



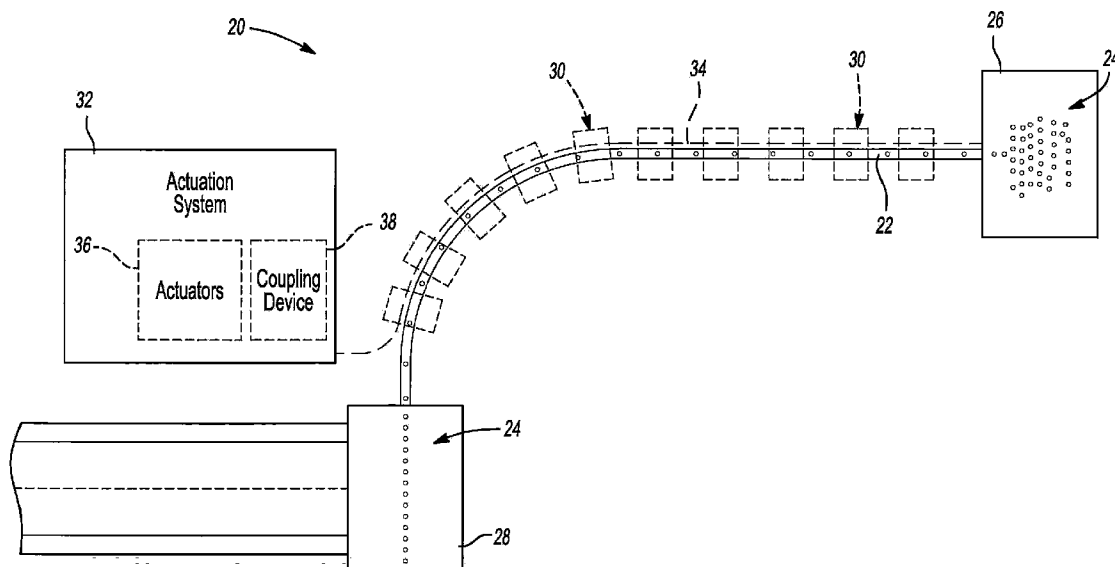
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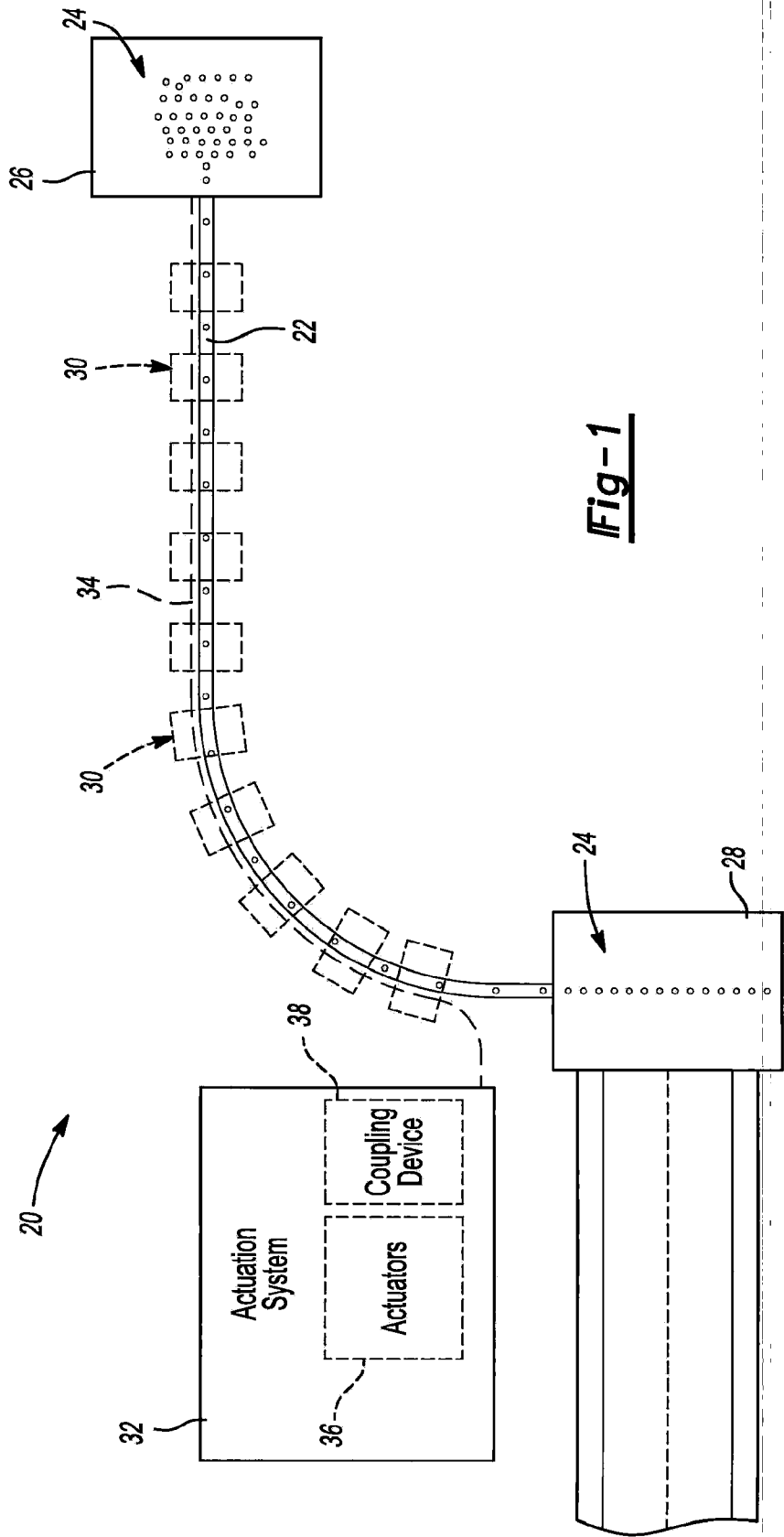
(19) **United States**(12) **Patent Application Publication**  
**Ingraham**(10) **Pub. No.: US 2007/0095247 A1**(43) **Pub. Date: May 3, 2007**(54) **GUIDE POSITIONING SYSTEM FOR A  
CONTAINER TRANSPORT LINE****Related U.S. Application Data**(63) Continuation-in-part of application No. 11/050,278,  
filed on Feb. 3, 2005.(75) Inventor: **Thomas M. Ingraham**, Fort Collins,  
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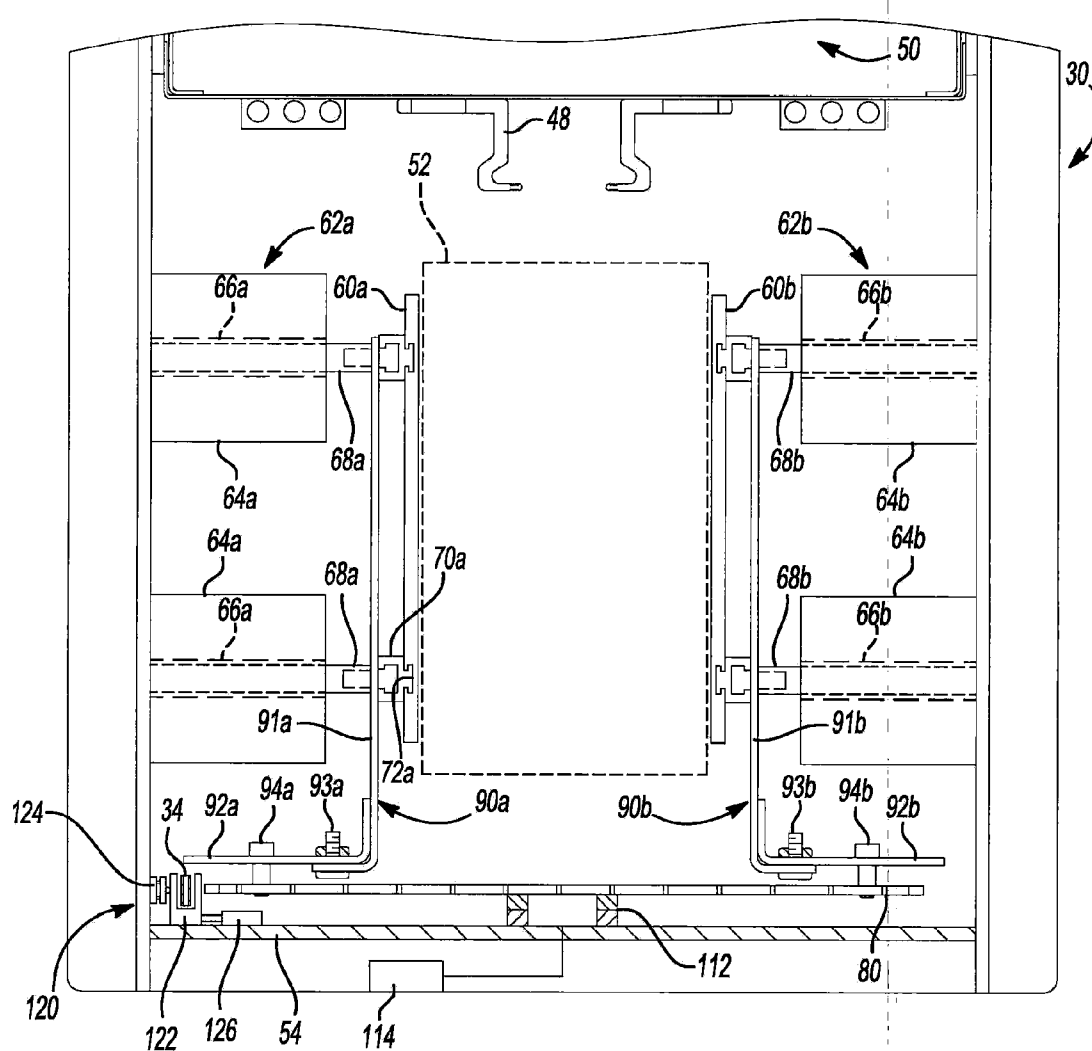
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**HARNES, DICKEY & PIERCE, P.L.C.****P.O. BOX 828****BLOOMFIELD HILLS, MI 48303 (US)**(57) **ABSTRACT**

