

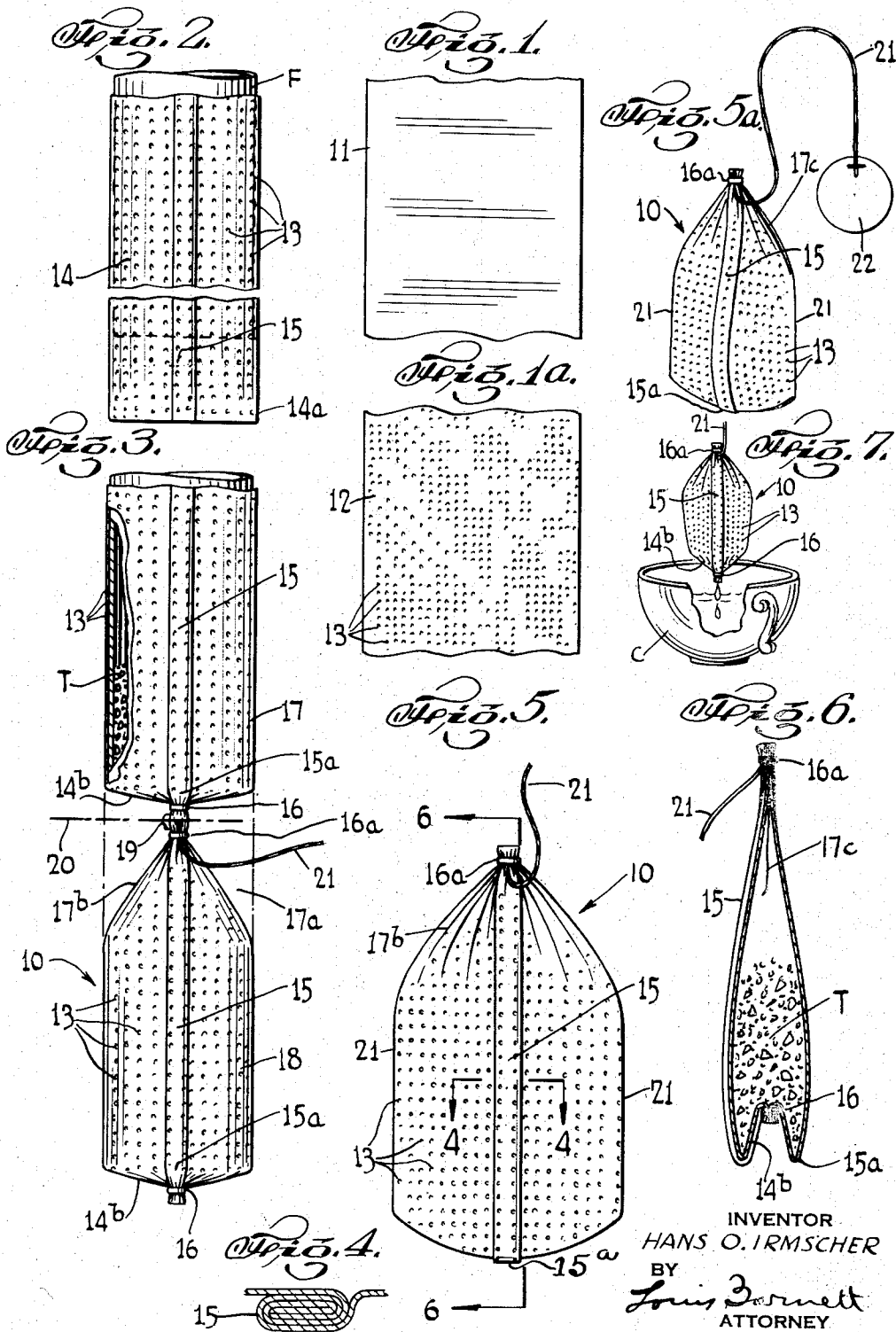
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PACKAGE AND METHOD OF MAKING THE SAME

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PACKAGE AND METHOD OF MAKING THE SAME

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This invention relates to the manufacture and filling of containers or bags. Although in practising the invention containers or bags may be made for use to package various materials, the embodiment of the invention as herein described is directed to the packaging of tea, coffee and similar essence containing products made and sold as complete articles of manufacture for use in brewing beverages, as for example, in making so-called tea-balls in packages or bags formed of crease-retaining sheet material, such as filter paper, or perforated vegetable parchment paper or Cellophane, and is also directed to the novel method of producing the same.

