May 29, 1945. M. WEISMAN 2,377,118

PACKAGE

Filed Nov. 30, 1940

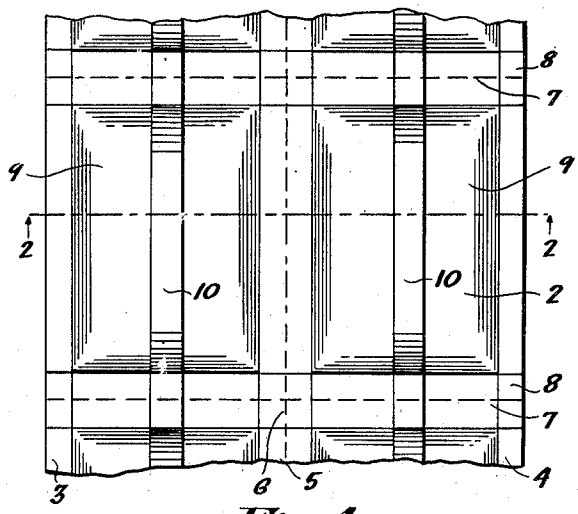


Fig. 1

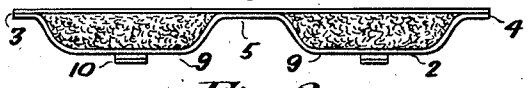


Fig. 2

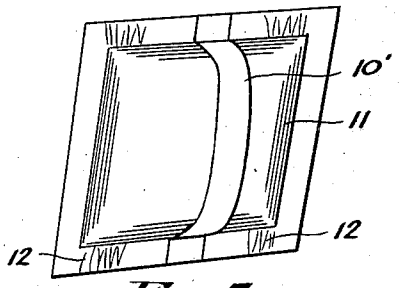


Fig. 3

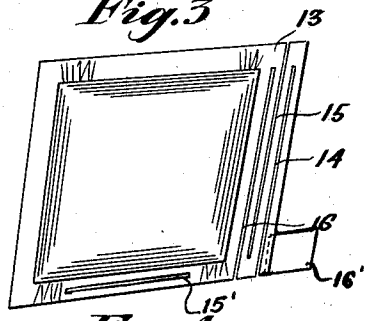


Fig. 4

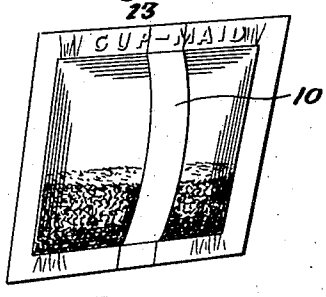


Fig. 5

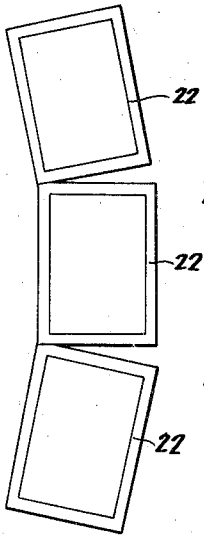


Fig. 8

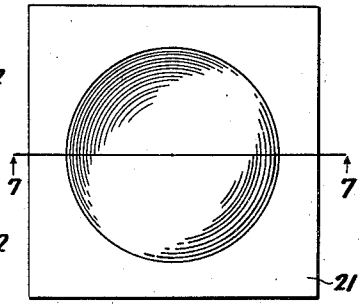


Fig. 6

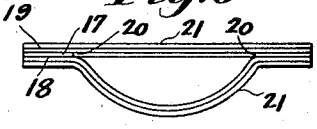


Fig. 7

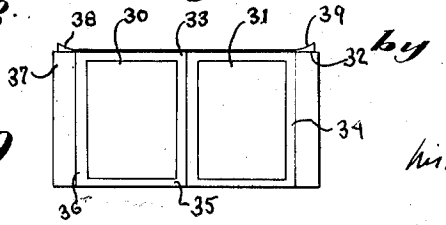


Fig. 9

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Patented May 29, 1945 2,377,118

UNITED STATES PATENT OFFICE

2,377,118

PACKAGE

Maurice Weisman, Roxbury, Mass., assignor to Mabe Corporation, New York, N. Y., a corporation of New York

Application November 30, 1940, Serial No. 368,102

2 Claims. (Cl. 99—77.1)

The present invention relates to a bag or package principally for packing teas, coffees or other similar substances which are to be immersed in water or other liquids to extract the soluble substances therein.

