Dec. 2, 1924. 1,518,080

A. H. KYLER

CAN LABELING MACHINE

Filed June 30, 1920 5 Sheets-Sheet 1

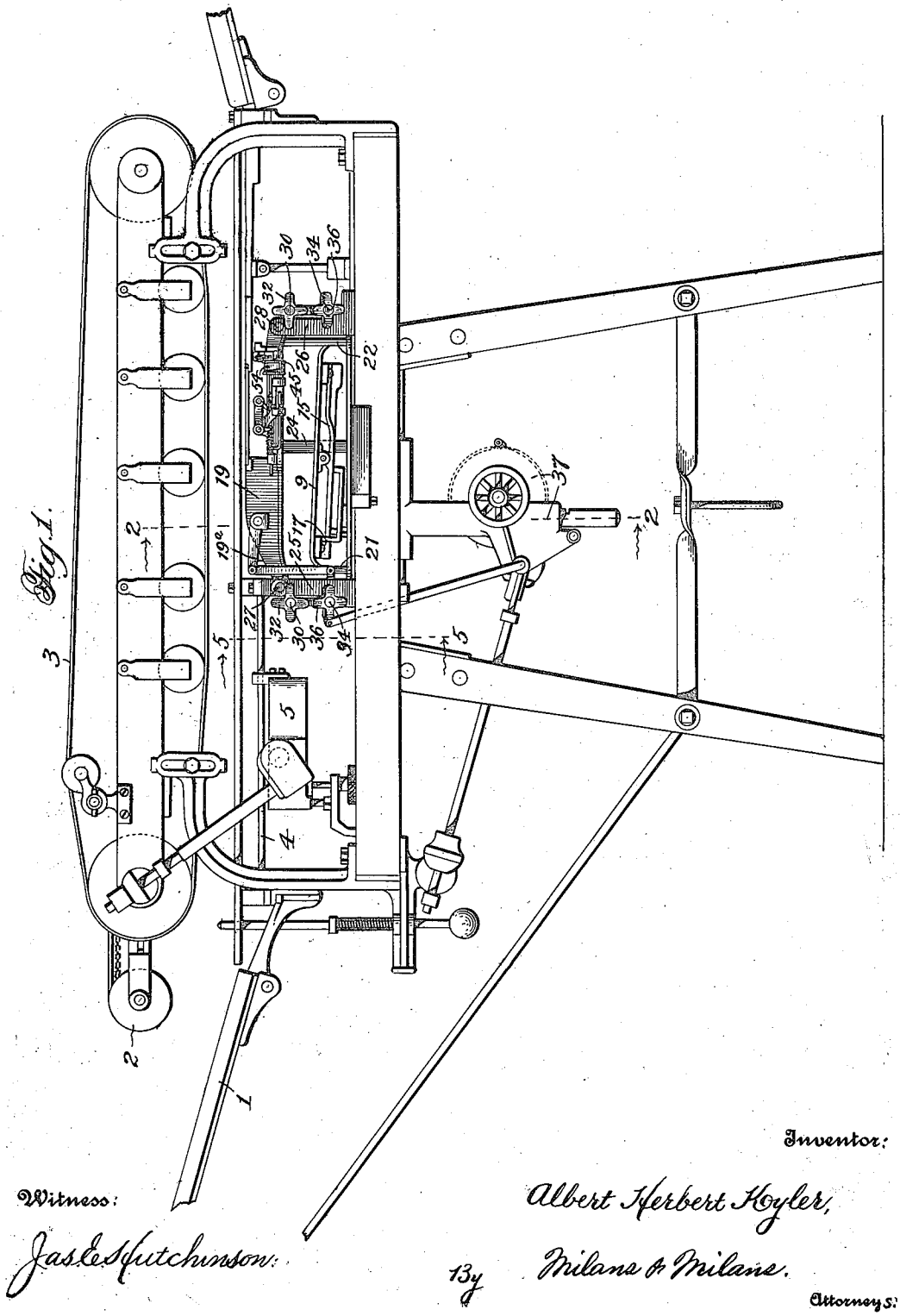


Fig. 1.

Witness:
Jas. E. Hutchinson.

Inventor:
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Attorneys.