Among the objects of the invention is to generally improve packages of the character described and the methods of manufacturing same, which shall have joint seams formed by folding and creasing alone, said seams being firmly retained against separation without the use of any adhesives, which shall comprise of few and simple fastenings arranged to provide an inexpensive article of new, neat and attractive appearance, the improved method of manufacture of which shall be particularly adapted for large scale production, and which method and article shall be efficient and practical to a high degree.

Other objects of the invention will in part be obvious and in part hereinafter pointed out. The invention accordingly consists of features of construction and method, combinations of elements, arrangements of parts and steps in the process of manufacture which will be exemplified in the construction and method hereinafter described and of which the scope of the application will be indicated in the following claims.

Certain features herein shown and described are shown and described in my co-pending application, Serial No. 210,152, filed May 26, 1938, of which the application is a continuation in part.

In the accompanying drawing in which is shown various possible illustrative embodiments of this invention,

Figs. 1 and 1a are front views showing fragmentary portions of unperforated and perforated sheet material webs, respectively, for use in practising the invention;

Fig. 2 is a perspective view of the web portion wrapped around the form to provide a seamed tubular structure;

Fig. 3 is a view similar to Fig. 2 showing the tubular structure provided with a bottom and top closure which constitute one tea-ball and the bottom closure of the following tea-ball;

Fig. 4 is a fragmentary cross-sectional view of the seam taken on lines 4—4 in Fig. 5;

Fig. 5 is a front elevational view of the partially filled bag in finished flattened condition with the bottom closure tucked in and the string han-

dle for the tag anchored at the top closure;

Fig. 5a is a perspective view showing a completely finished tea-ball made in accordance with the invention;

Fig. 6 is a cross-sectional view taken on lines 6—6 in Fig. 5; and

Fig. 7 is a perspective view showing the tea-ball during brewing operations in an expanded condition and the control of the drip therefrom.

Referring in detail to the drawing 10 denotes a tea bag manufactured and constructed to embody the invention.

In practising the embodiment of the invention for making tea-balls 10, suitable sheet material 11 may be used preferably from a roll having a web of required size in the well understood manner. Said sheet material when used merely as a protective cover in any embodiments of the invention for small packaging of a product other than here shown may be made of any of the various commercially obtainable forms of paper, "glassine" or "cellophane." In practising the invention for making tea-balls 10, however, where the product contains an essence to be extracted by brewing and the like, there may be used as the sheet material, suitable filter paper 11 of a character that will withstand immersion in boiling water without damage or disintegration, or said sheet material may be made of vegetable parchment paper or Cellophane 12, finely perforated as at 13 to permit passing there-through liquids forming the brew with the contents of the package.

In carrying out the improved method for making tea-balls 10, a strip or the leading end of a web of sheet material 11 or 12 may preferably be applied to or wrapped around a hollow form F and joined by creasing and folding aligning edge portions that extend lengthwise thereof as shown in Figs. 2, 3 and 4 to provide a tubular structure 14. Said creased and folded joint portions form a seam 15 for the tubular structure 14 without the use of any adhesives or other securing means. The lower end 14a of the tubular structure 14 at the start of the process embodying the invention, which is seen in Fig. 2 to extend beyond the form F, may next be infolded all around (see Fig. 3) and the extreme end of the portion infolded, gathered together to make a bottom closure 14b. A metallic staple or band 16 or other similar securing means is then applied to the gathered bottom closure 14b forming a receptacle structure 17 as shown in Fig. 3. The infolded portion above described provides a cross-fold 15a inwardly of band 16 which helps to retain the joint seam 15 against separation.

Next the receptacle structure 17 as now formed is partially filled with a product T, such as tea, through the center of the hollow form F. This is accomplished by either moving the receptacle

structure 17 down beyond the end of the form F, or by moving the form F up from the bottom closure 14b, the distance of relative movement between the form F and receptacle structure 17 being sufficient to form a complete tea-ball 10 of the partially filled structure 17, that is, a bottom closure for the next tea-ball and a top closure for the tea-ball 10, being completed in the manner hereinafter described.

After said movement of the form F the portion of the tubular structure 17a below said form F is infolded and gathered at 20 to provide another bottom closure 14b with a metallic staple or band 16 similar in all respects to that described above, for a succeeding receptacle structure as shown in Fig. 3. Another staple or band 16a spaced down from the band 16 and the gathered portion 19 is provided to secure the tapering gathered top 17b forming a closure for the tea-ball 10.

Both the stapling or fastening of the bottom 14b and the stapling or fastening of the top 17b of the tea-ball 10 (Fig. 3) may be performed in a single operation by simultaneously applying bands 16 and 16a if desired. The small gathered portion 19 allowed between the two staples or bands 16 and 16a separating the tea-ball 10 from the structure above, that is, the portion in the process of being completed, is severed by cutting along the line 20 for detaching the tea-ball 10.