Tea and coffee bags are of course well known in the art, and usually these bags are made of gauze or similar material which is perforated or which have holes smaller in size than the material contained within the package. These packages for the most part are stitched or stapled and have strings attached thereto whereby the bags may be removed from the liquid when desired.

The present invention is an improvement over the existing bags in a number of respects. In the present invention all stitching is eliminated and the bag itself is preferably made of a porous paper or paper like material preferably sealed around its periphery to form a bag which has a definite shape in all three dimensions whereby greater utility is given to the bag in its use in permitting the extraction of its soluble contents. The bag is preferably also provided with a band or tape by which it may be raised from the cup or container containing the liquid so as to overcome the difficulties which occur in the usual bags when the string drops into the liquid.

The bag of the present invention may take various forms and construction as shown by the description in the specification below illustrating the invention in connection with the drawing in which:

Figure 1 shows the bags as they are formed together before being stripped from one another.

Figure 2 shows a section on the line 2—2 of Figure 1.

Figure 3 shows a perspective view of a single bag or package with a modified band.

Figure 4 shows a still further construction with a modified band.

Figure 5 shows in perspective a bag of the kind illustrated in Figure 1.

Figure 6 shows a modified form of the bag illustrated in Figure 5 with an independent center sealing element.

Figure 7 shows a section on the line 7—7 of Figure 6.

Figure 8 shows a series of connected bags in accordance with any of the modifications previously illustrated, and,

Figure 9 shows a modification of the cover shown in Figures 6 and 7 in perspective.

Figure 1 shows the bags as they come from the machine which forms and fills them and which has been completely described in my companion application Serial Number 368,101 filed November 30, 1940. Preferably the bags are made of two sheets of material, a back sheet 1 and a front sheet 2, although both of these sheets may be one and the same and be made by lapping the end sections over to the middle, in which case the ends 3 and 4 are simply creased edges and the side edges of the sheet meet substantially in the center section 5.

The sheets 1 and 2 are preferably of thermoplastic material, the "Webril" sheet which is of a cellulose acetate composition described in my companion application above referred to being suitable for this purpose. This sheet is made of a cellulose acetate compound comprising a physical mixture of cotton and cellulose acetate fibers, carded together and formed into a sheet. The sheet so formed is porous and water resistant and is unaffected by boiling water but is thermoplastic at a much higher temperature. In place of "Webril" other materials may be used such as waterproofed paper which is perforated, or cotton fabric, or woven material. While thermoplastic material is preferably desired, the sheet may have binders or adhesive material which may be separate from the sheets forming the bag or applied to the sheets. An adhesive sheet or thermoplastic sheet may be used between the two sheets forming the bag, and this sheet may have a center opening or openings to permit the water to pass through and also to permit free contact of the contents within the bag with both cover sheets. These modifications will be described later.

In Figure 2 the end sections 3 and 4 and the center section 5 are sealed together in face to face relation longitudinally along the length of the sheet as shown in Figure 1, and the center section is perforated along the line 6 while the sheets are perforated laterally also as indicated at 7 in the center of the sealed sections. As indicated in Figure 2 the front sheet 2 is extended forward at 9 forming a pouch. This is accomplished by using a larger front sheet and having the front and back sheets sealed at the center and edges so that the front sheet bulges out at 9 on both sides of the center.

In the middle of each pouch section 9, there is shown a band or strap 10 which may be, and preferably is of the same material as the bag, although other types of material may be used. The bands 10 come in strips and are fed with the sheets forming the bag. They are sealed to the

bags in the lateral sealing sections 8 at the top and at the bottom face of the bag, so that when the bags are separated by the lateral cuts 7, each strip acts as a strap or handle across the bag.

If desirable, as indicated in Figure 3, the strap 10' may be made to hang further from the body 11 of the bag. This will permit a spoon or other utensil to be readily inserted between the bag and the strap so as to raise the pouch out of the water. In place of the band 10, a string of thermoplastic material may be used, and if desired one end of the band or string may be cut so that it will hang freely from the other end. If desired a tag may be attached or sealed to the free end.

