June 4, 1929. O. K. REINHARDT 1,715,388

CONTAINER MAKING MACHINE

Filed June 8, 1926 6 Sheets-Sheet 1

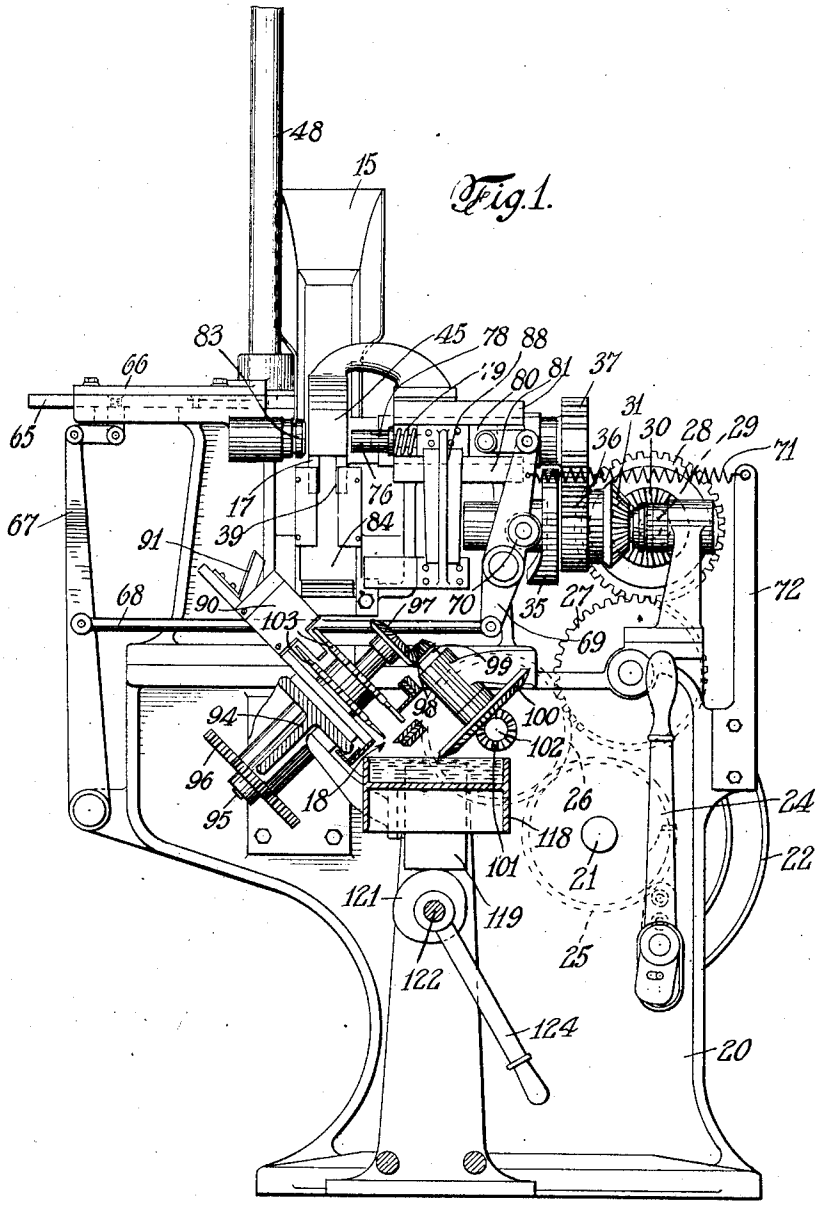


Fig. 1.

INVENTOR
O. K. Reinhardt
BY
William & Turner
ATTORNEYS

June 4, 1929. O. K. REINHARDT 1,715,388

CONTAINER MAKING MACHINE

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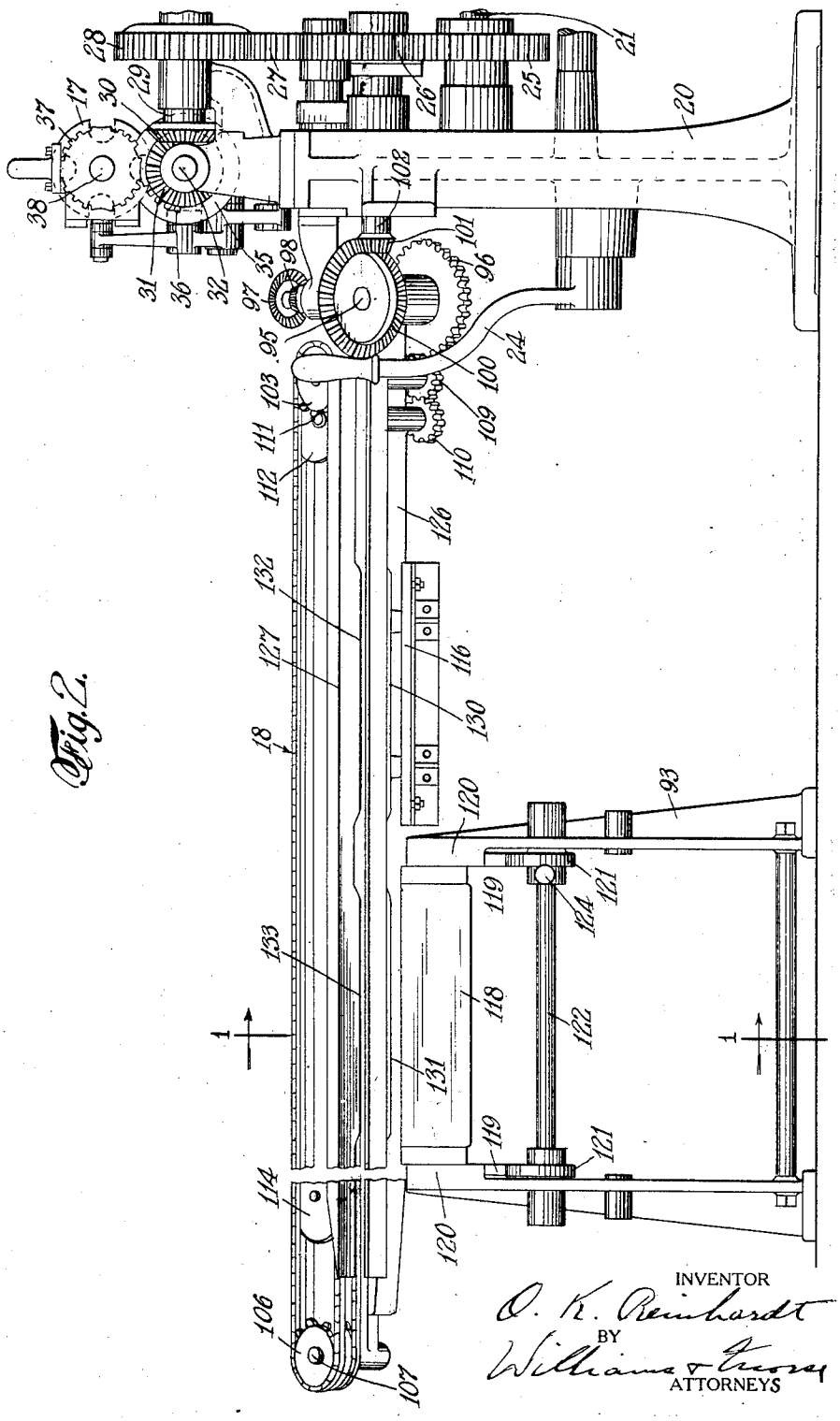


