March 27, 1934. E. L. JONES 1,952,869

RECEPTACLE MAKING APPARATUS

Filed May 31, 1932 7 Sheets-Sheet 1

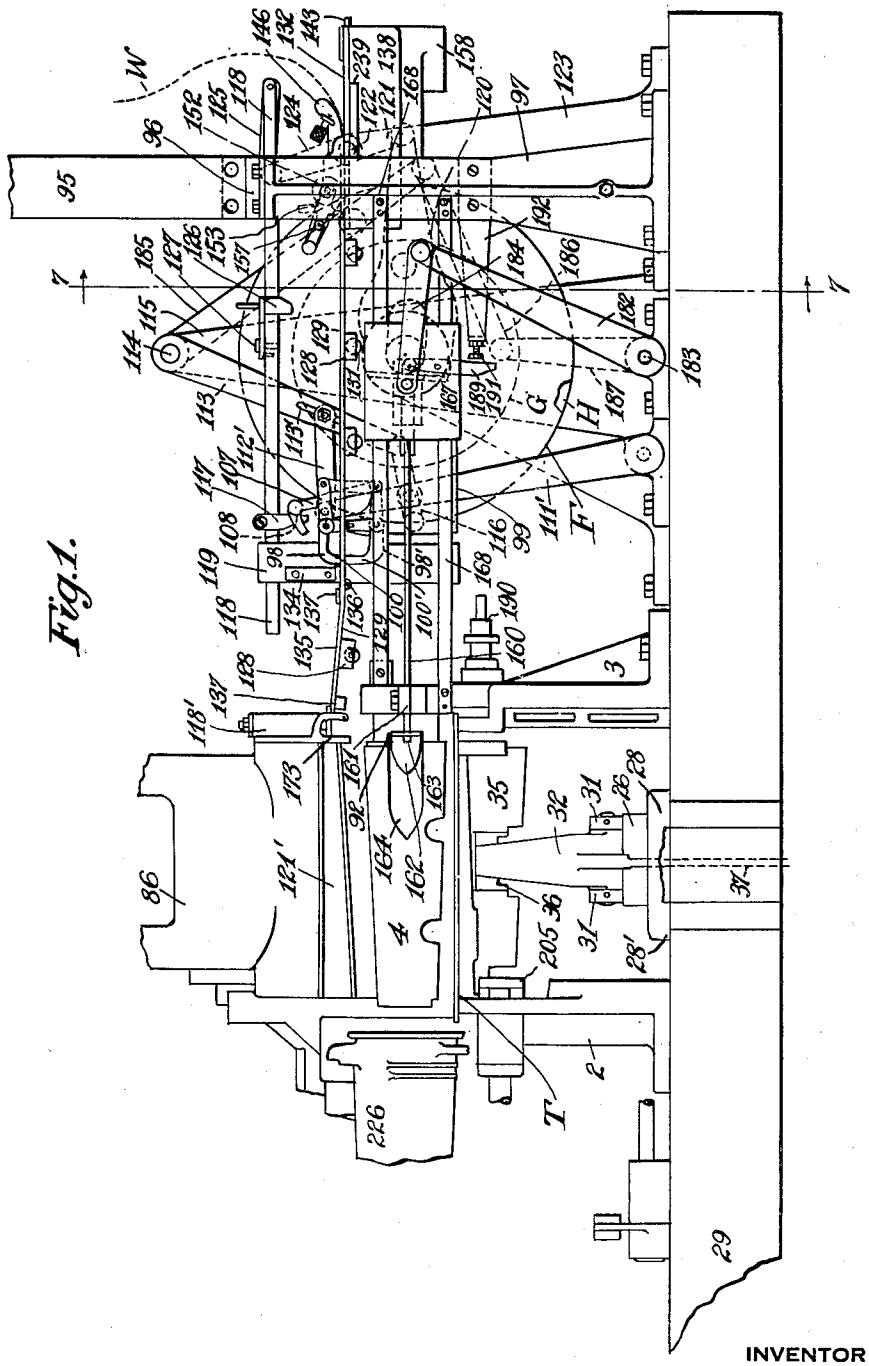


Fig. 1.

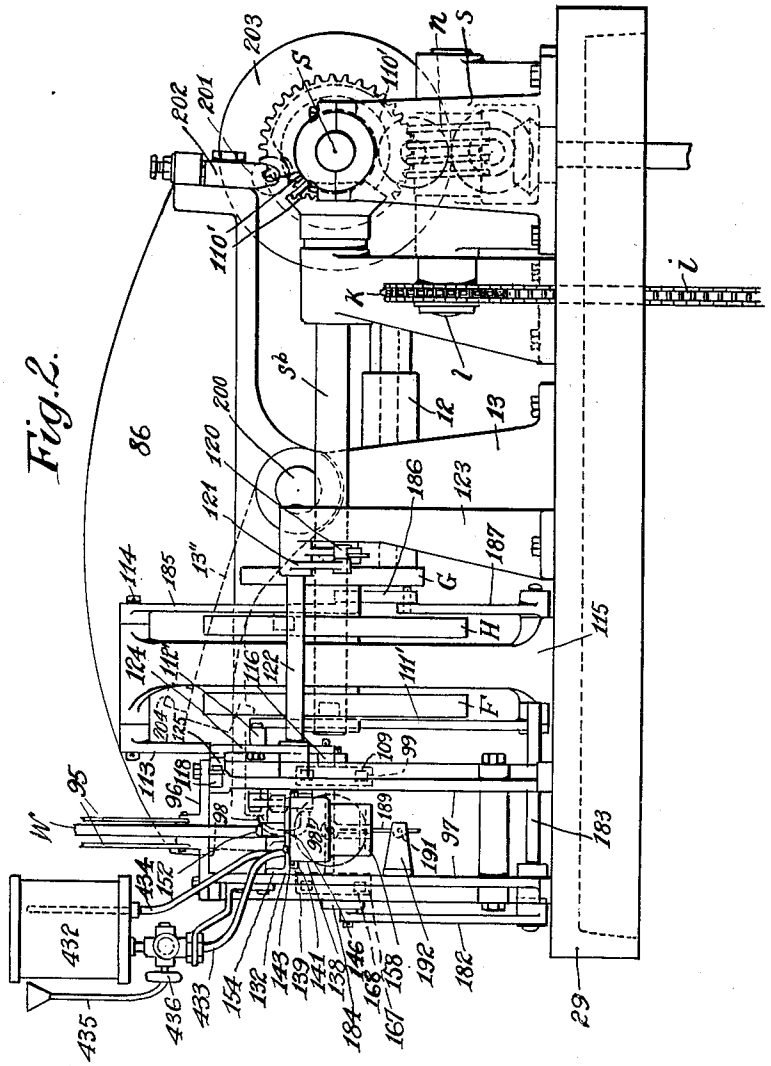
INVENTOR
E. L. Jones
BY
John O Seifert
ATTORNEY

March 27, 1934. E. L. JONES 1,952,869

RECEPTACLE MAKING APPARATUS

Filed May 31, 1932 7 Sheets-Sheet 2

Fig. 2.



