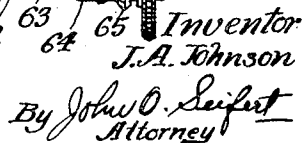


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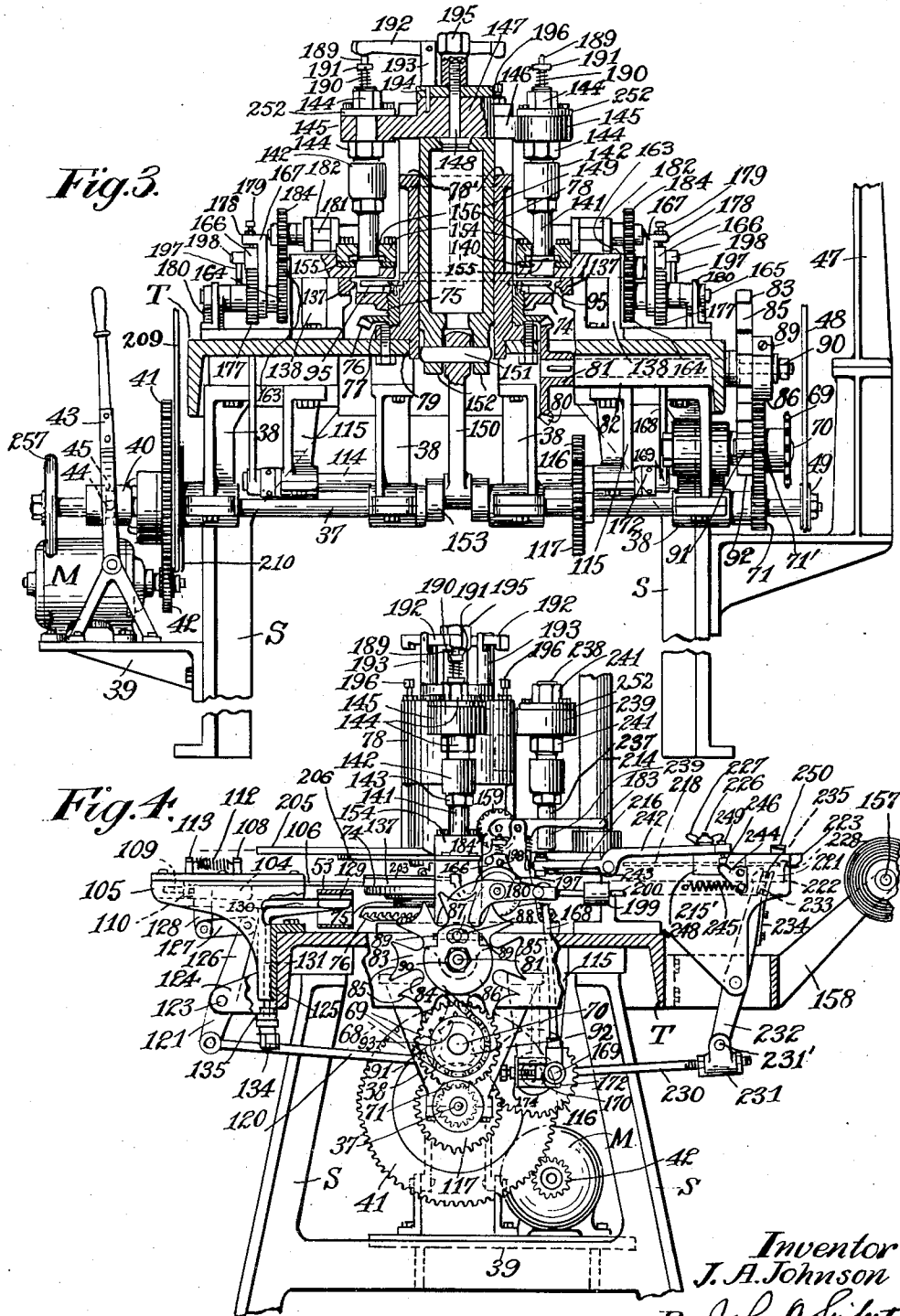
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APPARATUS FOR ASSEMBLING LININGS IN RECEPTACLE CLOSURE CAPS

Filed April 20, 1931

7 Sheets-Sheet 2



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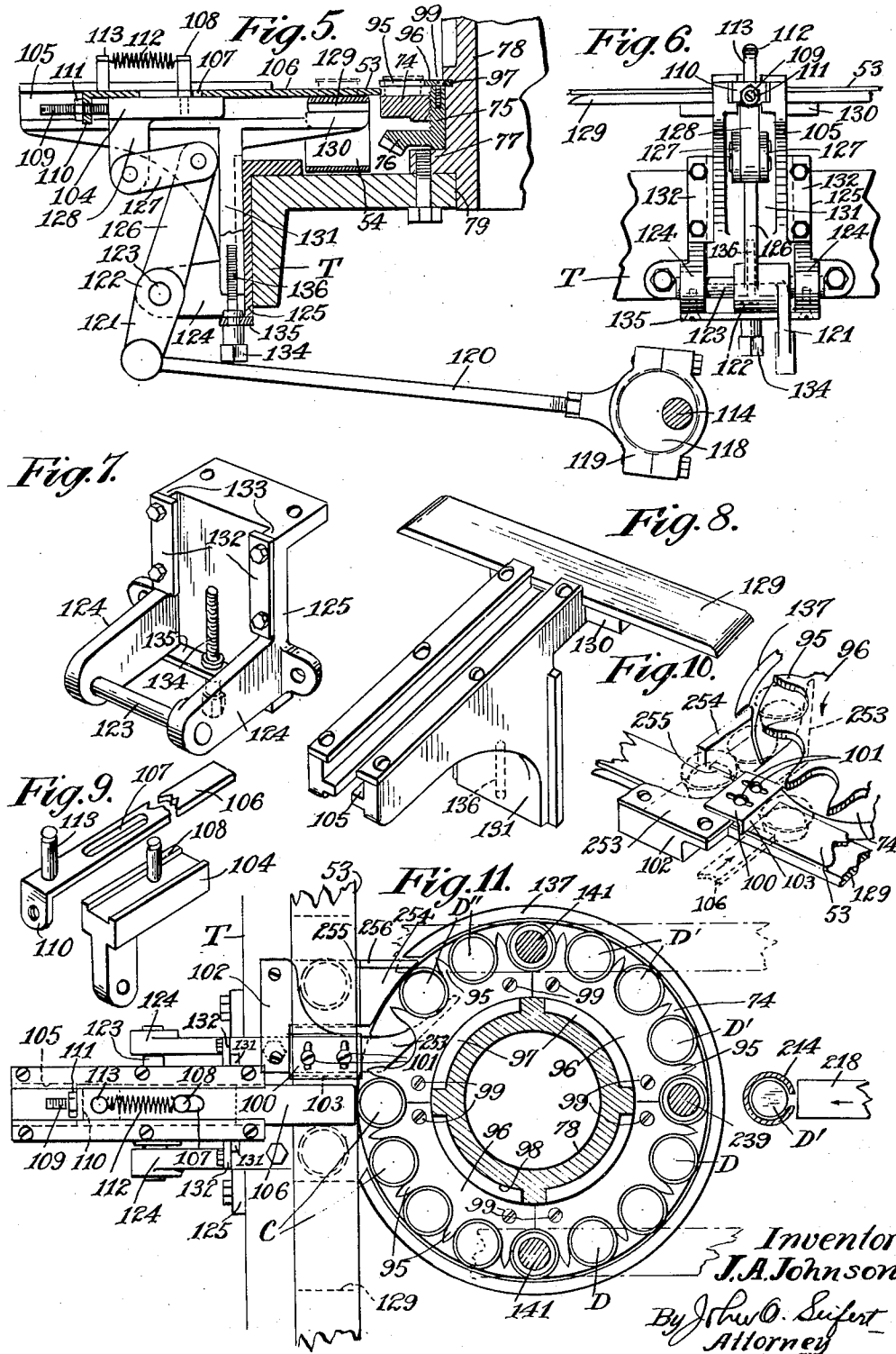
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APPARATUS FOR ASSEMBLING LININGS IN RECEPTACLE CLOSURE CAPS

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7 Sheets-Sheet 3



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APPARATUS FOR ASSEMBLING LININGS IN RECEPTACLE CLOSURE CAPS

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7 Sheets-Sheet 4

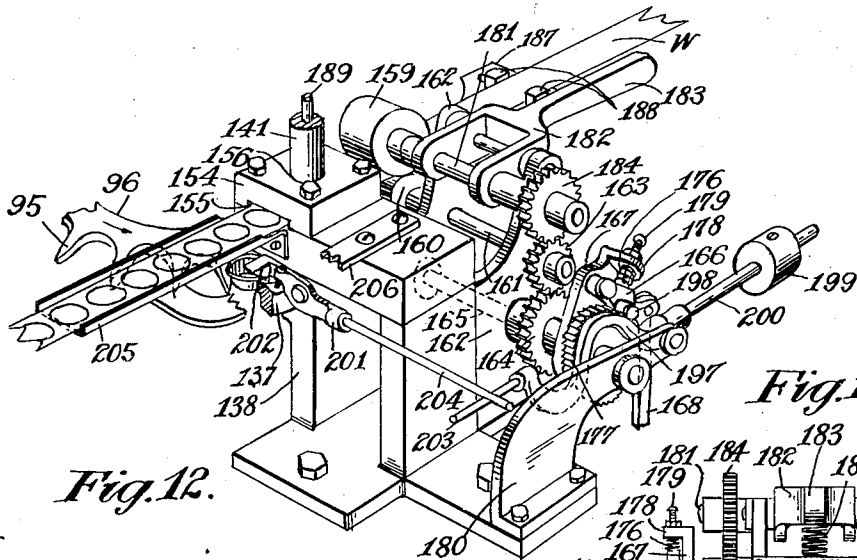


Fig. 12.

