

June 1, 1937.

R. L. BUSSEY

2,082,323

METHOD OF FORMING RECEPTACLES

Original Filed May 22, 1934

4 Sheets-Sheet 1

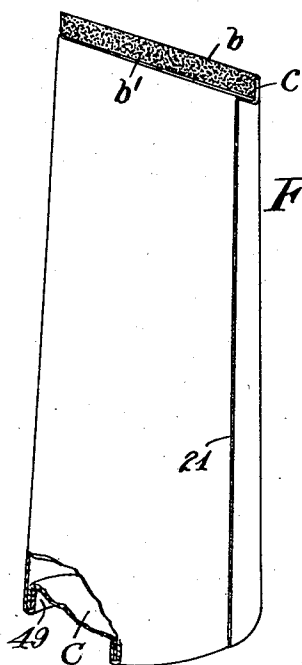


Fig. 1.

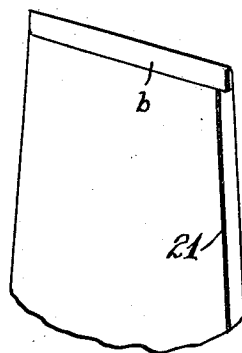


Fig. 3.

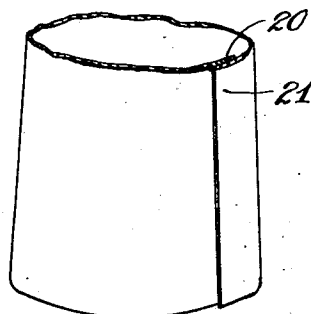


Fig. 4.

Fig. 2.

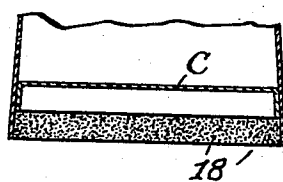
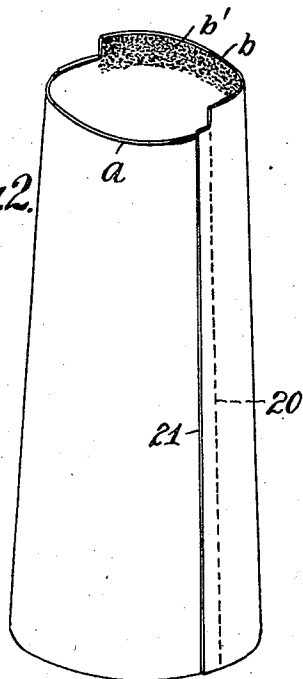


Fig. 5.

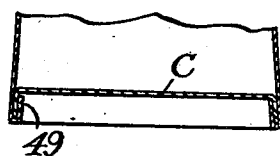


Fig. 6.

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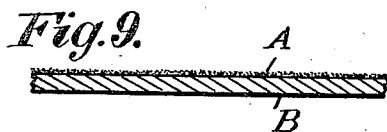
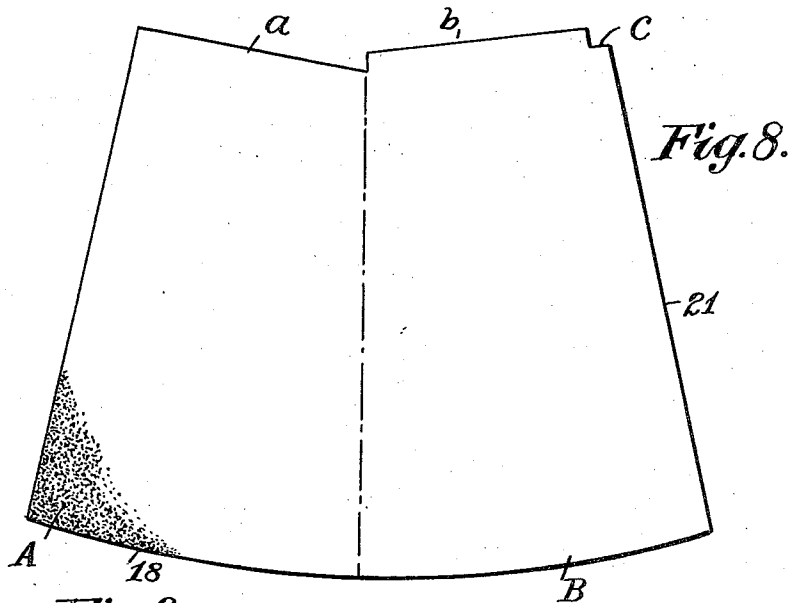
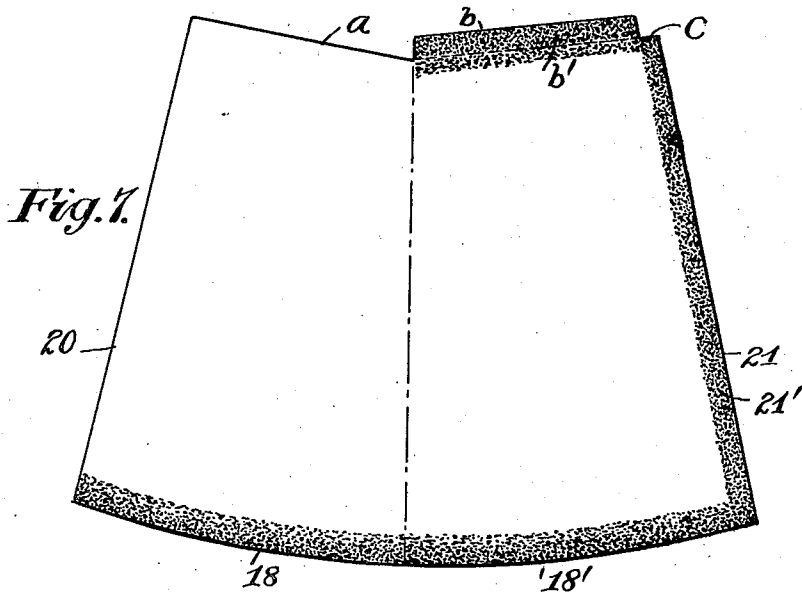
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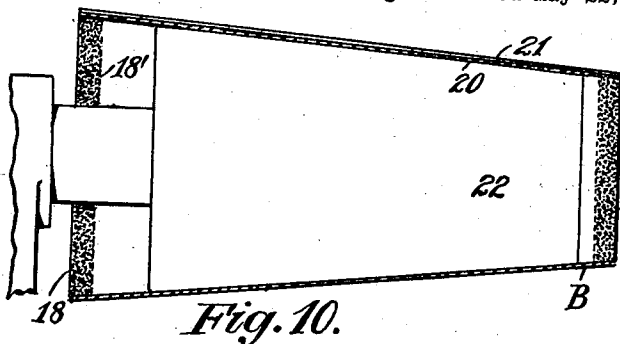


