Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 1

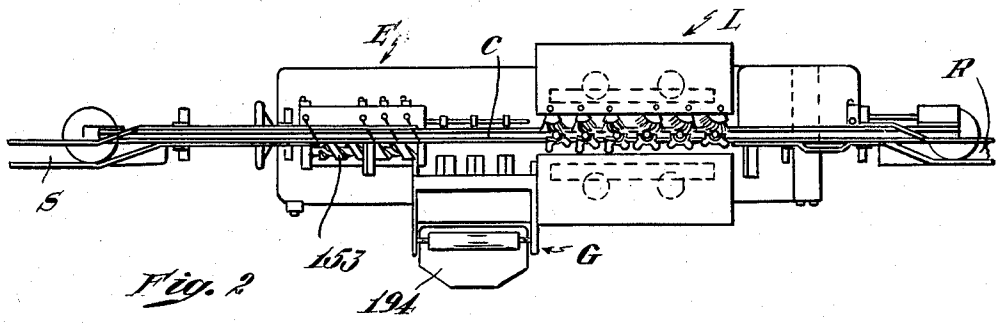


Fig. 2

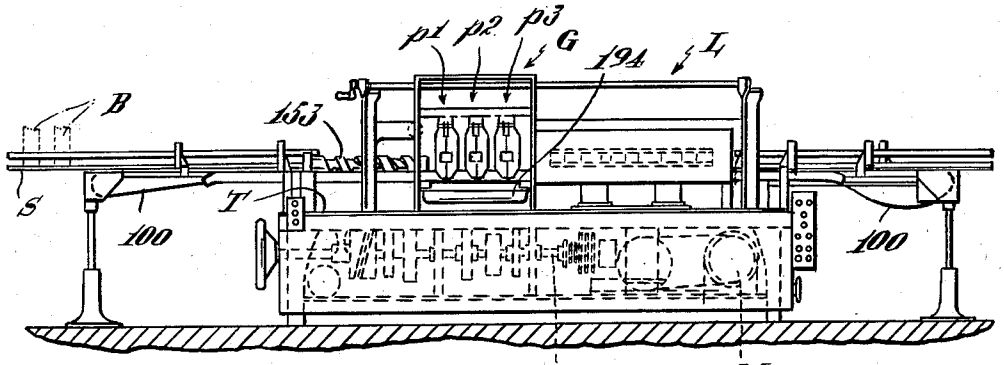


Fig. 1

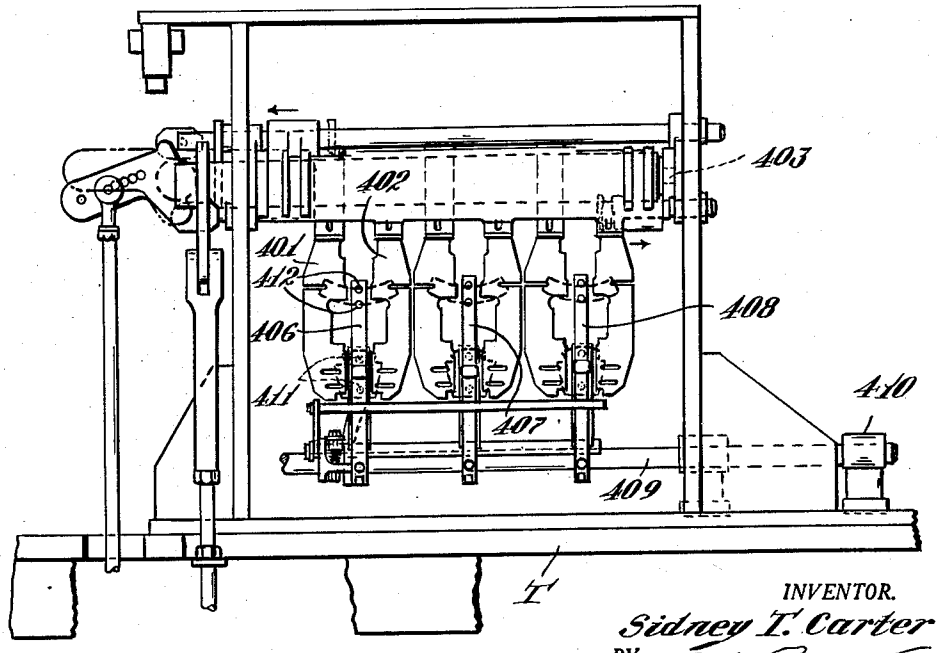


Fig. 1a

INVENTOR.
Sidney T. Carter
BY Roberts Cushman & Grover
Attys

Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 2

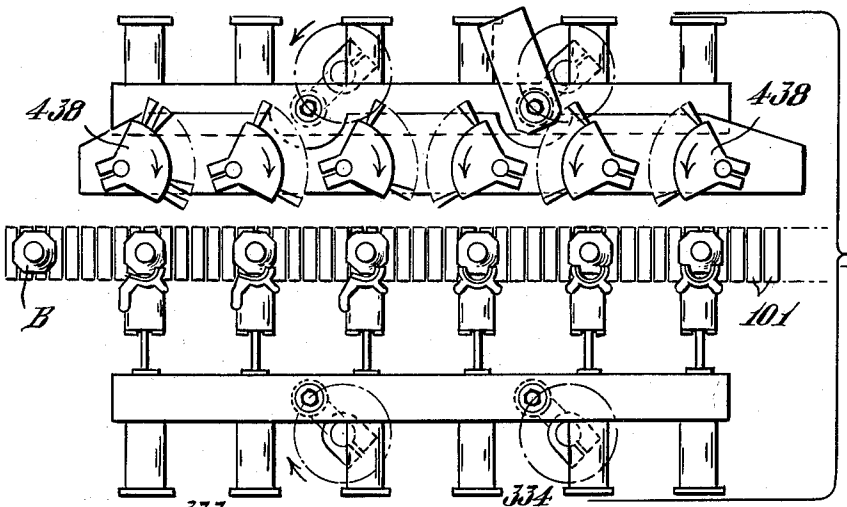


Fig. 3

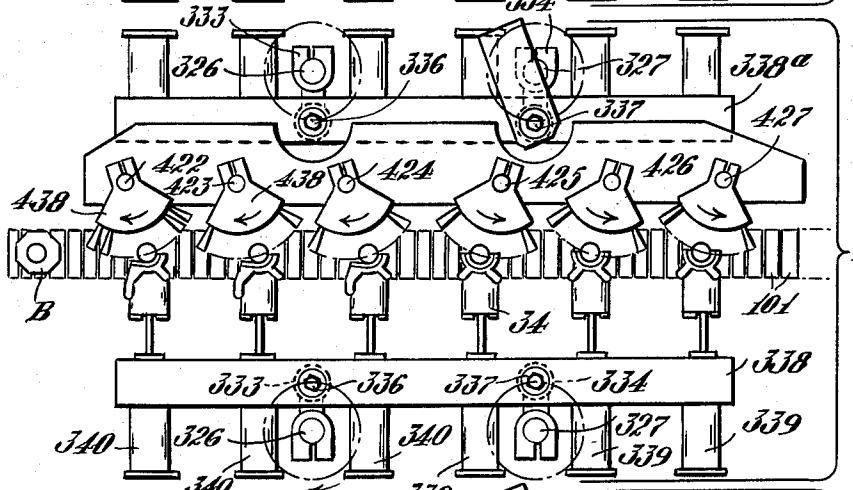


Fig. 4

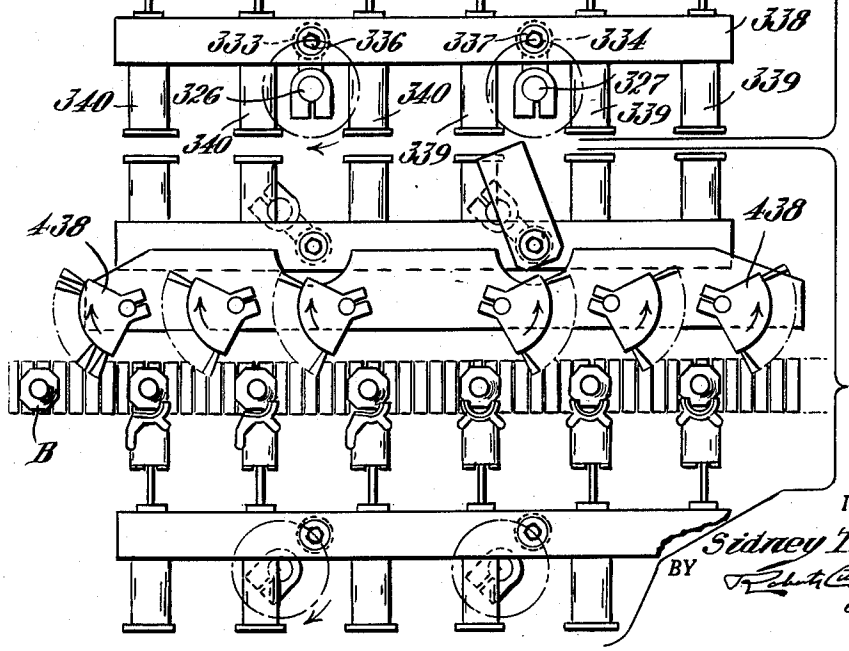


Fig. 5

INVENTOR.
Sidney T. Carter
BY
Attys

Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 3

