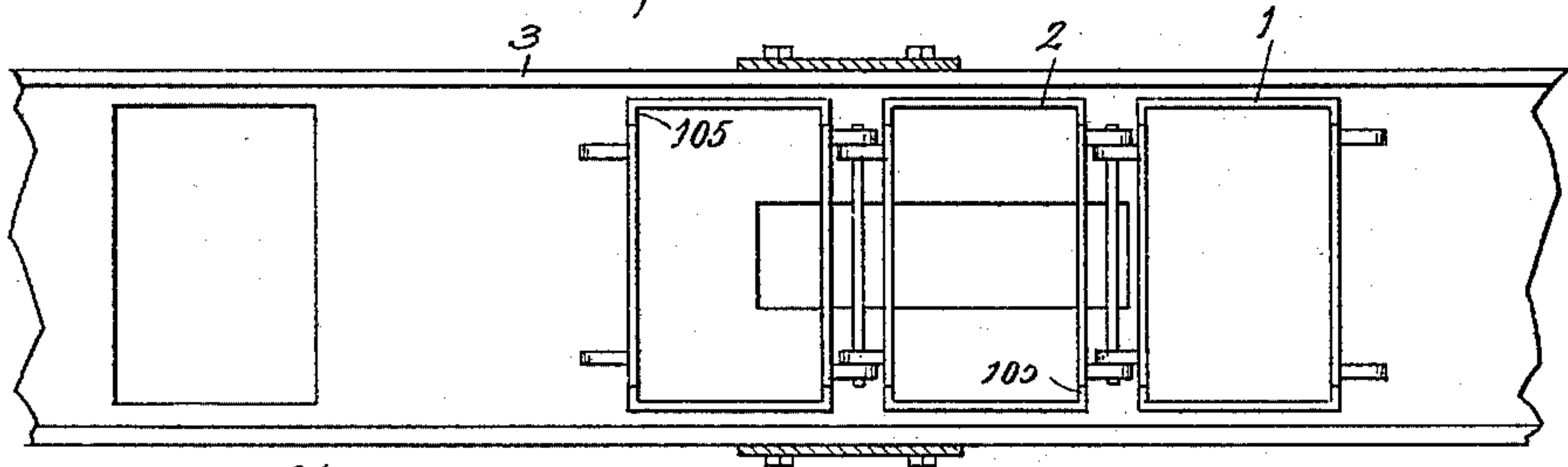
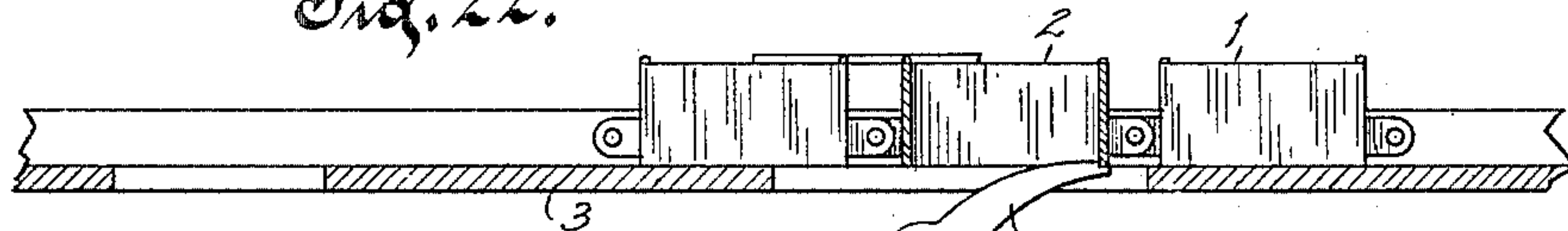
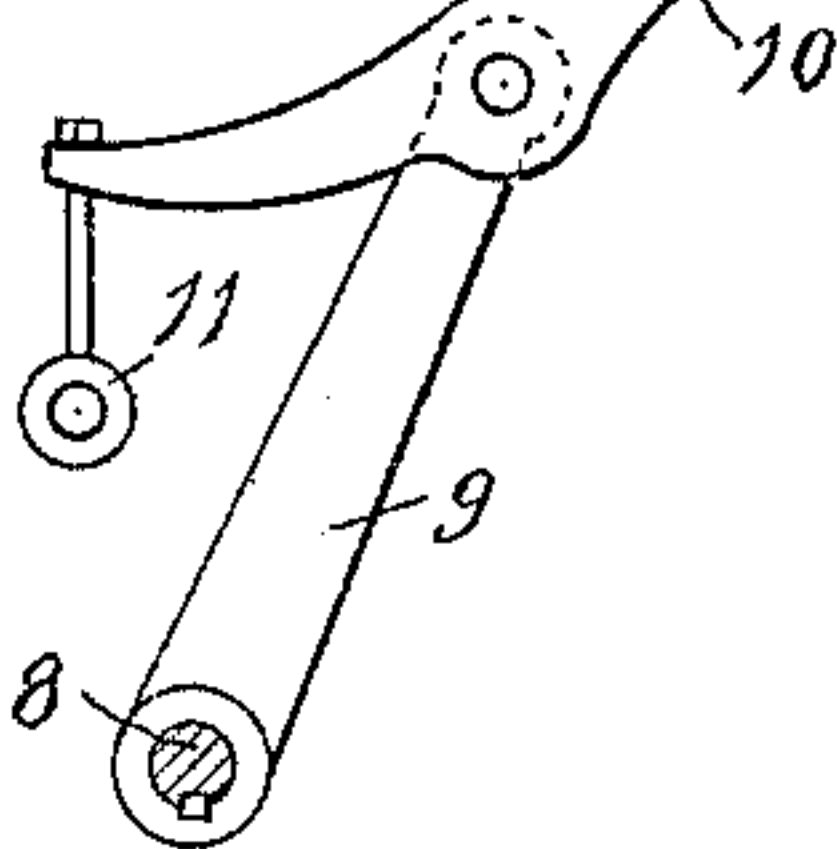


