No. 855,715. PATENTED JUNE 4, 1907.

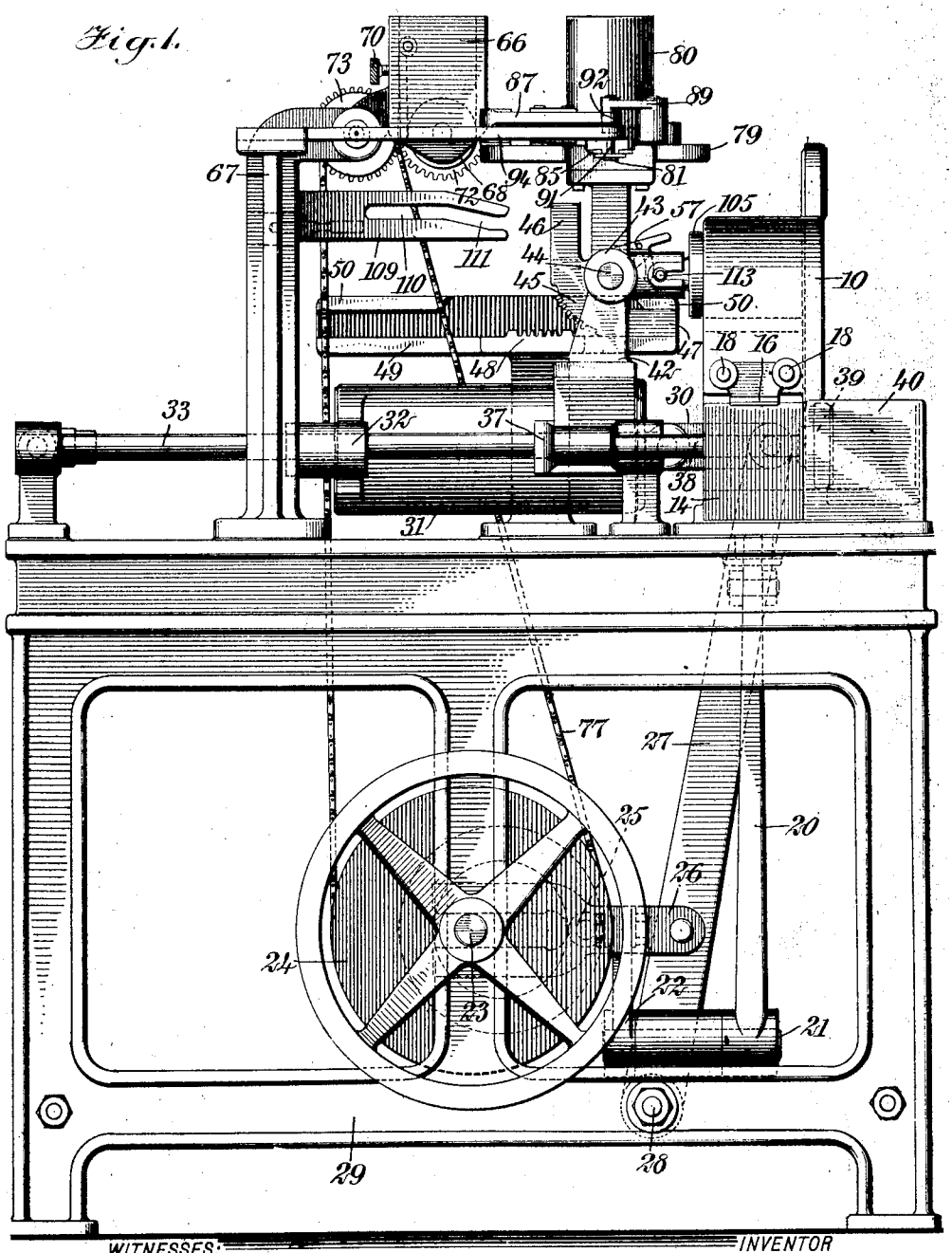
F. X. MALOCSAY.

LABELING MACHINE.

APPLICATION FILED NOV. 18, 1905.

6 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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6 SHEETS—SHEET 2.

