

- [54] **DEVICE FOR FEEDING STRIPS OF MATERIAL**
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[52] U.S. Cl.**271/27, 271/DIG. 1**
[51] Int. Cl.**B65h 3/08**
[58] Field of Search.....271/29, 27, DIG. 1, 32, 4

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[57] **ABSTRACT**

A device for feeding strips of material such as labels includes a picker having gripping means such as a suction element which is movable to engage a label from

a stack of labels in a magazine and to withdraw it from a magazine. The picker comprises a rotatable manifold which is rotatably supported on a crank arm. The rotational movement of the picker is guided by a planetary gear engaged within an internal gear in a manner to cause the suction member of the picker to move inwardly substantially normal to each label to grip the label and to move it away with the picker in a direction substantially normal to the label. The picker manifold advantageously includes two radially extending arm portions which communicate during their rotation with a pressure regulating plate for alternately connecting the suction member to a vacuum and to a positive or atmospheric pressure for engaging and releasing the label during its movement. The label which is engaged and removed from the magazine is either transferred to an intermediate take off roller or applied directly to a label support surface on a rotatable drum which moves the label into association with either adhesive applying means or heating means so that it will have a surface which may be subsequently directed onto a device such as a container which is to receive the label. The receiving roller advantageously moves through a path which intercepts a belt conveyor having suction means for withdrawing the label from the individual supports and then moving it onto a receiving article such as a container which is moved thereagainst. The label receiving drum may advantageously include supporting surfaces which are associated with pressure control means for applying a receiving suction for engagement of the label and a positive pressure for the disengagement of the label as necessary. In addition the supporting surfaces may be moved outwardly for engagement of the label during the transfer thereof from the picker. The support elements may also be for either effecting the direct withdrawal of the labels from a magazine or be oriented to receive the labels from a picker member.

13 Claims, 19 Drawing Figures

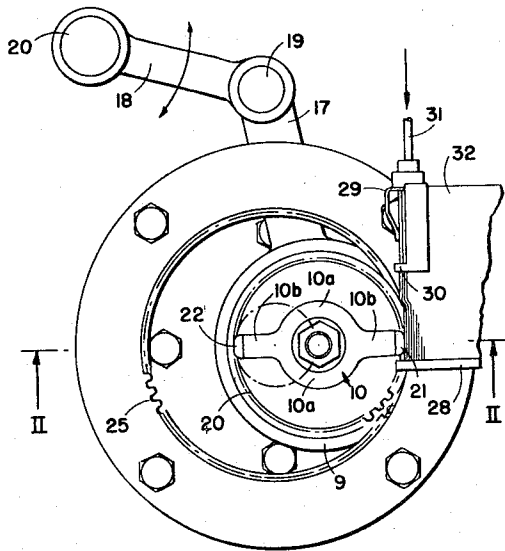


FIG. 1

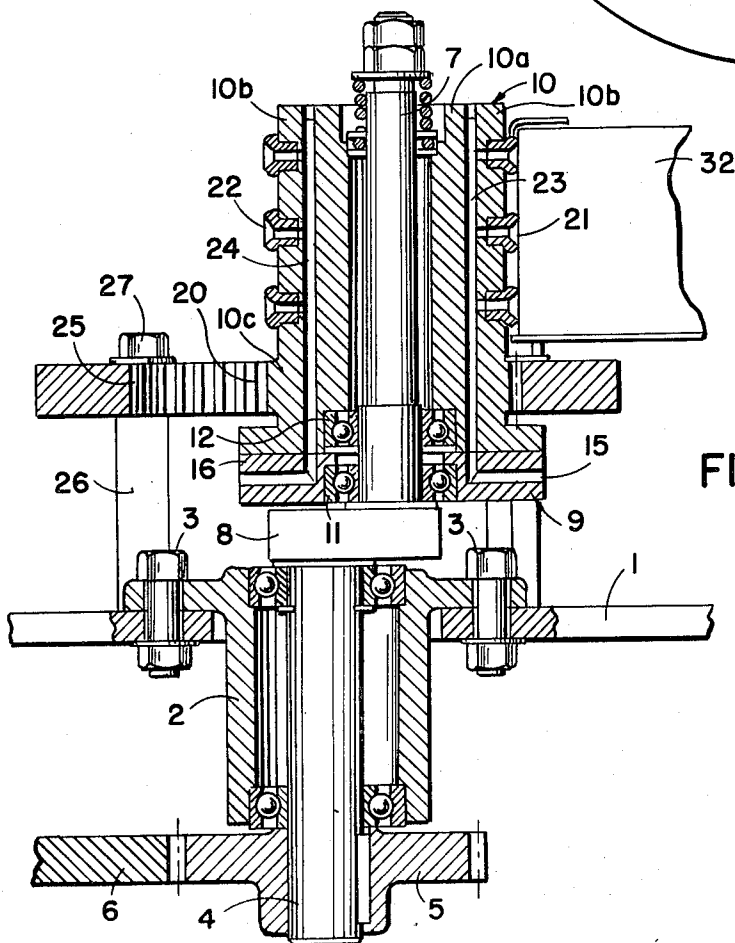
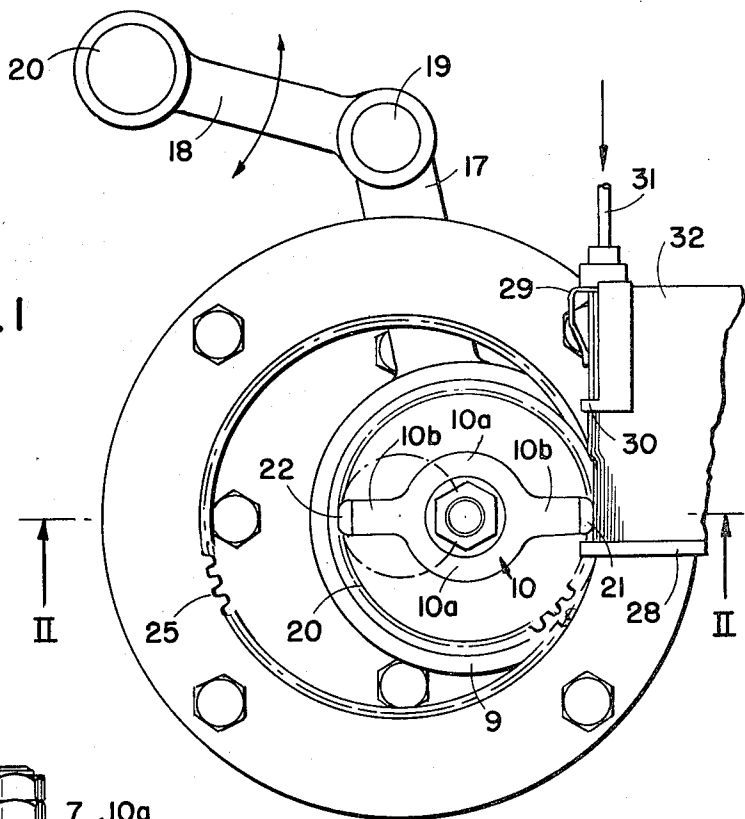


