No. 795,149. PATENTED JULY 18, 1905.

H. MILLER.

LABELING MACHINE.

APPLICATION FILED JAN. 2, 1904.

3 SHEETS—SHEET 1.

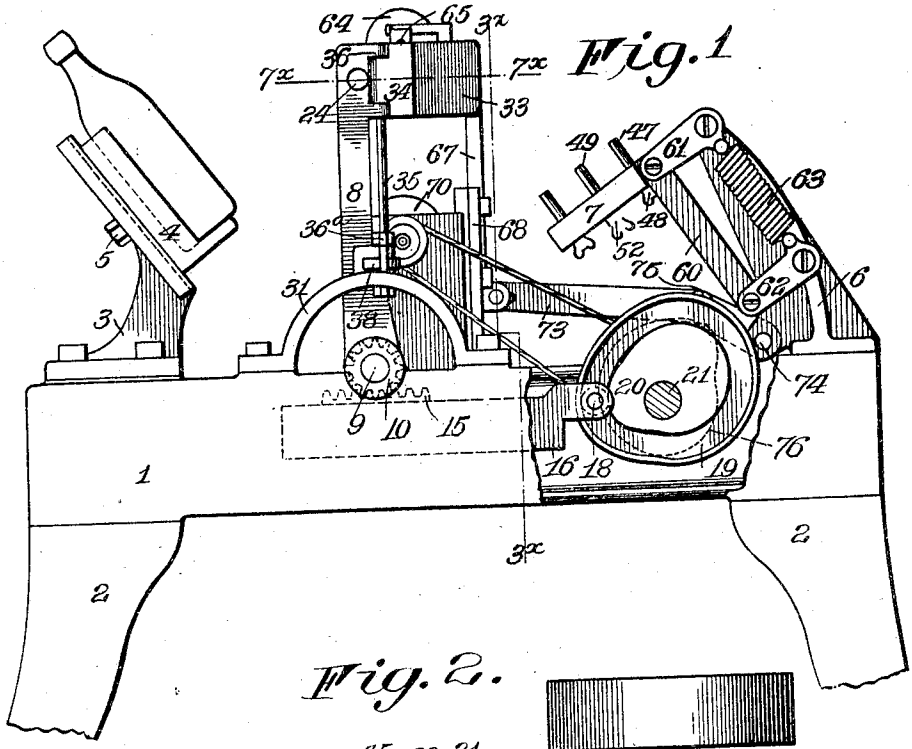


Fig. 1.

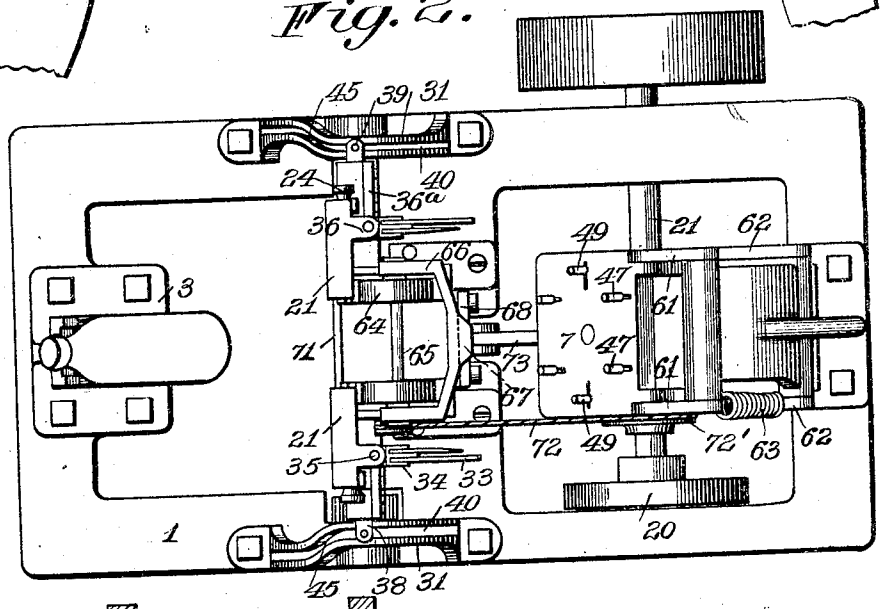


Fig. 2.