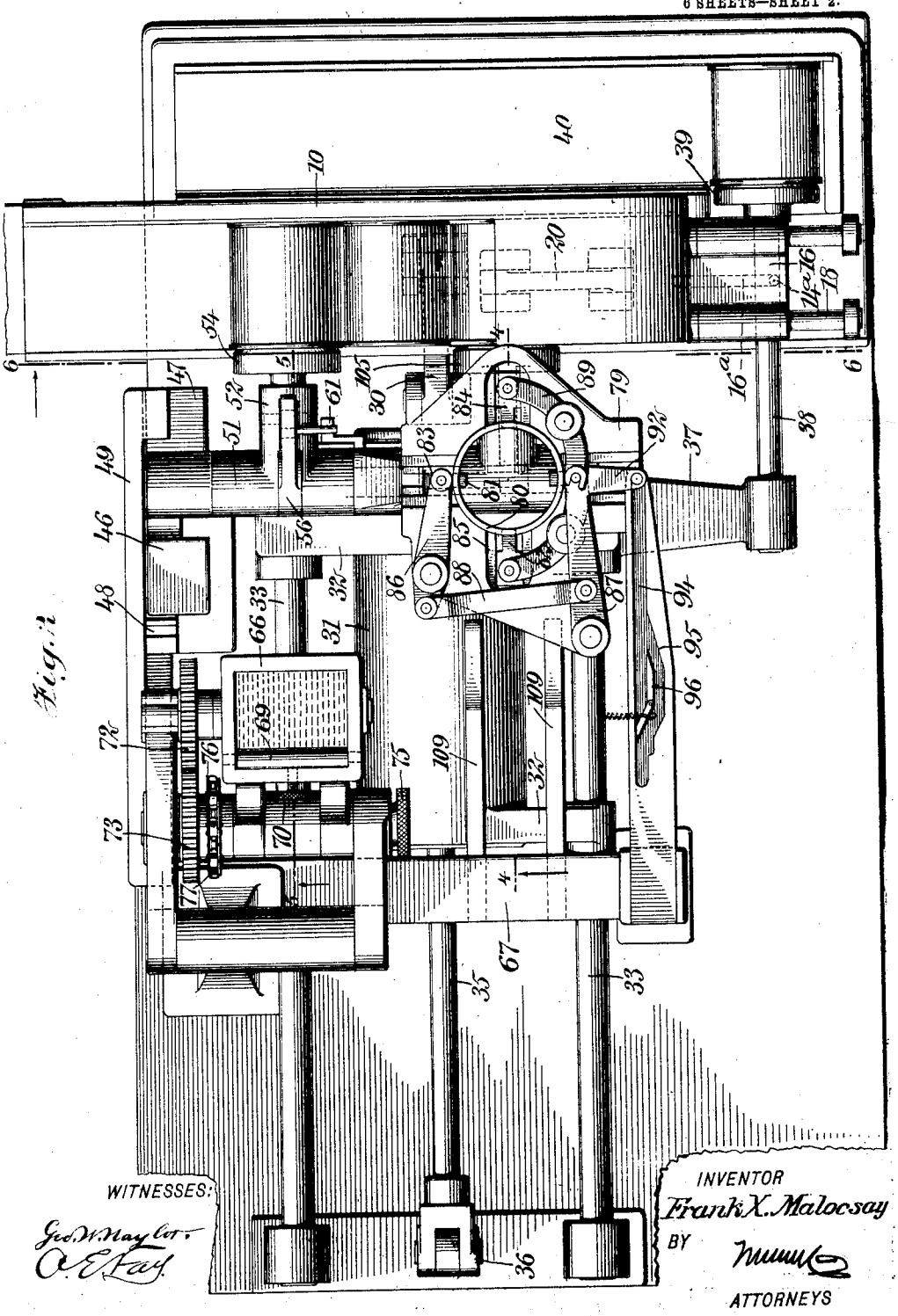


Fig. 2.

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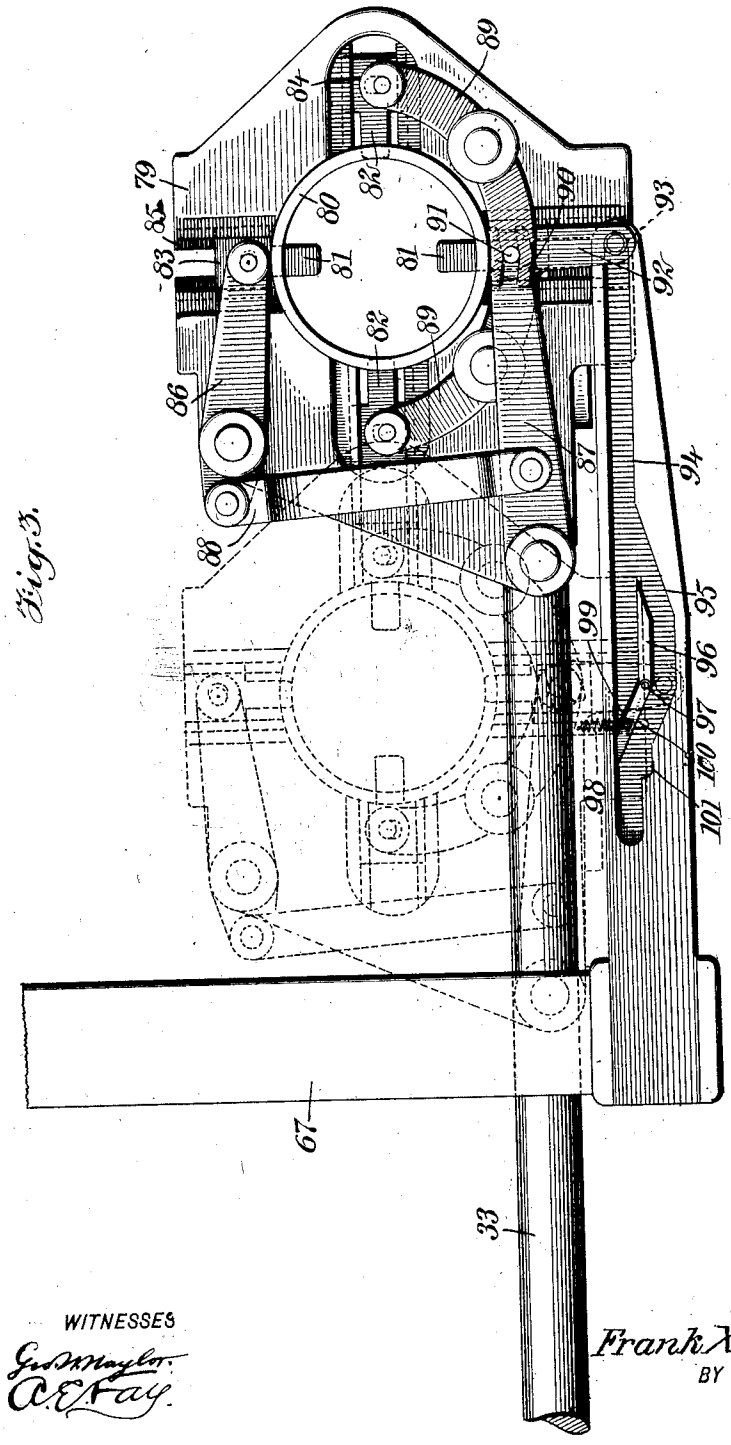


Fig. 3.