INVENTOR
E. L. Jones
BY
John O. Seifert
ATTORNEY

March 27, 1934. E. L. JONES 1,952,869

RECEPTACLE MAKING APPARATUS

Filed May 31, 1932 7 Sheets-Sheet 3

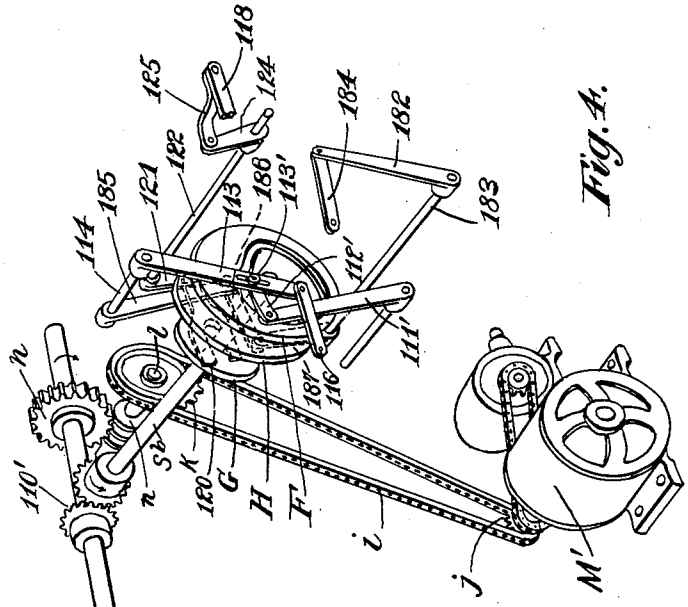


Fig. 4.

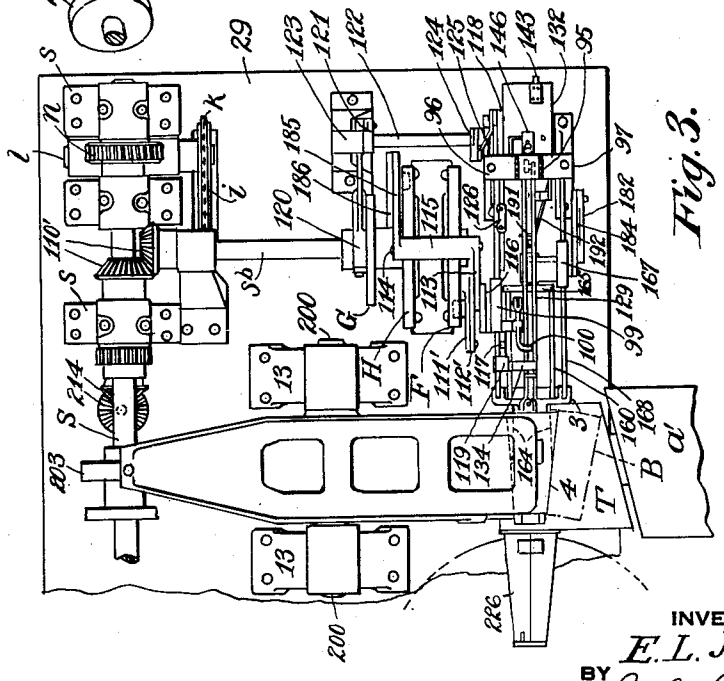


Fig. 3.

INVENTOR
E. L. Jones
BY
John O. Seifert
ATTORNEY

March 27, 1934. E. L. JONES 1,952,869

RECEPTACLE MAKING APPARATUS

Filed May 31, 1932 7 Sheets-Sheet 4

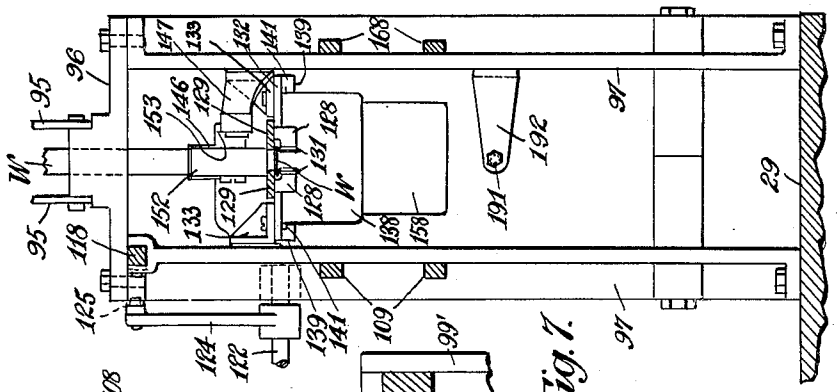


Fig. 7.

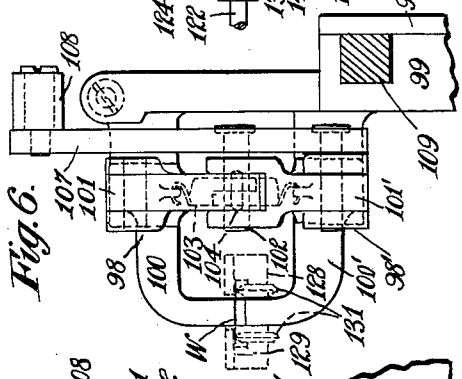


Fig. 6.

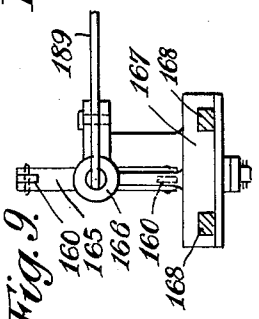


Fig. 9.

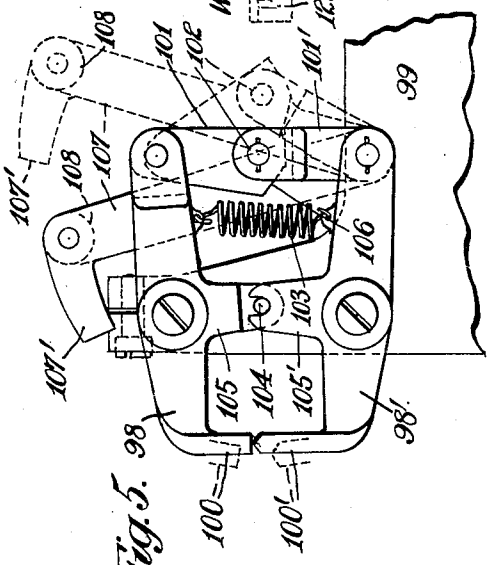


Fig. 5.

