Nov. 11, 1969 C. F. KEAS 3,477,199

COVER FEEDING APPARATUS

Filed Sept. 25, 1967 4 Sheets-Sheet 1

Fig. 1

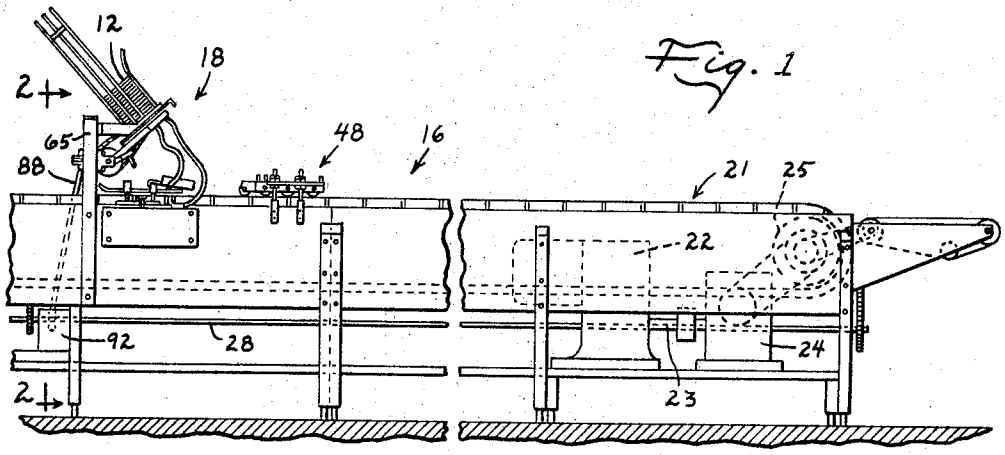
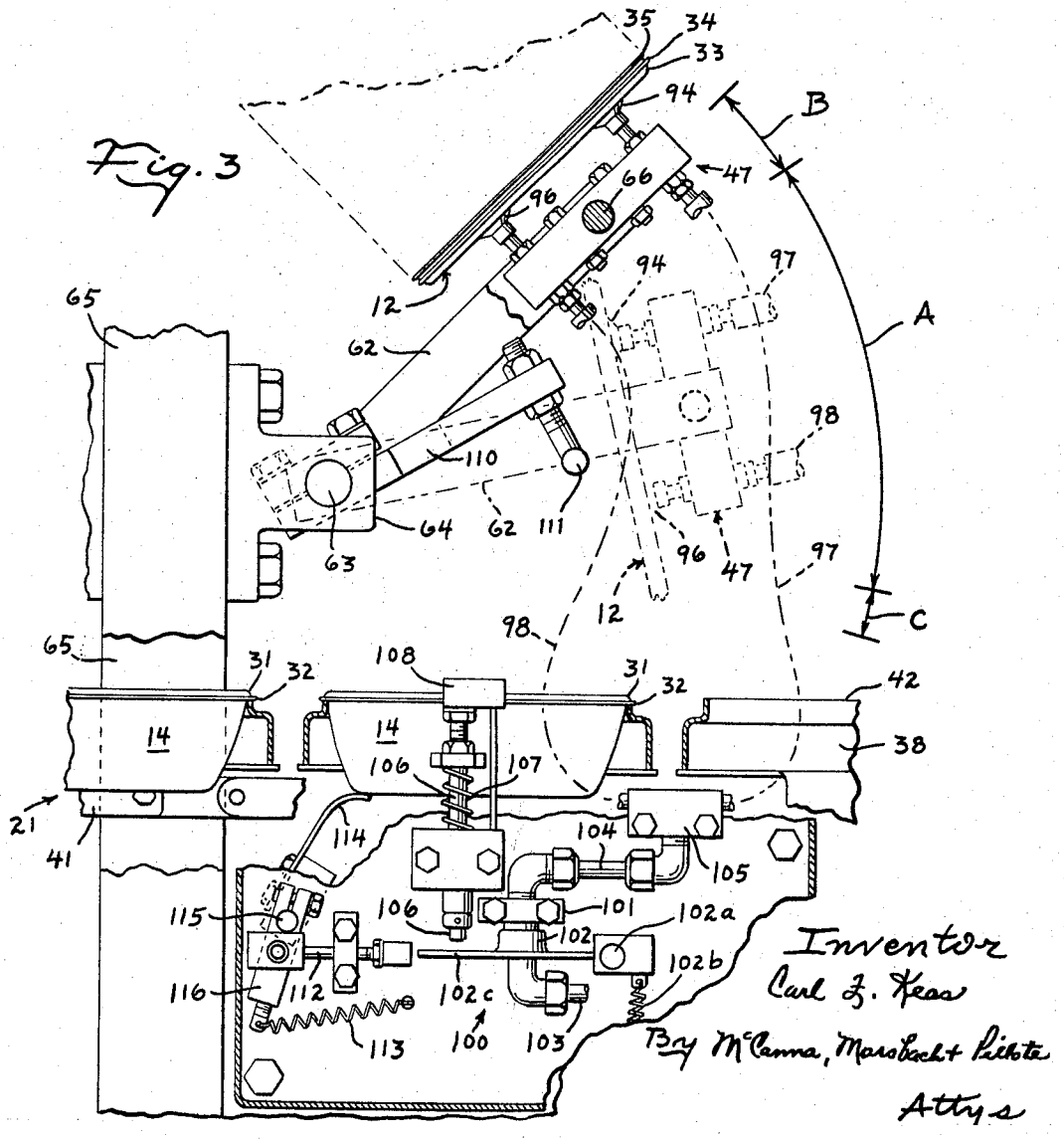