Fig. 13.

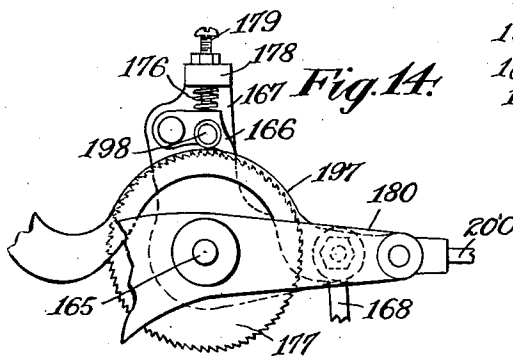


Fig. 14.

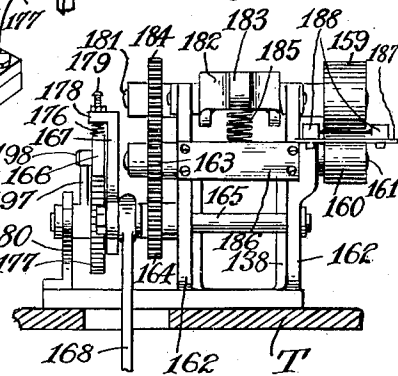
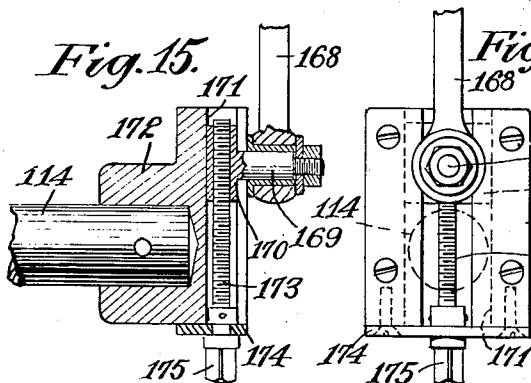


Fig. 15.

Fig. 16.



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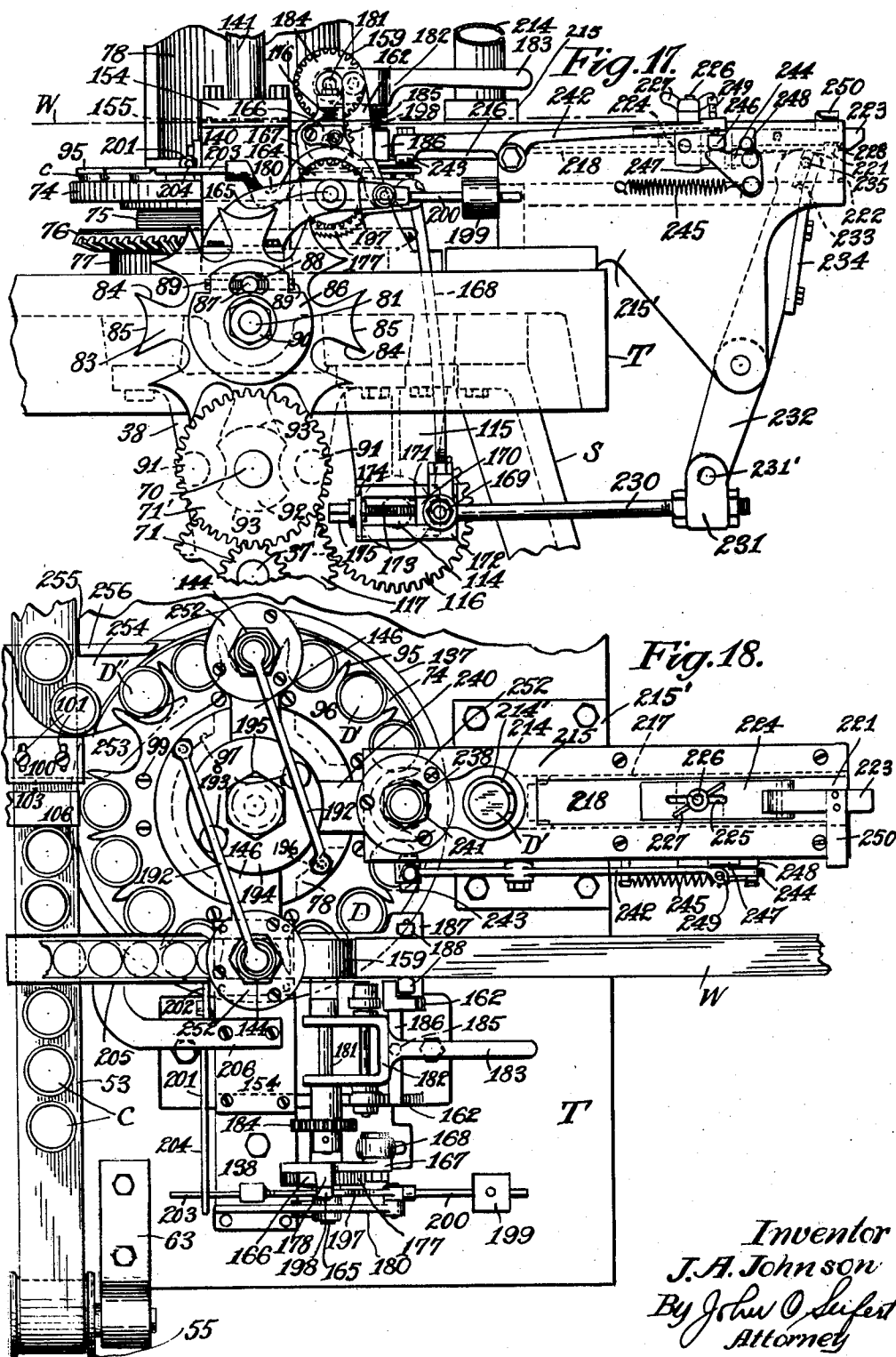
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APPARATUS FOR ASSEMBLING LININGS IN RECEPTACLE CLOSURE CAPS

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APPARATUS FOR ASSEMBLING LININGS IN RECEPTACLE CLOSURE CAPS

Filed April 20, 1931

7 Sheets-Sheet 6

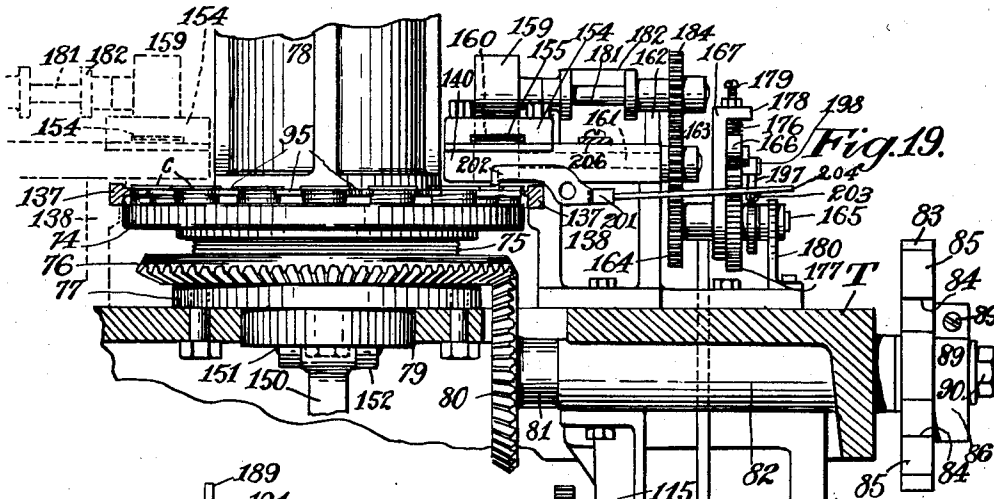
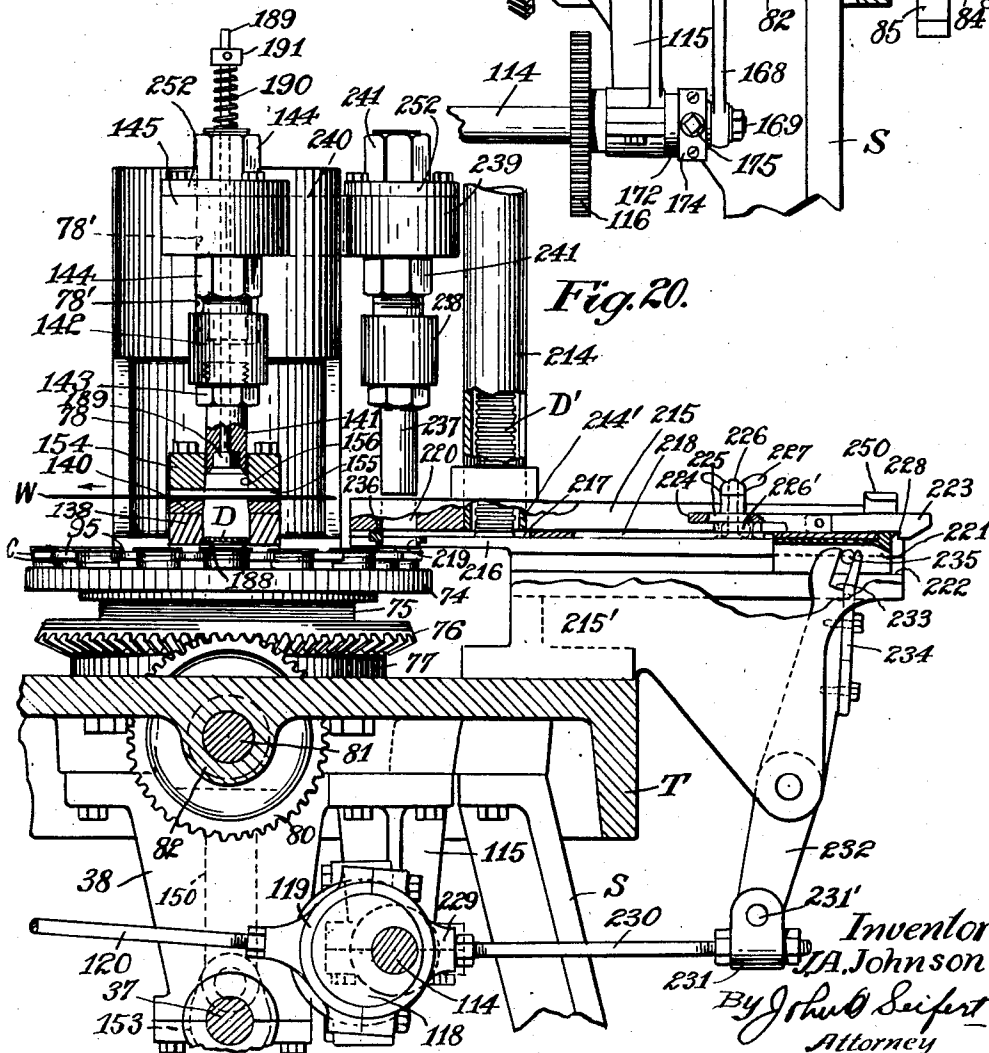