FIG. 2

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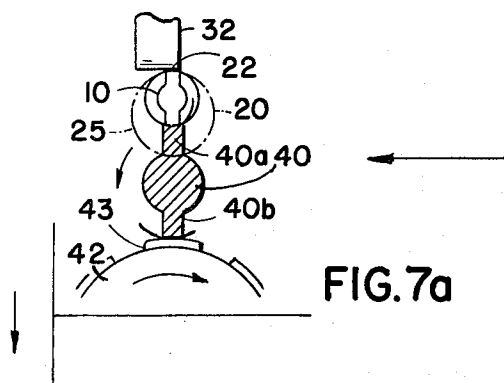


FIG. 7a

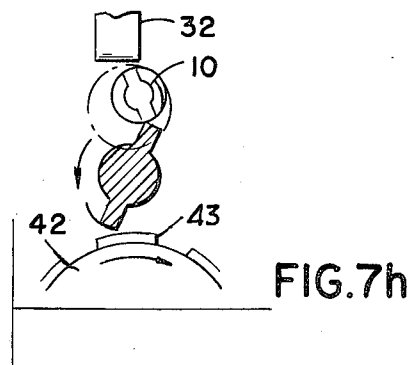


FIG. 7h

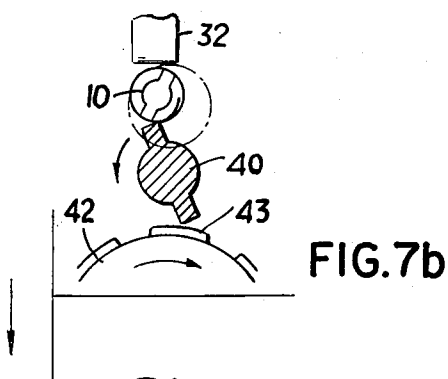


FIG. 7b

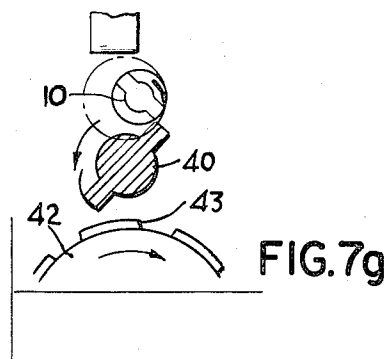


FIG. 7g

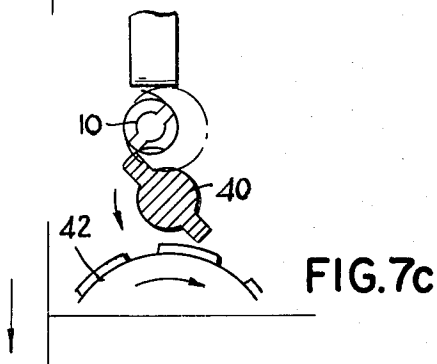


FIG. 7c

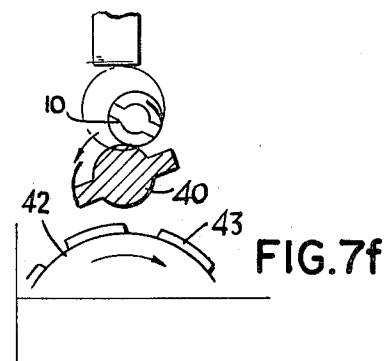


FIG. 7f

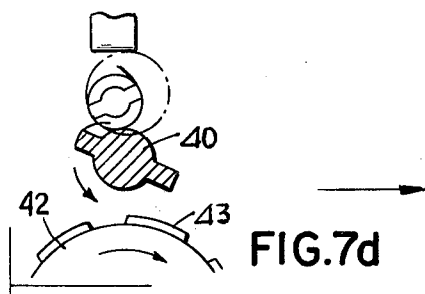


FIG. 7d