Fig. 3



Inventor
Carl F. Keas
By McCanna, Morsbach & Pietsch
Attys

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COVER FEEDING APPARATUS

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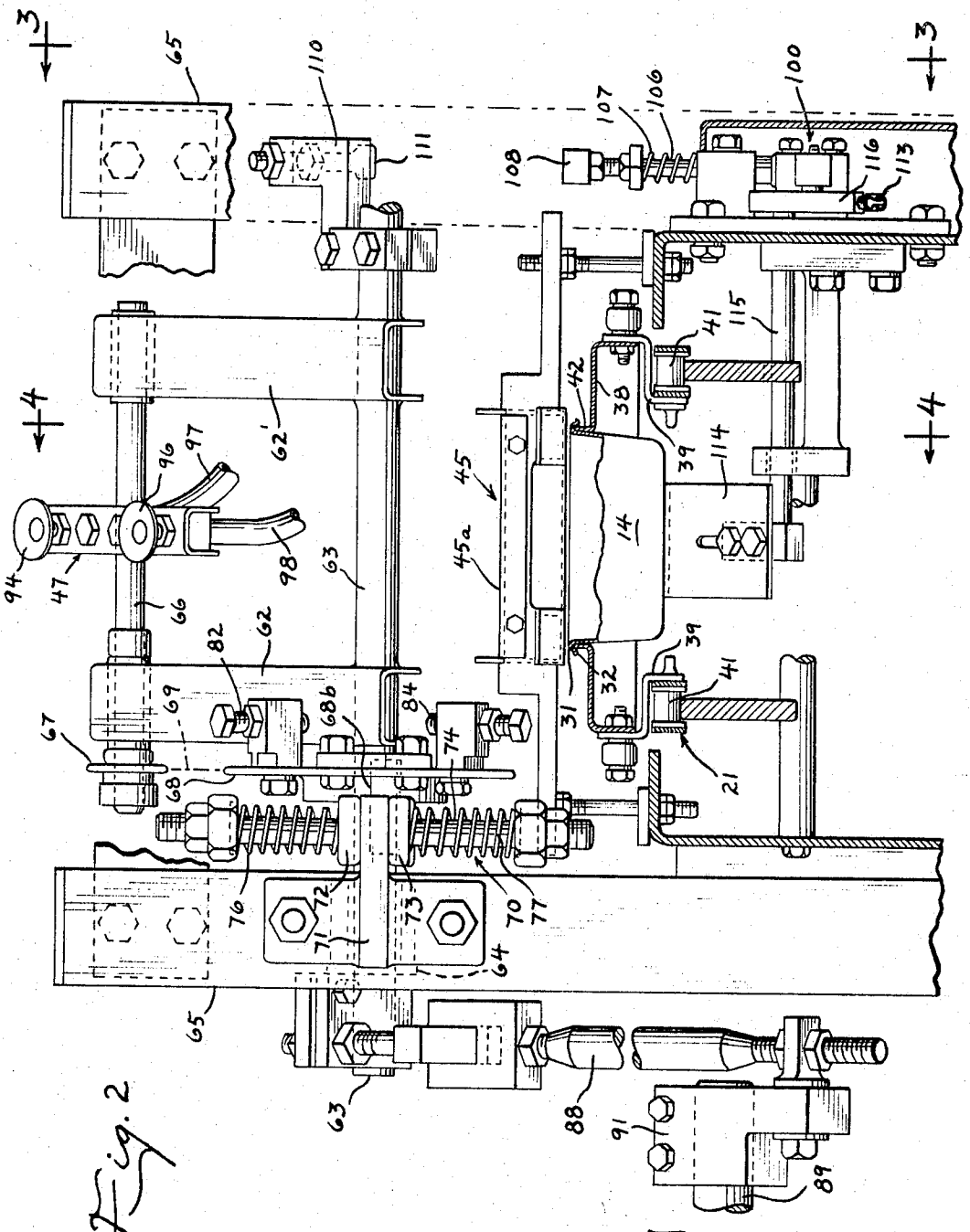