Fig. 20.



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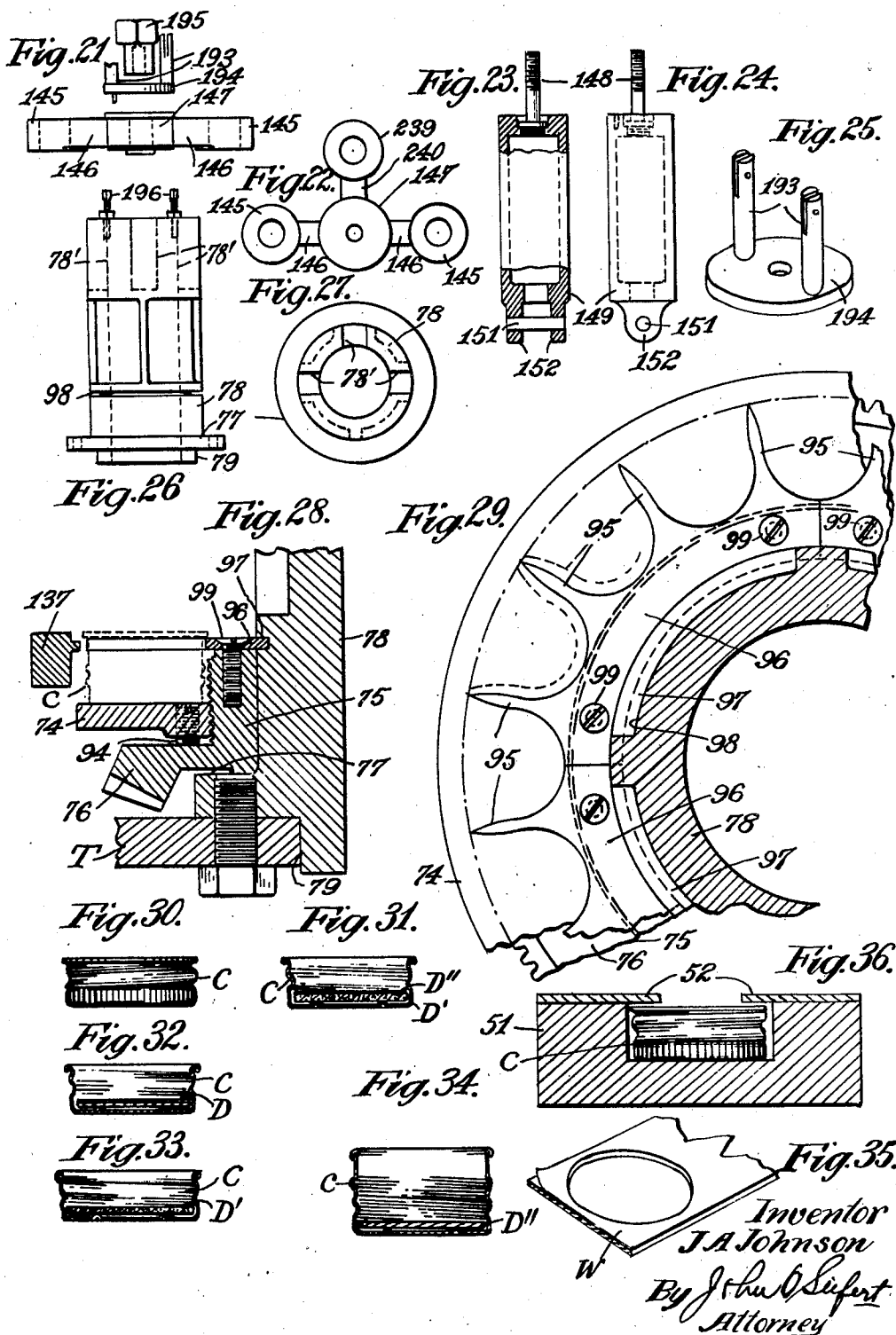
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APPARATUS FOR ASSEMBLING LININGS IN RECEPTACLE CLOSURE CAPS

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UNITED STATES PATENT OFFICE

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APPARATUS FOR ASSEMBLING LININGS IN RECEPTACLE CLOSURE CAPS

Application filed April 20, 1931. Serial No. 531,423.

This invention relates to apparatus for assembling linings in receptacle closure caps particularly of the type having the skirt portion arranged with a screw thread to cooperate with the thread about the opening of the receptacle to which the closure is to be applied, and comprising in the assembling of a plurality of linings of different materials in the closure cap and the linings secured therein under tension of the linings themselves and the obstruction of the thread of the caps. It is the primary object of the invention to provide apparatus for this purpose of improved and novel arrangement of parts, whereby the number of caps assembled is greatly increased over that of the present apparatus for assembling this type of closure caps.

Another object of the invention is to provide an apparatus of this character wherein the number of the linings and the compositions of said linings positioned in the caps may be varied without affecting the continuous operation of the apparatus.

A further object of the invention is to provide an apparatus which may be adjusted to assemble caps of different sizes especially as to the length of the skirt and diameter thereof.

It is another object of the invention to arrange the apparatus with actuating means whereby an individual means for assembling a single lining in a closure cap may be rendered inoperative in the absence of a cap positioned relative to said lining assembling means without affecting the operation of the remaining lining assembling means.

It is a further object of the invention to arrange the different parts whereby the caps are delivered to and removed from the apparatus by the same means.

Other objects and advantages will hereinafter appear.

In carrying out the invention I provide an intermittently rotatable annular support arranged with cap engaging and positioning means disposed about the circumference thereof adapted to receive caps from a continuously actuated endless conveyer to transport caps from a source of supply and from

which conveyer they are delivered to the support by a reciprocatory slide, the rotatable support being adapted to position the caps thereon relative to a series of individual mechanisms comprising punch and die mechanisms and a plunger spaced equidistantly about the support to assemble or position linings of different materials in said caps during the periods of rest of the support, the caps with linings assembled therein after leaving the last lining positioning means being delivered from the cap engaging means and the support onto the conveyer and transported to a suitable depository.

In the drawings accompanying and forming a part of this application, Figure 1 is an elevational view of the apparatus looking at the cap delivery side thereof.

Figure 2 is a plan view looking at the top of Figure 1 with cap and lining pad supply hoppers removed.

Figure 3 is a cross-sectional view taken on the line 3—3 of Figure 2, looking in the direction of the arrows, and showing power means for operating the apparatus.

Figure 4 is an end elevational view of the apparatus looking at the right of Figure 2 with portions removed to show specific structure.

Figure 5 is a sectional view of the reciprocatory slide for delivering caps from the conveyer to the rotatable support and showing the actuating mechanism therefor.

Figure 6 is a view of said slide looking at the left of Figure 5.

Figure 7 is a perspective view of an adjustable support for the slideway for the reciprocatory slide.

Figure 8 is a perspective view of the slideway for the reciprocatory slide.

Figure 9 is a perspective view of the slide and showing the parts in disassembled relation.

Figure 10 is a perspective fragmentary view of an adjustable stop to position the caps on the conveyer relative to the reciprocatory slide and a guide to direct the assembled caps from the rotatable support to the conveyer.

Figure 11 is a plan view looking at the top of the rotatable support and showing the arrangement of the cap engaging and positioning means relative thereto and the means to deliver the caps from the conveyer to the support and from the support to the conveyer.