Fig. 2.

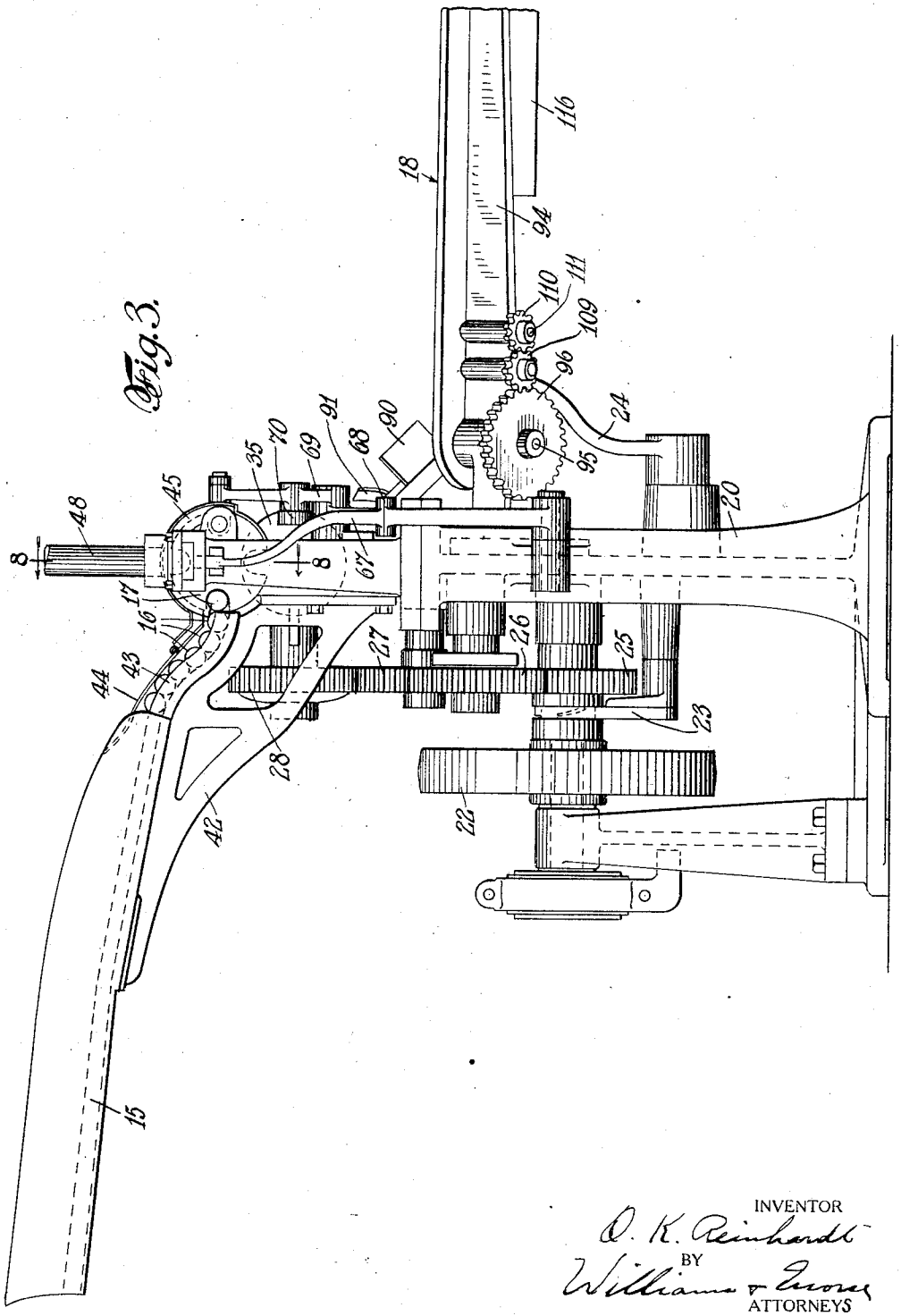
INVENTOR
O. K. Reinhardt
BY
Williamson & Thomas
ATTORNEYS

June 4, 1929. O. K. REINHARDT 1,715,388

CONTAINER MAKING MACHINE

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Fig. 3.



INVENTOR
O. K. Reinhardt
BY
Williams & Evans
ATTORNEYS

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CONTAINER MAKING MACHINE

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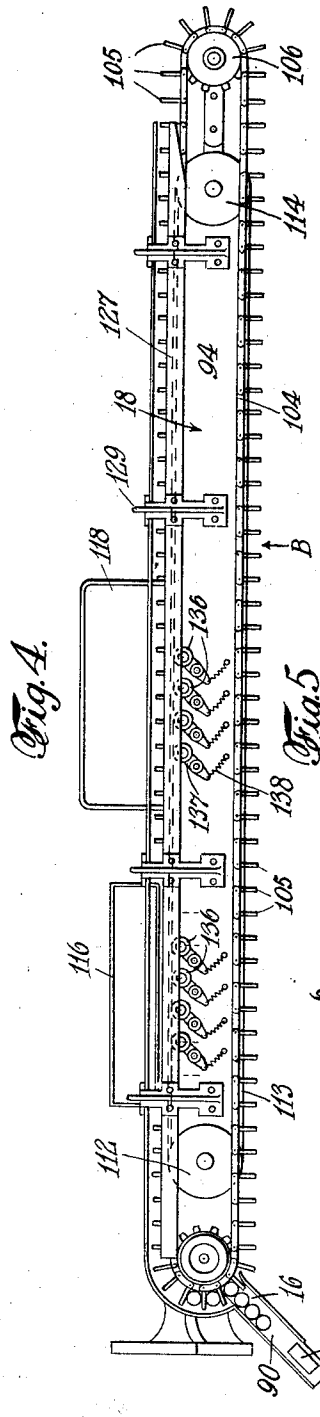


Fig. 4.