Fig. 2

Inventor
Carl F. Keas

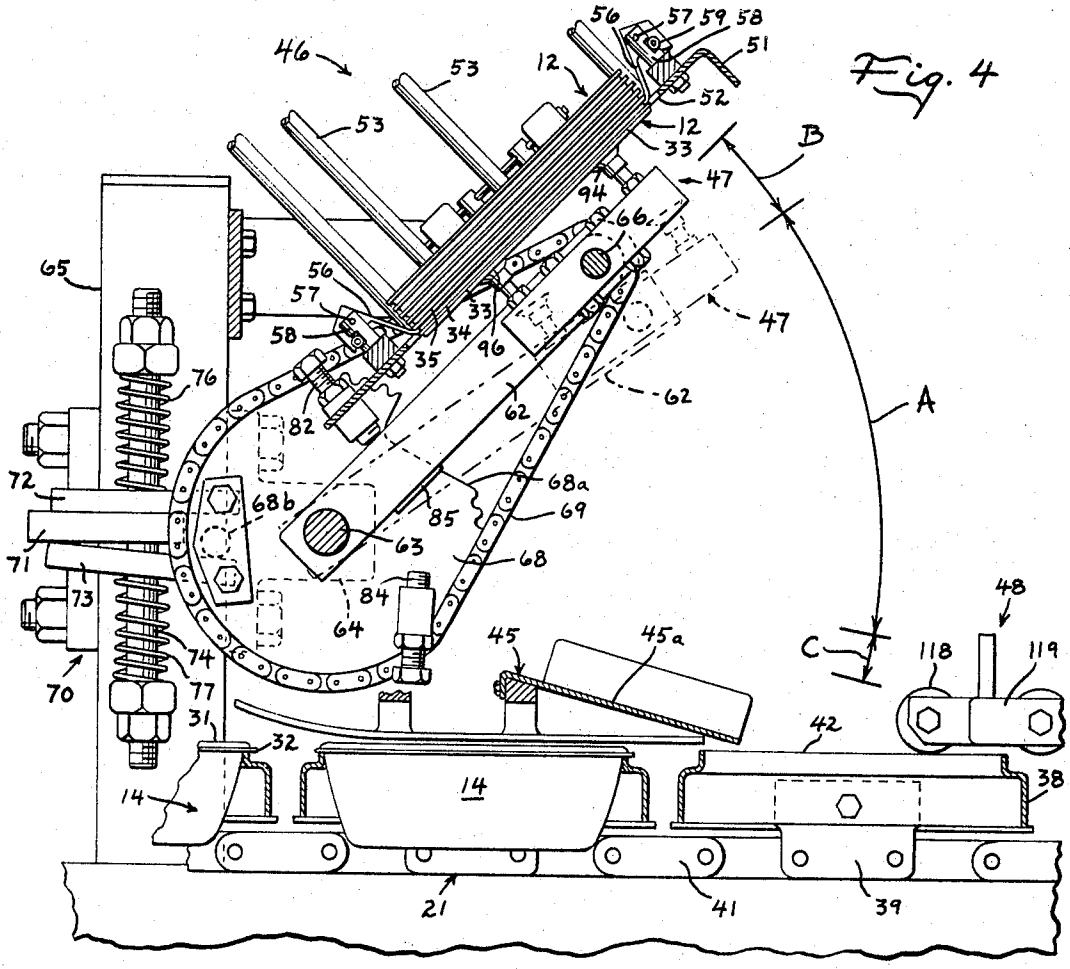
By McCanna, Morsbach & Pillote
Atty's

Nov. 11, 1969 C. F. KEAS 3,477,199

COVER FEEDING APPARATUS

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Fig. 4



Inventor
Carl F. Keas

By McCanna, Morsbach & Pillote
Attys

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COVER FEEDING APPARATUS

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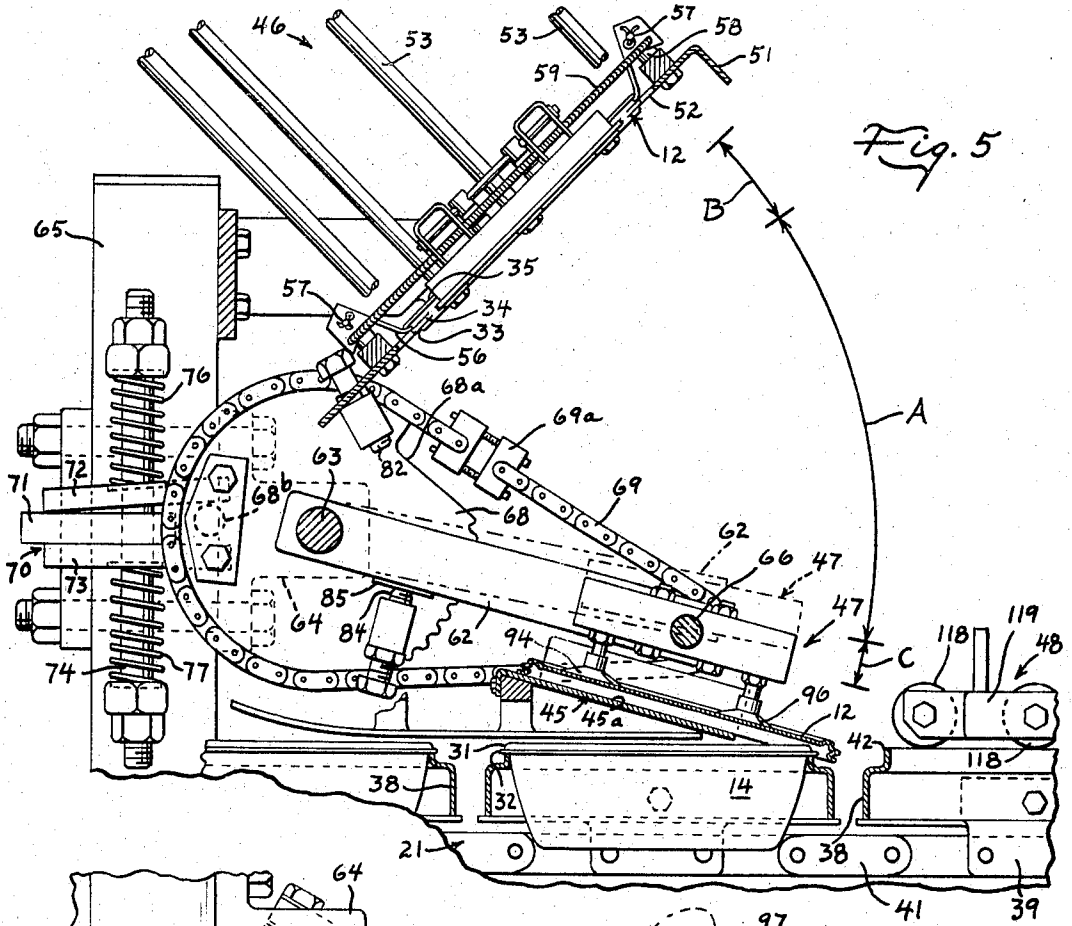


