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PACKING FOR GROUND COFFEE

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Fig. 1.

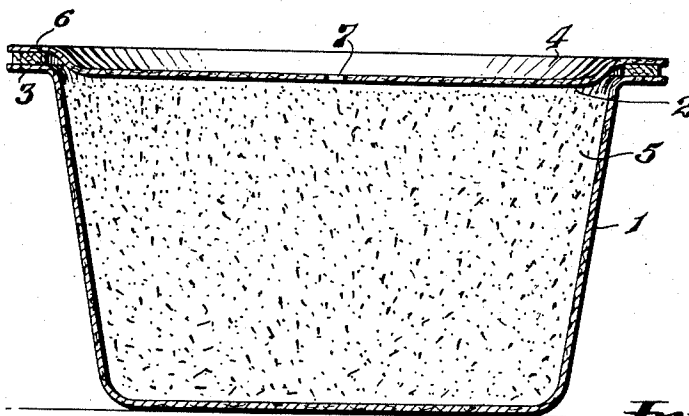
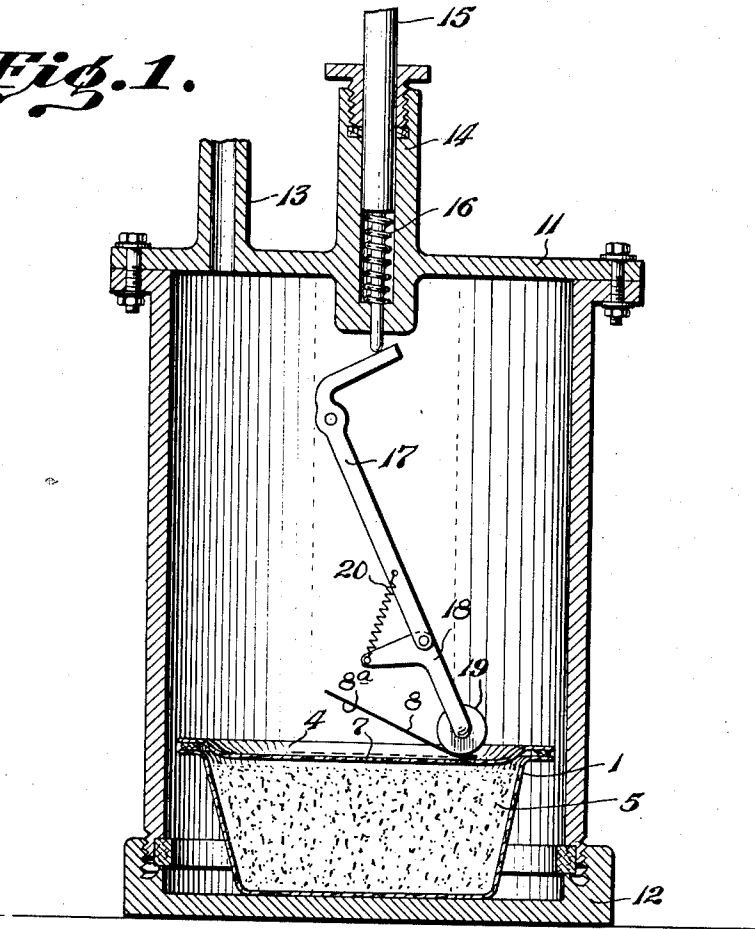


Fig. 2.

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PACKING FOR GROUND COFFEE

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10 Claims. (Cl. 99—152)

The present invention relates to packing systems for enclosing, in a vacuum, products in the form of a powder or of very small elements, such as grains, for instance ground coffee, the envelope that constitutes the packing element being made of a flexible and/or plastic impervious matter.

The invention concerns a method for packing these products which permits of making use of very thin envelopes, which could not resist by themselves the efforts exerted by the atmospheric pressure after the product has been subjected to the action of the vacuum. This method therefore permits of supplying packings of very low cost and of a weight negligible as compared with that of the product thus packed, both of these advantages resulting from the considerable thinness of the packing material.

This method also involves an important technical advantage which is that the person that is to make use of the product thus packed can easily open the packing without requiring any special tool and without any effort or difficulty. This advantage also results from the considerable thinness of the packing material.