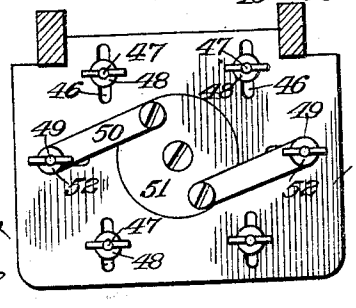


Fig. 5.

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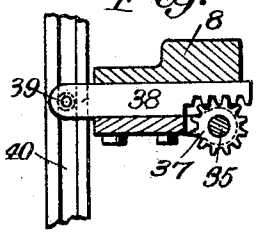
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3 SHEETS—SHEET 2.

Fig. 6



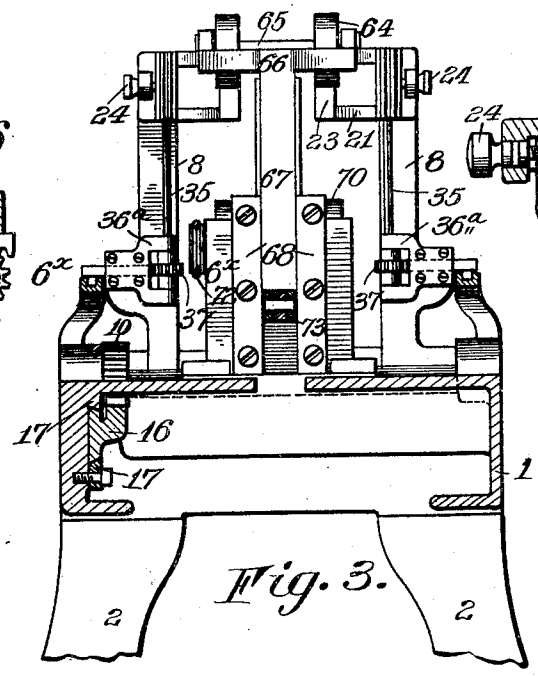


Fig. 3.

Fig. 7.

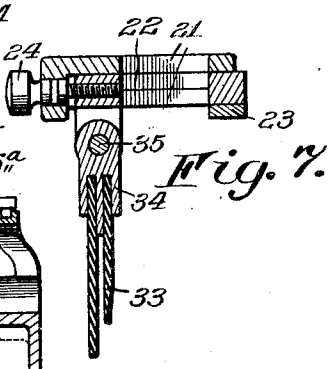
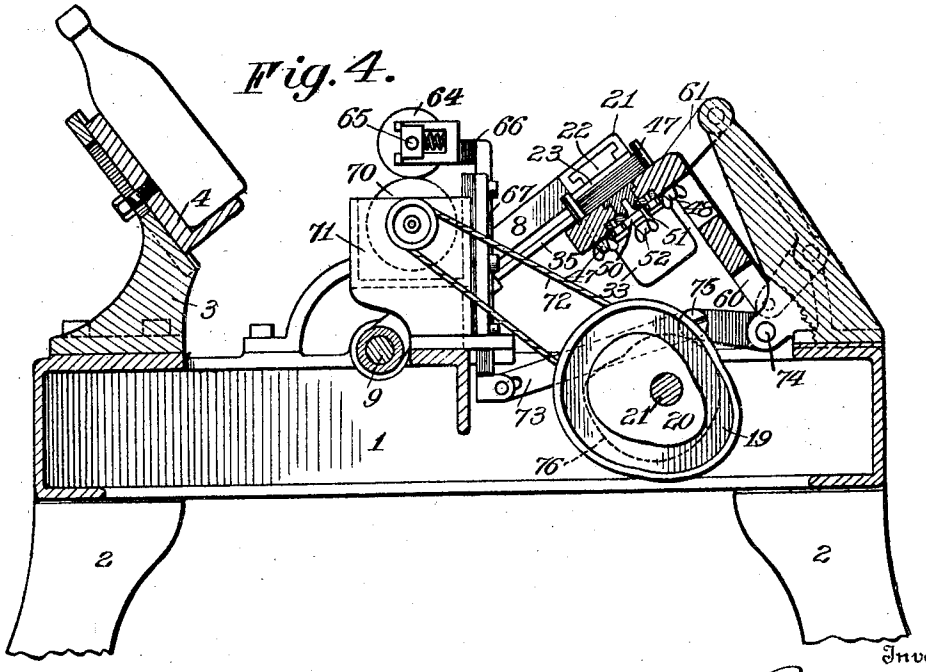


