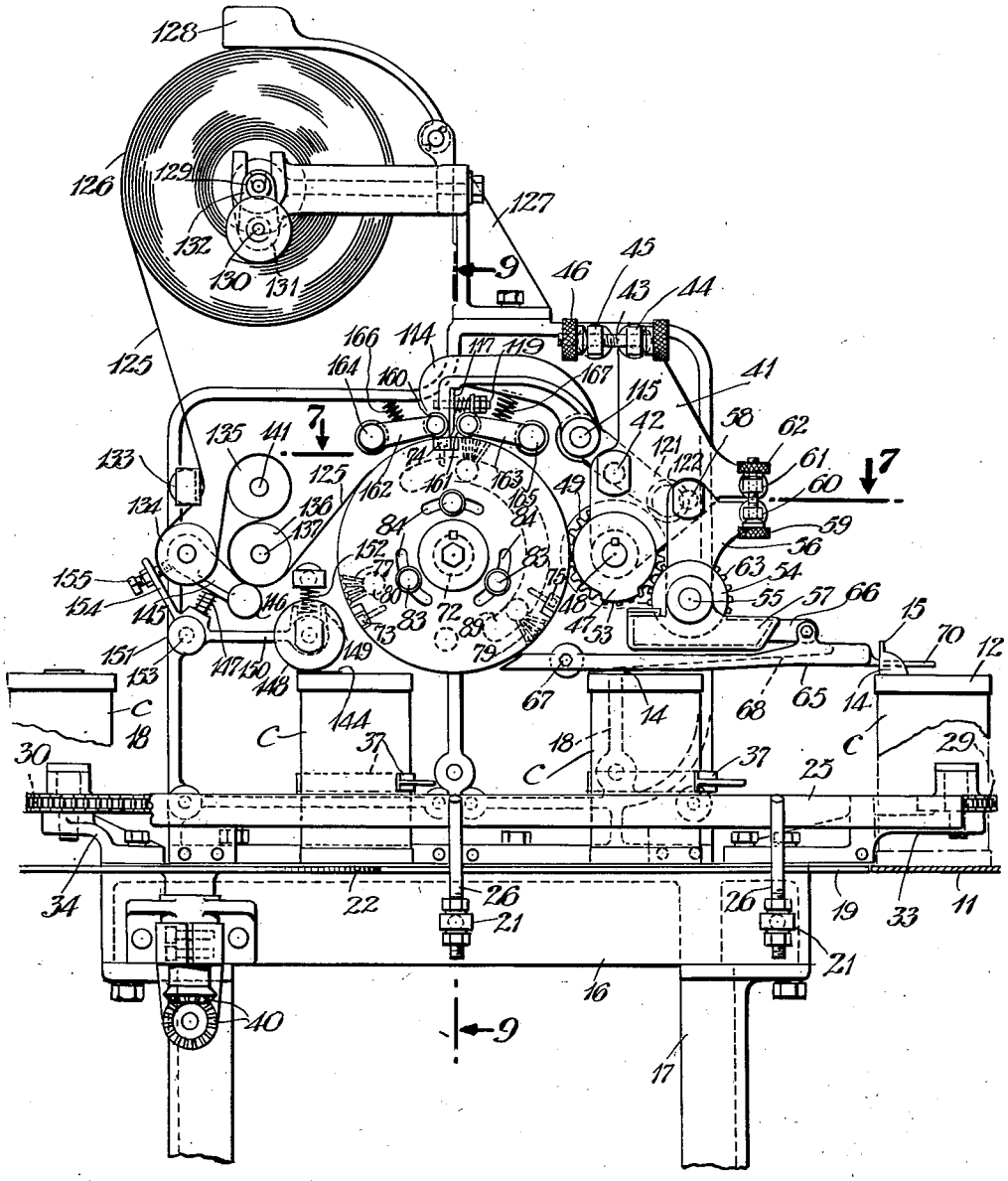
Oct. 4, 1949. P. E. FISCHER ET AL 2,483,458

SPOUT SEALING MACHINE

Filed July 17, 1945 6 Sheets-Sheet 1

Fig. 1.



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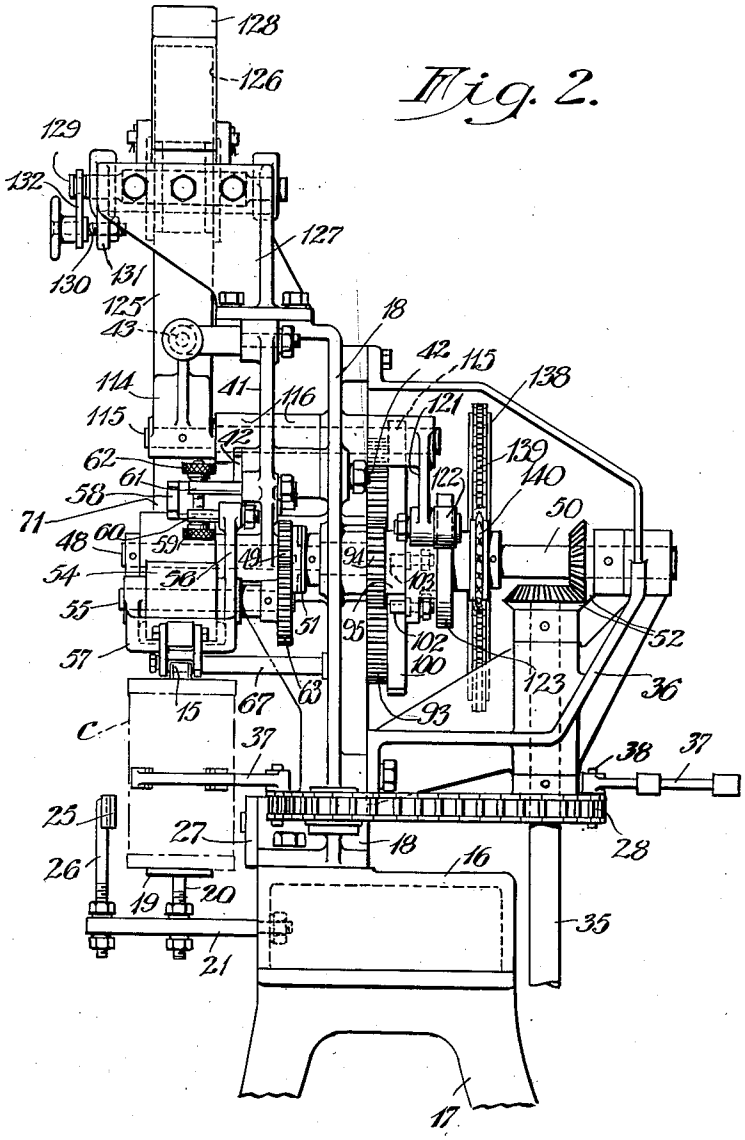
SPOUT SEALING MACHINE

