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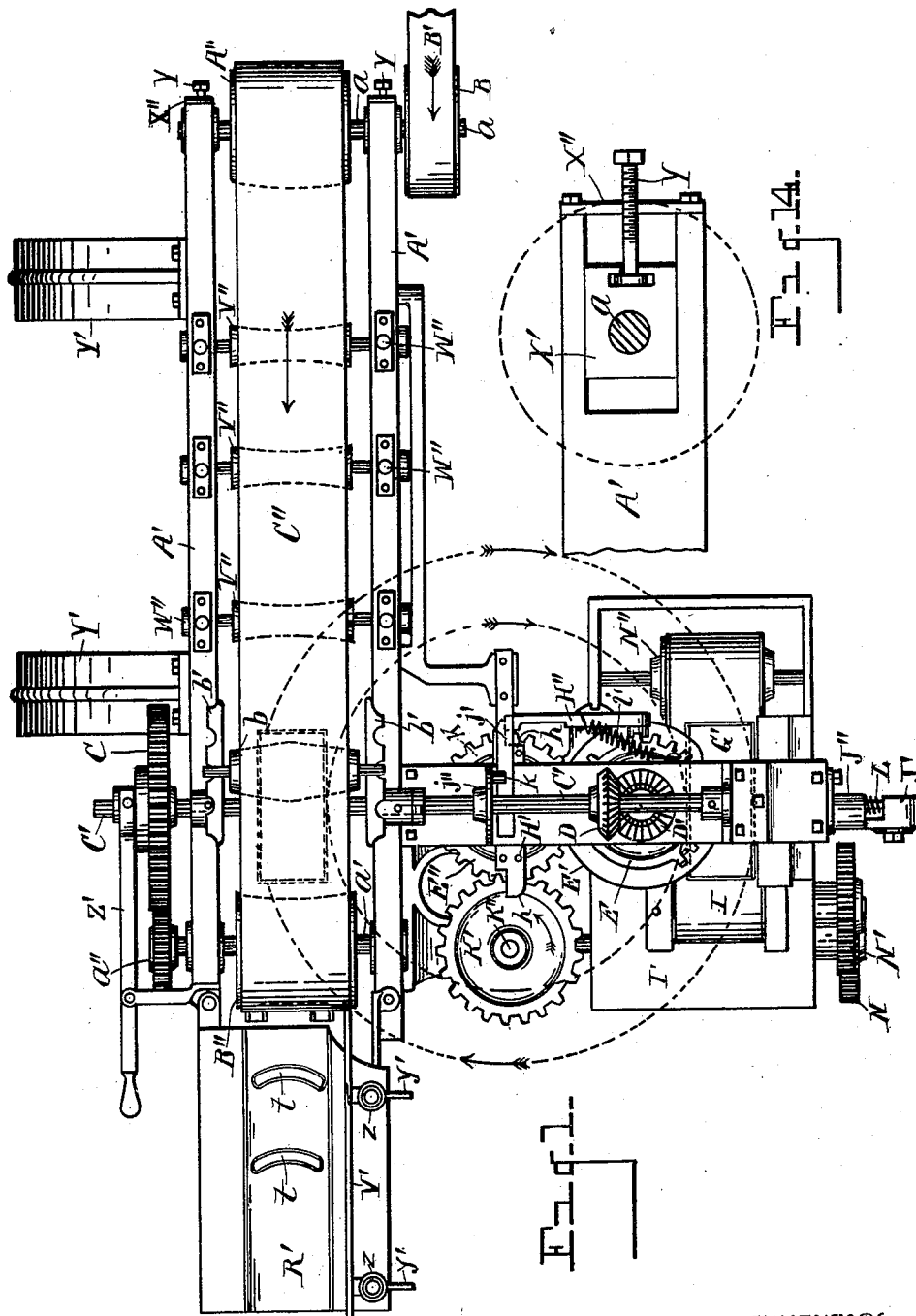
Patented Nov. 8, 1898.

F. H. KNAPP & C. W. BLACKSTONE.
BOTTLE LABELING MACHINE.

(No Model.)

(Application filed Dec. 1, 1896.)