Fig. 5

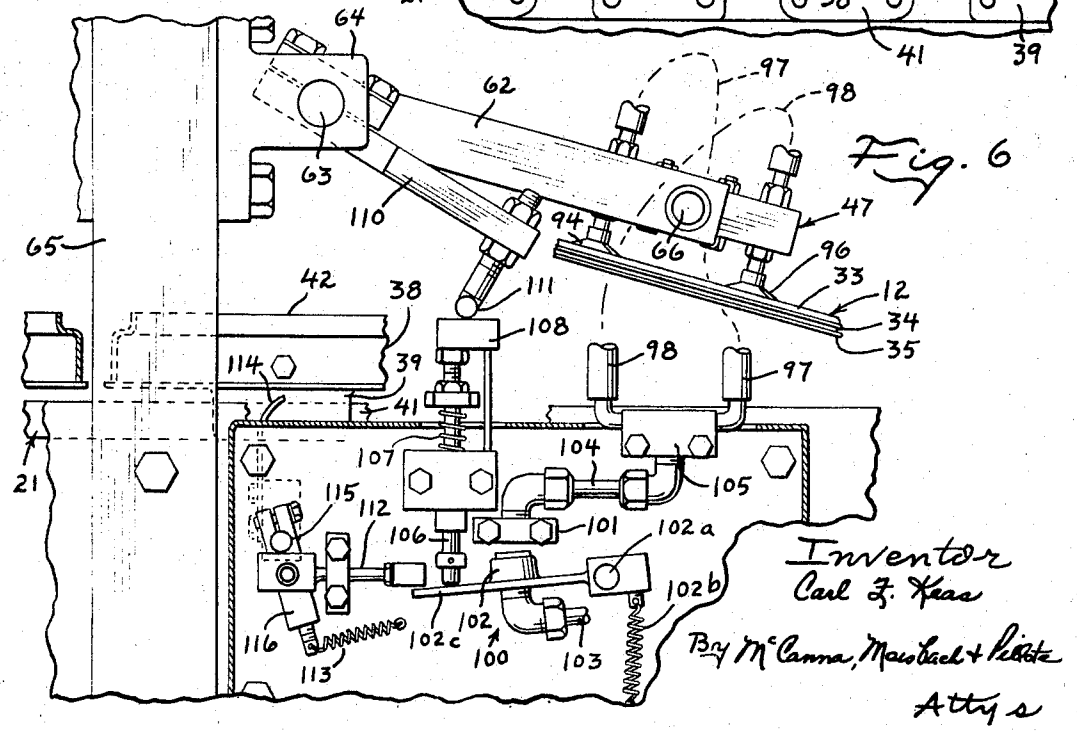


Fig. 6

Inventor
Carl F. Keas
By McCanna, Morsbach & Pietsch
Attys

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3,477,199

COVER FEEDING APPARATUS

Carl F. Keas, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois

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Int. Cl. B65b 57/04, 7/28
U.S. Cl. 53—67 17 Claims

ABSTRACT OF THE DISCLOSURE

A pocketed conveyor for advancing containers past an inclined guide. A cover magazine for holding a quantity of inverted covers. A pivotal arm having suction cups on a pivotally mounted head at the outer end of the arm. Vacuum lines leading to the suction cups and a valve for controlling vacuum thereto. The head arranged for withdrawing an inverted cover and rotating the same to a generally upright position as the arm swings to a point adjacent the guide. The valve then opening in response to reciprocation of the arm to dispense the cover on the guide.

Background

The present invention relates generally to packaging and more particularly to an apparatus for feeding covers for application to containers.

Covers are frequently held in an inverted position in a cover magazine preparatory to removal, inversion, and application to a container or receptacle. Inversion by a head has been accomplished by a cam operation, as seen, for example, in Patent No. 3,293,823. A cam operation has several disadvantages, among which are wear on the cam, difficulty of adjustability, and noise in operation. Additionally, since the cam must operate to invert the head, it is located adjacent the head and encumbers the area of operation.

Summary

The present invention relates to improvements in cover feeding apparatus. More particularly, the invention provides an improved apparatus in which covers are stored in a magazine in an inverted position, removed from the magazine one at a time, inverted, and placed on a container. Additionally, the cover transfer head may be vacuum operated and the apparatus provided with improved means for controlling the application of vacuum.

It is a general object of this invention to provide an improved cover feeding apparatus which will reliably and rapidly supply covers to containers.

Another object of this invention is to provide a cover feeding apparatus which has an improved arrangement for removal of covers from a magazine and inverting the covers for dispensing thereof.

Still another object is to provide a cover feeding apparatus in accordance with the foregoing object and which includes a head pivotally mounted on a swinging arm and arranged to prevent pivoting of the head at the end of the swing of the arm.

It is another object of this invention to provide a cover feeding apparatus which is readily adjustable to properly position the head for removal of covers from a magazine.

Another object of this invention is to provide a cover feeding apparatus of the type wherein receptacles are advanced past a cover applying station and which has an improved means for preventing dispensing of a cover in the absence of the container on the conveyor.

Other objects of the present invention are to provide a cover feeding apparatus which is simplified in construction, smooth and quiet in operation, and low in maintenance.

These, and still other objects and advantages of this

invention, will become better understood by reference to the following description and the accompanying drawings.

Drawings

FIGURE 1 is a partial side elevational view of a packaging machine having an embodiment of the present invention mounted thereon;

FIG. 2 is a larger scale cross-sectional view taken generally along line 2—2 of FIG. 1 and having a portion broken away for better illustration of the parts;

FIG. 3 is a fragmentary side elevational view of a preferred embodiment of the present invention, taken along line 3—3 of FIG. 2, having portions broken away for better illustration of the relationship of the parts, and showing the arm and head in upper position;

FIG. 4 is a longitudinal sectional view taken generally along line 4—4 of FIG. 2;

FIG. 5 is a view similar to FIG. 3 but illustrating the arm and head in lower position; and

FIG. 6 is a view similar to FIG. 4 but illustrating the arm and head in lower position and the relationship of of various parts of the pneumatic system when there is no succeeding receptacle.

Description

Reference is now made more particularly to the drawings which illustrate the best presently known mode of carrying out the invention and wherein similar reference characters indicate the same parts throughout the several views.