Fig. 10.

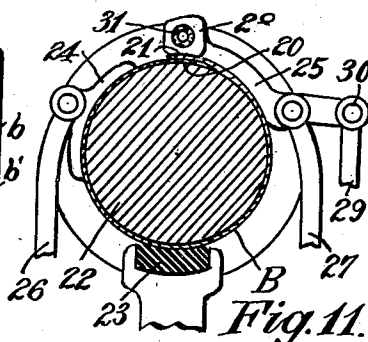


Fig. 11.

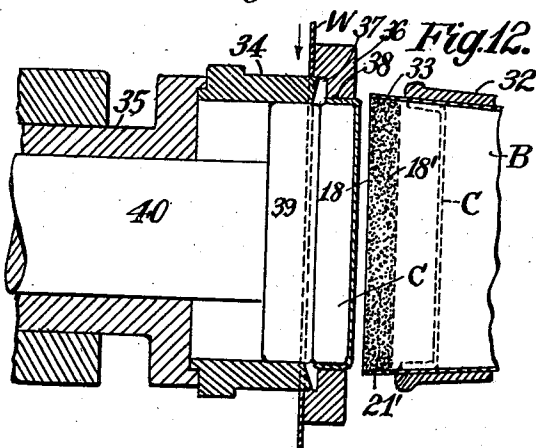


Fig. 12.

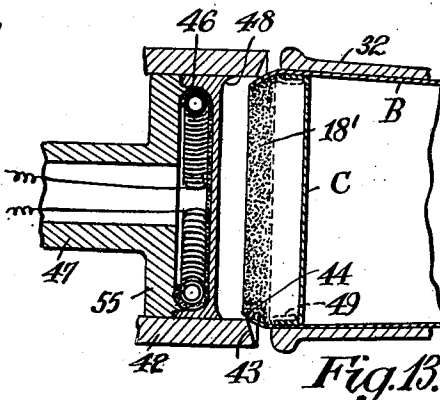


Fig. 13.

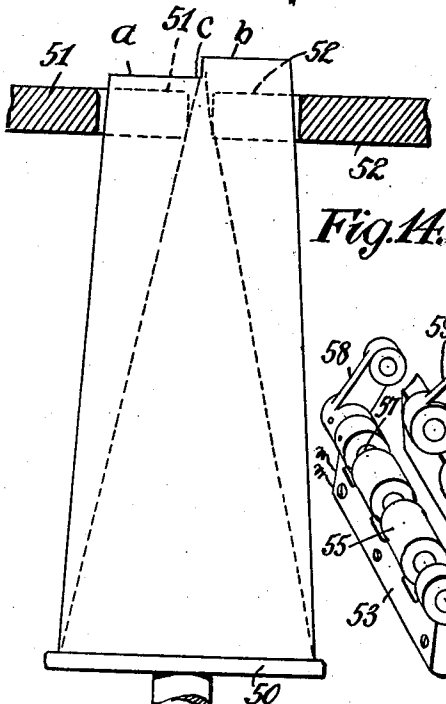


Fig. 14.

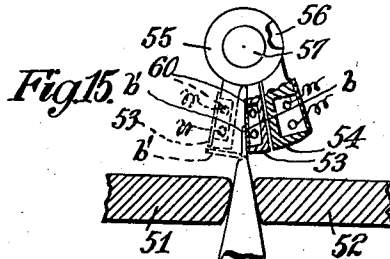


Fig. 15.

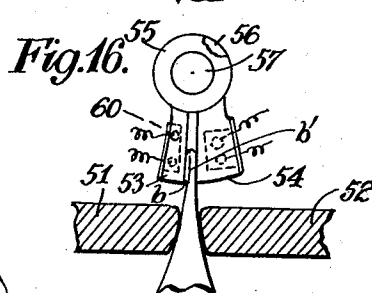


Fig. 16.

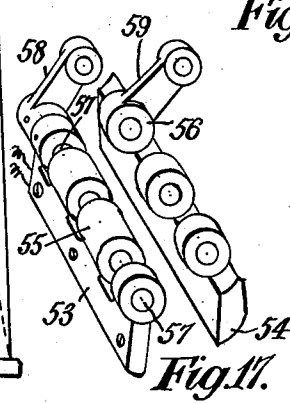


Fig. 17.