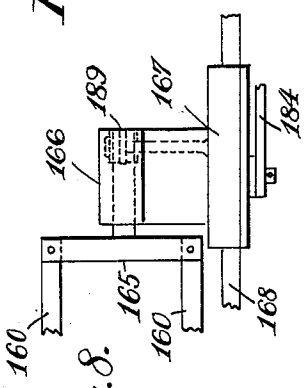


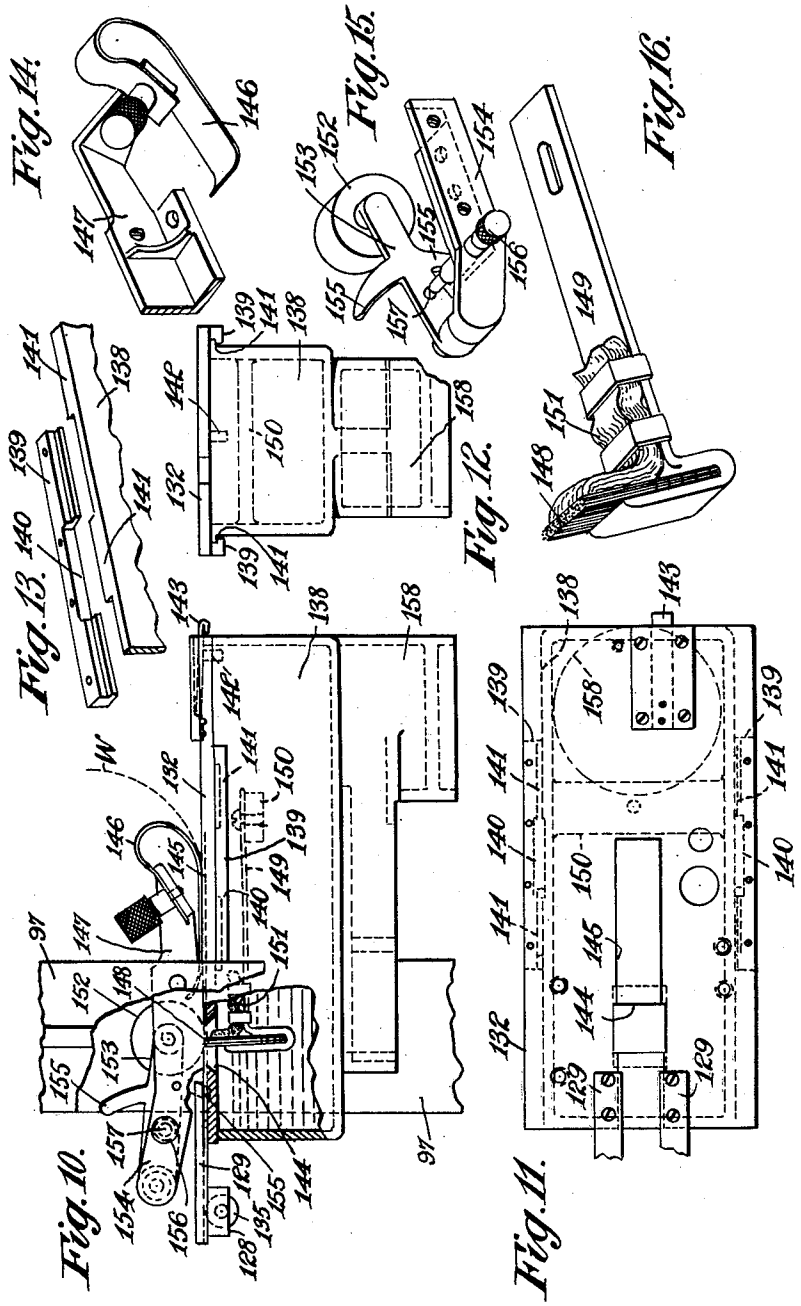
Fig. 8.

INVENTOR
E. L. Jones
BY
John O. Seifert
ATTORNEY

March 27, 1934. E. L. JONES 1,952,869

RECEPTACLE MAKING APPARATUS

Filed May 31, 1932 7 Sheets-Sheet 5



INVENTOR
E L Jones
BY
John O. Seifert
ATTORNEY

March 27, 1934. E. L. JONES 1,952,869

RECEPTACLE MAKING APPARATUS

Filed May 31, 1932 7 Sheets-Sheet 6

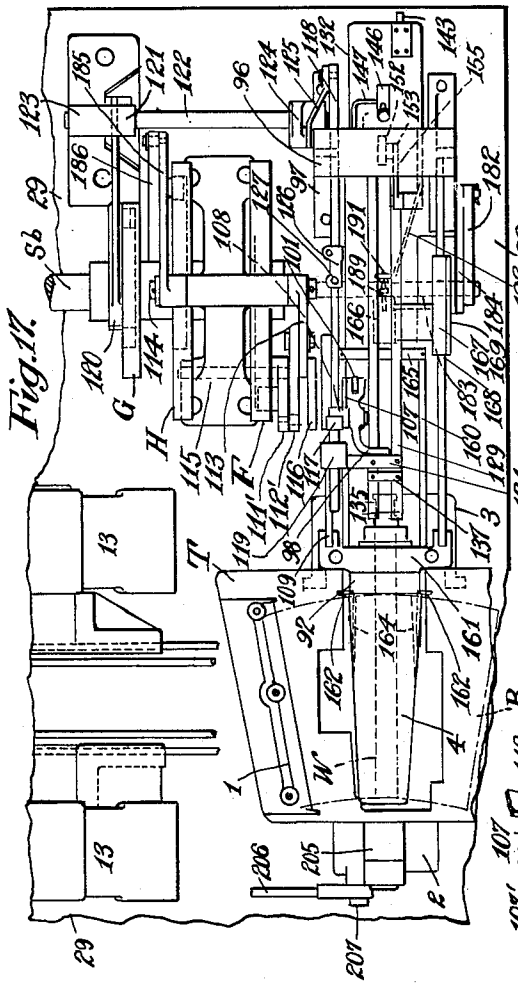


Fig. 17.

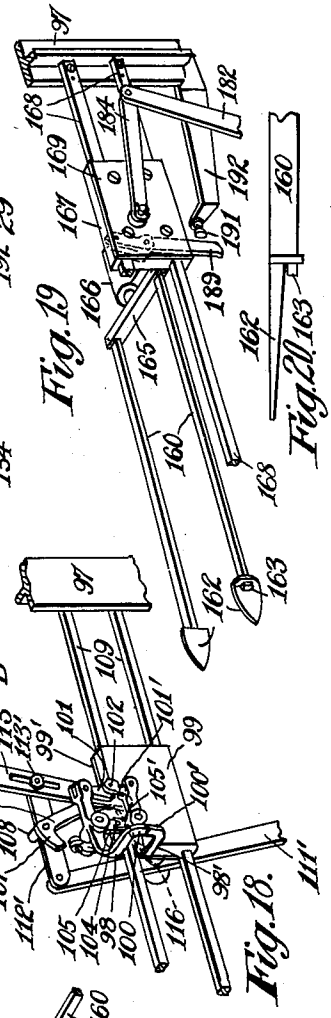


Fig. 19

Fig. 20

Fig. 18.

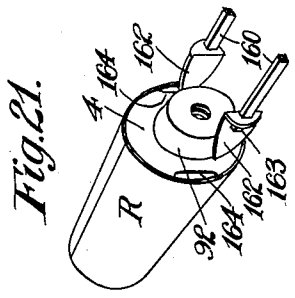


Fig. 21.

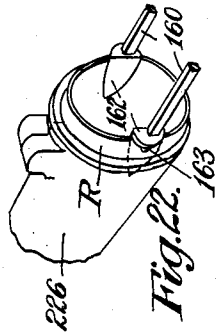


Fig. 22.