The apparatus of the present invention is adapted for use in applying skirt-type covers **12** to receptacles or containers **14** as they are advanced along a path and may, for example, be used in conjunction with a packaging machine as shown in FIG. 1 and generally designated by the numeral **16**. The packaging machine illustrated includes a pocketed conveyor **21** of the endles type which may be driven in continuous fashion as by a motor **22** through a transmission shaft **23**, a gear box and clutch **24**, and a drive sprocket **25**. The packaging machine **16** may include a container dispenser (not shown), a filler (not shown), and a cover applying station **18** disposed at spaced stations along the conveyor to sequentially dispense containers or receptacles into the pockets and fill and cover the receptacles. The container dispenser and filler may be of any conventional construction; however, both are preferably driven in timed relation with the movement of the conveyor. They may, for example, be operatively connected to a longitudinally extending drive shaft **28** which is driven in timed relation with the conveyor through a power take-off to the gear box **24**.

While the apparatus of the present invention is generally adapted for feeding covers **12** to containers **14**, the embodiment illustrated is particularly designed for use in feeding covers to relatively lightweight containers formed of plastic or the like. A typical container **14** is in the form of a cup-like body having outwardly and downwardly extending rim portion **31** which terminates in an outwardly extending flange **32**. The covers **12** are shaped to overlie the container and flange and have a downwardly extending rim **33** which has an intermediately located peripheral bead **34**, and an outwardly extending flange **35** at the lower end thereof, as best seen in FIG. 6.

The container receiving pockets on the conveyor **21** are arranged to firmly support the containers **14** adjacent the top thereof as the containers are advanced past the various stations. As best shown in FIG. 2, the container receiving pockets on the conveyor **21** are in the form of trays **38** connected as by brackets **39** to endless conveyor chain **41**. The trays **38** have container re-

ceiving openings therein with upturned flanges **42** along the sides and ends of the openings. The flanges are arranged to closely surround the side walls of the container **14** and extend into the space between the side walls and the downturned rim **31**, as best seen in FIG. 2, to firmly support the containers adjacent their upper ends.

Referring again to FIG. 1, the cover applying station generally designated **18** includes a guide **45** for positioning covers for application to the containers, a cover magazine **46** for holding a plurality of covers in inverted position, a head **47** for removing the covers from the magazine and dispensing the same on the guide, and a pressing apparatus **48** for firmly pressing the covers on the containers as they are advanced away from the guide. The conveyor pockets **38** advance the containers **14** along a path with the tops of the containers at a preselected level, and the guide **45** is arranged to support a cover **12** in downwardly converging relation to the path of travel of the containers and with the lower edge of the cover extending below the level of the top of the containers to be engaged thereby and stripped off the guide as the containers move therepast. For this purpose, the guide **45** has an upper surface **45***a* disposed at an angle advantageously about 15° from the horizontal and is arranged to receive the covers **12** so that the lower edge of the cover extends beyond the end of the guide and thus is properly positioned (see FIG. 5).

A nested stack of covers **12** is supported in the magazine **46** in a generally inverted position as best shown in FIG. 4. The magazine includes a frame **51** having an opening **52** dimensioned to allow passage of the covers therethrough. A plurality of rods **53** are arranged for guidably supporting the nested stack of covers **12**. As stated above, the covers in the stack are in a substantially inverted position as shown, and the lowermost cover in the stack is releasably supported around the periphery of the opening **52** by a plurality of fingers **56**. The fingers are advantageously pivotally mounted on pins **57** supported by brackets **58** on the frame **51**. The fingers have inwardly directed tips arranged to engage the flange on the lowermost cover to support the same. The fingers **56** are yieldably urged inwardly into engagement with the cover by a circumferential spring **59**. As shown, the cover magazine **46** advantageously is disposed at an angle of about 45° to the horizontal, and the surface of the caps **12** is similarly disposed at an angle of about 45° to the horizontal.

As stated above, the head **47** operates to remove the lowermost cap **12** in the stack and dispense the same onto the guide **45**. As seen in FIGS. 3–6, this is accomplished by swinging the head through an arc and simultaneously rotating the head so that the cover is dispensed in a substantially upright position after being withdrawn from its inverted position. To accomplish swinging movement of the head **47**, an arm **62** is secured to a first generally horizontal shaft **63** which extends crosswise of the conveyor. The shaft **63** is rotatably mounted on the machine as by bearing blocks **64** secured to upright **65** which constitutes a portion of the frame of the machine. The arm **62** extends outwardly from shaft **63**, and head **47** is rotatably mounted thereon as by a second horizontally extending shaft **66** adjacent the outer end of arm **62**. As best shown in FIG. 2, a second arm **62'** may be provided generally parallel to arm **62**, if desired. In this manner, when shaft **63** is rotated, arm **62** is swung, carrying with it head **47** adjacent the outer end of the arm. As previously indicated, the surface of the cover is 45° from the horizontal while the surface of the guide **45** is 15° from the horizontal. Thus, in the present embodiment, arms **62** and **62'** are arranged for swinging through an arc approximating 60°.

Means is provided for rotating the head **47** as the arm **62** is swung. For this purpose, a first sprocket **67** is secured to shaft **66** for rotation therewith, and a second sprocket **68** is advantageously rotatably mounted on shaft **63**. A chain **69** is entrained over the sprockets to operatively connect the two together. In the embodiment illustrated, sprocket **68** is in the form of a segment of a circle or sprocket to provide a recess **68***a* to accommodate a connector **69***a* of chain **69** (see FIG. 5). Means is provided to hold sprocket **68** against rotation at least through a portion of the swinging of arm **62**, as hereafter explained, thus causing sprocket **67** to rotate as the arm is swung and thereby causing head **47** to rotate. To hold the sprocket **68** against rotation, a holding mechanism **70** is mounted on leg **65** for engaging a laterally extending pin **68***b* secured to the sprocket **68** in any convenient manner. In the embodiment illustrated, the holding mechanism **70** includes a mounting plate **71** secured to leg **65**, an upper plate **72** overlying pin **68***a* and a lower plate **73** underlying the pin. A rod **74** passes through aligned openings (not shown in the plates **71–73**). The upper and lower plates are resiliently urged to a position in full contact with plate **71** by springs **76** and **77**, respectively, surrounding the rod **74**. In this manner, sprocket **68** is ordinarily held in a stationary position, but can rotate slightly against the force of springs **76** and **77** for a purpose which will hereinafter become apparent.