Filed July 17, 1945 6 Sheets-Sheet 2

Fig. 2.



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SPOUT SEALING MACHINE

Filed July 17, 1945

6 Sheets-Sheet 3

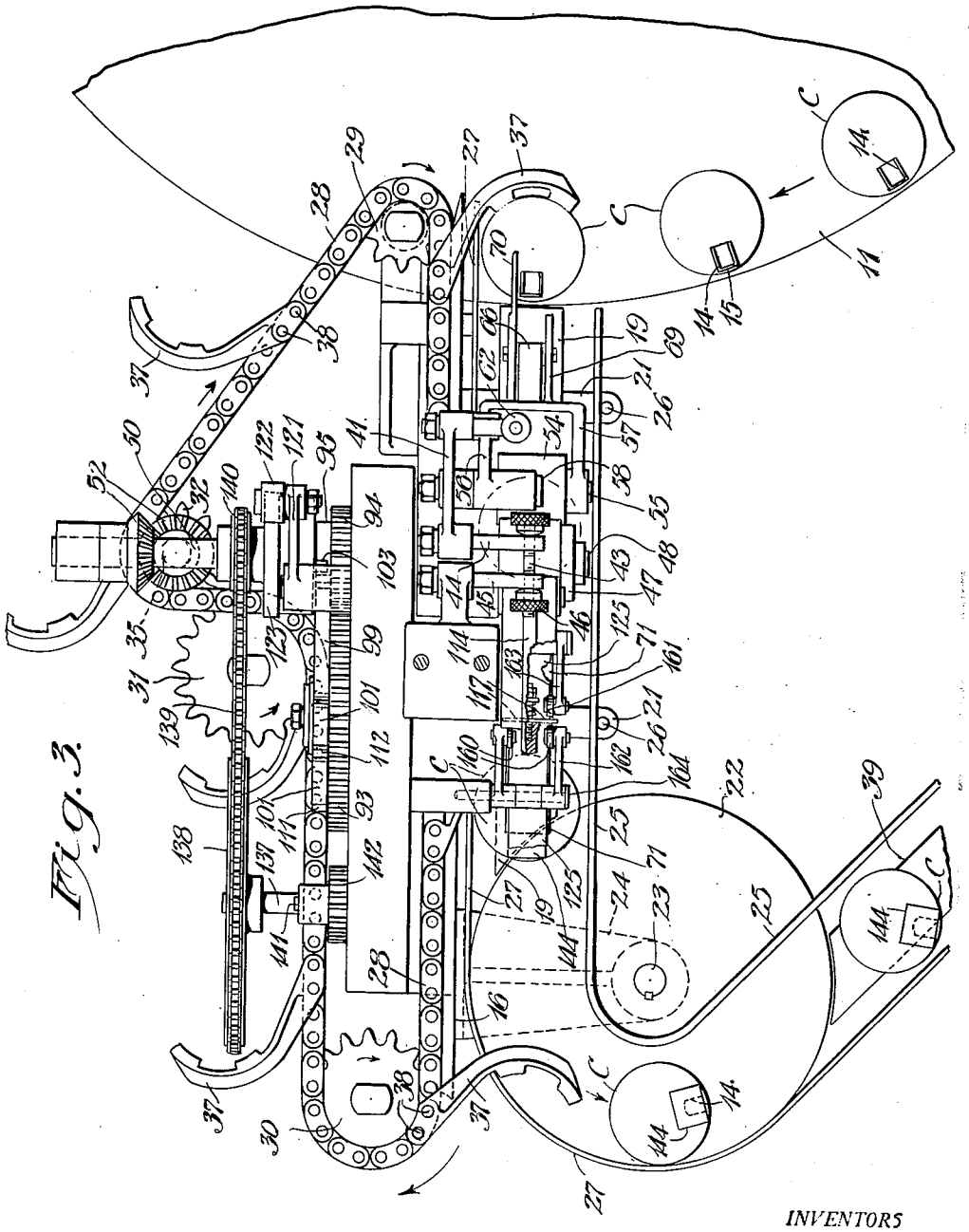

Fig. 3.

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SPOUT SEALING MACHINE

Filed July 17, 1945

6 Sheets-Sheet 4

Fig. 4.