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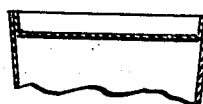
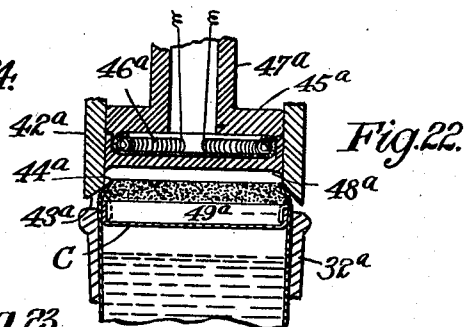
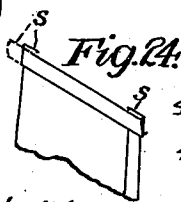
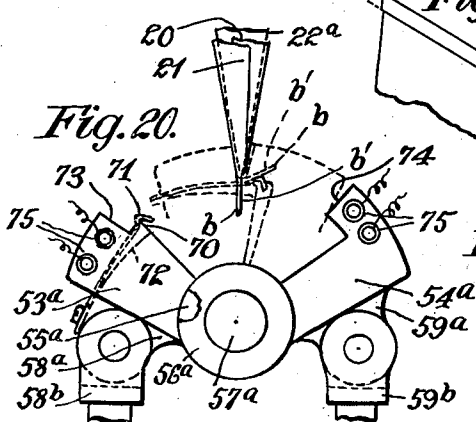
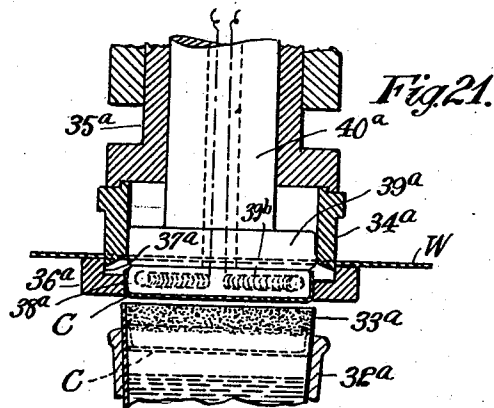
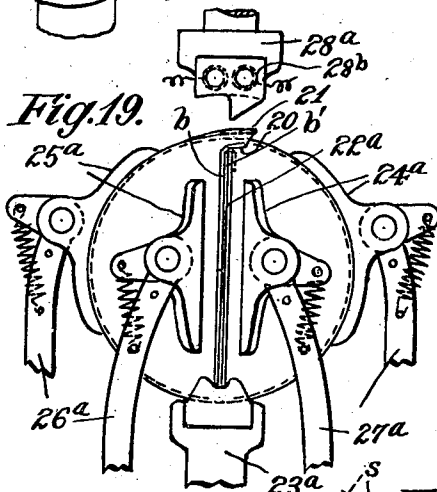
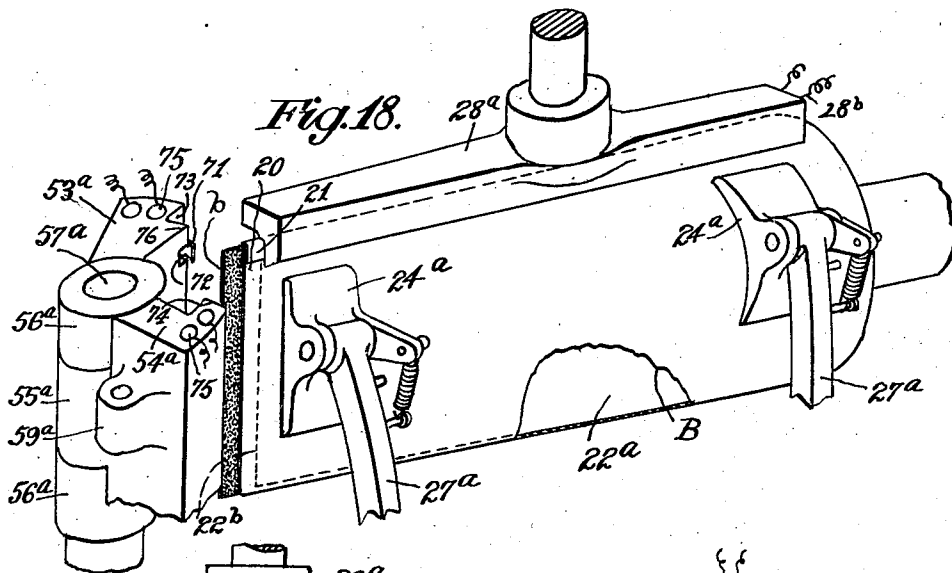
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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

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METHOD OF FORMING RECEPTACLES

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N. Y., a corporation of New York

Application May 22, 1934, Serial No. 726,936
Renewed November 3, 1936

12 Claims. (Cl. 93—39)

This invention relates to a method of forming paper receptacles, such as disclosed in a companion application filed by me December 2, 1933, the serial number of which is 700,666, the receptacle consisting of a body made from a blank shaped to tubular form and secured at the longitudinal marginal portions, with a bottom closure secured in one end and the filler opening at the opposite end.

It is an object of the invention to provide an improved receptacle of this character, an improved constructed and arranged blank from which to make the receptacle body, and improved method of and means for making the receptacle, and an improved method and means for securing the filler end in collapsed and closed condition.