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CAN LABELING MACHINE

Filed June 30, 1920 5 Sheets-Sheet 2

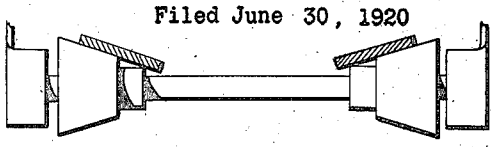
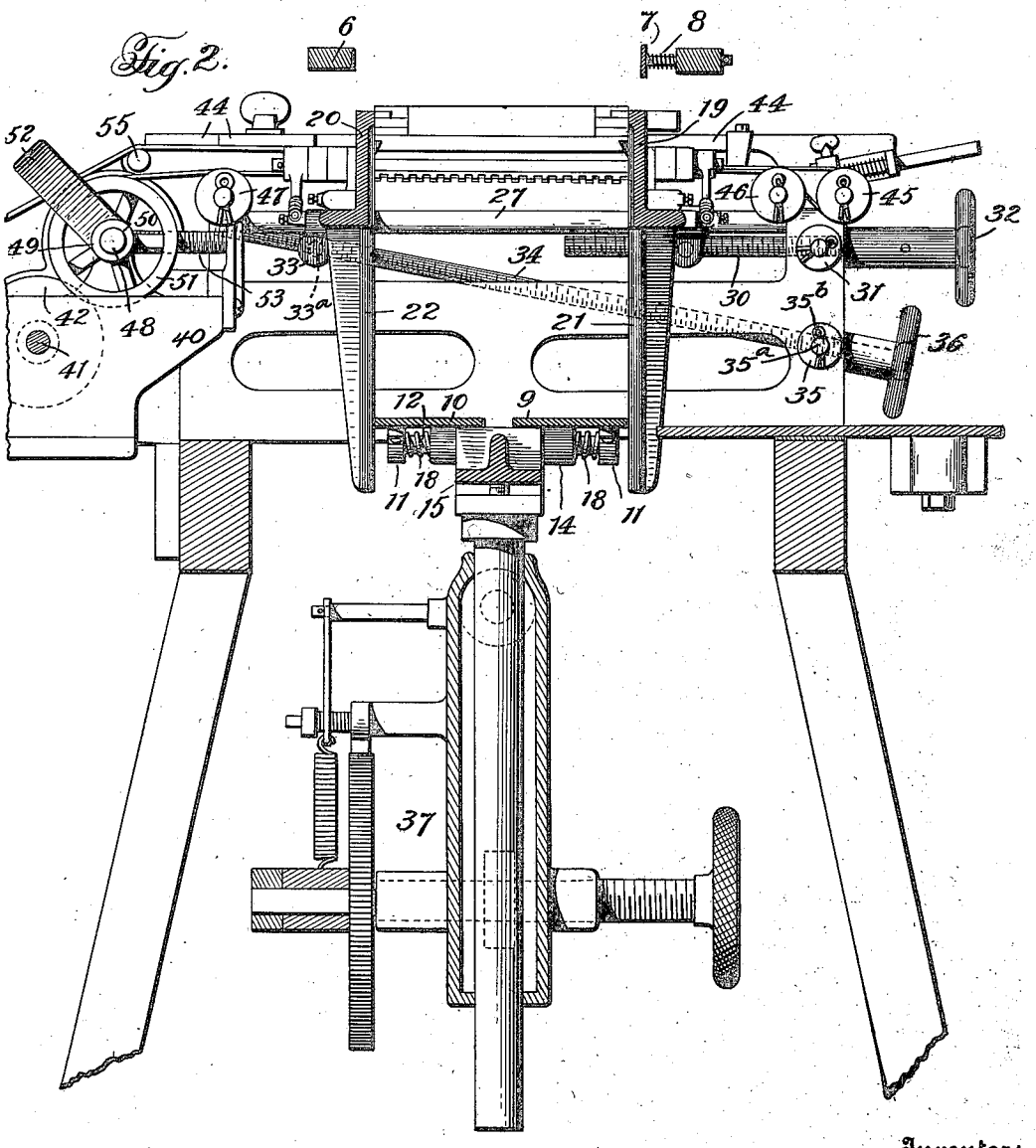


Fig. 2.



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Dec. 2, 1924. 1,518,080

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CAN LABELING MACHINE

Filed June 30, 1920 5 Sheets-Sheet 3

Fig. 5.

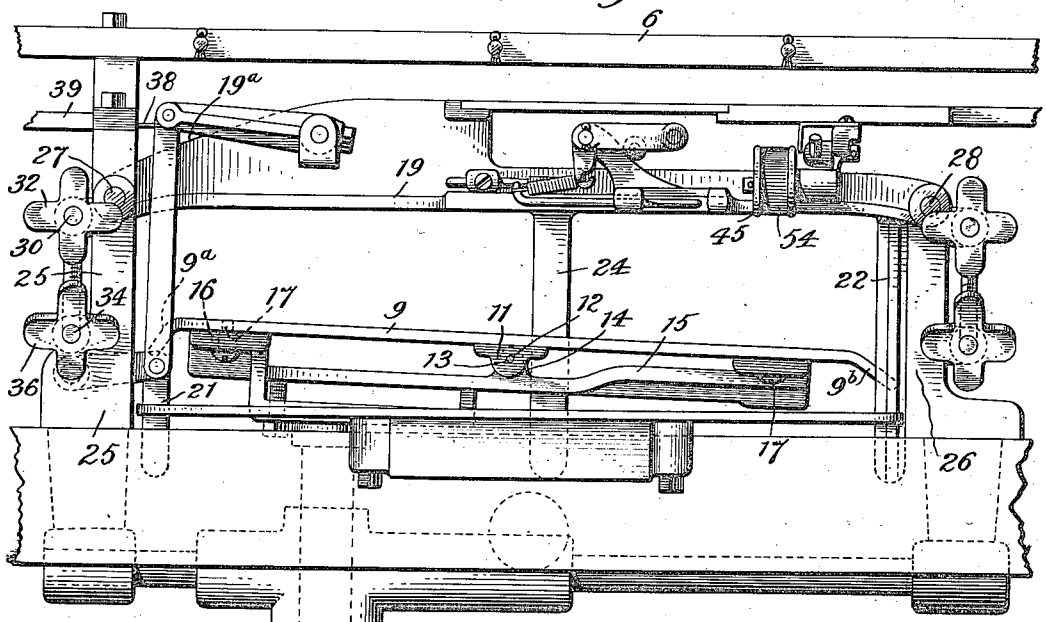
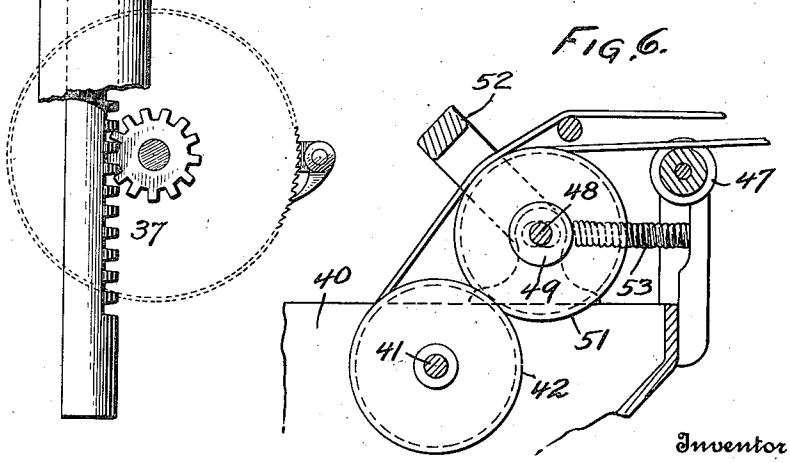