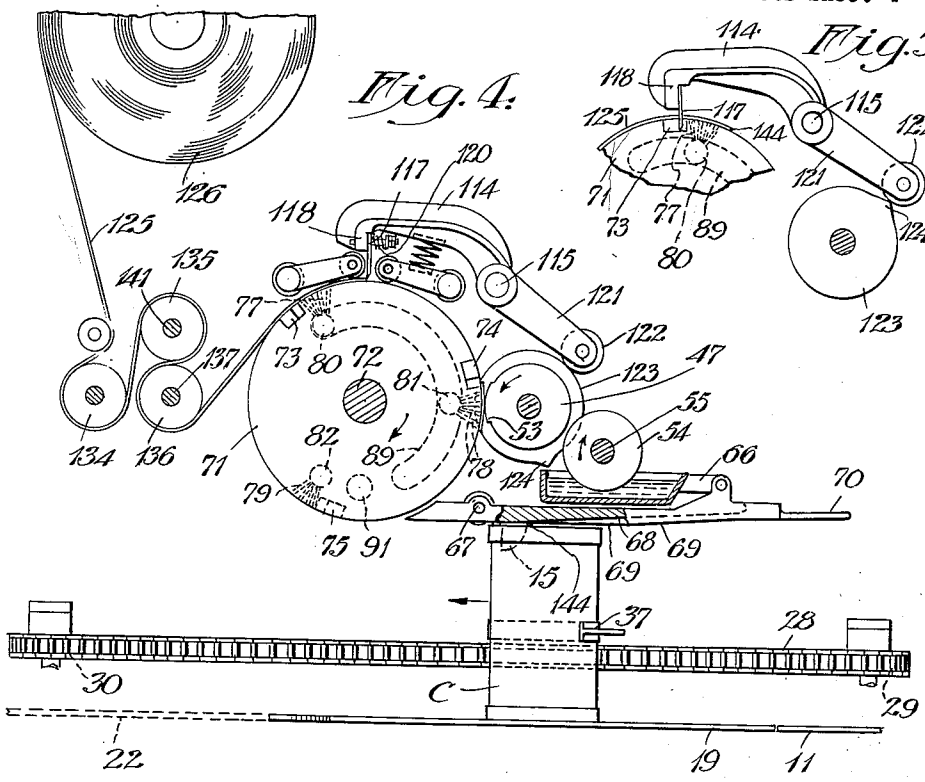
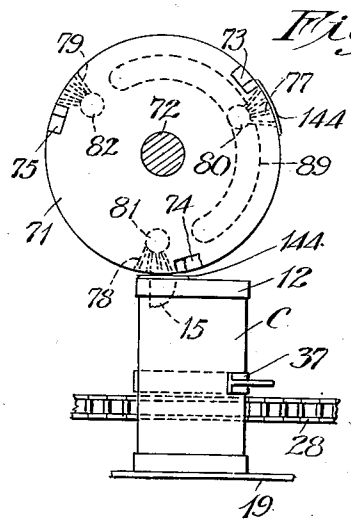


Fig. 5.

Fig. 6.



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SPOUT SEALING MACHINE

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Fig. 7.

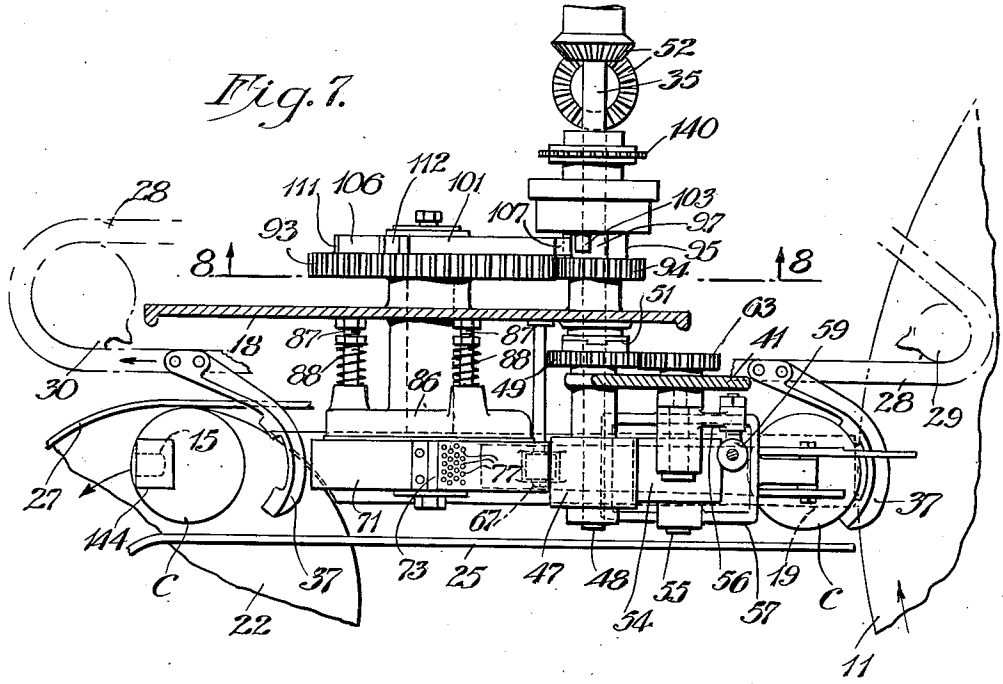
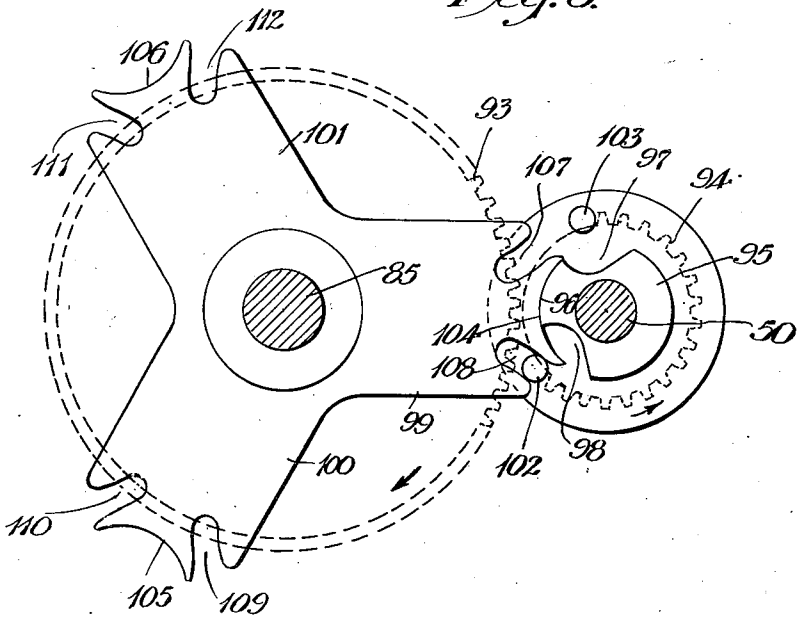