It is another object of the invention to provide an improved paper receptacle impervious to the action of greases and oil, particularly hydrocarbon or mineral oils, and having the properties of being alcohol and acid resisting, and to contain and dispense the same therein, and externally impervious to the action of water and moisture.

It is a further object of the invention to provide an improved material for making receptacles, consisting of a sheet or web of paper having a flexible coating on one surface and impregnated therewith of a flexible material having the properties of being impervious to the action of grease and oil, and alcohol and acid resisting.

A further object of the invention consists in providing a paper receptacle wherein the component parts are secured by a flexible adhesive having the properties of being grease and oil proof and alcohol and acid resisting and normally non-tacky and adapted to be rendered tacky when subjected to an elevated temperature.

Other objects and advantages will hereinafter appear.

In the drawings accompanying and forming a part of this application, Figure 1 is a perspective view of my improved receptacle showing the same with the filler end in closed condition, and partly broken away to show the method of securing a bottom closure in the receptacle body.

Figure 2 is a perspective view of the receptacle showing the filler opening in open condition.

Figure 3 is a perspective view of the filler opening end of the receptacle and showing the filler opening secured in closed conditions.

Figure 4 is a perspective view of one end of the receptacle body and closure member therefor, showing the same in disassembled relation.

Figure 5 is a sectional view of an end portion of the receptacle showing the manner of engaging a closure member therein.

Figure 6 is a view similar to Figure 5, but showing the closure member secured in the receptacle body.

Figures 7 and 8 are plan views of improved died out blanks from which the receptacle body is made.

Figure 9 is a sectional view, on an enlarged scale, of the material of the blank shown in Figure 8.

Figure 10 is a side elevation of a mandrel with a blank wrapped around the same to show the manner of forming the receptacle body.

Figure 11 is a cross sectional view of the mandrel around which the blank is wrapped, in forming the receptacle body and showing the means to wrap the blank around the mandrel and the means to adhesively unite the blank at the marginal portions upon the mandrel.

Figure 12 is a sectional view showing the manner of cutting a closure disk from a web, peripherally flanging and engaging the same in the end of a receptacle body.

Figure 13 is a sectional view of means for folding the end of the receptacle body over the closure flange in securing the closure in the receptacle body.

Figure 14 is a side elevation of a receptacle constructed from the blank shown in Figures 7 and 8 relative to means to close the filler opening by squeezing together the opposite wall portions, showing the same in normal position in full lines, and in dot and dash lines the open and collapsed end in closed condition.

Figure 15 is an elevational view of the upper end of the receptacle showing the same relative to the closing means and in closed condition, and means to fold a portion of the receptacle extended beyond the opposite wall portion of the receptacle over the closed end of the receptacle.

Figure 16 is a view similar to Figure 15, but showing the extended end of the receptacle folded over the opposite receptacle portion and showing the means to apply heat and pressure to said folded end to secure the receptacle opening in closed condition; and

Figure 17 is a perspective view, disassembled, of the means for folding the extended end of the receptacle and securing it in folded condition.

Figure 18 is a perspective view of a modified form of the mandrel with the blank wrapped around the same, with one end of the blank folded to a collapsed position, and the closing

flaps of the blank in position to be folded over, and the means to fold the same, and the means to adhesively unite the folded flap.

Figure 19 is an end view of the mandrel around which the blank is wrapped in forming the body, and showing the means to wrap the blank around the mandrel and the means to adhesively unite the blank at the marginal portions.

Figure 20 is a plan view of the flap folding means shown in Figure 18 showing in full lines the open position thereof and the closed position in broken lines, also showing the means for adhesively uniting the flap.

Figure 21 is a sectional view showing the manner of cutting a closure disk from a web, peripherally flanging and engaging the same in the end of a receptacle.

Figure 22 is a sectional view of means for folding the end of the receptacle body over the closure flange in securing the closure in the receptacle body.

Figure 23 is a view of the receptacle body and showing the flanged cap inserted flush with the receptacle end, and adhesively united without turning in the receptacle body.

Figure 24 is a perspective view of a portion of the receptacle showing a modified form of the closing flap provided with extensions to fold over the back of the body after folding the flap to the front side.

In carrying out the invention, there is provided a suitable die to cut out from a sheet or web a blank B substantially of quadrilateral form, as shown in Figures 7 and 8, having an end, to constitute the base of the receptacle or container, of arcuate or curved form, as at 18. The opposite sides 20, 21 converge at the same angle from the base end to the opposite end of the blank, the edge of the blank opposite the base end having three straight line portions a, b, and c inclining at the same and an acute angle to the horizontal. The portions a, b are arranged and dimensioned so that when the upper open end of the receptacle formed from the blank is collapsed said portions will extend substantially in an even horizontal plane and constitute substantially one side of the collapsed receptacle end with the portion b arranged in a plane above the portion a for a purpose to be hereinafter described. The portion c is of an extent substantially equal to the marginal portion of the side 21 of the blank to be lapped over the marginal portion of the side 21 in securing the blank at said marginal portions in forming the receptacle body. In forming a receptacle from the blank shown in Figure 7, the marginal portion of the base end, the side 21 and end portion b are provided with an adhesive surface, as indicated at 18', 21', and b'. This adhesive comprises a flexible gelatine or gluten, such as a cereal derivative, which is impervious to grease and oil, particularly hydrocarbon or mineral oil and grease, and having the properties of being alcohol and acid resisting, and the same being solidified and rendered substantially non-tacky at ordinary room temperature and adapted to be rendered tacky when subjected to an elevated temperature. The adhesive may be applied to the blank and be in a dry and substantially non-tacky condition preparatory to forming the receptacle body, or the same may be applied to the blank in a soluble and tacky condition just prior to forming the receptacle body.