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 8.

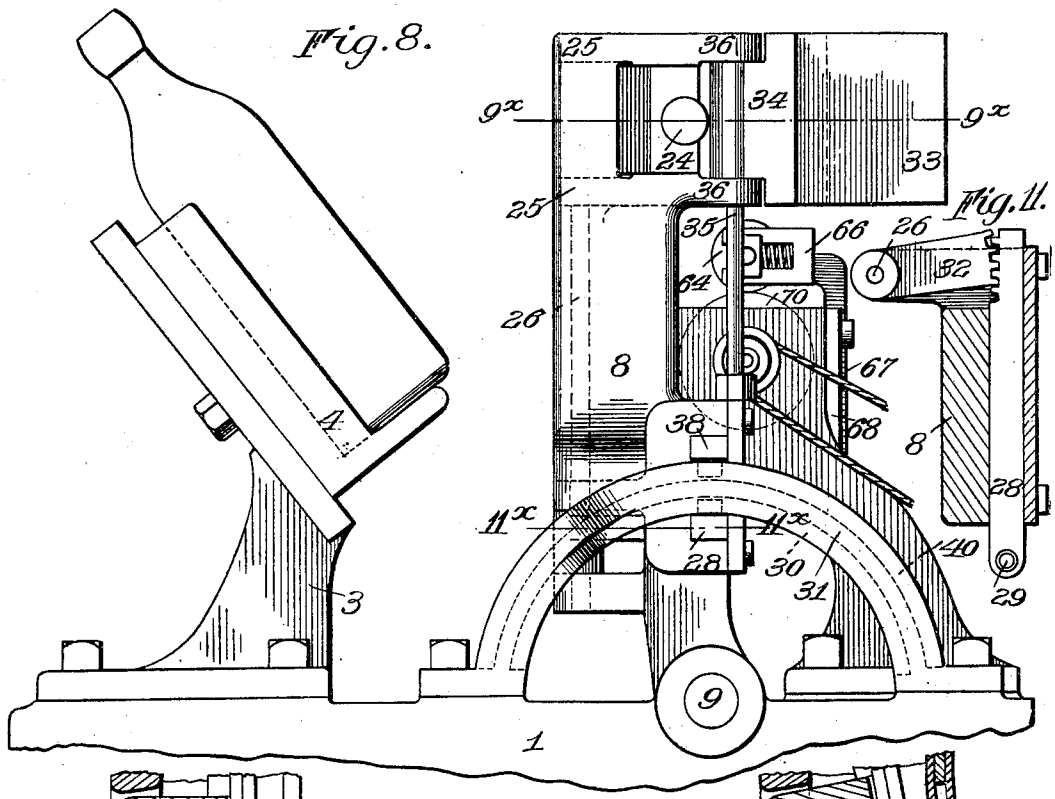


Fig. 11.