5 Sheets—Sheet 1.



WITNESSES

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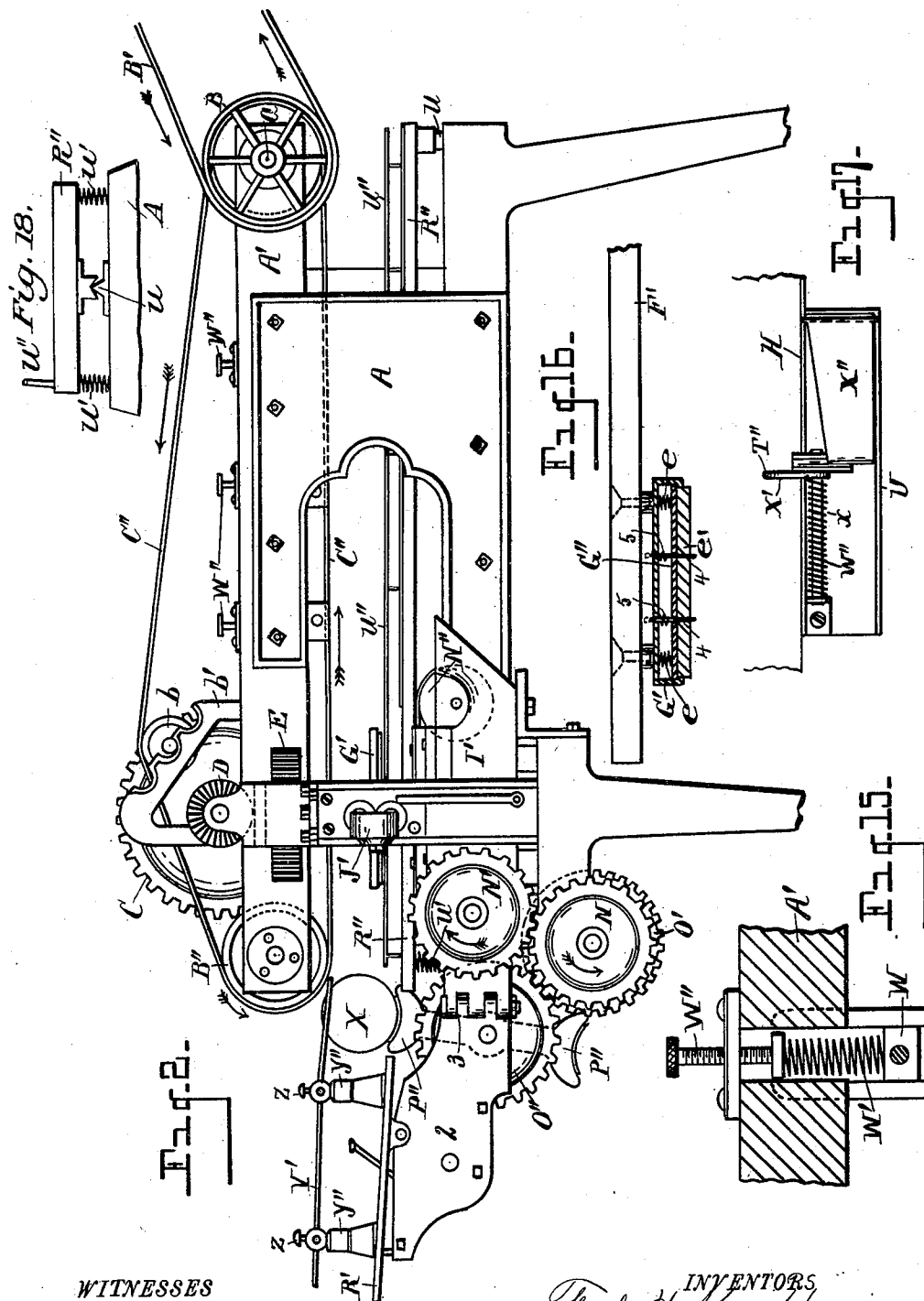
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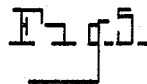
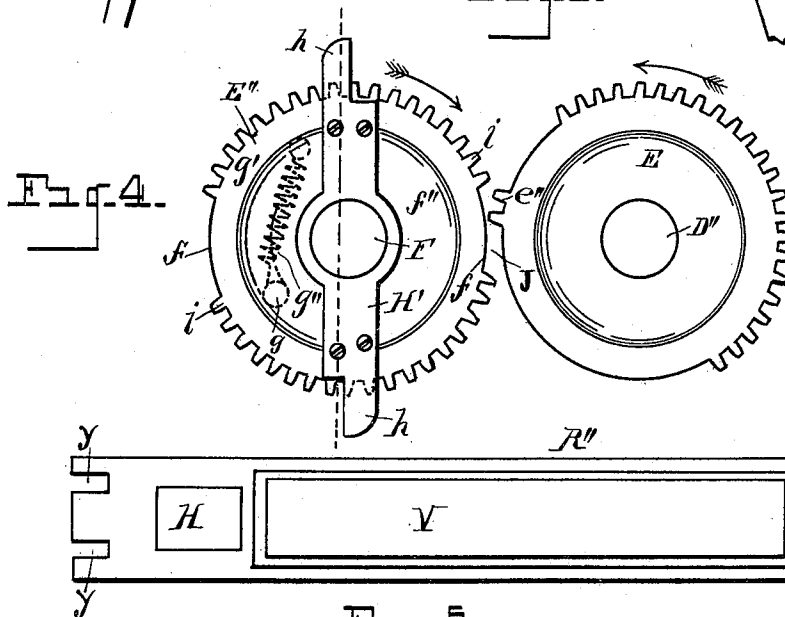
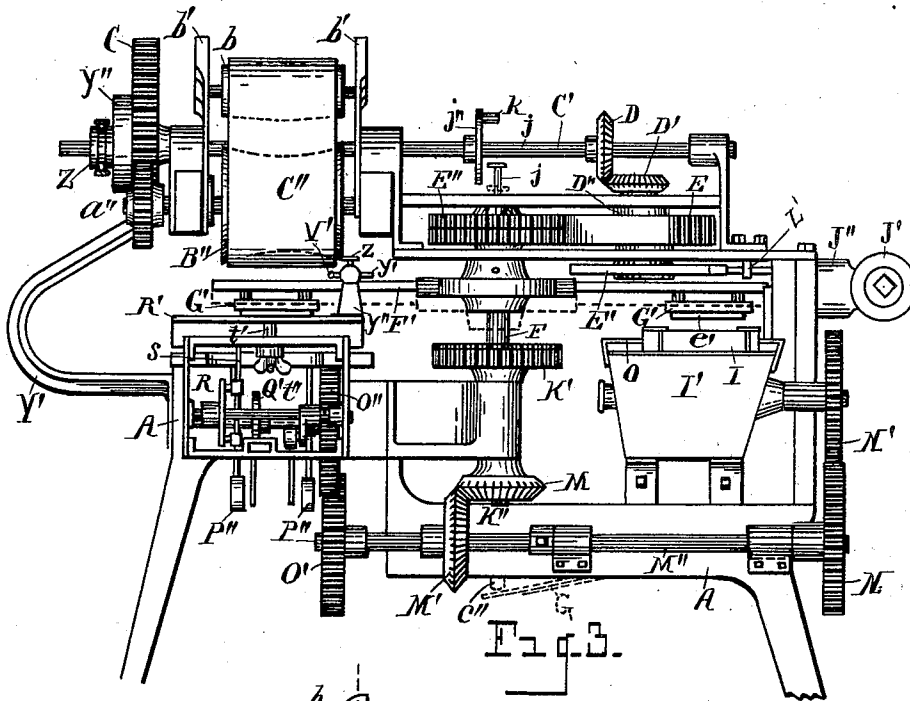
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5 Sheets—Sheet 3.