To form the receptacle or container body, the blank is wrapped around the mandrel 22 (Fig-

ures 10 and 11) with the adhesively surfaced marginal portion 21' in overlapped relation to the marginal portion 20, the blank being initially clamped intermediate the sides 20, 21 to the mandrel by a clamping member 23 movable toward and away from the mandrel, and the portions of the blank at opposite sides of the clamp wrapped under the tension about the mandrel by folding flaps 24, 25, shaped to conform to the mandrel pivotally carried by arms 26, 27 reciprocatory in a direction transversely of and at opposite sides of the mandrel in a manner which is usual in the art. In case the adhesive applied to the blank is in a tacky condition, pressure is applied to the overlapped portions of the blank which may be effected in any suitable manner and accomplished by a pressure member 28 carried by the flap 25 forcibly applied to the overlapped portions of the blank, as by a lever arm 29 pivotally connected to an ear extended from said flap, as at 30. Should the adhesive be in a dry and non-tacky condition, heat is applied to the overlapped portions of the blank simultaneously with the pressure, effected by heating the presser 28 as by arranging an electric heating element therein, as shown at 31.

After the receptacle body is formed, it is removed from the mandrel and engaged in a holder 32, (Figures 12 and 13) shaped to conform to the receptacle body and of a length so that a portion of the end of larger diameter will project from the holder, as shown at 33, and the holder positioned in register with means to cut a disk from a web W, peripherally flange the disk and engage the flanged disk in successive sequence with the flanging operation into the end 33 of the receptacle body projecting from the holder 32. This means comprises a tubular punch 34 mounted on a reciprocatory carrier 35 and a die plate 36 having an opening therethrough with two diameters 37, 38, the punch cooperating with the portion of larger diameter 37 to cut a disk from the web W and a head 39 carried by a plunger 40 reciprocatory in the punch carrier 35 cooperating with the portion 38 of lesser diameter in the die plate to peripherally flange the disk by forcing the disk through said portion of the die opening of smaller diameter, the continued movement of the flanging head engaging the peripherally flanged disk in the end of the receptacle body in the holder, as clearly shown in Figure 12, with the adhesively surfaced portion of the end of the receptacle body extending beyond the disk flange, the adhesive being in a substantially dry and non-tacky condition.

After the closure disk C has been engaged in the receptacle body, the holder is positioned in register with means to turn in the extended end of the receptacle body over and into engagement with the disk flange, when it is subjected to heat and pressure to render the adhesive 18' tacky and effect an intimate uniting of adjacent or contacting surfaces and of the receptacle body with the disk flange. This means, as shown in Figure 13, consists of a tubular member 42 reciprocatory toward and away from the end of the holder and having an internal diameter less than the diameter of the projecting end of the receptacle body with the end wall 43 converged inward, and as said member is moved to the holder, said beveled end wall 43 will engage the projecting end of the receptacle body and deflect it inward, as shown at 44. A head 45 carrying a heater, shown as an electric heating unit 46, and actuated by a tubular plunger 47 is slidably mounted

in the member 42 and reciprocatory toward and away from the holder 32. The peripheral portion of the heater is slightly flared outward, as at 48, and as the head is moved to the holder 32, said flared peripheral portion will engage the inwardly deflected end 44 of the receptacle body and direct it inwardly to the inside of the disk flange, as shown at 49, the external diameter of the heater being such as to firmly engage the turned in receptacle end with the disk flange, the heat radiating therefrom rendering the adhesive 18 tacky and causing an intimate uniting of the turned in receptacle end with the disk flange.

After the closure disk C has been secured in the receptacle body, the receptacle is complete and is of a structure, as shown in Figure 2, with the edge portion b having the adhesive surface b' at the mouth or open end extending beyond the edge a of the opposite wall portion. In this condition, the receptacle may be filled with the contents to be dispensed therein. To close and seal the filler opening of the receptacle, the opposite wall portions a, b at the opening are collapsed by squeezing them together, preferably so that the longitudinal edge 20 of the receptacle blank at the open end will be at one side of the receptacle, as shown in Figure 1, with the adhesive surfaced portion b' extending beyond the edge a, the adhesive being substantially dry and non-tacky. To seal the collapsed receptacle end, the extended end b is folded over the edge a and subjected to heat and pressure to render the adhesive tacky and effect an intimate uniting of the adhesive surfaced portion b' with the receptacle.

To close the receptacle end, the receptacle is positioned upon the head of a vertical reciprocatory plunger 50 and positioned thereby between a pair of members 51, 52, which may be in the form of slides, movable toward and away from each other and normally assuming a spread position to permit the engaging of the end of the receptacle between the same, as shown in Figure 14. As the members 51, 52 are moved toward each other, as shown in dotted lines, the open end of the receptacle will be collapsed and assume substantially the position shown in dot and dash lines.

