

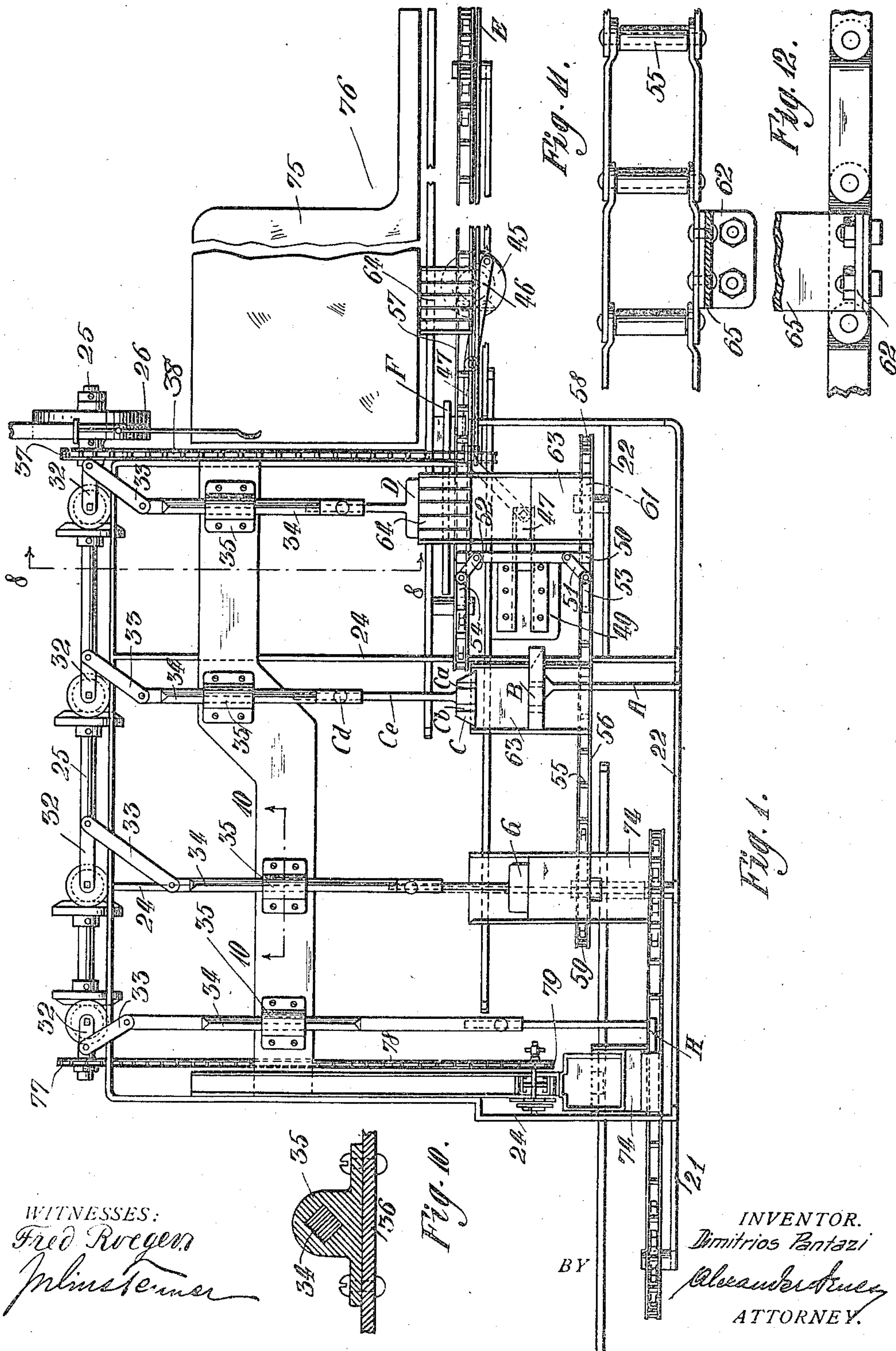
D. PANTAZI.
CIGARETTE PACKING AND SEALING MACHINE.

APPLICATION FILED JAN. 28, 1915.

Patented Sept. 28, 1915.

4 SHEETS—SHEET 1.

1,155,002.