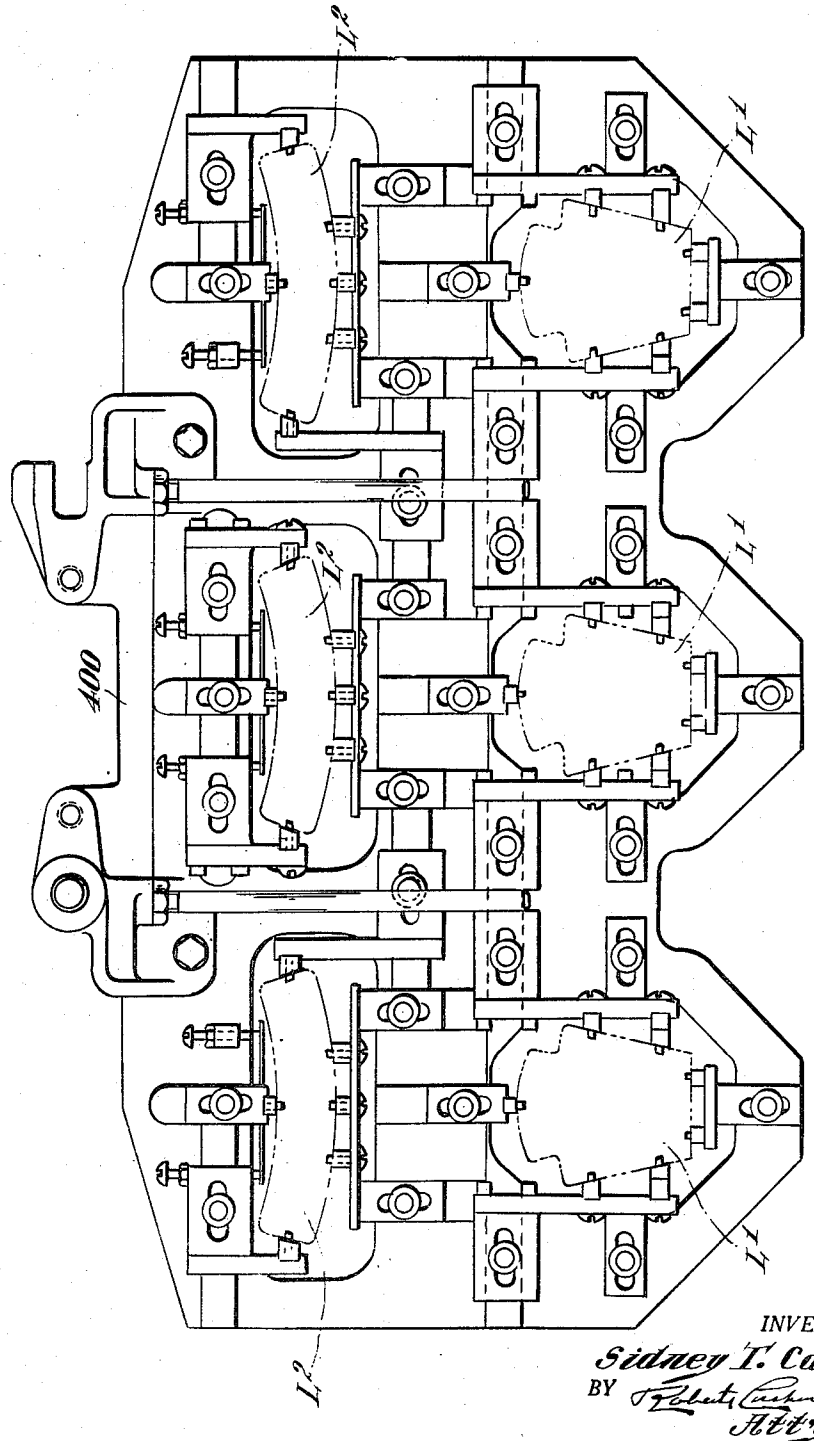


Fig. 6

INVENTOR.
Sidney T. Carter
BY Roberts, Cushman & Grover
Attys

Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 4

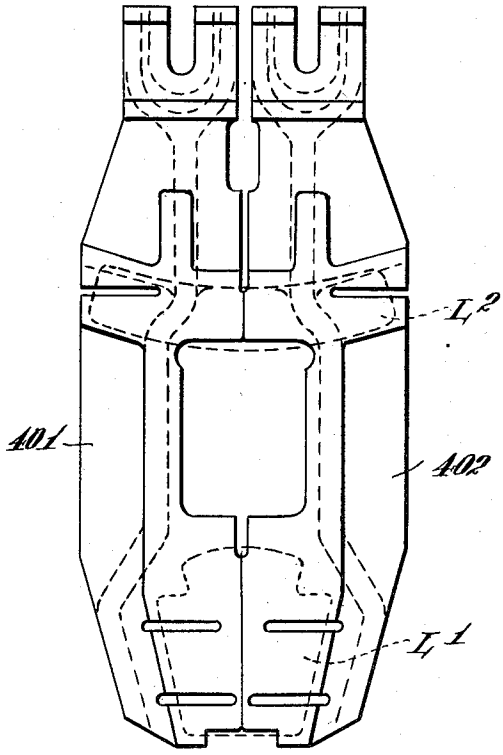


Fig. 7

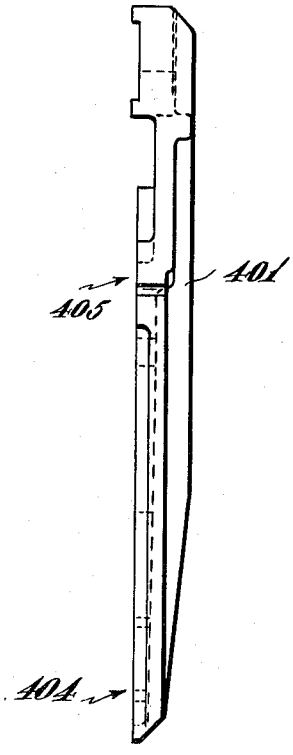


Fig. 8

INVENTOR.
Sidney T. Carter
BY Roberts Cushman & Grover
Attys

Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 5

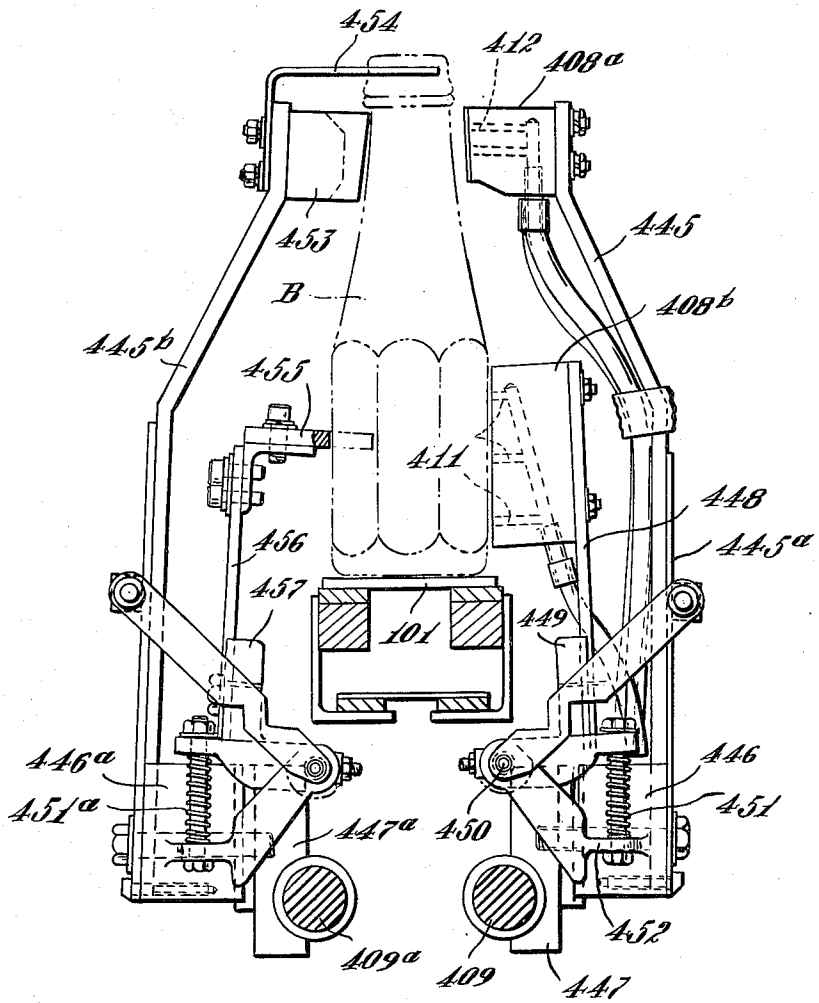


Fig. 9

INVENTOR.
Sidney T. Carter
BY Robert Cushman & Grover
Attys

Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 6

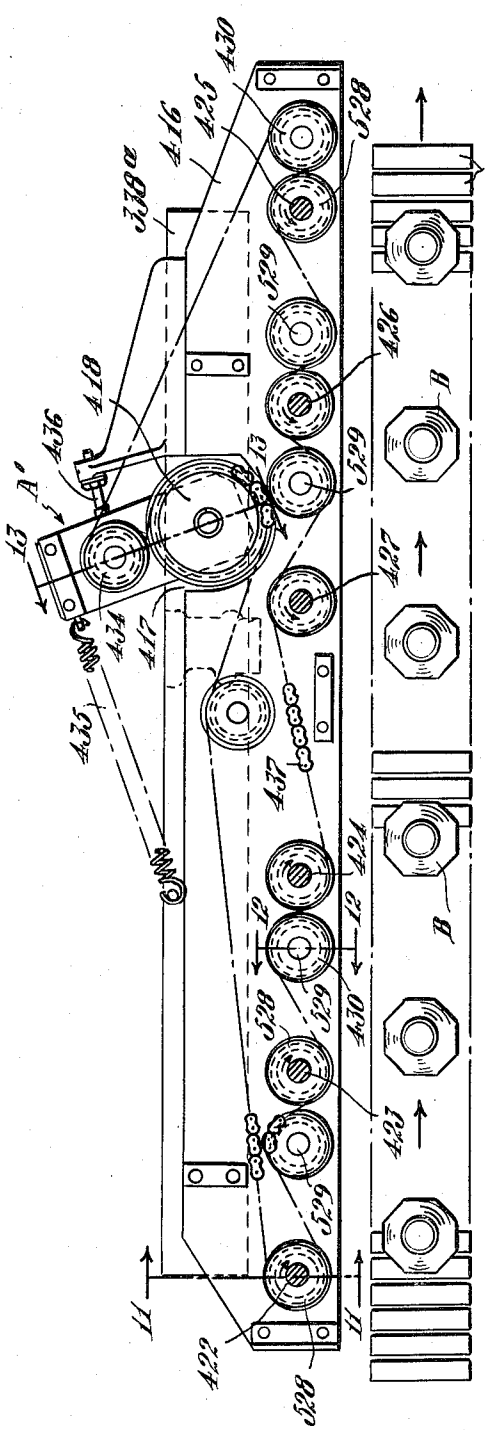