The means to fold the adhesive surfaced end b' over the open end of the collapsed receptacle and secure it in folded condition, is positioned directly above the collapsing members 51, 52 and comprises a pair of pivoted jaws 53, 54, each jaw provided with knuckles 55, 56, whereby the jaws are mounted upon a pintle 57 with the knuckles in interengaged relation with the knuckles 55 fixed to the pintle, as by a pin, and the knuckles 56 loose thereon, the extended end of the pintle having a crank arm 58 fixed thereto and the end knuckle 56 of the jaw 54 having a crank arm 59 integral with the knuckle or fixed thereto. The jaws are normally positioned contiguous to each other and at one side of the projecting end b of the collapsed receptacle end, as shown in Figure 15, and to fold the end b over the closed receptacle end the jaw 53 is moved to the dotted line position, shown in said Figure 15, thereby moving said extended end b to extend substantially at a right angle to the end of the receptacle. In this position of the jaw 53, it will be spaced from the jaw 54, when vertical movement is imparted to the plunger 50 to engage the end of the receptacle between the jaws, thus effecting a folding of the extended end b to the opposite side of the receptacle when the jaws are actuated to exert

a clamping force thereon. To produce an elevated temperature to render the adhesive b' tacky and effect an intimate uniting of the projecting flap portion b with the receptacle, one or both of the jaws is heated, shown in the present instance as the jaw 53, by arranging an electric heating unit 60 thereon. After the extended flap portion b has been adhesively united in folded condition with the receptacle, the jaws 53, 54 are actuated to move them out of engagement with the receptacle, the collapsing members 51, 52 being moved away from each other releasing the receptacle when the plunger 50 is actuated to move the closed receptacle from between the collapsing members.

While I have described my receptacle and method of forming the same, whereby the receptacle is open at the smaller end to be the filling opening of the receptacle which is thereafter collapsed and sealed at this end after the filling thereof, I may elect to directly form the body in the collapsed form and at the same time close and seal this end, and fill the receptacle from the large or opposite end, and insert the cap C as the finishing operation which may be done in proper sequence, that is when the filling mechanism is a part of the receptacle forming means, or the cap may be inserted by a separate means or manually any time after the forming thereof.

It has been found in practice to be a decided advantage in the pouring or depositing of various substances into the receptacle to fill the same from this larger end, both in the handling of the receptacle when filling manually or when filling automatically which materially simplifies the means for forming the receptacle. I accomplish this, as shown in the modified form of this method, see Figures 18 to 22, of which Figure 18 shows the mandrel 22a conforming in shape to fit the interior of the collapsed body, on which the blank B in every respect the same blank as described, is formed, except here the closing flap is turned in and sealed to close the receptacle at this end, before the folded body is removed from the mandrel, the mandrel is flattened on opposite sides and comes to edge 22b, terminating short of the overhanging blank, see Figure 18. To thus form the receptacle body, the blank B is wrapped around the mandrel as before, the mandrel being mounted to move forward to forming position, and withdrawn by a reciprocating action; as shown the mandrel is forward, and the blank first being clamped by the bar 23a, the sides 20 and 21 of the blank folded up by flaps 24a, 25a, shaped here to fit the circular end of the folded body and the wedge shape or collapsed end which is folded to bring the opposite walls together and held under tension by these folding flaps, the overlapped portions 20 and 21 of the blank are forced down by a reciprocating presser bar 28a to have movement toward and away from the mandrel to apply pressure, and carrying a heating unit 28b by which the lapped portions are intimately united. These flaps are pivotally carried by arms 26a, 27a reciprocatory in a direction transversely of opposite sides of the mandrel, and the overlapped portion of the blank being pressed down and pressure applied by bar 28a, slidably located above the mandrel to move into and out of engagement therewith, this bar having the heating unit 28b to render the adhesive tacky to the overlapped portion.

Before removal of the blank body from the mandrel, the extended end b is folded over on the body by a folding and clamping means located

in front of the mandrel. This means folds the adhesive surfaced end *b'* over the closed folded end of the body and is secured in this folded condition, by a pair of pivoted jaws *53a*, *54a*, each jaw provided with ears *55a*, *56a* whereby the jaws are loosely mounted upon a stud *57a* with the ears interengaged similar to a hinge, each jaw has a perforated ear *58a*, *59a* for connection of actuating levers *58b*, *59b*, by which the jaws are operated. The jaws are normally open as indicated in full lines in Figure 20, one jaw as *53a* is first rocked inward to engage the ended end *b* of the blank and by a shouldered portion *70* of the jaw folds the end *b* to the position shown in broken lines, to a greater angle than right angle to the full line position, this being done by spring members *71*, carried by this jaw, so located in slotted portions *72* of the jaw to yield inward of the slots on the first engagement of the flap *b* and move outward to fold the same to the angle shown, whereupon the jaw *54a* is rocked to engage the partially folded flap to close the same against the body of the receptacle. Each jaw has a clamping portion *73*, *74*, that is brought firmly against the flap and body on opposite sides, thus effecting a folding of the extended end *b* of the receptacle. To produce an elevated temperature to render the adhesive *b'* tacky and effect an intimate uniting of the projecting flap, portion *b* with the receptacle, one or both of the jaws is heated, as shown in the present instance, each jaw has an electric heating unit *75* thereon to render the adhesive tacky. After the extended flap *b* has been adhesively united in folded condition with the receptacle, the jaws *53a*, *54a*, are actuated to move them out of engagement with the receptacle and the mandrel is withdrawn, releasing the receptacle to be carried in a holder *32a* shaped to conform to the receptacle body and of a length so that a portion of the end of circular form will project from the holder as at *33a*, to the filling mechanism, not shown. The receptacle is then shifted to a closing and sealing position, see Figure 21, to register with means to cut a disk from a web *W*, peripherally flange the disk and engage the flanged disk in successive sequence with the flanging operation into the end *33a* of the receptacle body, projecting from the holder *32a*. This means comprises a tubular punch *34a* mounted on a reciprocatory carrier *35a* and a disk plate *36a* having an opening therethrough with two diameters *37a*, *38a*, the punch cooperating with the portion of larger diameter *37a* to cut a disk from the web and a head *39a* carried by a plunger *40a* reciprocatory in the punch carrier *35a* cooperating with the portion *38a* of lesser diameter in the disk plate to peripherally flange the disk by forcing the disk through said portion of the disk opening of smaller diameter, the continued movement of flanging head engaging the peripherally flanged disk in the end of the receptacle body in the holder, as shown in Figure 21, with the adhesively surfaced portion of the end of the receptacle body extending beyond the disk flange. After the closure disk *C* has been engaged in the receptacle body, the holder is positioned in register with means to turn in the extended end of the receptacle body over and into engagement with the disk flange, when it is subjected to heat and pressure to render the adhesive *18'* tacky and effect an intimate uniting of the turned in end of the receptacle body with the disk flange. This means, as shown in Figure 22, consists of a tubular member *42a* reciprocatory toward and

