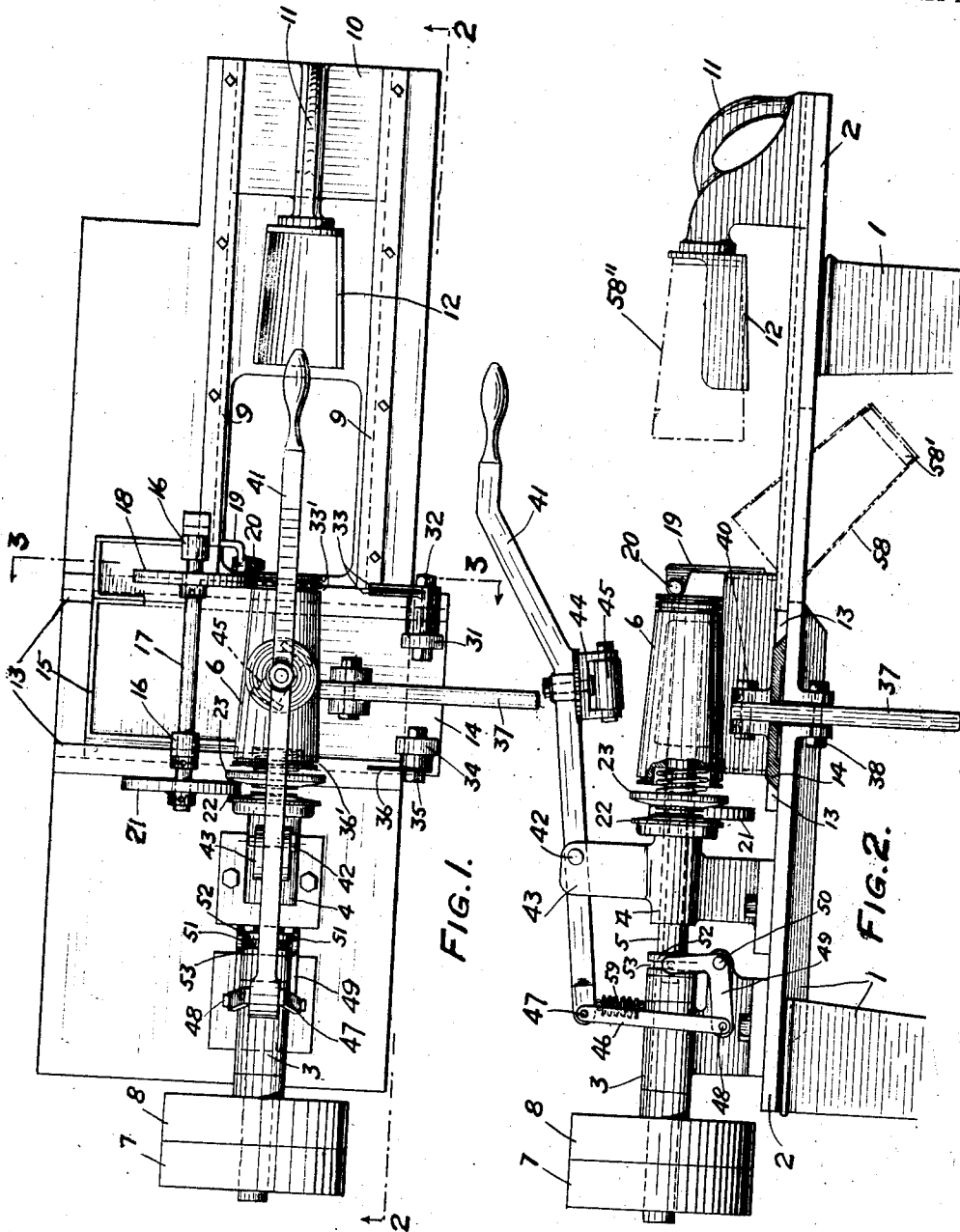


J. NAZEL.
 MACHINE FOR MAKING TUBULAR RECEPTACLES.
 APPLICATION FILED MAR. 12, 1909. RENEWED JAN. 13, 1912.
 1,037,040.

Patented Aug. 27, 1912.
 2 SHEETS—SHEET 1.