WITNESSES:
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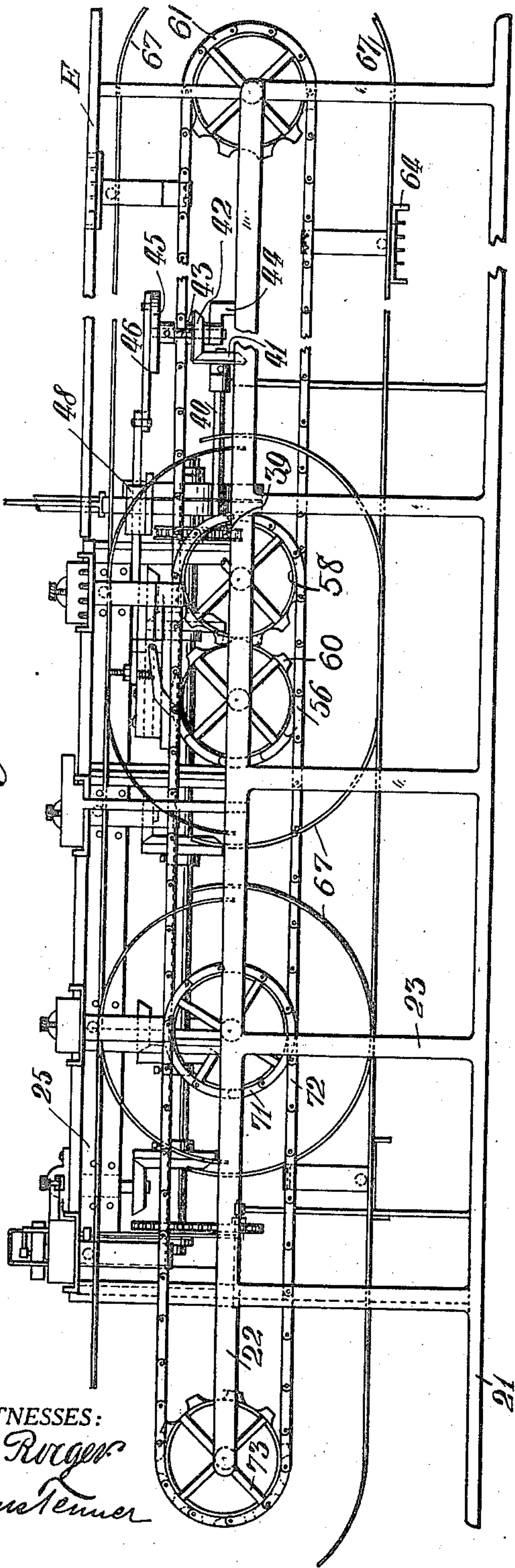
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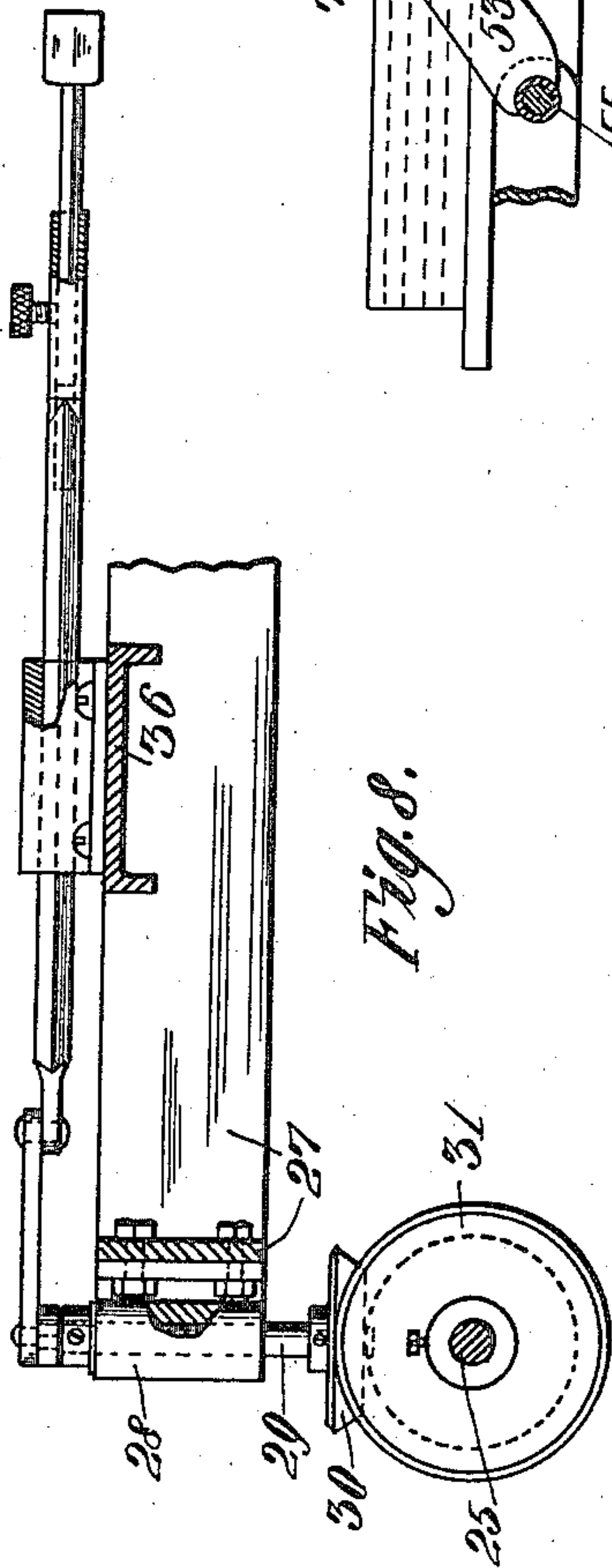
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Fig. 2.



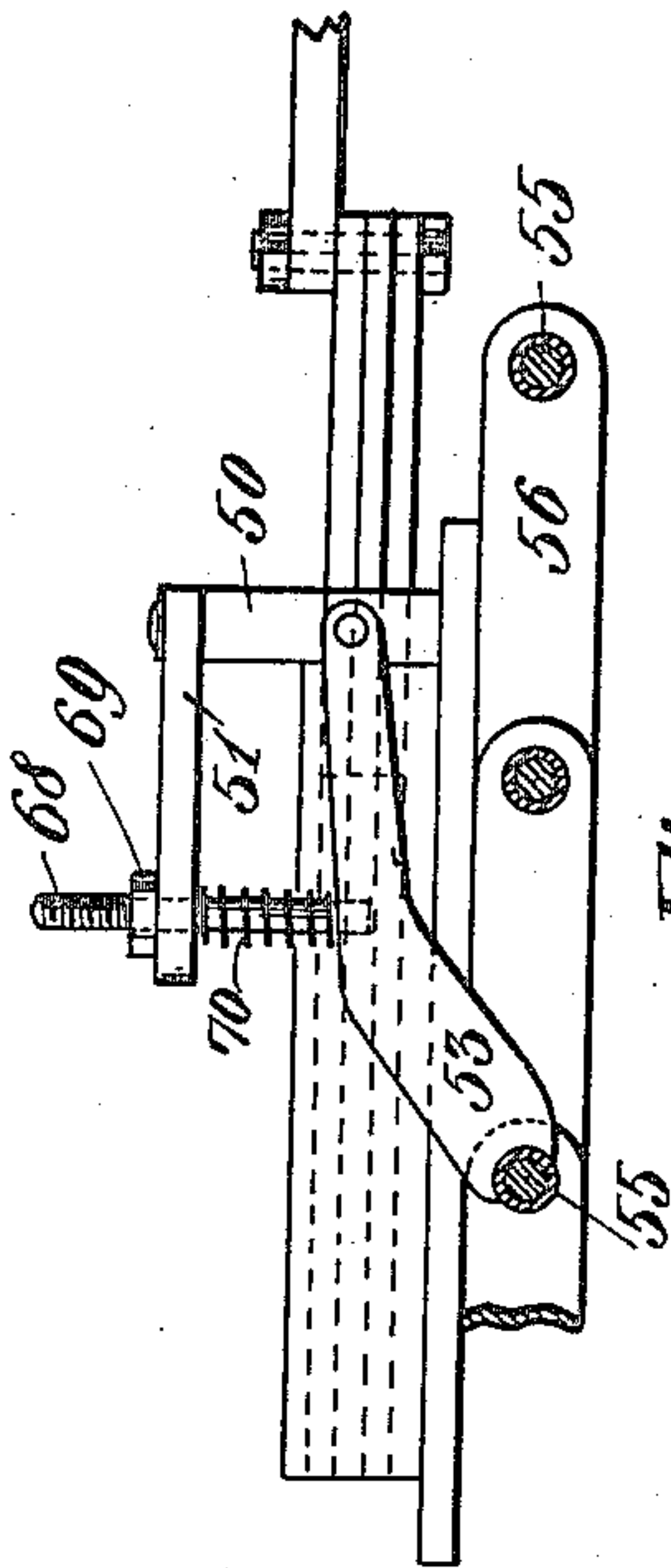
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Fig. 8.