Fig. 8.



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SPOUT SEALING MACHINE

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Fig. 10.

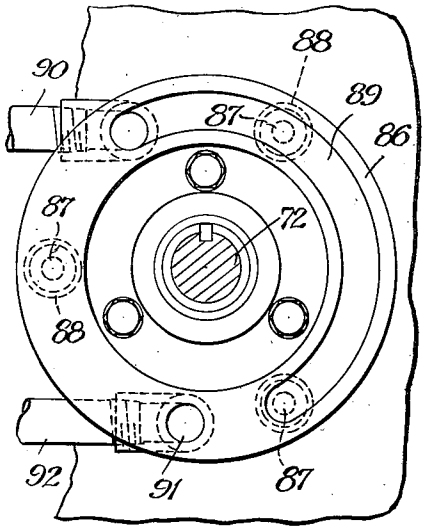

Fig. 9.

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Patented Oct. 4, 1949 2,483,458

UNITED STATES PATENT OFFICE

2,483,458

SPOUT SEALING MACHINE

Paul E. Fischer, Portland, and Edgar Ardell, Middletown, Conn., assignors, by mesne assignments, to Hartford-Empire Company, Hartford, Conn., a corporation of Delaware

Application July 17, 1945, Serial No. 605,540

8 Claims. (Cl. 216—29)

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This invention relates to a machine for closing containers and more particularly concerns apparatus of this nature for closing the spouts or other closures of containers for salt or like granular materials and sealing such spouts in closed position.

Salt and other dry granular or pourable products are customarily packaged in cylindrical containers or cans, usually formed of cardboard, that are provided with pouring spouts hingedly secured to the top of the container and movable in an opening in the top from open to closed positions. In one well known construction, the spout forms a closure which substantially closes the opening in the container top when the spout is moved to its closed position. In the packaging of such materials, the containers are filled with the spouts open and it is thereafter necessary to close the spouts and to seal them against accidental opening and leakage while the container is in transit. This sealing is preferably accomplished by adhesively securing a small sheet of thin paper over the closed spout and the adjacent portions of the container top which surround the spout and the opening through which it moves. The paper employed is relatively thin and fragile and the difficulty of separating and applying individual sealing sheets of such paper has heretofore been a source of difficulty in machines for applying such seals as well as small paper labels to containers.

It is the object of the present invention to provide an improved machine for closing the spouts of containers and sealing the spouts in closed position as well as sealing the opening through which the spouts move. The invention further contemplates improved apparatus for cutting successive sheets, which may comprise sealing sheets or labels, or sealing sheets carrying printed label matter, from a continuous web or sheet material, spacing the cut sheets on a sheet applying element, such as a drum, applying adhesive to the spaced sheets and successively applying them to successive containers. Further objects of the invention include improved mechanism for operating the sheet cutting means in timed relation with the web feeding and sheet separating operations, and improved means for permitting relative adjustment of the sheet cutting and applying means, the adhesive applying means and the container spout closing means, in order to accommodate the apparatus to changes in size of the material employed and changes in size and shape of the containers. The invention further

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contemplates the provision of apparatus of the character described which is simple and rugged in construction and which is capable of operating continuously without attention or servicing.

Various additional objects, advantages and characteristic features of the invention will become apparent from the following description of a typical embodiment thereof.

In describing the invention in detail, reference will be made to the accompanying drawings in which a typical embodiment thereof is illustrated. In the drawings:

Fig. 1 is a front elevation of a machine embodying the invention;

Fig. 2 is an end elevation of the machine shown in Fig. 1;

Fig. 3 is a plan view of the machine with certain parts omitted and others broken away to show the construction;

Fig. 4 is a front elevation of the web cutting and adhesive applying mechanism together with the spout closing mechanism of the machine;

Fig. 5 is a partial elevation showing the operation of the web cutting mechanism in severing a sheet from a continuous web;

Fig. 6 is an elevation of the sealing sheet applying mechanism at the point in its operation where a sheet is being applied to a container;

Fig. 7 is a sectional plan view taken along the line 7—7 of Fig. 1 and viewed in the direction of the arrows;

Fig. 8 is a view taken along the line 8—8 of Fig. 7 and viewed in the direction of the arrows;

Fig. 9 is a sectional view taken along the line 9—9 of Fig. 1 and viewed in the direction of the arrows; and

Fig. 10 is a view taken along the line 10—10 of Fig. 9 and viewed in the direction of the arrows.

Referring to the drawings and particularly to Figs. 1, 2 and 3, the machine operates in conjunction with the horizontal turntable 11 of a container filling machine in which a plurality of containers, illustrated as conventional salt cans C, are filled. The containers C as shown in Figs. 1, 3, 4 and 5 are cylindrical and are provided with tops 12 having slotted openings 13 therein in which a spout 14 is hingedly secured to move between an open position, as shown at the right in Fig. 1, and a closed position as shown in Fig. 5. In the closed position, the lip portion 15 of the spout substantially closes the container top opening 13. A succession of such containers C are disposed at regular intervals adjacent the periphery of the turntable 11, each with its spout 14

open and disposed adjacent the edge of the turntable and with the spout extending radially thereof as shown in Fig. 3.

