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J. YATES

2,313,696

TEA BAG AND METHOD OF MAKING THE SAME

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Fig. 1

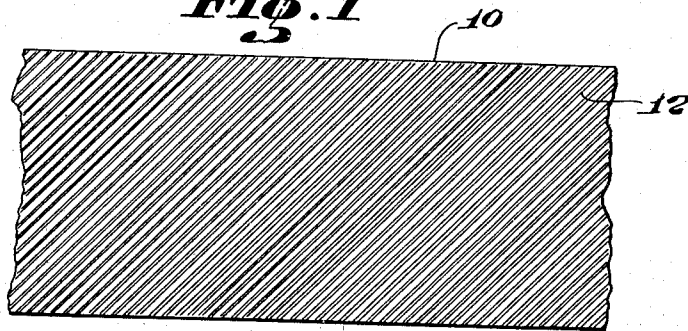


Fig. 2

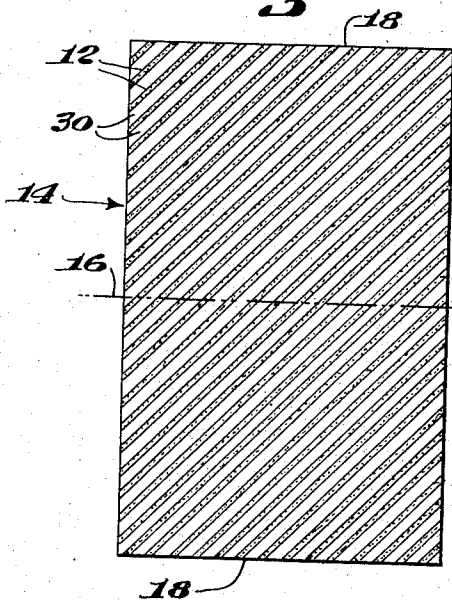


Fig. 3

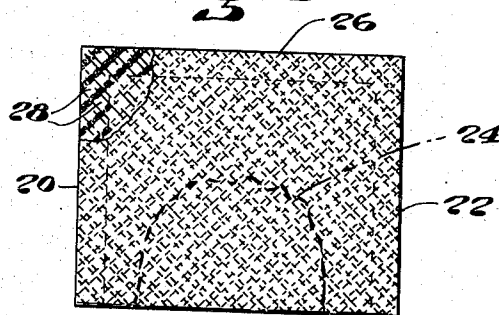


Fig. 4

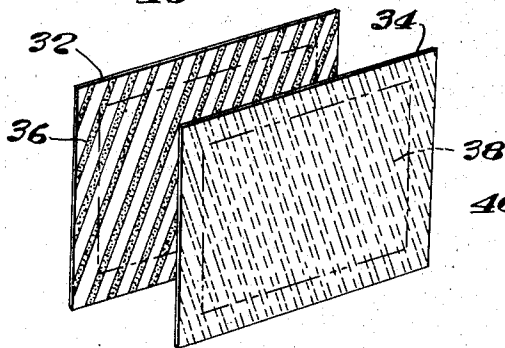


Fig. 5

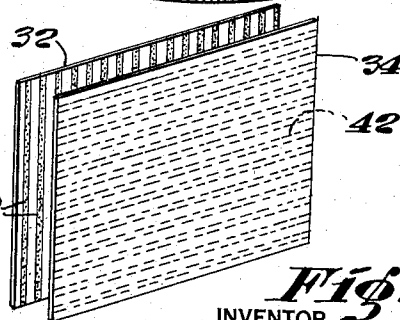


Fig. 6

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TEA BAG AND METHOD OF MAKING THE SAME

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10 Claims. (Cl. 93-3)

This invention relates to a tea, coffee or similar bag and to the method of making the same.

The invention has for an object to provide a novel and improved bag of the character specified which may be economically produced and is highly efficient in use.

A further object of the invention is to provide a novel and practical method for the manufacture of the present improved bag.