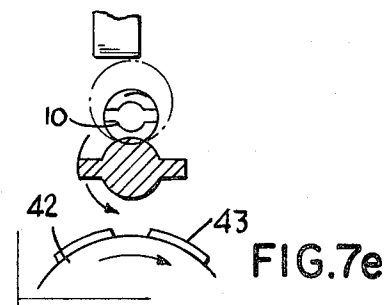


FIG. 7e

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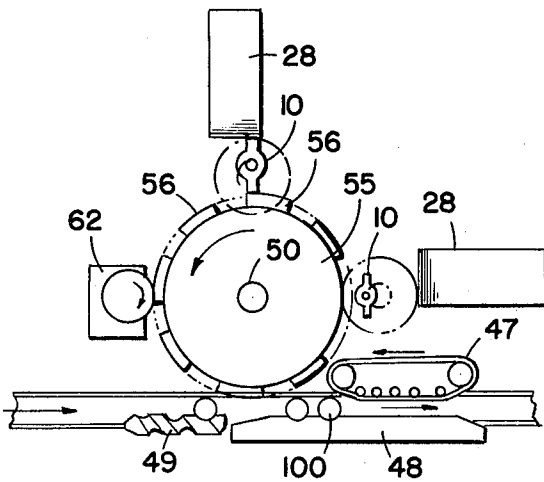


FIG. 8

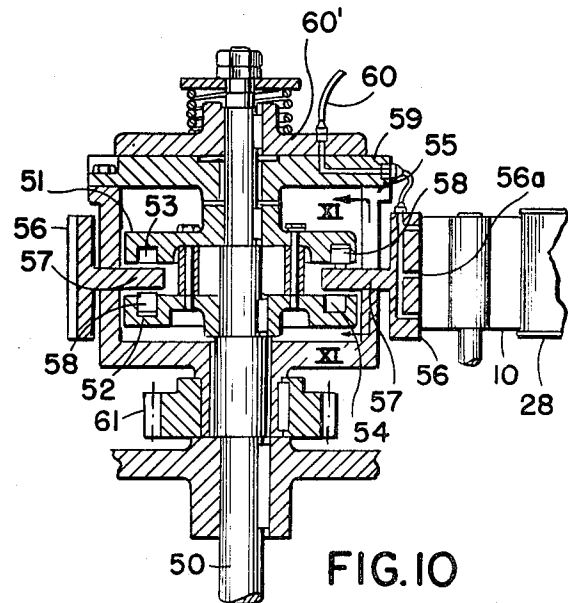


FIG. 10

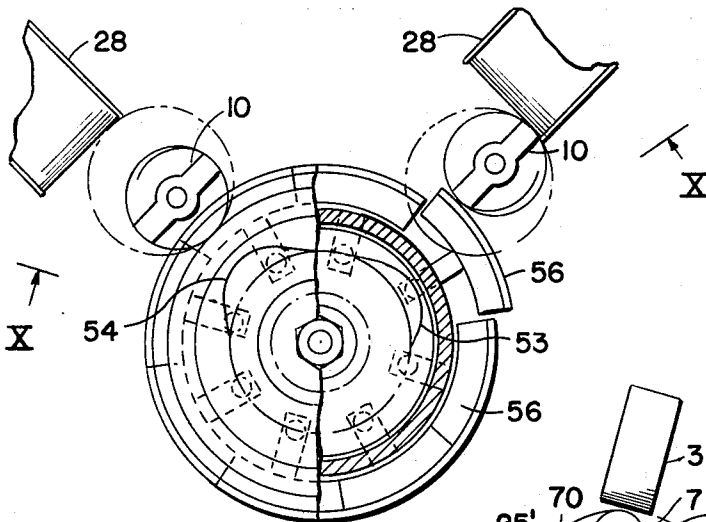


FIG. 9

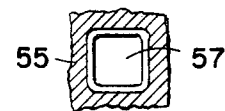


FIG. 11

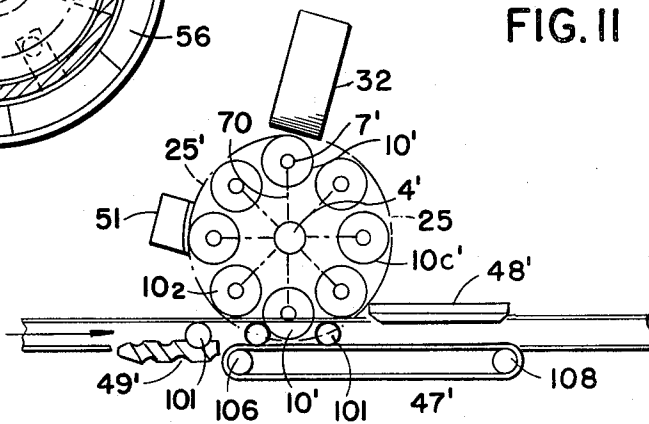


FIG. 12

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DEVICE FOR FEEDING STRIPS OF MATERIAL