The container closing and sealing mechanism includes a bed 16 carried on suitable legs 17 and having an upwardly extending frame member 18 integral therewith and suitably secured thereto. A conveyor platform 19 is adjustably secured to and runs along the front face of the bed 16, being mounted on posts 20 adjustably secured to horizontal bracket arms 21 fixed to the bed as shown in Fig. 2. The platform 19 is so disposed that its upper surface is aligned with the upper surface of the turntable 11 and its entering end is close to the periphery of this turntable as shown in Figs. 1 and 3. The other end of the platform 19 is arcuately curved and disposed closely adjacent the periphery of a container delivery turntable 22 carried by a shaft 23 journaled in a bracket 24 fixed to the bed 16. An outer guide bar 25 is disposed above and outside the conveyor platform 19 and is supported on posts 26 adjustably secured to the bracket arms 21. A cooperating inner guide bar 27 is suitably fixed to the frame 18 along the opposite side of the platform 19 as shown in Fig. 2, and this guide bar extends around and above the periphery of the delivery turntable 22 and forms the outer guide of a discharge conveyor 39 as shown in Fig. 3. Similarly, the outer guide bar 25 continues above the surface of the turntable 22 and forms the other guide bar of the discharge conveyor 39.

The containers C are successively removed from the turntable 11 and continuously propelled along the platform 19 by suitable conveying mechanism. In the disclosed embodiment, an endless chain 28 is employed for this purpose. The chain 28 is carried by the successive idler sprockets 29, 30 and 31 and the driving sprocket 32. The sprockets 29 and 30 are so disposed that the span of the chain between them lies parallel to and adjacent the conveyor platform 19. The sprockets 29 and 30 are carried by stub shafts suitably journaled in brackets 33 and 34 fixed to opposite ends of the bed 16 (Fig. 1). The sprocket 31 is suitably rotatably supported at the rear of the bed 16 and serves to guide the chain 28 over a considerable arc of the driving sprocket 32. The sprocket 32 is fixed to the main drive shaft 35 which is journaled in a bracket 36 fixed to the rearward face of the frame 18, as best shown in Fig. 2. The shaft 35 is suitably driven at uniform speed by a motor or any other source of power.

A plurality of flight bars 37 are respectively secured to the chain 28 at equally spaced points thereon. The bars 37 have arcuately curved hook shaped outer ends formed to embrace the cylindrical surfaces of the containers C. The bars may be fixed to links of the chain 28 by suitable means such as pins 38 (Figs. 2 and 3.)

The chain 28 is driven at a linear velocity which is timed in relation to the rate of rotation of the turntable 11 so that as each successive container C moves in line with the conveyor platform 19, a flight bar 37 engages it and moves it onto and along the platform. As each successive container leaves the end of the platform 19 it is carried out of its propelling flight bar 37 and onto the discharge conveyor 39 by the rapidly rotating turntable 22. The turntable 22 is driven by any suitable means through the bevel gears 40 at a speed such that the linear velocity of the portion thereof on which the containers C are carried is considerably greater than that of the chain 28 and its flight bars 37.

A frame plate 41 is pivotally secured to the frame 18 by a stud 42 (Figs. 1 and 2). The angular position of the plate 41 relative to the frame 18 is adjustable by means of a knurled headed bolt 43 passing through openings in two posts 44 and 45 respectively fixed to the plate 41 and the frame 18. The bolt 43 is provided with a knurled nut 46, and adjustment thereof stops the plate 41 at various angular positions while leaving it free to move a limited distance counterclockwise about the stud 42 as viewed in Fig. 1.

An adhesive applying drum 47 is carried on a shaft 48 journaled in the plate 41. The shaft 48 carries a pinion 49 and is connected with a drive shaft 50 through a suitable flexible connection 51 of known construction which permits limited relative movement between the axes of the connected shafts while transmitting power from the shaft 50 to the shaft 48. The shaft 50 is journaled in the frame 18 and in the bracket 36, as shown in Figs. 2 and 7, and is driven from the shaft 35 through the bevel gears 52. The adhesive applying drum 47 has a raised sector 53 on its periphery for receiving adhesive and applying it to a cut sheet as hereinafter explained.

A drum 54 carried on a shaft 55 journaled in a movable frame 56 moves in an adhesive trough 57 integral with the frame 56 and transfers adhesive therefrom to the raised sector 53 of the drum 47. The frame 56 is pivotally connected to the plate 41 by a stud 58 (Figs. 1 and 3). A knurled headed bolt 59 passing through openings in the posts 60 and 61 respectively fixed to the frame 56 and the plate 41 permits adjustment of the relative positions of the drum 56 and the adhesive applying drum 47. A knurled nut 62 engages the bolt 59. The drum 54 is driven through a pinion 63 fixed to the shaft 55 and meshing with the pinion 49 on the shaft 48.

A spout closing cam element 65 is disposed centrally about the conveyor platform 19 and is pivotally connected to a bracket 66 on the leading end of the trough 57 as shown in Figs. 1 and 4. The cam element is also pivotally connected to the frame 18 by a stud 67. As shown in Figs. 1 and 4, the cam surface 68 of the element 65 slopes downwardly in the direction of movement of the conveyor chain 28 to a point where it will completely close the spout 14 of a container C moving beneath it. The element 65 has depending side walls 69 on either side of the cam surface 68, which walls extend beyond the leading end of this cam surface and guide the spout 14 to and along the surface. A guide finger 70 protrudes from the leading end of the element 65 to properly guide the container spout into the space between the side walls 69 as will be apparent from Figs. 3 and 4.