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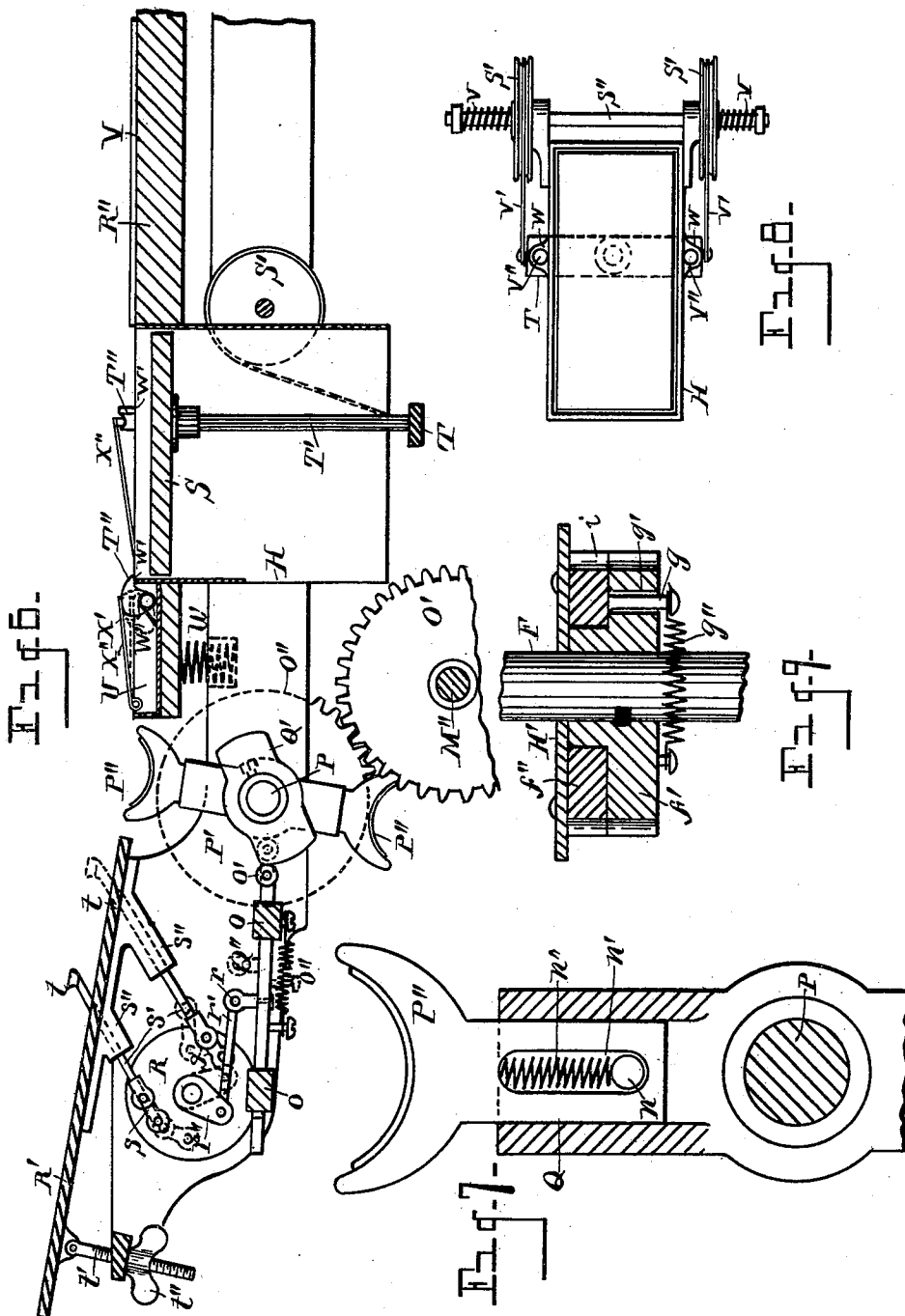
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5 Sheets—Sheet 4.



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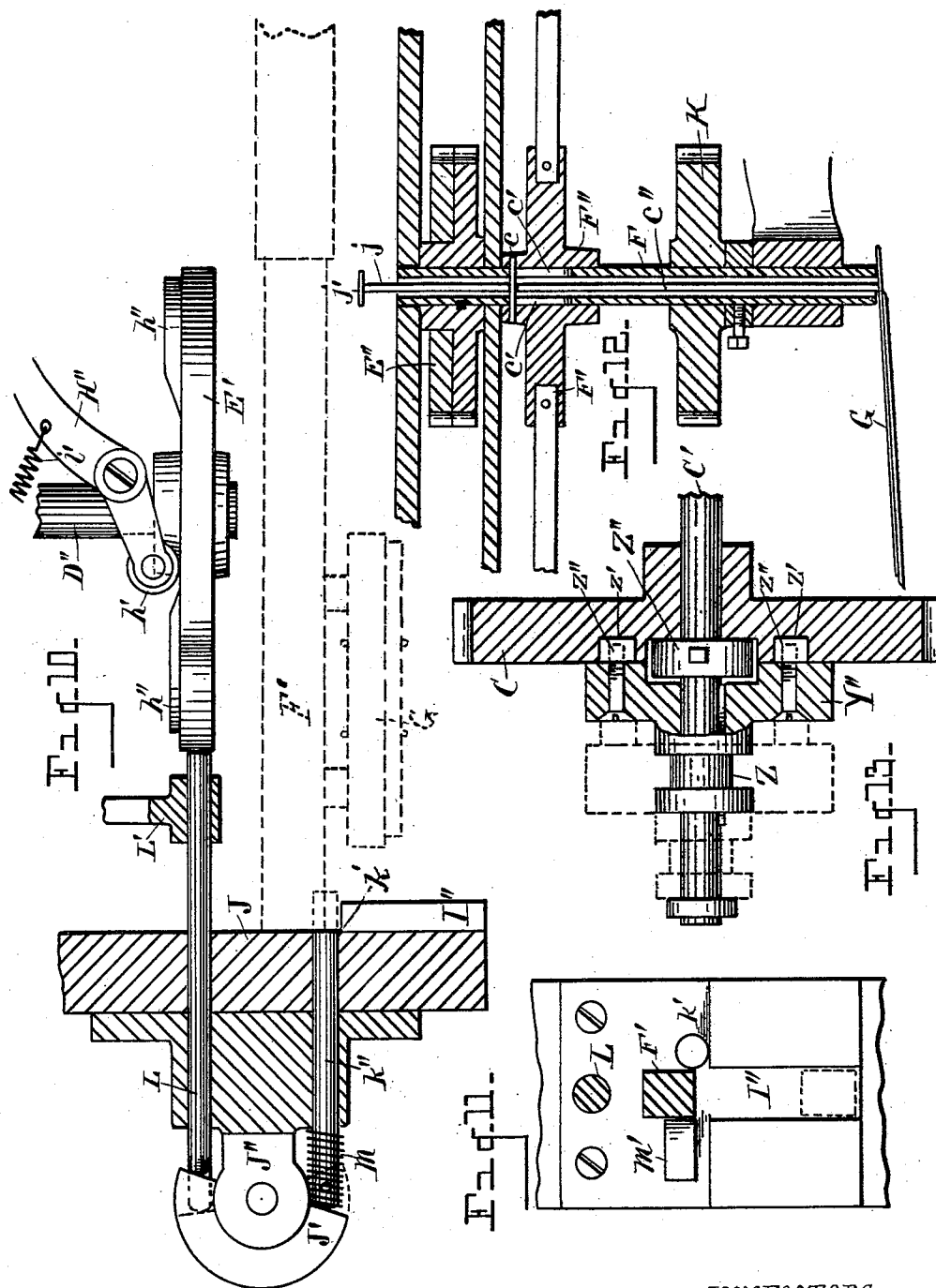
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UNITED STATES PATENT OFFICE.