FIG. 6.



Witness:

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Inventor:

Albert Herbert Kyler,

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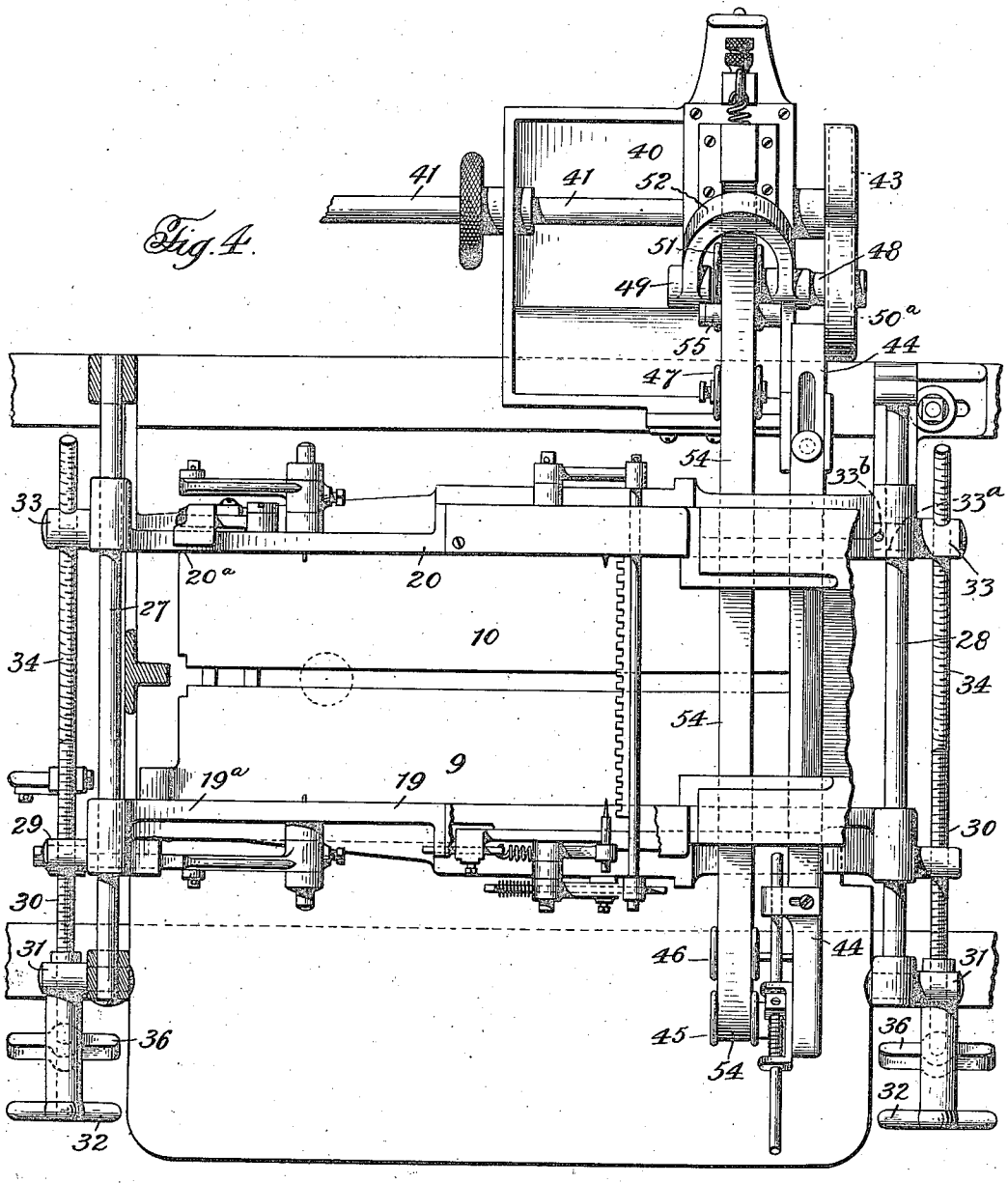
Dec. 2, 1924. 1,518,080

A. H. KYLER

CAN LABELING MACHINE

Filed June 30, 1920 5 Sheets-Sheet 4

Fig. 4.