Fig. 10

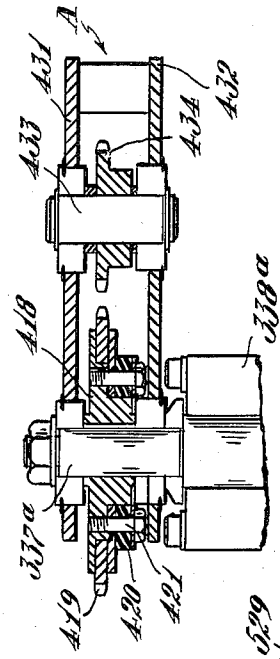


Fig. 13

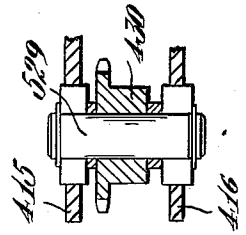


Fig. 12

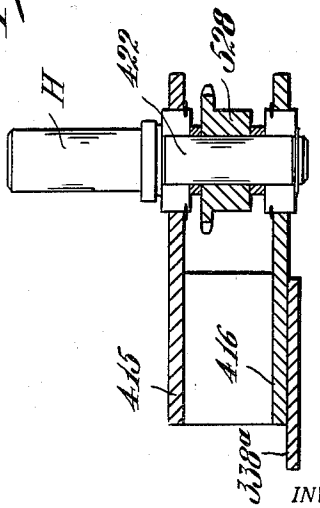


Fig. 11

INVENTOR.
Sidney T. Carter
BY Robert Cushman & Grover
Attys

Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 7

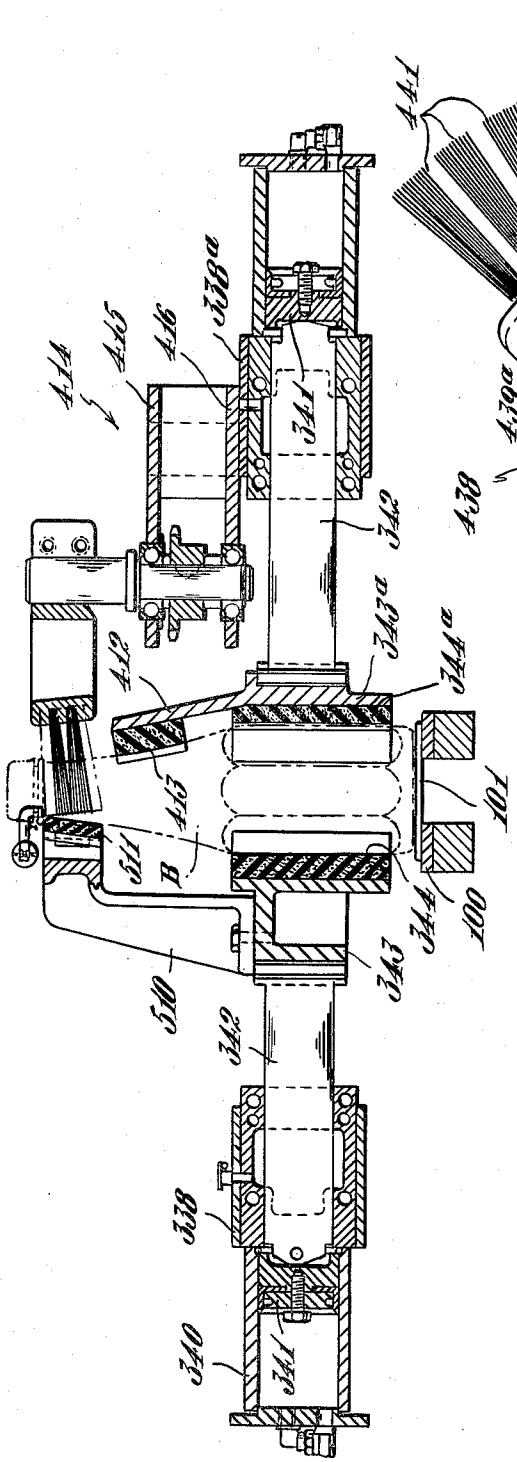


Fig. 16

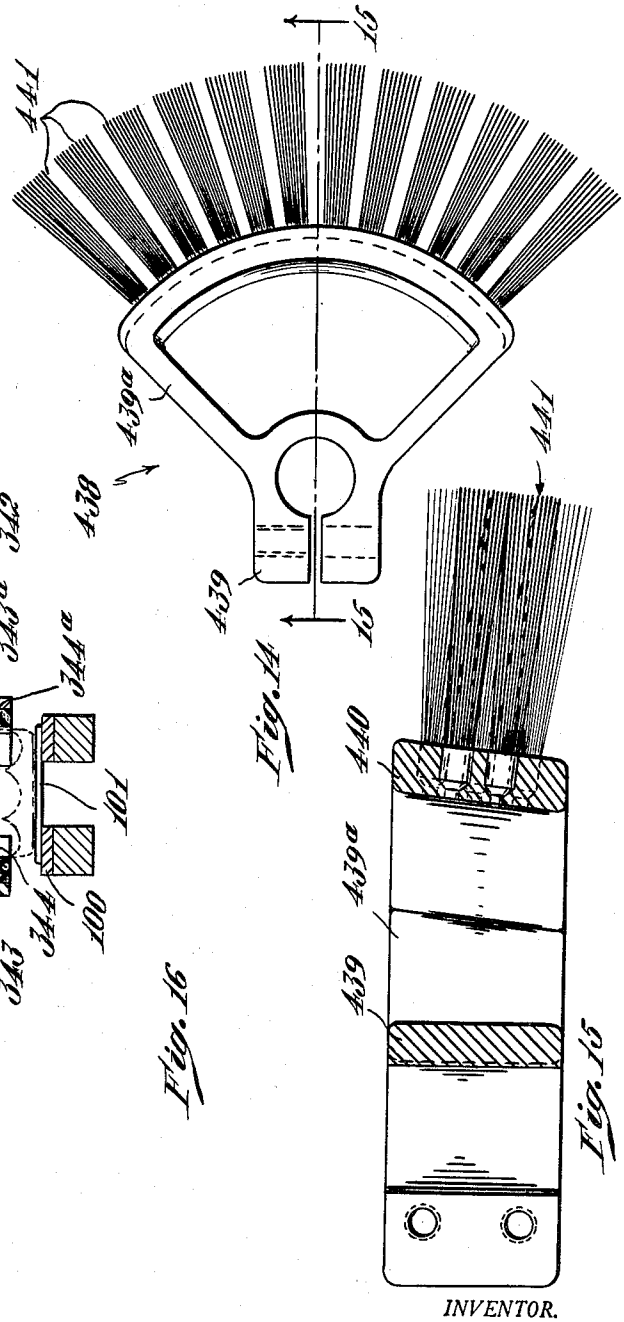


Fig. 14

Fig. 15

INVENTOR.
Sidney T. Carter
BY Roberts, Cushman & Grover
Attys

Feb. 23, 1960 S. T. CARTER 2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Filed June 26, 1956 8 Sheets-Sheet 8

