April 26, 1949. L. L. SALFISBERG 2,468,464

INFUSION PACKAGE

Filed Feb. 7, 1946 2 Sheets-Sheet 1

Fig. 1

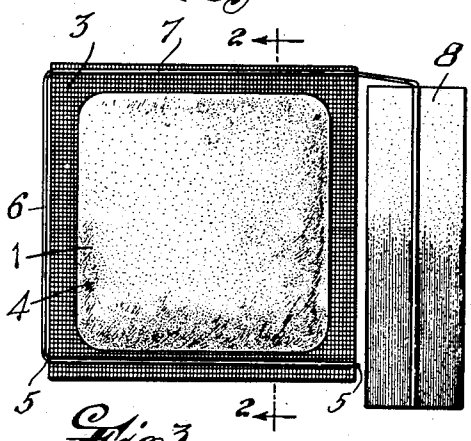


Fig. 8

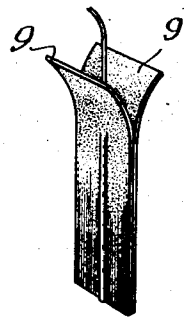


Fig. 9

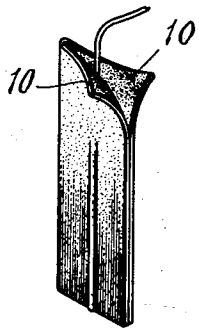


Fig. 3

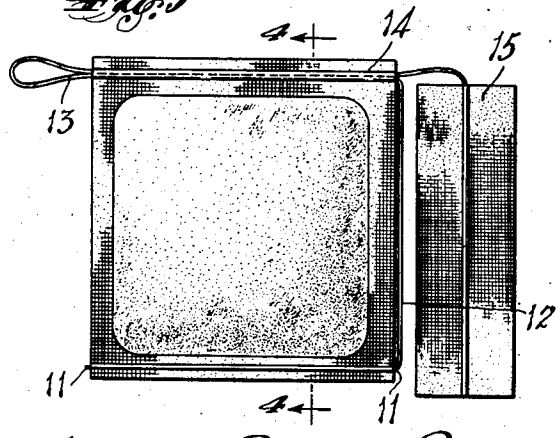


Fig. 5

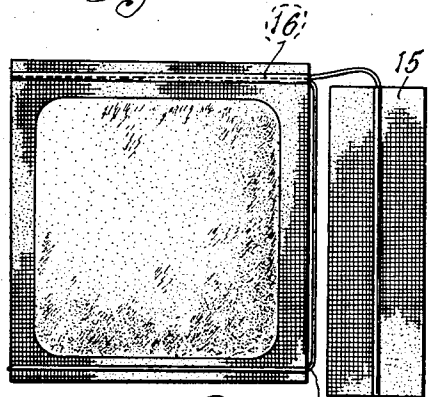


Fig. 6

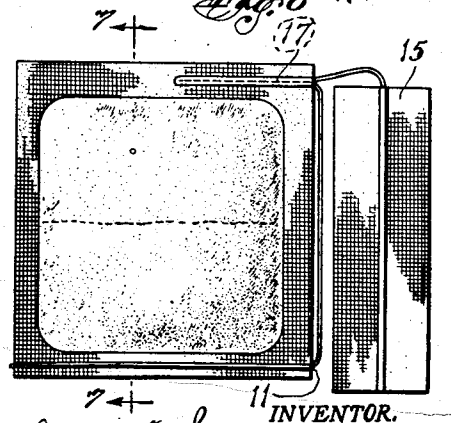


Fig. 2

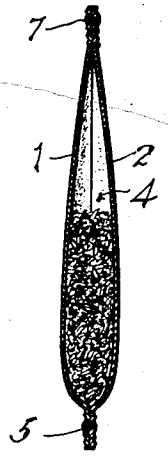


Fig. 4

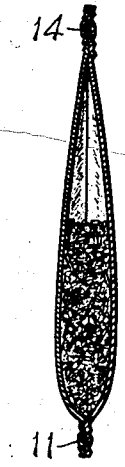


Fig. 7



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Fig. 10

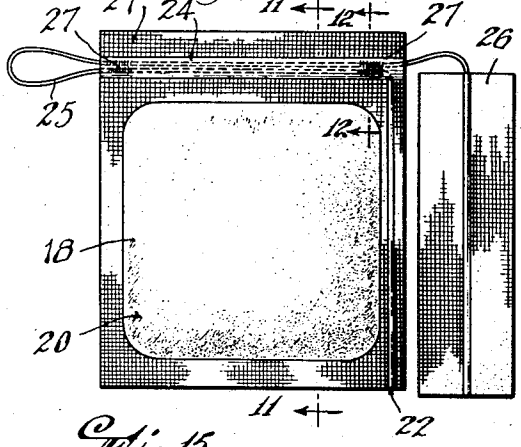


Fig. 13

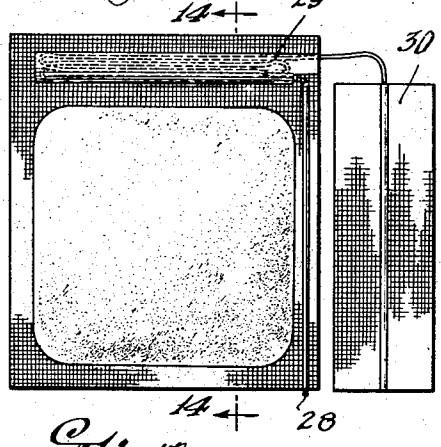


Fig. 15

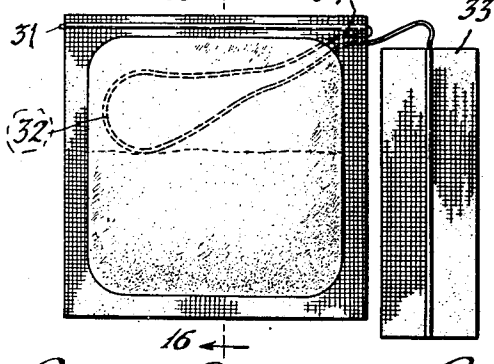


Fig. 17

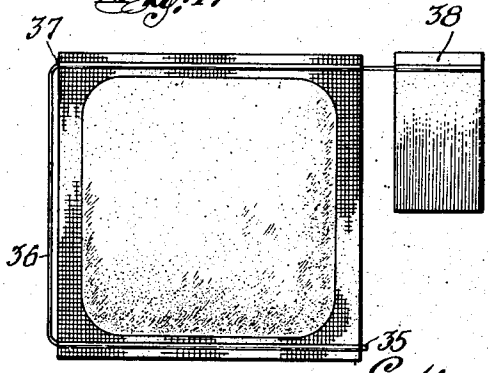


Fig. 11

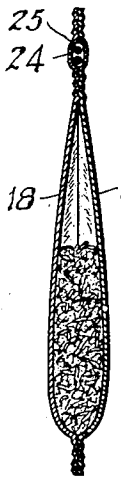