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Fig. 9.



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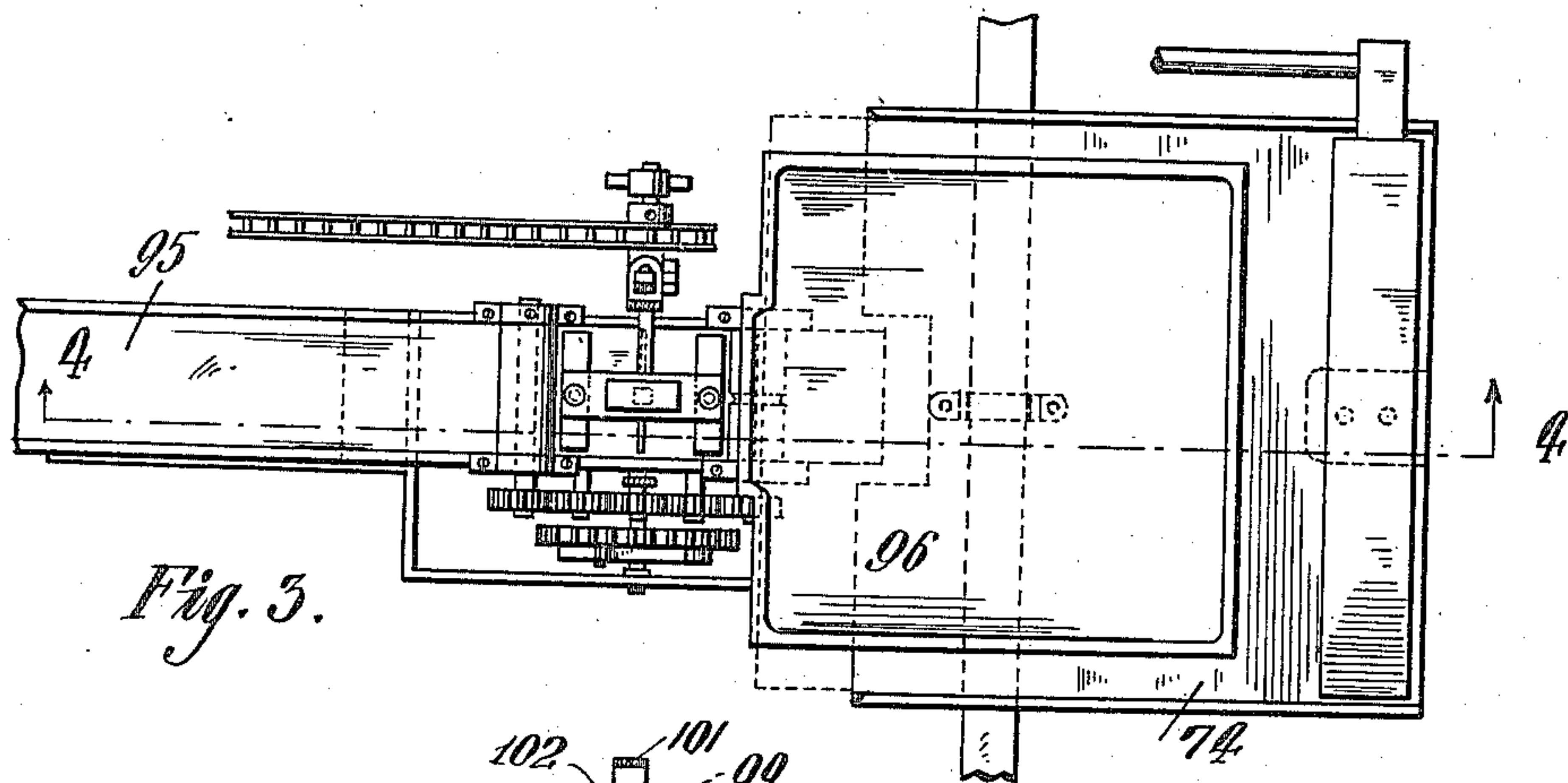


Fig. 3.