SUMMARY OF THE INVENTION

This invention relates in general to the construction of feeding devices for individual lengths of strip material, such as labels, and in particular to a new and useful feeding device which includes a picker member having gripping means which is adapted to be moved through a path substantially normal to the label to engage it and to thereafter move in a direction substantially normal to the label magazine with the label to a station for example for transfer of the label to means for applying it to an article.

There is an ever increasing demand for the construction of a device for applying labels to articles at ever increasing speeds. In one attempt to design a label feeding machine with increased speed, the label magazine is swingably mounted for movement in the vicinity of a turntable picker and when suction means on a picker approaches a magazine the front ended portion thereof moves forward, within the predetermined range, in timed relationship to the picker suction means in order to transfer the label to the latter. After the completion of the transfer, the magazine moves back ready for the next feed stroke. With such a construction, the ordinary label machines require one reciprocating motion of the magazine for each label to be fed thus taking too much time for any marked speed up of operation. In addition, the label magazine during the operation is required to repeat the swinging motions for each feeding operation. In addition, for each replenishment of the supply of the labels, the entire machine has to be stopped. A further disadvantage is that the magazine cannot be increased in length and its capacity is limited because of the fact that it is mounted for movement.

The present invention provides an improved machine which operates with a fixed label magazine and with a picker having gripping means which is moved in a manner such that it moves toward and away from the individual labels of the magazine at directions substantially normal to the labels. For this purpose the picker comprises a rotary manifold having internal passages which communicate a suction member thereon alternately with a vacuum and either atmosphere or a positive pressure, in order to provide for engagement and release of the individual labels from the magazine. The manifold is rotatably mounted on a crank arm and carries a planetary gear which is guided within an internal gear. The combined rotary movement of the crank arm and the manifold causes the suction elements of the picker to move through a path which causes the approach and withdrawal of the suction member to be substantially perpendicular to the individual labels. This means that the speed of the movement of the picker may be very rapid and positive feeding of the labels one after the other may be accomplished without requiring any shut down of the machines or delay of the high speed operation. Because the gripping elements on the picker approach the magazine from a normal direction and leave in the same manner, the labels can be positively taken out one after the other at extremely high speeds. Because the label magazine is fixed, the supply of labels therein can be constantly replenished without any shut down of the operation.

In accordance with a further feature of the invention, the feeding mechanism advantageously includes a transfer roller which provides an intermediate transfer of the labels from the picker or the labels may be transferred directly onto a receiving support surface of a rotary drum. The rotary drum is provided with support surfaces which advantageously include means which are synchronously presented to the picker after it is removed from the magazine with the label so that the label will be transferred easily to the support surface. For this purpose the support surface advantageously includes internal passage means for communicating the surface with suction means for aiding in the transfer. In addition, the support surfaces may advantageously be mounted on individual radially extending supports which are guided outwardly to cause the receiving of the labels on the surface from the picker and then the movement of the supports backwardly against the periphery of the drum. The drum is advantageously arranged in association with means for applying an adhesive to the exterior surface of the label on the support surface, or to provide a heating effect thereto in the case of a label such as a plastic label which may be applied by heat sealing. As the drum is rotated it moves to a transfer point which intercepts a conveyor belt having a vacuum roll for receiving each label in succession as the individual support surfaces are moved thereto. The conveyor belt is arranged to rotate through a path which intercepts an article to receive the label, such as a container or the like.

In the preferred arrangement of the invention, the picker member comprises a plurality of individual sucker elements which are moved during the rotation of the picker in succession into a gripping engagement with an associated label. In addition, a plurality of rotatably supported picker elements may be arranged around a receiving drum and may operate through a rotatable planetary movement which moves its associated picker into association with a separate magazine supply of the labels, so that the drum receives labels from more than one source at a time.

In still another form of the invention, a plurality of rotatable picker members are rotatably supported on angularly spaced radially extending arms of a single shaft member all of which are guided by a single annular gear which guides the suction elements of each picker so that it will move toward away from the associated magazines in directions perpendicular to the surfaces of the labels. In addition, the picker elements may be moved directly into association with adhesive applying means or heating means so that the labels can be transferred directly from the pickers onto a receiving article such as a can which is also moved into association with the rotating and revolving picker members.

Accordingly, it is an object of the invention to provide a strip material feeding device which includes a fixed magazine for holding a plurality of the strip material elements at a fixed location and a picker which has gripping means and which is mounted for rotary movement such that it approaches and engages a label in a direction normal to the label and also moves away from the label in a normal direction.