WITNESSES:

Robert R. Kitchell
John G. Ramsey Jr.

INVENTOR

John Nazel
 BY *Charles H. Braden*

ATTORNEY

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FIG. 3.

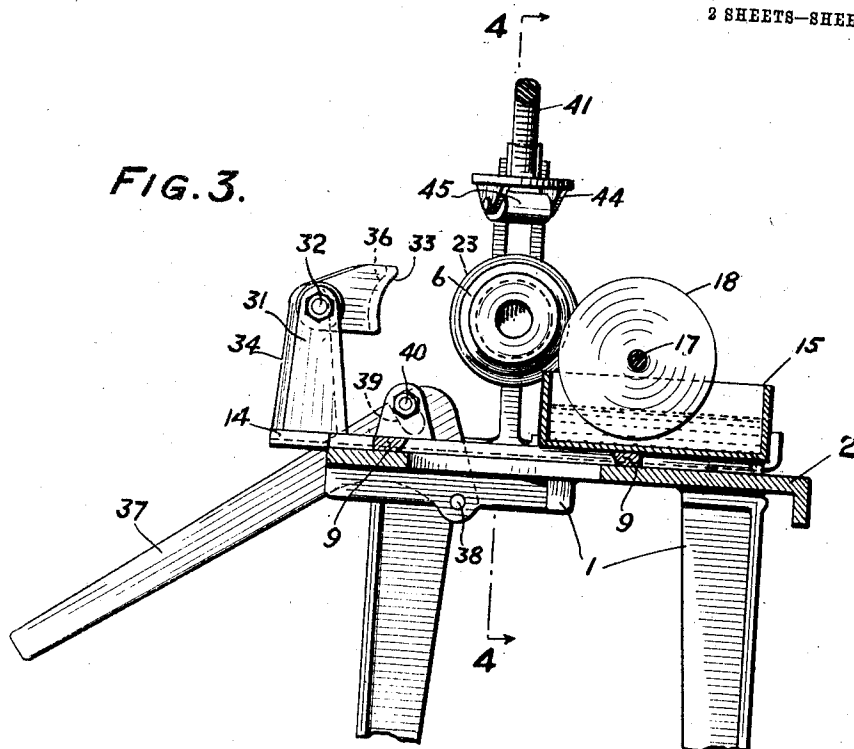
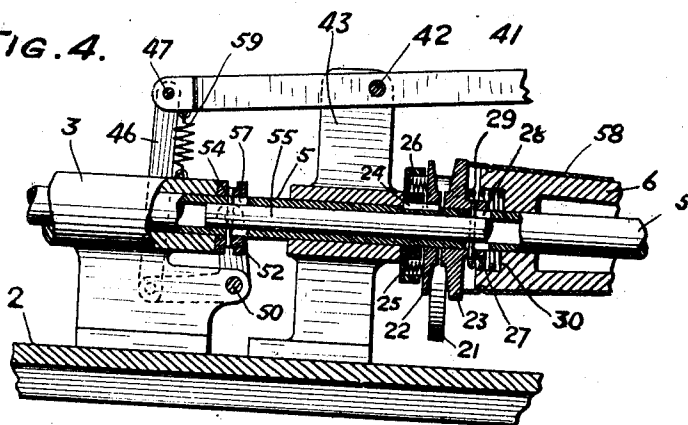


FIG. 4.



WITNESSES:

Robt. A. Kitchel
 Jos. G. Warming Jr.

INVENTOR

John Nazel
 BY *Charles N. Butler*

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN NAZEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SANITARY PAPER BOTTLE COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

MACHINE FOR MAKING TUBULAR RECEPTACLES.

1,037,040.

Specification of Letters Patent. Patented Aug. 27, 1912.

Application filed March 12, 1909, Serial No. 482,945. Renewed January 13, 1912. Serial No. 671,100.