FRED H. KNAPP AND CLARENCE W. BLACKSTONE, OF ADRIAN, MICHIGAN,
ASSIGNORS TO THE CORNELL & KNAPP COMPANY, OF SAME PLACE.

BOTTLE-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 613,686, dated November 8, 1898.

Application filed December 1, 1896. Serial No. 614,117. (No model.)

To all whom it may concern:

Be it known that we, FRED H. KNAPP and CLARENCE W. BLACKSTONE, citizens of the United States, residing at Adrian, in the county of Lenawee, State of Michigan, have invented certain new and useful Improvements in Bottle-Labeling Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in bottle-labeling machines; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to produce a bottle-labeling machine of comparatively simple and inexpensive construction which will rapidly attach the labels to bottles of various sizes and shapes, the purpose being to provide a machine which will label any and all bottles in commercial use.

The further objects are to space the bottles as they are fed into the machine so as to keep them the requisite distance apart; to provide for presenting said bottles to the labels so that the labels will be applied straight thereto; to provide means for pasting the successive labels in the receptacle so that they will adhere perfectly to the bottles; to provide for properly releasing the labels as the bottle passes over said receptacle, and to provide for perfectly feeding the labels to the bottles as they are consumed in the operation of labeling.

These objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of our improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation of the machine. Fig. 4 is an enlarged detail of the mutilated gears which impart intermittent motion to some of the operative mechanism. Fig. 5 is a plan view of the runway or table, having a rubber pad or other suitable cushion

upon which the bottles roll to more firmly affix the labels thereto. Fig. 6 is an enlarged detail, partly in section, through the bottle-spacing mechanism, the label-receptacle, and runway. Fig. 7 is an enlarged detail, partly in section, showing the end of one of the rotary arms which present the bottles to the machine. Fig. 8 is a plan view of the label-receptacle, showing the spring-actuated pulleys which operate the follower to feed the labels upward to the bottles. Fig. 9 is an enlarged transverse section through the double mutilated-gear wheel which is employed to transmit an intermittent motion to the spacing, feeding, and pasting mechanism. Fig. 10 is an enlarged detail, partly in section, of the mechanism for arresting the horizontally-rotatable arms carrying the paste-applying pads, so as to cause said pads to register perfectly with the label-receptacle when applying paste to the labels therein. Fig. 11 is an enlarged detail, partly in section, of the spring-actuated latch and stop-pin for arresting the pad-carrying arm, as well as the vertical way which guides the end of said arm in its vertical movement. Fig. 12 is an enlarged detail, in vertical section, of the mechanism for depressing the arm carrying the pasting-pads and for raising said arm after being depressed. Fig. 13 is an enlarged detail, partly in section, of a clutch employed to control the operation of the machine. Fig. 14 is a detail showing one of the movable boxes in which the rear roller of the endless belt is journaled, whereby the tension of said belt may be regulated. Fig. 15 is an enlarged detail, partly in section, of the spring-actuated bearing, in which the upper compression-rollers, under which the bottles pass, are journaled, permitting said rollers to yield as the bottles pass thereunder. Fig. 16 is an enlarged detail in section through one of the pads carried by the rotatable arm by means of which paste is deposited on the labels, showing the spring construction to render said pad yielding, so as to insure contact with the entire surface of the label. Fig. 17 is a plan view of the spring-actuated label-retaining dog, which automatically releases the labels from the label-receptacle. Fig. 18 is a detail in elevation of the rear end of the

tilting table, showing the V-shaped point supporting said table at its rear end, so as to permit it to tilt from side to side.

Referring to the letters of reference, A designates the main frame, which is of such construction as to properly carry the operative mechanism. The upper portion of the frame consists of parallel sides A', between which, at the rear end, is journaled a large roller A'', the shaft *a* of which projects through said frame and carries the driving-pulley B, carrying the driving-belt B'. Between the opposite ends of the sides A' of the upper portion of the frame is journaled a large roller B'', whose shaft *a'* extends through the side of said frame and carries the pinion *a''*, which meshes with the large gear C, loosely mounted upon the main horizontal shaft C', which extends transversely of the machine and is suitably journaled in the frame thereof.

C'' designates a wide endless belt, which passes around the large rollers A'' and B'' at the ends of the frame, respectively, and over the idle-roller *b*, which is journaled in the successive steps of the inclined brackets *b'*, mounted upon the opposite sides A' of the frame. Said roller *b* serves as a tightener to keep the requisite tension upon said belt through which the machine is driven and by contact with which the bottles are carried through the machine in the operation of applying the labels thereto, as hereinafter set forth. The roller B'' at the front of the machine, as will be seen, is concaved, the purpose of which is to accommodate bottles having swelled bodies which pass thereunder. It will also be seen that the roller A'' and the idler *b* are of the double-cone pattern, the purpose of which shape is to maintain the belt C'' properly upon the concaved roller B''. The main shaft C' (clearly shown in Figs. 1 and 3) carries near its outer end a beveled gear D, which meshes with a like gear D' on the upper end of a short vertical shaft D'', suitably journaled in the frame and carrying the mutilated-gear wheel E. The lower end of the shaft D'' carries a cam-plate E', which turns with the gear E for purposes hereinafter described.