A further object of the invention is to provide a high speed label operating device which includes a picker

member which is advantageously in the form of a rotary manifold having a suction finger which is communicated during rotation of the member with a source of suction for removing the label and wherein the picker member is mounted on a crank arm and is guided by engagement of a planetary gear thereon with an internal gear so that the suction finger moves substantially normal toward and away from a fixed magazine for the rapid removal of labels in succession from the magazine.

A further object of the invention is to provide a label feeding device which includes a picker having gripping means for removing labels by movement in a direction substantially perpendicular to the surface of the label in a fixed magazine, and for thereafter transferring the label or moving it directly into association with a support surface, of a drum which is movable to advance the support surface first toward means for conditioning the label for adhesive engagement to an article and thereafter toward means for applying it directly to the article.

A further object of the invention is to provide a label feeding device which includes a plurality of rotary picker members each of which is guided for movement on a crank arm such that it approaches a label at a fixed magazine and moves away from the label in a direction substantially normal thereto and wherein all of the picker members are moved through an annular path on the associated mounting arms past means for conditioning the label for application to an article and then into direct association with an article for applying the label to the article.

A further object of the invention is to provide a label feeding and applying machine which is simple in design, rugged in construction and economical to manufacture.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this specification. For a better understanding of this invention, its operating advantages and specific objects attained by its use, reference should be had to the accompanying drawings and descriptive matter in which there are illustrated and described preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a top plan view of a label feeding device constructed in accordance with the invention;

FIG. 2 is a section taken along the line II—II of FIG. 1;

FIG. 3 is a top plan view of a pressure control plate;

FIG. 4 is a section taken on the line IV—IV of FIG. 3;

FIG. 5 is a diagrammatic plan view of the movement of the picker member and the associated mechanisms;

FIG. 6 is a top plan of another embodiment of label feeding mechanism which also includes a mechanism for applying the labels to an article such as a can;

FIGS. 7a, 7b, 7c, 7d, 7e, 7f, 7g, and 7h are schematic plan views of the label feeding mechanism indicating the various stages of feeding operation;

FIG. 8 is a top plan view of still another embodiment of the invention;

FIG. 9 is a top plan view partly in section on an enlarged scale of the essential mechanism of the apparatus indicated in FIG. 8;

FIG. 10 is a section taken along the line X—X of FIG. 9;

FIG. 11 is a section taken along the line XI—XI of FIG. 10; and

FIG. 12 is a top plan view of a further embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings in particular, the invention embodied therein as indicated in FIGS. 1 to 5, comprises a label feeding device which includes a table 1 having a bearing 2 which is secured thereto by bolts 3 for rotatably supporting a shaft 4. The shaft 4 is rotated by a drive gear 6 which drives through a gear 5 affixed to the shaft 4.

In accordance with the invention, a crank arm 8 is affixed to the shaft 4 for rotation therewith and it carries a stub shaft 7 which rotatably supports a picker or picker manifold member generally designated 10. A pressure control plate or evacuating plate 9 is associated with the picker 10 and each is rotatably supported on the shaft 7 by bearings 11 and 12, respectively.

As best seen in FIGS. 3 and 4, the pressure control plate 9 includes a top surface having a semi-circular groove 13 and an arcuate groove 14 spaced therefrom. The groove 13 provides a vacuum pressure connection through the passage 15 and a passage 23 in the picker 10 to individual sucker members or suction elements 21. The short arcuate groove 14 which is spaced from the groove 13 provides a communication with either atmosphere or compressed air through a passageway 16 of the control plate 9 and through the passage 24 to the suction elements 22 when they are in the positions as indicated in FIG. 2. When the elements 22 move to the active position engaged with a label 32 of a magazine 28, as is the case in respect to the suction elements 21, then the passage 24 will align with the suction passage through the groove 13. Similarly the suction elements 21 when they move to the position of the elements 22 as shown in FIG. 2 they will be communicated with atmospheric pressure.

As indicated in FIGS. 1 and 2, the picker member 10 comprises a cylinder having a hub portion 10a with an annular gear portion 20 therearound which meshes with an internal gear 25 which is secured in a fixed position over the table 1 by a bolt 27 and a bracket member 26. An arm 17 is connected, at its one end, to the pressure control plate 9 as indicated in FIG. 2, and at its opposite end, it is connected to a pin 19 of a crank lever 18 which is pivotally supported on a pin 20 carried by the table 1. During the operation the shaft 7 moves around the axis of the shaft 4 and, under the guidance of the arm 8 and the crank lever 18, which will swing in the directions indicated by the double arrow, plate 9 oscillates about shaft 7 through a small arc.

The picker cylinder 10 includes a cylindrical portion or hub 10a and radially extending arm portions 10b and 10c which are radially arranged in respect to the axis of the shaft 7. The lower part of the picker 10 includes a protrusion 10c which is provided with the spur gear 20.

The arm portions 10b, 10b carry rows of suckers 21 and 22, respectively, and, in the embodiment shown, these comprise three in number arranged in vertical alignment. These suction elements 21 and 22 comprise gripper means which are associated with the picker 10, and each is communicated with an negative pressure for the engagement of the label and subsequently with atmospheric pressure or a positive pressure to permit disengagement of the label 28.