Fig. 22.



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UNITED STATES PATENT OFFICE.

WILLIAM H. WUSSOW, OF OSHKOSH, WISCONSIN, ASSIGNOR OF ONE-HALF TO
HERMAN F. WUSSOW AND CHARLES ALBERT WUSSOW, OF SAME PLACE.

BOX-MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,249, dated January 2, 1900.

Application filed December 23, 1898. Serial No. 700,131. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WUSSOW, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented a new and useful Improvement in Box-Machines, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The object of my invention is to provide improved means in a machine for manufacturing paper boxes for accomplishing several of the many results obtained in machines of this general character.

The invention consists of the improved mechanism, its parts and combinations of parts, as herein described and claimed, or their equivalents.

In the drawings, Figure 1 is an elevation of the improved machine at one side. Fig. 2 is an elevation of the machine at the side opposite to that shown in Fig. 1, parts being broken away for convenience of illustration. Fig. 3 is a top plan view of the improved machine. Fig. 4 is a vertical section of the machine on line 4-4 of Fig. 3. Figs. 5 and 6 show details of the devices and mechanism for applying glue to the paper. Fig. 7 is a detail of the blank-cutter and related bed-plate construction and operating mechanism, some parts being in section. Fig. 8 is a plan of the bed-plate below the blank-cutter knives, and some related parts appearing in Fig. 7. Fig. 9 is a side elevation of some parts exhibited in Fig. 7. Fig. 10 is a side elevation of a blank-cutter knife shown in Fig. 7. Fig. 11 is an under side view of the blank-cutter knives of Fig. 7. Fig. 12 is a fragment of the strip of paper, showing the form of the blank cut therein preparatory to cutting the paper into sections and forming it into boxes. Fig. 13 shows features of the construction in and relating to the box-former. The view is at a right angle to the section of this machine at the left in Fig. 4. Fig. 14 is a detail of the box-former plunger at a right angle to the view in Fig. 13. Fig. 15 is a detail, partly in section, of a chain-retaining device, shown also in Fig. 13. Fig. 16 is a detail of the knife for cutting the paper into sections and related devices. Fig. 17 is a section through the construction shown in Fig. 16, at a right angle thereto. Fig. 18

shows mechanism for operating the glue-applying device. Fig. 19 is a top plan of the device for applying glue to the paper. Fig. 20 is a longitudinal section of the device shown in Fig. 19. Fig. 21 is a plan of a fragment of the endless chain of box-forming molds. Fig. 22 is a detail of the means for moving the chain of molds forward step by step.