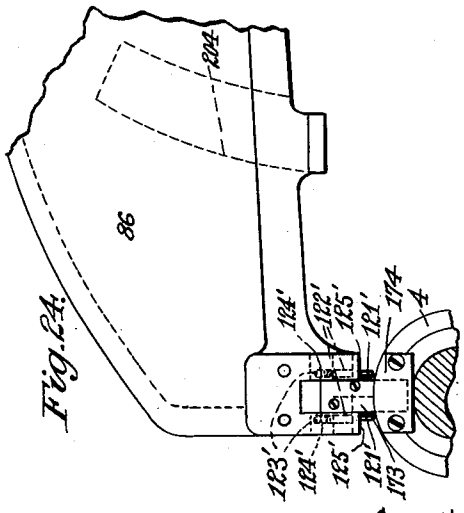
Inventor
E. L. Jones

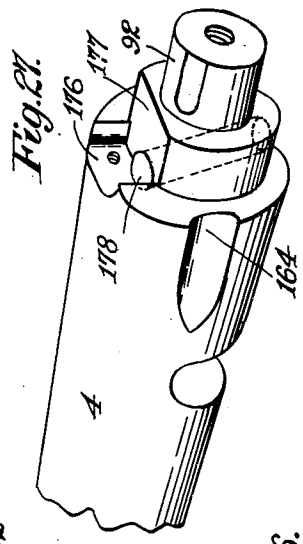
By his Attorney
John C. Seifert

March 27, 1934. E. L. JONES 1,952,869

RECEPTACLE MAKING APPARATUS

Filed May 31, 1932 7 Sheets-Sheet 7





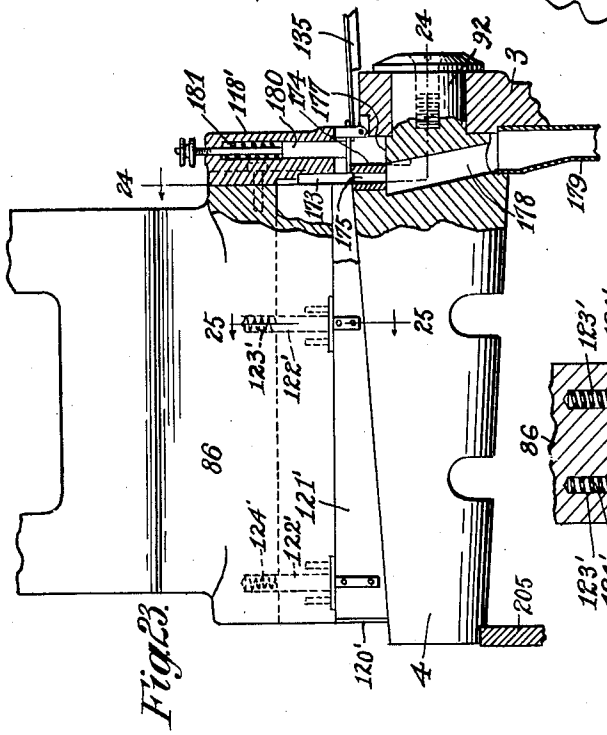
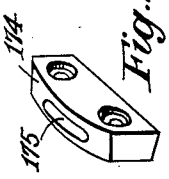


Fig.23.



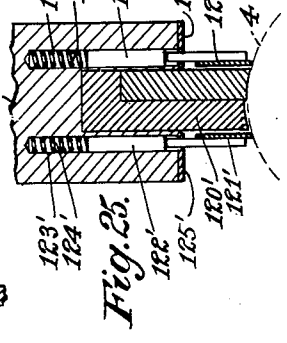


Fig.25.

INVENTOR
E. L. Jones
BY
John O. Seifert
ATTORNEY

Patented Mar. 27, 1934 1,952,869

UNITED STATES PATENT OFFICE

1,952,869

RECEPTACLE MAKING APPARATUS

Ellis L. Jones, Bellair, N. Y., assignor to American Sealcone Corporation, New York, N. Y., a corporation of New York

Application May 31, 1932, Serial No. 614,339

20 Claims. (Cl. 93—79)

This invention relates to apparatus for making receptacle bodies, and is a continuation in part of my application Serial No. 394,315, filed September 21, 1929, wherein a sheet or blank of paper is wrapped around a mandrel and secured while on the mandrel at the longitudinal marginal portions by applying an adhesive strip or web thereto to form the receptacle body, which body is ejected from the mandrel and delivered to one of a series of holders intermittently actuated to successively present the receptacle bodies therein to means to engage and secure a closure disk in one end of the receptacle body.

It is an object of the invention to provide improved means for positively feeding a predetermined length of web relative to the marginal portions of the blank wrapped around the mandrel to serve as the securing and side sealing strip for the receptacle body, and to provide improved means for moistening an adhesive surface of said web as it is fed to the mandrel.

Another object of the invention relates to cutter means actuated in sequence with the feeding of the side sealing web to the receptacle blank to sever the fed portion of the web.

A further object of the invention relates to means to position and apply pressure to the side sealing strip on the marginal portions of the blank simultaneously wtih the severing of said strip from the web.

It is another object of the invention to provide means to engage and eject the formed receptacle body from the mandrel into a holder subsequent to the applying of the side sealing strip to the marginal portions of the receptacle blank.

In the drawings accompanying and forming a part of this application Figure 1 is a side elevation of the means for feeding the side sealing web and ejecting the formed receptacle from the mandrel.

Figure 2 is an end elevation, on a reduced scale, looking at the right of Figure 1.

Figure 3 is a plan view, on a reduced scale, looking at the top of Figure 1.

Figure 4 is a perspective view of an operating train from the source of power for the different mechanism of the apparatus.

Figure 5 is a side elevation, on an enlarged scale, of web gripping means of the side strip feeding means and the actuating means therefor.

Figure 6 is a view of the gripping means looking at the right of Figure 5.

Figure 7 is a cross sectional view taken on the line 7—7 of Figure 1 looking in the direction of the arrows.

Figure 8 is a plan view of the mounting of the means for ejecting the receptacle body from the mandrel.

Figure 9 is a view looking at the right of Figure 8.

Figure 10 is a side elevation of a liquid carrying trough, partly broken away, to show means to apply the liquid from the trough to and moisten an adhesive surface of the side sealing strip, and means to guide the strip thereto.

Figures 11 and 12 are plan and end views of the trough shown in Figure 10.

Figure 13 is a perspective view of a support and a portion of the trough to show the arrangement for releasably mounting the trough on the support.

Figure 14 is a perspective view of the means to guide the sealing strip to the liquid applying means.

Figure 15 is a perspective view of means to maintain the sealing strip in contact with the liquid applying means as the strip is delivered relative to said liquid applying means.

Figure 16 is a perspective view of a brush for applying the liquid from the trough to the side sealing strip delivered relative thereto.

Figure 17 is a plan view looking at the top of Figure 1 and showing the side sealing web feeding means and the means to eject the formed receptacle from the mandrel.

Figure 18 is a perspective view of the side sealing strip feeding means.

Figure 19 is a perspective view of the means for ejecting a receptacle body from the mandrel.

Figure 20 is a view of a finger portion of the ejecting means.

Figure 21 is a perspective view showing the finger portions of the ejecting means about to engage a receptacle body on the mandrel to eject the body therefrom.

Figure 22 is a perspective view showing the fingers delivering a receptacle body into a holder.

Figure 23 is a side elevation, partly broken away, of the mandrel and a ram in position applying the side sealing strip to the marginal portions of a blank wrapped around the mandrel, and showing cutter means for severing the fed adhesive strip and means to strip the adhesive strip or web from the cutter means.

Figure 24 is a view taken substantially on the line 24—24 of Figure 23 looking in the direction of the arrow, and showing means for guiding the adhesive strip between the mandrel and ram, and relative to the marginal portions of the blank wrapped around the mandrel.

Figure 25 is a cross sectional view, on an enlarged scale, taken on the line 25—25 of Figure 23 looking in the direction of the arrows to show the mounting of the guiding means for the adhesive strip to the mandrel.

Figure 26 is a perspective view of a cutter of the cutter means for the adhesive strip adapted to be mounted on the mandrel; and

Figure 27 is a perspective view of a portion of the mandrel looking at the right of Figure 23.

In the embodiment of the invention illustrated in the drawings the operative mechanism of the apparatus is mounted on a table 29, and said mechanism is actuated from a drive shaft S journalled in standards *s* mounted upon the table 29, the drive shaft being operated from a motor M' by a chain *i* passing around a sprocket wheel *j* on the motor shaft and a sprocket wheel *k* fixed to a shaft *l* having a worm and worm wheel driving connection *n* with the driving shaft S.