The picker is rotated around its own axis and at the same time revolves around the shaft 4 as the shaft 7 moves around the axis of the shaft 4. In addition, because the gear ratio of the gear 20 to the internal gear 25, in the embodiment shown, is 2:3, a single rotation of the shaft 4 will bring either arm of the picker 10 back to the magazine position adjacent the magazine 28. The motion of the individual pickers 21, 22 is indicated by the curved path shown by the letters *i*, *f*, *g* and *h* in FIG. 5. The center point of the shaft 4 in the internal gear 25 is located at *a*. The center point of the spur gear 20 is located at *b* and the pitch circle of the spur gear 20 is located at *c*. The pitch circle of the internal gear 25 is located at *d*. The curve *e* in FIG. 5 as well as in FIG. 1, indicates the locus of movement of the shaft 7. The lines which connect the front ends of the rows of the suckers 21 and 22 intersect the pitch circle *c*.

As shown in FIGS. 1 and 2, the label magazine 28 includes a pawl 29 and a keep plate 30. The front tip of the compressed air pipe 31 is opened in the keep plate 30. Labels 32 are packed in the magazine and are retained in position by the pawl 29 and the keep plate 30 as indicated.

The operation of the machine shown in FIGS. 1 to 5 is as follows:

The shaft 4 is rotated by the gear 6 to cause rotation of the crank arm 8 and the revolving movement of the shaft 7 around a circle defined by alternate short and long dash lines *e* in FIG. 5, and in the direction indicated by the arrow A in that Figure. The picker 10 and the spur gear 20 rotate around the shaft 7 and, at the same time, they revolve along the internal gear 25. When the shaft 4 makes a complete turn, one point of the picker 10 which faces the label 32 moves from the position *f* in FIG. 5, in the direction indicated by the arrow B, to the position *g*. Thereafter the picker moves in the direction of the arrow C from the point *g* to the point *i* and during this movement it passes the position *h*. After a complete revolution of the shaft 4 takes place it reaches the point *i* and then moves during the next revolution from the point *i* in the direction of the arrow D to the position *f*. The points *f*, *g*, *h*, and *i* correspond to the point positions of a row of suction elements 21 and the other point diametrically across the shaft 7 corresponds to the position of the roll suction elements 22. From the above it is noted that the suction elements 21 and 22 both approach the labels 32 along a curve *i-f* and retreat from the labels along a *f-g*. Each of these curves approaches substantially a perpendicular path in respect to the surface of the labels 32. The deviation of the movement from the perpendicular path is no greater than 10°.

As the suction elements 21 or 22 approach the labels 32 the associated passages 23 and 24 (FIG. 2) which connect to these individual elements move to a position

in which they overlie a portion of the annular groove 13 and thus a suction pressure is communicated to the respective picker 21 or 22. The labels 32 are held in the magazine by the pawl 29 and the keep plate 30 in such a manner that they are separated from one another by compressed air which is supplied through compressed air pipe 31. Therefore the foremost label is immediately attracted by the suction pressure toward the associated suction element and carried away from the remaining elements in the direction of the position *g*. When either of the suction elements 21 or 22 are moved toward the position *h* from the position *g* they move on the control plate 9 to uncover the short arcuate slot 14 so that the suction pressure is removed and the associated suction element is connected to atmosphere. This reduction of suction pressure releases the label 32, and immediately after its release, it is caught up by a transfer roll of the type indicated 40 in FIG. 6, which comes into the position *h* and moves away from this position to carry the label to the next operating station.

By arranging the suction elements 21 and 22 such that they move along a path which extends substantially normal to and away from the labels and by arranging the labels such that the end one is already separated from the remaining stack, it is possible to feed the labels no matter at how high a speed the picker 10 is driven.

In the embodiment illustrated in FIG. 6, the label feeding device also includes means for transferring the label into association with an article to be covered by the label and to condition the label for such application. The feeding and transfer mechanism of FIG. 6 includes a plurality of magazines 28 arranged at angularly spaced locations around a central transfer drum or rotary wheel 42. Each magazine station includes a picker generally designated 10 which is identical to the picker described in respect to FIGS. 1 to 5. When each of the pickers 10 are moved to the position corresponding to the position *h* in FIG. 5, they intersect carrying elements or lobes 40a and 40b of a rotary transfer member 41 which rotates in the direction indicated by the arrow in FIG. 6. Each receiving surface 40a and 40b includes gripper means for example, in the form of a negative pressure suction apparatus (not shown) which causes a suction action as the element passes the point *h* to remove a label from an associated picker 21 or 22 and transfer it to an associated surface 40a or 40b. Thereafter the label is transported to a support surface 43 on rotary drum 42 which includes a plurality of such surfaces spaced around its periphery. The drum 42 is mounted on a shaft 44 for rotation therewith in the direction indicated by the arrow so that the peripheral velocity of the label supports 43 is kept substantially equal to that of the surfaces 40a or 40b. One of the surfaces 40a and 40b mates during each revolution with every other label support surface 43 while the other one mates with the surfaces 43 between these. Conditioning means, in the form of a rotatable roller 45, is arranged to engage the surface 43 for the purpose of either heating the labels or applying an adhesive thereto to ensure the sticking of the label when it is applied onto an article.