Since the front sheet 2 is extended in the section 9, it will be evident that this causes the material at the bottom and at the top of the bag to be taken up in the sealing margin. This is preferably done by pressing the bags in this section as indicated by 12—12 in Figure 3, although other suitable means may be used as for instance pleating or folding the thermoplastic material or simply creasing it together as it is sealed.

In the modification illustrated in Figure 4, instead of applying the strip or handle at the mid-section of the bag, the larger marginal portion 13 may be left at the side, which is slit by slits 14, 15 and 16, alternately from the sides. This will provide a long strip by which the pouch or bag can be raised from the cup. Instead of slitting the margin from the edge, the slit may be made in from the edges as at 15', leaving a handle by which the bag may be lifted. Also a tag 16' may be sealed between or outside the strips at the end.

In Figures 6 and 7 there is shown a further modification in which a thermoplastic center sealing element 17 may be employed to seal the porous sheets 18 and 19, making the coffee or tea bag.

The thermoplastic sheet 7 may have a hole in the center as indicated by the line 20 or this sealed sheet may itself be perforated to permit the water entering through the side 19 to come in easy contact with the contents within the bag.

The sheet 18 as indicated in Figure 7 may take a somewhat spherical shape as indicated by the section in Figure 7. The bag itself may be covered on both sides as indicated by the covers 21, 21. These covers can also be applied to the modification shown in Figures 3, 4 and 5, in which case the back sheets are all thermoplastic material, while the cover is not, so that it may readily be removed from the bag without tearing the two sheets forming the bag, apart. At the same time the contact of the thermoplastic sheet with the non thermoplastic cover will be such as to provide a sufficient seal between the two when the bag is not in the water. The outer sheets 21, if desired, may be nonpervious to air, so that the contents within may be hermetically sealed by the cover. When it is desired to immerse the bag in water, in this case the covers are removed and the bag is simply dropped in the water in the usual manner.

In Figure 8 there is indicated a chain of bags, 22, 22, 22, which may be cut from groups of bags as indicated in Figure 1. In this connection the lengthwise and crosswise perforations are such as to permit the corners of the bags to hold together and form chains which facilitates packing and handling, where it is desired to use a number of bags together.

Figure 5 shows a perspective view of a single bag in accordance with Figure 1 of the drawing.

It will be noted that Figure 5 shows embossing at the top of the bag together with printing 23, which may be from an ink of soluble coffee or tea extract which may also be embossed by a die in the sealing anvil.

In the packages described above, in place of using two thermoplastic sheets of porous material, a single sheet of porous material may be used which is thermoplastically sealed around its edges to a transparent cellulose acetate sheet which is non-porous and simply acts as a window to show the contents of the material within the passage. In this construction the porous sheet need not be of thermoplastic material, necessarily, but simply must be sealed at its edges to the transparent material. A band as described in connection with the other modifications may also be used in the case of this bag and also if desired, the feature described in connection with Figure 4 may also be used.

In Figure 9 a cover is shown having a pair of twin bags 30 and 31, which may be the same type of bags shown in Figure 1 with perforations in the slit section between the two bags whereby they can be separated. The cover in this case consists of a front sheet 32 and a rear sheet 39 which are sealed along the sealing margins 33, 34, 35 and 36 to the edges of the bags. The sheets 32 and 39 it will be noted in Figure 9, extend beyond the sides of the bags in open flaps 37 and 38 by means of which the cover sheets may be peeled off before the bags are immersed in hot water.

Having now described my invention, I claim:

1. A sealed package containing infusible substances suitable for beverages, comprising sheets of thermoplastic, porous, flexible, thin, paper-like material, resistant to boiling water, said sheets being of different widths and sealed in face to face relation about their edges, the edges of the larger width sheet being crimped to the edges of the smaller width sheet to form an enclosed pouch-like bag, and a band of similar material sealed at its ends to the sealed edges of said bag.

2. A sealed package containing infusible substances suitable for beverage comprising sheets of different width filled out by the enclosed substances, said sheets being of thermoplastic, porous, flexible, paper-like, thin material, resistant to boiling water, sealed in face to face relation around their peripheral edges and of differing areas within the sealing edges to form an enclosed space therebetween, the excess area of the larger sheet being taken up in the sealing of it to the smaller by crimping of the larger sheet about its periphery.

MAURICE WEISMAN.