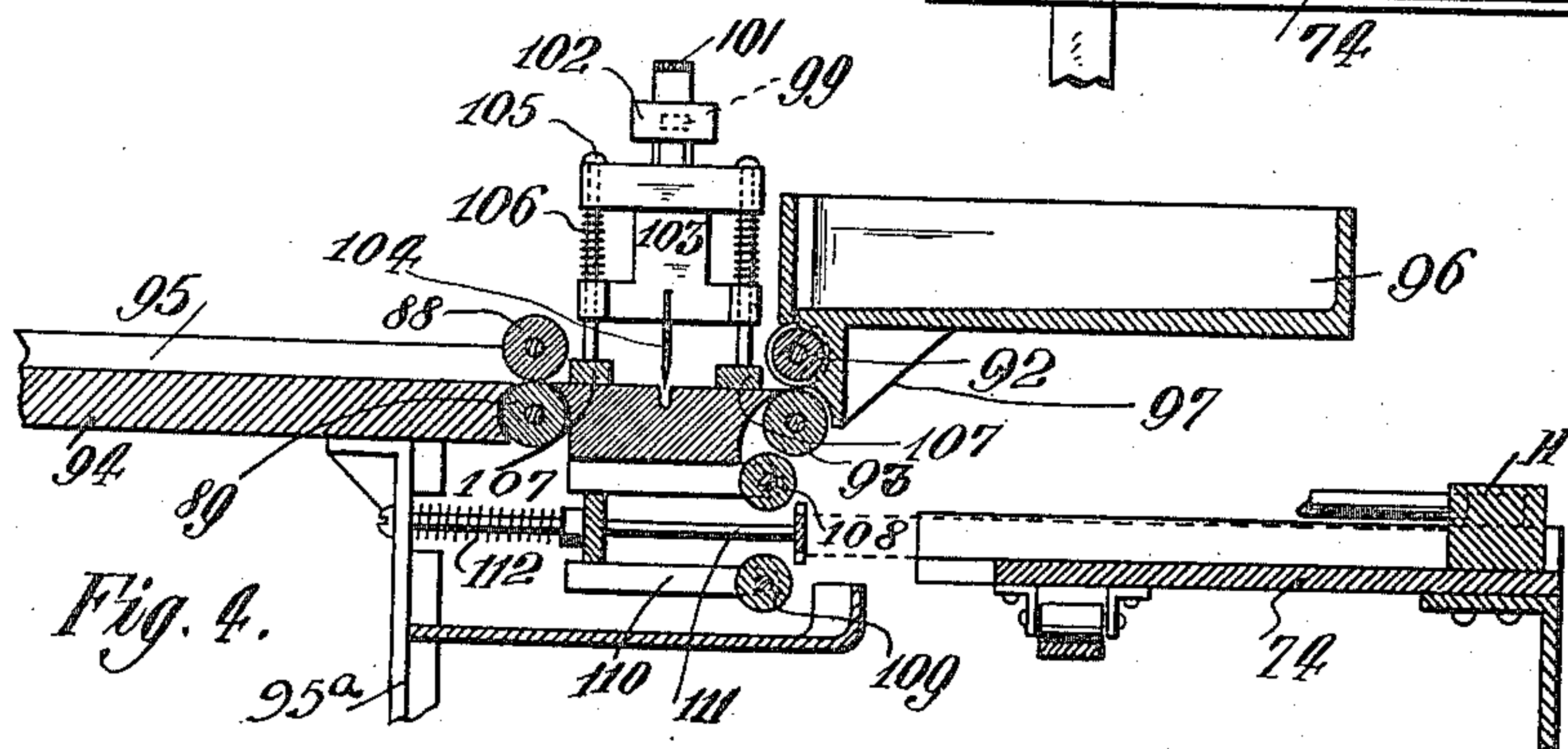


Fig. 4.