To all whom it may concern:

Be it known that I, JOHN NAZEL, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improved Machine for Making Tubular Receptacles.

My invention relates to the manufacture of receptacles having tubular bodies with bottoms having flanges telescoping therewith, and it is designed particularly to provide improved means for gumming, joining and handling the parts that enter into the receptacles.

The machine in its preferred form comprises the combination of a revoluble mandrel, with a reciprocating gumming apparatus, forming devices, reciprocating means adapted for placing the parts of the receptacle upon the mandrel, and means for ejecting the receptacle from the mandrel.

The characteristic features of my improvements are fully disclosed in the following description and the accompanying drawings in illustration thereof.

In the drawings, Figure 1 is a plan view of a machine embodying my improvements; Fig. 2 is a sectional side elevation of the same taken on the line 2—2 of Fig. 1; Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1; and Fig. 4 is a partial sectional view taken on the line 4—4 of Fig. 3.

The machine, as shown in the drawings, comprises a frame 1 having on the bed 2 thereof the journal bearings 3 and 4. Revoluble in these bearings is the hollow shaft 5 having fixed on the inner end thereof the conical mandrel 6 and on its outer end, the driving and idle pulleys 7 and 8. In ways 9 on the bed extending parallel to the shaft 5 moves a slide 10 having thereon the handle 11 and the holder 12 movable in alinement with the shaft and adapted for placing the parts of the tubular receptacles on the mandrel 6. In ways 13 on the bed extending transversely to the shaft 5 moves a slide 14 having on the rear thereof a fountain 15. On the fountain are bearings 16 in which is journaled a shaft 17 having thereon a disk 18 which revolves in gum contained in the fountain and is adapted for making contact with the conical part of the bottom of the receptacle placed on the mandrel 6. An arm 19 fixed on the fountain has journaled thereon a conical roller 20 having its contracted end disposed toward

the front of the machine, the roller being adapted to force the bottom of the receptacle into close fitting relation with the bottom of the mandrel, simultaneously with the gumming of the conical part thereof. The shaft 17 is revolved by the engagement of a disk 21 fixed thereon with the conical surfaces of disks 22 and 23 movable longitudinally on the shaft 5. The disk 22 is revolved by the shaft through the spline 24 and is pressed toward the disk 21 by the coiled springs 25 supported by the bearing 26 fixed on the shaft. The disk 23 is revolved by the shaft through the pin which passes through slots 28 in the shaft and is pressed toward the disk 21 by a coiled spring 29 supported by a bearing 30 in the mandrel.

The slide 14 has fixed on the front thereof by means of the bearing 31 and the bolt 32 the beaders 33 and by means of the bearing 34 and the bolt 35 the beader 36, the beaders being tools with blunt edges adapted for coaction with the grooves 33' and 36' respectively formed in the bottom and top of the mandrel respectively for better fixing the body and bottom of the receptacles together and for providing means in the top of the receptacle for engaging a cover. The slide 14 is reciprocated to cause the disks 18 and 21 and the beaders 33 and 36 to operate in alternation by means of a crank lever 37 having the fulcrum 38 supported by the frame and the slot 39 engaging a bearing 40 on the slide.

A lever 41 having the fulcrum 42 on the strut 43 is provided with a bearing 44 in which is journaled a roller 45 disposed angularly to the axis of the mandrel 6 and adapted to make contact with the body of a receptacle thereon. Links 46 have pivotal connections 47 with the lever 41 and pivotal connections 48 with crank levers 49 which have fulcrums 50 on the frame. Studs 51 on the crank levers engage a collar 52 through a circular channel 53 thereof, the collar being movable longitudinally on the shaft 5 and connected by means of a pin 54 with a bolt 55 adapted to reciprocate within the shaft, the pin passing through slots 57 in the shaft. The bolt 55 is connected with the pin 27 fixed to the disk 23. Consequently when the lever 41 is depressed the disk 23 is moved longitudinally on the shaft 5, through the intermediate mechanism described, to loosen the receptacle 58 from the

mandrel and simultaneously the roller 45 makes contact with the revolving receptacle whereby the latter is thrown off. A coiled spring 59 connecting the lever 41 with the bearing 3 holds the lever and the connected parts described normally in the position shown in Fig. 2.