With these general objects in view, and such others as may hereinafter appear, the invention consists in the tea, coffee or similar bag and in the method of making the same, hereinafter described and particularly defined in the claims at the end of this specification.

In the drawing, which illustrates the preferred embodiment of the invention, Fig. 1 is a view showing a web of bag forming material prepared in accordance with the present invention and from which the present bag may be formed; Fig. 2 is an enlarged view of a bag forming blank severed from the strip and before being folded to form a bag; Fig. 3 is a side elevation of a bag produced in accordance with the present invention; Fig. 4 is a plan view in cross-section of the completed bag shown in Fig. 3; Fig. 5 is a perspective view illustrating two separate blanks of bag forming material prepared in accordance with the present invention and from which a modified form of the bag may be produced; and Fig. 6 is a perspective view similar to Fig. 5, to be referred to.

In general, the present invention contemplates the production of a container for a tea or coffee bag of the so-called "pillow" type formed by folding a blank of bag making material and joining the edges thereof after depositing a quantity of the tea, coffee or other material between the thus folded portions of the bag making material. The present method contemplates the use of a filter or similar paper or other bag making material of a porous structure having suitable characteristics for permitting the extraction of the tea or coffee therethrough. Such bags may be made in a continuous strip by folding an elongated strip of the bag forming material longitudinally and sealing the strip at spaced transverse portions to form bag sections and then sealing the top of the strip after the bag sections have been filled, whereupon the sections may be severed to form individual bags, or if preferred, the bag sections may be severed prior to sealing the top of the bag.

In accordance with one method of forming such bags, the bag making material is provided

with a coating of thermoplastic adhesive thereon whereby the sides and top of the containers may be heat sealed. Where such bag making material has been provided with an overall coat of adhesive on one surface thereof, the bag, when used as a container for infusing material, would not be as efficient in the extraction of the tea or coffee. In the production of bags in which the bag making material is provided with adhesive at spaced transverse portions of the strip corresponding to the bag sections to be formed, a difficult problem of registering the strip with the heat sealing and bag severing means is encountered, due to irregularities in the spacing of the previously applied transverse strips of adhesive.

In accordance with the present invention, the bag making material may comprise a rectangular blank of porous structure, such as filter paper and upon which a sealing adhesive, and preferably a thermo-plastic adhesive, is applied to one surface thereof in spaced stripes or bars arranged so that when the material is folded to form two half sections, the adhesive stripes of one half section intersect the adhesive stripes of its opposing half section. When the edges of the bag thus formed are sealed as by heat sealing, after depositing a quantity of infusing material between the fold, the intersecting portions of the adhesive form a continuous seal along the edges while the unsealed portions of the blank provide a sufficient porous area between the adhesive stripes to permit efficient extraction of the tea or coffee. Thus, in the production of the bag, no registration problem is involved, a tight and continuous seal is provided along the edges of the bag, and at the same time the bag may permit efficient extraction of the tea or coffee.

The invention may also be embodied in a bag formed of two separate half sections of bag forming material, each half section being provided with spaced stripes of sealing adhesive, and preferably of thermo-plastic adhesive, the stripes of one half section being disposed to extend in a direction at an angular relation to the direction of extension of the stripes of its opposing half section. The half sections of the bag thus prepared may then be sealed and preferably heat sealed along the edges after depositing a quantity of tea or coffee between the sections, a continuous seal being formed by the intersection of the stripes of adhesive of one half section with the stripes of its opposing half section.

Referring now to the drawing, 10 represents an elongated web of bag forming material, pref-

erably a porous material, such as any of the economical tea bagging papers, such as filter paper, and in accordance with the present invention, the bag forming material is provided with a coating of adhesive, preferably a thermo-plastic adhesive, on one face thereof arranged in spaced stripes or bars 12, preferably throughout the entire surface thereof and in any event at those portions thereof which it is desired to seal together. When the bag is to be formed from a single rectangular blank of bag forming material the spaced stripes 12 are preferably angularly disposed with respect to the side edges of the web, and as herein illustrated, the arrangement of the stripes is substantially 45 degrees with respect to the longitudinal edges of the web, but it will be understood that other angular positions of the adhesive stripes will serve the purpose of the present invention.