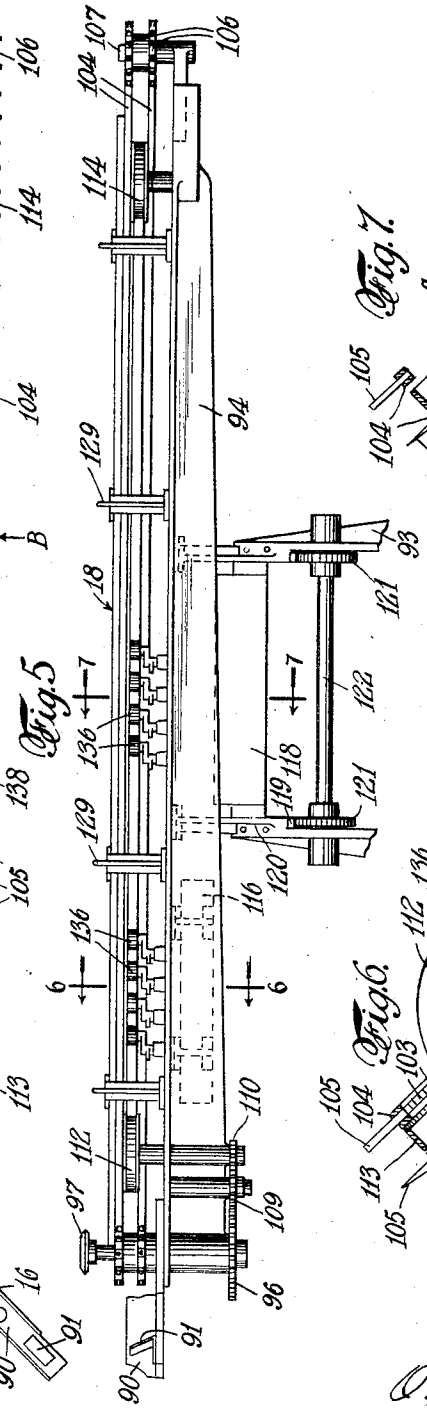


Fig. 5

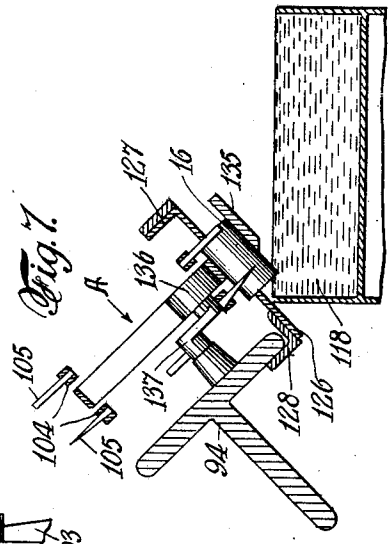


Fig. 7.

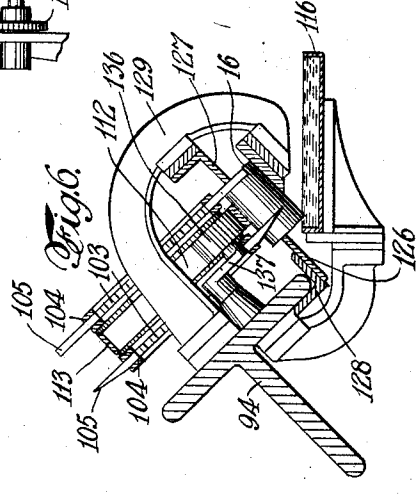


Fig. 6.

INVENTOR
O. K. Reinhardt
BY
Williamson & Thomas
ATTORNEYS

June 4, 1929. O. K. REINHARDT 1,715,388

CONTAINER MAKING MACHINE

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Fig. 8.

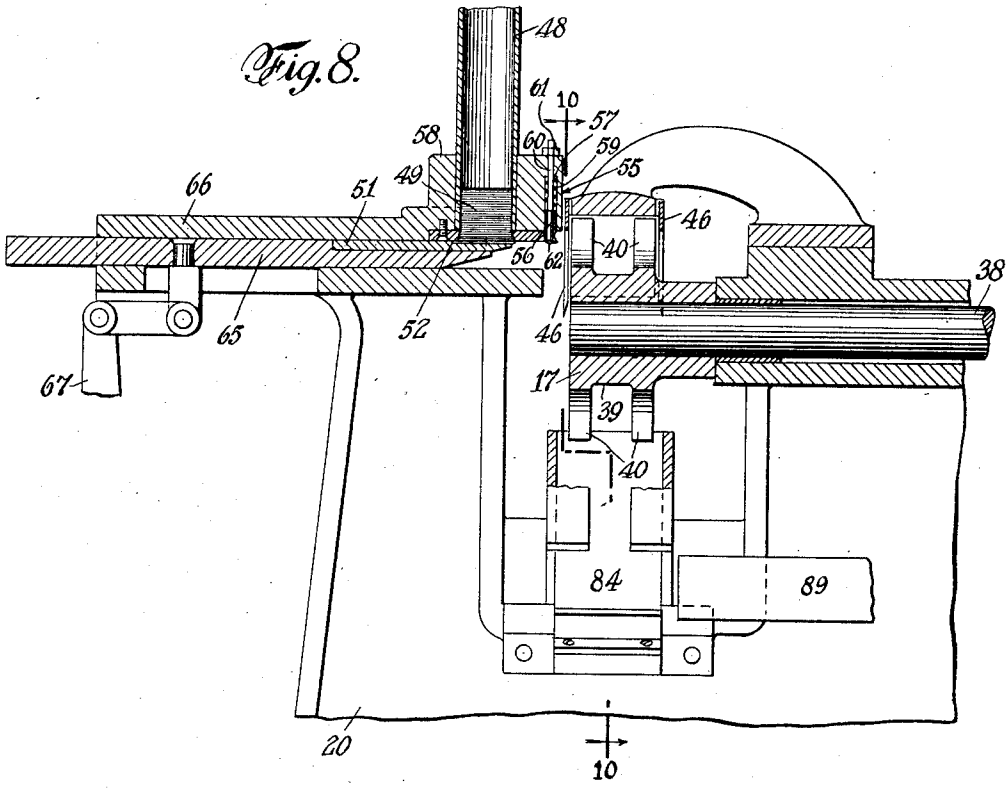
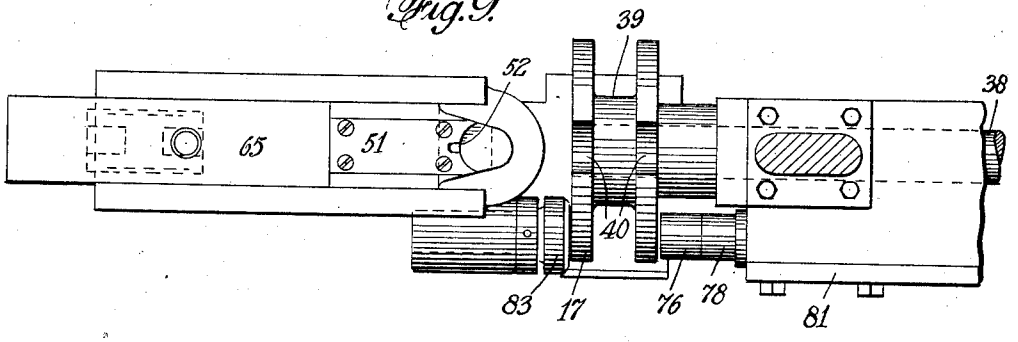