Meshing with the gear E is a divided or two-part mutilated gear E'', the lower part of which is made fast on the upper end of a hollow vertical shaft F, suitably journaled in the frame and shown more clearly in Fig. 12. Mounted upon said shaft, below said divided gear E'', at its longitudinal center is a rotary arm F', whose projecting ends in their movement describe a horizontal circle. The shaft F passes loosely through the central hub F'' of said arm, which is secured thereto by means of a pin *c*, which passes through the hub of said arm and through a vertical slot *c'* in said shaft. By this means said arm is caused to rotate with the shaft F and is made vertically movable thereon. Passing upward into said shaft F, through the lower end thereof, and engaging the pin *c* is a rod *c''*, which

rests upon a spring G, that serves to normally hold the arm F' in its raised position, but which will yield to permit said arm to be depressed and again return said arm to its normal position when the force which depressed it is removed.

The outer ends of the arm F' are each provided with a paste-applying pad, (shown in Fig. 16,) which consists of a case G', open at its under face and detachably secured to the under side of the arm by means of screws. Located within said case is a movable plate G'', mounted upon coiled springs *e* and provided on its under face with a suitable pad *e'*, which depends slightly below the edges of the case G', by which arrangement a yielding pad is provided which will accommodate itself to the surface of the labels when pressed downward thereon and insure the application of paste to the entire surface of the label. This arm F' in its operation of applying paste to the labels which are in the label-receptacle H, located in the bottle-runway of the machine, (see Fig. 6,) swings in a horizontal circle, and twice during each complete revolution of said arm it is arrested in its horizontal movement and caused to reciprocate vertically, so as to bring the paste-laden pad on the end thereof into contact with the uppermost label in said receptacle. This intermittent movement is imparted to said arm through the mutilated gears E and E'', of which the gear E rotates continuously while the machine is in operation, while the divided gear E'', which turns the shaft F upon which said arm F' is mounted, has an intermittent motion, being arrested twice in each revolution by reason of the absence of the gear-teeth from one-half of the gear E. The operation of these gears is as follows, reference being had to Figs. 3, 4, and 9: As will be seen, gear E is a wide gear and is provided with teeth upon one-half of its circumference only with the exception of the two gear-teeth *e''*, distant from the remaining teeth, while the divided gear E'' has teeth removed from opposite points on its periphery, as shown at *f*. This gear E'', as before stated, is divided horizontally, consisting of a lower part *f'* and an upper part *f''*. The part *f'* of said gear is fixed to the shaft F, while the part *f''* is journaled on the hub of part *f'*, being limited in its movement by a pin *g*, fixed therein and projecting downward through a curved slot *g'* in the part *f'*, said pin having attached to the lower end thereof a coiled spring *g''*, the opposite end of which is secured to the under face of the part *f'* of said gear. By this arrangement the part *f''* of said gear is permitted to move upon the part *f'* the distance equal to the length of said slot, which is sufficient to cause the teeth upon the part *f''* to cover the open space on the periphery of the part *f'*, thus making the teeth continuous upon the surface of said divided gear when the parts are in such position, and in which position it is the tendency of the spring *g''* to normally

hold said gears. Crossing the face of the upper part f'' of said divided gear is a cross-arm H' , having the projecting ends h , which are adapted to be alternately engaged by the upper end of a pivoted lever H'' , (shown in Figs. 1 and 10,) the opposite end of which is provided with an antifriction-roller h' , which is adapted to travel upon the upper face of the cam-disk E' , carried on the lower end of the shaft D'' , upon the upper face of which cam are the diametrically-opposed projections h'' , over which said antifriction-roller is adapted to travel to actuate said lever and disengage it from said arm H' .

The gears and accompanying parts are so timed and adjusted that when in the position shown in Fig. 4 as the separate teeth e'' of the gear E by the rotation thereof pass into the path of the teeth i on the upper part f'' of the divided gear E'' the lever H'' will be actuated by one of the projections h'' on the cam-plate E' , so as to depress the upper end of said lever and release it from engagement with the projecting end of the arm H' , when the coiled spring g' , drawing upon the pin g , carried by the movable upper part f'' of said divided gear, will turn said part f'' of said gear, so as to cause its teeth i to strike against the separate teeth e'' of the gear E and, as said gear turns, follow said teeth e'' until the pin g shall have reached the limit of the slot g' . By this operation the gear-teeth upon said part f'' will extend across the open spaces on the periphery of the part f' , making the teeth upon the periphery of said divided gear E'' practically continuous, at which time the remaining teeth upon the periphery of the gear E will move into engagement with the teeth of the gear E'' , when said gear will be driven and the shaft F will revolve one-half turn, at which time the teeth occupying one-half the periphery of the gear E will encounter the open space f in the upper part f'' of the gear E'' and drop said part, which is then arrested by the engagement of the arm H' with the end of the lever H'' , which is returned into the path of said arm by the action of the spring i' , the teeth of the lower part f' of said divided gear, however, still being in engagement with the teeth of the gear E said part is carried farther, so that the open spaces f in the parts of said gear E'' are caused to register. At this point in the operation of said gears the teeth of the gear E pass from engagement with the teeth of the divided gear E'' , when said divided gear ceases to revolve and remains stationary until the gear E makes one-half of a revolution, when the arm H' is again released by the lever H'' , causing a re-engagement of the teeth of said gear, as before described, and imparting a succeeding one-half rotation to the divided gear E'' .