Fig. 14

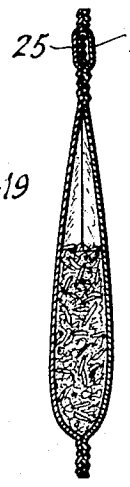


Fig. 16



Fig. 19



Fig. 18

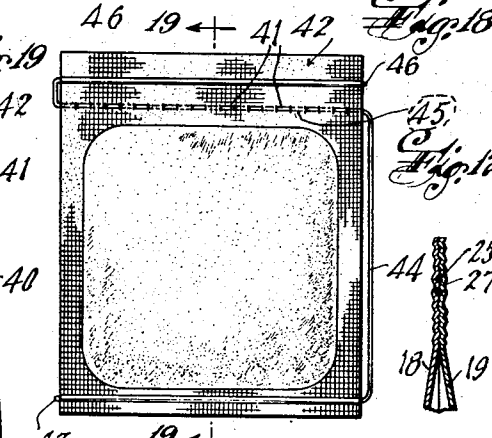


Fig. 12

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UNITED STATES PATENT OFFICE

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INFUSION PACKAGE

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Application February 7, 1946, Serial No. 645,985

4 Claims. (Cl. 206—0.5)

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This invention relates in general to packages of the type comprising layers of thin flexible material sealed together in opposed relation to each other in zones forming and bounding a compartment between the layers for the substance being packaged. The invention particularly contemplates an infusion package, for example, a tea bag.