Fig. 9.



INVENTORS

O. K. Reinhardt

BY

Williamson & Merriam

ATTORNEYS

June 4, 1929. O. K. REINHARDT 1,715,388

CONTAINER MAKING MACHINE

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Fig. 10.

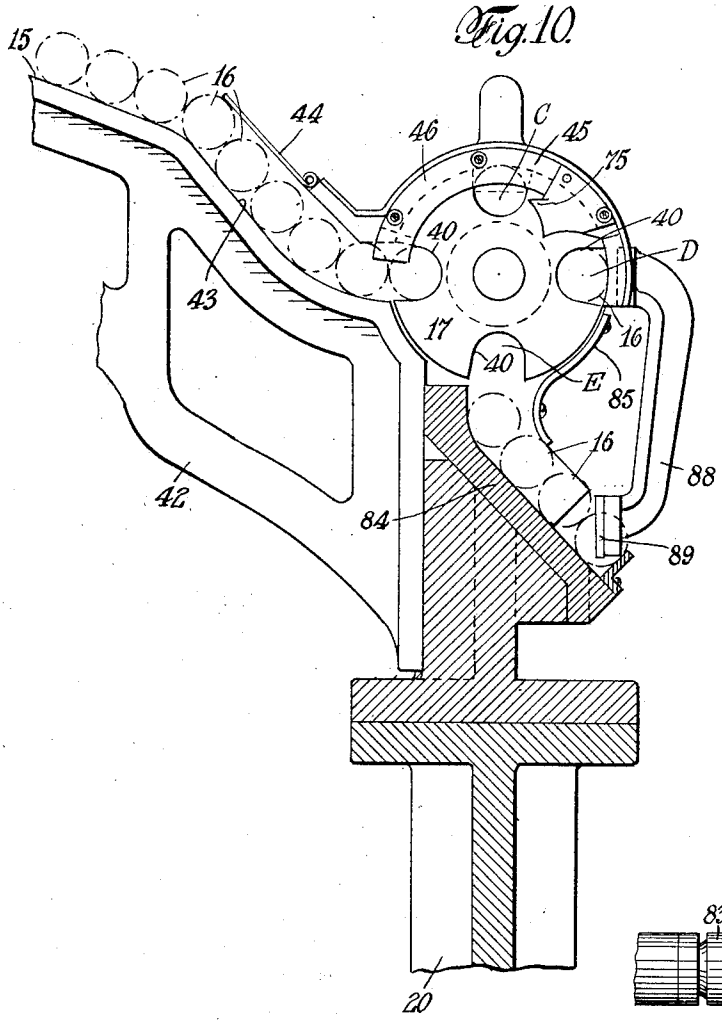


Fig. 11.

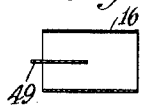


Fig. 12.

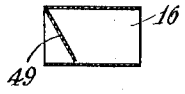
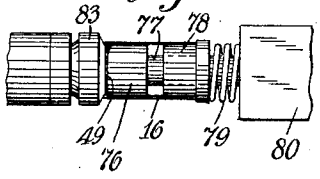


Fig. 13.



INVENTOR
O. K. Reinhardt
BY
Williams & Green
ATTORNEYS

Patented June 4, 1929. 1,715,388

UNITED STATES PATENT OFFICE.

OTTO KARL REINHARDT, OF JAMAICA, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO BOND ELECTRIC CORPORATION, A CORPORATION OF DELAWARE.

CONTAINER-MAKING MACHINE.

Application filed June 8, 1926. Serial No. 114,419.

This invention relates to container-making machines and has particular reference to a machine particularly adapted for the making of so-called "zinc-cups" used in dry batteries.

A general object of the invention is to provide an improved machine of the type mentioned which is speedy, efficient, and reliable in operation.

Other objects and advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawings in which—

Figure 1 is a vertical sectional view taken on the line 1—1 of Figure 2, the remote parts of the machine being shown in elevation.

Figure 2 is a side elevation of the machine with the main drive shaft broken away.

Figure 3 is a side elevation of the machine as viewed from the rear in Figure 2, the end of the conveyor with its support shown in Figure 2 being omitted.

Figure 4 is a plan of the conveyor as viewed in the direction of the arrow A in Figure 7.

Figure 5 is a side elevation of the conveyor as viewed in the direction of arrow B in Figure 4.

Figure 6 is a transverse sectional view taken on the line 6—6 of Figure 5.

Figure 7 is a transverse sectional view taken on the line 7—7 of Figure 5.

Figure 8 is a vertical sectional view taken on the line 8—8 of Figure 3.

Figure 9 is a plan view of the turret and the disc feeding slide appearing in section in Figure 8.

Figure 10 is a vertical sectional view taken on the line 10—10 of Figure 8.