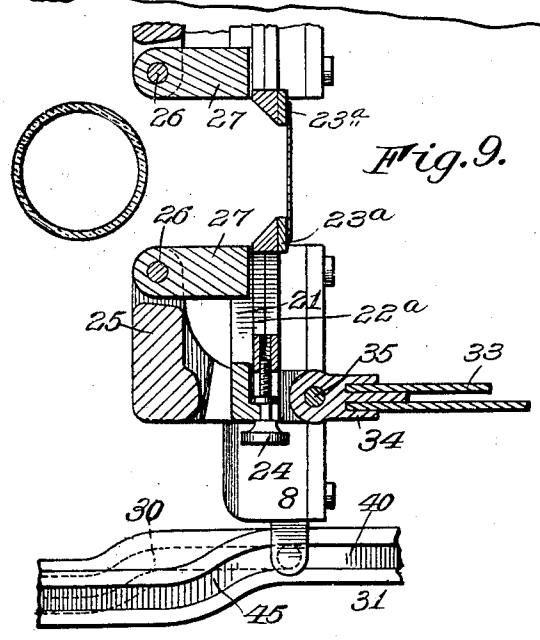
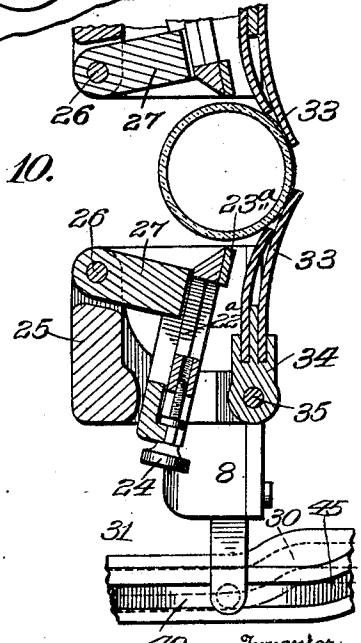


Fig. 9.

Fig. 10.



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No. 795,149. Patented July 18, 1905.

UNITED STATES PATENT OFFICE.

HENRY MILLER, OF ROCHESTER, NEW YORK.

LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 795,149, dated July 18, 1905.

Application filed January 2, 1904. Serial No. 187,461.

To all whom it may concern:

Be it known that I, HENRY MILLER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Labeling-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide a machine for affixing or attaching labels to bottles or similar articles, comprising generally a rest or support, a holder for the labels, and affixing-arms and wipers for transferring a label from the holder and applying it to the bottle, together with suitable mechanism for causing a relative operation of the various parts of the machine.

To these and other ends my invention consists in certain improvements and combinations of parts, all as will be more fully described hereinafter, the novel features being pointed out particularly in the claims at the end of the specification.

In the drawings, Figure 1 is a side elevation of a labeling-machine constructed in accordance with my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a sectional view on the line $3^{\times}$ $3^{\times}$ of Fig. 1. Fig. 4 is a view similar to Fig. 1, shown partly in section, illustrating the affixers coöperating with the labels on the holder. Fig. 5 is a bottom plan view of the label-holder. Fig. 6 is a detail sectional view on the line $6^{\times}$ $6^{\times}$ of Fig. 3. Fig. 7 is a similar view on the line $7^{\times}$ $7^{\times}$ of Fig. 1. Fig. 8 is an enlarged side elevation of the affixing-arms and contiguous parts, illustrating a modification applied thereto. Figs. 9 and 10 are detail sectional views taken on the line $9^{\times}$ $9^{\times}$ of Fig. 8 and illustrating the operation of the label carriers and wipers, and Fig. 11 is a sectional view on the line $11^{\times}$ $11^{\times}$ of Fig. 8.

A labeling-machine constructed in accordance with my invention embodies the main frame 1, supported upon suitable legs 2 and provided at one end with a bracket 3, on which is mounted a rest or support 4, upon which a bottle or other article may be held, and it is adjustably secured in position by a nut, whereby the article may be raised or lowered, so that the label may be applied in the desired position thereon. At the opposite end of the frame is a bracket having arms 6, on which is supported the label-holder 7, as will be further described. Located intermediate the bottle-rest and the label-holder are the affixing-arms 8, attached at their lower ends to a shaft 9, extending transversely of the frame 1 and journaled in suitable bearings thereon. Also mounted on the shaft 9 is a pinion 10, meshing with the rack-teeth 15, provided on the bar 16, supported in suitable ways formed by the gibs 17 on the inner side of the frame 1. The outer end of the bar 16 is provided with a pin or roller 18, resting in a cam-groove 19, formed between the inner and outer walls of the cam 20. This cam is mounted on the driving-shaft 21 and is of such a shape that a single rotation of the shaft will cause the affixing-arms 8 to be moved into contact with the label-holder, as shown in Fig. 4, and then revolved beyond the bottle or other article held on the rest 4.