A conveyor is arranged to operate adjacent the roller 42 and it includes a vacuum roller which defines a nip

with each of the label supporting surfaces 43 as they are moved thereby. A belt 47 is trained around the vacuum roller 46 and an additional roller 46' at the opposite end. The belt 47 which continually runs on the conveyor rollers 46 and 46' moves into association with each label on a support 43 as it moves around and therefore, the belt transfers this label from the support to an article such as a can or container 100 which is moved under the belt and over a sponge table 48. The cans 100 are moved from a feed path 101 into association with a timing screw 49 so that they move beneath the vacuum roll 46 in time to receive the label in a manner such that it will be wrapped around the surface thereof and pressed into engagement therewith as it moves between the sponge table 48 and the belt 47. During the rotation of the pickers 10, the associated suction elements 21 and 22 are alternately moved into contact with the support 40a and 40b of the transfer roller 40 or directly with alternate ones of the label supports 43 on the drum 42. The labels with the paste side or heated side turned outwardly are transferred onto the conveyor belt 47 from each support 43, and, as they are applied to each container 100 in succession they are stretched out in a crease proof fashion by means of the roller belt 47 and the sponge table 48.

The construction permits the continuous smooth supply of labels to each container no matter how high the speed of the pickers 10. FIGS. 7a to 7e show the sequence of movement of each of the elements during the feed out of the labels from the magazine 32 to the support surfaces 43 of the drum 42.

In the embodiment of FIGS. 8 to 11, a plurality of magazines 28 are arranged at angularly spaced locations around a drum 55, for example at a spacing of 90° apart. The drum 55 includes a fixed shaft 50 which mounts cams 51 and 52 as seen in FIG. 10. One of the cams, that is the cam 51, is formed with a groove 53 which extends in one axial direction and an opposite cam 52 is formed with a groove 54 opposed to the first groove. The drum 55 is rotatably mounted on the shaft 50, and on the periphery of the drum are supported a plurality of radially movable label supports 56. In the embodiment shown, eight supports 56 are provided which move radially inwardly and outwardly under the control of the cam 53 and 54. For this purpose, each of the supports 56 includes legs 57 which have rollers, one including roller 58 which engages in the groove 53 and each additional alternate support including a roller 58 which engages in a groove 54. A suction control plate 59 is arranged adjacent the top of the drum and it carries a passageway which communicates at the proper time with a vacuum line 60 carried on a member 60' which is biased into contact with the plate. The suction pressure is communicated through passages to suction elements 56a on each support 56 and this suction is effective whenever the label is to be transferred to the surface. At other times the suction element 56a is communicated with a compressed air source or is opened to atmosphere in order to provide a dislodging of the label from the surface 56. A spur gear 61 is affixed to the shaft 50 and it receives a driving rotation from further gear drive means (not shown).

With the above construction as described in FIGS. 8 to 11, each of the labels 32 is taken out of the magazine 28 by the suction means 21 of the pickers 10 and arrive

at the position h shown in FIG. 5. The rotary drum 55 with the label supports 56 is moved so that as the support 56 approaches the transfer point h its roller guide 58 is moved in the associated guide groove 53 to cause it to rise from the rotary drum surface 55 to receive the label. The next adjacent support 56 is guided by the groove 54 to move away from the periphery of the rotary drum 55 and to receive a respective label 32. Thereafter, each label is moved into association with a paste applicator 62 for coating the rear side thereof. With the pasted face turned outward it is transferred to the conveyor belt and upon arrival at a predetermined position in respect to the belt 47 each label 32 is released due to the removal of the suction from the suction elements 56a and the label is transferred to the periphery of the container 100. With this arrangement, each support surface 56 which is to receive a label moves away from the periphery of the drum and thereafter returns to the drum with the label which is transferred by the picker. In this manner the various transfer elements do not interfere with the operation of the pickers of the next adjacent stations. Because all of the functions are accomplished on a single drum the whole machine can be simplified in construction. The means for holding the labels on the various supports may be similar to that shown in FIGS. 8 to 11 or it may comprise any kind of a means such as a tacky surface such as shown or suggested in FIG. 6.

In the embodiment shown in FIG. 12, a shaft 4' similar to that shown in FIG. 1 is provided, which is driven in a similar manner. A plurality of angularly spaced arms 70 such as eight arms as shown in this embodiment are secured to the shaft 4' for rotation therewith. Each arm 70 carries a shaft 7' which rotatably supports a picker 10' of the type indicated in the embodiment of FIGS. 1 to 5. Each picker 10' includes a planetary gear 10c' which is meshed with an internal gear having a pitch circle indicated at 25'. The planetary gears 10c' therefore are rotated by the internal gear 25' and the gear ratio is such that after one complete revolution a certain point on each gear comes back to its original position. Each picker 10' is provided with suction elements similar to those shown in the other embodiments. For this purpose, the gear ratio of the internal gear 25' to the planetary gearing 10' will be 4:1. A conveyor belt 47' is trained over sprockets 106 and 108 adjacent one side of the pickers 10' in a position to receive containers 101 which are fed by a timing screw 49'. The containers move into association with the picker elements for transfer of the labels thereto after the labels have been treated by treatment means 51 to cause them to adhere to the receiving container. Thereafter the label is flattened between the conveyor belt 47' and a table 48' having a resilient surface. During the application of the labels to the containers 101 they are held between adjacent pickers 10' and the belt 47' and the belt is driven at a suitable speed which will not cause slippage between itself and the containers. With this latter construction, because of the use of the multiplicity of picker elements 10', a larger number of labels may be delivered from the magazine 32 into association with each container 101.