Inventor:

Witness:

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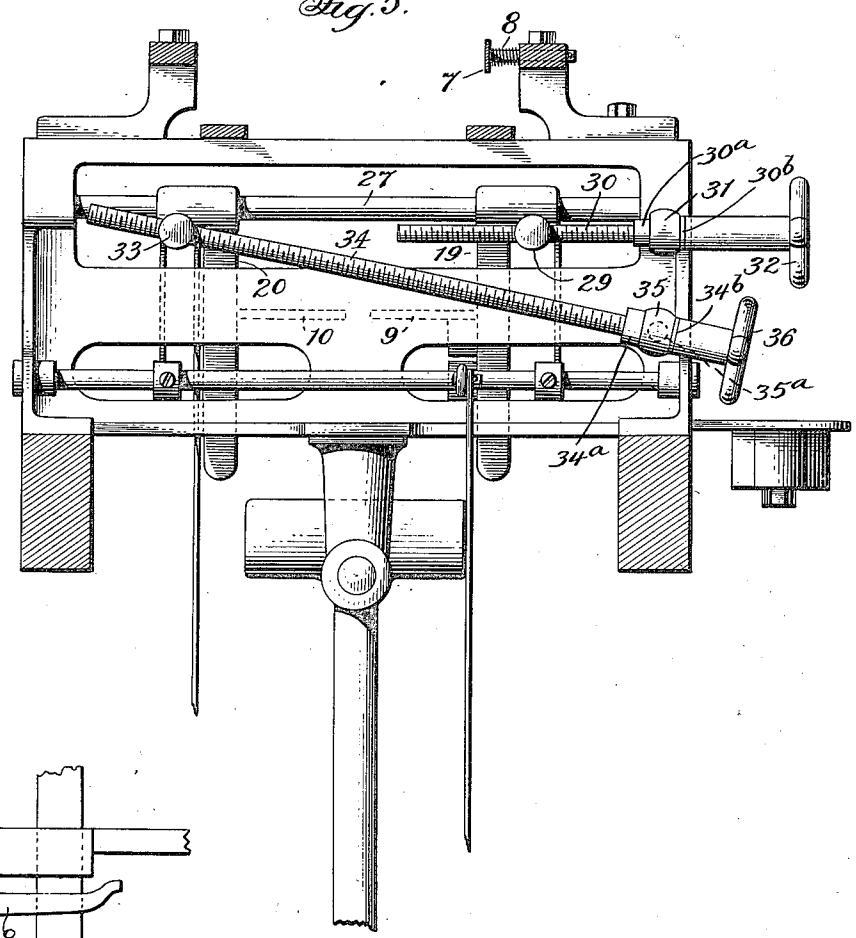
Dec. 2, 1924. 1,518,080

A. H. KYLER

CAN LABELING MACHINE

Filed June 30, 1920 5 Sheets-Sheet 5

Fig. 5.



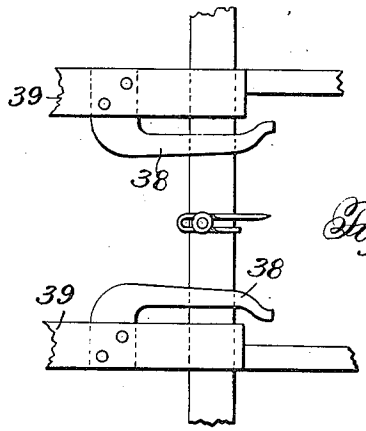


Fig. 5a.

Witness:

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Attorneys.

Patented Dec. 2, 1924. 1,518,080

UNITED STATES PATENT OFFICE.

ALBERT HERBERT KYLER, OF WESTMINSTER, MARYLAND, ASSIGNOR TO THE FRED H. KNAPP COMPANY, OF WESTMINSTER, MARYLAND, A CORPORATION OF MARYLAND.

CAN-LABELING MACHINE.

Application filed June 30, 1920. Serial No. 393,110.

To all whom it may concern:

Be it known that I, ALBERT HERBERT KYLER, citizen of the United States, residing at Westminster, in the county of Carroll and State of Maryland, have invented certain new and useful Improvements in Can-Labeling Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in can labeling machines, and more particularly to machines of the character wherein cans are adapted to travel along a suitable runway, and in their movement along a runway have applied to the periphery thereof a label, suitable pasting means being employed to cause the label to adhere to the cans.

One of the primary objects of the present invention is to provide novel and improved labeling mechanism in a machine of the character described, said mechanism being susceptible of ready adjustment whereby to accommodate itself to labels of various sizes, to the end that cans of different lengths may be successfully and neatly labelled.

It has heretofore been suggested in the art to provide a receptacle for labels with means for adjusting one or more of the sides of the receptacle, but difficulty has been experienced in performing the adjusting operations, not only as to the incident loss of time in making the necessary adjustments but in the accuracy of the adjustments which oftentimes resulted in an uneven fitting of the labels, as well as injury to the labels.