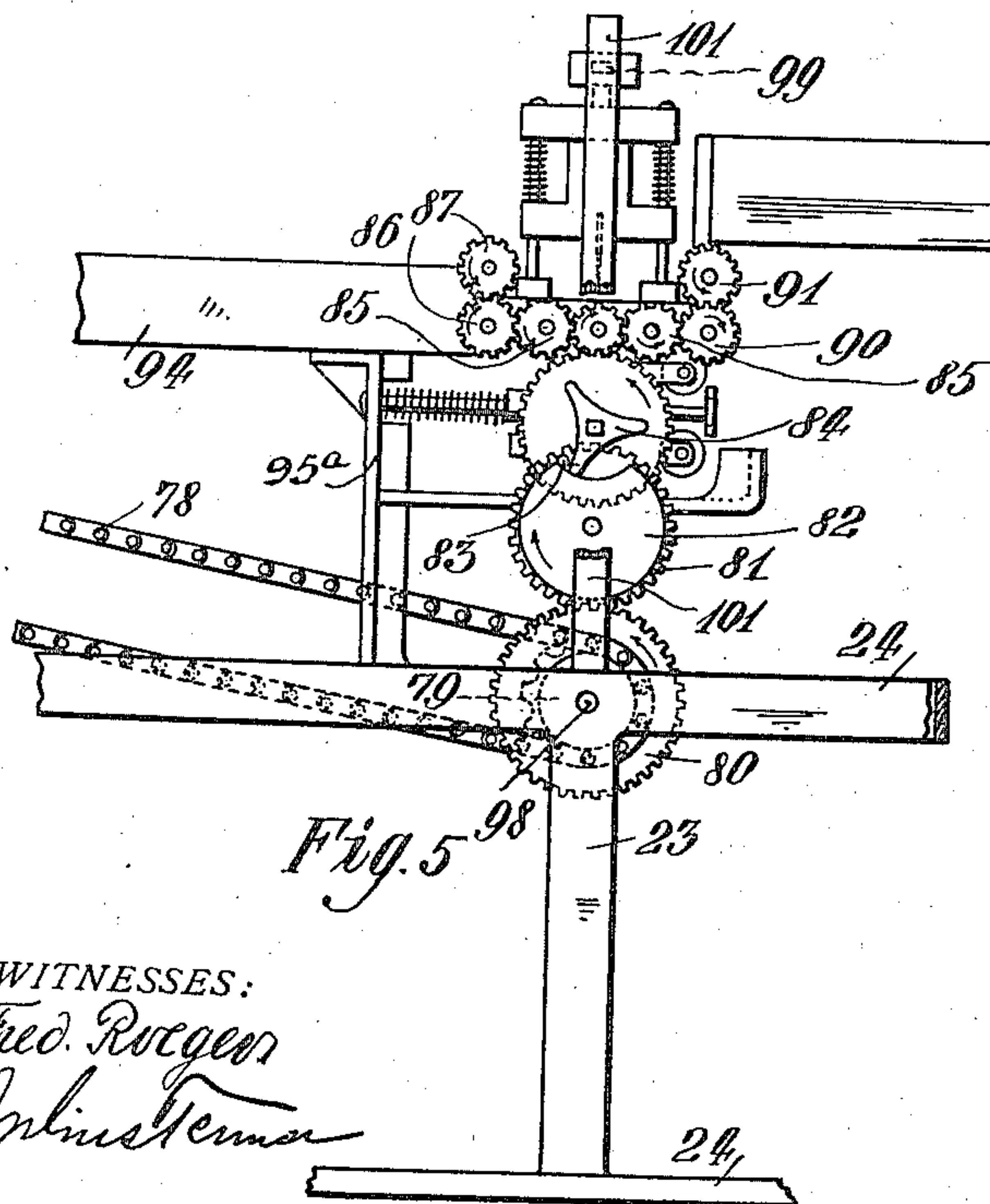


Fig. 5.

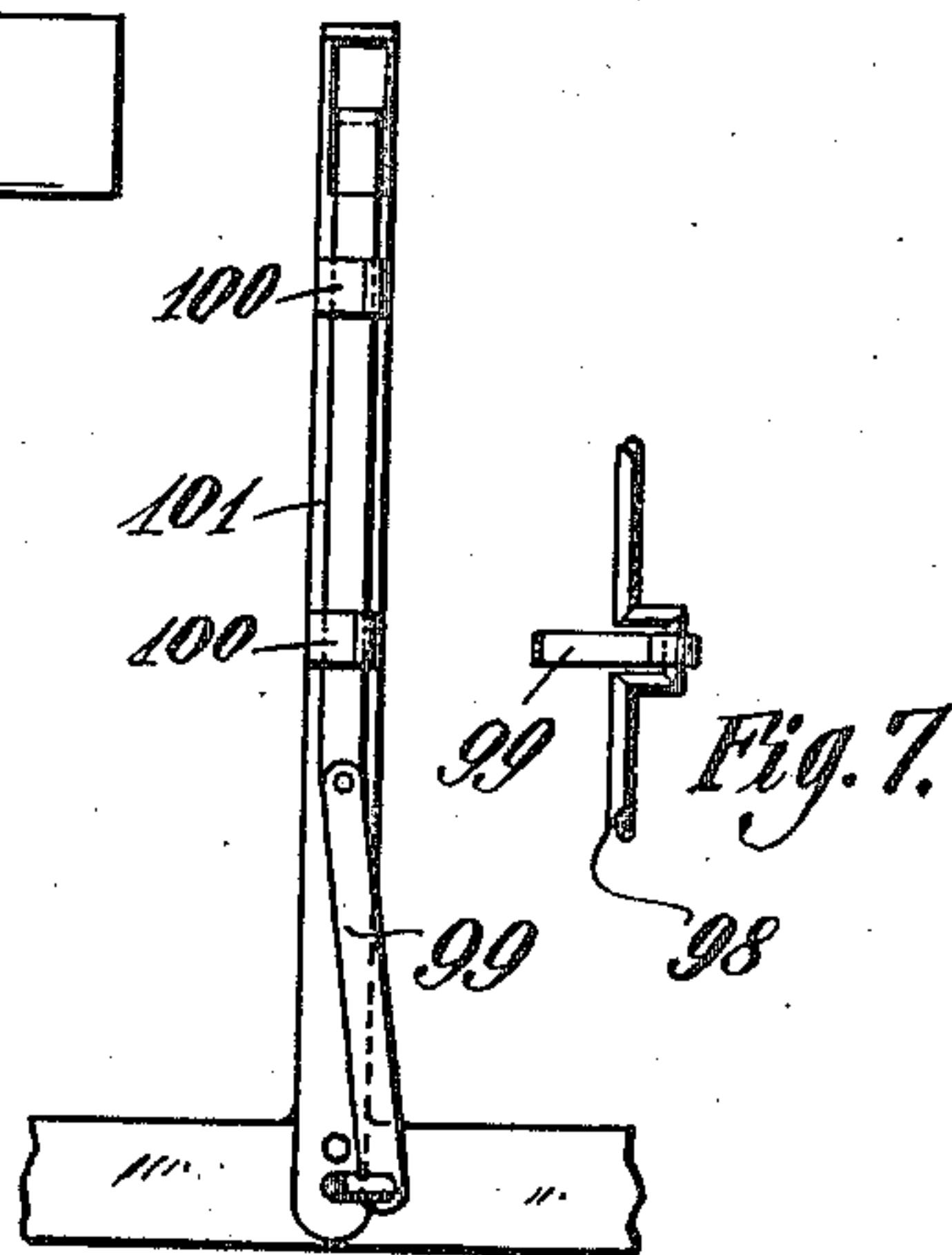


Fig. 6.

INVENTOR.