Referring now to the mechanism for cutting, separating and applying sealing sheets or labels to the containers, the primary element of this apparatus is a drum 71 carried by a shaft 72 journaled in a boss on a frame 18. The drum may be adjustably fixed to the shaft by means of bolts 83 passing through an arcuate slot 84 in the drum and engaging a flanged collar 85 keyed to the shaft 72 as shown in Figs. 1 and 9. The cylindrical surface of the drum 71 is centrally disposed above the conveyor platform 19 and is spaced therefrom by a distance substantially equal to the height of the containers C being

closed (Figs. 1, 4 and 5). The drum 71 is provided with three equally spaced severing blocks 73, 74 and 75, each extending transversely across its cylindrical surface and formed of suitable yielding material for receiving the edge of a web severing knife which cuts the sheet from a web on the drum surface as hereinafter explained.

Immediately beyond the respective blocks 73, 74 and 75, a plurality of sets of openings 77, 78 and 79 are formed in the drum surface and these respectively communicate with transverse passages 80, 81 and 82 running to the rearward end face of the drum. Suitable means are provided for successively applying suction and pressure to the sets of openings 77, 78 and 79 as the drum rotates. As best shown in Figs. 9 and 10, a circular manifold 86 slidingly engages the rearward end face of the drum 71 and is preferably ground to fit tightly against this face. The manifold 86 is supported on three studs 87 fixed to the frame 18 and is resiliently pressed against the drum face by the springs 88 on these studs. An arcuate suction passage 89 is formed in the drum face engaging surface of the manifold 86 in line with the drum passages 80, 81 and 82, and the passage 89 extends around approximately half the circumference of the drum from a point somewhat in advance of the uppermost point of the drum's rotation to a point equally in advance of its lowermost point of rotation, as shown in Figs. 1, 4, 5 and 10. A pipe 90 communicating with the passage 80 leads to a suitable vacuum pump or suction line, not shown. Adjacent and slightly beyond the lowermost point of rotation of the drum 71, a circular opening 91 is provided through the manifold 86 in line with the drum passages 80, 81 and 82. The opening 91 is supplied with air under pressure through a pipe 92.

With the described arrangement, as the drum 71 rotates clockwise as shown in Figs. 1, 4 and 5, suction is applied to each successive set of drum periphery openings 77, 79 and 78 as each such set moves along the arcuate manifold passage 89, and pressure is applied to each such set as it moves to the point where its transverse passage 80, 82 or 81 overlaps the manifold pressure opening 91.

The drum 71 is driven intermittently through a gear 93 fixed to the drum shaft 85, and a stop mechanism including a pinion 94 with interrupted teeth thereon fixed to the shaft 50. Stop mechanism of the type here employed is disclosed in the pending patent application of Paul E. Fischer and Edgar Ardell, Serial No. 573,802, filed January 20, 1945. As best shown in Fig. 8, the pinion 94 has fixed thereto an interrupted disc 95 having an arcuate surface 96 between two recesses 97 and 98. A spider comprising three arms 99, 100 and 101 is fixed to the drum shaft 85 adjacent the gear 93 and in line with the disc 95. Two pins 102 and 103 protrude from the pinion 94 at the points where the teeth thereon are discontinued. The ends of the arms 99, 100 and 101 are provided with concave arcuate faces 104, 105 and 106 which are disposed to be respectively engaged by the arcuate surface 96 of the disc 95 when the spider and the drum shaft are stopped. Pin receiving slots 107 and 108 are formed in the arm 99 on either side of the arcuate surface 104, and similar slots 109—110 and 111—112 are respectively provided adjacent opposite sides of the surfaces 105 and 106 of the arms 100 and 101.

When the pinion 94 has turned the gear 93 to

a point where the pin teeth are interrupted, the pinion 102 enters the slot 108 in one of the arms 99 and decelerates the gear, whereupon the disc surface 96 engages the arm surface 104 and holds the gear 93 stationary while the pinion 94 turns through a predetermined angle, whereupon the other pin 103 enters the slot 107 and accelerates the arm 99, the arcuate surface 104 passing into the recess 97 and the pinion teeth again engaging the gear teeth to continue rotation of the gear 93 and the drum shaft 85.

The stop mechanism is so arranged that the drum 71 is momentarily stopped three times during each complete revolution, the stops being made when each of the three severing blocks 93, 94 and 95 is at the uppermost or severing position, as shown in Figs. 1 and 6.

A knife arm 114 is fixed to a shaft 115 journaled in a boss 116 on the frame 18. The arm 114 carries a knife blade 117 secured against the knife arm head 118 by a stud 119 carrying a spring 120 that presses the blade 117 against the knife arm head and permits limited movement of the blade in the direction of rotation of the drum 71. The blade 117 extends across the peripheral surface of the drum 71 and may be provided with an inclined cutting edge as shown in Fig. 9. An arm 121 carrying a cam engaging roller 122 is fixed to the knife arm shaft 115 adjacent its rearward end. The roller 122 engages a cam disc 123 fixed to the shaft 50 to which the stop mechanism pinion 94 is secured. The disc 123 has a high point 124 (Figs. 1, 4 and 6) which lifts the arm 121 and so presses the edge of the knife blade 117 into one of the drum carried severing blocks 73, 74 or 75 each time the drum is stopped by the above described stopping mechanism. The arrangement is such that the continued rotation of the pinion 94 while the gear 93 is held stationary turns the high point 124 of the cam disc 123 past the roller 122 and so actuates the knife blade 117 while the drum 71 is held stationary by the stop mechanism with one of the severing blocks 73, 74 or 75 in line with the knife blade 117.