Figure 12 is a perspective view of a web feeding mechanism associated with the punch and die mechanisms for stamping linings from the web and assembling the linings in the caps on the support.

Figure 13 is an elevational view of said web feeding mechanism looking at the rear of Figure 12.

Figure 14 is a fragmentary view of means to intermittently actuate the web feeding mechanism.

Figures 15 and 16 are sectional and elevational views of an adjustable crank connection between a drive shaft and the actuating means for the web feeding means shown in Figure 14.

Figure 17 is a fragmentary end elevation of the apparatus showing the web feeding means relative to a punch and die mechanism, the means to feed sealing pads to a plunger assembly and the means to intermittently actuate the rotatable support.

Figure 18 is a view looking at the top of Figure 17 and showing in addition to said latter figure the conveyer, the plunger to position the fed sealing pads in the caps, and the other punch and die mechanism.

Figure 19 is a sectional view looking at the left of Figure 17, and showing in dotted lines web feeding means for the other punch and die mechanism.

Figure 20 is a sectional view showing a punch and die mechanism and the manner of feeding the web thereto, the plunger for assembling sealing pads in caps, and the means for feeding pads to the plunger.

Figures 21 and 22 are elevational and plan views, respectively, of a head for carrying the punches and plunger.

Figures 23 and 24 are elevational views, Figure 23 being partly in section, of a reciprocatory carrier for the head shown in Figures 21 and 22.

Figure 25 is a perspective view, on an enlarged scale, of a carrier for rocker arms of kicker mechanisms of the punch and die mechanisms supported by the head.

Figures 26 and 27 are elevation and plan views, respectively, of a slide support for the reciprocatory carrier.

Figure 28 is an enlarged fragmentary view in cross section to show the adjustable mounting of the rotatable support.

Figure 29 is an enlarged fragmentary view of the rotatable support showing in dotted lines the interchangeability of the cap engaging means thereof.

Figure 30 is an elevational view of a cap in which linings are to be assembled.

Figures 31 to 34, inclusive, are cross sectional views of caps showing different types of linings assemblable therein by the apparatus.

Figure 35 is a perspective view of a portion of a composite web from which a lining has been stamped; and

Figure 36 is a cross sectional view of a chute for delivering the caps from a hopper to the conveyer shown in Figure 1.

In the embodiment of the invention illustrated the operative parts are mounted upon a suitable framework comprising a table T, supported at the opposite ends upon standards S, and are actuated from a drive shaft 37 rotatable in hangers 38 suspended from the table T, and driven from a suitable source of power, such as an electric motor M mounted on a shelf 39 supported by one of the standards S, said motor being releasably connected to the shaft 37 by clutch mechanism comprising a member 40 slidably mounted on the shaft and rotatable therewith, and a member arranged with a gear 41 loosely mounted on said shaft and retained against longitudinal movement on the shaft, and said gear meshing with a pinion 42 fixed to the shaft of the motor. The slidable clutch member is actuated into and out of engagement with the loosely mounted clutch member by a lever 43 pivotally mounted on the shelf 39 and connected to the slidable member 40 by a pin 44 extended from said lever and engaged in an annular recess 45 in the clutch member 40, as shown in Figure 3.

The caps C into which linings of various materials are to be assembled or positioned are supplied from a hopper of suitable design, as indicated at 46 in Figure 1, supported in an elevated position by a standard 47 from a standard S opposite to the standard supporting the motor shelf 39, and arranged with agitating and sorting mechanism of desirable structure actuated from the drive shaft 37 by a belt 48 passed around pulleys 49, 50 fixed to the drive shaft 37 and the shaft of the agitator, respectively. The agitating and sorting mechanism delivers the caps from the hopper 46 into a chute 51 leading from the hopper to a position juxtaposed to the table T and comprising a strip of channel shape in cross section having the marginal portions flanged to overhang the channel to prevent the caps leaving the chute, as at 52 shown in Figures 1, 2 and 36. The agitating and sorting mechanism is adapted to position the caps with the bottom lowermost and in sliding relation to the channel of the chute, as shown in Figure 36.

As the caps leave the lower end of the chute by the force of gravity they are positioned on the upper stretch of an endless

conveyer belt 53 supported at the opposite ends by drums 54, 55, drum 54 being rotatably supported between a pair of arms 56 adjustably and slidably mounted in a bifurcated bracket 57 fixed to the table T, the legs of the bifurcation being arranged with slots 58 for the engagement of bolts 59 threaded into the arms 56 with washers interposed between the heads thereof and the legs of the bracket 57, as shown in Figures 1 and 2, whereby slack in the conveyer belt may be taken up by loosening the bolts 59 and adjusting the arms 56 by a set-screw 60 threaded into a bracket 61 suspended from the arms 56 with the free end of the screw abutting the end of the table T. The arms 56 are spaced apart to permit free rotation of the drum 54 by a spacer 62, as shown in Figure 2. The conveyer is driven from the drum 55 which is fixed to a shaft rotatably mounted in a pair of brackets 63 fixed to the table T, and a bevel pinion 64 fixed to said shaft meshing with a bevel pinion 65 fixed to a shaft 66 rotatably supported in the adjacent bracket 63 and extending transversely of the shaft of drum 55 and carrying a sprocket wheel 67 with a sprocket chain 68 passing around said wheel and a sprocket wheel 69 fixed to a counter shaft 70 rotatably mounted in one of the hangers 38 above and extending parallel to the drive shaft 37 and driven at a reduced speed by a gear 71 fixed on the shaft 37 meshing with a gear 71' fixed on shaft 70.

To guide the caps on the conveyer as they leave the chute 51 guide bars 72 of angle shape in cross section are supported from and in spaced relation to the table T by posts 73, Figure 1, with an angle portion of each bar overhanging the marginal edges of the conveyer, as shown in Figure 2, to prevent lateral and vertical displacement of the caps as they are transported by the conveyer.

To periodically deliver the caps on the conveyer to a series of means for positioning a plurality of linings into said caps a rotatable support is provided comprising an annular member or table 74 having the interior wall threaded to adjustably engage a correspondingly threaded hub 75 of a beveled gear 76 rotatably mounted on a shoulder portion 77 at the lowermost portion of a cylindrical support or standard 78 secured to and extending upward from the table T in register with an opening in said table and into which opening a portion of the support 78 is engaged, as shown at 79 in Figures 3, 5, 19 and 28. The annular member or table 74 is intermittently rotated by a Geneva mechanism through a pinion 80 meshing with the gear 76 and fixed to a shaft 81 journaled in a sleeve portion or boss 82 arranged on the undersurface of the table T, as shown in Figures 19 and 20. To the free end of said shaft there is fixed a disk 83

having recesses 84 equidistantly spaced about the periphery and extended radially inward with the periphery of the portions of the disk between the recesses of curved or concave form, as at 85. The disk 83 is releasably secured on the shaft 81 by a collar 86 mounted on the shaft to rotate therewith by a key whereby the collar is movable longitudinally on the shaft and is connected to the disk 83 by a pin 87 fixed to and extended from the face of the disk into a recess 88 in the collar and engaged at opposite portions by set screws 89 threaded through the collar to extend into said recess, as shown in Figures 4 and 17, the collar being held against longitudinal movement on the shaft by a nut 90 threaded onto the end of said shaft and abutting the hub of the disk 83 against an extended portion of the boss 82. The disk 83 may be adjusted relative to the shaft by screwing one of the set screws 89 further into the recess 88 than the other set screw, portions of the collar being cut away, as shown in Figures 4 and 17, to facilitate the manipulation of said screws. Intermittent movement is imparted to the disk 83 from shaft 37 by pins 91 fixed in and extended laterally from the gear 71' fixed to the counter shaft 70 and meshing with gear 71, said pins engaging the disk recesses 84, the gear in the present instance being arranged with two of said pins 91 whereby upon one revolution of the gear two intermittent movements of the same extent will be imparted to the disk 83 and the annular member 74. The Geneva disk 83 is held against movement during the periods of rest by a member 92 fixed on the counter shaft 70 juxtaposed to gear 71' and having opposite projections arranged at right angles to the pins 91 with the free ends of said projections of arcuate or convex form, as at 93, to correspond with the curvature of the concave peripheral portions 85 between the disk recesses 84 and for sliding engagement therewith during the interim of movement of a pin 91 into and out of a recess 84 and the engagement of the following pin in a successive recess.

The width of the annular table 74 is sufficient to completely support the largest size cap desired to be assembled, and to accommodate caps of different heights to properly position them relative to the operative assembling mechanisms of the apparatus the table is rotated on the threaded mounting thereof on the gear hub 75 to adjust the same in a direction axially of the hub 75 of gear 76, and is retained against downward movement due to the pressure of the assembling mechanism by adjustable abutments in the form of set screws 94 threaded into and extended through the table to abut the gear 76, as shown in Figure 28.

To prevent lateral movement of the caps on table 74 and accurately position the caps relative to the lining forming and assembling mechanisms, the caps are engaged between equidistantly spaced fingers 95 of arcuate plates 96, there being four of said plates in number of equal length to form a complete circle of a diameter to position the fingers in juxtaposed relation to the table and are releasably mounted upon the upper end of the gear hub 75 with segmental portions 97 of said plates extending from the inner periphery thereof engaged in arcuate recess 98 in the support 78. The spaces between the fingers 95 are of arcuate formation corresponding to the shape of caps, and to accommodate the apparatus for assembling linings in caps of different diameters the plates are replaced with plates arranged with the correct size and shaped spaces, as indicated in dotted lines in Figure 29, by removing plate securing screws 99 passed through perforations in the plates and threaded into the hub 75, as shown in Figures 28 and 29.