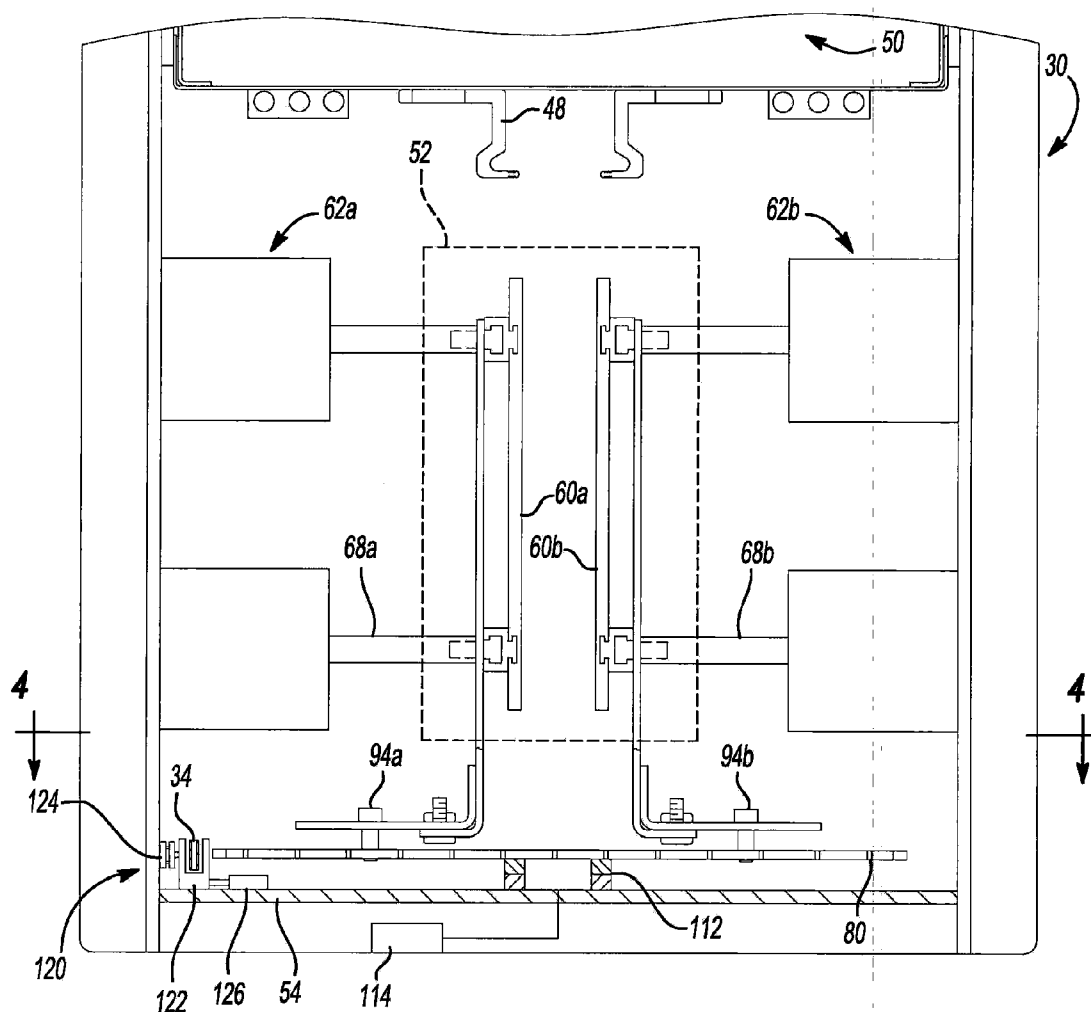
A guide positioning system for a container transport line includes a guide assembly supporting a pair of guide segments extending opposite each other along the container transport line and an actuation system. The guide segments are located in a home position, and the actuation system is set to correspond with the home position to calibrate the guide positioning system. Furthermore, the actuation system selectively couples and operates the guide assembly so that the guide segments move to a predetermined position away from the home position.

(73) Assignee: **ADVANCED MANUFACTURING  
TECHNOLOGY**, Loveland, CO (US)(21) Appl. No.: **11/554,339**(22) Filed: **Oct. 30, 2006**