Dimitrios Pantazi

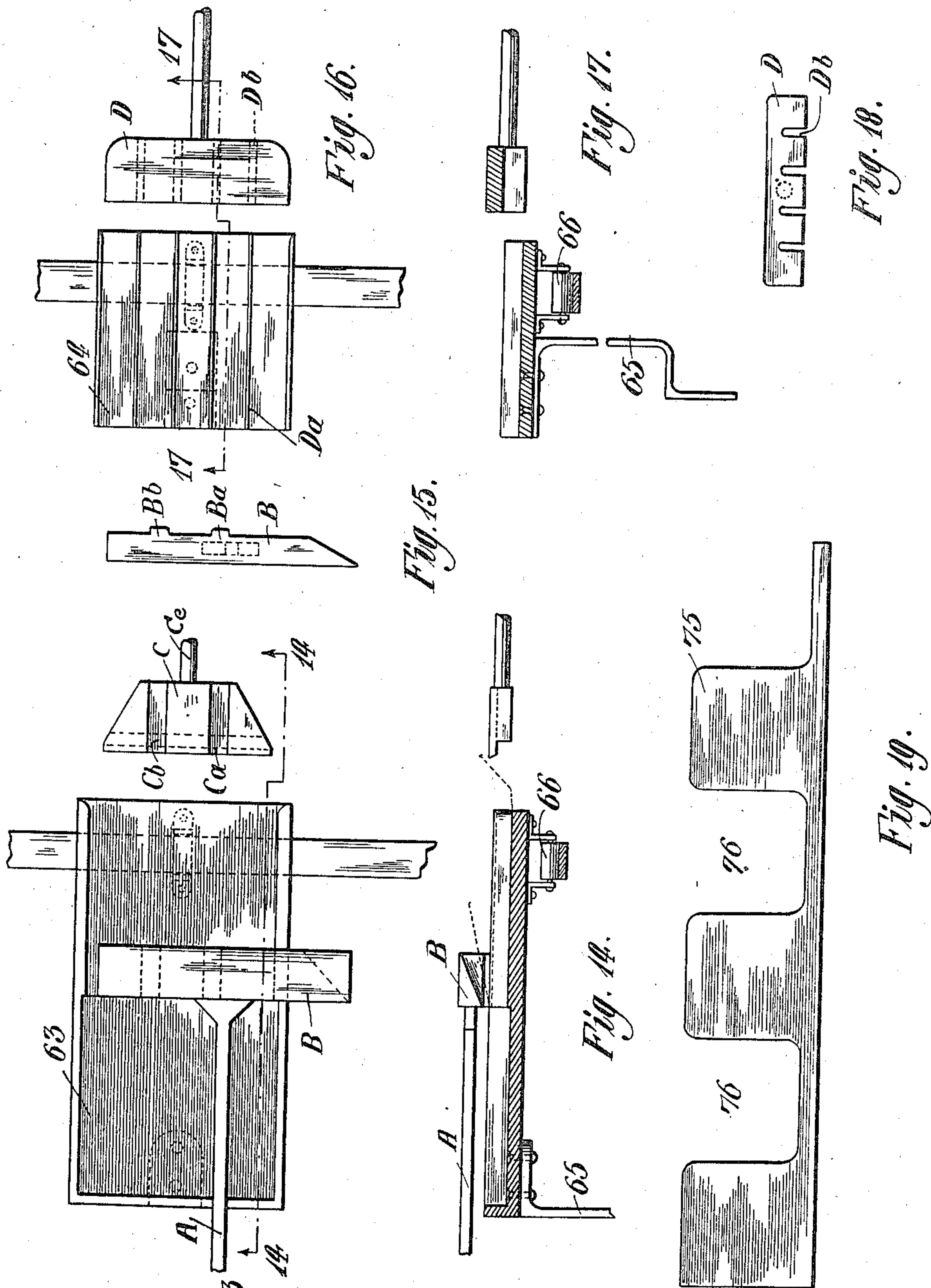
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Fig. 13

Fig. 14

Fig. 15

Fig. 16

Fig. 17

Fig. 18

Fig. 19

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UNITED STATES PATENT OFFICE.

DIMITRIOS PANTAZI, OF NEW YORK, N. Y.

CIGARETTE PACKING AND SEALING MACHINE.

1,155,002.

Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed January 28, 1915. Serial No. 4,930.

To all whom it may concern:

Be it known that I, DIMITRIOS PANTAZI, a subject of the King of Greece, and resident of New York, in the county of New York and State of New York, have invented new and useful Improvements in Cigarette Packing and Sealing Machines, of which the following is a specification.

My invention relates to cigarette packing machines and its principal object is to provide means whereby this operation can be executed more economically than by hand, being calculated to do at least double the amount of work with the same number of workmen within a certain specified time.

A further object of my invention is of a sanitary nature, the handling of the cigarettes by human hands being reduced to the minimum.

Reference will now be had to the accompanying drawings, in which:

Figure 1 is a plan view of the entire machine, with certain parts broken away. Fig. 2 is a front elevational view of the machine, with some parts broken away and some hidden parts shown in dotted lines. Fig. 3 is a detail view in plan of one part of the machine, on an enlarged scale. Fig. 4 is a sectional view of the same part, taken on the line 4—4 in Fig. 3, looking in the direction of the arrows. Fig. 5 is a side elevational view of the part shown in Figs. 3 and 4. Fig. 6 is an elevational view of one part of the machine, on a larger scale than employed in the Figs. 3 to 5 inclusive. Fig. 7 is another detail in elevation. Fig. 8 is a rear elevational view of part of the machine, with some parts broken away for better understanding. Fig. 9 is a partly sectional and partly elevational view of a part of the machine. Fig. 10 is a sectional detail view. Fig. 11 is a plan view of one part of the machine. Fig. 12 is a side elevational view of the same part. Fig. 13 is a detail view in plan. Fig. 14 is a longitudinal sectional view of the part shown in Fig. 13, on the line 14—14 of the same, showing the section of a cigarette box in dotted lines. Fig. 15 is a front elevational view of a part of the machine. Fig. 16 is a plan detail view. Fig. 17 is a section taken on the line 17—17 of Fig. 16, looking in the direction of the arrows. Fig. 18 is a detail view in elevation. Fig. 19 is a plan view of part of the machine.