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6 SHEETS—SHEET 4.

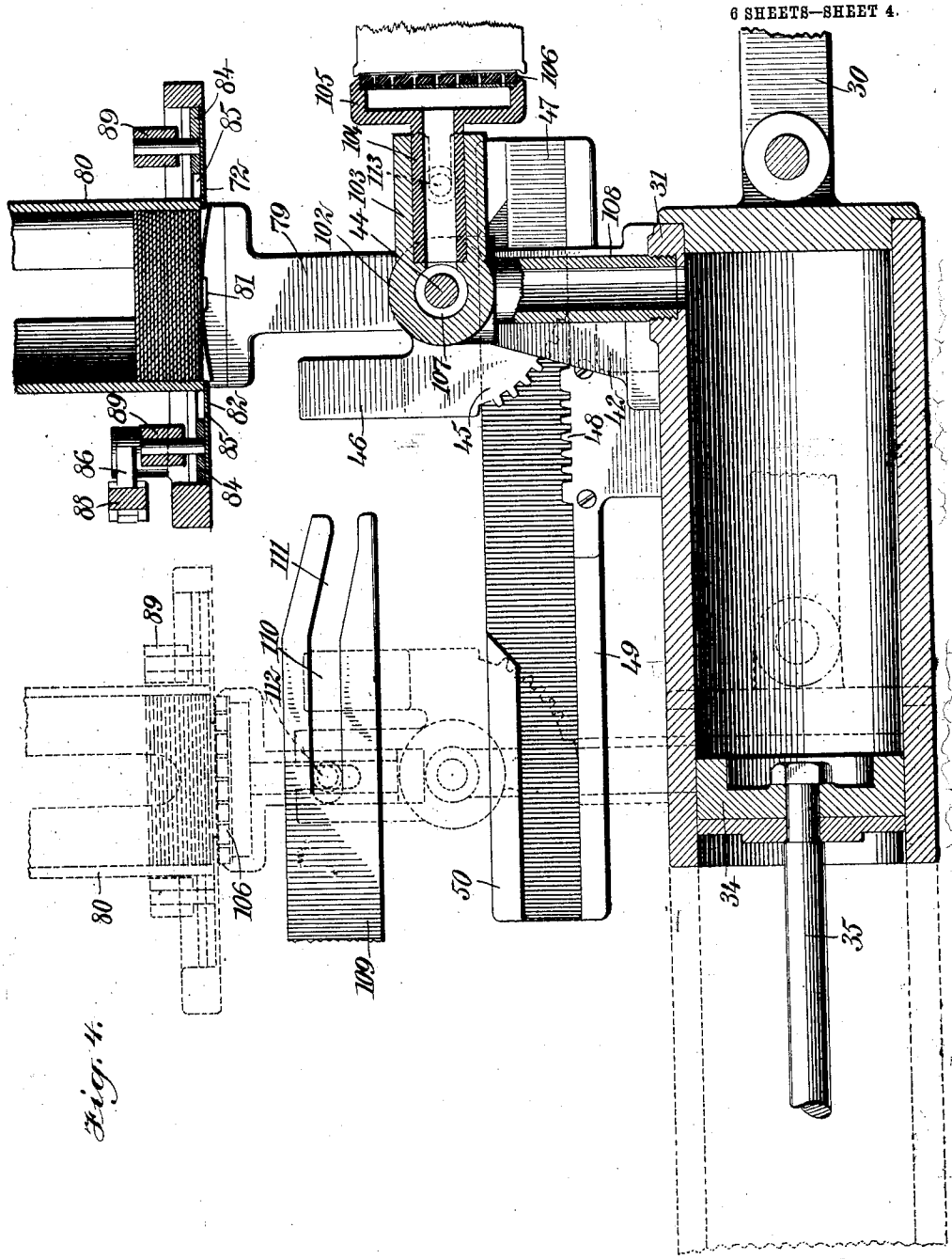


Fig. 4.