The horizontally-rotatable arm F' , being mounted upon the shaft F , driven by the gear E'' , partakes of the intermittent motion imparted to said shaft and is so mounted thereon as to stand transversely of the machine, as

shown in Fig. 3, during each pause made in the rotation of its carrying-shaft F . In this position of parts one end of said arm stands directly over the label-receptacle in the runway of the machine, while the other end stands over the paste-carrying apron I , mounted in the paste-box I' . In order to carry the paste-depositing pad on one end of said arm into contact with the surface of the label and the pad on the opposite end of said arm into contact with the paste-supplying apron, it is necessary to depress said arm while in this position. This is accomplished by means of a vertical rod j , (shown more clearly in Figs. 3 and 12,) which enters the upper end of the hollow shaft F and rests upon a cross-pin c . Lying upon the upper end of said rod j is a flat leaf-spring j' , (shown in Fig. 1,) one end of which is secured to a part of the frame. Mounted upon the horizontal shaft C' adjacent to the upper end of the rod j is a disk j'' , carrying upon its vertical face a projecting lug k , which as said disk rotates engages the leaf-spring j' and forces downward the rod j , upon which said spring bears, thereby causing said arm F' to slide downward upon the shaft F , the pin c in this movement sliding downward in the slot c' in said shaft. As the arm is depressed by this operation the pad on one end thereof is forced into contact with the surface of the uppermost label in the label-receptacle, while the pad on the other end of said arm is simultaneously brought into contact with the paste-supplying apron I , so that with each depression of said arm, which occurs intermediate its periods of movement, a label is pasted, and a supply of paste is procured by the opposite pad for the succeeding operation. The periods of depression of said arm are of short duration, lasting only while the lug k on the disk j'' is passing the lower arc of the circle described by its movement, and as soon as released said arm is raised through the operation of the spring G , as before described.

It is necessary in the vertical movement of the arm F' that it be guided perfectly to its work, so that the outer paste-applying pad thereon shall register exactly with the opening in the label-receptacle to insure a perfect application of paste to the surface of the label. This guiding of the arm in its vertical movement is effected by causing the end thereof adjacent the paste-roller to register with and travel vertically in a way I'' , (see Figs. 10 and 11,) formed in the frame of the machine, the arrangement of the parts being as follows: Formed in the plate J of the frame, adjacent to the upper end of the way J'' , is an aperture k' , which extends through the frame of the machine and in which a pin k'' is adapted to reciprocate, the outer end of said pin being pivoted to an oscillating head J' , which is in turn pivoted to a bracket J'' on the frame. Embracing the outer end of said pin k'' is a spring m , which is confined between said bracket and the shoulder of the oscillating head J' . Pivoted to the

opposite side of the oscillating head is a rod L, which passes freely through said bracket and the plate J, its inner end being supported in a hanger L' adjacent to the edge of the cam E'. This cam is provided with a high point on its periphery, which engages the end of the rod L and forces said rod outward, oscillating the head J' and causing the end of the pin j'' to project into the path of the arm F'. This operation occurs at the time of a rest in the propulsion of said arm, through the operation of the mutilated gear, so that the protruding end of the pin k'' simply arrests the momentum of said arm, while the beveled spring-latch m', over which the end of said arm rides in its forward movement, springs out as the arm passes and prevents any rebound thereof from its engagement with the pin k'', whereby the end of the arm is locked directly in line with the way I' and is caused to move in said way as said arm reciprocates vertically. The high point on the edge of the cam E' is in engagement with the end of the rod L but a short time, so that the end of the pin k'' is held protruded only long enough to arrest the motion of the arm F', when the spring m' withdraws the end of said pin from the path of said arm, permitting the arm when it rises after its depression to pass onward in its horizontal movement.

The bottle spacing and feeding mechanism, as well as the rollers in the paste-box which carry the paste-supplying apron I, are driven intermittently by means of a gear K, mounted on the shaft F, as shown in Fig. 12, which meshes with a gear K', (see Figs. 1 and 3,) which is mounted on the upper end of a short vertical shaft K'', journaled in the frame and carrying at its lower end a beveled gear M, which meshes with a like gear M' on the horizontal shaft M''. The outer end of said shaft M'' carries a gear-wheel N, which meshes with a gear N' on the journal of one of the rollers carrying the paste-supplying apron I. This apron passes over a second roller N'', journaled in the paste-box, and the under side of said apron dips into the paste therein. By this arrangement it will be seen that the paste-apron I, through the gears N and N', is caused to travel over its supporting-rollers and present a fresh supply of paste to the pads of the swinging arm, which are at intervals forced downward thereon, as before described. Extending under said apron is a suitable table O, which forms a support therefor under the point where the pads of said arm bear thereon.

Mounted upon the inner end of the shaft M'' is a gear-wheel O', which meshes with a gear O'', mounted on a short transverse shaft P, journaled in the feed end of the machine. (See Figs. 3 and 6.) Mounted upon said shaft P at their longitudinal center are two rotary arms P', whose free ends swing in a vertical circle and which are spaced from each other so as to support at each end the bottle being fed to the machine. The ends of these arms

are provided with a curved saddle P'', having a stem Q, (see Fig. 7,) which freely enters a socket in the end of said arm and is retained therein by a pin n, which passes through a vertical slot n' in the stem of said saddle. Confined between said pin and the upper end of said slot is a coiled spring n'', which normally holds the saddle P'' extended, but which will permit said saddle to recede to accommodate itself to any variation in the size of the bottle and automatically align the bottle lying in the saddles of said arms, so as to properly present it to the carrier-belt C'' that said belt may convey it over the label in the receptacle so as to apply said label squarely to the bottle.

In feeding the bottles to the machine so that they may be properly timed in their passage to the saddles of the rotary feeding-arms it is necessary to space said bottles at the entrance of the machine. This spacing mechanism is actuated by a double-ended cam Q', which is fixed upon the shaft P and turns therewith. Q' designates a reciprocal rod mounted in suitable guides o and carrying on its inner end an antifriction-roller o', which extends into the path of the cam Q'. Attached to the under side of said rod is a coiled spring o'', which holds the roller o' on said rod in contact with said cam. By this arrangement it will be seen a rotation of the cam Q' will cause the rod Q' to reciprocate longitudinally. Pivoted to a stud r, carried by the rod Q'', is a link r', the opposite end of which is pivoted to a crank r'' on the shaft of the disk R, whereby the oscillation of the rod Q' imparts a rotary reciprocation to the disk R. Pivoted to the vertical face of said disk R are the diametrically-opposed links s, which are in turn pivoted to the lower ends of the rods s', that pass obliquely through the guides s'', secured to the under face of the inclined chute or table R', and carry at their upper ends the curved stops t, adapted, when protruded through said inclined table, to arrest and hold a bottle from rolling downward thereon. These rods, because of their attachment to the reciprocal disk R, are actuated to successively project the stops on their upper ends above the plane of the inclined table R' and withdraw said stops below the plane of said table, the arrangement being such that when the upper stop is projected the lower stop is withdrawn, and vice versa, whereby the bottles that are placed upon the inclined table are alternately held and released by said reciprocating stops as they roll down the incline of said table, so that they are properly spaced and fed into the machine so that said bottles do not crowd each other and may be handled one at a time, according to the timed operation of the mechanism in their passage through the machine.