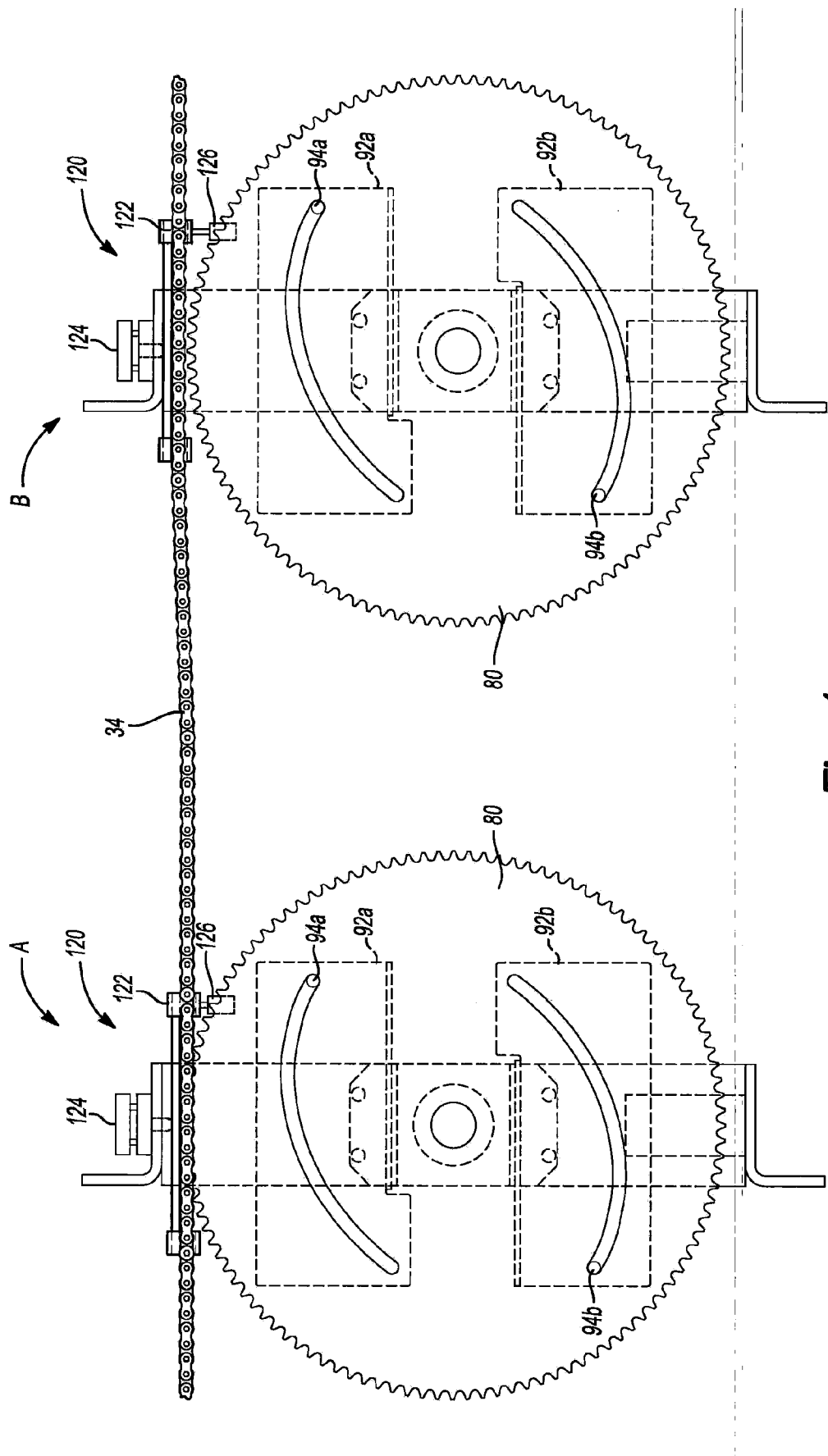




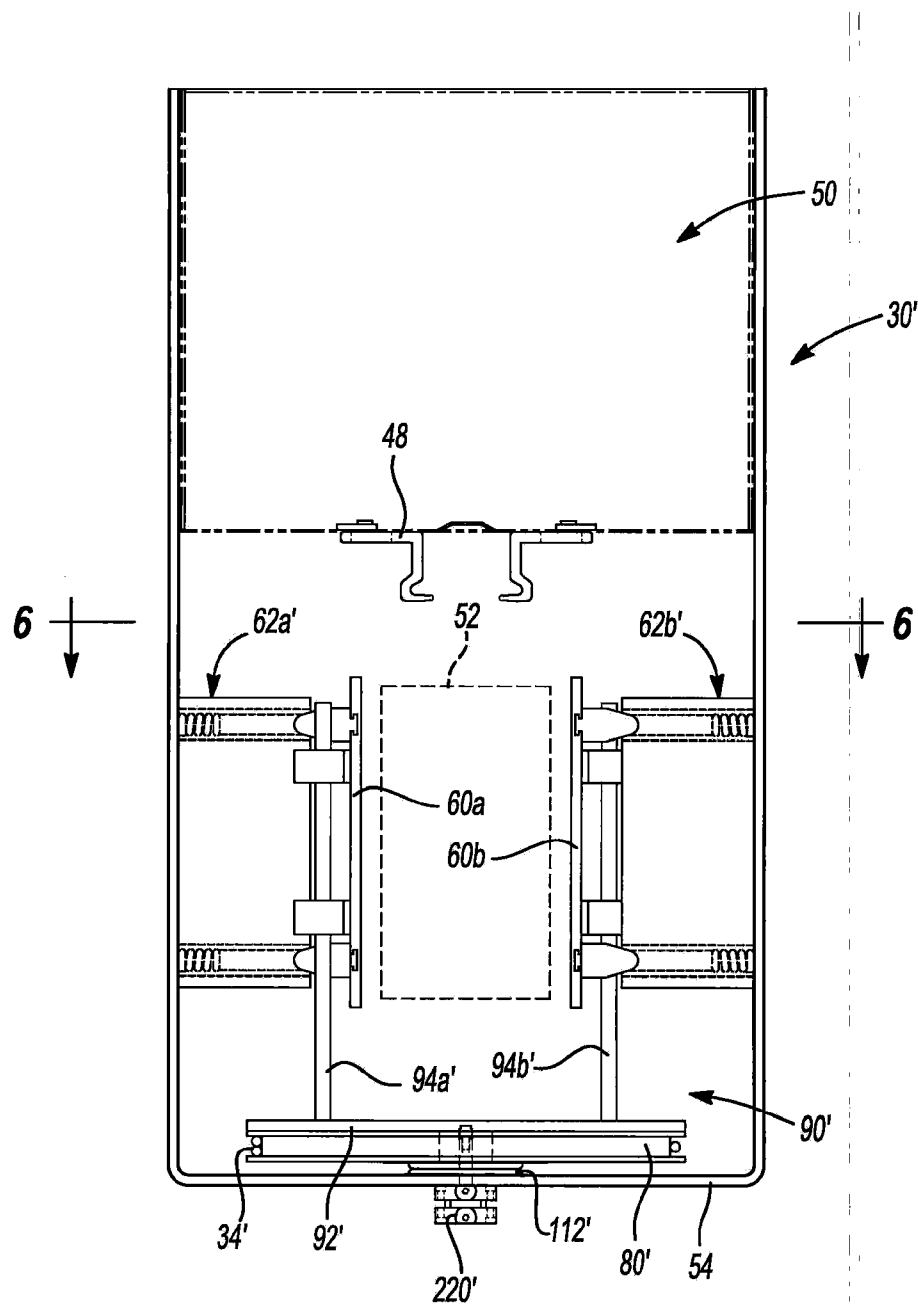
**Fig-2**



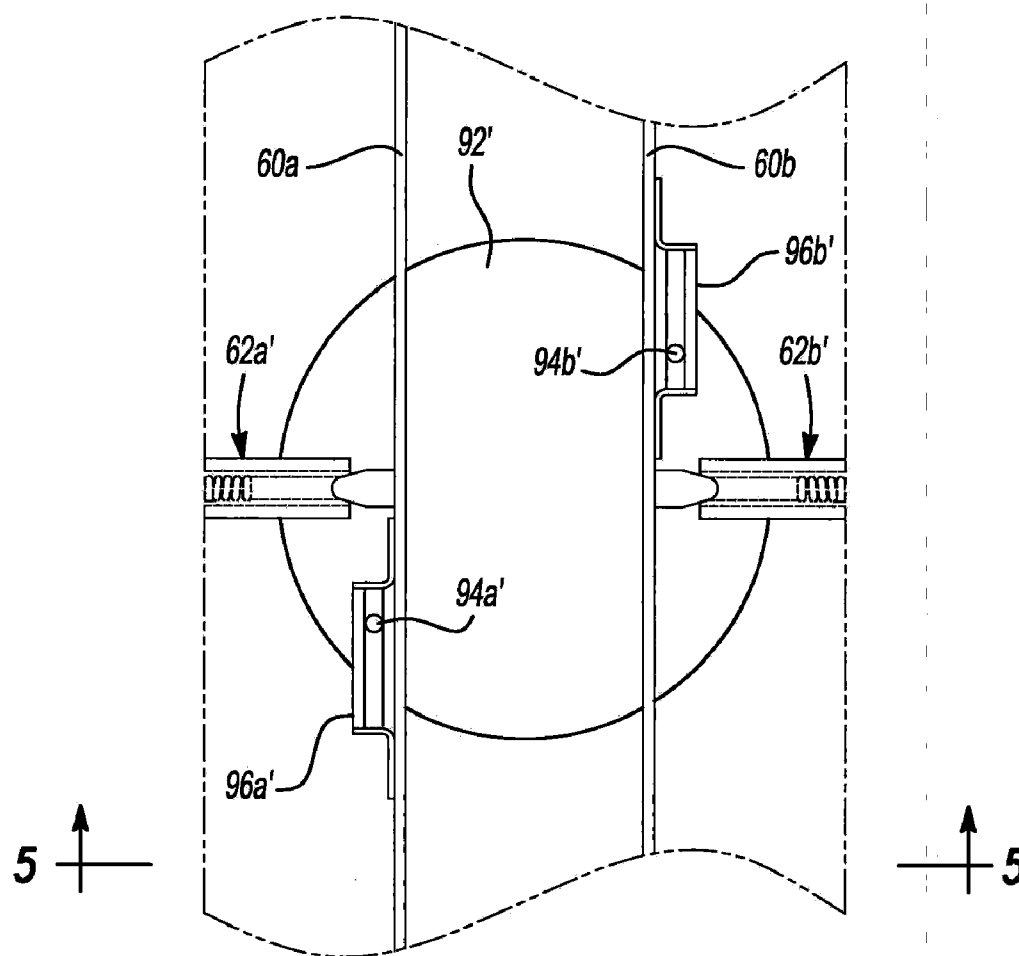