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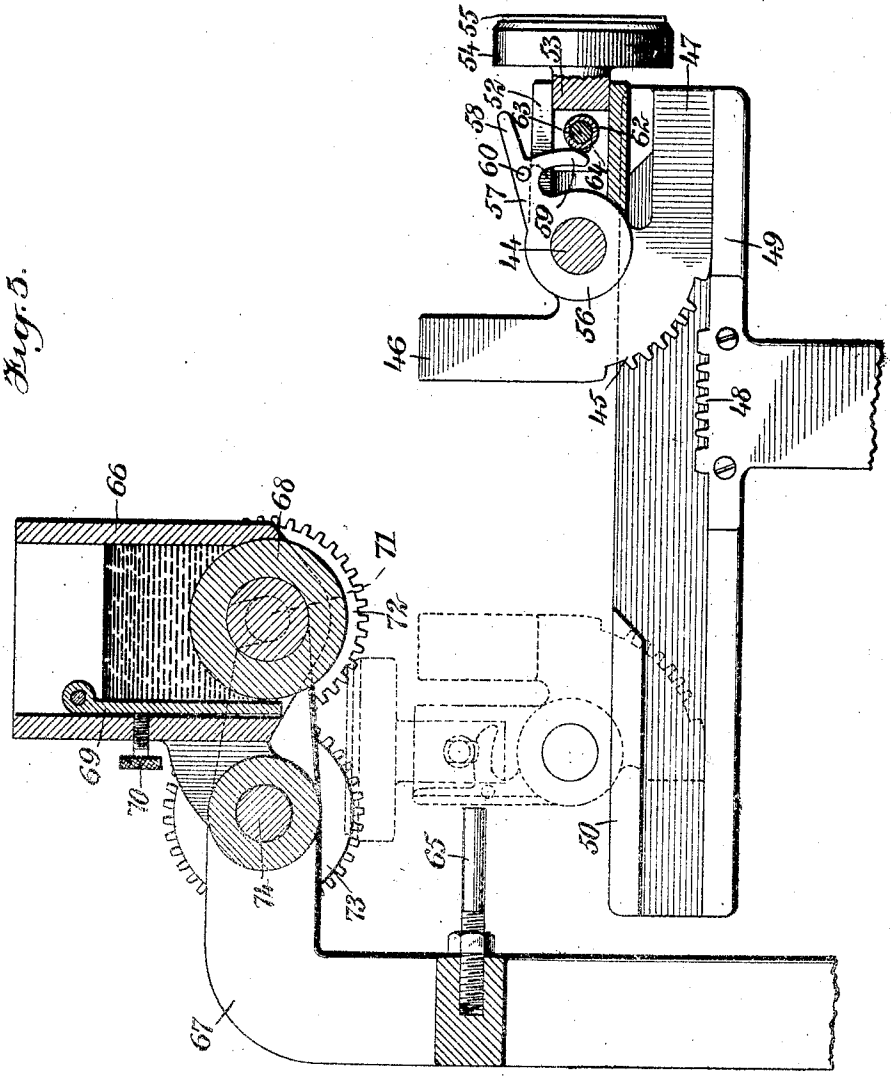
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6 SHEETS—SHEET 5.

Fig. 5.



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6 SHEETS—SHEET 6.

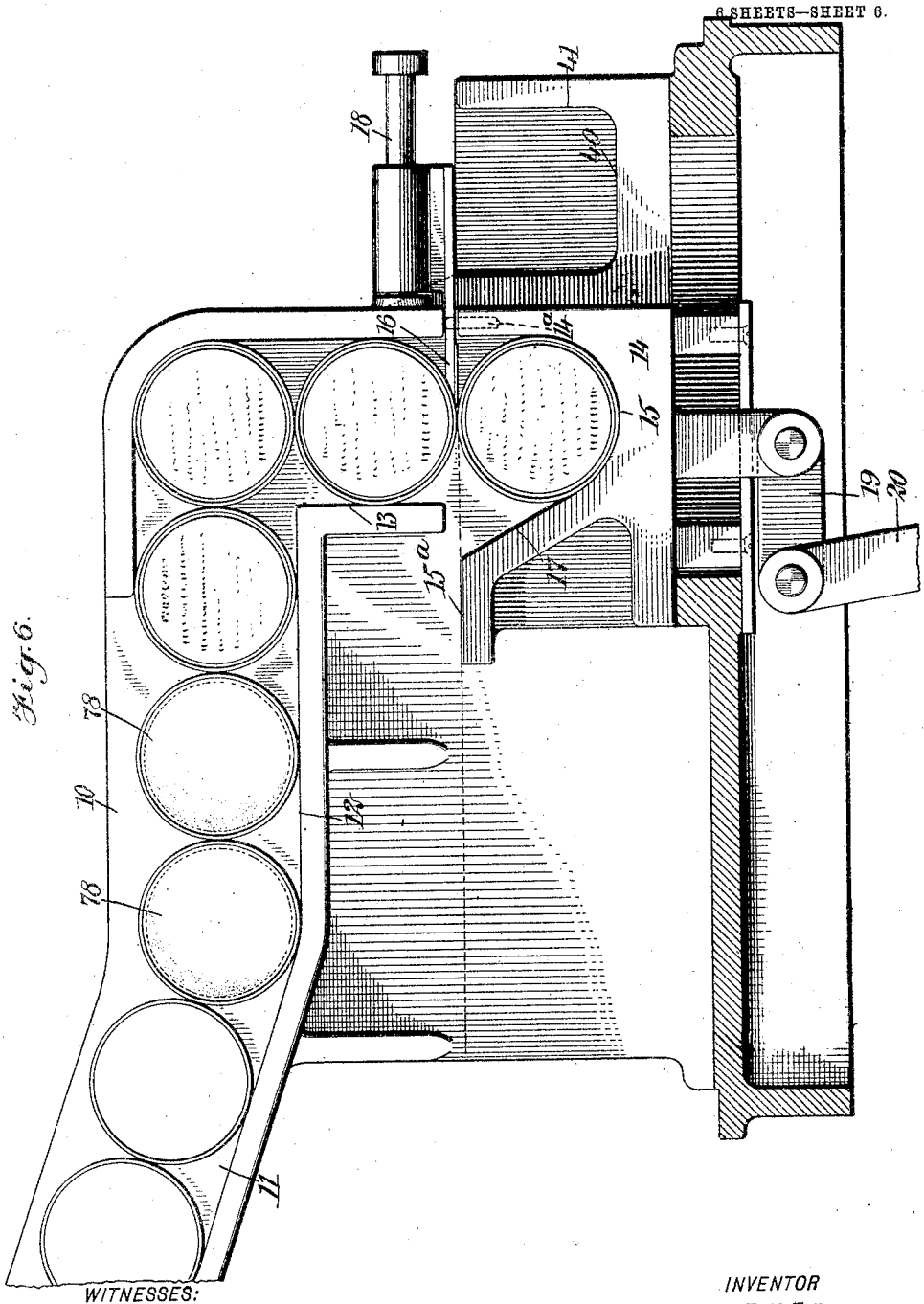


Fig. 6.

WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK X. MALOCSAY, OF NEW YORK, N. Y., ASSIGNOR OF ONE-SIXTH TO HIMSELF, ONE-SIXTH TO EDWARD F. ROOS, ONE-SIXTH TO LOUIS F. ROOS, JR., ONE-SIXTH TO PAUL SCHNITGER, ONE-SIXTH TO LOUIS F. ROOS, SR., AND ONE-SIXTH TO EDWARD P. SCHNITGER, OF NEW YORK, N. Y.

LABELING-MACHINE.

No. 855,715. Specification of Letters Patent. Patented June 4, 1907.

Application filed November 18, 1905. Serial No. 287,894.

To all whom it may concern:

Be it known that I, FRANK X. MALOCSAY, a citizen of the United States, and a resident of the city of New York, Williamsbridge, borough of the Bronx, in the county and State of New York, have invented a new and Improved Labeling-Machine, of which the following is a full, clear, and exact description.

My invention relates to a machine for applying labels to articles of various kinds.

It is especially adapted, however, for applying them to the ends of cylindrical articles, like milk and other cans.

The principal objects of the invention are to provide means whereby an adhesive can be applied to cans or other articles, to provide for thereafter feeding and applying labels to the cans successively onto the portion which is supplied with the adhesive, and to provide means for manipulating the several essential parts of the machine and feeding the cans, both before and after the labels are applied.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a machine constructed in accordance with the principle of my invention; Fig. 2 is a plan of the same; Fig. 3 is an enlarged plan of a portion of the machine which constitutes the main part of the label feeder; Fig. 4 is a sectional view on an enlarged scale, on the line 4—4 of Fig. 2; Fig. 5 is a sectional view, on the line 5—5 of Fig. 2; and Fig. 6 is a sectional view, on the line 6—6 of Fig. 2.

On reference to Fig. 6 it will be seen that I have provided a raceway 10 having a slanting portion 11 which feeds cylinders or cans onto a horizontal portion 12, and that the raceway terminates in a vertical portion 13. These several portions of the raceway may be designed to contain any desired number of cans, but it is convenient to make the horizontal portion long enough to contain three cans, so that paste can be applied to one, a label to another, while the intermediate one is resting between these two. The vertical portion can contain any desired number of cans; I have shown it as being provided with two. For the purpose of feeding the cans or other articles, I have illustrated a carriage 14, which reciprocates across the raceway, preferably at the end of the vertical portion. The carriage is provided with a receptacle 15 of such size and shape as to receive a can. It is also provided with a plate 16, which, in the normal position of the carriage shown in Fig. 6, projects inwardly so as to hold the line of cans in an elevated position and prevent their falling into the carriage. This plate has a slot 16^a into which extends a pin 14^a on the carriage. This allows the plate to remain in position to hold the cans when the carriage moves until a flange 15^a on the rear of the carriage is in position to support them. The rear of the carriage comprises a slanting surface 17, and the distance between the top of this surface and the end of the plate 16 is sufficient to permit the passage of a can. When the carriage reciprocates to the right, the plate 16 is withdrawn, and the can which was formerly held by it can enter the carriage in an obvious manner, rolling down the inclined surface 17. I have shown guides 18 for insuring the proper motion of the carriage.

For the purpose of moving the carriage, a link 19 is provided, this being connected with a lever 20 which is mounted to oscillate on a shaft 21. Rigidly connected with the lever is an arm 22 which is designed to be operated by a face or other cam (not shown) on a main shaft 23. This main shaft is designed for operating all the principal parts of the mechanism, and it is provided with a cam 24, in which moves a roller 25 mounted on a link 26 for the purpose of oscillating a lever 27 pivoted on a stud 28 on the frame 29 of the machine. These parts are designed for operating the devices for applying an adhesive, placing labels and feeding cans from the carriage 14. In order to accomplish all these results, the lever 27 is connected by a link 30 with a movable cylinder 31. This cylinder is provided with arms 32 which have perforations for receiving stationary guide-rods 33, to insure a rectilinear reciprocating motion. Within the cylinder is a stationary piston 34 on a piston-rod 35. This piston-rod is pivoted, by means of a short shaft 36, on a stationary part of the frame. Connected with

the cylinder is an arm 37, on which is mounted a rod 38, this rod being provided with a head 39 adapted to pass through the depression 15 in the carriage 14, for the purpose of forcing the cans or other articles from the carriage into a raceway 40 which is located adjacent to the first-mentioned raceway. This action is, of course, accomplished when the carriage is at the end of its stroke, registering with an opening 41 in the wall of the raceway. The cams on the main shaft are so designed as to provide for the occurrence of reciprocation of the rod 38 at this time. This also occurs simultaneously with the reciprocation of the cylinder 31, as the arm 37 is attached thereto.

I will now describe the use of the piston and cylinder in applying an adhesive and labels to the cans: Mounted on the movable cylinder is a bracket 42 having bearings 43 for a shaft 44 which runs across the machine. To this shaft is rigidly connected a segment 45 having a projection 46 on one end, and a projection 47 on the other. These two projections are shown as being mounted substantially at right angles to each other, but the angle between the projections is dependent upon the amount of oscillation desired to be imparted to the shaft 44. It will be obvious that the reciprocation of the cylinder 31 carries the shaft 44 and the segment 45 with it, and that as they move to the left, to the position shown in full lines in Fig. 5, the segment will engage a rack 48 on a guide 49 which is mounted in a stationary position upon the frame. This causes the segment to be turned and the shaft to be oscillated through said angle; in the present instance that angle is substantially 90 degrees. After the segment leaves the rack, the projection 46 slides along the guide 49 at the left, and moves under a companion guide 50, as is indicated in dotted lines at the left in Fig. 5. The motion of the shaft 44 will thus be clearly understood. During the first part of the movement to the left it will operate without turning; it will then turn for about 90 degrees, and finally reach the position from which it continues to move to the left without further turning, and the guide 50 prevents any further oscillation during the remainder of the reciprocation in this direction. Upon the return motion, the sequence of events is reversed.