Referring more particularly to the drawings, the reference character 21 designates a frame having longitudinal beams or girders such as 22, stanchions or legs such as 23 and cross beams or ties such as 24. On the hind legs 23, at their outer surface, supported by suitable bracket bearings, is mounted a shaft 25. At one end of the shaft 25, outside of the frame 21, is mounted a fast and a loose belt pulley and a governor, as shown at 26, for transmitting the power to the machine. A plate 27 is running around the rear and partly the sides of the machine, fastened to the outside of the legs 23. Hinges such as 28 (Fig. 8) are mounted on the outside of the plate 27, in the rear of the machine, and rotatable in same are vertical shafts such as 29, with right angle bevel gear wheels 30 at their lower ends, engaged by similar bevel gear wheels 31 rigidly mounted at corresponding places on the main shaft 25. Eccentric rods 32 are mounted on the top end of the vertical shafts 29, with connecting rods 33, and slide bars 34 running in guide boxes 35 mounted on a table 36 running across the whole length of the machine and so shaped as to afford support for the guide boxes at suitable positions. The slide rods 34 are of a square section at those parts which glide through the glide boxes 35, whereas their other portions can be made flat.

At the end of the main shaft 25, near the belt pulleys, is mounted a sprocket wheel 37, from which a driving chain 38 runs toward the front of the machine and over another sprocket wheel 39 rigidly mounted on a horizontal shaft 40 supported by journals mounted on the frame. Rigidly mounted on the other end of the shaft 40 is a right angle bevel gear wheel 41 engaging a similar wheel 42 superposed to it and rigidly mounted on a vertical shaft 43 supported by an angle pedestal bearing 44 mounted on one of the longitudinal girders 22. To the top of the vertical shaft 43 is rotatably mounted an eccentric sheave and attached to same an eccentric rod 46 hingedly connected to a Z shaped sliding rod 47 one end of which slides in a guide box 48 and the other end slides between guide bars 49. To the end that slides between the guide bars 49 is rigidly attached a cross head 50 with rigid members 51 and 52 at its two extremities. To the cross head 50 are hingedly fixed on either

side thereof pawls 53 and 54 with semicircular grooves at their ends adapted to engage link pins such as 55 of sprocket chains 56 and 57, respectively. The sprocket chain 56 travels over the sprocket wheels 58 and 59 and the sprocket chain 57 over the sprocket wheels 60 and 61, all rigidly mounted on shafts journaled into the framing. To the link plates of both the sprocket chains 56 and 57 are attached, by means of brackets such as 62, a multitude of boxes such as 63 on the chain 56 and such as 64 on the chain 57, shown in detail in Figs. 13-14 and 16-17 respectively. All the boxes have stems such as 65 and guide rolls such as 66 attached to their bottoms, the stems 65 supporting them on the chains and the rolls 66 on guide rails such as 67, over which the rolls pass when the boxes are upright over the chains and by which they hang when the boxes are upside down hanging on the chains. The pawls 53 and 54 are kept in engagement with the link pins 55 by a pin 68 hingedly attached to the pawls 53 and 54 and passing through a slot in the member 51, being secured by a nut 69 over the member 51 from slipping out of it and regulated thereby, and a spiral spring 70 between the pawls and the members 51 pressing the former down. Rigidly mounted on the same shaft as the wheel 59 is another sprocket wheel 71 with a sprocket chain 72 passing around it and around the sprocket wheel 73 mounted on a shaft journaled into the end of the frame. On the chain 72 are fastened in the same manner as described with regard to the chains 56 and 57, boxes such as 74, shown in detail in Figs. 3 and 4, also supported by guide rails such as 67. At the end of the machine where the driving pulleys are, between the same and the chain 57, I provide a table 75 with recesses such as 76 for the operators. Attached to the foremost longitudinal beam 22 over the level of the boxes 63 when on top of the machine and projecting inward halfway over the boxes 63 is an arm A with a cross piece B at its end, shown in detail in Figs. 13 to 15 inclusive, with two lugs B^a and B^b projecting downward from the cross piece B fitting into grooves C^a and C^b in a hand C attached by a stem C^c to one of the slide bars 34 by a set screw C^d. A hand D is similarly attached to another slide bar 34 in front of the boxes 64 which are divided into five compartments by partitions such as D^a, the hand D being provided with four grooves such as D^b into which the partitions D^a fit, as shown in detail in Figs. 16 to 18 inclusive. In front of the chain 57 I provide a border plate E, somewhat over the level of the frame, the upper edge of same being in plan with the top of the boxes 64 when over the chain, and extending from the right end of the

machine to the line of the sprocket wheel 39. Just below the level of the boxes 64, in front of the hand D and continued in both directions therefrom to a small distance, I provide a beveled lath F with its lip on top and projecting toward the front of the machine, the right end of which is cut away obliquely. A hand G is attached to one of the slide bars 34 and a hand or rake H to another slide bar 34 in the above described manner.

At the left end of the main shaft 25 is rigidly mounted a sprocket wheel 77 and a sprocket chain 78 passes around same and another sprocket wheel 79 in the front part of the machine, mounted on a shaft journaled into one of the cross beams 24. Integral with the sprocket wheel 79 is a toothed wheel 80 and in engagement with same a toothed wheel integral with a pin disk 82. The pin 83 on same engages a spur gear wheel 84 so arranged that each revolution of the toothed wheel 81 causes the spur gear wheel 84 to make one third revolution at the same speed, but standing still during the time the toothed wheel 81 completes its revolution. This interrupted movement is transmitted by means of gear wheels such as 85 to one pair of toothed wheels 86 and 87, integral with friction rollers 88 and 89, respectively, and another pair of toothed wheels 90 and 91, integral with friction rolls 92 and 93, respectively, mounted on shafts journaled into a table 94 supported by a bracket 95 mounted on the frame of the machine. On top of the table 94 is a feeding channel 95^a and, on the other side, a paste container 96, supported by a bracket 97. There is a groove in the center of the friction roller 92 and a tongue projecting from the side of the paste container 96 over the rear part of the friction roller 92 covers the groove up on this side. On the other side the base of the paste container 96 is so formed as to fit into the groove in the friction roller 92. Thus the paste cannot run out from the container through the groove.