Figure 11 is a diagrammatic view illustrating the position of the bottom-forming disc when first introduced into a cylindrical body.

Figure 12 is a view similar to that of Figure 11 showing the bottom-forming disc as having been tilted during movement of the body from disc-receiving position to its next succeeding position about the axis of the turret.

Figure 13 is a detail view in elevation of a disc-positioning plunger and an abutment with which the plunger is adapted to cooperate in positioning the disc at right angles to the axis of the cylindrical body preparatory to the soldering operation.

Referring to Figures 3 and 10, the machine includes a suitable hopper 15, adapted for the reception of receptacle bodies 16, herein shown as cylindrical, to be fed to an intermittently actuated turret 17. With this turret 17, are associated suitable means, hereinafter described, for introducing bottom-forming discs into the cylindrical bodies and properly positioning such discs therein. The cylindrical bodies with their bottom-forming discs carried therein are transferred to an endless conveyor 18 by means of which one end of the cylindrical bodies and the adjacent peripheral margins of the bottom-forming discs are subjected, first, to an acid bath and then to a bath of solder, whereby the discs are secured to their respective cylindrical bodies, thus producing containers which are delivered to a suitable receptacle, not shown, at the end of the conveyor.

The turret 17, with its associated cooperating elements, is supported by a frame 20, within which a power shaft 21 is journaled, the power shaft having journaled thereon a pulley 22, adapted for connection with a suitable source of power, not shown. In order to start and stop the machine, a suitable clutch 23 is provided for locking the pulley 22 to the power shaft 21, the clutch 23 being controlled through the instrumentality of a suitable lever 24 located within convenient reach of the operator. To the shaft 21, is secured a gear 25, meshing with a gear 26, which in turn engages a gear 27, the gear 27 being in mesh with a spur gear 28, secured to a shaft 29 which is provided with a bevelled gear 30. The bevelled gear 30 meshes with a similar gear 31, carried by a shaft 32 which is suitably journaled in the frame 20 and is provided with a cam 35 and a Geneva gear 36 adapted to engage and cooperate with a similar gear 37, the gear 37 being carried by a shaft 38 to which is secured the turret 17. This turret is channeled as shown at 39 in Figure 9, to relieve excess weight, and is provided with a plurality of equidistantly spaced pockets 40, four of such pockets being herein shown.

The hopper 15 is suitably supported by means of a bracket 42, carried by the frame 20, and is provided with a chute 43, through which the cylindrical bodies 16 pass in entering the pockets 40 of the turret 17. In order to prevent displacement or jamming of the cylindrical bodies 16, due to their being su-

perimposed one upon the other, while traversing the chute 43, a guard finger 44 is provided, such finger being carried by a semi-circular guard 45, partially encircling the turret 17 and provided with depending aprons arranged adjacent opposite ends of the turret 17 to prevent axial displacement of the bodies within their respective pockets 40 as the turret 17 is intermittently actuated.

Suitably supported upon the frame 20, is a tubular magazine 48, adapted for the reception of a stack or plurality of bottom-forming discs 49 which are adapted to be introduced successively into the bodies 16 at station C while the turret 17 is at rest. The bottom-forming discs 49 are removed from the magazine 48, one at a time, by means of a reciprocating finger 51, cut away at its forward end 52 to a depth equal to the thickness of one of the bottom-forming discs 49, and are carried forwardly and positioned within the cylindrical bodies 16 during such time as they remain at rest at station C. As the finger 51 is retracted from the cylindrical body 16, into which the bottom-forming disc 49 has just been introduced, the bottom-forming disc, is usually frictionally engaged by the cylindrical body 16 at diametrically opposed points, and is held within the cylindrical body 16. Should the cylindrical body 16 fail to hold the bottom-forming disc 49 sufficiently to retain the same therein as the finger 51 starts to move to its retracted position, shown in Figure 8, withdrawal of the bottom-forming disc is prevented by restraining means 55. This restraining means 55 comprises a spring pressed plunger 56 carried within a chamber 57, formed in a suitable housing 58 into which the lower end of the magazine 48 fits. The plunger 56 is urged to its position shown in Figure 8 by a coil spring 59, surrounding the plunger stem 60 which projects through the housing 58 and carries at its upper end a stop 61 which serves to retain the plunger 56 within the chamber 57. The plunger 56 is, at its lower end, provided with a rounded head 62 which will permit the bottom-forming disc 49, as it is carried forward by the finger 51, to readily lift the plunger 56 against the spring 59 so as to allow the bottom-forming disc, about to be introduced into the cylindrical body 16, to move forward in an unobstructed manner to a position in front of the plunger 62 and well within the cylindrical body 16. Should the bottom-forming disc 49 start to move back with the finger 51 as this finger is retracted, such disc will be engaged by the plunger 56, while at its lowermost position shown in Figure 8, and will be thereby held against withdrawal from the cylindrical body 16.

As best shown in Figures 1, 8 and 9, the finger 51 is carried by a reciprocating slide 65, suitably mounted within a guide 66, carried by the frame 20, the slide 65 being linked to an oscillating arm 67, pivoted at its lower end to the frame 20 and connected by means of a rod 68 to an operating lever 69. This lever 69 is pivoted to the frame 20, and carries a roller 70, adapted to traverse the face of the cam 35, by means of which cam the operating lever 69 is moved in one direction, said lever being moved in an opposite direction by a tension spring 71 which is connected at its respective ends to the lever 69 and a suitable arm or anchor 72 carried by the frame 20.

After the bottom-forming disc 49 has been inserted into the cylindrical body 16 at station C, as shown in Figure 11, it becomes necessary to swing the bottom-forming disc at an angle to the axis of the cylindrical body into the angular position with respect to said axis, as shown in Figure 12. This displacement or swinging of the bottom-forming disc, from its position shown in Figure 11 to its position shown in Figure 12, is effected while the cylindrical body is being carried from station C, shown in Figure 10, to station D shown therein, and is accomplished by means of a stationary cam or member 75 (Figures 8 and 10), carried by the semi-circular guard 45 and so arranged, adjacent one end of the turret 17, that the outwardly projecting edge of the bottom-forming disc 49 engages the cam and is gradually moved thereby from its position shown in Figure 11 to its position shown in Figure 12. Thus, by the time the cylindrical body reaches station D, the bottom-forming disc carried by that body is so positioned as to be acted upon by a suitable disc positioning mechanism hereinafter described, which is employed to move the bottom-forming disc 49 from its position shown in Figure 12, to its position shown in Figure 13, preparatory to the soldering operation.