The affixing-arms 8 are provided on their approximate sides with inwardly-extending heads 21, and guided therein are frames 22, provided at their inner ends with contact plates or carriers 23, which may be adjusted, by means of screws 24, to move the carriers relatively toward and from each other to adapt them to apply labels of different sizes to bottles of various diameters. In order also to permit labels of a width less than the diameter of a bottle to be readily applied thereto, I may arrange on the arms 8, as shown in Figs. 8 to 10, lugs or brackets 25, in which are journaled shafts 26, at the upper ends of which may be applied heads 27, in which the relatively adjustable frames 22^{a}, having the carriers 23^{a}, are supported, and the latter being located in rear of the shaft 26. I also provide means for rotating them, whereby the carriers will be separated, allowing them to pass beyond the bottle or article supported on the rest 4, as shown in Fig. 10. This movement of the carriers in the present instance is accomplished by means of laterally-movable members 28, carried on the arms 8, the outer ends of which are provided with projections 29, lying in

cam-grooves 30, formed in segmental rings 31, secured to the frame 1 and arranged concentric with the shaft 9. The inner ends of these members are provided with teeth, and engaging therewith are similar teeth formed on the arms 32, attached to the lower ends of the shafts 26, as shown in Fig. 11. The wipers are also supported on the affixing-arms, and they consist of the flexible fingers 33, supported on the heads 34, rigidly attached to the shafts 35, supported at their upper ends in bearings 36 on the arms 8 and at their lower ends in plates 36ª, attached to said arms by screws or bolts, as shown. As these wipers are adapted to close over the carriers 23 and to frictionally engage over the label as the arms 8 move beyond the bottle, each of the rods or shafts 35 is provided at its lower end with a pinion 37, meshing with the teeth of the rack-bar or member 38, as illustrated in Fig. 6. These rack-bars are operated laterally of the affixing-arms and are provided at their outer ends with projections in the form of pins or rollers 39, projecting into a cam-groove 40, also arranged in the rings 31. The major portion of each of the cam-grooves 40 is straight, as shown in Fig. 2, which portions operate to hold the rack-bar 38 projected inwardly, so that the wipers normally extend in line with the arms 8, and at the points 45 they are offset to move the racks or members 38 outwardly, causing the rods 35 to be revolved to move the wipers into the position shown in Fig. 10, so that they will extend over the face of the bottle and yieldingly engage the latter to affix the label smoothly thereon.

The label-holder may be of any desired construction; but the form I have illustrated consists of the plate or support having slots 46 therein, in which are arranged pins 47, adjustably secured at their lower ends by nuts 48, said pins being adapted to engage the top and bottom edges of the label. The pins 49 engage the opposite sides of the pile of labels, and in order to insure the latter being arranged centrally of the machine these pins are connected to links 50, attached to a disk 51, pivoted to the bottom of the holder or support, and they are also supplied with thumb-nuts or bolts 52, as shown particularly in Fig. 5.

In order to permit the label-holder to yield when the carriers engage the pile of labels, I provide it with a downwardly-extending arm 60, the upper and lower ends of which are attached, respectively, to links 61 and 62, pivoted to the arms 6, and between two of said links I arrange a coil-spring 63, the tension of which will serve to hold the label-holder in its normal position and also allow it to yield, as will be understood. By arranging the links as shown it will be seen that when the affixing-arms engage the pile of labels the holder 7 is permitted to yield downwardly and as it moves about the pivotal points of the links it travels slightly toward the right-hand end of the machine. This draws the pile of labels in a relatively longitudinal direction beneath the label-carriers on the arms 8, so that the uppermost label adhering thereto will be easily separated from the remainder. The necessary paste or adhesive material is applied to the labels by the carriers 23, and it is supplied to these by means of rollers 64, mounted on the shaft 65, held in a yoke 66, carried by the supporting-arm 67, movable vertically between guides 68, located centrally of the frame 1.