Where a string handle 24 terminated by a tag 22 is used on the package as in making tea-balls 10, an end of the string handle 24 is anchored by means of the staples or bands 16a as shown in Figs. 3, 5, 5a, 6 and 7.

After the tea-ball 10 is detached by cutting at 20 as indicated in Fig. 3, the method of manufacture may be continued by repeating the cycle of operation above described by again moving the form F with respect to the receptacle structure 17 made thereon after partially filling, infolding and providing the gathered portion 19 with the spaced bands 16 and 16a and then severing to detach a completed tea-ball 10.

Another procedure which is contemplated in practicing the invention is instead of making the combination top and bottom closure portion 19 on which the bands 16 and 16a are applied by infolding and gathering as described above, to first flatten the partially filled portion 18 of the structure below the cutting line 20 (Fig. 3) in the manner described above before severing and then to twist the flattened portion 18 to provide the top and bottom closure portion 19 on which the bands 16 and 16a are applied, said portion 19 then being severed at 20 as before to detach the tea-ball 10.

Either before the tea-ball 10 is completed and severed as above described or after detachment thereof, the bottom closure 14b may be tucked in and the partially filled structure 18 of said tea-ball flattened so that the staple or band 16 and the infolded bottom closure 14b are concealed from view as seen from Figs. 5, 5a and 6.

The tea-ball 10 made by the improved method and construction above described can be utilized in the well-known manner by holding the string handle 24 and immersing the tea-ball 10 in a cup C or like container having preferably water at boiling temperature to make a brew in the well understood manner. As the tea-ball 10 is lifted out of the cup to drain the brewing liquid, the bottom end of the tea-ball is expanded from its normally flattened condition and the draining will take place by the brew fol-

lowing the gathers at the bottom closure 14b dripping from the tea-ball in a guided stream from the end adjacent the staple 16 as shown in Fig. 7. Thus it is seen that the dripping is facilitated and confined so that it can easily be managed, a feature greatly desired in this type of article as it aids in avoiding accidental spillage.

As seen from Fig. 5a the tea-ball 10 as supplied to the user is in a flat compact condition with the bottom closure 14b tucked in and concealed, the longitudinal edges 21 formed with smooth single folds, and a seam 15 extending across the middle of one of the flat surfaces of the tea-ball 10, said seam 15 forming a bracing as well as an ornamental trimming. The tapered top closure 17b of the tea-ball 10 has a string handle anchored thereto by the staple or band 16a and forms a harmoniously shaped article which is neat and attractive in appearance.

As stated above the embodiment of the invention shown in the drawing and described herein is directed to the manufacture of a package for brewing, such as a tea-ball. It is to be understood, however, that the identical package may be utilized for blueing or otherwise tinting clothes in laundry work and also in household and factory dyeing operations. Packages for dispensing various dry products, samples thereof, medicinal products and the like, may be manufactured in accordance with the invention using sheet materials that are not to be immersed in liquids but on the contrary may be moisture-proof. Such package may be made with or without string handles.

Where it is desired to reduce the extent of the gathers on the top closure 17b of the tea-balls, the top tapered closure 17b may be formed with edge infolds 17c, as shown in Fig. 5, two such edge infolds 17c being provided during the flattening of the tea-ball 10 above described.

It is thus therefore seen that there is provided an improved article of manufacture and a method for making the same in which the objects of the invention are achieved and which are well adapted to meet all conditions of practical use.

As various possible embodiments may be made in the above invention for use for different purposes and as various changes might be made in the embodiments and method above set forth, it is understood that all the above matters here set forth or shown in the accompanying drawing are to be interpreted as illustrative and not in a limiting sense.

Thus having described my invention, I claim as new and desire to secure by Letters Patent:

1. In the method of making packages of the character described from an internally supported tubular structure formed of sheet material having a single adhesiveless seam joint and an infolded and fastened end closure, the steps of removing the internal support from the portion of said structure adjacent said infolded and fastened end closure, partially filling said portion with a product to be packaged, infolding an unsupported tubular structure portion adjacent the remaining internally supported portion of the tubular structure, fastening the last mentioned infolded portion to form the end closure for a succeeding structure similar to the first mentioned closed structure and fastening the last mentioned infolded portion at a spaced distance below the end closure last mentioned to serve as a top closure for the partially filled structure, severing the infolded structure be-

tween the spaced fastenings to detach the filled package formed from the tubular structure with the closed end, and flattening opposite sides of said package.