In the drawings, A is a frame of suitable size and construction for supporting the operating mechanism of the improved box-machine thereon. A large number of rectangular box-like molds 1, having no bottom or top, are hinged together, forming an endless chain 2. A bed-plate 3, fixed on the frame and provided with upwardly-projecting guards along its edges, supports the endless chain thereon and forms a runway for its travel. At the respective extremities of the bed-plate the endless chain runs also on the idle pulleys 4 and 4'. There are two pulleys at each end of the machine, the two pulleys of each set being mounted revolvably on an axle secured adjustably in the head of an angular bracket 5, secured to the frame by bolts 6 and to the bed-plate at its angle by bolts 7. These brackets, one at each end of the machine, are secured thereto detachably by the bolts 6 and 7 and, being located below and centrally of the bed-plate, carry the pulleys 4 and 4' thereon, the pulleys of each set being severally located on opposite sides of the bracket. The endless chain is caused to travel step by step intermittently by means of a rock-shaft 8, Figs. 1 and 22, provided with a crank-arm 9 and a pawl 10, pivoted thereon, which pawl is adapted to engage the lower edge of the wall of the box-like structure forming the links of the chain 2. The pawl 8 is uptilted, so as to engage the endless chain in one direction by means of a counterbalancing-weight 11 on its rear arm. The extent of the movement of the pawl 10 advances the chain a distance equal to the length of one link. The rock-shaft 8 is provided with a crank-arm 12, connected by a rod 13 to a wrist-pin on a crank-arm on the driving-shaft 14. The driving-shaft 14 is provided with a band-pulley 15, through which motion is communicated to the shaft. The shaft 14 is also provided with a crank hand-wheel 16. Retaining-plates 17, Figs. 1, 13, and

15, secured to the flanges of the bed-plate 3, turn inwardly at their upper extremities and extend over portions of the walls of the box-like links 1 of the endless chain directly above the point at which the chain is engaged by the pawl 10 and prevent the chain from being lifted away from the bed-plate by the pawl. Portions of the walls of the box-like links are cut away to receive in the recesses or depressions formed thereby the overturned ends of these retaining-plates, so that the upper surfaces of these retaining-plates and the upper edges of the remaining portions of the walls of the links are substantially flush with each other.

The paper from which boxes are made by this machine is provided therefor in a roll 18, which is placed on a fixed arbor 19 and is held thereon against a disk at its other end by a collar 20, provided with a set-screw, securing the collar releasably to the arbor. From this roll the strip of paper is carried to and runs over an idle roller 21, Fig. 4, past the glue-applying device 22, thence on and about the idle roller 23, thence about the idle roller 24, and thence in a horizontal direction past the feed-rolls 25 25', thence past the blank-cutting knives 26, and thence to the box-forming devices, including the plunger 27.

An arm 28, hinged at its upper extremity to the frame and depending therefrom, carries idle rollers 29 29 thereon at its lower free extremity, which rollers bearing against the surface of the roll of paper 18 prevent its unduly unwinding from the arbor 19, thereby securing the proper tension of the paper. A weight 30 may be attached releasably to the lower extremity of this arm 28, which is bent laterally from the plane of its pivotal point, thereby causing the rollers 29 to bear more heavily against the paper, thus increasing the resistance to unwinding from the arbor and correspondingly the tension of the paper.

A tank 31 for holding liquid glue is set so as to be lifted therefrom in a water-bath heater 32, which in turn sets on a frame 33. The frame 33, Figs. 2 and 4, is held in place adjustable vertically by rods 34, fixed on the frame, which rods pierce loosely parts of the frame and serve as ways on which the frame can be raised or lowered. A rock-shaft 35, mounted on the frame, is provided with crank-arms 36, connected at their free extremities by links 37 to ears 38, fixed on the frame 33. One of the crank-arms 36, being prolonged radially, provides a handle 36', by which the rock-shaft 35 can be operated to raise or lower the frame 33 and the glue-tank thereon. The object of this vertical movement of the frame 33 is to provide for raising the glue-tank up to or depressing it below the glue-block 22, when it is at the lowest position to which it is adapted to be depressed, away from the strip of paper. A stop 39, fixed on the frame, limits the movement of the handle 36' in one direction.