The shaft 98 on which the sprocket wheel 79 is mounted, is cranked in front of the wheel 79 and actuates a connecting rod 99 which slides in guides such as 100 on a support 101 mounted on the frame of the machine. The connecting rod 99 is bent horizontally at the upper end and attached to it is a cross head 102, carrying a block 103 and fastened in the center thereof, diagonally to the length of the table 94 and parallel to the length of the machine, a cutting blade 104. Through four corners of the crosshead 102 and the block 103 pass four bolts such as 105 with heads over the crosshead 102 and spiral springs such as 106 between the crosshead and the block. The blocks extend through the lower part

of the block and have, at their lower ends, pads such as 107, fitting closely on the surface of the table 94.

Underneath the table 94 I provide two more rollers 108 and 109 and guide bars 110, sliding between them a plunger 111 journaled through the bracket 95 at one end and the other end projecting somewhat forward in front of the rollers 108 and 109, with a spiral spring 112 to hold it normally in that position, as shown in Fig. 4.

The operation of the machine is as follows: Operators stationed behind the table 75, in the recesses 76, one in each, fill cigarettes into the boxes 64, two cigarettes into each compartment or 10 altogether in each box, as they pass before them in succession, the chain 57 being compelled by the pawl 53 in regular intervals and the boxes 64 being placed around the chain 57 in convenient number so that with each movement of the chain one of the boxes 64 arrives in front of the hand D. In the meantime open cigarette boxes have been placed by another operator into the boxes 63, the sleeve or outer part of the cigarette boxes being placed in the wider and deeper part of the boxes 63, with the opening toward the hand D and the inner part of the cigarette boxes which will have to be pushed into the sleeve part, placed in the shallow and narrow part of the box 63, the difference in width and depth being just of the size of the cardboard of which the cigarette boxes are made, and the front flap of the inner part of the cigarette boxes being slipped under the beveled lath F and held down by the lip on top of same. When the box 63 arrives in front of the hand D it just tallies with a box 64 in front of the same and there they stop. The hand D pushed forward by the rotation of the eccentric rod 32 pushes the cigarettes out from the box 64 into the box 63, the partitions of the box 64 passing through the grooves D^b of the hand D, and thus the cigarettes come to lie on the cardboard cigarette box contained in the box 63. The box 63 then proceeds farther and reaches the cross piece A, the right end of which is obliquely cut off so that the lid of the inner part of the cardboard cigarette box will thereby be plied down, the flap in front which was under the beveled lath F having in the meantime slipped out from under it. When the box 63 gets into front of the hand C, it stops again and the hand C having a lip in front at the top, presses the flap of the cardboard cigarette box down and pushes the whole inner part of it into the sleeve part behind it in the deeper part of the box 63, thereby automatically closing down the lid of the cardboard box. The cigarettes will now be completely packed into the closed box after which they move on in front of the hand G.

There the box 63 stops again and at the same time a box 74 stops in front of it. Then the hand G pushes the closed box from the box or tray 63 upon the box 74, which forwards it in front of the rollers 108 and 109. There it stops and the rake H pushes them against the plunger 111, between the rollers 108 and 109. Sealing stamps in ribbons of 10 stamps each are laid in the channel 95 and drawn in by the friction rollers 88 and 89, pass under the pads 107, which press down on them and at the same time a reciprocating blade 104 is cutting off one stamp. After the blade and the pads rose again, the friction rollers 92 and 93, the roller 92 conveying paste from the container 96 to the stamp and the part of the container entering into the groove of the friction roller 92 prevents the stamp sticking to the roller, but forces it to go downward over the roller 93 where it hangs until the cigarette box is pushed in by the rake H between the rollers 108 and 109, when it will stick to the cigarette box and be pressed over both sides, thus sealing the box. After the rake H is retired by the rotation of the eccentric rod, the plunger 111, actuated by the spring 112, pushes the box again on the tray 74, part of which is cut out where the stamp would lie on it, so that it may not be pushed against the edge of the tray and thereby torn off the cigarette box. It can then be taken off by another operator who also puts the stamp ribbons into the channel 95.

It is understood that while I have thus shown and described the preferred form of my invention, I do not want to be limited to its mechanical details and I contemplate such changes and modifications which might render its working more economical, without departing from the principles disclosed. I especially intend to devise an attachment for filling the cigarettes automatically into the boxes 64, thus reducing further the manual labor required for the operation.

Having thus described my invention, what I claim is:

1. In a device of the character described, three conveyers carrying trays, one into which the cigarettes are laid by hand, one into which the cardboard box is laid by hand, and one which conveys the closed cardboard box to a sealing apparatus, hands controlled by rotating eccentrics for pushing the cigarettes into the box, for shutting the box, for pushing the closed box from one conveyer to the other and for pressing the closed box into the sealing apparatus, spring controlled means for pushing the box out of the sealing apparatus after the accomplishment of the operation, and means for transmitting the power received from an engine to all moving parts in such a way

that they move and stop alternately as required.

2. In a device of the character described, a frame, a main shaft mounted at the back of said frame and receiving the power from an engine by a pulley mounted on said main shaft, a secondary shaft actuated by means of sprocket wheels and chains from the main shaft, sprocket wheels and chains intermittently actuated by means of a pair of pawls attached to a bar at the end of a connecting rod attached by its other end to an eccentric sheave rotated by said secondary shaft, trays on said chains intermittently actuated, supported by guide rails, for taking up the cigarettes, and for taking up the cigarette boxes, so arranged around the said chains as to stop exactly before hands controlled by sliding rods passing through guide boxes mounted on a table fastened to

the frame, rails to hold down and let go the flaps of the cigarette boxes at the required positions, a cross piece fastened to the frame and so shaped as to close the lid of the cigarette boxes when passing under said cross piece, hands to push the cigarettes from one tray into the cigarette boxes on another tray, to close the box and to push the box from one tray upon another tray, sprocket wheels and chain with trays to receive the closed boxes and to convey them to a sealing apparatus, substantially as set forth in the specification.

In testimony whereof, I have hereunto fixed my signature in the presence of two witnesses.

DIMITRIOS PANTAZI.

Witnesses:

GEORGE RITARIDES,
ALEXANDER DENES.