The rotatable cap supporting table 74 is mounted on the table T so that the conveyer 53 will extend tangentially thereof, and during the periods of rest of said support a space between a pair of cap engaging fingers 95 is positioned centrally of the point of contact between the support and conveyer to receive a cap from the conveyer arrested in its travel on the conveyer in alinement with said positioned cap receiving space of the support by engaging an abutment stop in the form of a plate 100 slidably mounted by a slot and screw connection 101 on a member 102 supported on the table T (Figures 10 and 11) and extended transversely of the conveyer with a longitudinal edge of the plate abutment bent to extend in a vertical plane toward the conveyer, as at 103 in Figure 10, for engagement of the cap to arrest the same. The loosening of the connection screws 101 will permit of adjustment of the abutment along the line of travel of the conveyer to permit the proper positioning of different size caps in alinement with a cap engaging space of the support.

The cap in abutting engagement with the abutment is transferred from the conveyer to the table or support 74 by a slide reciprocatory transversely and above the conveyer, comprising a carrier block 104 slidably mounted in a slideway 105 and adapted to slidably support a cap engaging plate member 106 having a slot 107 engaged on a pin 108 fixed in and extended from the block 104 to permit of a limited longitudinal movement of the plate relative to the block and impart the movement of the block to said plate toward the conveyer, the return movement of the block away from the con-

veyer being adjustably imparted to the plate through a set screw 109 threaded through a perforated lip 110 of the plate to engage the block and secured in adjusted position by a lock nut 111. The set screw 109 is yieldingly urged into engagement with the block by a spring 112 anchored at the ends to the post 108 and a post 113 fixed in and extended from the plate 106 between the slot 107 and lip 110. The block 104 is reciprocated toward the conveyer to engage the arrested cap with the plate 106 during the period of rest of the rotatable support 74 from a shaft 114 journaled in hangers 115 suspended from the table T, said shaft being driven by a gear 116 fixed thereon meshing with a gear 117 carried by the drive shaft 37. The block 104 is reciprocally connected to the shaft 114 by an eccentric 118 fixed on said shaft embraced by a strap member 119 having a rod 120 adjustably connected thereto, as shown in Figure 20, and pivotally connected at the free end to an arm 121 extended from a sleeve member 122 loosely mounted on a rod 123 supported between a pair of arms 124 extended laterally from a bracket 125 fixed to the front of the table T, the sleeve member 122 having another arm 126 extending in the opposite direction from the arm 121 with the free end of arm 126 connected by a pair of links 127 to a portion 128 extending from the bottom of the block 104. The cap engaging portion of slide plate 106 is arranged to permit of free movement of the same relative to the stop abutment 100, as shown in Figures 2 and 11.

To compensate for the vertical adjustment of the rotatable cap support 74 the slide 106 together with the upper stretch of the conveyer, which stretch should travel in a plane even with the supporting surface of the cap support of table 74 to properly deliver caps therefrom to the support by the slide plate 106 movable in superposed relation to said conveyer stretch, the portion of the conveyer traveling relative to the slide 106 is supported by a plate 129 having beveled end portions to facilitate the riding of the conveyer upon said plate and supported in spaced relation to the table T by a shelf portion 130 extended from the guideway 105, said guideway being arranged with a vertically extending portion 131 having the lateral edges reduced to engage a slideway in the bracket 125 formed by strips 132 fixed to and overhanging parallel edges 133 projecting from the base of said bracket as shown in Figure 7. The guideway 105 and the conveyer supporting plate 129 carried thereby are simultaneously adjusted in a vertical plane by a set screw 134 threaded through a horizontal ledge 135 of the bracket 125 to engage a corresponding shaped recess 136 in the vertical portion 131 of the guideway and abut the end of said recess, as

shown in Figure 5, whereby the slideway together with the conveyer supporting plate are supported in adjusted position.

The slide plate 106 and block 104 are actuated away from the conveyer simultaneously with the engagement of a pin 91 with one of the recesses 84 of the disk 83 and the rotative movement of the cap support 74 which rotation will position the cap delivered thereon away from and position a successive cap engaging recess relative to the conveyer. To prevent the caps on the support 74 from leaving said support due to the force of the intermittent movement thereof, a guide rail 137 is supported from the table T by brackets 138 and extended to substantially surround the periphery of the support 74 in a plane even with the end of the gear hub 75 to engage the side of the caps, said guide having a gap therein adjacent the conveyer to permit the transfer of a cap from the conveyer to the support 74, as shown in Figures 1, 2, 11 and 18.

The intermittent actuation of the rotatable cap support 74 successively positions the caps relative to a series of mechanisms to assemble a lining or a plurality of linings therein. The first of said mechanisms in the present instance to which the caps are delivered comprises a punch and die mechanism 139 (Figure 1) for severing disk linings from a web W of any desirable type of material such as a single ply paper or a plurality of plies of suitable materials, as shown in Figure 35, and positioning the severed disks in the caps. The punch and die mechanism 139 comprises a die 140 fixed to one of the brackets 138 and extended therefrom in juxtaposed relation to the cap engaging fingers 95 and in alinement with a cap during the period of rest of the support 74, as shown in Figures 19 and 20. The punch is in the form of a tubular member 141 having an enlargement at the outer end of the bore to form a seat for a purpose hereinafter described, the punch having a threaded connection at the opposite end with a carrier 142 therefor and retained therein by a nut 143 threaded onto said member 141 in abutting relation to the carrier, the carrier being extended through an opening in a boss 145 at the end of an arm 146 and adjustably supported by nuts 144 from said arm. Said arm is integral with and extended radially from a head 147 engaged and secured upon a post 148 fixed in and extended vertically from the top of a cylindrical slide member 149 mounted to have reciprocatory movement in the bore of the cylindrical support 78 and adapted to be moved in a downward direction during the period of rest of the rotatable cap support 74. Said slide 149 is reciprocated from the drive shaft by a connecting rod 150 pivotally connected at one end to a pin 151 mounted in a pair of ears 152 extended downwardly

from the bottom of the slide 149, and the opposite end of the rod loosely connected to a crank pin 153 arranged in the drive shaft 37 between a pair of hangers 38, as shown in Figures 1 and 3. The cylindrical support 78 is arranged at the top portion thereof with equidistantly spaced slots 78' extended downwardly from the top edge with the axes of the successive slots extending at right angles to each other, as shown in Figures 26 and 27, one of said slots being engaged by the head arm 146 in all the positions of the head to prevent rotative movement of the head and slide, and maintain the punch in alinement with the die and cap positioned relative thereto during the reciprocation of the punch.

Disks D severed from the web W are of substantially the same diameter as the bottom portion of the caps in which they are assembled, and to facilitate the engaging of the disks in the caps the disks are flexed or convexed to permit the same to pass the threaded portion of the skirt of the caps. To effect such flexing of the disks the diameter of the delivery end of the opening through the supporting bracket 138 for the die is restricted, as indicated at 188 in Figure 20. The disks are forced through the restricted portion of the opening by a headed plunger 189 slidably mounted in the bores of the punch members 141, 142 with the head thereof normally positioned within the bore enlargement of the punch 141 by a spring 190 coiled about a portion of the plunger stem extending beyond the top of the punch carrier 142 and confined between said carrier and a collar 191 secured on the plunger stem. In the lowermost actuated position of the punch 141 it is extended in juxtaposed position relative to the restricted opening 188, and the head of the plunger 189 is actuated beyond the punch 141 to strip the severed disk therefrom by a kicker mechanism comprising a rocker arm 192 pivotally mounted in the bifurcated end of a post 193 fixed in and projected vertically from a plate 194 engaged on the post 148 of the slide 149 superposed to the head 147 and clamped to said head by an elongated cap nut 195 threaded onto the projecting end of the post 148. One end of the rocker is extended in abutting engagement with the projecting end of the plunger 189 and the opposite end is adapted to engage an adjustable abutment, in the form of a screw 196 threaded into the top of the tubular support 78 adjacent one of the slots 78' and retained in adjusted position by a lock nut, during the downward movement of the slide 149 thereby rocking the lever and the lever arm in engagement with the plunger 189 actuating the head of said plunger beyond the punch to force the severed disk D through the restricted opening in a convex

form and position the same against the bottom of the cap. The cutting edge of the punch diverges toward the portion of enlarged diameter of the bore so that the peripheral portion of the severed disk is engaged by said edge during the actuation of the stripper plunger 189 to prevent said disk from assuming a tilted position.