The disc-positioning mechanism is actuated by the cam 35 and includes a plunger head 76 carried by a shank 77 on which is slidably mounted a pressure head 78 which is adapted to be urged into intimate engagement with one end of the cylindrical body 16 by means of a compression spring 79, arranged intermediate the pressure head 78 and a reciprocating slide 80 to which the shank 77 is secured. This reciprocating slide 80 operates within a guide 81 (Figure 1), suitably connected to the frame 20 and is linked to one end of the operating arm 69 so that the cam 35 positively moves the plunger head 76 in one direction, whereas the spring 71 moves it in an opposite direction. At station D, a stationary abutment 83 is carried by the frame 20, the abutment 83 being so located adjacent one end of the turret 17 as to align with the plunger head 76 and the pockets 40 as the cylindrical bodies 16 are brought successively into position to receive the plunger 77 at station D. As the cylindrical bodies 16, carrying their respective bot-

tom-forming discs 49, are brought successively into position at station D, the plunger 77 enters such cylindrical bodies, whereupon the pressure head 78 engages the edge of the cylindrical body and urges the same longitudinally of its axis into intimate engagement with the abutment 83, as shown in Figure 13. As the plunger head 76 continues to move forward it engages the bottom-forming disc 49 and moves it from its position shown in Figure 12 to its final position at right angles to the axis of its cylindrical body 16, as shown in Figure 13. Inasmuch as the bottom-forming discs 49 are so dimensioned as to snugly fit the interior of the cylindrical bodies 16, such discs, when forced into their final respective position, shown in Figure 13, will remain so positioned during such time as is required to transfer the cylindrical bodies, with their bottom-forming discs positioned therein, from the turret 17 on to the conveyor 18 and through the acid and solder baths, respectively. The plunger head 76, upon reaching its forward position shown in Figure 13, is retracted by the spring 71 as the cam 35 continues to rotate preparatory to the next succeeding forward movement of the plunger head 76, and after said plunger head has been withdrawn from the cylindrical body 16, the turret 17 is so rotated as to move the cylindrical body with its bottom-forming disc to station E, at which point the cylindrical body drops by gravity from the turret on to a chute 84 suitably supported by the frame 20.

During movement of the cylindrical body from station D to station E, the succeeding cylindrical bodies are transferred from their stations to their next succeeding stations. During movement of the cylindrical bodies from station D to station E, they are retained within the turret pockets by a keeper or guard 85, shown as carried by the chute 84 and curved at its lower end so as to insure against jamming of the cylindrical bodies as they pass from the turret 17 on to the chute 84.

As the cylindrical bodies 16, with their respective bottom-forming discs 49, are introduced into the chute 84, the lowermost of such bodies within this chute is removed, the removal taking place simultaneously with the introduction of the plunger head 76 into the cylindrical body 16 at station D. The means for removing the lowermost cylindrical body 16 from the chute 84 is shown in Figures 1 and 10 as a depending arm 88, carried by the slide 80 and provided with a horizontally disposed foot 89 which is adapted to engage one end of the lowermost cylindrical body within the chute 84 and push such body horizontally to an inclined chute 90, associated with the conveyor 18. As the cylindrical bodies are transferred from the chute 84, it becomes necessary to insure their being delivered to the chute 90 in a perpendicular relation to this chute, so that they may be properly fed to the conveyor 18, and in order to insure proper delivery of the cylindrical bodies to the chute 90, there is arranged at the upper end of the chute 90 a deflector plate 91 which engages the forward end of the cylindrical body as it passes from the chute 84, and so deflects the same that it drops on to the chute 90 in a right angle position with respect thereto.

The conveyor 18, to which the cylindrical bodies 16 are fed down the inclined chute 90 under the action of gravity, is secured at one end to the frame 20 and is supported at its other end by means of a supporting frame 93. This conveyor 18 includes a horizontally disposed frame member 94 to which is journaled, adjacent the frame 20, a shaft 95 provided at its lower end with a spur gear 96 and at its upper end with a bevelled gear 97. The bevelled gear 97 meshes with a similar gear 98 carried by a shaft 99, journaled in the frame 20. To the shaft 99, is secured a second bevelled gear 100 which meshes with a similar gear 101, carried by the shaft 102 to which the gear 26 is connected. The shaft 95 is provided, intermediate its gear 97 and the frame member 94, with a pair of sprockets 103 over which pass a pair of spaced sprocket chains 104, each of which is provided with a plurality of spurs or fingers 105 and each of which passes, respectively, over sprockets 106 journaled upon a trunnion 107 supported by the frame member 94 at the outer end thereof. Suitably journaled to the frame member 94, is an intermediate gear 109 which meshes with the gear 96 and in turn meshes with a similar gear 110, carried by a shaft 111 which is journaled to the frame member 94 and is provided with a pulley 112. The pulley 112 carries a belt 113 which passes over a similar pulley 114, suitably journaled to the frame member 94 at the outer end thereof, the pulleys 112 and 114 being so dimensioned that the stretches of the belt 113 operate intermediate the corresponding stretches of the chains 104, as shown most clearly in Figures 6 and 7. It will be noted that, due to the presence of the intermediate gear 109 the belt 113 will travel in the same direction as the chains 104, thereby effecting rotation of the cylindrical bodies during such times as they pass through the acid and solder baths, respectively, so as to insure proper application of acid and solder respectively, to the parts to be soldered.

Intermediate the frame 20 and the supporting frame 93, is arranged a relatively shallow receptacle 116 for carrying a suitable acid, as shown in Figures 2 and 6, the receptacle 116 being supported from the frame member 94 by means of brackets 117, or the like. Beyond the receptacle 116, is arranged a vertically adjustable receptacle 118, within which is carried a quantity of molten solder, as

shown in Figure 7, which solder may be maintained in a molten condition by means of a suitable source of heat such as a gas flame, not shown. The receptacle 118 is provided at opposite ends with vertical guides 119 which are confined within guideways 120, carried by the supporting frame 93, the guides 119 being adapted to engage and rest upon cams 121, carried by a horizontally disposed shaft 122, journaled within the supporting frame 93 and provided with an operating lever 124. Through the instrumentality of the cams 121 which cooperate with the guides 119, the receptacle 118 may be raised or lowered to suit varying conditions, as will be readily appreciated.