It is contemplated by the present invention to provide a label receptacle including opposed sides, which are readily adjustable bodily with respect to one another, as well as adjustable at an angle with respect to one another, and means whereby the necessary adjustments may be accomplished from one side of the machine, preferably the front side, to the end that the operator may readily make the necessary adjustment at the front of the machine as he positions the labels on the base or bottom of the receptacle.

It is further contemplated by the invention to provide novel and efficient means whereby a side of the receptacle may be adjusted at opposite ends independently, with the result that, as desired, said side may be inclined in one direction or the other at will.

It is a further object of the invention to provide, in operative association, means whereby the sides of the label receptacle may be relatively adjusted, of novel means for simultaneously adjusting the base of the receptacle whereby the latter will automatically assume a normal position with respect to the sides, regardless of adjustment.

More particularly, the invention includes certain improvements in labeling machines, simple in design and construction, strong and durable, and efficient in operation.

Other improvements and novel details in the construction and arrangement of parts will be understood from the description to follow which, for a clear understanding of the invention, is to be considered in connection with the accompanying drawings, forming a part hereof, and wherein is disclosed, a convenient and satisfactory embodiment of the invention.

In the drawings,

Figure 1 is a front elevation of the labeling machine with the improvements applied;

Figure 2 is a transverse section enlarged, substantially on the line 2—2 of Figure 1;

Figure 3 is a front elevation enlarged, of a label support, other parts of the machine being removed;

Figure 4 is a top plan view of the same;

Figure 5 is a transverse section enlarged, substantially on the line 5—5 of Figure 1, showing more particularly adjusting means for one side of the label receptacle;

Figure 5ª is a detail view of label supporting means; and

Figure 6 is a detail section of the supporting member 49.

With more particular reference to the drawings wherein like reference numerals refer to corresponding parts throughout the several views, 1 is a suitable inlet feed runway for cans, 2 a suitable can spacing means, and 3 endless belt conveyors, the latter being adapted to rotate whereby to impart rolling feeding movement of the cans along a suitable runway 4 as delivered to the latter from the feed runway 1. 5 is a suitable paste receptacle having therein a pasting roll not shown but adapted to, in the movement of the cans along the runway, apply to the periphery of the cans a daub of paste whereby as this pasted area of the can engages with a label on the receptacle, the label will be picked up and applied to the periphery of the can. The parts above described may be of any of the approved types heretofore

patented, and not necessary to describe in detail herein.

The runway 4 is provided with suitable end guides for the cans comprising a guide bar 6 which may be adjustably supported, but when adjusted will normally assume a stationary position, and arranged to cooperate with this guide bar 6 is an opposite guide bar 7 preferably of yieldable material and spring-held in position in contact with the adjacent end of the cans, as by the spring supports 8. It will be appreciated that, the bar 6 having been properly adjusted to adapt itself to the particular length of cans to be labelled, the spring guides 7 will serve to maintain the cans in contact with the stationary guide 6, with the result that the cans will be properly positioned, in the rolling movement, with respect to the labels supported in the manner to be now described.

It will be appreciated that, in view of the fact that the machine may be adapted to different length cans, means should be provided to properly position the labels so that the latter will assume an accurate position with respect to the cans, irrespective of the size of the latter, and it will also be appreciated that there is some times a slight variation in the cut of the labels, and considerable flexibility of adjustment should be provided for the sides of the receptacle, whereby to accurately accommodate the size of the receptacle to the size of the label, and prevent any sticking of the labels against such sides, which might interfere with the accurate fitting of the labels into can-applying position.

The label receptacle preferably includes bottom sections 9 and 10 each of which has a central depending lug 11 to which is secured a suitable pin 12 projecting inwardly to slidably engage in an aperture 13 in an upwardly projecting ear 14 on an adjustable frame 15. The frame 15 has at opposite ends slotted ways 16 to receive pins 17 projecting downwardly from the bottom members 9 and 10. The engagement between the pins 12 and 17 and the slots 13 and 16 respectively is a loose one whereby to permit of slidable movement of the sections 9 and 10, as well as a slight tilting movement of one end of said sections 9 and 10 with respect to the opposite ends thereof. Interposed between the ears 14 and the depending lugs 11 are suitable spiral springs 18, said springs being mounted upon the pins 12 and adapted to constantly exert outward pressure on the lugs 11 and in turn force the connected bottom sections 9 and 10 outwardly.

The receptacle has a front side 19 and a back side 20. Depending from the front side are the arms 21 and 22 adjacent opposite ends thereof, and projecting from the rear side are arms 23 and 24, the arm 24 being arranged substantially midway of the ends of the back side 20 whereby to form a stop or abutment intermediate the ends of the said side for the labels. Suitable upright supports 25 and 26 are provided, the same being mounted in any desirable manner upon the framework of the machine, said supports being arranged in pairs—one at the front and one at the back of the machine, and projecting between the arms of each pair are suitable guide bars 27 and 28, respectively, upon which are sleeved for slidable movement apertured ends of the sides 19 and 20.