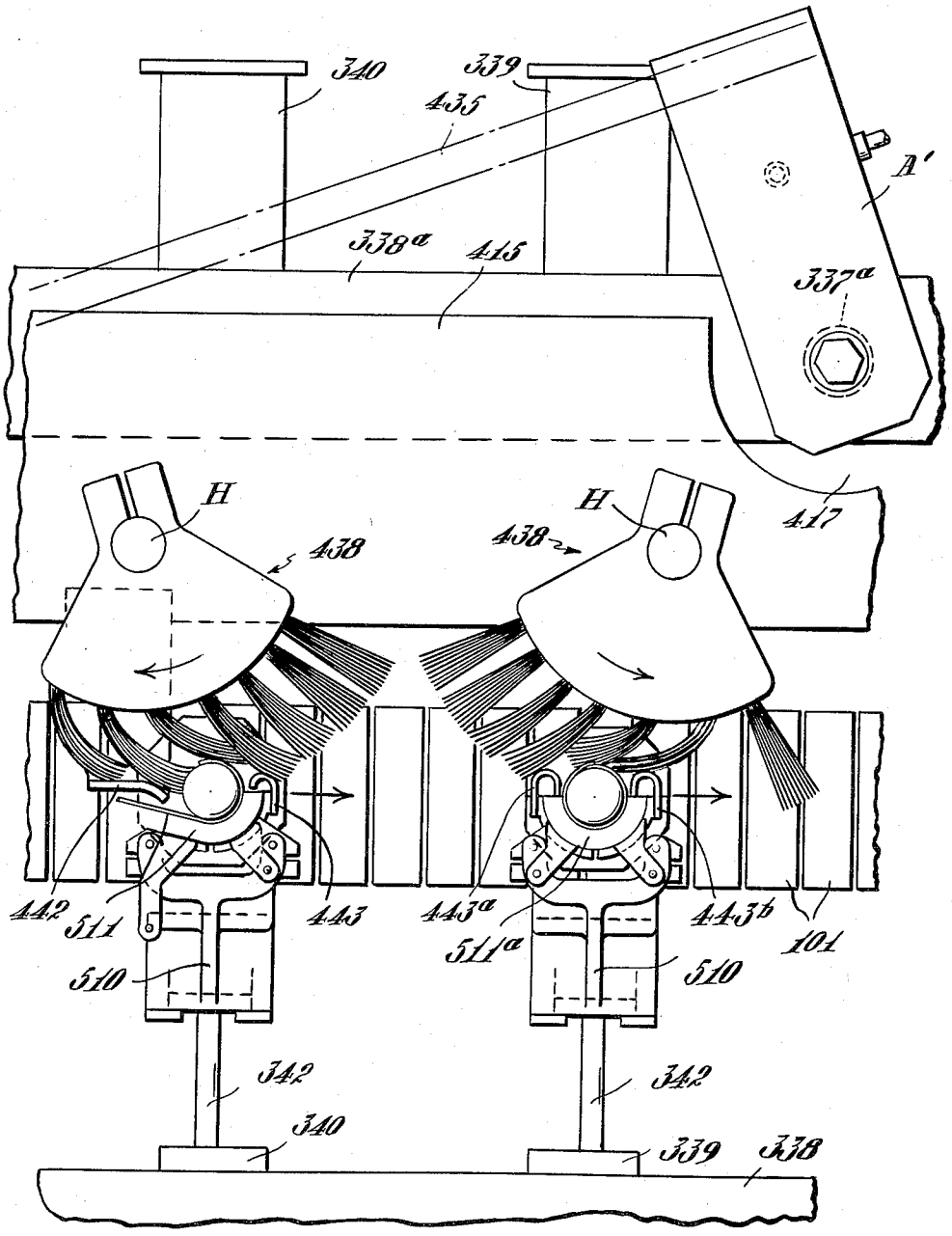


Fig. 17

INVENTOR.
Sidney T. Carter
BY Roberts Cushman & Grover
Attys

United States Patent Office 2,925,931 Patented Feb. 23, 1960

2,925,931

LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS

Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin

Application June 26, 1956, Serial No. 593,879

42 Claims. (Cl. 216—13)

This invention pertains to labeling machines, and more especially to a machine for applying a wrap-around type of label, that is to say, a label which extends more than half way around the article which is being labeled and including labels which extend all the way around the article and even overlap. Labels of this type are commonly applied to bottle necks, for instance, to the neck portions of ketchup bottles.

While certain features of the invention are of broader utility, the invention is herein described by way of example as embodied in a machine designed to apply labels simultaneously to a plurality of articles. Hereinafter for convenience but without limitation, such articles will be referred to as "bottles," and the apparatus disclosed is of that type wherein the bottles are moved uninterruptedly along a predetermined path, for instance along a rectilinear path along which they are moved by a continuously moving conveyor. Such a machine is illustrated for instance in the copending application of Sidney T. Carter, filed December 5, 1955, Serial No. 551,012.

It is a common practice, in applying labels to articles, first to contact the mid-portion of the adhesively coated label with the article and then to apply pressure, for instance by means of a yieldable wiper element for bringing the entire label into adhesive contact with the bottle. However, the usual pressure type wiper, which moves radially with reference to the bottle, does not suffice to carry the lateral end portions of a wrap-around label into contact with what here may be termed the "rear side" of the bottle, and especially when such end portions must be overlapped. To accomplish this operation it is necessary to employ auxiliary wiper means, for example wipers movable in opposite directions about the bottle and which, in succession, engage and wipe down the opposite end portions of the label. However, when the bottle to be labeled is moving along a predetermined path without interruption and especially, in a machine in which labels are applied simultaneously to a plurality of bottles so moving, it has not yet heretofore been considered practical to apply labels of the wrap-around type because of the difficulties involved in adhering the opposite ends of the label to the bottle neck while the bottle is moving without interruption.

The present invention has for its object the provision of novel wiper means for applying wrap-around labels to bottles. A further object is to provide means for applying wrap-around labels to bottles while the latter are moved uninterruptedly along a predetermined path. A further object is to provide means for wiping the opposite end portions of a wrap-around label to each, respectively, of several articles, simultaneously as they move uninterruptedly along said path. A further object is to provide novel means for simultaneously adhering a plurality of labels, one of which is of the wrap-around type, to the same face of a bottle. A further object is to provide novel means operative, by a brushing action, to smooth an adhesively-coated label of the wrap-around type into adhering contact with the bottle. A further object is to provide wiping means in the form of a rotary brush so arranged and so actuated as to sweep successive tufts of bristles over the label, whereby to cause the label to be smoothed down into adhering contact with the article. A further object is to provide wiping means comprising rotary bristle brushes arranged to turn in opposite directions and so that the bristles of one brush contact one end portion of a label and the bristles of the other brush contact the opposite end portion of the label. A further object is to provide wiping means for use in a machine which applies labels to bottles while the latter are moving uninterruptedly and comprising brush type wipers which turn in opposite directions and which contact the label successively, thereby first to wipe one end of the label and then the opposite end. A further object is to provide a rotary wiper brush and means for rotating it while concomitantly moving it back and forth toward and from the path along which the bottles to be labeled are progressed. A further object is to provide wiping means comprising a pair of brushes rotating in opposite directions and which are mounted upon a carrier which moves in an orbital path thereby to move the brushes toward and from the path of motion of the bottles which are to be labeled. A further object is to provide wiper brushes in two groups, wherein the number of brushes in each group corresponds to the number of bottles to which labels are applied at the same time. Other and further objects and advantages of the invention will be pointed out in the following more detailed description and by reference to the accompanying drawings, wherein

Fig. 1 is a diagrammatic front elevation of a labeling machine of the type wherein bottles to be labeled are moved uninterruptedly along a rectilinear path and while they are so moving, labels are adhered simultaneously to the same side of a plurality of bottles, and diagrammatically indicating the location of the wiping means of the present invention.

Fig. 1ª is a fragmentary elevation, to larger scale than Fig. 1, diagrammatically illustrating the pickers and grip fingers and some of the associated parts;

Fig. 2 is a plan view of the machine shown in Fig. 1;

Fig. 3 is a fragmentary plan view to larger scale than Fig. 2, diagrammatically showing a portion of a conveyor with articles thereon to be labeled and showing pressure type wipers at one side of the conveyor and brush type wipers according to the present invention arranged at the opposite side of the conveyor, the brush type wipers being shown in their non-active or retracted position;

Fig. 4 is a view similar to Fig. 3, but showing the brush type wipers as occupying their operative positions and at about the mid-portion of the wiping stroke;

Fig. 5 is a view similar to Fig. 4, but showing the brush type wipers as having completed their wiping stroke;

Fig. 6 is a plan view to larger scale showing a magazine structure useful in the practice of the present invention, and which has magazine compartments designed to hold body and neck labels in readiness for the application of labels simultaneously to three bottles;

Fig. 7 is a front elevation to larger scale than Fig. 1ª, showing a label picker of the type useful in a machine of the present invention;

Fig. 8 is a side elevation of the picker of Fig. 7;

Fig. 9 is a vertical section, transversely of the conveyor, showing grip fingers operative to take labels from the pickers and bring them into contact with the front side of the bottle and also showing steadying devices at the opposite or rear side of the bottle for supporting the

bottle while the labels are being adhered thereto by the grip fingers;

Fig. 10 is a diagrammatic horizontal section showing a portion of the conveyor in plan and illustrating the means for driving the shafts of the brush type wipers;

Fig. 11 is a section to larger scale than Fig. 10, substantially on the line **11—11** of Fig. 10;

Fig. 12 is a fragmentary vertical section on the line **12—12** of Fig. 10;

Fig. 13 is a fragmentary vertical section on the line **13—13** of Fig. 10;

Fig. 14 is a plan view to large scale of one of the brush type wipers removed from its shaft;

Fig. 15 is a section to larger scale on the line **15—15** of Fig. 14;

Fig. 16 is a fragmentary vertical section transversely through the conveyor, showing the means for supporting and guiding the various types of wiper employed; and

Fig. 17 is a plan view showing a portion of the conveyor, showing those two brush type wipers which are adjacent to each other but which turn in opposite directions.

Referring to the drawings, Figs. 1 and 2 diagrammatically illustrate one embodiment of the present invention in a labeling machine of the kind more specifically disclosed in the copending application of Sidney T. Carter, Serial No. 551,012 above referred to, but it is to be understood that the utility of the present invention in its broader aspects, at least, is not limited to its embodiment in a machine of this particular kind. The machine as shown in Figs. 1, 1ª and 2 comprises a suitable frame which supports a horizontal table T, beneath which the motor M (Fig. 1), the main drive shaft **119**, and most of the motion transmitting connections are located. The drive shaft **119** turns through an angle of 360° for each cycle of operations, that is to say, during that sequence of motions of the essential label-applying devices which include the application of glue to a picker, removal of labels from a magazine by a picker, the adhering of the labels to the article by suction-type grip fingers and the wiping of one end of each label by a wiper of a first set. However, the wiping of the opposite end of each label is accomplished by the wipers of a second set during the succeeding cycle.

The machine is designed to receive the bottles to be labeled from a suitable supply and to deliver them, after the labels have been applied, to a conveyor, stack or any other suitable receiver. As illustrated in Figs. 1 and 2, the bottles are supplied to the machine by a conveyor S, which as illustrated is laterally offset from the line of the article path. After receiving the labels the bottles are discharged onto a receiving conveyor R which is also here shown as laterally offset from the center of the article path.

The entrance portion of the article path is indicated at E (Fig. 2); the gumming and label-applying station is indicated at G and the wiping station at L.

For moving the bottles along the article path there is provided an endless conveyor C (Fig. 2) comprising a link chain **100** (Fig. 1), each link of which is provided with a flat plate **101** (Figs. 3, 4, 5, 9, 10 and 17). These plates, in the upper horizontal run of the conveyor, collectively provide a support on which the bottles B rest as they are moved along the conveyor path, the conveyor thus constructed being of generally conventional type. As the articles move along the article path they are confined and steadied by means of conventional guide rails. The conveyor chain **100** is driven uninterruptedly by suitable connections from the drive motor so that its upper run moves from left to right, as viewed in Figs. 1, 1ª and 2. The upper run of the chain rests upon horizontal supporting rails so that the upper run is kept horizontal.