In order to lower the cylindrical bodies into the acid and solder baths, respectively, as such bodies are moved along the conveyor 18 by the chains 104, lower and upper guides 126 and 127 are provided, the guide 126 being secured to an angle-iron 128 carried by the frame member 94, and the guide 127 being suitably connected to a yoke-shaped support 129 suitably connected to the frame member 94. Referring to Figure 2, it will be noted that portions of the lower guide 126 are cut away, thus providing depressions 130 and 131 located directly over the receptacles 116 and 118, respectively. It will also be noted that the upper guide 127 is formed with extensions 132 and 133 directly opposite and adjacent to the depressions 130 and 131, respectively. Due to the depressions 130 and 131 in the guide 126 and the presence of extensions 132 and 133 on the guide 127, the passage afforded between these two guides, 126 and 127, is a tortuous one, and since the cylindrical bodies 16 are forced to traverse this tortuous passage by the spurs or arms 105, these cylindrical bodies, as they move from one end of the conveyor to the other are first lowered a slight distance into the acid bath and then removed therefrom after which they are lowered to a slight distance into the solder bath and then removed therefrom. During movement of the cylindrical bodies from one end of the conveyor to the other, they are supported by a track member 135, suitably connected to the ends of the yoke-shaped supports 129, by means of which such track member is supported in a spaced relation to the guides 126 and 127, as shown most clearly in Figures 6 and 7.

As above stated, the belt 113 is provided in order to rotate the cylindrical bodies 16 while they are being subjected to the acid and solder baths, respectively; but in order to positively insure such rotation a plurality of idler rollers 136 are employed. These idler rollers are arranged in groups, as shown in Figures 4 and 5, one group being located adjacent the receptacle 116 and the other group being located adjacent the receptacle 118. Each of the rollers 136 is journaled upon an arm 137, which is pivotally connected intermediate its ends, to the frame member 94. These rollers are urged into intimate engagement with the inside of the lower reach of the belt 113 by means of tension springs 138, connected to the respective arms 137; and the belt 113 by these rollers 136 is thus urged into intimate engagement with the cylindrical bodies as they pass through the acid and solder baths, respectively. Since the belt 113 travels in the direction that the cylindrical bodies are being carried by the conveyor chains 104, the cylindrical bodies are rotated as they pass through the acid and solder baths, respectively, with the result that the periphery of the bottom-forming discs 49 and the lower end margin of the cylindrical bodies are subjected to a uniform application of acid and solder successively. Due to the proper application of acid and solder thus insured, non-porous and otherwise perfect joints between the cylindrical bodies and their respective bottoms are insured.

Operation of the machine is as follows: Assuming that cylindrical bodies are being introduced into the hopper 15, and power from a suitable source is connected to the main drive shaft 21, the intermittently actuated turret 17, into the pocket 40 of which a cylindrical body has been forced from the inclined chute 43 by gravity, carries such body to station C and then pauses, due to the system of intermittent gearing herein shown as including gears 36 and 37. During such pause, one of the bottom-forming discs 49 is removed from the bottom of the stack within the magazine 48 and introduced into the cylindrical body, previously carried to station C, within which body it remains positioned, as shown in Figure 11, when the finger 51 is retracted. Upon withdrawal of the finger 51 from the cylindrical body at station C, the turret 17 is again moved a quarter turn, whereupon the next succeeding cylindrical body entering the turret is elevated to station C; and the cylindrical body, into which the bottom-forming disc has been previously introduced at station C, is simultaneously moved to station D. During this movement, the previously introduced bottom-forming disc 49 is turned to its position shown in Figure 12 by the cam 75. During the pause of the turret 17, the plunger 77 moves into the cylindrical body while at station D and turns the bottom-forming disc 49 from its position shown in Figure 12 to its position shown in Figure 13. While the bottom-forming disc 49 is being turned at station D, the cylindrical body now positioned at station C is being supplied with a bottom-forming disc 49, in the same manner as previously described. After the plunger 77 is retracted from the cylindrical body at station D, simultaneous with which retraction the finger 51 is retracted from the cylindrical body at station

C, the turret 17 is again rotated a quarter turn, thus moving to station D from station C the last cylindrical body to receive a bottom-forming disc. During this quarter turn of the turret 17, the last cylindrical body to be introduced into the turret is elevated to station C, and the cylindrical body from which the plunger 77 has just been withdrawn drops from its pocket, at station E, on to the chute 84 from which it is later removed by the foot 89, simultaneous with a subsequent movement of the plunger 77 into a cylindrical body at station D. As the cylindrical bodies with their respective bottom-forming discs 49 are transferred from the chute 84 to the chute 90, they are cammed into a perpendicular relation to the chute 90 by the cam 91. The cylindrical bodies, as they move down the inclined chute 90 by gravity, are engaged successively by the arms or fingers 105 of the conveyor chains 104 and are moved from one end of the conveyor to the other between the guides 126 and 127. As previously explained, the cylindrical bodies are caused, by the tortuous path of travel afforded intermediate the guides 126 and 127, to dip, first, into the acid bath within the receptacle 116, and then into the solder bath within the receptacle 118, rotation of the cylindrical bodies being insured by the belt 113 as such bodies pass through the acid and solder baths respectively. As the cylindrical bodies emerge from the solder bath they travel thence to the end of the conveyor, during which travel the previously applied solder hardens and thereby permanently unites the cylindrical body and bottom-forming disc to form a container, the containers being permitted to drop from the end of the conveyor as they reach this point into a suitable receptacle or the like.

Having thus described the invention what is claimed is:

1. In a container-making machine adapted to receive a receptacle body to be moved from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body, means for engaging the projecting portion of said bottom-forming member and for angularly displacing the same as said body is moved to the next station, and means adapted to engage said member upon angular displacement thereof and move the same into bottom-forming position.

2. In a container-making machine, means for receiving and moving a receptacle body from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body, means for engaging the projecting portion of said bottom-forming member and for angularly displacing the same as said body is moved to the next station, and means adapted to engage said member upon angular displacement thereof and move the same into bottom-forming position.

3. In a container-making machine adapted to receive a receptacle body to be moved from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body, a stationary cam adapted to engage the projecting portion of said bottom-forming member as said body is moved to the next station whereby said member is angularly displaced, and means adapted to engage said member upon angular displacement thereof and move the same into bottom-forming position.