Projecting beyond opposite ends of the sides 19 are suitable lugs 29 having a threaded aperture therethrough adapted to receive correspondingly threaded bolts 30, loosely projecting through apertured bearings 31 which latter have associated therewith means for preventing relatively endwise movement of the bolts. This means for preventing endwise movement of the threaded bolts 30 conveniently takes the form of a collar 30^a, fixed upon the bolt 30 and adapted to loosely engage one side of the bearing 31 in the rotation of the bolt 30, and cooperating with a shoulder portion 30^b also fixed on the bolt 30 and adapted to engage the bearing 31 on its opposite side in the rotatable movement of the bolt 30. By reason of the fact that the bolt 30 is preferably devoid of threads at the point where it projects through the bearing 31, the engagement between the bolt proper and said bearing will, as previously stated, be a loose one, so that upon the rotation of the bolt 30 by means of its connected hand-engaging part 32, the movement of the bolt with respect to the bearing 31 will be a rotatable one, and said bolt by reason of the parts 30^a and 30^b, respectively, will be fixed against longitudinal movement with respect to the bearing or the support to which said bearing is fixed. At the same time, however, by reason of the threaded engagement between the bolt 30 and the member 29, fixed to the side 19, this side will be moved longitudinally as said bolt is rotated. The said bolts terminate in suitable operating handles 32.

Projecting beyond the ends of the back side 20 are suitable apertured lugs 33 interiorly threaded to receive threaded bolts 34 projecting forwardly and downwardly at an incline beneath the bolts 30 previously described and having suitable bearings 35 adjacent the forward ends, said bearings having associated means whereby to prevent endwise movement of the bolts with respect to the bearings. This means to prevent endwise movement of the bolts 34 with respect to the bearings 35 includes a collar 34^a fixed upon the bolt and adapted to loosely engage

against one side of the bearing 35, whereas a shoulder part 34[b] fixed upon the bolt is adapted to loosely engage the opposite side of said bearing 35. The bearings 35, while fixed against bodily movement, at the same time are permitted to have a slight oscillating or rotary movement, by reason of the projecting pintle 35[a] adapted to have rotary bearing and to be held in place by cotter pins or the like 35[b] (see Fig. 2). Likewise, the bearings 33 are adapted to have oscillating or rotatable movement in their supports by reason of the projecting pintles 33[a] which may project through the support and be adapted to be engaged by retaining means similar to the cotter pins 35[b] previously referred to (see Figs. 2 and 4). As the bolt 34 is rotated, it will be fixed from longitudinal movement by reason of the abutments 34[a] and 34[b], but by reason of the threaded engagement between said bolt 34 and the bearing 33, the latter with the connected side 20 will be moved longitudinally with respect to the bolt 34, the bearings 33 and 35, respectively, slightly tilting or swinging to accommodate for the movement of the bolt and plate 20, without any binding tendency. These bolts 34 preferably terminate short of the bolts 30 and have operating handles 36, said handles being arranged with respect to the handles 32 so that the operation of any one handle will not interfere with, or be impeded by, the operation of another.

From the description above, it will be seen that the front side with the projecting arms 21 may be moved back and forth by imparting rotatable movement to the bolts 30 by means of the handles 32. Assuming that these bolts 30 are operated simultaneously and in the same direction, opposite ends of the front side will be correspondingly moved. Assuming, on the other hand, that it is desirable to cant one end of a front side with respect to the other, the operator will impart movement to one or the other of the bolts 30. In this same connection, by reason of the fact that the bottom section 9 is constantly held under spring pressure in contact with the outwardly projecting arms 21 of the front side, said bottom section will have imparted thereto the necessary adjustment simultaneously with the adjustment of the front side, the pin-and-slot connections for the bottom section 9 permitting of the necessary freedom of movement of the bottom section to correspond with that of the front side of the label receptacle.

Now, assuming that it is desired to adjust the rear side section 20 together with the projecting arms 23 and 24, the operator grasps the operating handle 36, and he is enabled to do this without moving from his position at the front of the machine which he assumed in placing the labels on the base of the receptacle in the first instance, and making the necessary adjustments for the front side of the receptacle. By imparting simultaneous movement to the operating handles 36 and the connected bolts 34, this will through the threaded engagement of the latter with the threaded lugs 33 of the back side of the receptacle impart back or forth movement to the back side of the receptacle according to the direction of rotation of the operating handles. This operation will simultaneously impart the same movement to the back side throughout its length. If it is desired to cant or incline the back side, that is cause one end of said back side to be moved a greater or less distance than its companion side, then the operator grasps one or the other of the operating handles 36, as the case may be, and causes one end of said back side to move with respect to the other. The back section 10 of the bottom of the receptacle being spring-held in contact with the depending arms 23 and 24 of the back side of the receptacle, it will be observed that the bottom section 10 will follow the adjustment of the back side in the same manner as does the front bottom section 9 follow the adjustment of the front side 19, in the manner previously described.

By the above means of adjustment, not only is the operation simplified, but it is possible to make accurate adjustments whereby the frame will accurately correspond with the labels, to afford retaining guiding means for the latter, and at the same time overcoming the possibility of edges of the labels clinging by reason of too snug an engagement with portions of the sides, which would interfere with the accurate vertical feed of the labels which is accomplished in any desired manner, as by a plunger-and-ratchet feed generally indicated at 37 but not necessary to describe in detail herein.