Blanks B (Figures 3 and 17) from which the receptacle bodies are formed are fed or delivered from a pile on a suitable support *a'* onto a shelf T with an edge of the blank in register with a gauge 1 mounted upon the shelf. The shelf is mounted to extend in a horizontal plane upon standards 2, 3 fixed upon the table 29 below a mandrel or horn 4 and around which mandrel the blank delivered to the shelf is wrapped in forming the receptacle body. The blanks are fed to the shelf T by suction means as illustrated and described in my afore-mentioned co-pending application Serial No. 394,315, and it is believed it is not necessary to describe the structure and operation of said means in the present application.

When the blank B has been positioned on the shelf T by the suction means, means is operated to lift said blank from the shelf T to the mandrel 4, as fully set forth in my co-pending application, and the raised blank is wrapped around the mandrel by a rectangular open head 26 reciprocated toward and away from the mandrel in a guide member 28 extended through an opening in the table 29 and having a flange 28' whereby it is supported upon the table 29. The head 26 has a pair of ears 31 extending outwardly from opposite sides and between which ears a pair of arms 32 are pivotally supported, (Figure 1) and said arms extending upward and adapted to be urged in a direction toward each other. Flaps 35 are pivotally carried, as at 36, by the arms 32, said flaps being of curved form in cross section to conform with the contour of the mandrel. As said arms are moved upward by head 26 the leading longitudinal edge of the flaps engage the blank at opposite sides of the mandrel, and the continued upward movement of the head will move the flaps to encircle the mandrel and receptacle blank around the mandrel. The receptacle blank is of a width so that one longitudinal marginal portion may be lapped over the other marginal portion on the mandrel, and to facilitate the overlapping of one marginal portion over the other marginal portion the blank wrapping movement of one flap is retarded by rod 37, as fully disclosed and described by co-pending application Serial No. 394,315.

The mandrel 4 comprises a truncated conical block, fixed by a reduced portion 92 at the larger end to the standard 3 for the blank supporting table T.

The blank wrapped around the mandrel 4 is secured and sealed at the overlapped marginal portions to form the receptacle body by a strip applied to the receptacle blank over the marginal portions, by a ram 86 movable toward and away from the mandrel, the sealing strip comprising a fed portion severed from a web W of suitable material, such as paper, having an adhesive surface, which surface is moistened and rendered adhesive as the web is fed. The web is fed from a roll (not shown) rotatably supported by a pair of parallel standards 95 fixed to and extending upward from a crosshead 96 fixed upon standards 97 on the table 29.

The ram 86 is in the form of a lever of hollow structure pivotally supported intermediate its ends, Figures 2 and 3, in standards 13 by trunnions 200 extended laterally from opposite sides thereof, the ram being rocked to move an anvil 120' carried by the end of the ram extended over the mandrel into and out of engagement with mandrel by a roller 201 carried by a bracket 202 adjustably connected to the opposite end of the ram lever and engaging a cam groove in a disk 203 fixed to shaft S, the ram being guided in its movement and held against lateral distortion due to the connection of the ram with its actuating cam by a block carried by and extending laterally from opposite sides of an arm 13'' extended from one of the standards 13 into the hollow portion of the ram in a direction toward the anvil carrying end of the ram and engaging arcuate recesses in the opposite inner surfaces of the wall of the ram, as at 204. The movement of the anvil carrying end of the ram toward the mandrel may be varied by adjusting the carrying bracket 202 for the cam following roller.

The web feeding means comprises a pair of grippers mounted in the rear of the large end of the mandrel and in line therewith and reciprocatory toward and away from the mandrel, the grippers being operative to grip and positively feed a predetermined length of the web as they are moved in a direction toward the mandrel, and to release the web at the termination of such movement and during the return movement thereof. This gripping means, as illustrated in Figures 1, 2, 3, 5, 6 and 18, comprises a pair of levers 98, 98' pivotally mounted intermediate the ends to have movement on parallel axes on a reciprocatory carriage in the form of a slide 99. At one end the levers are extended laterally at substantially a right angle and in parallel relation to each other with the extremities extended toward each other, as shown at 100, 100', the end 100 of lever 98 being substantially flat while the end 100 of lever 98' is beveled to have a point or line contact with the flat end of the other lever, and to constitute the web gripping surfaces of the levers. At the opposite end the levers are connected by toggle links 101, 101' by pivotally mounting the same on pins in bifurcations at said ends of the levers, and the links are pivotally connected by the engagement of the link 101 in the bifurcated end of link 101', as at 102, and the extremities 100, 100' are normally yieldingly urged in a direction away from each other by a spring 103 connected to the levers adjacent the toggle links connecting the ends of the levers. The levers are connected to transmit the movement of one lever to the other by a pin and slot connection 104 between arms 105, 105' extended laterally from the levers in line with their pivotal supports. To limit the spreading movement of the gripping end of the levers by the spring the one toggle link 101 at the pivotal connection with the other toggle link is increased in width and has a corner at the juncture of one side edge with the end bevelled, as at 106, where-

by when the toggle is broken and the toggle connected ends of the levers are moved toward each other by the spring 103 said bevelled portion will engage with the connecting portion of the bifurcation legs of link 101', as shown in dotted lines in Figure 5. The movement of the gripping levers to web gripping and releasing positions is controlled by a latch 107 mounted on the pivotal connection 102 of the toggle links and the pivotal connection of toggle link 101' with the gripper lever 98', as clearly shown in Figures 5 and 6, said latch 107 carrying a roller 108 on a stud extended laterally therefrom and opposite to the gripper levers. The gripper carrier 99 comprises a block having parallel recesses therein for mounting on a pair of rails 109 and retained thereon by a plate 99' releasably secured to the block, the rails being mounted at one end upon a standard 97 and at the opposite end upon the supporting standard 3.

The gripper carrier 99 is reciprocated from the driving shaft S through a shaft S*b* (Figures 2, 3, 4, 17) operatively connected with the drive shaft through bevel gearing 110' (Figure 4) and the gripper carrier is operatively connected with said shaft S*b* by a roller carried by a lever 111' engaging a cam groove in a disk F fixed on the shaft. The lever is pivotally supported upon and extends upward from the table 29 and is operatively connected with the gripper carrier 99 through a link connection 112' between said lever and a lever 113 loosely hung on a shaft 114 in a standard 115 fixed upon the table (Figure 1), said lever 113 having a link connection 116 with the gripper carrier. The connection between link 112' and lever 113' is intermediate the ends of said lever and is adjustable, as shown at 113' in Figure 4, whereby to vary the movement of the lever 113 and thereby the travel of the gripper carrier 99 and length of the web fed.

To actuate the toggle link operating latch 107 as the gripper carrier reaches the termination of its web feeding movement, the latch roller 108 engages a stop 117 adjustably mounted on a slide rod 118 slidably mounted in a standard 97 on which the supporting rails 109 for the gripper carrier are mounted (Figure 1) and a bracket 119 fixed on rails 109. As the latch roller 108 engages said stop the slide rod 118 is moved in a direction reverse to the web feeding movement of the gripper carrier 99 thereby moving the latch to the position shown in dotted line in Figure 5 with the toggle links 101, 101' moved to exhausted position and permitting the gripper jaws to be moved to the dotted line position by spring 103 and releasing the jaws from the web. This movement is imparted to the stop carrying slide rod 118 by a roller carried by a link 120 engaging a cam groove in a disk G on shaft S*b*, the link being bifurcated and straddling said shaft. The link 120 is connected with an arm 121 fixed to a shaft 122 rotatably mounted in a standard 123 and a bearing member fixed to one of the standards 97, said shaft being connected with the stop carrying slide by an arm 124 fixed to said shaft having a link connection 125 with the slide rod 118. It will be obvious that by adjusting the stop 117 on the slide 118 the time at which the grippers are released from the web may be varied and thus effecting variations in the length of web fed.