At the entrance end E of the machine the bottles supplied by the conveyor S are engaged by a rotating feed screw or helix **153**, whose axis is parallel to the rectilinear article path defined by the conveyor C and the guard rails. The machine here illustrated is designed to apply labels to three bottles at the same time, and for this purpose the feed screw makes three revolutions for each cycle of the machine, that is to say, for each revolution of the main shaft **119**. The delivery end portion of the feed screw is of a pitch such that it imparts to a bottle the same linear velocity of advance as that of the conveyor chain **100**. As here illustrated, for simplicity in description, the machine is shown as adapted to apply labels to the front side only of the bottle, but if desired, the machine may readily be modified to apply body labels both to the front and rear of the bottle.

At the gumming station G suitable means is provided for supplying gum to the labels. As illustrated, the apparatus is designed simultaneously to apply a body label and a wrap-around neck label to each bottle. A magazine structure for holding labels of both types is illustrated in Fig. 6. This structure comprises a frame **400** which supports three label magazines, each designed to hold a stack of body labels L′ and a stack of wrap-around neck labels L^2 in readiness to be applied to the bottle, the three magazines making it possible to supply labels simultaneously for application to three successive bottles moving along the conveyor path. These magazines are of generally customary type (except that each holds both a body label and a neck label) having provision for adjustment to take labels of different sizes and shapes.

Associated with each magazine is a picker P′, P^2 and P^3 respectively (Figs. 1, 1ª, 7 and 8). Each picker comprises a pair of relatively movable blades **401, 402**; disposed in the same plane and which are mounted to oscillate simultaneously about the axis of the picker shaft **403** (Fig. 1ª) and also to move toward and from each other axially of the shaft. Pickers of this general type and means for actuating them are disclosed in the patent to Holm 1,901,101. However, since the present machine is designed to apply a body label and a neck label at the same time, the picker blades **401** and **402** (Figs. 7 and 8) are provided with faces **404** and **405** to which adhesive may be applied and which are so shaped and located as concomitantly to contact and pick labels from each of the stacks L′ and L^2 in the magazine.

At the gumming station G there is provided a gum box **194** and means for transferring gum from the gum box to the faces **404** and **405** of each picker blade. Such gum transfer means may be of generally conventional type and need not be described in further detail.

While receiving the gum, the blades **401** and **402** of each picker are disposed in edge-to-edge relation, as shown in Fig. 1, but as the picker blades contact the label in the magazine they begin to separate, thus assisting in uniformly spreading the adhesive over the label and at the same time provide the space between the blades through which the corresponding gripper finger may pass in order to strip the label from the picker. In Fig. 1ª the picker blades are shown separated to allow the grip fingers **406, 407** and **408**, corresponding to each respective picker, to pass between the picker blades so as to take the label from the picker blades and move it into adhering contact with the bottle.

Since the bottles are moving without interruption along the conveyor path, it is necessary that the grip fingers, while they are applying the labels to the bottles, move simultaneously with the bottles at the same speed longitudinally of the conveyor path as the bottles. Thus the grip fingers in the present machine must not only oscillate in carrying the labels from the transfer position into contacting relation to the bottles, but while in the latter position they must move lengthwise of the conveyor path.

The grip fingers **406, 407** and **408** (Fig. 1ª) are secured at their lower ends to a shaft **409** which is arranged to rock and also to move endwise in suitable bearings, one of which is shown at **410**. Any suitable means,

receiving its motion from the main shaft 119, may be employed for imparting such motions to the shaft 409, for example, such means as is more fully disclosed in the aforesaid copending application of Carter. Each grip finger, in accordance with the present invention, is provided with two sets 411 and 412 respectively, of suction ports, the two sets being so located as to register with body and neck labels, respectively, which are adhering to the surfaces 404 and 405 respectively of the pickers. Suitable means, not here shown, for example an air pump and an automatically actuated valve, establishes suction at the ports at the proper time in the cycle to enable the grip fingers to take the labels from the pickers, and then to break the suction at the ports at the proper time in the cycle to permit the grip fingers to leave the labels in adhering contact with the bottle while the grip fingers return to the transfer point.

As illustrated in Fig. 9, each of the grip fingers which receives the label from the pickers and transfers it to the bottle has an upper pad 408[a] for transferring the neck labels and a lower pad 408[b] for transferring the body label. The upper pad has within it the suction ports 412, and the lower pad has the suction ports 411.

The upper pad 408[a] (Fig. 9) is carried by a long, upwardly extending spring arm 445 secured at its lower end to a part 446 which is attached to an arm 447 fixed to shaft 409. Desirably, a spring-leaf 445[a], also fixed to part 446, is provided in order to stiffen the primary spring 445. The lower pad 408[b] is fixed to a rigid arm 448 secured at its lower end to an arm 449 of a bell-crank lever pivoted on a pin 450 fixed in the arm 447. A coiled spring 451, resting on an abutment 452 carried by the part 446, engages a second arm of the bell-crank lever and tends to swing the arm 448 in a counterclockwise direction so as to urge the suction pad 408[b] toward the bottle. At the rear side of the article path a shaft 409[a], parallel to the shaft 409, carries an arm 447[a] similar to the arm 447, to which is fixed a part 446[a]. To this latter part there is secured the lower end of a spring arm 445[b] provided at its upper end with a bottle steadying pad 453 and with a bifurcated resilient hold-down arm 454 designed to straddle the bottle cap so as further to steady the bottle during the application of the label by the grip finger.

A bottle centering yoke 455 is carried by a rigid arm 456 fixed at its lower end to a part 457 mounted on the arm 447[a]. A coil compression spring 451[a] tends to swing the arm 456 in a clockwise direction, the yoke 455 being shaped to fit about the body portion of the bottle and thus to center the latter with reference to the label-applying pads.

To insure the proper wiping of the neck label, especially when its ends nearly meet or actually overlap, it is necessary, after adhering the mid-portion of the label to the bottle, successively to wipe the opposite end portions of the label. In a machine employing six wiping elements and which applies labels to three bottles simultaneously during each rotation of the main shaft, this may be accomplished by imparting to the wiping mechanism one revolution for each rotation of the main shaft, and arranging the wiping elements in two sets of three each, so that each wiping element will contact each label twice as the bottle moves through the wiping zone.

In the preferred embodiment herein illustrated, the two wiping steps are accomplished by the use of six wiper assemblies arranged in two sets of three each. Each of these wiper assemblies comprises a pressure type wiper at the front of the article path and a rotary brush-wiper at the rear of the article path. The pressure type wipers may, for example, be of the construction more fully described in the patent to Carter 2,665,025, January 5, 1954, or in the patent to Essen 2,267,903, December 30, 1941. All of the brush wipers are caused to revolve in an orbital path once for each rotation of the main shaft, while at the same time each brush wiper is turned about its own axis twice for each revolution of the wiper mechanism as a whole. Concomitantly, all of the pressure type wipers revolve in an orbital path, once for each rotation of the main shaft. When using a brush provided with bristles extending through a 90° arc, each brush will be in contact with the label while the main shaft is turning through 45°.

While the present invention primarily relates to the provision of means for applying labels of the wrap-around type such as customarily applied to the neck portions of the bottles, the invention is here illustrated as embodied in apparatus which is also capable of applying body labels as well as the neck labels. While, as illustrated in Fig. 2, the apparatus is arranged to supply body labels for application to the front only of the bottles, the machine as a whole is so designed that by the addition of appropriate label magazines, glue supply, pickers and grip fingers at the rear of the machine, labels may be applied to the rear of the bottle in addition to those applied at the front, the wiping devices being adequate, without substantial modification to wipe body labels at either front or rear. Thus, as illustrated in Fig. 16, at the wrapping station L, body label wiping devices are arranged at front and rear respectively, of the article path, each of said body label wiper devices being of the pressure type, the body label wiping devices at front and rear being substantially alike, although as here shown, the rear wiper elements serve only as abutments. For wiping the neck labels, auxiliary wiping elements, hereinafter more fully described, are mounted on the main wiping devices at the front only, and partake of certain of the motions of the latter.

For actuating the wiping devices at the front and rear of the article path, the machine frame (Fig. 4) supports bearings for two pairs of vertical shafts 326 and 327, the shafts of one pair being at the front and those of the other pair being at the rear. Since the means for actuating body label wiper devices at the front and rear of the article path are substantially alike, it is sufficient as respects these body label wiper devices to describe only that one which is at the front of the article path. As respects this particular wiper device, the shafts 326 and 327 which actuate it are driven by appropriate mechanical connections (not here shown) from the main shaft 119, so that these shafts 326 and 327 turn in the same direction and make one complete revolution for each rotation of the shaft 119. However, it is desirable for reasons hereafter pointed out that the shafts 326 and 327 turn at non-uniform angular velocities while the main shaft turns uniformly.

To the upper ends of the shafts 326 and 327 (Fig. 4) there are secured crank arms 333 and 334 respectively, each provided with a crankpin 336 and 337 respectively. The crankpins are journaled in bearings provided in an elongate wiper support 338, the cranks being so arranged that as the shafts 326 and 327 rotate, the wiper support 338 moves bodily in an orbital path with the longer dimension of the support always parallel to the article path, although the support moves back and forth parallel to the article path and also toward and from the latter.

The support 338 carries two sets of cylinders, those of one set being designated by the numeral 339 and those of the other set by the numeral 340, the axes of these cylinders being spaced apart a distance equal to the spacing of the bottles B as the latter move along the article path.

Within each of the cylinders (Fig. 16) there slides a piston 341 having a piston rod 342. The outer end of each piston rod carries a bracket 343 or 343[a] respectively, on which is mounted a body label wiper 344 or 344[a] of the resilient pressure type. Air under pressure is supplied to each of the cylinders from a suitable source and under the control of automatically actuated valve means (not shown) the arrangement being such that as the housing 338 moves toward the article path

and the wiper 344 comes into contact with the bottle, the pad will compress a distance of the order of from 3/16" to 1/4", the remainder of the compression being taken up by the air in the cylinder. At the rear of the article path, the wiper support 338a (Fig. 4) is actuated in the same way by the shafts 326 and 327, and supports cylinders like the cylinders 339 and 340.