away from the end of the holder and having an internal diameter less than the diameter of the projecting end of the receptacle body with the end wall *43a* converged inward, and as said member is moved to the holder, said beveled end wall *43a* will engage the projecting end of the receptacle body and deflect it inward, as shown at *44a*. A head *45a* carrying a heater, shown as an electric heating unit *46a*, and actuated by a tubular plunger *47a*, that is slidably mounted in the member *42a* and reciprocatory toward and away from the holder, the end of the receptacle having been deflected, as stated, the tubular member *42a* comes to rest and the plunger *47a* continues in its movement toward the holder to engage the deflected end portion of the receptacle, the plunger *47a* has an extending annular portion *48a*, the edge of which is curved inwardly to engage the deflected portion of the body that is turned inward and over the flanged portion of the cap *C* previously inserted, as clearly shown in broken lines at *49a*. The diameter of the plunger being such to make a tight engagement with the inner diameter of the turned in body with the adhesive *18'* on the inner face thereof contacting with the flange of the cap and by means of the heating element the adhesive is rendered tacky and an intimate uniting is effected.

It will be here understood in the forming of the cap *C*, as in Figure 21, that the caps may be so formed in a separate mechanism and deliver the caps to a magazine or other convenient place instead of into the receptacle, for application to the receptacle to close the same at any time after the forming of the receptacle body, and the means for turning in the extended end of the receptacle, as in Figure 22, may be a separate means, and so turn in the receptacle end, at any time after the forming of the receptacle, and it will be further understood that the turning in of the receptacle end may be omitted and adhesively join the cap flange flush with the end of the receptacle body. As shown in Figure 23, when this is done, a heating element *39b* located in the head *39a*, as indicated in Figure 21, is electrically connected to heat the head and thereby render the adhesive at the end of the body tacky and intimately unite the flanged cap to the body, the heating element not being connected when turning in the body, as shown in this view. The flap *b* of the blank may be provided with side extensions in the form of ears *s.s.* to fold over the back of the body after the flap *b* has been folded in to close the receptacle body, as shown in Figure 24.

From the foregoing, it will be seen, in the method of forming the receptacle as described in connection with Figures 10 to 17 inclusive, the blank is formed on the mandrel to a truncated conical form, the opposite sides overlapped and adhesively united and heated, in which the filler end of the receptacle is the smaller end, the closure cap *C* is formed and inserted in the larger end of the receptacle, with the end of receptacle turned in, adhesively united and heated, the receptacle is filled from the end of smaller diameter, then collapsed to bring opposite walls of the body in close contact with each other, the extended portion *b* of one side wall, being the flap, is folded over and adhesively united and heated. In this method, of course, the later closing and sealing of the flap may be carried out at any time after the forming and filling of the receptacle.

In the modified form of the method of forming the receptacle, as in Figures 18 to 22 inclusive, the blank is formed on the mandrel to be directly formed to bring the opposite side walls in close contact and the extended portion, being the flap, is turned over and adhesively united and heated while still on the mandrel and is, in this method of operating, the closed end of the receptacle. The receptacle thereafter being filled from the opposite or circular open end of the receptacle after which the closure cap C is formed inserted and adhesively united and heated. In this method as in the former, the closure cap C may be inserted at any time after the forming and filling of the receptacle.

The receptacle is rendered grease and oil proof and alcohol and acid resisting after it is formed by coating the inner surface with a cereal gelatine or gluten, in a soluble condition, as by spraying or otherwise. Or to provide a grease or oil proof receptacle, the surface of the blank B and the bottom closure, to constitute the inner surface of the receptacle, may be coated with the grease and oil proofing material prior to the forming of the receptacle, as shown as A in Figures 8 and 9.

It has also been found that the grease and oil proofing material may be rendered moisture and water proof by adding formaldehyde.

The receptacle formed from the blank, as shown in Figure 7, with or without the coating of the grease and oil proofing material, or constructed from the blank as shown in Figure 8 with the grease and oil proofing material applied thereto, after the contents have been filled therein and it is closed and sealed, it is rendered moisture and water proof by applying a moisture and water proofing material, such as paraffine, to the exterior surface thereof, which may be effected by spraying or dipping into a paraffine bath, depending upon the contents of the receptacle.