To move the gripper levers 98, 98' to web gripping position at the end of the return movement of the carrier 99 and before the commencement of the web feeding movement of the same, a second stop 126 is mounted on the slide 118 for engagement of the latch roller 108 to actuate the latch 107 to move the toggle links 101, 101' to full line position, as shown in Figure 5. The stop 126 is pivotally mounted on the slide rod 118 at 127 whereby it may be adjusted to position out of the path of movement of the latch roller 108 with the result that no web gripping movement will be imparted to the gripper levers as the gripper carrier is reciprocated and no feeding of the web is effected. The latch 107 is arranged with a pallet 107' to guide the latch relative to the stops.

The web W is delivered by the web feeding means with the adhesive surface lowermost between the mandrel 4 and ram 86, the latter being operative to apply the web or strip under pressure to the marginal portions of the blank wrapped around the mandrel 4. The web is guided to said position by guiding means comprising a pair of sections, one section being fixed and embodying angle blocks 128 fixed to and spaced longitudinally of a pair of parallel and spaced rails 129 with the blocks suspended from the rails in opposed pairs with the angle portion of the opposed blocks extended toward each other and the inner marginal portions of the rails overhanging said angle portion of the blocks, as shown in Figure 7. The web is supported as it is fed by rollers 131 rotatably carried by the blocks, the peripheral portion of the rollers being of V shape in cross section to have only a limited contact with the web. The rails 129 are supported at one end upon a plate 132 fixed upon angle brackets 133 mounted on the standards 97, the plate extending from the ends of and with the upper surface in a plane with the guide rails 129 to constitute a continuation thereof. The opposite ends of the rails are supported by an angle bracket 134 fixed to the bracket 119. By the spacing of the rails the gripping jaws of the feeding means are adapted to engage the web and move the same longitudinally of the rails. The other section 135 of the guiding means is pivotally connected at 136 to one end of the guide rails 129 and has a similar connection with a bracket 118' fixed to the end of the ram 86 to participate in the movement of the ram toward and away from the mandrel. The guide section 135 embodies one pair of roller carrying blocks 128 and a pair of guide rails 129 connected by cross pieces 137. From the guide section 135 the web is guided in interposed relation to the blank wrapped around the mandrel and the anvil 120' fixed in and projecting from the face of the ram (Figure 25) by a pair of parallel guide plates 121' arranged at opposite sides of the anvil and fixed to the reduced ends of pins 122' with the enlarged portions of the pins slidably engaging in bores 123' in the ram and normally urged outward by springs 124' interposed between the ends of the pins and the bottom of the bores, with the shoulders formed by the reduced ends engaging perforations in plates 125' fixed to the face of the ram through which perforations the reduced ends of the pins are extended with the guide plates 121' extended beyond the face of the ram anvil.

As the ram 86 is moved toward the mandrel to apply the adhesive sealing strip to the marginal portions of the receptacle blank wrapped around the mandrel the fed portion of the adhesive web relative to the mandrel is severed by cutter mechanism (Figures 23, 24, 26 and 27), comprising a cutter 173 fixed to the end of the ram and extending beyond the face of the ram anvil, said cutter being of rectangular shape in cross section to

arrange the same with a pair of cutting edges. This cutter co-operates with a tubular cutter in the form of a block 174 having an opening 175 therethrough to conform to the shape of the cutter 173 and the edges of the opposite walls at the entrance to said opening forming cutting edges with which the cutter 173 co-operates to sever the web. The cutter block 174 is secured in a recess 176 in the end of the mandrel relative to a flat portion 177 of a portion reduced relative to the mandrel and enlarged relative to the reduced supporting end 92. By this arrangement the cutter instead of severing the web by a single shear cut a portion is severed from the web providing a clear edge at the severed edges of the web, the severed portion of the web being delivered to an opening 178 though the mandrel in line with the cutter block with which a chute 179 is connected to direct the severed web portion to a suitable receiving receptacle therefor. As the ram moves toward the mandrel the forward end of the web guide section 135 is moved downward therewith to position the web relative to the cutter mechanism (Figure 23), and the end of the web projecting from the guide is engaged by a plunger 180 slidably mounted in a bore in bracket 118' and yieldingly urged outward by a spring 181 to guide the web to the cutter mechanism and strip the web from the cutter mechanism during the receding movement of the ram.

The adhesive surface of the web W is moistened as it is fed to render it viscous, and for this purpose a liquid carrying trough 138 is removably mounted upon the bottom of the plate 132, which plate served as a closure for the trough. To mount the trough on the plate gibs 139 (Figure 13) are fixed to the bottom of the plate at the opposite marginal portions, said gibs having an intermediate cut away portion 140. Longitudinally spaced cleats 141 are fixed to the sides of the trough adjacent the top to have sliding engagement with the gibs. To mount the trough on the plate the one cleat is positioned opposite the cut away portion 140 of the gibs to position the top of the trough contiguous to the plate when the trough is moved longitudinally into sliding engagement with the gibs. The trough is releasably held against longitudinal displacement relative to an abutment 142 fixed to and extending downwardly from the plate and engaging the inside of the end wall of the trough by a yielding latch 143 carried by the plate engaging the end of the trough. The plate 132 has an opening 144 therein in relation to a recess 145 in said plate in line with the space between the rails 129, the web being retained and guides in said recess by a yielding presser 146 carried by a bracket 147 fixed to a standard 97. As the web passes over the opening 144 liquid is applied to the under adhesive surface by bristles 148 carried by a holder of resilient material 149 (Figures 10 and 16) mounted on a cross bar 150 in the trough and tensioned to normally assume a position with the bristles extended through the plate opening, the liquid being applied to the bristles by capillary attraction by an absorbent material 151 arranged on the holder contiguous to the bristle. The web is maintained in contact with the bristles by a gravity roller 152 (Figures 10 and 15) carried by an arm 153 pivotally mounted on a bracket 154 fixed to the standard 97 to which the presser carrying bracket 147 is fixed. The roller 152 engages and maintains the web in contact with the bristles by gravity. A pair of ears 155 are extended oppositely from the roller carrying arm 153, one to engage the plate 132 to limit the movement of the roller from the bristles and the other ear to support the roller carrying arm from a guide rail 129 when the roller is moved out of contact with the portion of the web superposed to the bristles. To prevent a momentary disengagement of the roller from the web and bristles by the sudden movement of the web during the commencement of the feeding thereof, a detent pin 156 is carried by the bracket 154 and yieldingly urged by a spring in a direction toward the roller carrying arm 153 to engage an abutment 157 fixed in and extending laterally from said arm. A tubular projection 158 is extended downward from the bottom of the trough for the removable connection of a heater, such as an electric heater (not shown) should it be desired to heat the liquid in the trough.