Since the bottle is traveling along the article path at a uniform linear velocity, and since the wiper support 338 has an orbital motion in a horizontal plane, being supported by the parallel cranks 334 and 335, it follows that if the cranks were to turn at uniform angular velocity, there would be only one point in the cycle at which the bottle and the wiper would be moving at the same speed. In order to insure proper wiping of the label, the contact of the wiper with the label must be for an interval of time exceeding that at which the wiper and bottle would be traveling at the same speed if the crankarms were turning at uniform angular velocity. For this reason, the shafts 326 and 327 are turned at a varying angular velocity as above noted, suitable mechanism not here shown being employed for the purpose of providing such varying angular velocity.

Such means for varying the angular velocity of the shafts 326 and 327 may, for example, comprise a suitably contoured cam turning in time with the shaft 119 and which operates periodically to tighten or loosen a sprocket chain by means of which the shafts 326 and 327 are driven. Such an arrangement, for example, is that more fully described in the above copending application of Carter. In Fig. 3 the wiper devices are shown as the wipers are approaching the bottles; in Fig. 4 the wiper devices are at the mid-point of the wiping cycle, and in Fig. 5 the wiper devices are shown as beginning to recede from the bottles.

Referring to Fig. 16, the conveyor, 100 is shown as supporting a bottle B (indicated in broken lines) and the bracket 343 which supports the front body-label wiper 344 is shown as carrying an upwardly directed arm 510 which supports a wiper pad 511 of the resilient cushion type designed to press the central portion of the neck label against the front of the bottle and also to support the bottle in opposition to the thrust of the rotary neck-label wipers. The bracket 343a which as shown in Fig. 16 carries a body-label presser pad 344a, supports an upwardly directed arm 512 provided with a pad 513, which functions to steady the bottle during the application of the front body label. The rear wiper supporting casing 338a supports an auxiliary casing 414 comprising upper and lower plates 415 and 416 suitably held in spaced relation. These plates are cut away to provide the vertically aligned recesses 417 (Fig. 17) into which projects an upward extension 337a of the shaft 327. A drive clutch element 418 (Fig. 13) is splined to the shaft extension 337a. A sprocket annulus 419 is arranged coaxially with the clutch element 418 and is resiliently urged into contact with the clutch element by a rubber washer 420 whose pressure is varied by tightening or loosening bolts 421. This arrangement for driving the sprocket annulus is designed to avoid damage to the parts if a bottle should break or become displaced during its travel along the article path.

The plates 415 and 416 carry bearings in which vertical brush shafts 422, 423, 424, 425, 426 and 427 (Fig. 10) are journaled, each brush shaft extending up above the upper plate 415 to provide a hub H on which a wiper brush 438 (Fig. 17) is mounted. A sprocket 528 (Figs. 10 and 11) is fixed to each of the shafts 422 to 427 between the plates 415 and 416. Adjacent to each of the shafts 423, 424, 426 and 427 there is a shaft 529 (Fig. 13) on which is mounted an idler sprocket 430.

The sprocket 419 above referred to and which is mounted on the upper extension 337a of the shaft 327 is of a diameter twice that of the sprockets 528 on the brush shafts. An arm A' (Fig. 10) comprising upper and lower spaced plates 431 and 432 (Fig. 13) is arranged to swing about the axis of the shaft extension 337a and supports a shaft 433 on which is mounted an idler sprocket 434. A spring 435 (Fig. 10) tends to swing the arm A' in a counterclockwise direction, while an adjustable stop 436 limits its swing in the opposite direction. A sprocket chain 437 is trained about the sprocket annulus 419 and about the idler sprockets 430 and about the sprockets 528 on the brush shafts 422 to 427, and also about the idler sprocket 434, the chain being so guided by the several idler sprockets that as the drive annulus 419 is turned, the brush shafts 422, 423 and 424 turn in a clockwise direction, while the brush shafts 425, 426 and 427 turn counterclockwise. The arm A', spring 435, and sprocket 434 keep the sprocket chain taut so that it will not jump off of the sprocket wheels. A brush 38 (Fig. 4) is fixed to the upper end portion of each of the brush shafts 422 to 427. Each brush (Fig. 14) comprises a hub 439 having a bore for the reception of the shaft, the hub preferably being split to permit it to be clamped about the shaft and also to be adjusted angularly or up or down with reference to the shaft. The hub 439 of the brush has a quadrant shaped extension 439a having an arcuate rim 440 provided with radial bores in which tufts 441 of brush bristles are fixed.

Each of the neck label wiping pads 511 carried by the first three of the brackets 510 at the front of the machine is shaped at its right-hand portion (Fig. 17) to extend through an arc of approximately 90° (measured from a radius of the brush shaft perpendicular to the article path) while at the opposite side of said radius the pad extends about the bottle neck through an arc of from 5° to 10°. Each of the first three brackets 510 also carries a guard plate 442 (Fig. 17) to prevent the brush bristles from contacting the adhesively-coated left-hand end portion of the label before said portion has been wiped into contact with the bottle neck.

A guard plate 443 (Fig. 17) is also provided at the right-hand side of the wiper pad 511 to prevent the brush from contacting and rapidly wearing the rubber wiper pad when the machine is running without bottles.

As shown in Fig. 17, each of the neck-label wiper pads 511a, carried by the last three of the brackets 510 at the front of the machine is preferably shaped to embrace the bottle neck through an arc of approximately 180°.

Referring to Figs. 3, 4, 5 and 17, it will be seen that the axes of the left-hand set of brush wipers are located to the left of vertical planes through the axes of the corresponding cylinders 339 and 340. This off-center position of the brush axes is such that a line connecting the axis of the wiper brush and the axis of a bottle whose label is being wiped by said brush will pass through the free edge of the right-hand end portion of the label after it has been wiped down by the brush. As here illustrated, the label is of such length that its ends when properly wiped down overlap. Thus, as illustrated in Fig. 17, the right-hand end portion of the label must be wiped beyond the vertical plane through the axis of the cylinder 340. Experiment has shown that a brush wiper will not satsifactorily wipe a label beyond a plane through the axis of the brush wiper and the bottle. Accordingly, the axes of the brush wipers are off-set as above described, so that the extreme end portion of the label may be wiped down properly. In the same way the brush wipers of the right-hand set are similarly offset to the right, so as to insure a proper wiping of the left-hand end portion of the label.

There is no necessity for providing a guard plate like the guard plate 442 in association with the right-hand set of brush wipers because the right-hand end portions of the labels have already been wiped down, so that their gummed surfaces are not exposed. However, the right-hand brush wipers are provided with guards 443a and 443b at opposite sides respectively, to prevent undue

wear of the wiper pads when the machine is running without bottles.

When, as is sometimes required, the ends of the neck label do not overlap but are spaced apart for instance from ¼" to ½", substantially the same wiping mechanism will be employed, except that it would then be desirable to provide guard plates like the plates **442** at the right-hand sides of the pads **511a** of the second set of wiper brushes, and to reverse the direction of rotation of the wiper brushes as compared with that indicated by the arrows in Fig. 17. Obviously, if it were desired to apply a wrap-around label to the body portion, for example, of a bottle instead of to the neck, or, in fact, to another article than a bottle, wiper means of the kind above disclosed may be employed for the purpose.

While one desirable embodiment of the invention has herein been illustrated and described, it is to be understood that the invention, in its broader aspects is not confined to the precise details herein illustrated, but is to be regarded as broadly inclusive of all modifications which fall within the scope of the appended claims.

I claim:

1. A labeling machine of the kind wherein a bottle to be labeled is moved uninterruptedly along a predetermined article path, a conveyor for so moving the bottle, means for adhering the central portion of a label to the bottle while the latter is so moving, label wiping means and means for supporting the wiping means for bodily movement along the conveyor path, characterized in that the wiping means comprises a rotary brush turning about an axis parallel to the axis of the bottle, and means for turning the brush in a direction to wipe an end portion of the label about the bottle.

2. A labeling machine of the kind wherein a bottle to be labeled is moved uninterruptedly along a predetermined article path, a conveyor for so moving the bottle, means for adhering the central portion of a label to the bottle while the latter is so moving, label wiping means and means for supporting the wiping means for bodily movement along the conveyor path, characterized in that the wiping means comprises a pair of rotary brushes each turning about an axis which is parallel to the axis of the bottle, the axes of the brushes being spaced apart lengthwise of the article path, and means for turning the brushes in directions such that one is operative to wipe one end portion of the label about the bottle and the other is operative to wipe the other end portion of the label about the bottle.

3. A labeling machine of the kind wherein bottles to be labeled are moved uninterruptedly along a predetermined article path, a conveyor for so moving the bottles, means for supplying bottles to the conveyor and for spacing them equidistantly apart on the conveyor, means for adhering a label simultaneously to each of a group of bottles while the latter are so moving, the label-adhering means being operative to apply the central portion of the label to the bottle while leaving the end portions of the label unattached, label wiping means and means for supporting the wiping means for bodily movement toward and from the article path and also for bodily movement longitudinally of the article path, characterized in that the wiping means comprises a plurality of brushes turning about parallel axes located in a plane parallel to the article path and spaced apart along said path a distance equal to the spacing of the axes of successive bottles, and means for rotating all of said brushes simultaneously in a direction such that each brush is effective to wipe one end portion of a label about a corresponding bottle of the group.

4. A labeling machine of the kind wherein bottles to be labeled are moved uninterruptedly along a predetermined article path, a conveyor for so moving the bottles, means for supplying bottles to the conveyor and for spacing them equidistantly apart on the conveyor, means for adhering a label simultaneously to each of a group of bottles while the latter are so moving, the label-adhering means being operative to apply the central portion of the label to the bottle while leaving the end portions of the label unattached, label wiping means, and means for supporting the wiping means for bodily movement longitudinally of the article path, said wiping means comprising two groups of rotary brushes, all of said brushes turning about parallel axes located in a plane parallel to the article path, the axes of the brushes being spaced apart along said path a distance equal to the spacing of the axes of successive bottles, and means for rotating the brushes of one group in a direction such that each brush of said group wipes one end portion of a label about a corresponding bottle, and means for rotating the brushes of the other group in the opposite direction thereby to wipe the opposite end portion of each label about the corresponding bottle.