For applying glue to the strip of paper in

the desired localities for securing the overlapping portions of the paper to the parts abutting against them at the ends of the box a glue-dabber is employed, consisting of an open frame 40, Figs. 19 and 20, having four small rectangular faces 41, that project above the surface of the frame, and this dabber-frame 40 is supported in horizontal position on the lower extremities of upwardly-extending rods or slides 42, mounted and adapted to reciprocate vertically in the frame. The dabber-frame is suspended below the strip of paper immediately above and so as to descend into the glue-tank 31, where by its submersion therein the faces 41 are loaded with liquid glue that by the lifting of the dabber is carried against the paper and is caused to adhere thereto in sufficient quantity for the purpose desired. The lower edges of the frame 40 are beveled to an edge, whereby they are adapted to discharge the excess of glue by its dripping therefrom. A resisting-plate 43, secured to a bracket fixed on the frame, is located immediately above the path of the paper and opposite the dabber. The dabber is lifted from the glue-tank and applied to the paper by means of a bell-crank 44, Figs. 18, 2, 4, 5, and 6, pivoted on the frame at its angle and riding at one extremity on the eccentric 45 and at the other extremity connected by a rod 46 to the arm 47 on a rock-shaft 48, provided with radial arms 49, that are connected by rods 50 to studs 51 on the slides 42. The arm 47 is projected radially in the form of a handle by means of which the attendant may raise and lower the dabber when the machine is not in operation. The eccentric 45 is loose on the shaft 52 and is secured thereto adjustably by the bolt 53, passing through a segmental slot in the eccentric and turning into the wheel 54 rigid on the shaft.

The idle roller 24, on which the paper P is carried and about which it turns, is mounted on a frame 55, that is adjustable laterally toward and from the paper-feed rollers 25 25'. The frame 55 is slidable in the main frame and is adjustable therein by means of the screw 56, rotatable in a bracket on the main frame and turning by its thread in a bracket on the movable frame 55. A short shaft 57, mounted in the main frame and geared to the screw 56, is provided with a hand-wheel by which it can be rotated, whereby the screw 56 is turned and the frame 55 adjusted.

The feed-rollers 25 25' are provided with longitudinal and peripheral ribs adapted to crease the paper as it passes between the rolls along such lines as the paper is there- after to be folded on in the forming of the box. The rollers 25 25' are geared to each other by the wheels 58, and the roller 25' is geared to the shaft 59. The shaft 59 is rotated step by step intermittingly by means of the ratchet-wheel 60, fixed thereon, which ratchet-wheel is engaged in one direction by the pawl 61, mounted on an arm 62, loose on the shaft 59, the arm 62 being connected by

a rod 63 to a crank-arm 64, fixed on the extremity of shaft 52. In front and at the rear of the feed-rollers 25 25' the paper is supported and travels on a table 65. Guards 66, Fig. 3, secured to the table near its edges, extend over the paper and hold it movably thereto.

For cutting the paper into proper blanks or form for box-sections the vertically-reciprocating cutter-knives 26 are employed. There are two sets of these knives carried on a single stem or slide 67, which is mounted reciprocable vertically in the frame, Figs. 3, 4, and 7. One extremity of the walking-beam 68, pivoted medially on the frame, enters a slot therefor in the slide 67, straddling a pin 69, fixed in the stem, and the other extremity of the walking-beam is provided with a pin 70, having an antifriction-roller thereon that rides in an eccentric groove therefor in a disk 71, fixed on the driving-shaft 14. Each set of knives 26, Figs. 7, 10, and 11, is arranged in double T form, as clearly shown by the under view thereof in Fig. 11. Each of these knives has a notched edge 72, beveled inwardly to the center of the knife, and the knives of the two sets are adapted to cut the T-shaped recesses from the paper shown at 73 73, Fig. 12.