In the present embodiment, the apparatus is arranged so that the head **47** rotates through 180° relative to the arm **62** during an intermediate portion of the swing of the arm. This intermediate portion is designated by the angle indicated at A in FIGS. 3–5. In the present embodiment, angle A is advantageously 45°. As shown in phantom in FIG. 4, when the arm is at the upper limit of angle A, the head **47** is generally aligned with the axis of arm **62**. The arm **62** then continues its movement through the angle designated B to engage the head **47** with the lowermost cap **12** in the magazine **46**. In the present embodiment, angle B is advantageously 10°. In this manner, then, the head **47** is rotated to proper engaging position prior to the end of the swing of arm **62** so that rotation of the head **47** does not interfere with the engaging process. In a similar manner, complete rotation of head **47** is accomplished prior to the lower extreme of the swing of arm **62**, as shown in phantom in FIG. 5. Rotation of the arm continues through an additional angle designated C to place the cover **12** on the guide **35**. In the present embodiment, angle C is advantageously 5°. Thus, rotation of the head **47** is completed prior to the dispensing process so that there is no movement to interfere with the dispensing.

To accomplish the above, means is provided for preventing rotation of first sprocket **67** relative to arm **62** adjacent the ends of the swing of the arm. To put it another way, means is provided for assuring that second sprocket **68** rotates with the arm **62**, thereby stopping rotation of first sprocket **67**. For this purpose, a pair of threaded bolts **82** and **84** are mounted on sprocket **68** for engaging the arm **62** at the upper and lower ends of angle A, respectively. The upper surface of the channel-shaped arm **62** defines one bearing surface for engagement by bolt **82**, and a plate **85** is conveniently provided at the bottom of arm **62** to provide a bearing surface for bolt **84**. Preferably, bolts **82** and **84** are adjustable so that the positioning of the head **47** may be adjusted to be substantially coplanar with the surface of caps **12** and the surface of guide **45**, respectively. It should be understood that adjustment of bolt **82** will change angles A and B, and that adjustment of bolt **84** will change angles A and C. In this manner, slight variations in materials or fabrications are quickly and easily alleviated by the present structure. When bolt **82** engages arm **62**, sprocket **68** must rotate with the arm during the swing designated by angle B. Pin **68***b* then moves against plate **73** and compresses spring **77**. In this manner, during the downward portion of the swing, the spring assures that the pin is held against the arm, thereby assuring that no accidental rotation of the head **47** will occur. As shown in FIG. 5,

during the bottom portion of the swing designated by angle C bolt **84** is engaged by bearing surface **85** and causes sprocket **68** to rotate with the arm. This forces pin **68***b* against plate **72** and compresses spring **76**. Thus, the holding mechanism **70** cooperates to assure rotation of head **47** during the intermediate portion of the swing and also to assure no rotation of the head relative to the arm **62** adjacent the ends of the swing.

As can be seen, the pivoting of head **47** is extremely smooth and responsive to pivoting of shaft **63**. As a result of this unusually smooth movement of the head, it is possible to sequentially withdraw a cover **12** from the magazine **46** and dispense it on the guide **45** for the passage of each container **14** on the conveyor. To accomplish this, the shaft **63** is oscillated in timed relation to the movement of the conveyor. For this purpose, shaft **63** is oscillated through about 60° by a pitman arm **88** (See FIGS. 1 and 2) which is connected to a rotating shaft **89** by a link **91**. Shaft **89** is driven by drive shaft **28** through a mechanism **92** and thus is driven in timed relation to the conveyor. As can be seen in FIG. 2, the ends of the pitman arm are threaded for easy adjustment in changing the angle of oscillation, if necessary, as may be caused by slight variations in materials, assembly, etc.

When the shaft **63** is oscillated by the pitman arm **88**, arm **62** swings head **47** between an upper position adjacent the magazine **46** to withdraw a cap **12** therefrom, and a lower position adjacent guide **45** to dispense the cap on the guide. For this purpose, head **47** advantageously includes suction cup means herein shown as suction cups **94** and **96**. Suction cups **94** and **96** are connected by conduits **97** and **98**, respectively, to a source of vacuum (not shown) through a valving mechanism generally designated **100**. The valve mechanism **100** operates to apply vacuum to the suction cups to remove a cover **12** from the magazine and to open to break the vacuum and dispense the cover **12** on the guide **45**. As shown, the valve mechanism includes a stationary portion **101** and a movable portion **102** for seating with portion **101**, as shown in FIG. 3. Portion **102** is communicated with line **103** leading to the source of vacuum (not shown), and portion **101** is operatively connected to conduits **97** and **98** through a single conduit **104** and manifold **105**. Thus, when the valve mechanism is closed as shown in FIG. 3, vacuum is applied to the suction cups **94** and **96**. Portion **102** is pivotally mounted as by a pin **102***a* and resiliently urged to closed position by a spring **102***b*. The valve mechanism includes a particularly advantageous apparatus for breaking the vacuum to the suction cups. For this purpose, movable portion **102** includes a laterally extending finger **102***c*. A pin **106** is positioned for engaging the finger **102***c* but is resiliently urged away from the finger by a spring **107**. At the upper end of pin **106** is carried a nylon bearing block **108**. An arm **110**, conveniently Z-shaped, is secured to shaft **63** for movement therewith. Z-arm **110** carries a knob **111** at its outer end for engaging bearing **108** to depress pin **106** at the lower extremity of the swing of arm **62**. This moves the various parts to the position shown in FIG. 6, unseating portion **102** from portion **101** and breaking the vacuum to suction cups **94** and **96**.