The web W is guided between the die 140 and punch 141 by a member 154 supported by the bracket 138 and having a channel 155 juxtaposed to the die and bracket 138 of substantially the same width as the web and a bore 156 for the passage of the punch. The web is intermittently fed through the channel 155 from a roll of the web rotatably supported on a shaft 157 mounted in an arm 158 fixed to and extended from the rear edge of the table T, as shown in Figure 4, by a pair of superposed rollers 159, 160, the roller 160 being mounted to rotate in a fixed plane to engage the lower surface of the web, by securing it to one end of a shaft 161 rotatably mounted in parallel plates 162 extended from the bracket 138, the opposite end of said shaft projecting beyond the outer plate carrying a gear 163 meshing with a gear 164 fixed to a shaft 165 rotatably mounted in the plates 162 parallelly of and below the shaft 161 and intermittently rotated by pawl and ratchet mechanism comprising a pawl 166 pivotally mounted on a carrier plate 167 loosely supported by the shaft 165 and adapted to be oscillated or rocked from the shaft 114 by a rod 168 pivotally connected at one end to the plate 167 angularly of the pawl and at the opposite end pivotally engaging a stud 169 of a slide 170 mounted in a slideway 171 arranged in the face of a hub 172 fixed to the shaft 114, the slide being adjusted to variably position the stud eccentrically of the axis of the shaft 114 by a threaded spindle 173 rotatably mounted in a plate 174 fixed to the hub portion 172 with the spindle extending into the slideway and having threaded connection with the slide 170. The extent of the rocking movement of the plate 167 and thereby the movement of the pawl and feed of the web will be increased proportionally to the increase in the distance between the stud 169 and the axis of the shaft 114, and no movement will be imparted to the pawl carrying plate 167 or the shaft 165 if the stud is adjusted to extend axially of the shaft 114. To facilitate the actuation of the spindle 173 it is provided with a wrench engaging head 175 arranged on a portion of the spindle extended exteriorly beyond the plate 174. The pawl is yieldingly urged by a spring 176 into engagement with a ratchet wheel 177 fixed to the shaft 165 whereby the rocking movement of the plate 167 is transmitted to intermittent rotation of the shaft 165 and the spring 176 is re-

tained between the pawl and an ear 178 extended from the plate 167 by a pin or screw 179 adjustably carried by the ear. The end portion of the shaft 165 carrying the pawl carrying plate 167 and ratchet wheel 177 is further supported by a bracket 180 fixed to the base of bracket 138. The upper web feeding roller 159 is adapted to be actuated away from the roller 160 to facilitate the engagement of the web between the rollers by fixedly mounting said roller on a shaft 181 rotatably supported in the legs of a bifurcated bracket 182 pivotally mounted between extended portions of the plates 162 and having a hand manipulating portion 183 at the end opposite to the bifurcated end. The roller 159 is positively rotated in synchronism with the roller 160 by a gear 184 fixed to an extended end of the shaft 181 meshing with the gear 163 rotatable with the roller 160. The roller 159 and gear 184 are normally urged in a direction to engage the web and gear 163, respectively, by a spring 185 interposed between a cross member 186 carried by the plates 162 and an intermediate portion of the roller carrier 182 to urge the bifurcated end thereof in a downward direction, as shown in Figure 13. The portion of the web W immediately in advance of the feeding rollers is maintained in a plane even with the bite of the rollers by a horizontally extending plate 187 supported by one of the plates 162 and arranged with a pair of side guides 188 between which the web is engaged to guide it to the rollers, and said guides are mounted in slots in said plate to have adjustment toward and away from each other in a direction transversely of the travel of the web to accommodate and guide webs of different widths.

To prevent the feeding of the web and severing of disk D therefrom by the plunger 189 should there be no cap engaged by the cap engaging fingers 95 in position in advance of the position of the cap engaging fingers in alinement with the punch and die mechanism 139 the web feeding rollers are rendered inactive so that upon the actuation of the punch there is no web to be severed. The web feeding rollers are rendered inactive by retaining the pawl 166 out of engagement with the ratchet wheel 177. For this purpose there is provided a pivotally mounted lever having one arm portion 197 extended from one side of its pivot support of sinuous formation extending in a vertical plane with the upwardly extending sinuous portion forming a cam which is positioned in abutting relation to a projection 198 extended laterally from the pawl by a weight 199 adjustably mounted on the other arm 200 of the lever extended from the opposite side of its pivot support, the weight being sufficient to rock the arm 197 to

such an extent as to lift and disengage the pawl from the ratchet wheel. The sinuous arm 197 is arranged to be actuated out of engagement with the pawl projection by a cap on the rotatable support 74 prior to being positioned in alinement with the punch 141 by a lever 201 pivotally mounted on the bracket 138 arranged at one end in the form of a feeler 202 extended in juxtaposed relation to the cap engaging fingers 95 to intersect the line of travel of the cap and normally urged toward said fingers by an extension 203 of the lever arm 197 engaging and moving in an upward direction by the weight 199 an extension 204 fixed in the end of the arm 201 opposite to the feeler end thereof, whereby upon the engagement of a cap on the rotatable support 74 by the feeler 202 the extension 204 will lower the extension 203 against the force of the weight 199 and permit the pawl under the force of the spring 176 to engage the ratchet wheel 177 and thereby couple the shaft 114 with the gears 163, 164 and 184 to intermittently feed the web W to the punch and die mechanism.

To prevent encumbering the rotatable cap support and other operative mechanism of the apparatus with the waste portion of the web W as it is fed from the punch and die mechanism, said waste portion is supported in spaced relation to the rotatable cap support 74 and the cap conveyer 53 by a guide member 205 of channel shape in cross section fixed at one end to the bracket 138 in alinement with the web guiding channel 155, as shown in Figure 12, and extended beyond the table T where the web is directed to a suitable depository, not shown. The member 205 is supported by an arm 206 fixed to the bracket 138 adjacent the web guide member 154 and bent at substantially a right angle to support the guide member 205.

Another mechanism is provided to assemble linings in caps on the table or support 74 positioned relative to said mechanism in addition to lining disks severed from the web W as described, or to be assembled separately in the caps by rendering the feeding means for web W inactive. To assemble linings in the caps in addition to a disk severed from web W which has been positioned in a cap, the cap is intermittently moved by the fingers 95 and support 74 to said second lining assembling mechanism, illustrated in the drawings as adapted for assembling sealing pads or disks D', such as compressed granulated cork disks, in caps that have been transferred from the punch and die mechanism 139. The disks D' are in condition to be positioned directly into the caps and are delivered to the assembling mechanism from a hopper 207 supported in elevated position relative to the rotatable cap support 74 by a standard 208 fixed to

and extended from the table T, said hopper being arranged with suitable agitating mechanism actuated from the drive shaft 37 by a belt 209 passing around a pulley 210 fixed to the shaft and pulley 211 connected to the agitating mechanism, the belt being supported and guided to said pulleys by a flanged wheel 212 carried by an arm 213 fixed to and extending laterally from the standard 208, as shown in Figure 1. The agitating of the disks in the hopper 207 effects delivery of the disks into a slotted tube 214 of substantially the same diameter as the disks in communication with the hopper outlet and supported in an opening, as at 214', in the connecting portion of a bifurcated member 215 mounted on a bracket 215' mounted on the table T with the disks arranged in stack formation in said tube and supported upon a shelf 216 extending laterally of the bracket and spaced from the lower surface of the member 215 to form therewith a slideway 217 in the bracket 215' in which an ejector slide 218 is mounted to be reciprocated toward and away from the tube 214 to position the lowermost disk in said tube resting on the shelf 216 relative to a perforation 219 in the shelf and in alinement with a perforation 220 in a portion of the member 215 extended from the tube in juxtaposed relation to the shelf 216, and forming therewith an extension of the slideway 217. The slide 218 is reciprocated by an actuator slide 221 slidably mounted in a slideway 222 arranged in the bracket 215' parallelly of and below the slideway 217, a portion of the actuator being extended into said latter slideway to abut the rear portion of slide 218 to impart forward movement thereto toward the stack of disks. The return movement of the actuator away from the tube 214 is transmitted to the slide by a latch 223 pivotally mounted in the bifurcated end of a carrier plate 224 having a slot 225 intermediate the ends thereof for the engagement of a threaded pin 226 fixed in and extended from the slide 218 to adjustably mount the plate on a raised portion of the ejector, as indicated at 226' in Figure 20, to vary the movement of the ejector slide transmitted thereto by the actuator 221 for positioning disks of different sizes relative to the perforations 219, 220, by changing the distance travelled by the ejector slide during the return movement thereof, the latch carrying plate being retained in adjusted position by a wing nut 227 threaded onto the pin 226. The end of the latch opposite to the pivotal mounting thereof is arranged with a hook portion to engage the rear edge of the extended portion of the actuator which is beveled to assure positive engagement, as shown at 228 in Figures 17 and 20. Reciprocatory movement is imparted to the actuator 221 by an eccentric fixed on shaft

114 and embraced by a strap, as at 229, connected to one end of a rod 230, the opposite end of which has an adjustable connection with a sleeve member 231 having a bifurcated portion whereby it is pivotally connected to one end of a lever 232, as at 231', pivotally mounted in a downwardly extending bifurcated portion of the bracket 215' with the opposite end of said lever extended upwardly and arranged with a bifurcation formed by an angular recess 233 and a plate 234 releasably mounted on the lever by screws engaging slots in the plate and threaded into the lever, one end of the plate being extended in parallel relation to the vertical side of the recess, as shown in Figures 17 and 20. The bifurcated end of the lever 232 engages a pin 235 mounted and extended in a horizontal plane transversely of a recess in the undersurface of the actuator 221 whereby when it is desired that no cork disks from the magazine 214 are to be assembled in caps the plate 234 is released and adjusted longitudinally of the lever 232 away from pin 235 disconnecting the lever from and preventing operation of the actuator 221 with the lever. The perforations 219, 220 are in alinement with the spaces between the caps engaging fingers 95 during the period of rest of the rotatable support 74 and the disks are positioned by the slide 218 in register with said perforations by a gauge member 236 secured to and extended from the face of the shelf 216 about the periphery of the perforation 219 adjacent the free end of the shelf, as shown in Figure 20.