Tea bags formed of tough porous paper, such as filter paper, are well-known, and such bags generally have had attached thereto a tag which is connected to one end of a string the other end of which is secured to the package so that the tag and the string serve as a handle for immersing the bag in a liquid, for example to make tea. Heretofore such tags have been made integrally with the strips of packaging material of which the bags are formed, the tags being separable from the bag along a scored line; but it has been difficult to apply to such tags indicia such as trade-marks or directions for use.

Accordingly one object of the present invention is to provide an infusion package of the general character described wherein the tag shall be formed separately from and preferably of different material than the tea bag itself so that indicia can be easily applied to the tag as by printing or in any other suitable manner, the invention also contemplating a novel and improved manner of attaching the string to the bag so that it shall normally be concealed or covered to prevent entanglement of the strings of a plurality of bags that may be packed in the same carton.

Another object of the invention is to provide such an infusion package wherein the tag shall be attached to one end of a string the other end of which shall be secured to the porous bag and the intermediate portions of the string shall be removably or detachably arranged between the layers of packaging material of which the bag is formed, so that normally the tag shall be closely related to the bag, for example when the bag is placed in a carton with other bags, but a slight pull on the tag will detach the main portion of the string from the bag so that the latter can be suspended in spaced relation to the tag for infusion purposes.

Other objects, advantages and results of the invention will be brought out by the following description in conjunction with the accompanying drawings in which

Figure 1 is a plan view of an infusion package or tea bag constructed in accordance with the invention.

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Figure 2 is an enlarged vertical longitudinal sectional view on the plane of the line 2—2 of Figure 1.

Figure 3 is a view similar to Figure 1 showing a modification of the invention.

Figure 4 is a transverse vertical sectional view on the plane of the line 4—4 of Figure 3.

Figure 5 is a plan view of another form of infusion package embodying the invention.

Figure 6 is a similar view showing a further modification of the package.

Figure 7 is a transverse vertical sectional view on the line 7—7 of Figure 6.

Figure 8 is a detached perspective view of a modified form of tag or label.

Figure 9 is a similar view of a further modification of the tag or label.

Figure 10 is a plan view of another form of the package embodying the invention.

Figure 11 is an enlarged transverse vertical sectional view on the line 11—11 of Figure 10.

Figure 12 is a similar view on the line 12—12 of Figure 10.

Figure 13 is a plan view of another form of infusion package embodying the invention.

Figure 14 is an enlarged transverse vertical sectional view on the line 14—14 of Figure 13.

Figure 15 is a view similar to Figure 13 showing another form of package embodying the invention.

Figure 16 is a transverse vertical sectional view on the line 16—16 of Figure 15.

Figure 17 is a plan view of a further modification of the invention.

Figure 18 is a similar view of still another modification of the invention.

Figure 19 is an enlarged transverse vertical sectional view on the line 19—19 of Figure 18.

Specifically describing the embodiment of the invention illustrated in Figures 1 and 2, the package is shown as comprising two layers 1 and 2 of suitable material, preferably tough porous fibrous material, such as filter paper, which are sealed together in opposed relation to each other in zones 3 which form and constitute the boundaries of a commodity-receiving compartment 4 between said layers. The bag or envelope may be formed in any suitable manner and preferably the commodity, such as tea, is deposited and enclosed within the compartment 4 as the package is formed, although the bag or envelope may first be formed with one open edge through which the commodity may be inserted and thereafter said edge may be sealed or closed.

As will be understood by those skilled in the

art, the layers may be sealed together by an adhesive or a thermo-plastic coating on the abutting faces of the layers according to known methods.