In operation, with the disks 18 and 21 and the bead-ers 33 and 36 out of engagement, the bottom 58' of a receptacle 58 is placed on the bottom of the mandrel, conveniently by hand or by means of the holder 12. The lever 37 is then operated to bring into contact with the bottom of the receptacle the gumming disk 18 and the cone roller 20 which simultaneously place the bottom exactly and gum the flange thereof, the disk 18 being revolved by the engagement between the disk 21 on the shaft 17 and the disks 22 and 23 on the revolving shaft 5. The disks 18 and 21 having performed their functions are withdrawn from their engagements by operating the lever and the tubular body 58" of the receptacle is forced on the mandrel so that the contracted end of the body has the bottom tightly telescoped therein, whereupon the lever 37 is further operated to press the beading tools 33 and 36 against the receptacle to engage the body and bottom thereof together by beading the same and to form a bead on the top of the receptacle as described. The bead-ers having performed their functions and being withdrawn, the lever 41 is depressed and, acting through the intermediate mechanism described, forces the disk 23 against the top of the receptacle to loosen it from the mandrel and simultaneously the roller 45 engages to throw off the receptacle.

Having described my invention, I claim:

1. In a machine for making receptacles, the combination of a revoluble mandrel adapted for receiving parts of a tubular receptacle, means for placing one of said parts on said mandrel in engagement with the other of said parts, and a device adapted to be moved transversely to the axis of said mandrel into and out of position for coacting with said mandrel and forming a bead in said parts.

2. In a machine for making receptacles, the combination of a revoluble mandrel adapted for receiving parts of a tubular receptacle thereon, a device adapted for placing one or more of said parts on said mandrel, a reciprocating device for gumming parts held on said mandrel, and a reciprocating device for beading parts held on said mandrel, said reciprocating devices acting alternately upon said parts affected thereby.

3. In a machine for making receptacles, a revoluble shaft, a mandrel on said shaft, a slide, a gumming disk journaled on said slide and adapted for gumming an article on said mandrel, a friction disk connected with and adapted for revolving said gumming disk, and a second friction disk mounted on said shaft and engaging said friction disk first named.

4. In a machine for making receptacles, a revoluble shaft, a mandrel on said shaft, a device revolved by said shaft, a slide, a revoluble device journaled on said slide and adapted for gumming an article on said mandrel, and a device connected to and adapted for revolving said gumming device, said third named device being movable by said slide into engagement with said first named device and revolved thereby.

5. In a machine for making receptacles, a revoluble shaft, a mandrel on said shaft, a pair of devices having conical faces, said devices being movable longitudinally on and revolved by said shaft, resilient means for holding said devices against movement from their normal positions on said shaft, a slide, a gumming disk journaled on said slide and movable thereby into and out of engagement with an article on said mandrel, and a frictional device connected to and adapted for revolving said gumming disk, said frictional device being movable by said slide into and out of engagement with said conical faces.

6. In a machine for making receptacles, a revoluble shaft, a mandrel fixed to said shaft, a fulcrumed lever, a device movable on said shaft for engaging the end of a tubular article on said mandrel, means whereby said lever operates said device, and a roller moved by said lever and adapted for moving an article disposed on said mandrel.

7. In a machine for making receptacles, a revoluble mandrel adapted for holding parts of a tubular receptacle, a slide, a gumming disk journaled on said slide and movable thereby into and out of engagement with one of said parts on said mandrel, and a conical roller journaled on said slide and movable thereby into and out of engagement with the bottom of said receptacle on said mandrel.

In witness whereof I have hereunto set my name this 11th day of March, A. D. 1909, in the presence of the subscribing witnesses.

JOHN NAZEL.

Witnesses:

JOS. G. DENNY, Jr.,
ROBERT JAMES EARLEY.