The sealing disks D' positioned relative to the perforations 219, 220 are delivered to a cap positioned by the fingers 95 and rotatable support 74 in alinement with said perforations during the periods of rest of said support by a plunger 237 connected to a carrier 238 similar to the carrier 142 having a stem portion engaged in a boss 239 arranged at the end of an arm 240 also integral with and extended radially from the head 147 at a right angle to the arm 146 for the punch 141 and slidably engaged in the intermediate slot 78' of the support 78, the stem portion being retained in adjusted positions in said boss by nuts 241 engaged on said portion at opposite sides of the boss, as shown in Figure 20. It will readily be seen that a cork disk D' will be positioned in a cap simultaneously with the severing and positioning of a disk D from web W the plunger 237 passing through and being guided by the perforation 220.

Should there be no caps in the cap space of the rotatable support in advance of the cap space positioned in alinement with the perforations 219, 220, the ejector slide 218 is rendered inactive by disconnecting the same from its actuator 221 through the re-

lease of the latch 223 therefrom effected by a lever 242 pivotally supported intermediate its ends on the side of the bracket 215'. The lever has a feeler 243 at one end extended in juxtaposed position relative to the cap receiving space in advance of the space aligned with plunger 237 and urged in a downward direction to engage a cap by a finger 244 pivoted on the bracket 215' and urged by a spring 245 anchored to the bracket in an upward direction into engagement with a projection 246 of a slide 247 mounted in a bracket 248 fixed to bracket 215', said slide projection 246 being lifted by the finger 244 into engagement with an adjustable abutment in the form of a set screw 249 threaded through the end of the lever 242 opposite the feeler end 243 to position said feeler end in the path of travel of the caps on the support 74, whereby upon the engagement of a cap the slide 247 is actuated in a downward direction against the force of spring 245. The top of the slide 247 is normally urged into engagement with a projection 250 extended laterally from the latch 223 when the ejector slide 218 is actuated in forward disk ejecting position by the force of the spring 245, which force will lift the latch 223 out of engagement with the actuator 221 whereby the slide will not participate in the return movement of the actuator 221 in position to deliver another disk from the stack in tube 214 to the perforations 219, 220 upon the next forward movement of the actuator. The latch will continue to be disconnected from its actuator until the slide 247 is actuated away from the latch projection 250 by the lifting of the feeler carrying end 243 of lever 242 by a cap against the force of spring 245.

After the cork disks D' have been assembled in the caps or after caps have passed the plunger 237 without cork disks D' due to the rendering of the actuator 221 inactive by disconnecting the lever 232 from the ejector slide actuator 221, the caps are intermittently actuated to position relative to a punch and die mechanism 251 for severing disks D'' from a web W' of impervious lining material to protect the cork disk D' or the first lining disk D from the deteriorating action of the contents of the receptacles to which the caps are applied, such as paper having a suitable coating of creosote or tar on one surface thereof constituting the upper surface of the disks as applied to the caps. The roll of the web W' is rotatably mounted on the shaft 157 on the opposite side of the bracket 158 to the mounting of the roll of the web W, and the web W' is fed to the punch and die by mechanism similar in structure and operation to the feeding mechanism for the web W, and therefore, it is not deemed necessary to again describe the structure and operation of said mechanism,

and it is further believed to be sufficient to designate similar parts of the different web feeding means by the same reference characters. The punch and die mechanism 251 is arranged directly opposite the punch and die mechanism 139, and is of the same structure and operation as the punch and die mechanism 139 and like characters designate similar parts of both punch and die mechanisms.

It is to be understood that the sequence of assembling the different linings may be changed without departing from the scope of the invention and that any of the assembling mechanisms may be rendered inoperative without affecting the operation of the other mechanisms as by bringing the crank connection 169 between the rod 168 and the shaft 114 to a dead center relative to the shaft, as shown in Figures 15 and 16, which will render the pawl 166 of the actuating means for the web feed rollers 159, 160 inactive and thus prevent the assembling of either or both of the lining disks D, D' by the punch and die mechanisms 139 and 251. The assembling of the cork disks D' may be rendered inoperative by the adjustment of the plate 234 which will disconnect the lever 232 from the actuator for the cork disk ejector slide 218.

The bosses 145, 239 of the head 147 are arranged with centrally perforated plates 252 to provide abutments against which the uppermost retaining nuts 144, 241 abut.

After the sealing disks D' have been assembled in the caps, or after the caps have passed the punch and die mechanism 251, the caps are engaged and directed by a finger 253 out of engagement with the fingers 95 and from the rotatable support or table 74 and delivered onto a shelf 254 consisting of a lateral extension of the supporting member 102, said shelf having a depressed recess 255 for the passage of the conveyer belt 53 and the supporting surface of the shelf extending in a plane even with the upper stretch of the conveyer, so that the caps are directed onto said conveyer stretch by the delivering of successive caps through the movement of the rotatable support 74. The finger 253 comprises an angular horizontally extending plate fixed to the supporting member 102 with the inner edge extending in an arcuate path to change the arcuate path of travel of the caps into a direction of travel substantially laterally from the rotatable support 74. The free end of the plate is extended at an obtuse angle and in interposed relation between the rotatable support 74 and the spaced fingers 95, as shown in Figures 10 and 11. The adjustable abutment 100 is mounted in superposed relation to the finger plate 253. The annular guide rail 137 terminates adjacent the shelf 254 and a flange 256 is extended laterally from the shelf 254

as a lateral continuation of the guide rail 137 to prevent the caps from leaving the shelf as they are delivered onto the conveyer. The fully assembled caps are delivered by the conveyer to a suitable depository, not shown, positioned at the end of the conveyer.

The slide 106, pin carrying gear 71', head 147, pawl 166, and actuator 221 are adapted to be adjusted to be actuated by the drive shaft 37 through the eccentrics on said shaft in synchronism with each other by providing a hand manipulating wheel 257 on the free end of the shaft to rotate said shaft and facilitate the adjusting of said eccentrics connected to the respective working parts.

In Figures 31 to 34, there is illustrated caps in cross section showing the various types of caps the apparatus hereinbefore described is capable of assembling linings therein without interfering with the continuous operation thereof. Figure 31 shows the type of lining assembled during the operation of the second and last assembling mechanisms with the first mechanism inactive. Figure 32 shows the type of lining assembled in caps, when only the second assembling mechanism is rendered inactive, or such lining may be assembled by either the first or last mechanism if the linings are severed from a composite web. Figure 33 shows only a cork sealing disk assembled by the second mechanism, and Figure 34 shows a cap having a skirt of greater length than the other caps illustrated with a single lining assembled in the cap by either of the mechanisms.

It will be obviously that various modifications may be made in construction and arrangement of parts without departing from the scope of the invention, and that portions of the invention may be used without others without departing from the scope of the invention.

Having described my invention, I claim:

1. In apparatus for assembling linings in receptacle closure caps, a rotatable support for the closure caps, an endless conveyer mounted to travel tangentially of the cap support and transporting caps from a source of supply, means to deliver caps from the conveyer to the rotatable support, means reciprocatory toward and away from the support to position linings in the caps carried by the support, and means for engagement by caps having linings therein on the support by the rotation of the support to direct the assembled caps from the rotatable support onto the conveyer to be transported from the cap support.

2. In apparatus for assembling linings in receptacle closure caps, an intermittently rotatable support for the caps, a conveyer belt travelling relative to the support to transport caps from a source of supply to the rotatable support, means mounted centrally

of the rotatable support to have movement toward and away from the support to successively position linings of the different materials in the caps carried by the rotatable support, and means adjustably mounted to engage caps of different sizes on the support having linings therein and direct said caps from the support onto the conveyer.

3. In apparatus for assembling linings in receptacle closure caps, a rotatable support for the caps, a conveyer belt travelling relative to the rotatable support to transport caps from a source of supply to the rotatable support, a head mounted centrally of the rotatable support to have reciprocatory movement in the direction of the axis of the support and fixed against rotary movement, and plungers carried by the head to position successive linings of different materials in caps successively positioned by the rotatable support relative to said plungers.

4. In apparatus for assembling linings in receptacle closure caps, a rotatable support for the caps comprising an annular member and fingers movable with and equidistantly spaced about said member and superposed thereto for engagement of caps on the support, an endless conveyer travelling tangentially of the annular member to transport caps from a source of supply to the support, slidably means to deliver the caps from the conveyer onto the annular member between the spaced fingers, and means mounted centrally of the rotatable support to have reciprocatory movement toward and away from the annular member to position linings in the caps on the annular member engaging the fingers.

5. Apparatus for assembling linings in receptacle closure caps as claimed in claim 4, wherein the annular member is adapted to be adjusted toward and away from the spaced fingers to accommodate caps of different heights.

6. In apparatus for assembling linings in receptacle closure caps, a rotatable support for the caps adapted to have vertical adjustment, an endless conveyer belt mounted to travel tangentially of the support with the upper stretch extending in the plane of the support and arranged to be adjusted to correspond with the adjustment of the support, and means reciprocatory toward and away from the cap support to position linings in the caps carried by the support.

7. In apparatus for assembling linings in receptacle closure caps, a rotatable support for the caps, an endless conveyer travelling tangentially of the support with the upper stretch thereof extending in the plane of the support to transport caps to the support, a slide reciprocatory transversely of and above the upper conveyer stretch to transfer the caps from the conveyer to the rotatable support, and means reciprocatory to-

ward and away from the rotatable support to position linings in the caps on said support.