In the normal lowermost position the supplying-rollers rest upon the feeding-roller 70, arranged in a suitable receptacle 71, containing the paste or adhesive material, and which is revolved continuously by means of a belt 72, driven by a pulley 72′ on the driving-shaft 21. Attached to the lower end of the guide is an operating-lever 73, pivoted to the frame 1 at the point 74 and provided with a roller or projection 75, coöperating with a cam 76, (shown in dotted lines,) attached to the driving-shaft 21. By the rotary action of this cam the arm 69 is operated to move the supporting-arm 67 vertically to carry the roller 64 from the position shown in Fig. 4 to that illustrated in Fig. 1, when they will contact with the carriers 27 and then be retracted out of the path of the latter, this cam and the cam 20 being so timed that the oscillatory movement of the affixing-arms 8 is temporarily arrested during a portion of the vertical movement of the supporting-arm 67.

The operation of the machine will be readily understood. The rotation of the driving-shaft 21, carrying the cam 20, causes the rack-bar 16 to be reciprocated and the affixing-arms to be oscillated and temporarily arrested in the position shown in Fig. 1 when the supporting-arm 67 is moved downwardly by the cam 76, causing the rollers 64 to supply the adhesive material to the carriers 23. The latter are advanced into engagement with the pile of labels on the holder 7, as shown in Fig. 4, and are carried during the oscillatory movement of the arms beyond the bottle or other article on the rest 4. During the time the affixing-arms are approaching the labels the wipers extend in the plane of the movement of said arms, as shown in Figs. 2, 8, and 9, and they are rotated inwardly toward each other, so as to engage the face of a bottle to brush or wipe a label thereon, as illustrated in Fig. 10, by the offset 45 in the cam tracks or grooves, which cause the outward movement of the racks or members 38 and a rotary movement of the shafts 35. A similar movement is also imparted to the shafts 26 by the relative lateral movement of the members 28, which cause the carriers to be moved outwardly from beneath the edges of the label, so as to avoid the bottle as they are carried

beyond it by the affixing-arms. After a label has been applied the bottle is removed and the arms are returned to the position shown in Fig. 1. The wipers are again returned to their normal open position, when the rollers 64 again engage the carriers supplying paste to the faces thereof in readiness for a subsequent operation.

A labeling-machine such as I have shown and described consists of few parts, which are simple in construction and positive and rapid in operation.

I claim as my invention—

1. In a labeling-machine, the combination with a frame, a label-holder, and a bottle-rest, oscillatory affixing-arms and means for moving them between said holder and rest, of wipers pivoted to the arms and segmental cams on the frame operating to move the wipers into the operative and inoperative position.

2. In a labeling-machine, the combination with a frame, a label-holder and a bottle-rest, of affixing-arms journaled on the casing and means for operating them, of wipers journaled on the arms and cams arranged concentric to the pivotal center of the arms and operating to move the wipers into and out of operative position.

3. In a labeling-machine the combination with a frame, a label-holder and a bottle-rest, of affixing-arms and means for moving them between said holder and rest, of wipers, a shaft attached to each and means controlled by the movement of the affixing-arms coöperating with the shafts to rotate them and move the wipers into and out of operative position.

4. In a labeling-machine the combination with a frame, a label-holder and a bottle-rest, of affixing-arms and means for moving them between said holder and rest, of wipers, an operating-shaft attached to each, a relatively stationary cam on the frame, a member operated laterally thereby and coöperating with the shaft for rotating it.

5. In a labeling-machine, the combination with a frame, a label-holder and a bottle-rest, of affixing-arms and means for moving them between said holder and rest, of wipers, pivoted to the affixing-arms, stationary cams on the frame and operating members carried on the arms and actuated laterally by the cams to move the wipers into and out of operative position.

6. In a labeling-machine, the combination with a frame, a label-holder and a bottle-rest, affixing-arms and means for moving them between said holder and rest, of shafts journaled in the arms, label-carriers attached thereto, a relatively stationary cam located beneath the path of the label-carrier and a member operated thereby to rotate the shafts.