Upon the shaft 44 is mounted a collar 51, which is provided with a cylinder 52. In this cylinder operates a plunger 53 bearing a head 54 which is provided with a pad 55 upon its face. These parts, of course, turn with the shaft 44, as they are secured to it, and it will be readily seen that the necessary operations for feeding the pad toward a can (as is indicated in Fig. 2), turning the pad into proper position, and pressing it against a can are provided for.

It is desired that on the return motion, to the position shown in dotted lines in Fig. 5, an adhesive should be applied to the pad, and for reasons which will appear later it is advisable that the pad should be lowered slightly on its reverse motion and then raised when it moves to the right. For this purpose I have shown a collar 56 mounted loosely on the shaft 44 and provided with a projection 57. This projection has two extensions 58 and 59. The former extends in substantially a straight line with respect to the arm 57, and the latter is curved, having an outer surface eccentric with respect to the shaft. The projection 57 is also provided with a pin 60 which is designed to engage a stationary projection 61 mounted on the frame. The extension 59 is designed to operate against a roller 62 which is mounted on a shaft 63 in the plunger 53. This plunger is provided with an elongated slot 64 for receiving the shaft 63 and allowing it a slight reciprocating motion with respect to the plunger. The operation of these features is as follows: When the cylinder 31 and attached parts reaches the extreme rear end of its stroke, and certain parts are in the position shown in dotted lines in Fig. 5, the projection 57 engages a stud 65 on the frame, and the extension 59 is thus forced inwardly so as to engage the roller 62 and force the shaft 63 upwardly in the slot 64, to its extreme position. The parts remain in this position until the segment turns nearly into a horizontal position at the other end of the stroke, and then the pin 60 engages the projection 61 and moves the extension 59 out of contact with the roller 62, which permits the head 54 to be withdrawn toward the cylinder 52 upon the application of pressure through the head to the end of the can in the raceway. During the stroke of these parts from the position shown in dotted lines to that shown in full lines, an adhesive is applied to the pad 55. For the purpose of accomplishing this result I have shown an adhesive tank 66 on an extension 67 of the frame. At the bottom of this tank is an adhesive-applying roller 68. This roller is mounted at the mouth of the tank in such a manner as to substantially fill it, and an adjustable plate 69 is pivoted upon the interior of the tank and adjusted by means of a screw 70 in such a manner as to afford any desired opening between it and the surface of the roller. The roller is mounted upon a shaft 71 and is designed to be turned so as to constantly supply an adhesive in a position below the tank, where it can be taken off by the pad. It is preferable that the motion of the pad to the right should rotate the roller, and for that reason the mechanism described above for lowering the pad when it moves to the left has been adopted. With this construction the pad will rotate the roller in a constant direction so that an adhesive

will always be upon the surface of the roller which is engaged by the advancing pin. The roller may, however, be rotated by hand, and for that purpose the shaft 71 is provided with a gear 72 which engages with a gear 73 on a shaft 74, this shaft being provided with a hand wheel or button 75, by means of which it can be manipulated. I have also shown the shaft 74 as provided with a sprocket wheel 76 over which runs a chain 77 operated from a sprocket on the main shaft 23, so that the roller can be operated by power, if desired.

In Fig. 6 I have shown two cans as having been provided with an adhesive 78. After the adhesive is applied and the can is fed along by the movement of the carriage 14, labels are applied by means of the following mechanism: Mounted on the bracket 42 is a frame 79 carrying a receptacle 80 for labels. This receptacle is preferably provided with an open bottom and means for feeding one label at a time. For the purpose of feeding the labels in this manner, I have shown two pairs of tongues 81 and 82, located in such position as to move inwardly from the sides of the receptacle 80. The tongues 81 are mounted on slides 83, and the tongues 82 on slides 84. All these slides move radially with respect to the receptacle in ways 85 on the frame 79. The slides 83 are connected with levers 86 and 87, respectively. These levers are connected together by a link 88 in such a manner that both of these slides will move outwardly at the same time when either one of the levers is operated. The slides 84 are connected with levers 89 for the same purpose. Each of these levers is provided with a fork 90 and a pin 91 passes into both of these forks. This pin also passes through a perforation in the lever 87. It will be obvious that the reciprocation of this pin in a substantially radial line with respect to the receptacle 80 will oscillate the four levers and simultaneously reciprocate the four slides, moving two of them in, while the other two move out. For accomplishing this purpose, the lever 87 is provided with an angular extension 92 having a roller 93 thereon. As the cylinder 31 reciprocates, carrying the frame 79 with it, the roller 93 travels in a guide 94 located on the extension 67 of the frame of the machine. This guide is provided with an offset 95, and adjacent to said offset is a lever 96 mounted on a stud 97. A spring 98 normally acts to pull the lever in the position shown in Fig. 3, this spring being connected with the lever by means of a pin 99 operating in a slot 100. When the roller moves to the left, in the construction shown in Fig. 3, it will engage the upper arms of the lever and force the lever to move against the tension of the spring about its pivot, so that the upper end of the lever will enter a second offset 101 in the guide. The position of the four tongues will not be affected by this operation. As the roller continues to move to the left, it will finally move beyond the end of the lever, and the spring moves the latter into its normal position. Upon the return motion, the roller moves along the inclined, outer face of the lever until it reaches the stud 97, as is indicated in dotted lines in Fig. 3. This operates the lever 87 and the tongues 81 and 82, withdrawing the former and inserting the latter. The effect of this action will be clear from an inspection of the upper part of Fig. 4. The two tongues which have supported the bottom label in the receptacle being withdrawn and the other two tongues inserted, the edges of the label can be drawn down by suction, or in any desired way, and then when the position of the tongues is reversed the two which were originally under the labels will enter the space between the lowered edges of the bottom label and the lower surface of the next label, thus providing for feeding a single label.