**Fig-3**



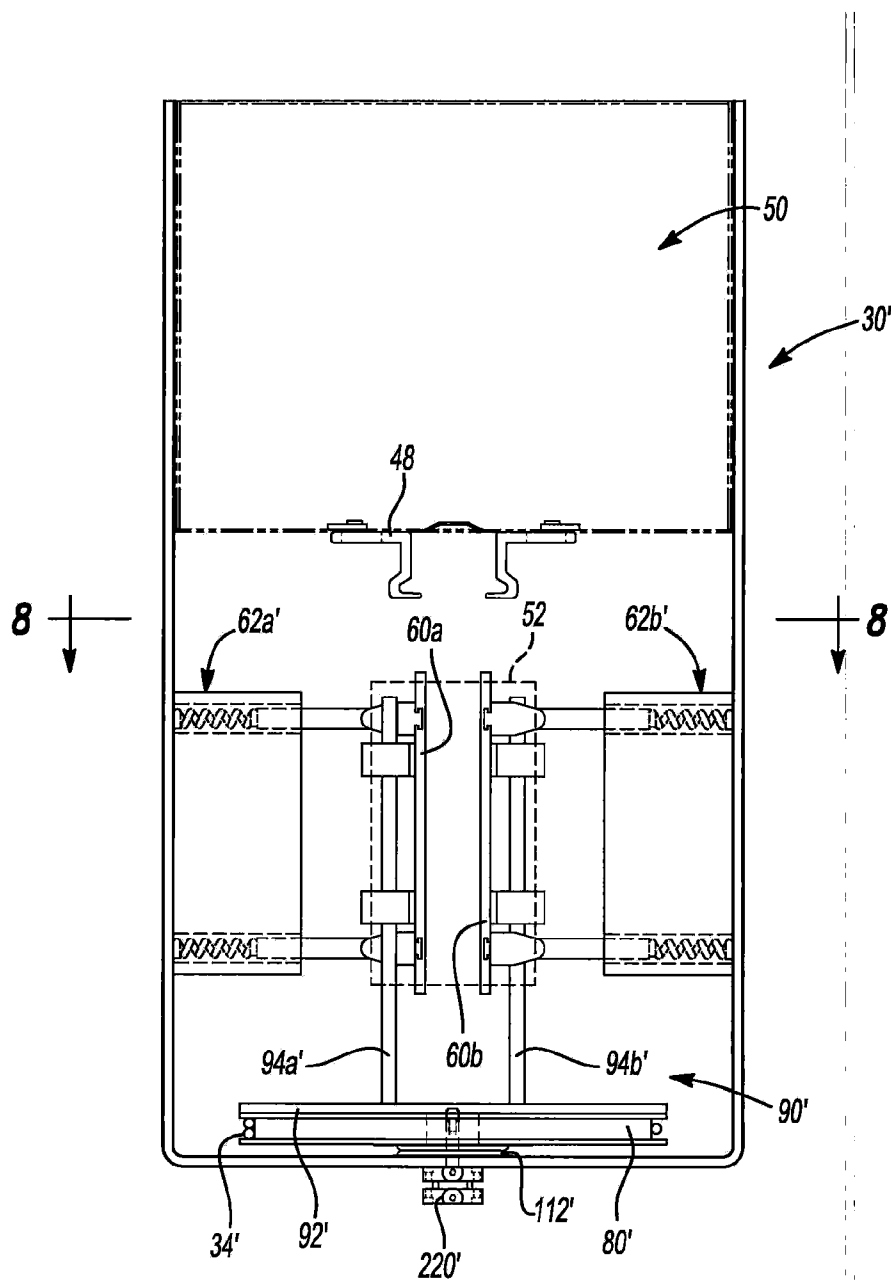
**Fig-4**



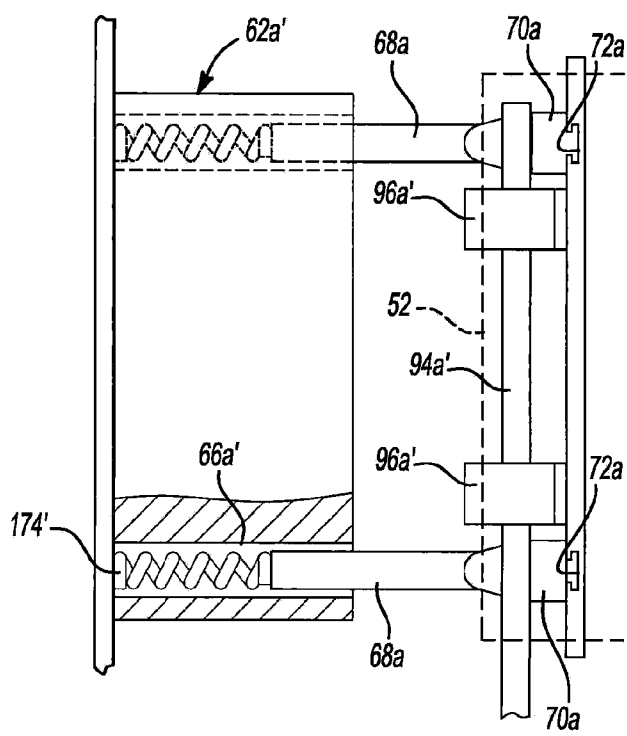
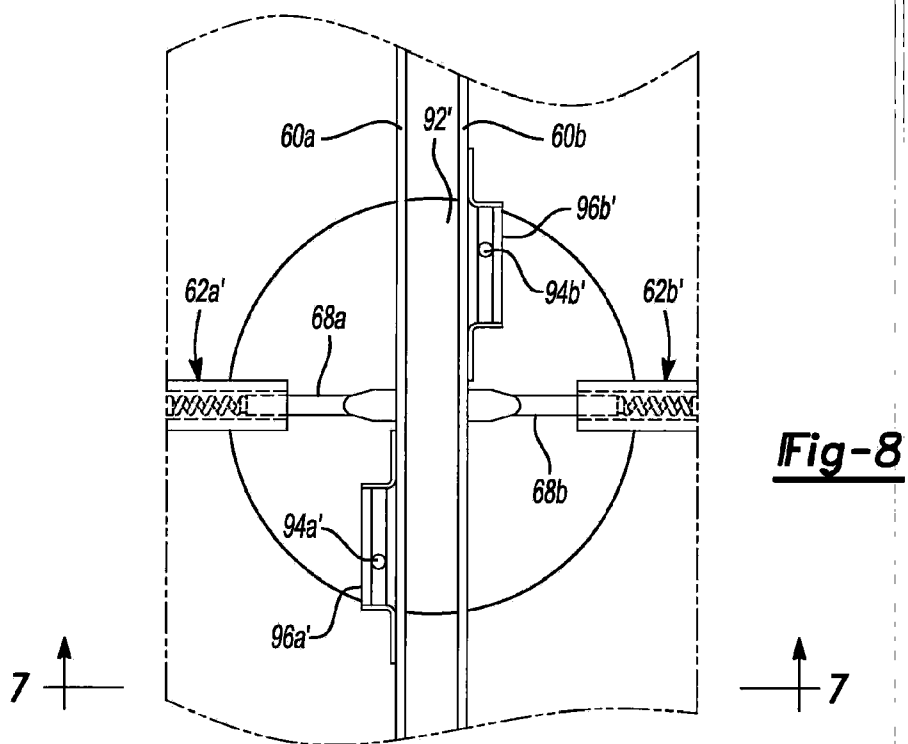
**Fig-5**