5. A labeling machine wherein bottles to be labeled are moved uninterruptedly along a predetermined article path, a conveyor for so moving the articles, and means for applying to the neck of a bottle while the latter is so moving along the article path, a label which embraces the neck through an arc which exceeds 180°, the means for applying the label comprising a resilient pad provided with suction ports which moves the central portion of the label into adhering contact with the bottle neck, and brush type wipers operative, in succession, to apply wiping force first to one end portion of the label and then to the other end portion.

6. In a labeling machine of the kind wherein bottles to be labeled are moved in succession along a predetermined article path, and having means operative simultaneously to adhere labels to each of the articles of a group of such articles while said group of articles is moving uninterruptedly along said path, a plurality of pickers, in number equal to the number of articles constituting such group, an equal number of label magazines, means operative simultaneously to move the several pickers to take labels from the respective magazines and to carry them to a transfer station, a group of grip fingers, equal in number to the number of pickers, and which are operative to take labels from the transfer station and to adhere the central portions of the respective labels to the bottles constituting said group, means for moving the grip fingers in a direction parallel to the article path and at the same linear speed as the bottles while holding the labels in contact with the bottles, each grip finger being so constructed and arranged as to embrace approximately 90° of the circumference of the bottle, and wiping means operative to complete the wiping of the label about the bottle, the wiping means being bodily movable along the article path while performing the wiping operation and comprising elements which act successively to wrap the opposite end portions of the label about the bottle.

7. In a labeling machine of the kind wherein bottles to be labeled are moved in succession along a predetermined article path, and having means operative simultaneously to adhere labels to each of the articles of a group of such articles while said group of articles is moving uninterruptedly along said path, a plurality of pickers, in number equal to the number of articles constituting such group, an equal number of label magazines, means operative simultaneously to move the several pickers to take labels from the respective magazines and to carry them to a transfer station, a group of grip fingers, in number equal to the number of pickers and which are operative to take labels from the transfer station and to adhere the central portions of the respective labels to the several bottles constituting said group, means for moving the grip fingers in a direction parallel to the article path and at the same linear speed as the bottles while holding the labels in contact with the bottles, and wiping means operative to complete the wiping of the label about the bottle, said wiping means comprising two

sets of wiper elements, the number of wiper elements in each set equalling the number of bottles in the group, and means operative to actuate one set of wiper elements to wipe in one end portion of the label, and means operative to cause the other set of wiper elements thereafter to wipe in the opposite end portions of the label.

8. In a labeling machine of the kind wherein bottles to be labeled are moved in succession and in definitely spaced relation along a predetermined article path and having means operative simultaneously to adhere labels to each of the articles of a group of such articles while said group of articles is moving uninterruptedly along said path, a plurality of pickers, in number equal to the number of articles constituting such group, an equal number of label magazines, means operative simultaneously to move the several pickers to take labels from the respective magazines and to carry them to a transfer station, a group of grip fingers, equal in number to the number of pickers, and which are operative to take labels from the transfer station and to adhere the central portion of each respective label to one of the bottles constituting said group, means for moving the grip fingers in a direction parallel to the article path and at the same linear speed as the bottles while holding the labels in contact with the bottles, each grip finger being so constructed and arranged as to embrace approximately 90° of the circumference of the bottle, and wiping means operative to complete the wrapping of the label about the bottle, said wiping means comprising two sets of rotary brush wipers, the number of brush wipers in each set equalling the number of bottles in a group, the first wiper of the second set being spaced along the article path from the last wiper of the first set a distance equal to the spacing of the bottles as they are moved by the conveyor, means operative to rotate the brush wipers of one set oppositely to those of the other set, means to move the brush wipers of one set into operative engagement with the labels on the bottles constituting one group thereby to wipe in one end portion of each respective label, and means operative thereafter to cause the brush wipers of the other set operatively to engage the labels on the bottles of the same group, thereby to wipe in the opposite end portions of the respective labels.

9. In a labeling machine of the kind wherein, during a single rotation of a drive shaft, labels are applied to a group of bottles and which comprises a conveyor for moving a series of bottles, arranged in spaced tandem relation, uninterruptedly along a predetermined article path, a plurality of magazines, equalling in number the number of bottles which constitutes each of said groups, all of said magazines being at the same side of said path and being equally spaced apart along said path, a picker corresponding to each magazine, a grip finger corresponding to each picker and which is operative to take a label from the picker and to adhere its center portion to a corresponding bottle, all of said pickers and all of said grip fingers being located at the same side of said path, and wiper means operative to wipe one end portion of the label which adheres to each bottle of a group into contact with the corresponding bottle, means for actuating the pickers, grip fingers and said wiper means during one rotation of the drive shaft, additional wiper means for wiping the opposite end portions of the labels which adhere to each bottle of a group into contact with the respective bottles, and means operative to actuate said latter wiping means during the next successive rotation of the drive shaft while the first-named wiper means is wiping labels adhering to bottles of the next preceding group.

10. In a labeling machine of the kind wherein, during a single rotation of a drive shaft, a neck label of the wrap-around type is applied to each of three bottles and which comprises a conveyor for moving a series of bottles arranged in definite, spaced tandem relation uninterruptedly along a predetermined article path, three magazines each designed to hold neck labels, all said magazines being at the same side of said path and being equally spaced apart, three pickers operative to take labels from the respective magazines and to carry them to a transfer station, three grip fingers each operative to take a label from the transfer station and to adhere the central portion of the label to the neck of a corresponding bottle, all of said pickers and grip fingers being located at the same side of the article path, and three power-driven, rotary wiper elements each operative to wipe one end portion of a label about the corresponding bottle, means for actuating the pickers, grip fingers and said wiper elements during one rotation of the drive shaft, three additional power-driven, rotary wiper elements each operative to wrap the opposite end portion of the label about a corresponding bottle, all of said rotary wiper elements being located at the opposite side of the article path from the pickers and means operatively for actuating said last-named wiper elements during the next successive rotation of the drive shaft.

11. In a labeling machine according to claim 10, wherein all of the wiper elements are rotary brushes, means for turning the first three of said brushes in one direction, and means for turning the other three brushes in the opposite direction.

12. Apparatus in accordance with claim 10, comprising means for moving the grip fingers and both sets of brushes longitudinally of the article path while they are in operative contact with the labels.

13. In combination, in apparatus for applying to the neck of a bottle a label which extends more than 180° about the bottle neck and wherein a drive shaft makes one revolution while a label is being removed from a magazine by a picker, taken from the picker by a grip finger, and brought into adhesive contact with the bottle, and a wiper element contacts one end portion only of said label and wraps said end portion about the bottle neck, and wherein constantly moving conveyor means advances the bottle uninterruptedly along a predetermined article path, and wherein the aforesaid wiper element is mounted on a support located at the opposite side of the article path from the grip finger and wherein said support is moved bodily in a closed orbit during each rotation of the drive shaft, a second wiper element mounted on the same support but in such spaced relation to the first wiper element that it contacts the opposite end portion of the label adhering to said bottle during the next rotation of the drive shaft subsequent to that during which the first wiper element contacted the label and while the first wiping element is wiping the label of another bottle, each of said wiper elements being a rotary brush, means for turning the brushes in opposite directions and at an angular velocity such that each brush makes two complete turns for each rotation of the drive shaft.

14. In combination, in apparatus according to claim 13, wherein the wiper support is carried by two crankpins fixed to cranks which are mounted on parallel shafts whose axes are spaced apart and in a plane parallel to the article path and wherein said shafts turn in the same direction, once for each rotation of the drive shaft, and wherein each wiper brush is mounted on a shaft turning in bearings in the support, a sprocket wheel fixed to each brush shaft, a sprocket coaxial with one of the crankpins and fixed relatively to said crankpin, and a sprocket chain which embraces the sprocket wheels on the brush shafts whereby, as the support is revolved by the crankshafts, the brushes are rotated.

15. Apparatus according to claim 14, wherein the sprocket wheel which is fixed relatively to the crankpin is of a diameter twice that of the sprocket wheels which are mounted on the brush shafts whereby the brush shafts are turned twice for each rotation of the drive shaft.

16. Apparatus according to claim 15, wherein each

wiper brush has bristles extending through an arc of approximately 90° of the circumference of the brush.

17. Apparatus according to claim 14, comprising idler sprockets operative so to guide the sprocket chain that the brush shafts turn in opposite directions, and means for keeping the sprocket chain under proper tension.

18. In combination, in a machine for applying wrap-around labels to bottle necks and wherein the bottles to be labeled are moved uninterruptedly along a predetermined article path by conveyor means for applying to each bottle a neck label which extends more than 180° about the periphery of the bottle neck, and wherein, during each rotation of a drive shaft, neck labels are adhered to each of a group of bottles moving along the article path, the means for so adhering the labels comprising a plurality of magazines, in number equal to the number of bottles forming such a group, picker means cooperative with each magazine to take a label from the latter, a suction-type grip finger cooperative with each picker to take a label from the latter and contact its central portion with a neck of one of the bottles, respectively, comprised in such a group, each grip finger comprising a pressure-type wiper pad which is constructed and arranged to apply pressure to a label through an arc of approximately 90°, a set of wiper elements, in number corresponding to the number of bottles in such a group, each wiper element of said set being operative to wipe one end portion only of a label, a support on which said wiper elements are mounted and which revolves bodily in an orbital path while moving toward and from the article path and also back and forth along said path, said support being located at the opposite side of the article path from the grip fingers, means for moving the pickers, grip fingers, pressure type wiper pads and said set of wiper elements through one operative cycle during each rotation of the drive shaft, and a second set of wiper elements carried by the support, the wiper elements of said second set being operative to wipe in the other ends of the labels.

19. In combination, an apparatus according to claim 18 and wherein each of the wiper elements is a rotary brush, means for turning the shafts of the two sets in opposite directions.