While the adhesive for securing the component parts of the receptacle, and the material with which the interior surface of the container is coated and impregnated, has been defined as particularly adapting paper containers to contain mineral or hydrocarbon oils and greases, it is also impervious to the action of vegetable oils, such as peanut oil and olive oil, and that it is also acid resisting, such as carbonic acid gas, and alcohol resisting, such as alcohol contained in still wines.

Having thus described my invention, I claim:

1. The method of making a paper container which comprises coating a blank and closure on one entire surface with a composition, allowing the composition to become dry, forming the blank into a tube with the coating inside, and with the edges overlapping, securing said overlapping edges with the coating by application of heat and pressure, inserting a flanged closure in each end of the tube, securing and sealing them in place with the same coating by the application of heat and pressure.

2. The method of making liquid proof containers which comprises coating a single blank and closure on one entire surface with a composition, allowing the composition to become dry, forming the blank into a tube with the coating inside and with the edges overlapping, securing said overlapped edges with the coating by application of heat and pressure, flattening one end of the tube, folding an extension of one side over the other, and sealing with the coating

by the application of heat and pressure, inserting a flanged closure in one end of the tube, securing it in place with the same coating by folding the tube end over the flange and applying heat and pressure.

3. The method of making liquid proof paper containers which comprises coating a single blank and closure on one entire surface with a composition, allowing the composition to become dry, forming the blank into a tube with the coating inside and with the edges overlapping, securing said overlapped edges with the coating by application of heat and pressure, flattening one end of the tube, folding an extension of one side over the other and sealing with the coating by the application of heat and pressure, inserting a flanged closure in the other end of the tube, securing it in place with the same coating by applying heat and pressure.

4. The method of making liquid proof paper receptacles which comprises coating a single blank and closure on one entire surface with a composition, allowing the composition to become dry, forming the blank into a tube with the coating inside and with the edges overlapping, securing said overlapped edges with the coating by application of heat and pressure, flattening one end of the tube, folding an extension of one side over the other and sealing with the coating by the application of heat and pressure, inserting a flanged closure in the other end of the tube, securing it in place with the same coating by folding the tube end over the flange and applying heat and pressure.

5. The method of making a liquid proof container which comprises coating a single blank and closure on one entire surface with a composition, allowing the composition to become dry, forming the blank into a tube with the coating inside and with the edges overlapping, securing said overlapping edges with the coating by application of heat and pressure, inserting a flanged closure in one end of the tube, securing it in place with the same coating by the application of heat and pressure, flattening the opposite end of the tube and sealing with the coating by application of heat and pressure.

6. The method of making a grease or oil proof container which comprises coating a single blank and closure on one entire surface with a composition of gelatine and formaldehyde, allowing the composition to become dry, forming the blank into a tube with the coating inside and with the edges overlapping, securing said overlapping edges with the coating by application of heat and pressure, inserting a flanged closure in one end of the tube, securing it in place with the same coating by folding the tube end over the flange and applying heat and pressure, flattening the opposite end of the tube, folding an extension of one side over the other and sealing with the coating by application of heat and pressure.

7. The method of making paper receptacles which comprises coating the marginal portion of one side and both ends of a single blank with a composition, allowing the composition to become dry, forming the blank into a tube with the marginal coating inside and with the edges overlapping, securing said overlapping edges with the coating by the application of heat and pressure, inserting a flanged closure in each end of the tube, securing and sealing them in place with the marginal coating by the application of heat and pressure.

8. The method of making paper receptacles which comprises coating the marginal portion of one side and both ends with a composition, allowing the composition to become dry, forming the blank into a tube with the marginal coating inside and with the edges overlapping; securing said overlapping edges with the composition by the application of heat and pressure, inserting a flanged closure in each end of the tube, securing it in place with the composition by folding the tube end over the flanges and applying heat and pressure.

9. The method of making paper receptacles which comprises coating the marginal portion of one side and one end of a blank with a composition, allowing the composition to become dry, forming the blank into a tube with the marginal coating inside and with the edges overlapping, securing said overlapping edges with the coating by the application of heat and pressure, flattening the coated end of the tube folding an extension of one side over the other and sealing with the coating by the application of heat and pressure, inserting a closure in the other end, the flanged portion of which is coated with the composition, securing it in place with the coating by folding the tube end over the flange and applying heat and pressure.

10. The method of making paper receptacles which comprises coating the marginal portion of one side and both ends of a blank with a composition, allowing the composition to become dry, forming the blank with a tube with the marginal coating inside and with the edges overlapping, securing said overlapping edges with the coating

by the application of heat and pressure, inserting a flanged closure in one end of the tube, securing it in place with the composition by folding the tube end over the flange and applying heat and pressure, flattening the opposite end of the tube, folding an extension of one side over the other and sealing with the composition by application of heat and pressure.

11. The method of making a paper receptacle which comprises coating the marginal portion of one side and both ends of a single blank with a composition, allowing the composition to become dry, forming the blank into a tube with the marginal coating inside and with the edges overlapping, moistening the coating with a solvent immediately prior to forming, securing said overlapped edges with the coating by the application of heat and pressure, inserting a flanged closure in each end of the tube, securing and sealing them in place with the moistened marginal coating by the application of heat and pressure.

12. The method of making a liquid proof paper receptacle which comprises coating a single blank on one entire surface with a composition, allowing the composition to become dry, forming the blank into a tube with the coating inside and with the edges overlapping, moistening the said overlapped portions with a solvent, securing said overlapping edges with the coating by application of heat and pressure, moistening the marginal portion of each end of the tube with a solvent, inserting a flanged closure in each end, securing them in place with the same coating by the application of heat and pressure.

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