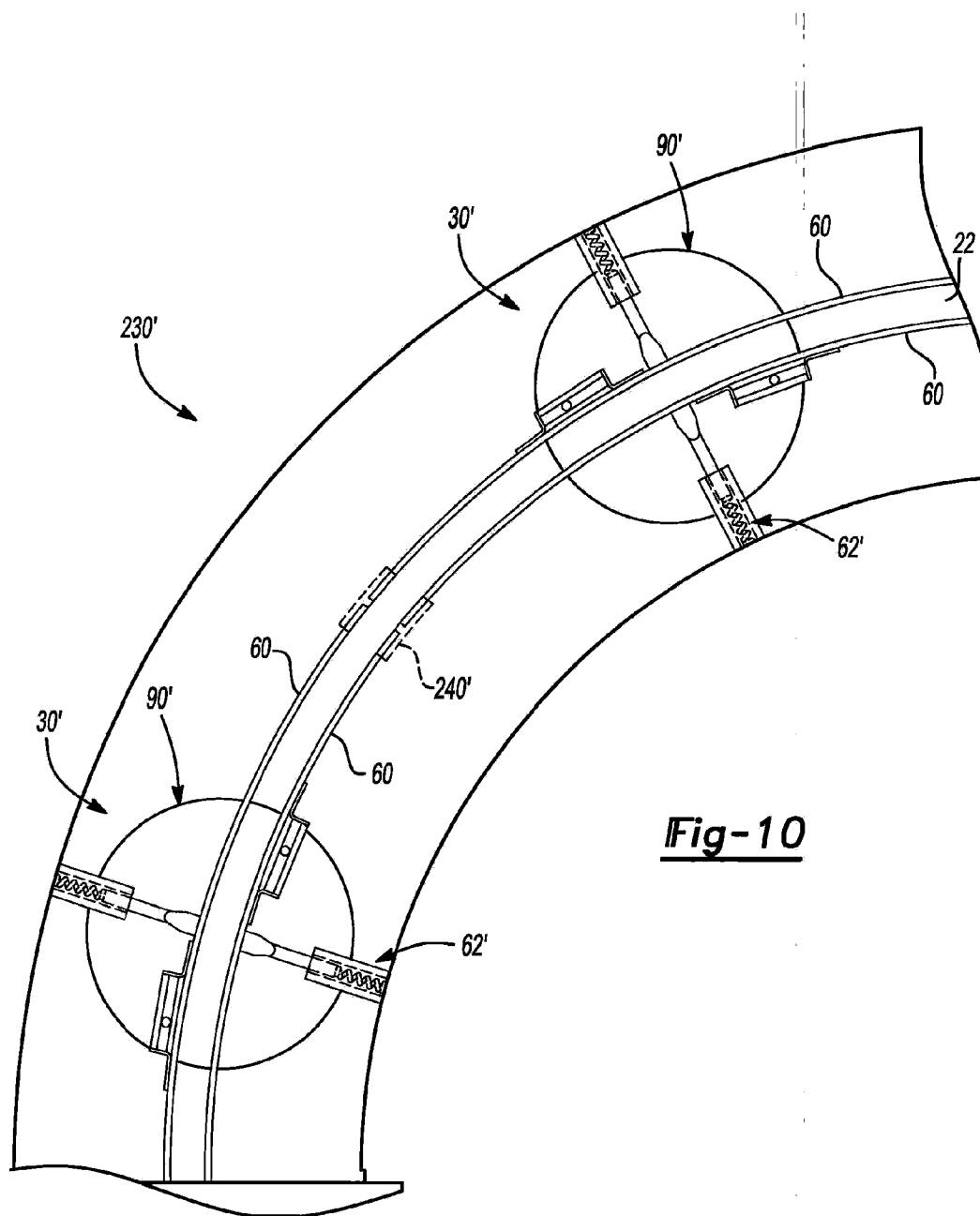


**Fig-6**



**Fig-7**





**Fig-10**

## GUIDE POSITIONING SYSTEM FOR A CONTAINER TRANSPORT LINE

### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 11/050,278 filed on Feb. 3, 2005. The disclosure of the above application is incorporated herein by reference.

### FIELD

[0002] The present disclosure relates to a container transport system, and more particularly to a container transport system including a container transport line and a guide positioning system with adjustable guides along the container transport line.

### BACKGROUND

[0003] The statements in this section merely provide background information related to the present disclosure and may not constitute prior art.

[0004] Currently, various packaging and shipping methods are used to transport containers, such as bottles, from one location to another. As such, it is often necessary to provide a container transport line or conveyor to transfer containers from one machine to another in the handling process. Such container transport systems will often utilize guide rails along the transport line to maintain the proper orientation of the containers being transferred. In recent years, variations in shapes and sizes of containers have proliferated. Accordingly, it is desirable to have a system which allows such guide rails to be quickly and repeatedly adjusted to accommodate a variety of bottle sizes and shapes.

[0005] Container transport systems with adjustable guides can include guide positioning systems. During operation, however, components can slip, misalign, or otherwise require recalibration. Occasionally, such guide positioning systems may require calibration in order to properly align the guides for a given bottle. Accordingly, it would be desirable to have a guide positioning system which can be efficiently and repeatedly calibrated.

### SUMMARY

[0006] The present disclosure provides a guide positioning system for a container transport line. The guide positioning system can include a guide assembly having a first guide segment and a second guide segment extending opposite each other along the transport line. The guide assembly can further have a rotating member disposed proximate the transport line and a force translation mechanism coupled between the guide segments and the rotating member for displacing the guide segments in correspondence with a rotation of the rotating member. The guide positioning system can also include an actuation system having a drive element extending along the transport line and adapted to engage the rotating member, an actuator, and an actuator coupling device.

[0007] In operation, the guide segments locate a home position, and the actuation system is set to correspond with the home position. The actuator coupling device selectively

couples the drive element and the actuator. The actuation system selectively operates the drive element to rotate the rotating member and move the guide segments to a predetermined position away from the home positions.

[0008] In another form, the present disclosure provides a container transport system including an infeed machine for collecting a plurality of containers, a discharge machine for receiving the containers, and a container transport line extending between the infeed machine and the discharge machine. The container transport system further includes a plurality of guide assemblies supporting guides along the transport line and an actuation system selectively coupled to the guide assemblies. When the guide assemblies and the actuation system are uncoupled, the guides are located in a home position, and the actuation system is set to correspond with the home position to calibrate the container transport system. When the container transport system is calibrated, the actuation system selectively operates the guide assemblies to move the guides to a predetermined position away from the home position.