4. In a container-making machine, intermittently actuated means adapted to receive a receptacle body and move the same intermittently from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body, a stationary cam adapted to engage the projecting portion of said bottom-forming member as said body is moved to the next station whereby said member is angularly displaced, and means adapted to engage said member upon angular displacement thereof and move the same into bottom-forming position.

5. In a container-making machine adapted to receive a receptacle body to be moved from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body, means for engaging the projecting portion of said bottom-forming member and for angularly displacing the same as said body is moved to the next station, and a reciprocating plunger adapted to be moved into said body upon angular displacement of said member and engage said member to move the same into bottom-forming position.

6. In a container-making machine adapted to receive a receptacle body to be moved from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body, a stationary cam adapted to engage the projecting portion of said bottom-forming member as said body is moved to the next station whereby said member is angularly displaced, and a reciprocating plunger adapted to be moved into said body upon angular displacement of said member and engage said member to move the same into bottom-forming position.

7. In a container-making machine, an intermittently actuated turret adapted to receive a receptacle body and move the same intermittently from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said

body, a stationary cam adjacent one end of said turret for engaging the projecting portion of said bottom-forming member as said body is moved to the next station whereby said member is angularly displaced, a reciprocating plunger adapted to enter said body upon angular displacement of said member and move said member into bottom-forming position, an abutment against which said body is adapted to be moved upon entrance of said plunger, and yieldable means associated with said plunger for urging said body into engagement with said abutment.

8. In a container-making machine, an intermittently actuated turret adapted to receive a receptacle body and move the same intermittently from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body, means for engaging the projecting portion of said bottom-forming member as said body is moved to the next station whereby said member is angularly displaced, a plunger adapted to enter said body upon angular displacement of said member and move said member into bottom-forming position, a chute into which said body with its bottom-forming member is adapted to be introduced from said turret, and means for removing said body from said chute.

9. In a container-making machine, an intermittently actuated turret adapted to receive receptacle bodies successively and move the same intermittently from station to station, means for retaining a supply of bottom-forming members, means for successively transferring bottom-forming members from said supply into said bodies at one station, the movement of said members into said bodies being so limited that a portion of the margin of each member projects from one end of the body into which it has been introduced, a stationary member adjacent one end of said turret for successively engaging the projecting portions of said bottom-forming members during intermittent movement of said turret whereby said members are angularly displaced, a plunger adapted to engage said members successively upon angular displacement thereof and move the same into bottom-forming positions, and operating means common to the second named means and said plunger.

10. In a container-making machine, an intermittently actuated turret adapted to receive receptacle bodies successively and move the same intermittently from station to station, means for retaining a supply of bottom-forming members, means for successively transferring bottom-forming members from said supply into said bodies at one station, the movement of said members into said bodies being so limited that a portion of the margin of each member projects from one end of the body into which it has been introduced, a stationary member adjacent one end of said turret for successively engaging the projecting portions of said bottom-forming members during intermittent movement of said turret whereby said members are angularly displaced, a plunger adapted to engage said members successively upon angular displacement thereof and move the same into bottom-forming positions, operating means common to the second named means and said plunger, a chute into which said bodies with their bottom-forming members are introduced successively from said turret, a second chute adapted to receive said bodies from the first named chute, means for transferring said bodies one by one from the first named chute to the second named chute, and means for moving said bodies during their transfer from chute to chute into a perpendicular relation with respect to the second named chute.

11. In a container-making machine, an endless conveyor adapted to receive receptacle bodies having bottom-forming members temporarily retained therein in bottom-forming positions, driving means for said conveyor, an acid bath arranged beneath said conveyor, means for deflecting said bodies into and out of said bath as they are moved by said conveyor, means for retaining said bodies in an inclined position with respect to a horizontal plane as they travel through said bath, endless moving friction means engaging said bodies for rotating the same as they travel through said bath, said endless moving friction means being contiguous with said endless conveyor, and means for driving said endless moving friction means at a different rate of speed to that of said endless conveyor.

12. In a container-making machine, an endless conveyor adapted to receive receptacle bodies having bottom-forming members temporarily retained therein in bottom-forming positions, driving means for said conveyor, an acid bath arranged beneath said conveyor, means for deflecting said bodies into and out of said bath as they are moved by said conveyor, a solder bath arranged beneath said conveyor, means for deflecting said bodies into and out of said solder bath as they are moved by said conveyor, means for retaining said bodies in an inclined position with respect to a horizontal plane as they travel through said solder bath, endless moving friction means engaging said bodies for rotating the same as they pass through said baths, said endless moving friction means being contiguous with said endless conveyor, and means for driving said endless moving friction means at a different rate of speed to that of said endless conveyor.

13. In a container-making machine, an end-

less conveyor including sprocket chains and adapted to receive receptacle bodies having bottom-forming members temporarily retained therein in bottom-forming positions, an acid bath arranged beneath said conveyor, means for deflecting said bodies into and out of said bath as they are moved by said conveyor, a solder bath arranged beneath said conveyor, means for deflecting said bodies into and out of said solder bath as they are moved by said conveyor, means for retaining said bodies in an inclined position with respect to a horizontal plane as they travel through said baths, a belt operating intermediate said sprocket chains and having one of its reaches engaging said bodies and means for driving said belt at a different rate of speed to that of said endless conveyor whereby said bodies are rotated as they travel through said baths.

14. In a container-making machine adapted to receive a receptacle body to be moved from station to station, means for introducing a bottom-forming member into said body at one station with a portion of its margin projecting from one end of said body in a plane coincident with the longitudinal axis of said body, means for engaging the projecting portion of said bottom-forming member and for angularly displacing the same as said body is moved to the next station, and means adapted to engage said member upon angular displacement thereof and move the same into bottom-forming position.

15. In a container-making machine, an endless conveyor adapted to receive receptacle bodies having bottom-forming members temporarily retained therein in bottom-forming positions, driving means for said conveyor, an acid bath arranged beneath said conveyor, means for deflecting said bodies into and out of said bath as they are moved by said conveyor, a solder bath arranged beneath said conveyor, means for deflecting said bodies into and out of said solder bath as they are moved by said conveyor, means for retaining said bodies in an inclined position with respect to a horizontal plane as they pass through said solder bath, endless moving friction means engaging said bodies for rotating the same as they travel through said bath, said endless moving friction means being contiguous with said endless conveyor, and means for driving said endless moving friction means at a different rate of speed to that of said endless conveyor.

In testimony whereof, I have affixed my signature to this specification.

OTTO KARL REINHARDT.