The main feature of the invention is the manner of attaching a separate tag by means of a string to the bag or envelope, and according to this form of the invention, one end 5 of a string is permanently secured or sealed between the layers 1 and 2 in the sealed zone 3 along one margin of the compartment 4, and the string is folded or bent so that an intermediate portion 6 of the string runs along another margin of the package and free therefrom and another portion 7 of the string is detachably fastened between the layers along a margin of the package opposite the margin to which the end 5 of the string is attached. The other end of the string has a tag 8 permanently secured thereto, and as shown this tag may comprise two strips 9 of suitable material having the end of the string sealed between them, as shown in Figure 8, or the tag may comprise a single piece of material folded upon itself to form two opposed layers 10 with the end of the string sealed between them as shown in Figure 9. The layers 9 and 10 may be sealed together in any suitable manner, for example as are the layers 1 and 2 of the bag.

The portion 7 of the string is so sealed between the layers 1 and 2 that it can be pulled outwardly from the layers by applying simple tension on the string through a pull on the tag 8, and for expediting this detachment or separation of the string, it is desirable to place the string close to the edge of the bag.

With this construction it will be seen that the major portion of the string is normally held in an out of the way position and the tag is closely related to the bag so that the dangling of the string and the consequent entanglement of the string with the strings of other bags is obviated. Moreover, the tag may be made of such material so that it will receive any desired inscription or indicia and the printing may be done before the the layers of the tag are secured to the string.

The package shown in Figure 3 is similar to that of Figure 1 and differs primarily only in the fact that the string is attached to the bag in a different way. As shown, one end 11 of the string is permanently sealed between the layers of the bag along one margin thereof while an intermediate portion 12 of the string runs along and outwardly of another margin of the package at right angles to the first-mentioned margin and another intermediate portion is looped at 13 with the bight of the loop extending from one margin and the arms of the loop running parallel to each other and detachably sealed at 14 between the layers of the package. The free end of the string projects from the margin of the package opposite that from which the bight 13 projects and has secured thereto a tag 15 that may be constructed in any suitable manner.

With this construction, a slight pull on the tag 15 will withdraw the looped portion of the string from between the layers of the package and thus free the portion 12 so that the bag can be suspended through the string from the tag in the usual manner, but normally the string will be confined in close relation to the package so that possibility of breakage or entanglement of the string is reduced to the minimum.

In this form of package, the looped portion of the string may be initially freely slidable through the portion 14 between the layers, or it may be sealed between the layers and detached from the layers by pulling of the string outwardly from between the layers at the edge of the package in a manner similar to that in which the string is detached from the package shown in Figure 1.

Figure 5 shows a package similar to that of Figure 3, the main difference being that the looped portion 16 of the string has its bight disposed wholly within the boundaries of the package instead of projecting from the package as shown in Figure 3.

Figure 6 shows a package similar to that of Figure 5, the main difference between the two packages being that in Figure 6 the looped portion 17 of the string extends only a portion of the width of the package instead of entirely across the package as shown in Figure 5.

The package shown in Figure 10 comprises the bag formed of two layers of material 18 and 19 similar to the layers 1 and 2 sealed together along their margins to form and bound the commodity-receiving compartment 20, but the sealed zones at one margin of the bag are wider than the zones at the other margins as shown at 21. One end 22 of the string is secured between the layers 18 and 19 along one longitudinal marginal portion of the bag while an intermediate portion of the string is looped and located within an unsealed tubular portion 24 between the layers 18 and 19 along a marginal portion adjacent to and at right angles to the first-mentioned marginal portion, the bight 25 of the loop projecting from one edge of the bag and the free end of the string extending from the opposite edge of the package and having a tag 26 connected thereto. In forming the bag, the tubular portion 24 is made during the sealing operation by leaving spaced opposed zones of the layers unsealed from each other, and the looped portion of the string is located in the tubular portion 24 during the sealing of the layers 18 and 19.

The looped portion may be normally freely slidable in the tubular portion 24, or if desired small areas of the tubular portion may be sealed or otherwise separably attached to the string as indicated at 27 so that accidental pulling of the string out of the tubular portion is prevented.

Figure 13 shows a package similar to that of Figure 10 wherein one end of the string 28 is connected to the bag as is the end 22 of the string in Figure 10, while the intermediate portion of the string is looped several times and enclosed within a chamber or compartment 29 between the layers or the package formed in substantially the same manner as is the tubular portion 24. A tag 30 is attached to the free end of the string which projects from one edge of the bag.

This construction allows the use of a longer string than does the construction shown in Figure 10, due to the multiple loops of the string enclosed within the relatively large compartment 29.