[0009] In another form, the present disclosure provides a method positioning a guide for a container packaging system. The method includes locating a guide in a home position, setting an actuation system to correspond with the home position of the guide, coupling the guide and the actuation system, and operating the actuation system to move the guide to a predetermined position away from the home position.

[0010] Further areas of applicability will become apparent from the description provided herein. It should be understood that the description and specific examples are intended for purposes of illustration only and are not intended to limit the scope of the present disclosure.

### DRAWINGS

[0011] The drawings described herein are for illustration purposes only and are not intended to limit the scope of the present disclosure in any way.

[0012] FIG. 1 is a top view of a container transport system according to the principles of the present disclosure;

[0013] FIG. 2 is a front elevation of a guide assembly according to the principles of the present disclosure showing the guide segments in a home position;

[0014] FIG. 3 is a front elevation of the guide assembly of FIG. 2 showing the guide assemblies in a predetermined position away from the home position;

[0015] FIG. 4 is a top view of a pair of guide assemblies according to the principles of the present disclosure;

[0016] FIG. 5 is a front elevation of an alternative guide assembly according to the principles of the present disclosure showing guide segments in a home position;

[0017] FIG. 6 is a top view of the guide assembly of FIG. 5;

[0018] FIG. 7 is a front elevation of the guide assembly of FIG. 5 showing the guide segments in a predetermined position away from the home position;

[0019] FIG. 8 is a top view of the guide assembly of FIG. 7;

[0020] FIG. 9 is an enlarged portion of the front elevation of the guide assembly of FIG. 7; and

[0021] FIG. 10 is a top view of a nonlinear portion of a container transport line according to the principles of the present disclosure.

#### DETAILED DESCRIPTION

[0022] The following description is merely exemplary in nature and is not intended to limit the present disclosure, application, or uses. It should be understood that throughout the drawings, corresponding reference numerals indicate like or corresponding parts and features.

[0023] According to the principles of the present disclosure, a guide positioning system for a container transport line includes a guide assembly supporting a pair of guide segments extending opposite each other along the container transport line. The guide positioning system also includes an actuation system. When the guide segment is located in a home position, the actuation system can be set to correspond with the home position to calibrate the guide positioning system. Furthermore, the actuation system selectively couples and operates the guide assembly so that the guide segments move to predetermined positions away from the home position.

[0024] Referring to FIG. 1, a container transport or conveyor system 20 for a container packaging system is shown. Container transport system 20 includes a container transport line or conveyor 22 along which containers 24 are transported from an infeed machine 26 to a discharge machine 28. Infeed machine 26 collects a plurality of containers 24 and introduces them to container transport system 20 which accumulates and transports containers to discharge machine 28.

[0025] Container transport system 20 also has a guide positioning system. The guide positioning system includes a plurality of guide assemblies 30 coupled along transport line 22 and an actuation system 32 for selectively operating guide assemblies 30. As described in further detail below, guide assemblies 30 support guide segments 60 along transport line 22.

[0026] Actuation system 32 includes a drive element 34 extending along transport line 22 and coupled to guide assemblies 30. Actuation system 32 includes an actuator 36 for selectively manipulating drive element 34 and a coupling device 38 for selectively coupling drive element 34 and actuator 36. Actuation system 32 is configured to utilize multiple drive elements 34, actuators 36, and coupling devices 38 along the length of the transport line 22. Additionally, actuation system 32 may include a control device (not shown). As described in more detail below, the control device can be configured to receive inputs from a user to operate actuation system 32 in accordance therewith.

[0027] As shown in FIGS. 2-3, transport line 22 includes neck guide 48. Neck guide 48 supports and directs containers 24 traveling along transport line 22. As presently preferred, an air plenum 50 is supported along transport line 22 above neck guide 48 and accommodates an air conveyance system for powering movement of containers 24 along transport line 22 as is well known in the art. A container shape envelope 52 is defined relative to transport line 22 and neck guide 48 which corresponds to various sizes and shapes

of containers 24 transferred along transport line 22. A system support or base 54 extends proximate transport line 22.

[0028] Referring to FIGS. 2-4, an exemplary guide assembly 30 is shown. Guide assembly 30 includes a pair of guide segments 60a, 60b, and a corresponding pair of support structures 62a, 62b. It is to be understood that guide assembly 30 may include multiple similar components, such as guide segments 60a, 60b and support structures 62a, 62b depending on the length and configuration of the transport line 22. As such, it is to be understood that descriptions of an individual component applies to corresponding similar components and that similar components can be collectively described. For example, guide segments 60a, 60b can be collectively described and referenced as guide segments 60.

[0029] With particular reference to FIG. 2, slidable support structure 62a includes a pair of base components 64a fixed to support frame 54. Base components 64a are relatively rigid and have apertures 66a formed therein. Support structure 62a further includes shafts 68a, and apertures 66a are configured to slidably support shafts 68a. Shafts 68a are fixed to guide segment 60a. In particular, shafts 68a include coupling portions 70a fixed on an end thereof and configured to engage with t-slots 72a formed in guide segment 60a. Support structure 62a can include two of apertures 66a, shafts 68a, and coupling portions 70a. In this manner, support structure 62 slidably support the guide assemblies 30.

[0030] Each of guide assemblies 30 further include a rotating member 80 and a pair of force translation assemblies 90a, 90b for converting the rotating movement of rotating member 80 into translation movement guide segments 60a, 60b. Force translation assembly 90a includes a vertically oriented support plate 91a which is fixed relative to guide segment 60a. Force translation assembly 90a further includes cam plate 92a fixed to support plate 91a by fastening assemblies 93a. Cam plate 92a is oriented parallel to rotating member 80. Pin 94a is secured to rotating member 80 and extends upward into slot 96 formed within cam plate 92a. As rotating member rotates pin 94a translates along slot 96a and translates force translation assembly 90a and, therefore, guide segment 60a accordingly.

[0031] As illustrated in FIGS. 2-4, rotating member 80 is in the form of a sprocket, and drive element 34 is in the form of a roller chain configured to meshingly engage the sprocket. Rotating member or sprocket 80 is rotatably supported on system base 54 by a bearing assembly 112. Additionally, an actuator 114 may be coupled to each of sprockets 80 to locate guides 60 in a home position as described in further detail below.

[0032] Chain displacement assemblies 120 are supported by system base 54 and include a bracket 122, an actuation device 124 and a biasing mechanism 120 which may take the form of an air cylinder. Chain displacement assemblies 120 operate to disengage drive element 34 from sprocket 80 as described in detail below.

[0033] In operation, the guide positioning system of container transport system 20 locates guide segments 60 to a predetermined position within container shape envelope 52. Initially, guide segments 60 are in a home position (FIG. 2) in which the guide segments are fully retracted. Actuation system 32 is then set to correspond with the home positions.

Accordingly, container transport system 20 is calibrated for operation. As described in further detail below, the guide positioning system of container transport system 20 can be calibrated and/or recalibrated automatically in response to an input from a user into the control device of actuation system 32.

[0034] To operate container transport system 20, predetermined positions of guide segments 60 can be input into the control device of actuation system 32. In response, actuation system 32 operates actuator 36 to move drive element 34. Sprockets 80 thereby rotate and cause pins 94 to move guide segments 60. In particular, pins 94 move along slots 96 of cam plates 92 and push guide segments 60 inwardly away from the home position to a predetermined position (FIG. 3). With particular reference to FIG. 4, slots 96 can have a non-linear shape in order to provide a consistent relation between the rotation of sprocket 80 and the displacement of guide segments 60. For example, when pins 94 are at the ends of slots 96, a larger component of the rotation of sprocket 80 is in the direction of movement of guide segments 60. Thus, with slots oriented toward this direction, only a part of the component is translated to guide segments 60. As the sprocket is further rotated, the shape of the slot is such that a greater rotation is necessary for the same amount of linear translation.