The proper incline or pitch of the table R' is attained by means of the screw-bolt t', which is pivoted to the under side of said table and,

passing through a suitable support, receives the adjusting thumb-nut t'' .

The bottles as they pass from the spacing-stops t in the inclined table are received by the saddle-carrying arms P' and presented to the table or runway R'' of the machine, where they are engaged and rolled along upon said runway or table by the conveying-belt C'' . This table extends the entire length of the machine under said belt, and its rear end is supported centrally upon a pivotal V -point bearing u , which permits of the tilting of the forward end of said table, which is supported on each side by means of coiled springs u' , which allow said table to tilt laterally and yield vertically as the bottle is delivered thereon to accommodate any variation in the size of the bottles and at the same time hold the bottles upward in firm contact with the traveling belt C'' . Extending along one edge of the table or runway R'' is a guide-rail u'' , which engages the bottom of the bottles and keeps the bottle straight in its passage through the machine.

The label-receptacle H is located in the runway or table R'' , near the forward end thereof, as clearly shown in Fig. 6, and consists of a box or case depending through said table and provided with a vertically-movable follower S , which fills the inner diameter thereof and serves as a movable bottom, on which the labels are supported and by means of which they are fed upward as they are used. This follower is carried upward in the label-receptacle by means of two sheaves S' , actuated by the springs v , one end of said springs being attached to a suitable support and the opposite end to said sheaves, respectively, which are mounted upon a shaft S'' . Attached to said sheaves and lying in the grooves therein are the cords v' , which extend downward and are attached to the ends of the cross-piece T , which extends under the bottom of the label-receptacle and to which is attached the lower end of the vertical rod T' , upon which said follower S is mounted. By this arrangement it will be seen that as the follower is forced downward in the act of placing labels in said receptacle the sheaves S' are rotated, so as to wind the springs v , whose tension when wound is exerted through the cords v' to force said follower upward, in which movement said follower is guided by means of the side rods v'' , attached at their lower ends to the cross-piece T and passing through suitable guides w on the sides of the label-receptacle.

To provide for retaining the labels in the receptacle to prevent them from being crowded therefrom by the upward pressure of the follower, and at the same time to automatically release the uppermost label so that it may be picked up and wound onto the bottle passing over the receptacle, there is employed a series of spring-actuated dogs or catches T'' , which are pivoted one at the forward end and one on each side of the label-receptacle and which are provided with a projecting nose w' , that

projects slightly beyond the upper edge of the receptacle and engages the edges of the uppermost label therein and normally prevents the label from passing upward beyond a line with the top of said receptacle. These dogs are mounted upon spring-actuated shafts w'' , journaled in recesses located in the bed or table R'' , and the spring x on said shafts serves to normally hold said dogs so that the nose will project onto the labels in the receptacle. The upper face of said dogs terminates in a rearwardly-curved extension x' , upon which bears a thin blade x'' , whose opposite end is hinged to said table. By this arrangement a downward pressure upon said blade x'' will cause it to bear upon the dog and rock said dog backward into the recess U , as shown by dotted lines in Fig. 6, so as to withdraw the nose of said dog from engagement with the labels in the receptacle, enabling the label to be removed, the operation being as follows: The bottle, entering the machine, rolls onto the initial blade x'' , which, being pressed downward, rocks backward the dog at the forward end of the label-receptacle and releases the forward end of the label, which, being pasted, is picked up by the bottle rolling thereon. As the bottle passes over the dog at the forward end of the receptacle the spring x upon its shaft returns said dog to its former position, so as to engage the succeeding label, while the bottle in its onward movement rolls onto the blades x'' on the sides of the label-receptacle and in like manner actuates the dogs, so as to release them from engagement with the sides of the label, thereby permitting the label to be freely picked up and wound onto the bottle as it passes along the runway, said dogs, after the passage of the bottle, returning to their former position to engage the succeeding label.

Mounted in the bed of the runway R'' is a continuous pad of rubber or like substance V , shown in Fig. 5, which serves, as the bottle rolls thereon, to press the label tightly thereto. In the forward end of said runway are the slotted openings y , through which pass the ends of the rotary feeding-arms P' as the bottle is deposited by said arms onto said way.

In general the operation of the machine is as follows: The bottles to be labeled are placed upon the inclined table R' , so as to be engaged by the spacing-stops t , whereby they are properly timed and delivered to the feeding-arms P' , in the saddle of which they are carried from said table to the runway of the machine, upon which they are deposited, as shown at X , in Fig. 2, so as to be engaged by the conveyer-belt C'' , whose motion while the machine is in operation is continuous. As soon as the bottle is engaged by said belt it is rolled along the runway over the uppermost label in the label-receptacle, which has been previously pasted by means of the horizontally-swinging arm F' , which in its operation swings into position and deposits paste upon the uppermost label in the receptacle after

the passage of each bottle therefrom, all of which operations are correctly timed and regulated by means of the mutilated gears E and E' and the connecting mechanism driven thereby. After picking up the pasted label and winding it thereon the bottle is carried along the runway onto the rubber pad V and the label firmly pressed into place, when said bottle is discharged from the rear end of the machine, by which arrangement bottles of varying sizes and shapes may be quickly and accurately labeled.

Mounted upon the inclined table R' is a guide-rail V', made adjustable by means of the lateral pins y', which slide freely through the supports y'' and are locked by the hand-screws z. The bottoms of the bottles are placed against this rail, so that the bottles may be fed into the machine in such manner as to cause the labels to be applied at the desired location thereon.

Journaled between the sides A' of the frame, adjacent to the under side of the belt C'', and against which said belt travels, is a series of small concaved rollers V'', which prevent said belt from springing upward as the bottles pass thereunder and hold said bottles firmly in contact with the pad of the runway. These rollers are journaled in sliding boxes W, (see Fig. 15,) which are held downward by a coiled spring W', against which bears a tension-screw W'', whereby said rollers are yieldingly held in place.