To supply liquid to and maintain it at a predetermined level in the trough 138 a substantially air tight liquid carrying receptacle 432 is carried by a bracket fixed to a standard 97, an outlet tube 433 leading from the bottom of the receptacle to the trough. A tube 434 opens to and extends into the trough to an extent below the desired liquid level in the trough and has a connection with the receptacle adjacent the top thereof and an air space above the liquid level in the receptacle. Should the liquid level in the trough fall below the end of the tube 434 air is admitted to the receptacle effecting a flow of the liquid from the receptacle to the trough until it reaches a level to seal the end of the tube 434 in the trough when the flow of the liquid is automatically shut off. Liquid is supplied to the receptacle through a tube 435 connected with the outlet tube. To control the delivery of liquid through the tube 435 to the receptacle instead of to the trough and flooding the same a two-way valve is arranged in the connection of the supply tube with the outlet tube, indicated in a general way at 436. The valve is arranged to shut off the outlet tube from the trough when the supply tube is connected with the receptacle, and to shut off the supply tube from the receptacle and the outlet tube when the receptacle is connected with the trough through the outlet tube.

The body R is ejected from mandrel 4 into a holder 226 positioned in alinement with the small end of the mandrel by an ejector mechanism, (Figures 1, 2, 3, 8, 9, 17, 19, 20, 21 and 22) comprising a pair of parallel ejector rods 160 slidably guided at 161 in an upward extension of the mandrel supporting bracket 3 to have longitudinal movement at opposite sides of the mandrel. Angle plates, the opposite edges of one angle portion 162 of which converge toward each other and are of progressively decreased thickness outward, as shown in Figure 20, are secured to the ends of the ejector rods with a reduced portion of the rods extended through the other angle portion and spaced from the angle portion 162, as at 163. The mandrel has diametrically opposite longitudinal recesses 164 therein and the ejector rods are spaced apart a distance to engage the portions 162 in the recesses 164 and so that the edge of a receptacle R will engage the space between the plate portion 162 and the extended ends 163 of the ejector rods 160. The ejector rods are carried by head 165 connected with a reciprocatory carrier by a stud forming a part of the head 165 extended through and slidable in a tubular portion 166 extended laterally from a slide block 167 of the carrier having recesses for slidable mounting on rails 168 fixed

to a standard 97 and the bracket 3, and retained on the rails by a plate 169 secured to the block. The ejector rod carrier block 167 is reciprocated by an arm 182 fixed to a rock shaft 183 and having a link connection 184 with the carrier. The shaft 183 is rocked from a rocker arm 185 hung on shaft 114 having a link connection 186 with an arm 187 fixed to shaft 183, the arm 185 being rocked by a roller on said arm engaging a cam groove in disk H fixed to shaft S*b*. To impart an added increment of movement to the ejector rods 160 greater than that imparted thereto by its carrier a lever 189 is pivotally carried in a slotted portion extended downward from the tubular portion 166 of the carrier 167. The stud of the head 165 is of greater length than said tubular portion and one end of the lever 189 is pivoted to the end of said stud of head 165 extended from the tubular portion 166, the opposite end of the lever extending below the carrier. As the carrier approaches the end of its ejecting movement the downward extending end of the lever 189 will engage an adjustable abutment 190 in bracket 3 rocking the lever and thereby imparting an added movement to the ejector rods. At the end of the return movement of the ejector carrier 167 said extended end of the lever 189 engages an adjustable abutment 191 carried by an arm 192 fixed to one of the standards 97, and thereby imparting an additional return movement to the ejector rods to position the plates 162 away from the mandrel and permit wrapping of a blank around the mandrel.

The small end of the mandrel is free and unsupported during the ejecting of the formed receptacle from the mandrel into the holder 226 and is adjustably supported by the standard 2 when the side sealing strip is being applied by the ram 86 to prevent springing of mandrel by the ram by providing an adjustable auxiliary support on the standard 2 (Figures 1, 17 and 23), comprising an arm 205 rotatable in a recess of the standard 2 normally positioned as shown in full lines in Figure 1 and moved to mandrel supporting position shown in Figure 23 just prior to the ram engaging with the mandrel by a rod 206 pivotally connected to an arm 207 fixed to the mandrel supporting arm 205.

Having thus described my invention, I claim:

1. In receptacle body forming apparatus, a mandrel, means to wrap a receptacle blank around and hold the same to the mandrel with the marginal portions of the blank free of said means, means to feed a predetermined length of an adhesive securing web to the marginal portions of the blank on the mandrel, comprising a carrier block slidably supported to have reciprocatory movement in a plane longitudinally of and toward and away from the mandrel, a pair of levers mounted on the block to have movement on parallel axes and arranged with web gripping jaws movable into and out of engagement with the web guided from a supply roll between said jaws, means to reciprocate the lever carrier, means to actuate the levers to move the jaws to position to clamp the web between the jaws at the commencement of the web feeding movement of the levers and to release the lever jaws from the web at the termination of the web feeding movement, and means to sever the fed portion of the web and apply the same to the marginal portions of the blank wrapped around the mandrel.

2. In receptacle body forming apparatus as claimed in claim 1, a drive shaft, and means to operatively connect to said shaft the operating means for the means to wrap the blank around the mandrel, the means to sever and apply the fed adhesive securing web to the marginal portions of the blank wrapped around the mandrel, and the means to reciprocate the lever carrier of the web feeding means to actuate said means in timed sequence.

3. In receptacle body forming apparatus as claimed in claim 1, means to operatively connect the levers to transmit the movement of one lever to the other lever, a spring connected with and actuating the levers to move the jaw carrying ends away from each other, and toggle links connected to the ends of the levers operative to actuate the levers to move the jaws into contact and retain them in said position.

4. In receptacle body forming apparatus as claimed in claim 1, a drive shaft to which the blank wrapping means and the means to sever and apply the fed portion of the web to the marginal portions of the blank on the mandrel are operatively connected and driven therefrom, and the means to reciprocate the carrier for the jaw carrying levers comprises a shaft driven from the drive shaft, and means to connect the carrier with said driven shaft.

5. In receptacle body forming apparatus as claimed in claim 1, a drive shaft to which the blank wrapping means and the means to sever and apply the fed portion of the web to the marginal portions of the blank on the mandrel are operatively connected and driven therefrom, and the means to reciprocate the carrier for the jaw carrying levers comprises a shaft driven from the drive shaft, a cam on said driven shaft, a lever carrying a roller to follow said cam, and a second lever having a link connection with the first lever and a connection with the carrier for the jaw carrying levers.

6. In receptacle body forming apparatus as claimed in claim 1, a drive shaft to which the blank wrapping means and the means to sever and apply the fed portion of the web to the marginal portions of the blank on the mandrel are operatively connected and driven therefrom, and the means to reciprocate the carrier for the jaw carrying levers comprises a shaft driven from the drive shaft, a disk on the driven shaft having a cam groove in the face thereof, a pivoted lever carrying a roller engaging the cam groove in the disk, a second lever having a link connection with the carrier for the jaw carrying levers, and an adjustable connection between the two levers to vary the movement of one lever relative to the movement of the other lever and thereby the reciprocatory movement of the carrier.

7. Receptacle body forming apparatus as claimed in claim 1, wherein the means to actuate the jaw carrying levers to move the jaws to position to grip the web between the jaws at the commencement of the web feeding movement and to release said lever jaws from the web at the termination of the web feeding movement, comprises toggle links connected to the ends of the levers operative to actuate the levers to move the jaws into contact and retain them in said position, a pair of stops, and means connected with the toggle links of the jaw carrying levers engaging one of said stops at the termination of the web feeding movement to break the toggle formed by the links, and engaging the other of said stops at the termination of the retrograde movement and move the toggle links

to supporting position and the lever jaws to web gripping position.