[0035] As described above, slots 96 of cam plates 92 can determine the relation between the rotation of sprocket 80 and the displacement of guide segments 60. Therefore, slot 96 can, in part, determine the accuracy of container transport system 20 in positioning guide segments 60. Furthermore, different applications of container transport system 20 may require different levels of accuracy. With cam plates 92 attached to support plates 91 with fastener assemblies 93, cam plates 92 can be readily removed and/or interchanged depending on the particular application of container transport system 20. As such, it should be understood that the cam plates and slots illustrated and described herein are exemplary and can vary according to the principles of the present disclosure.

[0036] The predetermined positions of guide segments 60 are within container shape envelope 52, as shown in FIG. 3 and guide segments 60 are maintained in one of the predetermined positions as required by the particular bottle sized and configuration. The container transport system 20 can be readily reconfigured by moving the guide segments to other positions for different sized bottles. Accordingly, container transport system 20 can accommodate a variety of container shapes and sizes.

[0037] During operation of container transport system 20, it may be desirable or necessary to recalibrate container transport system 20. According to the principles of the present disclosure, in order to recalibrate container transport system 20, coupling device 38 disengages drive element 34 and actuator 36, and each of guide assemblies 30 are, in turn, reset so as to locate guide segments 60 in the home positions.

[0038] In particular, with drive element 34 disengaged from actuator 36, drive element 34 has enough slack to be disengaged from sprocket 80. As presently preferred, each guide assembly 30 is disengaged in succession. Chain displacement assembly 120 moves drive element 34 away from sprocket 80. For example, as shown in FIG. 4 at "A", drive element 34 engages one of sprockets 80; while at "B", drive

element 34 is disengaged from the other of sprockets 80, and the guide assembly 30 at "B" can be reset. In particular, to disengage drive element 34 and sprocket 80, actuation mechanism 124 is operated to pull bracket 122 away from sprocket 80, which, therefore, moves drive element 34 away from sprocket 80. With drive element 34 and sprocket 80 disengaged, guide assembly 30 can be reset.

[0039] It is to be understood that guide assembly 30 can be reset in a variety of ways. For example, an operator of container transport line could manually move guide assemblies 30 to as to locate guide segments 60 in the home positions. Additionally, actuator 114 can be coupled to sprocket 80 to move guide assemblies 30 so as to locate guide segments 60 in the home position. With guide segments 60 in the home position, actuation mechanism 124 of chain displacement assembly 120 is disengaged, and biasing mechanism 126 moves drive element 34 back into engagement with sprocket 80. This process can be repeated in succession for each of guide assemblies 30.

[0040] With all of guide assemblies 30 reset, actuation system 32 can again be set in correspondence with the home positions of guide segments 60. As a result, container transport system 20 is recalibrated. The guide positioning system of container transport system 20 can be recalibrated automatically in response to an input from a user into the control device of actuation system 32. Moreover, the components of container transport system 20 can be re-engaged and again operated as described above.

[0041] Referring to FIGS. 5-9, container transport system 20 may employ an alternative guide assembly 30'. Guide assemblies 30' includes components that are substantially similar or the same as guide assembly 30, and, as such, these components are referred to by the same reference numerals (such as guide segments 60a, 60b). Otherwise, similar components are referred to with reference numerals such as 15, 15'.

[0042] Guide assembly 30' includes guide segments 60a, 60b, and a corresponding pair of support structures 62a', 62b'. As stated above with regard to guide assembly 30, it is to be understood that descriptions of individual components apply to corresponding similar components, that similar components are collectively described, and that a collective description of such components equally applies to each individual component.

[0043] As shown in FIG. 9, support structure 62a' includes a base component 64a' fixed to system base 54. Base component 64a' is a relatively rigid component having apertures 66a formed therein as described above with regard to base components 64a. Support structure 62a' includes shafts 68a, which have coupling portions 70a engaged with t-slots 72a as described above. Support structure 62a' further includes biasing devices 174a' fixed to base component 64a' within apertures 66a' and attached to shafts 68a opposite coupling portions 70a. Biasing devices 174a' locate guide segment 60a' in a home position. As presently preferred, biasing devices 174a' may be in the form of springs; however other devices which generate a retracting force for urging the guide assembly 30' in to a home position may be utilized. Support structure 62a' further includes two of apertures 66a, shafts 68a, coupling portions 70a, and biasing devices 174a'.

[0044] Referring again to FIGS. 5-9, each of guide assemblies 30' include a rotating member 80' and a force transla-

tion assembly 90' having a plate component 92' and pins 94a', 94b'. Pins 94a', 94b' are configured to interact with guide segments 60 and support structures 62'. Brackets 96' on guide segments 60 receive pins 94', as shown in FIGS. 3 and 5.

[0045] Force translation assemblies 90' are supported on rotating member 80' for co-rotation therewith. Each of rotating members 80' can be rotatably coupled to system base 54 by a bearing assembly 112. Drive element 34' is engaged with each of rotating members 80'. Coupling devices 220' is supported by system base 54 proximate rotating members 80' and is operable for selectively decoupling force translation assemblies 90' from rotating members 80'. As shown in FIGS. 2 and 4, rotating members 110' can be in the form of pulleys, and coupling devices 220' can be in the form of air cylinders. Furthermore, as also illustrated in the Figures, drive element 34' may be in the form of a cable with sufficient tensile strength to prevent stretching and the length of the conveyor system.

[0046] In operation, the guide positioning system of container transport system 20 locates guide segments 60 to a predetermined position within container shape envelope 52. Initially, guide segments 60 and actuation system 32 are decoupled from one another. In particular, coupling device 38 is disengaged so that drive element 34' and actuator 36 are not coupled to one another. As force translation assemblies 90' are coupled to guide segments 60' via pins 94', coupling devices 220' are operated to decouple force translation assemblies 90' from rotating members 80'. Biasing devices 174' urge guide segments 60 to a home position, as shown in FIGS. 5 and 6, and force translation assemblies 90' rotate correspondingly. Biasing devices 174' can take a variety of forms, including but not limited to springs, air cylinders, and weight systems. In this manner, biasing devices 174' automatically locate guide segments 60 in the home positions when force translation assemblies 90' are decoupled from rotating members 80'. With guide segments 60 in home positions, actuation system 32 is set to correspond with the home positions and container transport system 20 is calibrated for operation. The guide positioning system of container transport system 20 may be configured to be calibrated automatically in response to an input from a user into the control device of actuation system 32.

[0047] With container transport system 20 calibrated for operation, coupling device 38 couples drive element 34' to actuator 36, and coupling devices 220' couples force translation assemblies 90' for rotation with rotating members 80'. Next, a predetermined position of guide segments 60 is input into the control device of actuation system 32. In response, actuation system 32 operates actuator 36 to move drive element 34'. Force translation assemblies 90' and rotating members 80' thereby rotate causing pins 94' to move guide segments 60. In particular, pins 94' move along brackets 96' and push guide segments 60 inwardly away from the home position to a predetermined position within container shape envelope 52, as shown in FIGS. 7-8. Guide segments 60 are maintained in the predetermined position for a given bottle being transported in container transport system 20. The system may be adjusted by further providing an input to re-locate the guide segments 60 as needed. Accordingly, container transport system 20 can accommodate a variety of container shapes and sizes.

[0048] As explained above, during operation of container transport system 20, it may be desirable or necessary to recalibrate container transport system 20. According to the principles of the present disclosure, in order to recalibrate container transport system 20, coupling device 38 uncouples drive element 34' and actuator 36, and coupling device 220' uncouples force translation assemblies 90' and rotating members 80'. Therefore, Biasing devices 174' re-locate guide segments 60 in the home position. Actuation system 32 can again be set in correspondence with the home position of guide segments 60. As a result, container transport system 20 is recalibrated. The guide positioning system of container transport system 20 can be configured to be recalibrated automatically in response to an input from a user into the control device of actuation system 32. The components of container transport system 20 are then re-engaged and again operated as described above.