2. In the method defined in claim 1, including the step of infolding opposite converging edge portions forming said top closure during the flattening operations.

3. In the method of making packages of the character described from an internally supported tubular structure formed of sheet material having a single adhesiveless seam joint and infolded and fastened end closure, the steps of removing the internal support from the portion of the structure adjacent said end closure, partially filling said portion with a product to be packaged, flattening the unsupported and partially filled portion and tucking in the end closure last mentioned between the flattened side, gathering by twisting the unsupported tubular structure adjacent the remaining supported tubular portion to form an infolded closure, fastening said gathered closure to serve as an end closure for a succeeding structure similar to the first mentioned closed structure and fastening said gathered portion at a spaced distance below the last mentioned fastening to form a top closure of the partially filled structure, anchoring one end of a string handle and tag to said last mentioned top closure, and severing the structure between the two spaced fastenings to detach the filled package formed from the structure.

4. A method of making packages of the character described by forming a continuous internally supported tubular structure with an adhesiveless seam joint from a continuous web of paper, removing from an end of said tubular structure the internal support, infolding the unsupported tubular structure portion adjacent the supported portion and fastening said infolded portion forming an end closure, filling said closed portion with a product to be packaged, removing the internal support from the filled portion and from a space of the unfilled portion of the tubular structure above filled portion, constricting the last mentioned unfilled portion between filled portion and internally supported portion, fastening said constriction to form a top closure of a package and fastening said constriction at a short space above the last mentioned fastening forming a bottom closure for a succeeding package similar to the first mentioned bottom closure, detaching said package from the tubular structure by cutting between the two last mentioned fastenings, and flattening the detached package with bottom closure thereof tucked into a concealed position.

5. A package of the character described comprising a flattened structure formed of a pliant sheet material folded and creased with a single seam joint extending longitudinally along a flat side thereof, said seam joint having meeting edge portions of the sheet material bent and doubly folded in an interlockment, an end portion of said structure being gathered to form a bag bottom closure for the package, fastening means securing said bottom closure end together with one end portion of said seam joint, a product partially filling the bag, said bottom closure being depressed inwardly in an inoperative position and forming a cross fold transversely of seamed joint, the other end of said structure being gathered to

form a top closure for said package, fastening means securing said top closure together with the other end of said seam joint, said fastening means at top and bottom closures and said cross fold securing said seam interlockment of joint against unfolding and separation.

6. An infusion package of the character described comprising a flattened tubular enclosing structure having constricted ends, said structure formed of pliant filter sheet material folded and creased with a single adhesiveless seam joint extending along a mid-portion of a flat side thereof and through said restricted ends, said seam joint having meeting edge portions of the sheet material bent and doubly folded in an interlockment, a staple securing each constricted end with the interlockment seam joint passing therethrough, a product partially filling said structure, one of said stapled ends being depressed inwardly in an inoperative position and concealed between the flat sides of the package adapted to be extended in an operative position when package is immersed in a liquid.

7. The package defined in claim 6 in which the other stapled constricted end is provided with opposite edge border infolds forming a flat top tapered closure.

8. An infusion package of the character described comprising a flattened tubular enclosing structure having constricted ends, said structure formed of pliant filter sheet material folded and creased with a single adhesiveless seam joint extending along a mid-portion of a flat side thereof and through said restricted ends, said seam joint having meeting edge portions of the sheet material bent and doubly folded in an interlockment, a staple securing each constricted end with the interlockment seam joint passing therethrough, a product partially filling said structure, one of said stapled ends being depressed inwardly in an inoperative position and concealed between the flat sides of the package adapted to be extended in an operative position when package is immersed in a liquid, and a string handle terminated by a tag anchored by the staple on the other end of said stapled end opposite that concealed.

9. An infusion package of the character described comprising an enclosure partially filled with a brewing product formed of a pliant paper filter sheet material having gathered end closures, said enclosure having a seam joint formed from meeting edge portions of the sheet material bent and doubly folded in an adhesiveless interlockment, and fastening means at opposite ends of the enclosure for securing said gathered ends and for retaining said interlocked seam joint against unfolding and separation on expansion of the package when immersed in a liquid during a brewing operation, said enclosure forming a creased structure having flat sides with said seam joint extending centrally along one of said sides, said fastening means at one end of the closure being depressed inwardly to normally extend between the flat sides and adapted to be projected beyond said sides to provide a drip means on said expansion of the package.

10. The method defined in claim 1 including the step of tucking the bottom end closure and fastening into a concealed position between said flattened sides before the flattening of the package.

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