In order to prevent dispensing of a cover **12** in the absence of a container **14**, valve mechanism **100** includes a provision for preventing the application of vacuum to suction cups **94** and **96**. For this purpose, a member **112** is resiliently urged by a spring **113** toward a position overlying the end of finger **102***c*, as shown in FIG. 6. Sensing means is provided for sensing the present of a suceeding container and retracting the member **112** when a succeeding container is present on the conveyor. For this purpose, a finger **114** is secured to shaft **115** pivotally supported on the main frame of the machine, as best seen in FIG. 2. At the outer end of shaft **115** is secured a block **116** to which the aforementioned spring **113** is affixed. Finger **114** is normally urged to a raised position by the spring **113** and thereby normally urged into engagement with the bottom of containers as they approach the cover applying station. In the presence of a succeeding container, as shown in FIG. 3, finger **114** is depressed, member **112** is retracted, and second portion **102** seats against stationary portion **101** to apply vacuum to the suction cups **94** and **96**. When no succeeding container is present as shown in FIG. 6, finger **114** can move to a raised position, thereby extending member **112** and allowing the same to overlie finger **102***c* when it has been depressed by pin **106**. In this manner, the valve mechanism is kept open until such a time as a container again depresses finger **114**.

In the manner described, a particularly advantageous mechanism is provided for controlling application of vacuum to the suction cup means, for breaking the vacuum to dispense the cover on the guide, and for preventing reapplication of vacuum when no succeeding container is present. Thus, no cover is withdrawn unless a container is present to receive the same.

When the container **14** withdraws a cover **12** from the guide **45**, the aforementioned presser **48** operates to firmly press the covers on the containers as the containers are advanced. In the embodiment illustrated, the presser includes a plurality of rollers **118** mounted on a carriage **119** to extend crosswise of the conveyor at a level to engage and firmly press the covers on the containers.

It is now deemed apparent that the present invention provides an apparatus for feeding and applying covers to containers in a manner that is smooth and quiet, and yet simplified in construction and certain in operation. Additionally, the apparatus is arranged for preventing dispensing of the cover in the absence of a receptacle on the conveyor.

While a preferred embodiment of the invention has herein been illustrated and described, this has been done by way of illustration and not limitation, and the invention should not be limited except as required by the scope of the appended claims.

What is claimed is:

1. In an apparatus for feeding and applying covers to containers including conveyor means for advancing the containers along a path past a cover applying station, and a cover magazine at said station disposed above the conveyor means for holding a plurality of covers in a generally inverted position, the improvement comprising: an arm mounted at said station for pivotal movement about a first axis and having an outer end swingable between an upper position adjacent the cover magazine and a lower position adjacent the conveyor means; a head pivotally mounted about an axis at the outer end of the arm; said head being pivotally movable between a cover engaging position for removing the lowermost cover from the magazine when the arm is in its upper position and a second position for dispensing the cover in a generally upright position when the arm is in its lower position; means for actuating the head to seize a cover from the magazine and for releasing the cover at the second position; means for swinging the arm between said upper and lower positions; and means for pivoting the head between the cover engaging position and second position as the arm swings and including wheel means concentric with said head axis and operatively connected to the head for pivotal movement therewith, means mounted at the first axis and operatively connected to the wheel means for rotating the wheel means as the arm is swung to rotate the head, and means for preventing rotation of the wheel means adjacent the ends of the swinging movement of the arm.

2. The combination of claim **1** wherein the last-mentioned means is adjustable to prevent rotation of the wheel means and head at a selected position in respect to the arm so that the head is properly positioned at the cover engaging position.

3. The combination of claim **1** wherein the means mounted at the first axis includes a plate pivotally mounted adjacent the arm; one of the items of a group consisting

of said arm and said plate having means defining first and second bearing surfaces; and wherein the last-mentioned means comprises a first and a second engaging member mounted on the other of said items; the first engaging member arranged for engaging the first bearing surface as the arm approaches its upper position and the second engaging member arranged for engaging the second bearing surface as the arm approaches its lower position.

4. The combination of claim 3 including means for resiliently restraining the plate against pivotal movement adjacent the ends of the swinging movement of the arm to resiliently urge the engaging members against the respective bearing surfaces.

5. The combination of claim 4 wherein the engaging members are adjustable to prevent rotation of the wheel means and head at selected positions with respect to the arm to properly position the head at the ends of the swing of the arm.

6. The combination of claim 5 including guide means at said station disposed above the conveyor means for supporting a cover in downwardly converging relation to the path of movement of the containers; and wherein the lower position of the arm disposes the head adjacent the guide means for releasing the cover onto the same; the first axis is generally crosswise of the conveyor means and at a level between the cover magaine and the guide means; and the first engaging member is adjusted to dispose the head generally parallel to the lowermost cover in the cover magazine when the arm is in its upper position and the second engaging member is adjusted to dispose the head generally parallel to the guide means when the arm is in its lower position.

7. The combination of claim 1 wherein the wheel means comprises a first sprocket; the means mounted at the first axis includes a pivotally mounted second sprocket having a chain entrained around the first sprocket; the last-mentioned means comprises first and second pins mounted on the second sprocket for engaging the arm adjacent the ends of its swing to cause the second sprocket to rotate with the arm and prevent rotation of the first sprocket; said second sprocket having a laterally extending projection attached thereto; and including resilient means for engaging said projection when the second sprocket is rotated with the arm and for urging the second sprocket to a non-rotative position during the central portion of the swing of the arm so that the first sprocket and head are then rotated.