[0049] Referring now to FIG. 10, a curved section 230' of transport line 22 is shown. By using drive element 34' that is flexible (other than in tension), container transport system 20 is readily adaptable for use with a transport line 22 that has a portion such as a wire cable or roller chain, with a non-linear path which may rise or fall in elevation as well as turn in various directions. Guide assemblies 30' are coupled along portion 230'. Guide segments 60 of guide assemblies 30' have a curved shape corresponding to portion 230'. Drive element 34' extends between guide assemblies 30' along portion 230'. The length of guide segments 60 required to extend continuously along portion 230' varies depending on the position of guide segments 60. Accordingly, guide segments 60' along portion 230' include extensions 240'. Each of extensions 240' are attached beneath one of guide segments 60 proximate an end thereof. When guide segments 60 are positioned so as to have gaps between the ends thereof, extensions 240' provide a surface for containers 24 to engage with when traveling across the gap.

[0050] The present disclosure may vary in many ways. A preferred configuration of the container transport system 20 of the present disclosure includes one guide assembly for approximately every five feet of transport line 22. Additionally, a preferred configuration would include multiple actuators 36, the number depending on the length of transport line 22. As presently preferred, a single actuator 36 can be used to separate one hundred feet of transport line 22. Thus, in such a configuration, one drive element 34 and one actuator 36 could operate up to forty guide assemblies 30. Actuators 36 are included which provide a desired accuracy corresponding to the size of container shape envelopes. Suitable actuators 36 may include fluidic muscles, pneumatic motors, hydraulic and pneumatic cylinders stepper motors, servo motors, stepped air cylinders, and servo air cylinders, but it is anticipated that others may be used. Additionally, the control device of actuation system 32 can take a variety of forms well known in the art.

[0051] The components of a container transport system according to the principles of the present disclosure can be made of a variety of materials. In a typical embodiment of the present disclosure, the drive elements are flexible. As such, suitable materials for both include roller chains, wire rope and steel cables. It is anticipated that other materials can be used for the drive elements. The guide segments can be shaped to correspond to the path of transport line 22, as shown in FIG. 7, and must be sufficiently rigid to maintain

shape while interacting with containers **24** traveling along transport line **22**. By way of non-limiting example, the guide segments can include ultrahigh molecular weight (UHMW) polyethylene. Furthermore, the base components and shafts of the support structures can also include UHMW polyethylene. Alternatively, the guide segments may be an extruded metal component which employs a UHMW guide cover to prevent wear on the guide segment.

[0052] According to the principles of the present disclosure, transport line **22** may take a variety of configurations and paths. Likewise containers **24** can have a variety of shapes and sizes and container shape envelope **52**. As such, it is to be understood that the guide segments and actuation systems **32** can be coupled in a variety of ways.

[0053] This disclosure is exemplary in nature and, as such, variations which do not depart from the gist of this disclosure are and intended to be within the scope of this disclosure. Such variations are not to be regarded as a departure from the spirit and scope of this disclosure.

What is claimed is:

1. A guide positioning system for a container transport line, the guide positioning system comprising:

a guide assembly including a first guide segment and a second guide segment extending opposite each other along a transport line, a rotating member disposed proximate the transport line, and a force translation assembly coupled between said guide segments and said rotating member for displacing said guide segments in correspondence with a rotation of said rotating member; and

an actuation system including a drive element extending along the transport line and selectively engages said rotating member, an actuator selectively coupled to said drive element,

wherein said actuation system selectively operates said drive element to rotate said rotating member and move said guide segments from a home position to a predetermined position away from said home positions.

2. The guide positioning system of claim 1, wherein said force translation assembly includes first and second pins secured to said rotating member, a first cam plate secured relative to said first guide segment, and a second cam plate secured relative to said second guide segment, said first and second cam plates each having a slot formed therein for receiving said first and second pins, respectively.

3. The guide positioning system of claim 2, wherein said slots have a non-linear shape.

4. The guide positioning system of claim 2, wherein said force translation assembly further includes first and second support plates coupled between said first and second guide segments and said first and second cam plates, respectively, said first and second cam plates being removably attached to said first and second support plates.

5. The guide positioning system of claim 1, wherein said rotating member is a sprocket, and said drive element is a roller chain configured to meshingly engage with said sprocket.

6. The guide positioning system of claim 5, further comprising a chain displacement assembly for selectively engaging and disengaging said sprocket and said chain.

7. The guide positioning system of claim 1, wherein said rotating member is a pulley, and said force translation assembly includes a relatively rigid plate disposed on said pulley, a first pin extending from said plate and engaging with said first guide segment, and a second pin extending from said plate and engaging with said second guide segment.

8. The guide positioning system of claim 7, wherein each of said guide segments includes a bracket attached thereto and receiving said pins.

9. The guide positioning system of claim 1, further comprising a plurality of guide assemblies, each of said plurality of guide assemblies interconnected to said actuation system.

10. The guide positioning system of claim 1, wherein said actuator coupling device is an air cylinder.

11. A container transport system comprising:

an infeed machine for collecting a plurality of containers;  
a discharge machine for receiving said plurality of containers;

a container transport line extending between said infeed machine and said discharge machine;

a plurality of guide assemblies supporting guides along said transport line; and

an actuation system selectively coupled to each of said plurality of guide assemblies and operable between a calibration state wherein said guide assemblies and said actuation system are decoupled to position said guides in a home position, and an operation state wherein said actuation system selectively operates said guide assemblies to move said guides to a predetermined position away from said home position.

12. The container transport system of claim 11, wherein, when said guide assemblies and said actuation system are uncoupled, said guides are automatically located in said home positions.

13. The container transport system of claim 12, wherein said guide assemblies further include an actuator for automatically locating said guides in said home position.

14. The container transport system of claim 12, wherein said guide assemblies include biasing devices coupled to said guides for automatically locating said guides in said home position.

15. The container transport system of claim 11, wherein said actuation system includes a drive element extending along said transport line and engaging a plurality of said guide assemblies, an actuator selectively coupled to said drive element for selectively operating said drive element.

16. A method positioning a guide for a container packaging system, the method comprising:

locating a guide in a home position;

setting an actuation system to correspond with said home position of said guide;

coupling said guide and said actuation system; and

operating said actuation system to move said guide to a predetermined position away from said home position.

17. The method of claim 16, further comprising:

uncoupling said guide and said actuation system after operating said actuation system;

re-locating said guide in said home position after uncoupling said guide and said actuation system; and

resetting said actuation system to correspond with said home position of said guide.

**18.** The method of claim 17, wherein uncoupling said guide and said actuation system, locating said guide after decoupling, and resetting said actuation system are performed in response to an input to a control device of said actuation system.

**19.** The method of claim 16, wherein operating said actuation system to move said guide comprises translating a rotational motion powered by said actuation system into a linear displacement of said guide.

**20.** The method of claim 19, wherein translating said rotational motion powered by said actuation system comprises providing a substantially constant rate of said linear displacement of said guide.

**21.** The method of claim 16, wherein biasing said guide and setting said actuation system are performed in response to an input to a control device of said actuation system.

**22.** The method of claim 16, wherein coupling said guide and said actuation system comprises operating an air cylinder to engage a drive element with said actuation system.

**23.** The method of claim 16, wherein locating said guide to said home position comprises operating an actuator coupled to said guide.

**24.** The method of claim 16, wherein locating said guide to said home position comprises manually moving said guide.

**25.** The method of claim 16, wherein locating said guide to said home position comprises coupling said guide to the container packaging system with a spring assembly.

\* \* \* \* \*