8. Apparatus for assembling linings in receptacle closure caps as claimed in claim 7, wherein the rotatable support, upper stretch of the conveyer and slide are adapted to be adjusted relative to the means reciprocatory toward and away from the support to accommodate the apparatus to caps of different heights.

9. In apparatus for assembling linings in receptacle closure caps, a rotatable support, fingers equidistantly spaced about and in superposed relation to the rotatable support and rotatable therewith, a travelling conveyer with the upper stretch in the plane of the support to transport caps to the support, a slide reciprocatory transversely of the conveyer and toward and away from the support to transfer the caps from the conveyer onto the support between the fingers, means to position linings in the caps on the support, and means to intermittently rotate the support, and alternately therewith reciprocate the cap transferring slide to transfer the caps from the conveyer to the support and actuate the means to position the linings in the caps during the periods of rest of the support.

10. In apparatus for assembling linings in receptacle closure caps, a rotatable support, a conveyer belt travelling relative to the support to transport caps to the support, an abutment extended transversely of the conveyer for engagement of caps transported by the conveyer to arrest the travel of the caps with the conveyer, a slide reciprocatory relative to the abutment and transversely of the conveyer to transfer the cap in engagement with the abutment onto the support, and means reciprocatory toward and away from the support to position linings in the caps on the support.

11. Apparatus for assembling linings in receptacle closure caps as claimed in claim 10, wherein the abutment is adjustable in the line of travel of the conveyer to accommodate different size caps.

12. Apparatus for assembling linings in receptacle closure caps as claimed in claim 10, wherein the slide comprises a carrier adapted to be reciprocated a predetermined distance, a cap engaging slide mounted on the carrier to participate in the movement of and have limited movement relative to and in the direction of movement of the carrier, and an adjustable abutment carried by the cap engaging slide for engagement of the carrier to vary the movement of said slide relative to the movement of the carrier to accommodate the slide for the transferring of different size caps.

13. In apparatus for assembling linings in receptacle closure caps, a rotatable support,

a conveyer travelling relative to the support to transport caps to the support, means slidably mounted and adapted by its movement to engage and transfer caps from the travelling conveyer to the rotatable support, punch and die mechanism juxtaposed to the support and the caps thereon, and means to feed a web of lining material to the punch and die mechanism to be severed into lining disks by the punch and die mechanism and positioned into the caps by the punch.

14. In apparatus for assembling linings in receptacle closure caps, a rotatable support, a conveyer travelling relative to said support to transport caps to the support, means to transfer caps from the conveyer to the support, punch and die mechanism juxtaposed to the support and the caps thereon, means to feed a web of lining material to the punch and die mechanism to be severed into lining disks by the punch and die mechanism and positioned into the caps, said feeding means being normally inoperative, and means to extend in the path of travel of the caps on the support and actuated by a cap on the support to render the web feeding means operative.

15. In apparatus for assembling linings in receptacle closure caps, a rotatable support, a conveyer travelling relative to the support to transport caps to the support, means to transfer caps from the conveyer to the support, punch and die mechanism juxtaposed to the support and the caps thereon, means to feed a web of lining material to the punch and die mechanism, pawl and ratchet means to intermittently actuate said web feeding means, means to normally position the pawl out of engagement with the ratchet, and means extended into the path of travel of the caps on the support and connected to the means positioning the pawl out of engagement with the ratchet to actuate said latter means to release the pawl to engage with the ratchet upon the engagement of a cap with said extended means and render the web feeding means operative.

16. In apparatus for assembling linings in receptacle closure caps, a rotatable cap support, a conveyer travelling relative to the support to transport caps to the support, means to transfer caps from the conveyer to the support, a support for sealing pads mounted adjacent a peripheral portion of the rotatable support, a plunger reciprocatory toward and away from the rotatable support and the caps thereon, a slide reciprocatory transversely of the plunger to deliver a sealing pad from the pad support to the plunger to be positioned by the plunger into a cap on the rotatable support, and means to actuate the slide normally disconnected from the slide and adapted to be connected thereto by a cap on the rotatable support in advance of the plunger.

17. In apparatus for assembling linings in receptacle closure caps, a rotatable support, a conveyer travelling relative to the rotatable support to transport caps to the support, reciprocatory means to transfer the caps from the conveyer to the support, a head mounted centrally of the rotatable support to have reciprocatory movement toward and away from the support, plungers adjustably carried by the head spaced about the support in alinement with the travel of the caps on the support, and means to deliver linings of different materials to the plungers to be positioned in the caps on the support by said plungers.

18. Apparatus for assembling linings in receptacle closure caps as claimed in claim 17, wherein a separate lining delivering means is provided for each plunger and either one of which means is adapted to be manually rendered inoperative without effecting the operation of the other means.

19. In apparatus for assembling linings in receptacle closure caps, a rotatable support, a conveyer mounted to travel relative to said support and adapted to carry caps, slidable means to transfer the caps from the conveyer to the support, reciprocatory means mounted centrally of the support to have movement toward and away from the support and fixed against rotation to position linings in the caps on the support, and a guide supported adjustably to extend in juxtaposed relation to the support and conveyer for engagement and directing of the assembled caps from the support to a portion of the conveyer beyond the cap transferring means to be transported from the support.

20. In apparatus for assembling linings in receptacle closure caps, a rotatable cap support arranged with means for engagement of the caps circumferentially and equidistantly spaced about the same, dies superposed to the support in the line of travel of the caps, punches alined with said dies supported to have reciprocatory movement axially of the support to move the punches toward and away from the dies, means to feed webs of lining material to the punches and dies to sever disks therefrom and position the same in caps on the support, and means operative by an empty cap engaging means of the support to render either one of said web feeding means inoperative while the other is maintained operative.

21. In apparatus for assembling linings in receptacle closure caps, an intermittently rotatable cap support arranged with means for engagement of the caps circumferentially and equidistantly spaced about the same, dies fixedly superposed to the support in the line of travel of the caps and with which a cap engaging means is adapted to be alined during the periods of rest of the support,

- punches, means reciprocatory axially of the support fixed against rotation and carrying the punches in alinement with the dies, and said punches to be moved by said reciprocatory means toward and away from the dies, means to feed webs of lining material to each punch and die for severing disks therefrom and positioning the same in the caps, a plunger carried by the punch carrier in the line of travel of the caps and with which the cap engaging means is adapted to be alined during the periods of rest of the support, means for delivering sealing pads to said plunger to be positioned by the plunger in a cap on the cap support, and means operative by an empty cap engaging means of the cap support to render either one or more of said web and pad feeding means inactive while maintaining the other one or more of said feeding means operative.
22. In apparatus for assembling linings in receptacle closure caps, an intermittently rotatable cap support arranged with means for engagement of the caps circumferentially and equidistantly spaced about the same, means to deliver caps to the table relative to the cap engaging means, a series of devices disposed about the support in the line of travel of the caps and with which caps are alined in the cap engaging means during the periods of rest of the support to stamp linings for the caps from webs and position the same in the caps and to position a previously formed liner in a cap, means for rendering either one or more of said devices inoperative while maintaining either one or more operative, and means relative to which caps with linings assembled therein are moved by the travel of the support to direct the assembled caps from the support onto the cap delivering means to be transported away from the rotatable cap support.
23. In apparatus for assembling linings in receptacle closure caps, an intermittently rotatable cap support arranged with means for engagement of the caps circumferentially and equidistantly spaced about the same, an endless conveyer travelling relative to a peripheral portion of the support, means to aline caps in the travel thereof with the conveyer, means relative to which the caps on the conveyer are positioned slidably mounted to transfer the caps from the conveyer to the cap engaging means of the support, means disposed about the support in the line of travel of the caps with which caps are alined during the periods of rest of the support to assemble linings in the caps, and means relative to which said caps with linings assembled therein are moved by the support to transfer said caps to the conveyer, said latter means being adjustable along the longitudinal axes of the conveyer for different size caps.
24. In apparatus for assembling linings in receptacle closure caps, a rotatable cap support, a head reciprocatory axially of the cap support and fixed against rotation, devices adjustably carried by said head superposed to and circumferentially disposed about the cap support in the line of travel of the caps thereon to stamp linings from webs and position the same in caps on the support, and manually actuated means to render either one or more of said devices inoperative to assemble linings in caps or maintain either one or more operative to assemble linings in caps.
25. In apparatus for assembling linings in receptacle closure caps, a rotatable cap support, a head reciprocatory axially of the cap support and fixed against rotation, devices carried by said head superposed to and circumferentially spaced about the cap support in the line of travel of the caps thereon to stamp linings from webs and position the same in caps on the support, means for feeding webs of lining material to said devices tangentially of the support, and means to render inoperative or operative either one or more of said web feeding means.
26. In apparatus for assembling linings in receptacle closure caps, an intermittently rotatable cap support, dies superposed to and fixedly spaced about the cap support in the line of travel of the caps therewith and relative to which caps on the support are positioned during the periods of rest of the support, a head reciprocatory axially of and alternately with the actuation of the cap support carrying punches in line with the dies and a plunger in line with the travel of the caps with the support, means to feed webs of lining material to the punches and dies tangentially of the support and lining pads to the plunger in a direction toward the axis of the support, and means to render inoperative and operative the pad feeding means and either one or more of the web feeding means.
- Signed at the City of New York, in the county of New York and State of New York, this 10th day of April, 1931.
- JOHN A. JOHNSON.