A web 125 of paper or similar material from which the container sealing sheets or labels are formed is supplied from a roll 126 carried by a bracket 127 fixed to the frame 18. A tension drag 128 pivotally secured to the bracket 127 engages the surface of the roll 126 as shown in Fig. 1. The spindle 129 on which the roll 126 is carried is axially adjustable in the bracket 127 by means of a screw 130 threadedly engaging a block 131 fixed to the bracket 127 and moving the spindle 129 through a link 132 (Fig. 2). This arrangement permits the web 125 to be properly aligned with the mechanism to which it is fed.

As shown in Fig. 1, the web 125 passes to the right of a guide roller 133, then to the left of an idler roller 134, and then upwardly over a feed roller 135 and down and under a second feed roller 136, finally moving to the cylindrical surface of the drum 71. The rollers 133 and 134 are suitably rotatably supported on shafts carried by the frame 18. The feed rollers 135 and 136 are driven in opposite directions as shown in Fig. 1. The shaft 137 to which the lower feed roller 136 is secured is journaled in the frame 18 and carries a sprocket 138 driven through a chain 139 from a sprocket 140 fixed to the shaft 50 (Fig. 2). The shaft 141 of the upper feed roller 135 carries a pinion 142 meshing with a like pinion on the shaft 137.

An arm 145 journaled on the shaft boss of the

idler roller 134 carries at its free end a roller 146 which is pressed against the web 125 on the lower feed roller 136 by a spring 147 engaging the arm 145. A label or sealing sheet pressing roller 148 is rotatably carried in a bracket 149 connected to the end of one arm 150 of a bell crank lever 151 through a spring 152. The bell crank lever 151 is pivotally connected to the frame 18 by a stud 153. The other arm 154 of the bell crank lever carries a set screw 155 which engages a suitable stop on the machine frame 18 to limit the downward movement of the roller carrying arm 150. The roller 148 is in line with the central portions of the containers C which are moved thereunder by the above described conveying mechanism, and the roller serves to firmly press a sealing sheet or label 144 into adhesive engagement with the container top 12 and the closed pouring spout 14 thereon.

The relative size of the sprockets 138 and 140 is so related to the peripheral dimensions of the feed rollers 135 and 136 and to the average rate of rotation of the drum 71 and its circumference that during each complete revolution of the drum 71, a sufficient length of the web 125 is fed by the feed rollers to form three sealing sheets or labels 144. The dimensions of each such sealing sheet 144 lengthwise of the web 126 is considerably less than the distance between successive severing blocks 73, 74 and 75 on the drum 71 (Figs. 4, 5 and 6).

In the operation of the machine, the conveying mechanism removes successive containers C from the turntable 11 and propels them along the conveyor platform 19 whereupon the cam surface 68 of the cam element 65 closes the pouring spout 140 of each successive container. Each container then moves along beneath the cylindrical surface of the drum 71. As the drum 71 turns from the position indicated in Fig. 1, at which it is stopped and a sealing sheet or a label 144 is cut from the web 125 thereon, the drum is rapidly accelerated to a peripheral velocity considerably exceeding the speed at which the web 125 is fed by the feed rollers 135 and 136. During the initial portion of such drum movement, a length of the web 125 is carried along on the drum surface beyond the uppermost point thereof for the reason that previous to this movement a small amount of slack has developed in the web 125 between the feed roller 136 and the drum 71, as will be explained. Thereafter, as the drum turns at a peripheral velocity exceeding the rate of feed of the web, the web slips on the drum surface until the drum has turned to the next station represented by the severing block 73. When this severing block has reached the uppermost point on the drum, the drum is stopped by the stop mechanism and the knife blade 117 is lowered to cut off a sealing sheet or label 144, which is held on the drum surface by suction through the set of openings 77. While the drum is thus stationary, the web feed rollers 135 and 136 continue to turn and feed the web, and so produce a small amount of slack in the web span between the roller 136 and the drum 71 for the purpose explained above. As each successive cut sealing sheet or label passes the adhesive applying roller 47, the raised portion 53 of this roller applies adhesive to the outer face of the sheet. Thereafter, as each sheet 141 reaches the lowermost point of the drum, the suction thereon is cut off and pressure is applied to forcibly apply the sheet to an underlying container C over the closed pouring spout of the container and in engagement with the container top 12 around the closed pouring spout (Fig. 5). Thereafter, the container moves beneath the roller 148, and the applied sealing sheet is firmly pressed down into adhesive engagement with the container top and the closed pouring spout.

The above described operation is successively repeated as the drum 71 rotates.

The sealing sheet web and the sheets cut therefrom may be held in firm contact with the drum 71 during the cutting operation by two pairs of spring pressed rollers 160 and 161 which respectively engage the peripheral drum surface on opposite sides of the knife blade 117, as shown in Figs. 1 and 2. The rollers 160 and 161 are respectively carried by pairs of arms 162 and 163 pivotally supported on studs 164 and 165 fixed to the frame 18. Suitable springs 166 and 167 respectively press the roller arms of each pair 162 and 163 downward to force the rollers 160 and 161 toward the drum surface.

It will be understood that changes may be made in the construction and arrangement of the parts of the apparatus above set forth without departing from the spirit of the invention as set forth in the appended claims.

We claim:

1. In a device of the character described, in combination, a conveyor for conveying a succession of containers, a rotatable drum having a cylindrical surface disposed adjacent said conveyor for engagement with the successive containers carried thereby, means for feeding a continuous web of sheet material onto the cylindrical surface of said drum at a uniform linear velocity, means for successively stopping said drum and turning said drum at a peripheral velocity greater than the linear velocity at which said feeding means feeds said web, means for severing a sheet from said web on said drum surface when said drum is stopped, and means for transferring the successive sheets so severed on said drum onto successive containers conveyed by said conveyor.