The table 65 is provided with apertures 74 74, Fig. 8, corresponding in form with the recesses 73, cut in the paper, the apertures in the table being adapted for receiving the knives 26 as they cut through the paper supported on the table. As the knives in cutting downwardly through the paper and taking out the pieces that are removed in forming the recesses 73 are liable to force down the edges of the paper, so that as the paper is advanced these edges may catch against the table, and thereby the paper be folded under or turned, I provide temporary covers or slides 75 75, that slide laterally in the table and are adapted to substantially close these apertures 74 in the table, except at the moment of the passage of the knives through it, at which moment the covers are withdrawn, thereby lifting the paper out of the recesses and preventing its engaging the table as it is moved forward. For automatically sliding these covers 75 in and out of the recesses 74 two fingers 76 76, Figs. 2, 3, and 7, pivoted medially on the frame, enter sockets therefor in the covers 75, and their upper extremities are provided with roller-pins that enter diverging recesses therefor in a yoke 77, fixed on the stem 67. By this construction the covers 75 are moved laterally away from the path of the knives in the apertures 74 immediately before the knives come down to the paper and are pushed back into the apertures, closing them up immediately on the withdrawal of the knives upwardly therefrom. The knives cut the paper out, forming the recesses 73 therein and discharge the piece downwardly through the apertures 74.

A knife 78, Figs. 4 and 16, located below

the table 65, is reciprocable vertically in ways therefor in the frame at the end of the table and is adapted to cut the paper into box-sections along the dotted lines 79, Fig. 12. The edge of this knife is in oblique lines, being adapted to cut shearingly against the sharp edge of the knife-bar 80, Figs. 16 and 17, secured to the frame above and transversely of the path of the paper. The stem 81 of the knife 78 is pivoted at its lower extremity to the free extremity of the lever-arm 82, Figs. 1 and 2, the other extremity of which arm is pivoted to the frame. A rod 83 connects the arm 82 medially to one arm of a walking-beam 84, Figs. 3 and 4, which walking-beam is pivoted medially on the frame, and the other arm of which is provided with a pin 85, having an antifriction-roller thereon that rides in an eccentric groove therefor in the disk 86, fixed on the driving-shaft 14.

In use the paper P is fed along on table 65 until it comes under plunger 27, Figs. 1, 3, 4, and 14. The blank then rests on plates 87, Fig. 13, flush with and substantially a continuation of the table 65, the side wings 81, Fig. 12, being under the guards 90. The plunger 27 then comes part way down, forcing the blank with it a little way into the link-mold, turning the side wings 88 up against the sides of the plunger. The plunger then rests a moment, while the slides or folders 91 move inwardly toward each other, folding the wings 92 along line 89 inwardly against the plunger. The plunger then completes its movement downwardly, forcing the blank farther into the mold, and, turning the end wings 93, which have the glue on them, upwardly, brings them against the edges of the retainers 102, whereby they are forced against and held briefly to the wings 92, to which thereby they are caused to adhere, thus completing the box. Thereupon the plunger is withdrawn upwardly, leaving the paper box in the link-mold 1.

The slides or uptilters 91 are provided with pins that enter slots therefor in the free extremities of arms of the bell-cranks 94, that are pivoted on the frame, and the other arms of which bell-cranks are each connected by a rod 95 to one extremity of a walking-beam 96, pivoted medially on the frame, the other arm of which is provided with a pin having an antifriction-roll that rides in a groove therefor in the disk eccentric 97, fixed on the driving-shaft 14. On the other side of the chain from the slides 91 there are complementary or duplicate slides 91', actuated by lever-arms 94', corresponding with the downwardly-projecting arms of the bell-cranks 94, which lever-arms 94' and the bell-cranks 94 are keyed onto the rock-shafts 94 $\frac{1}{2}$, which rock-shafts are the pivots of the bell-cranks and lever-arms in the frame. The two sets of slides 91 91' are adapted to act synchronously to up-tilt the ends of the side wings of the paper blank on the two sides of the strip.

The plunger 27 is provided with a stem 98,

that travels vertically in ways therefor on the frame, and one extremity of a walking-beam 99 enters a slot of the stem 98 between anti-friction-rollers mounted in the stem against which it bears. The walking-beam 99 is pivoted medially on the frame, and the other arm thereof bent downwardly somewhat is provided with a pin 100, having an anti-friction-roller thereon that rides in an eccentric groove therefor in the eccentric disk 101, fixed on the driving-shaft 14.