In one embodiment of the invention, a rectangular blank 14 of bag forming material, severed from the web 10 is folded along a line 16 substantially midway of the side edges 18 of the blank to form two half sections. When thus folded, it will be observed that the angular stripes 12 of one half section of the bag intersect the angular stripes 12 of its opposing half section. After a quantity of the tea or coffee 24 has been deposited between the fold, the side edges 20, 22 and the top edge 26 of the bag may be sealed by heat or otherwise, to complete the formation of the tea, coffee or similar bag. In some instances it may be preferred to seal the side edges 20, 22 before inserting the material whereupon the top of the bag may be subsequently sealed.

From an inspection of Fig. 3 it will be seen that the criss-cross arrangement formed by the lines of adhesive 12 on opposing half sections of the blank to be sealed, forms a continuous seal along the side and top edges of the bag, the sealing being continued or extended from the sealed edges a sufficient distance inwardly to cover at least one line of the series of squares 28 formed by the criss-cross arrangement. It will also be observed that the unsealed portions of the bag within the folded and sealed edges have a sufficient adhesive free area comprising the spaces 30 between the stripes or bars 12 to permit efficient extraction of the tea or coffee in the bag. The thermo-plastic adhesive preferably employed may be of an odorless and tasteless nature so that the brew prepared from the bag will not be affected thereby.

In practice, as above described, for rapid production of the bags, it is preferred to form the bags in a continuous strip, by known means, the method employed comprising in general folding the elongated web of bag forming material 10 longitudinally and sealing the strip at spaced transverse portions to form bag sections, depositing the commodity in the bag sections, closing the top, and thereafter severing the strip at the sealed transverse portions to form individual bag sections. In some instances it may be preferred to cut the bag sections prior to the sealing of the top of the bag.

From the description thus far it will be observed that the present bag structure is particularly adapted to permit rapid and continuous production of bags of the character specified, the production being facilitated in that the transverse seals may be made at any point along the folded web, thus eliminating the necessity for registering the web in accordance with preformed spaced strips of adhesive as formerly required.

Referring now to Figs. 5 and 6, the invention is therein illustrated as embodied in a bag structure comprising two separate half sections or blanks 32, 34 the stripes 36 of one half section being arranged in a different angular direction than the stripes 38 of its opposing half section so that when the sections are placed in assembled relation the adhesive stripes of one half intersect the stripes of its opposing half section to form a continuous seal along all four edges. The blanks of bag forming material shown in Fig. 6 illustrate vertical stripes 40 of adhesive on one bag section and horizontal stripes 42 on its opposing half section.

Although the invention has been herein illustrated and described as embodying spaced angularly disposed stripes of thermo-plastic adhesive throughout the entire surface of the contacting faces to be sealed, it will be understood that other arrangements of the adhesive stripes may be used such as spaced undulating stripes, a criss-cross formation, or other patterns or designs. The outstanding feature of the invention residing in the adaptability of the material to permit a continuous seal to be formed along any edge portion of the web when the half sections are placed together and sealed to form a bag, eliminating any necessity for accurate registration of the adhesive with a cutter or sealing device, and at the same time maintaining a sufficient filtering area in the bag material to permit efficient extraction of the tea or coffee.

Having thus described the invention, what is claimed is:

1. A tea, coffee or similar bag comprising a container formed of a blank of bag forming material of porous structure and enclosing a quantity of the commodity, said blank being provided with spaced stripes of adhesive, the stripes upon one half section of the bag being disposed to extend in a different angular direction from the stripes of its opposing half section, said bag being sealed along its edges by the intersection of the stripes of adhesive on one half section with the stripes of adhesive on its opposing half section forming a continuous seal.