The space above the front section 9 of the bottom of the receptacle and between the arms 21 is substantially open by reason of the end disposition of the arms 21 for the ready reception of the labels onto the bottom sections of the label receptacle, and in order to afford substantial bearing for the bottom section 9 in the movement and adjustment of the latter, said bottom section is provided at opposite ends with flanges 9[a] and 9[b] downwardly curved thereby forming an extended bearing with the downward projecting arms 21 of the front side. The front ends of the front and back sides of the label receptacle, in the direction of movement of the cans, are curved downwardly as indicated at 19[a] and 20[a], whereby in the operation of the machine the forward end of the topmost labels will assume

a position above the forward end of said front and back sides of the receptacle, and in order to assist in maintaining the labels in flat position until separated by the cans, an elongated spring arm 38 projects from the adjacent runway sections 39 at each side of the runway, said spring arms being flat and adapted to contact with the forward edge of the topmost labels, the spring arms being forced into contact with such labels by the cans as they move from the adjacent runway sections 39 onto the top edge 19^a and 20^a of the front and back sides of the label receptacle, which top edges of said sides constitute runway sections for the cans as the latter move over the label receptacle.

Suitable lap-end pasting means is provided adapted to engage the rear edge of the topmost label, the said means including a suitable paste receptacle 40 secured conveniently to the rear side of the framework of the machine and having mounted therein for rotatable movement a suitable drive shaft 41 adapted to be driven in any desired manner from any of the driving parts of the machine. Positioned upon said shaft for rotatable movement therewith is a suitable roller 42, the shaft 41 projecting through the opposite side of the paste receptacle 40 and having mounted thereon a suitable gear wheel 43. An elongated supporting arm 44 adjustably mounted upon the paste receptacle projects across the label receptacle adjacent the rear end thereof and projecting from one side of the free end of the arm 44 are rollers 45 and 46, respectively. A suitable pulley 47 is conveniently mounted upon the receptacle 40. A transversely-extending shaft 48 is mounted for free rotatable movement in a suitable support 49 mounted at its lower end as at 50, to the adjacent side of the paste receptacle 40. Mounted upon the shaft 48 and affixed thereto for movement therewith is a gear wheel 50^a adapted to mesh with the gear wheel 43 heretofore described, and also mounted upon the same shaft is a pulley 51 also affixed to the shaft for rotatable movement therewith. The supporting arm 49 conveniently has an integral U-shaped extension 52, the opposite arms of which terminate in bearings for the shaft 48, and the curved part thereof overlying and adapted to constitute a guard for the paste-applying belt about to be described. Interposed between the support 49 and a stationary part of the frame is a suitable spring member 53 adapted to exert constant outward pressure on the support 49. The paste member proper conveniently takes the form of an endless paste-carrier belt which at one end passes around the pulley 45 and thereafter both stretches of the belt pass over the pulley 46. Both stretches of the belt thereupon project across the labels whereby the lower stretch is adapted to move into contact with the topmost label adjacent its edge, at a point adjacent the opposite side of the machine. The upper and lower stretches of the belt are separated by a suitable spacing rod 55. (See Figs. 2 and 4.) The lower stretch of the belt then passes over the pulley 47, thence downwardly between the pulleys 42 and 51, and the upper and lower stretches of the belt contact in passing around the pulley 51. The spring support 49 performs a double function, that of maintaining the belt in a stretched condition and in contact with the respective rolls 42 and 51, and at the same time maintain the gears 43 and 50^a in mesh, since the gear 50^a is mounted for movement with the support 49. The engagement between the pulleys 42 and 51 also limits the contacting engagement between the gear wheels 43 and 50^a, which will assist in prolonging the life, in limiting the wear on the teeth of these gears. The pulley 47 assists in evenly distributing the paste on the lower stretch of the belt prior to the engagement of the latter with the labels.

In the specification and claims, wherein the term "cans" is employed, this term is to be considered in a general sense; that is, as including packages and cartons of various types and descriptions, adapted to be moved into contact with the labels and to have the latter applied thereto, in a manner well understood in the art.

What I claim is:

1. In a can labeling machine having a runway and pasting appliances, a label receptacle having opposed relatively adjustable sides, and means arranged in front of one of said sides and constructed and arranged whereby the said sides may be adjusted towards or from each other, and whereby one side may be moved an increased distance with respect to its other side.

2. In a labeling machine, the combination of a label receptacle, comprising front and rear sides, and means for relatively adjusting said sides, said means including operating devices at the front side and connecting with the front and rear sides whereby said sides may be moved together or independently, and in straight paths or at relative inclinations, as desired.

3. In a labeling machine having pasting and can feeding appliances, the combination of a label receptacle comprising a bottom and opposed sides, each of said sides being adjustable in straight lines or at relative angles, and means arranged adjacent opposite ends of said sides for such adjustment.

4. In a can labeling machine having pasting and can feeding appliances, the combination of a label receptacle comprising a

bottom and opposed sides, each of said sides being adjustable in straight lines or at relative angles, the said adjusting means being arranged adjacent to one another whereby they are operable from the same side of the machine.

5. In a labeling machine having a can runway and pasting appliances, the combination of opposed sides, one of which is adjustable towards or away from the opposite side, and adjustable means arranged to engage opposite ends of said side whereby the opposite ends of said side may be simultaneously or independently adjusted.