In shaping the paper boxes in the link-mold by forcing the paper into the mold by means of the plunger 27 it becomes necessary to withdraw the plunger from the box, leaving it in the mold, and for so retaining the box in the mold I provide the box-retainers 102 102, Figs. 1, 4, and 14, that consist of two reversely-bent or approximately U-shaped plates turned over on their sides and so disposed that the upper legs or members of the plates project inwardly toward each other over and just above the edges of the links 1, and the lower legs or members of the plates project inwardly toward each other below the path of the chain, the plates or retainers being held in position movably toward and from each other between pairs of rollers 103 103, mounted in brackets therefor on the under side of the bed-plate 3. These plates are held in position toward each other yieldingly by a spring 104. The upper members of these box-retainers project inwardly a little over and beyond the side walls of the molds 1, being so located that they are in the path of the recesses or notches 105, Figs. 21 and 22, cut in the mold-links along their upper side edges, the upper surfaces of these retainers being substantially flush with the remaining top surfaces of the link-molds. It may also be noted that the chain-retainers 17 also are so related to the links of the chain as to be in these same recesses 105. The plunger 27 at two sides is cut away from the bottom upwardly a distance, and the side walls of the plunger opposite this cut-away portion consist of the spring-plates 106, Fig. 14. As the plunger comes down on the paper and forces it past the retainers 102 into the mold below, these spring-plates 106, acting on the beveled edges of the retainers 102, force them laterally, carrying the paper, with the plunger, down into the mold, causing the glue to adhere to opposing faces. Thereupon the spring 104, which is very light, contracts with sufficient effort to draw the upper edges of the retainers 102 over the top edges of the paper box which is now in the mold, and as the plunger is withdrawn from the mold the box is prevented from escaping therewith by these box-retainers.

For discharging the boxes from the molds a pusher 107 is employed, the pusher being provided with a stem 108, that slides vertically in ways therefor in the frame. The pusher is located directly above the path of the chain 2, and the pusher is adapted to be reciprocated, passing through the molds sev-

erally and forcing the boxes therefrom downwardly into the chute 109. The stem 108 is connected at its upper extremity by a link 110 to a bent walking-beam 111, Figs. 1, 2, 3, and 4, that is pivoted medially on the frame, and the other extremity of which is provided with a stud-pin and anti-friction-roller that travels in an eccentric groove in the disk or wheel 54 on shaft 52.

The pulley 15 is loose on shaft 14 and is provided with a pin 112, Fig. 3, that is adapted to be engaged by a radially-projecting stud provided with an anti-friction-roller 113 on the collar 114, splined on shaft 14, whereby the shaft is compelled to rotate with the pulley 15 when the clutch is in engagement therewith. A shifting lever 115, pivoted medially on the frame, rides at one extremity in an annular groove therefor in the clutch 114 and at the other extremity is connected to a shifting rod 116, sliding in supports therefor on the frame and extending to the front of the machine for the convenience of the attendant.

What I claim as my invention is—

1. In a box-machine, the combination with a frame, of an endless chain of box-molds but hinged together at their adjacent edges and resting and movable on the frame, a rock-shaft provided with a crank-arm, a pawl pivoted medially on the crank-arm and provided with a gravity actuating-weight and adapted to engage severally the molds of the chain and move it forward step by step the length of the mold-link.

2. In a box-machine, the combination with a frame, of an endless flexible chain composed of a series of box-molds provided with recesses in their top edges in the direction of the length of the chain, a bed-plate on which the chain is supported and travels, retaining-plates 17 one at each side secured to the bed-plate and turning over the molds fitting loosely into said recesses and being flush with the remaining top surfaces of the molds, the retaining-plates being adapted to hold the chain at both sides movably to the bed-plate, and an intermittingly-acting pawl adapted to engage the mold-links of the chain severally below said retaining-plates and advance the chain step by step as the pawl is reciprocated.

3. In a box-machine, the combination with means for supporting a rolled strip of paper so that it can be unwound by rotation thereof, of a tension device comprising a hinged and swinging depending arm, rollers mounted on the free end thereof adapted to bear against the roll of paper at one side of the vertical plane of the pivot of the arm, and a weight on the roller end of the arm adapted by gravity to hold the rollers firmly against the paper-roll.

4. In a box-machine, a permanently-located plate 43 beneath which the box material is fed, a glue-tank-supporting device, comprising an auxiliary frame, ways on the main frame on which the auxiliary frame is mov-

able vertically toward and from the constant path of the material, a rock-shaft mounted on the main frame and provided with radial arms, links wristed on the radial arms and
5 connected to the auxiliary frame, and means for rocking the shaft whereby the auxiliary frame is raised or depressed on its ways.