2. A tea, coffee or similar bag comprising a container formed of two half sections of bag forming material of porous structure and enclosing a quantity of the commodity, each of said half sections being provided with spaced stripes of adhesive, the stripes of one half section being disposed to extend in a direction at an angle to the stripes of its opposing half section, said bag being sealed along at least some of its edges by the intersection of the stripes of adhesive on one half section with the stripes of adhesive on its opposing half section forming a continuous seal.

3. A tea, coffee or similar bag comprising a container formed of a blank of bag forming material of porous structure and enclosing a quantity of the commodity, said blank being provided with spaced stripes of thermo-plastic adhesive, the stripes of one half section of the bag being disposed to extend at an angle to the stripes of its opposing half section, said bag being heat sealed along its edges by the intersection of the stripes of adhesive on one half section with the stripes of adhesive on its opposing half section forming a continuous seal.

4. A tea, coffee or similar bag comprising a container formed of two half sections of bag forming material of porous structure and enclosing a quantity of the commodity, each of said half sections being provided with spaced stripes

of thermoplastic adhesive, the stripes of one half section being disposed to extend at an angle to the stripes of its opposing half section, said bag being heat sealed along at least some of its edges by the intersection of the stripes of adhesive on one half section with the stripes of adhesive on its opposing half section forming a continuous seal.

5. A tea, coffee or similar bag comprising a container formed of a blank of bag forming material of porous structure and enclosing a quantity of the commodity, said blank being provided with spaced stripes of adhesive throughout the entire face of one surface thereof and having its two half sections with the adhesive surfaces facing each other, the stripes of one half section being disposed at the edge portions thereof at an angle to the stripes at the corresponding edge of its opposing half section, said bag having sealed edges formed by the intersection of the stripes of adhesive on one half section with the stripes of adhesive on its opposing half section forming a continuous seal.

6. A tea, coffee or similar bag comprising a container formed of two half sections of bag forming material of porous structure and enclosing a quantity of the commodity, each of said half sections being provided with spaced stripes of adhesive throughout the entire surface of the contacting faces, the stripes of one half section at an edge thereof being disposed at an angle to the stripes of the corresponding edge of its opposing half section, said bag having sealed edges formed by the intersection of the stripes of adhesive on one half section with the stripes of adhesive on its opposing half section forming a continuous seal.

7. A tea, coffee or similar bag comprising a container formed of a rectangular blank of bag forming material of porous structure and enclosing a quantity of the commodity, said blank being provided with spaced stripes of thermo-plastic adhesive, the stripes of one half section of the bag forming a criss-cross pattern with the stripes

of its opposing half section at the edge portions to be sealed, said bag being heat sealed along at least some of its edges, said sealed edges extending over at least one line of the figures formed by said criss-cross pattern forming a continuous seal.

8. A tea, coffee or similar bag comprising a container formed of two half sections of bag forming material of porous structure and enclosing a quantity of the commodity, each of said half sections being provided with spaced stripes of thermoplastic adhesive, the stripes of one half section forming a criss-cross pattern with the stripes of its opposing half section, said bag being heat sealed along its edges, said sealed edges extending over at least one line of squares formed by said criss-cross pattern forming a continuous seal.

9. In a method of making a tea, coffee or similar bag, the steps comprising providing a rectangular blank of bag making material with spaced stripes of thermo-plastic adhesive angularly disposed with relation to the edges of the blank, folding the blank to form two half sections thus presenting the adhesive stripes of one half section in intersecting relation to the adhesive stripes of its opposing half section, introducing a quantity of the commodity between the fold, and heat sealing the edges of the folded blank, the intersecting adhesive portions forming a continuous seal along said edges.

10. In a method of making a tea, coffee or similar bag, the steps comprising providing two half sections of bag making material with spaced stripes of thermo-plastic adhesive, placing the bag sections together to present the adhesive stripes of one half section in intersecting relation to the adhesive stripes of its opposing half sections, introducing a quantity of the commodity between the sections, and heat sealing the edges of the assembled sections, the intersecting adhesive portions forming a continuous seal along said edges.

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