6. In a labeling machine having can feeding and pasting appliances, the combination of a label receptacle comprising a bottom and opposed sides, each of said sides being mounted for adjustment towards and from one another, and adjusting means for opposite ends of both sides, said adjusting means being positioned at the front side of the machine substantially as and for the purpose described.

7. In a labeling machine having a can runway and pasting appliances, a label receptacle comprising a base and front and rear sides, the rear side being adjustable independent of the front side, and adjustable appliances for the rear side operable from the front of the machine.

8. In a labeling machine having a can runway and pasting appliances, a label receptacle comprising a base and front and rear sides, the rear side being adjustable with respect to the front side, and adjustable appliances for the rear side operable from the front of the machine, said adjusting means offering substantially no obstruction interiorly of the label receptacle, which latter has an unobstructed open front side.

9. In a can labeling machine having can feeding and pasting appliances, the combination of a label receptacle comprising a bottom and front and back sides, the back side being adjustable towards and from the front side, and means for adjusting the back side comprising transversely extending guide-ways for the back side and adjusting means operable from the front of the machine and engaging said back side, and means operatively connected with the front side whereby to independently adjust the same in straight lines or at an inclination.

10. In a labeling machine having a suitable runway, can feeding means, and pasting appliances, the combination of a label receptacle comprising a bottom and front and rear sides, lugs projecting laterally from the rear sides and bolts threaded through apertures in said lugs for imparting sliding movement to the rear side, said bolts terminating in hand-operating parts at the front of the machine, said front side being also adjustable, and means operable from the front side of the machine for adjusting said front side.

11. In a labeling machine having a runway for cans or the like, pasting appliances and labeling appliances, the latter comprising a bottom and front and rear sides, transversely extending guide-ways for the front and rear sides, which latter are mounted for sliding movement, an upright support at the front of the machine, and adjusting means having bearings in said upright support operatively associated with the front and rear sides for imparting thereto relative adjustment.

12. In a labeling machine having a can runway and pasting appliances, the combination of a label receptacle comprising a bottom and front and rear sides, transversely extending guide-ways for said sides, said sides being mounted for relative sliding movement towards and from one another, apertured lugs projecting outwardly from opposite sides of the front and rear sides, and adjusting bolts threaded respectively, one to each of said lugs and terminating in handles at the front side of the machine.

13. In a can labeling machine having can feeding and pasting appliances, the combination of a label receptacle comprising front and rear sides both of which are mounted for adjustment towards and from one another, and a bottom arranged in slidably mounted sections, and spring means for maintaining said sections in contact at all times with the adjacent side of the receptacle.

14. In a can labeling machine having can feeding and pasting appliances, the combination of a label receptacle comprising front and rear sides both of which are mounted for adjustment towards and from one another, and a bottom for the receptacle arranged in two sections substantially coextensive with the sides and mounted for relative sliding movement, and means interposed between the sections and acting automatically to maintain one bottom section in contact with one side and the other bottom section in contact with the opposite side in accordance with the adjustment of said sides.

15. In a labeling machine, the combination of a receptacle comprising opposing sides, and a bottom comprising opposing sections, means whereby said sides may be simultaneously or independently adjusted and whereby one end of the sides may be adjusted a greater distance than the opposite end thereof, and said bottom sections being mounted for adjustment automatically in accordance with the adjustment of said sides.

16. In a labeling machine, the combination of a label receptacle comprising a bottom arranged in front and rear sections, a

support for said sections, and said sections having a connection with said support permitting lateral and lengthwise adjustment, and front and rear sides for the receptacle, having means to contact with the bottom sections whereby to simultaneously adjust the latter according to the adjustment of the sides, and spring means for normally retaining the bottom sections in contact with said sides.

17. In a labeling machine, the combination of a label receptacle comprising front and back bottom sections, and front and back side sections, the front side section having depending arms adjacent opposite ends thereof with the space between said arms unobstructed for the insertion and removal of labels at the front of the machine onto said bottom sections, the bottom section having at its ends downwardly projecting flanges to engage said arms of the front side, and spring means for maintaining the bottom section of the downwardly projecting flanges in contact with the arms of the front side.

18. In a labeling machine, the combination of a can runway, means for feeding a can along the runway, opposed guides to engage opposite ends of the can, one side of the guide being adjustable whereby to permit of different length cans, pasting appliances and labeling appliances, the latter being adapted to support different width labels to accommodate the difference in the size of the cans to be labelled, and comprising a bottom member and opposed sides, and independent devices operable from one side of the machine for simultaneously adjusting both of said sides.

19. In a labeling machine, the combination of a can runway, means disposed above the runway for rolling cans along the runway, pasting appliances in the path of the rolling cans, and a label receptacle comprising bottom and opposed sides, the opposed sides at the upper edges forming in effect sections of the runway, said upper edges of said sides at the forward end beng inclined downwardly, and elongated flat spring arms projecting from opposed sides of the runway overlapping space from the runway sections and the label receptacle and adapted to engage the adjacent edge of the labels in the receptacle.

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

ALBERT HERBERT KYLER.

Witnesses:
FRED H. KNAPP,
MARY Z. BARTLETT.