5. In a box-machine, a movable glue-dabber comprising an open frame provided with
10 elevated upwardly-exposed faces in the same plane adapted to be supplied with liquid glue on those faces by submerging the dabber in a supply of liquid glue, and means for depressing the dabber into the glue and raising
15 it out of the glue and forcing it upwardly against the material.

6. In a box-machine, the combination with a frame and a plate fixed thereon above the path of the paper, of an open dabber-frame
20 having faces in the same plane elevated above the body of the frame, slides secured to the dabber-frame and movable vertically on the main frame, a rock-shaft provided with radial arms connected to the slides, an actuating
25 radial arm on the rock-shaft, a bell-crank pivoted on the frame, a rod connecting the bell-crank to the actuating-arm on the rock-shaft, and means for actuating the bell-crank.

7. The combination with a vertically-reciprocable knife or knives and a table for the support and travel of material thereon provided with a laterally-disposed knife aperture or apertures therein, of a laterally-slidable cover or covers adapted temporarily to close
30 said aperture or apertures, and means for automatically sliding said covers over and from said aperture or apertures synchronously with the upward and the downward movements of the knife or knives.

8. In a box-machine, the combination with a frame having a table provided with laterally-disposed apertures therein, of movable covers slidable in ways over and from said apertures, arms pivoted medially on the frame
40 and taking into said slidable covers, a reciprocable yoke provided with oblique slots in which pins on said arms are received, and means for reciprocating said yoke whereby said arms are moved and said covers reciprocated.
50

9. In a box-machine, the combination with a frame provided with a table, of a set of knives reciprocable toward and from the table, covers slidable laterally in the table
55 adapted to close and open the apertures in the table in the path of the knives, arms pivoted medially on the frame taking into the covers, a yoke fixed on the knife-stem provided with oblique elongated slots into which
60 pins on said swinging arms are received, a walking-beam pivoted medially on the frame taking into the knife-stem, and a cam on a driving-shaft by which the walking-beam is actuated.

10. In a box-machine, the combination with a frame, of a shearing-bar located above and transversely of the path of the box material

on the frame, a knife below the path of the material having a reversely-inclined cutting edge reciprocable in ways to and across the
70 path of the material, a lever-arm 82 pivoted on the frame and connected at one extremity to the knife-stem, a power-actuated walking-beam and a rod connecting the walking-beam to said lever-arm.
75

11. In a box-machine, the combination with a frame provided with a bed-plate and an endless chain of molds movable on the bed-plate, of mold-retainers extending yieldingly over the edges of the molds, ways in which the retainers are supported movably, and a spring
80 attached to and drawing the retainers toward each other yieldingly.

12. In a box-machine, the combination with a frame provided with a bed-plate and an endless chain of molds traveling on the bed-plate, of mold-retainers in substantially U form disposed horizontally, their upper legs above the path of the molds and their lower legs below the bed-plate, sets of rollers in which the lower
85 legs of the retainers are supported movably and a spring attached to both retainers adapted to draw the retainers toward each other.
90

13. In a box-machine, the combination with a frame provided with a bed-plate and an endless chain of molds movable on the bed-plate, of mold-retainers consisting of plate-like U-shaped members disposed horizontally with their open sides toward each other, the upper legs of the retainers extending inwardly
95 slightly over the molds of the chain, and means supporting the retainers yieldingly and movably toward and from each other.
100

14. In a box-machine, a former-plunger 27 two sides of which are recessed, and elastic
105 plates 106 secured to the plunger over the recesses and serving as yielding sides of the plunger.

15. In a box-machine, the combination with the frame having a bed-plate, and a chain of
110 molds movable thereon, of laterally-movable retainers projecting over the edges of the molds, and a reciprocable plunger provided with elastic sides adapted to act complementary to the retainers and press together interposed parts of the box material.
115

16. In a box-machine, the combination with the frame, of material-supporting plates 87, and material-retaining guards 90 at a little distance above and partially over said plates
120 and opposite a box-forming plunger.

17. In a box-machine, a means for actuating a glue-dabber, comprising a tilting lever 44, a driven shaft 52, a disk 54 fixed on the shaft, an eccentric 45 adjustable revolubly
125 on the shaft on which eccentric the tilting lever rides, and means clamping the eccentric adjustably to the disk.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. WUSSOW.

Witnesses:

JOHN F. HYER,
J. F. CLARK.