8. In an apparatus for feeding and applying covers to containers including conveyor means for advancing the containers along a path past a cover applying station, and a cover magazine at said station disposed above the conveyor means for holding a plurality of covers in an inverted position, the improvement comprising: and arm having one end pivotally mounted about a first generally horizontal axis at said station and having an outer end swingable between an upper position adjacent the cover magazine and a lower position adjacent the conveyor means; means for swinging the arm between said upper and lower positions; a cover transfer head pivotally mounted about a second generally horizontal axis at the outer end of the arm; said cover transfer head being pivotally movable between a cover engaging position when the arm is in the upper position and a second position for dispensing the cover in a generally upright position when the arm is in its lower position; wheel means pivotally mounted about the second axis for movement with said head; and means comprising at least a segment of a circle having its center at the first axis and operatively connected to the wheel means to rotate the same as the arm is swung and thereby rotate the cover transfer head.

9. The combination of claim 8 wherein the last-mentioned means is pivotally mounted at the first axis; and including means for resiliently holding the last-mentioned means against rotation during at least the major portion of the swing of the arm so that rotation of the cover transfer head is correlative to the swing of the arm during said major portion thereof.

10. The combination of claim 9 including means for moving the last-mentioned means with the arm and preventing rotation of the cover transfer head for a preselected distance at the end of the swing of the arm at said upper position.

11. The combination of claim 9 wherein the first axis extends crosswise of the conveyor means; the arm extends radially therefrom for swinging movement in a generally upright plane; the second axis is generally parallel to said first axis; the wheel means includes a first sprocket; and the last-mentioned means lies generally in the same plane as the wheel means and comprises a second sprocket larger than the first sprocket and a chain entrained over the first and second sprockets to rotate the first sprocket when the arm is swung and the second sprocket is held against rotation.

12. The combination of claim 8 wherein the cover transfer head includes suction cup means for removing the lowermost cover from the cover magazine when the cover transfer head is at the cover engaging position; and including means including a valve for applying vacuum to the suction cup means; and means for opening the valve when the cover transfer head is at its second position to release the vacuum to the suction cup means and dispense the cover.

13. In an apparatus for feeding and applying covers to containers including a frame, conveyor means on the frame for advancing the containers along a path past a cover applying station, and a cover magazine at said station disposed above the conveyor means for holding a plurality of covers in an inverted position, the improvement comprising: guide means at said station disposed above the conveyor means for supporting a cover in downwardly converging relation to the path of movement of the containers; a generally horizontal shaft pivotally supported on the frame at said station and extending crosswise of the conveyor means at a level between the conveyor means and the cover magazine; an arm extending generally lengthwise of the conveyor means and having one end secured to the shaft and an outer end cantilevered therefrom; means for angularly oscillating the shaft to swing the outer end of the arm between an upper position adjacent the cover magazine and a lower position adjacent the guide means; a head pivotally mounted about a generally horizontal axis at the outer end of the arm and including suction cup means for removing the lowermost cover from the cover magazine; means responsive to swinging movement of the arm for pivoting the head about said axis between one position in which the suction cup means is positioned to engage the lowermost cover in the cover magazine and another position in which the suction cup means is positioned to deposit the cover on the guide means; means including a valve for applying vacuum to the suction cup means; and means operative in response to the angular oscillation of the shaft for opening the valve when the head is at said other position to release the vacuum to the suction cup means and deposit the cover on the guide means.

14. The combination of claim 13 wherein the conveyor means advances the containers in a preselected spaced relationship with their tops at a preselected level, and the guide means supports a cover with its lower edge extending below said preselected level to apply the cover to the container as the same is advanced; and including sensing means for sensing the presence of a container immediately following the container at the guide means and for holding the valve open in the absence of a following container whereby no vacuum is applied to the suction cup means and no cover is withdrawn thereby.

15. The combination of claim 14 wherein the conveyor means comprises a conveyor having container receiving pockets at spaced points therealong, and wherein the sens-

ing means includes a finger positioned to be depressed by said following container in a succeeding pocket, a resiliently urged member for engaging the valve in its open position and for holding the valve open, and linkage means operatively connected to said finger and said member for retracting the member when the finger is depressed by a container to allow said valve to close.

16. The combination of claim 13 wherein the valve includes a first portion and a second portion, the second portion movable between an open position and a closed position seated with the first portion to apply vacuum to the suction cup means, and means resiliently urging the second portion to said closed position; and wherein the last-mentioned means includes a second arm attached to the shaft for movement therewith for operatively engaging the second portion to move the same to said open position when the head is at said other position.

17. In an apparatus for feeding and applying covers to containers including pocketed conveyor means for advancing the containers along a path past a cover applying station, and a cover magazine above the conveyor means at said station for holding a plurality of covers, the improvement comprising: a head movable between a cover engaging position adjacent the cover magazine and a second position removed therefrom; said head including suction cup means for removing a cover from the cover magazine; a valve for applying vacuum to the suction cup means and including a first portion and a second portion;

the second portion being resiliently urged to a closed position seated with the first portion to apply vacuum to the suction cup means and movable to an open position to release the vacuum; means operative to move the second portion to open position when the head is at its second position to release the cover; a finger positioned to be depressed by a succeeding container advanced by the conveyor means; a resiliently urged member for engaging the second portion in its open position to hold the valve open; and linkage means operatively connected to said finger and said member for retracting the member when the finger is depressed by a container to allow said second member to move to its closed position; whereby the valve is held open in the absence of a succeeding container and no cover is removed by the suction cup means and the valve is closed in the presence of a succeeding container and a cover is removed.

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