7. In a labeling-machine, the combination with a frame, a label-holder and a bottle-rest, affixing-arms, and means for moving them between said holder and rest, of shafts journaled in the affixing-arms, arms attached to the shaft having label-carriers thereon, and crank-arms also connected to the shafts, cams arranged on the frame and laterally-movable members carried by the arms and connected to said cranks.

8. In a bottle-labeling machine, the combination with a frame having a label-holder and a bottle-rest thereon, affixing-arms and means for moving them between said rest and holder, of label carriers and wipers arranged on the arms, separate oscillatory shafts connected to each carrier and wiper, relatively stationary cams arranged concentric to the path of the label-carriers and at one side thereof, and members carried on the arms and coöperating with the cams and shafts to operate them.

9. In a bottle-labeling machine, the combination with a frame, an oscillatory shaft journaled therein and affixing-arms secured thereto, a label-holder and a bottle-rest, of a driving-shaft, a cam thereon and connections between said cam and the oscillatory shaft whereby the affixing-arms are operated so as to pause or rest between the label-holder and the bottle-rest.

10. In a bottle-labeling machine, the combination with a frame, an oscillatory shaft journaled therein and affixing-arms secured thereto, a label-holder and a bottle-rest located at opposite sides of said shaft, of a bar connected to a coöperating member on the latter, a driving-shaft and a cam thereon adapted to reciprocate said bar so as to cause a rest in the movement of the arms and means for applying paste to the arms when at rest.

11. In a bottle-labeling machine, the combination with a frame, an oscillatory shaft journaled therein having a pinion and affixing-arms secured to the shaft, a label-holder and a bottle-rest, of a rack-bar engaging the pinion and guided on the frame, a driving-shaft and a cam thereon coöperating with the rack-bar to oscillate the shaft and arrest the movement of the affixing-arms when moving toward the label-holder, paste-applying devices and means for moving them into engagement with said arms when the latter are at rest.

12. The combination with a bottle-rest, a label-holder and oscillatory affixing-arms, devices for operating the arms and means for arresting them in an intermediate position, of a paste-receptacle having a feeding-roller therein, an applying-roller coöperating therewith and means for operating it into and out of engagement with the arms when the latter are at rest.

13. The combination with a bottle-rest, a label-holder, pivoted affixing-arms having label-carriers thereon and devices for operating the arms so as to cause a rest in their movement, of a paste-receptacle arranged beneath the carriers, a supplying-roller coöperating therewith and means for raising said roller

into engagement with the label-carriers when the arms are at rest.

14. The combination with a bottle-rest, a label-holder, affixing-arms having label-carriers thereon, devices for operating the arms and means for arresting them in an intermediate position, of a paste-receptacle, a supplying-roller coöperating therewith and located beneath the label-carriers and means for operating the latter into and out of engagement with said carriers when the affixing-arms are arrested.

15. The combination with a bottle-rest, a label-holder, affixing-arms having label-carriers thereon and devices for operating the arms, and means for arresting them in an intermediate position, of a paste-receptacle located beneath the label-carriers, a vertically-movable frame and a roller carried thereon and coöperating with the receptacle, and devices for operating the frame.

16. The combination with a bottle-rest, a label-holder and oscillatory affixing-arms having label-carriers thereon, a paste-receptacle arranged beneath the path of the label-carriers, a supplying-roller coöperating therewith and a movable frame coöperating therewith, of a driving-shaft having a cam thereon, operating connections between the latter and the affixing-arms and a second cam on said shaft for operating the frame to move the supplying-roller upwardly into contact with the label-carriers.

17. The combination with a bottle-rest, oscillatory affixing-arms and means for operating them, of a label-holder and a support yieldingly holding the latter and operating it in a direction longitudinally of the arms when engaged by the latter.

18. The combination with a bottle-rest, label-affixing arms and means for operating them, of a label-holder, arms supporting it and pivoted at one side of the holder to swing it relatively to the label-affixing arms when engaged thereby.

19. The combination with a frame, a bottle-rest and oscillatory affixing-arms, of a label-holder, arms pivoted to the latter and to the frame and a yielding connection between the arms.

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