What is claimed is:

1. A device for feeding strip materials, such as labels, comprising magazine means for holding a plurality of

labels at a fixed location, a picker having air pressure operable gripping means and movable inwardly toward and outwardly away from said magazine means, rotary means connected to said picker for moving said picker through a continuous path which extends substantially perpendicular to the surface of the labels as it moves inwardly toward said magazine means to engage and grip a label, and which also extends substantially perpendicular to the surface of the label when it moves outwardly away from said magazine means with the associated label, said rotary means including a rotatable shaft having a crank arm rotatable therewith, said picker comprising a member rotatably mounted on a second shaft on said crank arm and having a portion formed as a relatively small diameter spur gear, a relatively large diameter stationary internal ring gear concentric with said rotatable shaft and meshing with said spur gear, said picker having passages therein communicating with said gripping means, a pressure control member oscillatable on said second shaft adjacent said picker and communicable with said passages to operate said gripping means, the rotary movement of said picker member around said internal ring gear upon rotation of said rotatable shaft producing the substantially perpendicular movement of the picker toward and away from said magazine means, and link means connected to said pressure control member and limiting the latter to a small arc of oscillation about said second shaft as said picker rotates around said internal ring gear. picker

2. A feeding device, according to claim 1, wherein said magazine means comprises a magazine for holding a plurality of labels, and means for holding the outermost label away from all the rest in the position to be engaged by said picker.

3. A feeding device, according to claim 1, wherein said picker comprises a rotatable member having diametrically opposite outwardly extending arm portions, each of said arm portions including at least one suction element comprising said gripping means.

4. A feeding device, according to claim 3, including a plate control valve, as said control member, having an arcuate groove defined therein communicating with a suction pressure, said picker member having a passage therein for each of said suction elements, said picker member being held in association with said control member and being movable relatively thereto cyclically to connect said suction member passage with said groove for communicating a suction pressure to said suction member during the time at which said suction member is moved to engage a label.

5. A feeding device, according to claim 1, including a rotatable drum having a plurality of support surfaces defined around its periphery, a plurality of pickers arranged around said drum at angularly spaced locations, said magazine means including a magazine associated with each of said pickers and means for transferring labels from each of said pickers to a respective support surface of said drum as said drum is rotated.

6. A feeding device, according to claim 5, wherein

said support surfaces include segmental portions of said drum and means for moving said segmental portions outwardly toward an associated picker when the associated support surface approaches said picker in order to facilitate the transfer of a label thereto.

7. A feeding device, according to claim 6, wherein said means for moving said segments outwardly toward the associated picker include a supporting leg for each support surface and cam means for guiding said supporting leg during the rotation of said drum.

8. A feeding device, according to claim 1, including a plurality of pickers, said rotary means including a rotatable central shaft, a radially extending arm for each of said pickers, each arm being angularly spaced, means for rotating said shaft, and means for rotating each of said pickers during rotation of said shaft with said arm, said magazine means including a single magazine located adjacent the periphery of said pickers and arranged adjacent the path of movement thereof during rotation of said arms.

9. A feeding device, as claimed in claim 4, including a rotatable transfer member having at least one surface which is movable through a path to intercept said picker member after said picker member has picked a label from said magazine means, said picker member, after moving outwardly away from said magazine means substantially perpendicular thereto, moving further along a path intercepting the path of movement of said transfer means to transfer a label thereto, said plate control valve, at such interception, disconnecting said section member passage from said groove.

10. A label feeding device, according to claim 9, including a rotatable drum adjacent said transfer means and having a plurality of receiving surfaces defined around its periphery which are moved through a path to intercept said transfer means for receiving a label from said transfer means at the point of interception.

11. A label feeding device, according to claim 10, including means associated with said transfer means and said drum for facilitating the release of the label from said transfer means and the attachment of the label to said drum.

12. A label feeding device, according to claim 11, wherein said support surfaces are comprised of individual segmental members, cam means associated with said members for moving said members outwardly to intercept the path of movement of said transfer means, and suction means carried onto said segmental members for sucking and gripping a label when said support means is moved into association with said transfer means.

13. A label feeding device, according to claim 9, including a plurality of radially extending crank arms arranged around said shaft at angularly spaced locations and a picker member rotatably supported on each of said crank arms so as to be arranged tangent to a cylinder defined by a line through the outer peripheries of said picker members, said magazine means including a magazine located substantially tangential to said cylindrical surface.

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