In Figure 15 one end 31 of the string is permanently secured along one margin of the bag while an intermediate portion 32 is looped and located within the commodity compartment and has its free end portion projecting from an edge of the bag and connected to a tag 33. Certain portions of the string may be separably attached or fastened to the bag by sealing said portions between the layers of the bag as indicated at 34, so

as to prevent accidental pulling of the loop from the bag.

It will be understood that a simple pull on the tag will pull the loop 32 of the string out of the compartment so that the string and tag may serve to suspend the bag in a liquid.

The package of Figure 17 has one end 35 of the string permanently secured in one margin of the bag, an intermediate portion 36 running along and outwardly of an edge of the bag at right angles to the first-mentioned margin, and another intermediate portion 37 separably secured to the bag along a margin parallel with the first-mentioned margin. The free end of the string projects from one edge of the bag and has a tag 38 connected thereto. In this form of the invention the free end of the string and the tag extend parallel to the margin in which the second-named intermediate portion of the string is fastened instead of at right angles to said margin as in the other packages. The portion 37 of the string can be easily pulled away from the bag by applying a lateral pull to the string through the tag 38.

The bag shown in Figure 18 has the tag initially formed integrally with the layers 39 and 40 of which the bag is formed and one or both of said layers is scored or formed with a plurality of aligned openings or perforations 41 to permit detachment of the tag 42 from the main portion of the bag. One end 43 of the string is secured to the bag along one margin, as hereinbefore described, while an intermediate portion 44 of the string runs along and outwardly of an edge of the package at right angles to the first-mentioned margin. Another intermediate portion 45 of the string is sealed between the layers 39 and 40 along the line of perforations 41 and the other end 46 of the string is permanently secured to the tag 42.

When it is desired to use the tag and the string to suspend the bag for infusion purposes, the tag may be torn from the bag along the scored lines 41 and this action will simultaneously release the intermediate portions 44 and 45 from the bag. In fact, by starting the tearing of the layers at the edge of the package which forms the inner end of the tag 42 (the left-hand edge of Figure 18), the intermediate portion 45 of the string will facilitate the tearing operation.

While I have shown and described the invention as embodied in several different packages, it will be understood by those skilled in the art that this is primarily for the purpose of explaining the principles of the invention and the now preferred forms thereof, and that many modifications and changes may be made in the details of construction of the packages within the spirit and scope of the invention.

Having thus described the invention, what I claim is:

1. A package comprising a substantially flat polygonal bag including two opposed layers of material sealed together in zones forming and bounding a commodity compartment between said layers, and a tag portion along one margin, there being a line of division between said tag portion and said bag, a string having one end permanently secured to said bag along another margin of said bag, an intermediate portion of said string being secured between said layers along said line of division between said compartment and said tag portion and the other end of said string being secured to said tag portion.

2. A package comprising a substantially flat polygonal bag including two opposed layers of material sealed together in zones forming and bounding a commodity compartment between said layers, a string having one end portion permanently secured to said bag along one margin, an intermediate portion of said string being folded or bent and separably attached to the bag along another margin and the other end of said string projecting from an edge of the bag and having a tag attached thereto, said intermediate portion of said string being looped and the loop being disposed between said layers.

3. A package comprising a bag including two opposed layers of material secured together and forming a commodity compartment between them, a string having one end portion permanently secured to said bag, an intermediate portion of said string being detachably attached to the bag and the other end of the string extending from the bag, and a tag secured to the last-named end of the string, said intermediate portion of the string being looped and the loop being disposed between said layers.

4. A package comprising a substantially flat polygonal bag including two opposed layers of material sealed together in zones forming and bounding a commodity compartment between said layers, a string having one end portion permanently secured to said bag along one margin, an intermediate portion of said string being folded or bent and separably attached to the bag along another margin and the other end of said string projecting from an edge of the bag and having a tag attached thereto, the second-named margin of the bag having an unsealed tubular portion formed between said layers and in which said intermediate portion of the string is disposed, whereby said string initially may be compactly folded and secured in folded condition to the package and thereafter the string can be unfolded and said intermediate portion thereof can be detached from the bag.

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