I will now describe the means which I have adopted for providing the suction and conveying the label from the position in which it was left by the operation above described, and applying it to the previously-pasted can: For this purpose a collar 102, similar in general form to the collar 51, is mounted on the shaft 44. This collar is provided with a hollow extension 103 constituting a cylinder, and in this cylinder is located a hollow plunger 104, to which is connected a hollow head 105 carrying a perforated pad 106. The collar 102 is provided with a chamber 107 communicating with the interior of the cylinder 103 and plunger 104. This chamber surrounds the shaft 44 and communicates with a pipe 108 which also communicates with the interior of the cylinder 31. When the parts are moved to the right, the piston 34 remaining stationary, a vacuum is obviously produced in the cylinder. As the cylinder communicates through the passages mentioned with the pad 106 which, at the beginning of this stroke, is located under the receptacle 80, as shown in dotted lines in Fig. 4, the attempt of the air to enter the perforations in the pad 106 has the effect of suction and draws down the edges of the bottom label which are not held by the tongues. As the stroke progresses toward the right, the tongues are withdrawn in the manner specified above, and while the other tongues are being inserted, the label is held upon the perforated pad. As the degree of the vacuum increases during the entire stroke to the right, the label will be held in this position until it is applied to the can. The paste on the can then holds the label and permits the plunger to be withdrawn for another operation. In order to guide the head 105 in the desired manner and force it into a proper position for receiv-

ing a label from the receptacle 80, a guide 109 is located on the extension 67. This guide has a horizontal portion 110 and an inclined portion 111 for receiving a roller 112, mounted on a shaft 113 on the plunger 104.

From an observation of the exclusive construction which has been illustrated by means of the mechanism shown in the drawings and the description above given, it will be seen that I have provided means whereby cans or other cylindrical or rolling objects can be fed through a raceway, supplied with paste, then with labels, and finally discharged into another raceway adjacent to the first, by means of which they are delivered from the machine. It will also be seen that the many difficulties which have heretofore been encountered in machines of this kind have been overcome, and that a most efficient device for carrying out the objects of this invention is obtained, whether the machine is constructed in accordance with my drawings or not, so long as the principle of the invention is maintained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A labeling machine having a raceway supplied with a slanting portion, a horizontal portion and a portion extending downwardly from the end of the horizontal portion, means for labeling articles resting in the horizontal portion a second raceway adjacent to the first, and a carriage movable from the end of the third portion of the first raceway to the second raceway.

2. A labeling machine having a raceway provided with a downwardly-extending portion, a second raceway located in a plane parallel to the first, a carriage having a plate projecting inwardly from one edge, said plate being adapted to prevent the descent of an article from the first raceway into the carriage when the carriage is directly under the same, the carriage also being provided with a slanting rear surface opposite said plate, and means for moving the carriage from the end of the downwardly-extending portion of the first raceway into registration with the second raceway.

3. A labeling machine having a raceway provided with a downwardly-extending portion at one end, and a carriage movable under the end of said downwardly-extending portion, said carriage being provided with means, in its upper portion, for supporting articles in the downwardly-extending portion of the raceway when the carriage is in position under said portion, the carriage also being provided with an outwardly-slanting surface opposite said means, whereby, when the carriage is moved in one direction to a slight distance from the center of the downwardly-extending portion of the raceway, an article in said portion of the raceway can enter the carriage between said slanting portion and said means for holding articles in the raceway.

4. A labeling machine having two raceways, a carriage, means for moving the carriage across the first raceway and into registration with the second, said carriage having a slanting rear surface means for guiding said carriage to move in a straight line, and a plate projecting into the first race-way over a part of the carriage.

5. In a labeling machine, the combination of a reciprocable carriage, a plunger reciprocable across the path of the carriage, a main shaft, two eccentrics on said shaft, a lever connected with said plunger and with one of said eccentrics, and a lever connected with the carriage and with the other eccentric.

6. A labeling machine comprising a raceway adapted to receive cylindrical articles, means for applying paste to the end of an article supported in the raceway, and means for simultaneously applying a label to an article supported at another point in the raceway, said paste-applying means comprising a reciprocable frame, and a head oscillatably mounted on the frame and adapted to support a pad.

7. A labeling machine comprising a reciprocable frame, a shaft mounted thereon, a head connected with said shaft, means for turning said shaft during the reciprocation of the frame, and means for elevating said head during the stroke of the frame and depressing it during the return stroke.

8. A labeling machine comprising a reciprocable frame, a shaft mounted thereon, a cylinder connected with the shaft, a head adapted to reciprocate in said cylinder and provided with a projection, a projection loosely connected with said shaft and having an eccentric portion adapted to engage said projection on the head, means for forcing said eccentric portion into engagement with the projection on the head at one end of the stroke of the frame, and means for disengaging it therefrom near the other end of the stroke.