2. In a device of the character described, in combination, a conveyor for conveying a succession of containers, a rotatable drum having a cylindrical surface disposed adjacent said conveyor for engagement with the successive containers carried thereby, means for feeding a continuous web of sheet material onto the cylindrical surface of said drum at a uniform linear velocity, a continuously moving driving element, an intermittent motion mechanism connecting said driving element to intermittently turn said drum at a peripheral velocity greater than the linear velocity at which said feeding means feeds said web and stop said drum, means driven by said driving element for severing a sheet from the web on said drum when said drum is stopped, means for applying adhesive to each such severed sheet on said drum surface and means for transferring the successive sheets so severed on said drum onto successive containers conveyed by said conveyor.

3. In a device of the character described, in combination, a substantially horizontal conveyor for conveying a succession of containers, a drum rotatable about a substantially horizontal axis and having a cylindrical surface disposed above said conveyor for engagement with the successive containers carried thereby, means for feeding a continuous web of sheet material onto the cylindrical surface of said drum, means for successively cutting sheets from said web on said drum surface, means for spacing the cut end of said

web from each of said sheets along said drum surface, means for releasably holding said cut sheets on said drum surface, and means operated by the rotation of said drum for moving said sheets away from said drum surface and onto a container carried by said conveyor when each successive container is brought in contact with such sheet.

4. In a device of the character described, in combination, a substantially horizontal conveyor for conveying a succession of containers, a drum rotatable about a substantially horizontal axis and having a cylindrical surface disposed above said conveyor for engagement with the successive containers carried thereby, means for feeding a continuous web of sheet material onto the cylindrical surface of said drum, means for successively cutting sheets from said web on said drum surface, means for spacing the cut end of said web from each of said sheets along said drum surface, suction means for applying suction to said cut sheets to hold the same on said drum surface, means for applying adhesive to said successive sheets on said drum surface and means for releasing said suction and applying pressure to move said sheets from said drum surface onto a container carried by said conveyor when each successive container is brought in contact with said drum surface.

5. In a device of the character described, in combination, a conveyor for conveying a succession of containers, a rotatable drum having a cylindrical surface disposed adjacent said conveyor for engagement with the successive containers carried thereby, means for feeding a continuous web of sheet material onto said cylindrical drum surface at a uniform linear velocity, means for successively stopping said drum and turning said drum at a peripheral velocity greater than the linear velocity at which said feeding means feeds said web to said drum surface, the average peripheral velocity of said drum being greater than the linear velocity at which said feeding means feeds said web, means for severing a sheet from said web on said drum when said drum is stopped and means for transferring the successive sheets so severed on said drum onto successive containers conveyed by said conveyor.

6. In a device of the character described, in combination, a conveyor for conveying a succession of containers, a rotatable drum having a cylindrical surface disposed adjacent said conveyor for engagement with the successive containers carried thereby, means for feeding a continuous web of sheet material onto said cylindrical drum surface at a uniform linear velocity, a continuously moving driving element, an intermittent motion mechanism connecting said driving element to intermittently turn said drum at a peripheral velocity greater than the linear velocity at which said feeding means feeds said web and stopping said drum, the average peripheral velocity of said drum being greater than the linear velocity at which said feeding means feeds said web, means driven by said driving element for severing a sheet from the web on said drum when said drum is stopped, and means for transferring the successive sheets so severed on said drum onto successive containers conveyed by said conveyor.

7. In a device of the character described, in combination with a conveyor for conveying a succession of containers, means for applying a sheet to each of such a succession of containers comprising a rotatable drum having a cylindrical surface disposed adjacent said conveyor for engagement with successive containers carried thereby, means for intermittently turning and stopping said drum, at least one cutting block extending transversely of said cylindrical drum surface, said drum surface having a set of openings therein adjacent and in advance of said block in the direction in which said drum is turned, a knife adjacent said drum surface, means operated when said drum is stopped for moving said knife to engage said block and sever a sheet from a web on said drum surface, means for applying suction to said set of openings to hold a cut sheet on said drum surface when and after such sheet is cut, means for retarding the movement of a web running to said drum surface whereby the cut end of such web is spaced circumferentially of the drum from a sheet cut therefrom by slipping of the web on said drum surface when said drum is turned, and means for applying fluid under pressure to said set of openings to propel a cut sheet from said drum surface when said drum has turned to a position to bring the cut sheet in contact with a container.

8. In a device of the character described, in combination with a conveyor for conveying a succession of containers, means for applying a sheet to each of such a succession of containers comprising a rotatable drum having a cylindrical surface disposed adjacent said conveyor for engagement with successive containers carried thereby, means for intermittently turning and stopping said drum, a plurality of cutting blocks extending transversely of said cylindrical drum surface at points equally spaced circumferentially of said surface, said drum surface having a set of openings therein adjacent and in advance of each of said blocks in the direction in which said drum is turned, a knife adjacent said drum surface, means operating when said drum is stopped for moving said knife to engage one of said blocks and sever a sheet from a web on said drum surface, means for applying suction to each of said sets of openings to hold a cut sheet on said drum surface when and after such sheet is cut, means for retarding the movement of a web running to said drum surface whereby the cut end of such web is spaced circumferentially of the drum from a sheet cut therefrom by slipping of the web on the drum surface when the drum is turned, means for applying adhesive to each cut sheet on said drum surface, means for applying fluid under pressure to each of said sets of openings to propel a cut sheet from said drum surface when said drum has turned to a position to bring such cut sheet in contact with a container and means operated in accordance with the position to which said drum is turned for controlling the application of suction and fluid under pressure to said respective sets of openings.

PAUL E. FISCHER.
EDGAR ARDELL.

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