8. Receptacle body forming apparatus as claimed in claim 1, wherein the means to actuate the jaw carrying levers to move the jaws to position to grip the web between the jaws at the commencement of the web feeding movement and to release said lever jaws from the web at the termination of the web feeding movement, comprises toggle links connected to the ends of the levers operative to actuate the levers to move the jaws into contact and retain them in said position, a slide, a pair of stop abutments mounted on the slide, a latch connected with the toggle links of the jaw carrying levers arranged to engage said stop abutments at the termination of the web feeding movement and of the retrograde movement of the carrier for the jaw carrying levers, and means to actuate the slide at the termination of the web feeding movement of the carrier to move the latch to break the toggle formed by the toggle links, and at the termination of the retrograde movement thereof actuate the latch to move the toggle links to supporting position and the jaws to web gripping position.

9. In receptacle body forming apparatus, a mandrel, means to warp a receptacle blank around the mandrel and hold the same to the mandrel with the marginal portions of the blank free of said means, a carrier block slidably supported to have reciprocatory movement in a plane longitudinally of and toward and away from the mandrel, a pair of levers pivotally mounted on said carrier, said levers arranged with jaws to grip an adhesive web guided from a supply roll between the jaws and deliver the web to the mandrel relative to the marginal portions of the blank wrapped about the same, toggle links connected to the ends of the levers opposite to the jaws adapted to move the lever jaws to web gripping position when the links are moved to supporting position, a spring to move the jaw ends of the levers away from each other when the toggle formed by the links is broken, means operative at the commencement of the web feeding movement of the lever carrier to move the toggle links to supporting position and the lever jaws into web gripping position, and at the termination of the web feeding movement break the toggle formed by said links and permit the spring to actuate the levers to move the lever jaws out of web gripping position, a ram to apply the fed portion of the web to the marginal portions of the blank on the mandrel, co-operating cutters carried by the ram and mandrel to sever the fed portion of the web, a drive shaft, and means to operatively connect the blank wrapping means, the ram and the reciprocatory carrier for the jaw carrying levers with and actuate the same in timed sequence from said drive shaft.

10. Receptacle body forming apparatus as claimed in claim 9, wherein the means to move the toggle links connected with the levers to supporting position and the levers with the jaws to web gripping position, and to break the toggle formed by said links to release the lever jaws from the web, comprises a latch connected with the toggle links, a reciprocatory slide extending parallel to the movement of the carrier for the levers, stop abutments on said rod arranged in the path of movement of and for engagement by the latch at the termination of the web feeding and retrograde movements of the carrier, and means operative from the drive shaft to actuate said slide at the termination of the web feeding movement of the carrier to actuate the latch through one of the stop abutments in engagement therewith to break the toggle formed by the toggle links and release the lever jaws from the web, and at the termination of the retrograde movement of the carrier to actuate the latch through the other stop abutment engaged therewith and move the toggle links to supporting position and the lever jaws to web gripping position.

11. Receptacle body forming apparatus as claimed in claim 9, wherein the means operative at the commencement of the web feeding movement of the lever carrier to move the toggle links to supporting position and the lever jaws to web gripping position is adjustable to render said means inoperative to effect web gripping movement of the levers during the reciprocation of the carrier therefor.

12. Receptacle body forming apparatus as claimed in claim 9, wherein the means to reciprocate the lever carrier and actuate the means to move the lever jaws to web gripping and releasing positions comprises a shaft driven from the drive shaft, a cam on said driven shaft, interconnected levers connected with the lever carrier and one lever carrying a roller to follow the cam, a second cam on the driven shaft, a rock shaft connected with the means to control the movement of the lever jaws to web gripping and releasing positions, and a link connected with said rock shaft carrying a roller to follow the second cam.

13. In receptacle body forming apparatus as claimed in claim 1, means to moisten the adhesive surface of the web to render it viscous as it is fed, and means to support and guide the web to said moistening means, the web feeding means and relative to the marginal portions of the blank wrapped around the mandrel.

14. In receptacle body forming apparatus as claimed in claim 1, a liquid carrying trough having a closure with an opening therein in line with a channel in the closure, means to yieldingly engage the web in the closure channel to guide the web to the closure opening, a brush in the trough yieldingly urged into contact with the web juxtaposed to the closure opening to apply the liquid in the trough to and moisten the adhesive surface of the web, and means to engage and maintain the web in contact with the brush.

15. In receptacle body forming apparatus as claimed in claim 1, a liquid carrying trough, a brush in the trough, means to guide the web to and maintain it in contact with the brush to apply the liquid from the trough to and moisten the adhesive surface of the web, a liquid supply receptacle, and means to connect the receptacle with the trough and regulate the flow of the liquid from the receptacle to the trough and maintain the liquid at a predetermined level in the trough.

16. In receptacle body forming apparatus, a mandrel, means to wrap a blank around and secure the blank at the marginal portions on the mandrel, and means to deliver the body from the mandrel comprising rods slidably supported at the end and opposite sides of the mandrel to have reciprocatory movement longitudinally of the mandrel, fingers of angle shape carried by the rods, one angle portion of the fingers being adapted to engage recesses in opposite sides of the mandrel within the receptacle body and the

other angle portion to engage the edge of the receptacle body on the mandrel during the movement of the rods and eject the body from the mandrel.

17. In receptacle body forming apparatus, a mandrel, means to wrap a receptacle blank around and secure the blank at the marginal portions on the mandrel, and means to deliver the body from the mandrel comprising a slide block supported to have reciprocatory movement in the plane of and toward and away from the mandrel, rods carried by said slide arranged at opposite sides of the mandrel and normally positioned at the end of the mandrel, said rods being arranged with means to engage the edge of the body on the mandrel to eject the body therefrom when moved toward the mandrel, a drive shaft to which the means to wrap the blank around and secure the blank at the marginal portions on the mandrel are operatively connected and actuated therefrom, a shaft driven from the drive shaft, a cam on said driven shaft, and means connected with the rod carrying slide and including a cam following roller to actuate said slide from the cam.

18. In receptacle body forming apparatus, a mandrel, means to wrap a receptacle blank around and secure the blank at the marginal portions on the mandrel, a slide supported at the end of the mandrel to have reciprocatory movement toward and away from the mandrel, ejector rods carried by said slide to participate in the movement thereof and have independent movement relative to the slide, said rods being positioned at opposite sides of the mandrel and arranged with means to engage the edge of the receptacle body on the mandrel and eject the body from the mandrel as the slide with the rods is moved toward the mandrel, means to reciprocate the slide, and means to impart an added increment of movement to the ejector rods as the slide approaches the termination of its reciprocatory movements.

19. In receptacle body forming apparatus, a mandrel, means to wrap a receptacle blank around and hold the same to the mandrel with the marginal portions of the blank free of said means, a carrier slidably supported at the end of and reciprocatory toward and away from the mandrel, a pair of levers mounted on said carrier arranged with jaws at one end to grip an adhesive web guided between the jaws and deliver the web relative to the marginal portions of the blank on the mandrel by the movement of the carrier, means to normally and yieldingly urge the jaws away from each other to web releasing position, means to actuate the lever jaws toward each other to web gripping position and retain them in said position, and means to operate said lever actuating means to permit the levers to assume their normal web releasing position at the termination of the web feeding movement and move the levers to web gripping position at the termination of the retrograde movement thereof.

20. Receptacle body forming apparatus as claimed in claim 19, wherein the means to operate the lever actuating means is adapted to be rendered inactive to operate the lever actuating means to actuate the lever jaws to web gripping position during the reciprocation thereof with the carrier.

ELLIS L. JONES.