20. In combination, in apparatus according to claim 18, having means for so operating the wiper elements that each wiper element of the first set is wiping one end of the label on a bottle of one group while each wiper of the second set is completing the wiping of a label on a bottle of the group whose labels have already been wiped by the wipers of the first set.

21. Apparatus according to claim 18, further characterized in that the wiper support moves toward and from the article path once for each rotation of the drive shaft, and means for turning the wiper brushes through two complete rotations during each rotation of the drive shaft.

22. Apparatus according to claim 18, wherein each wiper element is a rotating brush mounted on a shaft turning in bearings on the support, a sprocket wheel fixed to each brush shaft, a drive sprocket carried by the support, the drive sprocket turning once for each rotation of the drive shaft and being of twice the diameter of the brush shaft sprocket wheels, a sprocket chain which embraces the several sprocket wheels, and guides means so disposed as to cause the brush shaft sprockets of one set of wiper elements to turn oppositely to the brush shafts of the other set of wiper elements.

23. Apparatus according to claim 18, comprising means for adhering a body label to each bottle of a group simultaneously with the adhesion of a neck label to said bottle.

24. Apparatus according to claim 18, comprising a magazine structure having sets of compartments, in number equal to the number of bottles in a group, each set comprising a compartment for holding neck labels and a compartment for holding body labels, the picker means being operative simultaneously to take a label from each compartment of a set, an auxiliary grip finger operative to take a body label from each picker respectively, and adhere it to a bottle, and a pressure type wiper associated with each grip finger, said pressure type wipers being operative to wipe the body labels into firm contact with the bottle.

25. Apparatus according to claim 18, comprising abutment means located at the opposite side of the article path from the grip finger and which is operative to prevent the bottle from tipping during the wiping of the central portion of the neck label.

26. In combination, in a machine according to claim 18, means located at the opposite side of the article path from the grip finger for centering each bottle preparatory to its reception of the label.

27. Apparatus according to claim 18, wherein a pressure type wiper, opposed to each respective brush wiper, has an arcuate, label-contacting surface of approximately 90° extent operative to embrace the advancing quadrant of the bottle neck, said arcuate surface having a continuation operative to engage the trailing quadrant of the bottle neck through an arc of the order of 7°.

28. Apparatus according to claim 27, comprising a guard arranged to prevent contact of a brush wiper of one of said sets with the gummed surface of the unwiped end portion of the label as the wiper retreats from the bottle neck.

29. Apparatus according to claim 27, comprising guard means to prevent direct contact of the wipers of either set with the pressure type wiper thereby to prevent undue wear of the brush type wiper when the machine is running without bottles.

30. Apparatus according to claim 27, comprising means engageable with the top of the bottle to prevent the latter from vibrating while it is moving through the label receiving zone.

31. Apparatus according to claim 27, wherein the axis of each wiper brush of the first set is offset in the direction of the supply end of the machine from a radial plane perpendicular to the article path through the axis of a bottle located in the wiping position.

32. Apparatus according to claim 27, wherein the axis of each wiper brush of the second set is offset in the direction of the delivery end of the machine from a radial plane perpendicular to the article path through the axis of a bottle located at the wiping position.

33. In a labeling machine in combination, means for moving a bottle along a predetermined path, means operative simultaneously to adhere the central portions of a body label and of a neck label to the center of one semi-circumference of a bottle, the neck label being of a length to embrace more than 180° of the bottle neck, wiper means of the pressure type, located at one side of said path, operative simultaneously to wipe the body label and the central portion only of the neck label about the bottle, a power-driven brush wiper element operative to wipe one end portion of the neck label about the other semi-circumference of the bottle, and an additional power-driven brush wiper element operative to wipe the opposite end portion of the neck label about the last-named semi-circumference of the bottle, both of said brushes being located at the opposite side of said path from the pressure-type wiping means.

34. In combination, in a labeling machine according to claim 33, wherein the brush wiper elements are rotary, segmental brushes, parallel, spaced shafts on which the brushes are mounted, and power-actuated means for turning said shafts in opposite directions.

35. In a labeling machine according to claim 33 and which is designed to attach a neck label of such length that its ends overlap when it is wrapped about the bottle neck, two power-driven brush wiper elements, said brush wiper elements being so spaced apart, along said path, that one brush wiper element wipes one end of a label

and thereafter the other brush wiper element wipes the opposite end of the same label.

36. A labeling machine comprising a conveyor capable of uninterruptedly advancing bottles to be labeled, one after another in but a single row, along a predetermined rectilinear path, means located at one side of said path operative simultaneously to apply the central portion of a gummed label, designed to embrace the neck of the bottle through an arc exceeding 270°, to the neck of each bottle, respectively, of a group of bottles while said group, consisting of a plurality of bottles whose axes are all in the same vertical plane extending lengthwise of said path, is moving along said path, and wiper means located at the opposite side of said path operative to wipe the opposite end portions of each respective label, one after the other, about the neck of a corresponding bottle of the group while the group is moving along said path.

37. A labeling machine comprising a conveyor operative uninterruptedly to advance bottles to be labeled in tandem relation along a single, predetermined, rectilinear path, and means for applying to the neck of a bottle, while the latter is in motion along said path, a label which embraces the bottle neck through an arc exceeding 360°, the means for applying the label comprising a label carrier, located at one side of said path and which moves transversely of the path and in so doing presses the central portion of an adhesively-coated label against the neck of the moving bottle, leaving the end portions of the label free from the bottle neck, and wiper means, located at the opposite side of the path from the label carrier, operative to apply frictional wiping force, first to one end portion of the label and then to the other end portion of the label, as the bottle continues to move uninterruptedly along said path.

38. A labeling machine comprising a conveyor operative uninterruptedly to move bottles in tandem relation along a single, predetermined path, and means for applying to the neck of a bottle, while the latter is moving along said path, a label which embraces the bottle neck through an arc of at least 360°, the applying means comprising a grip finger located at one side of said path and which is operative to take a label from a transfer station and by motion transversely of said path to adhere the central portion of the label to the neck of the moving bottle while leaving the end portions of the label free from contact with the bottle neck, and a pair of oppositely turning, rotary brush wipers, both located at the opposite side of the path from the grip finger, said brush wipers being permanently spaced apart along said path with their axes at the same distance from and parallel to the vertical plane defined by the axes of the bottles as they move along said path, said brush wipers being operative successively to contact the opposite end portions, respectively, of a label and to wipe said ends about the bottle neck as the bottle continues to move along said path.

39. In combination in apparatus for applying to the neck of a bottle a label which extends more than 270° of an arc about the bottle neck, means defining a single, rectilinear path along which bottles advance in tandem relation, and means for uninterruptedly advancing bottles along said path, a pressure-type wiper disposed at one side of said path and which is operative, by motion transversely of said path, to press the central portion of an adhesively-coated label against the neck of a bottle through an arc of approximately 90°, and two rotary brush-type wipers, both located at the opposite side of the path from said pressure-type wiper and which are spaced apart along the path with their axes vertical and parallel to the vertical plane defined by the axes of the bottles moving along said path, the axes of said brush-type wipers being so spaced that, while one wiper contacts a label on one bottle, the other wiper contacts the label on another bottle, and power means for driving said brush wipers, respectively, in directions such that one wipes one end of a label into contact with the neck of the first bottle and the other wipes the opposite end of a label into contact with the other bottle.

40. In combination in apparatus for applying to the neck of a bottle a label which extends more than 180° about the bottle neck, means operative to move bottles in succession and in tandem relation along a single, predetermined, rectilinear path, pressure-type wipers arranged at one side of said path and which are operative, by motion transversely of the path, to press the central portion of an adhesively-coated label against the center of one semi-circumference of the neck of each one of a group of bottles, while said group, consisting of a plurality of bottles disposed in tandem relation, is moving along said path, rotary brush wipers located at the opposite side of the path from the pressure-type wipers, the number of brush wipers being twice the number of bottles in a group, said brush wipers being spaced apart along said path with their axes vertical and at the same distance from the vertical plane defined by the axes of the bottles as they move along said path, said brush wipers being arranged in pairs, the wipers of each respective pair being operative to wipe the opposite end portions, respectively, of a label into contact with the other semi-circumference of the bottle neck, and power means for turning the brush wipers of each pair in opposite directions.

41. In combination in apparatus for applying to the neck of a bottle a label which extends approximately 360° about the bottle neck, means defining a predetermined, rectilinear path along which bottles move uninterruptedly and in tandem relation while receiving neck labels, means for moving the bottles in succession along said path, a pressure-type wiper located at one side of said path and which is operative, by motion transversely of the path, to press the mid-portion of an adhesively-coated label against the bottle neck, two rotary brush wipers, both located at the opposite side of the article path from the pressure-type wiper and which are operative to wipe opposite end portions, respectively, of the label into contact with a bottle neck, said brush-type wipers being spaced apart along the article path so that, while one of them contacts and wipes one end of a label into contact with the neck of one bottle, the other is wiping the opposite end of a label into contact with another bottle, and power means for constantly rotating said brush wipers.

42. A labeling machine designed to apply to an article a label of a length such that it may embrace the article through an arc exceeding 270°, said machine comprising a conveyor capable of uninterruptedly advancing articles to be labeled, one after another in but a single row, along a predetermined rectilinear path, transfer means located at one side of said path for bringing the central portion of a gummed label into contact with the moving article, said transfer means being operative to hold the label in contact with the article while the latter continues to move for a predetermined distance along said path, and wiper means located at the opposite side of said path, from the transfer means, operative successively to wipe the opposite end portions of the label into adhering contact with the article while the latter is moving along the path, characterized in that both the transfer means and the wiping means move bodily along said path at the same linear speed as the article while performing their respective functions.

References Cited in the file of this patent

UNITED STATES PATENTS

1,871,677	Ermold	Aug. 16, 1932
1,958,111	Oslund	May 8, 1934
1,985,774	Fenner et al.	Dec. 25, 1934
2,118,527	Schmutzer et al.	May 24, 1938
2,506,963	Magnusson	May 9, 1950
2,773,617	Weiss	Dec. 11, 1956