To provide for applying proper tension to the belt C'', the shaft a of the rear roller A'' is journaled in boxes X', mounted to slide in the rear ends of the sides A' of the frame. Threaded in the cross-plates X'', mounted on said frame, are the adjusting-screws Y, the inner ends of which are swiveled in said sliding boxes X', whereby by the turning of said screws the roller A'' may be adjusted to place the required tension upon the belt C''.

To provide for the extended necks of the bottles in their passage through the machine, the frame is open on the left of the machine and is supported by the curved braces Y', which afford free passage for the neck of the bottle.

To provide a clutch mechanism for throwing the machine in and out of gear, the gear-wheel C, (see Fig. 13,) which drives the main shaft C', is mounted loosely on said shaft, so as to rotate thereon, and is provided in its outer face with apertures z'. Standing adjacent to the outer face of said gear and splined upon the shaft C' is a disk Y'', having pins z'' projecting from the face thereof and adapted to enter the aperture in the face of the gear C. In the hub of the disk Y'' is an annular way Z, adapted to be embraced by the bifurcated end of the operative lever Z', by means of which said disk Y'' is moved longitudinally upon the shaft to carry its locking-pins z'' into and out of engagement with the gear C. Z'' designates a fixed collar which pre-

vents the gear C moving outward on the shaft C'.

On referring to Fig. 2 it will be seen that the forward section of the frame 2 is hinged at 3 to the main portion of the frame, so that it may be swung to one side, if desired, to enable the operator to have ready access to the label-receptacle from the front of the machine when it is desired to remove said receptacle or change the size of the labels.

To prevent the label from sticking to the pad e', carried by the rotary arm F', when said pad is pressed downward upon the label to apply paste thereto and obviate the lifting of said label with said pad when said arm rises, there is employed a series of vertically-reciprocating stripping-pins 4, which are mounted in the case G' (see Fig. 16) and project through the surface of said pad. Coiled around said pins are the springs 5, one end of which is attached to the pin, while the opposite end bears against the wall of the case G', through which said pins pass, by which arrangement said pins recede against the action of the springs 5 as the pad e' is pressed down upon the surface of the label, but the lower ends of which are projected through said pad as it is lifted from the label, so as to strip the label therefrom.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a bottle-labeling machine, the combination with the bottle-runway, the label-receptacle therein, the pivoted arm adapted to swing in a horizontal circle, the adhesive-carrying pads mounted on the ends of said arm, the adhesive-receptacle in the path of said arm and in alinement with said label-receptacle diametrically of the circle described by the movement of said arm, means for moving said arm to carry the pad on one end thereof into line with the label-receptacle, and the pad on the opposite end thereof into line with the adhesive-receptacle, and means for reciprocating said arm vertically.

2. In a bottle-labeling machine, the combination with the bottle-runway, the label-receptacle in said runway, the centrally-pivoted arm mounted to swing in a horizontal circle, the outer traveling ends of said arm carrying adhesive-depositing pads, the adhesive-receptacle in the path of the moving ends of said arm which, in their movement, swing over the label-receptacle, means for imparting an intermittent rotation of said arm, means for arresting said arm with its opposite ends in line with the label-receptacle, and the adhesive-receptacle, and means for reciprocating said arm vertically in this position.

3. In a labeling-machine, the combination with the runway and label-receptacle, the swinging and vertically-movable arm carrying the adhesive-applying pad, the movable pin for arresting the motion of said arm, means

for projecting said pin into and withdrawing it from the path of said arm, and the spring-latch for preventing the rebound of said arm.

4. In a bottle-labeling machine, the combination of the bottle-runway, the label-receptacle therein, the spring-actuated retaining-dogs pivoted at the sides of said receptacle having a projecting nose which bears upon the labels in said receptacle, means for feeding the labels upward against said retaining-dogs, the hinged leaf bearing upon the extended rear ends of said pivoted dogs, said leaves being located in the path of the bottle whereby said dogs are actuated to release the uppermost label as the bottle passes through the machine.

5. In a bottle-labeling machine, the combination of the runway, the label-receptacle therein, the spring-actuated retaining-dogs pivoted at the sides of said receptacle, the nose of said dogs projecting into the said receptacle and their body portion projecting beyond their point of pivot, means engaging the extended ends of said dogs operated by the moving bottle to rock said dogs outward and release the upper label as the bottle passes over said receptacle.

6. In a bottle-labeling machine, the combination of the bottle-runway, the rotary feeding-arms mounted in an opening in said runway, said arms having concaved saddles in the ends thereof adapted to receive the bottles, said saddles being mounted upon springs to permit of the yielding thereof.

7. In a bottle-labeling machine, the combination with the traveling conveyer, of the bottle-runway adjacent to said conveyer, said runway consisting of a table hinged at the rear end thereof, the spring supporting the forward end of said table whereby it is permitted to yield or tilt to accommodate itself to pressure placed thereon.

8. In a bottle-labeling machine, the combination with the traveling conveyer, of the tilting table located adjacent to said conveyer.

9. In a labeling-machine, the combination with the traveling conveyer, of the tilting table or runway distant below said conveyer, and the label-receptacle mounted on said table and partaking of the tilting movement thereof.

10. In a labeling-machine, the combination with the horizontally-traveling conveyer, the tilting table distant below said conveyer and approximately parallel therewith, said table carrying a continuous pad or cushion on the upper face thereof.

11. In a bottle-labeling machine, the combination with the runway, the movable feeding-arms in said runway having independent saddles at their ends which engage the bottle, said saddles being yieldingly mounted on said arms.

12. In a bottle-labeling machine, the combination with the runway and label-receptacle therein, the intermittently-movable paste-applying arm traveling over said receptacle, means for reciprocating said arm vertically when at rest, the spacing mechanism for regulating the entrance into the machine, and the movable feeding-arms which receive and present the bottles onto the runway.

13. In a can-labeling machine, the combination of the runway, the spacing-table hinged to the forward end of the runway to swing laterally out of line therewith.

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

FRED H. KNAPP.

CLARENCE W. BLACKSTONE.

Witnesses:

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