9. A labeling machine comprising a movable frame, a shaft mounted thereon, a cylinder secured to the shaft, a headed plunger in the cylinder, the plunger having a roller projecting through the side of the cylinder, a collar loosely mounted on the shaft and having an eccentric projection adapted to engage said roller for holding the plunger in an extended position with respect to the cylinder, means mounted in a stationary position for forcing said eccentric projection into engagement with the roller, and means carried by said frame for forcing the eccentric projection out of engagement with the roller at a different point in the stroke of the frame.

10. A labeling machine comprising a [illegible]

able frame, a shaft journaled thereon, a gear segment connected with said shaft and having two projections extending therefrom at an angle to each other, means for applying an adhesive connected with said shaft, a stationary guide having a rack for engaging said segment, and means for engaging said projections to prevent the rotation of the shaft during a portion of the stroke of the frame.

11. A labeling machine comprising a movable frame, an adhesive-applying device oscillatably mounted on said frame, a receptacle for an adhesive, a roller mounted in said receptacle and projecting therefrom, and means for moving said adhesive-applying device into engagement with said roller during motion of the frame in one direction and withdrawing the adhesive-applying device from engagement with the roller during motion of the frame in another direction.

12. A labeling machine comprising a movable frame, an adhesive-applying device oscillatably mounted on said frame, a receptacle for an adhesive, a roller mounted in said receptacle and projecting therefrom, means for moving said adhesive-applying device into engagement with said roller, and means for rotating the roller, comprising a shaft on which the roller is mounted, a second shaft, and means for connecting said shafts together.

13. A labeling machine comprising a movable frame, an adhesive - applying device mounted thereon, a receptacle for an adhesive having an open bottom, a roller mounted in said bottom, and an adjustable plate in said receptacle for closing the space between the roller and the wall of the receptacle.

14. A labeling machine comprising a movable frame, an adhesive - applying device mounted thereon, a receptacle for an adhesive having an open bottom, a roller mounted in said bottom, an adjustable plate in said receptacle for closing the space between the roller and the wall of the receptacle, and a labeling device mounted on said frame.

15. A labeling machine comprising a movable frame, an adhesive - applying device mounted thereon, a receptacle for an adhesive having an open bottom, a roller mounted in said bottom, an adjustable plate in said receptacle for closing the space between the roller and the wall of the receptacle, and a labeling device mounted on said frame, said labeling device comprising an oscillatable head adapted to carry labels.

16. A labeling machine comprising a reciprocable cylinder, a stationary piston therein, a shaft mounted in bearings on the cylinder, a tube connecting the cylinder with said shaft, this shaft being provided with a chamber communicating with said tube, a hollow head connected with the shaft and in communication with said chamber, and a perforated pad on the head.

17. A labeling machine comprising a reciprocating cylinder, a stationary piston within the cylinder, a hollow head, means for connecting said head with the cylinder whereby a vacuum is produced in the head during the stroke of the cylinder, a perforated pad mounted on said head for carrying labels, a frame mounted on said cylinder and movable therewith, a receptacle for labels mounted on said frame, and a series of tongues movable into the receptacle for supporting the labels.

18. A labeling machine comprising a movable frame, a receptacle for labels mounted thereon, a stationary guide, a series of tongues adapted to project into the receptacle, and levers for operating said tongues, said levers being provided with an arm engaging said guide.

19. A labeling machine comprising a movable receptacle for labels, two pairs of tongues adapted to be projected into said receptacle for supporting the labels, and means for projecting the tongues on opposite sides into the receptacle and withdrawing the other tongues during the reciprocation of the receptacle.

20. A labeling machine comprising a movable receptacle for labels, two pairs of tongues adapted to be projected into said receptacle for supporting the labels, and means for projecting the tongues on opposite sides into the receptacle and withdrawing the other tongues during the reciprocation of the receptacle, said means comprising a series of levers for operating the tongues, a projection on one of said levers, and a stationary guide for receiving said projection, said guide having a straight portion and an offset portion.

21. In a labeling machine, the combination of a receptacle for labels, a pair of tongues on opposite sides of the receptacle, levers for connecting said tongues together and simultaneously moving them both inwardly and outwardly, a second pair of tongues located at an angle with respect to the first-mentioned tongues, a pair of levers for simultaneously operating the second pair of tongues, and means for operating the first set of levers to force the first set of tongues inwardly and simultaneously operating the second set of levers to force the second set of tongues outwardly.

22. In a labeling machine, the combination of a movable receptacle, two sets of tongues adapted to project into the receptacle, and means for simultaneously moving said tongues, said means comprising a guide having a straight portion and an offset portion, and a lever in said guide, said lever being pivoted at a point adjacent to the offset portion and having two arms at an angle to each other, and a spring for drawing one of said arms toward the straight side of the guide.

23. A labeling machine having a station-

ary raceway, a second stationary raceway adjacent thereto, a carriage movable across said raceways, and mechanism co-acting directly with said second raceway and with said carriage for forcing an article from said carriage into said second raceway.

24. A labeling machine having two stationary raceways located in parallel planes, a carriage, means for moving the carriage from one raceway to the other, and mechanism co-acting directly with said carriage and with one of said raceways for forcing into the latter an article from said carriage.

25. In a labeling machine, the combination of a movable receptacle for labels, a pair of tongues, a second pair of tongues, means for simultaneously projecting the first pair of tongues into the receptacle and for withdrawing the second pair of tongues outwardly from the receptacle, said means comprising a lever connected with the receptacle having a projection, a guide for said projection, said guide having a straight portion and an offset portion, and a pivoted lever for directing said projection from the straight portion into the offset portion.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK X. MALOCSAY.

Witnesses:
JNO. M. RITTER,
ALBERT E. FAY.