This method is essentially characterized in that the product is tightly packed inside the envelope in such manner that, when it is placed under a vacuum, after closing of the envelope, the atmospheric pressure is supported by the contents of the envelope.

Other features of the present invention will result from the following detailed description of a specific embodiment thereof.

A preferred embodiment of the present invention will be hereinafter described, with reference to the accompanying drawing, given merely by way of example, and in which:

Fig. 1 is a diagrammatic sectional view of an apparatus for carrying out the method according to the present invention;

Fig. 2 is a vertical sectional view of a packing according to the invention.

According to the present invention, in order to pack, for instance, ground coffee, I operate as follows:

Coffee, immediately after having been roasted, is ground and introduced into a receiver 1 made of a plastic material. The amount 5 of coffee is then compressed in this receiver. This compression is absolutely necessary because it permits of making use of a receiver made of a very thin plastic material (the thickness averaging, for instance, 0.2 millimeter) without this container or envelope being crushed or torn when

the vacuum is applied therein. This results from the fact that, owing to this compression of the mass of ground coffee, the walls of the container adhere strongly against said mass of coffee, when the vacuum is applied. It follows that the contents of the envelope themselves withstand the effects of the atmospheric pressure and prevent the container from being injured by said effects.

Furthermore, the compression of the mass of coffee affords a support for the walls of the container up to the upper end thereof, which permits of making use, for closing the container, of an overlapping lid and of easily and fully gluing the latter against the outer wall of said cylindrical container. Otherwise, the plaits and creases that would be formed at the upper part of the wall of the container would prevent full adhesion over the whole length of the circumference between the two parts to be glued together. This would involve, when the vacuum is applied, inflow of air along said creases so that packing under vacuum could not be obtained.

Once the container is full and its content is suitably packed, lid 4 is fitted in position and it is glued by means of a suitable solvent of the matter of which the container is made. I then pierce a pin hole 7 in the lid of the container, and I glue a small band 8 of an adhesive material, merely along a portion of its length, in such manner that the portion 8^a that is not glued is raised. This portion 8^a of the band makes, for instance, an angle of 45° with the plane of the lid of the container, and it is located above the hole, which is therefore unobstructed.

The container is then placed in an apparatus 9 for producing a vacuum. This apparatus, which is devised in the known manner, includes an envelope 10 and ends 11 and 12 mounted in a fluidtight manner on said envelope. The conduit 13 for producing the vacuum opens into end 11. This end also carries a cylinder 14 in which can move a plunger piston 15 subjected to the action of a return spring 16. This plunger acts, when it is operated, upon a connecting rod 17 to which is pivoted a lever 18 provided at its end with a roller 19 and subjected to the action of a spring 20 fixed to connecting rod 17. This spring constantly applies the roller against band 8.

Once the desired vacuum has been produced plunger piston 15 is depressed. As a consequence, connecting rod 17 moves lever 18 which in turn causes roller 19 to run over band 8, therefore applying the portion 8^a of said band against the lid

and stopping hole 7, which ensures the full and fluid tight stopping of the packing.

In the embodiment, illustrated by the appended drawing, of a packing according to the invention, the packing proper consists of a fluidtight body 1 obtained by stamping from a sheet of plastic material. This body is then filled with ground coffee 5, or any other powdery or granular matter, which is compressed. The amount of coffee thus packed in body 1 is such that there remains a slight interval 2 between its upper level and the horizontal plane passing through the edge 3. This interval is intended to prevent coffee (or any other matter packed in body 1) from coming upon the edges 3. In this way, when lid 4 is fixed by means of a suitable solvent 6, there is no risk of particles of the product that is packed being caught between edge 3 and lid 4, which would produce small passages or channels preventing the closing from being perfectly fluidtight due to the possibility of leakage of air into the container.

For the packing according to the present invention I may make use not only of cellulose acetate, but also of other flexible bodies such as cellulose ethers and esters, in a general manner, transparent chlorinated rubber, etc.

Of course, the packing may have any shape different from that illustrated by the drawing and it may be utilized for bodies other than ground coffee, for instance tea and, in a general manner, products for infusions, or food products in the form of small elements.

In a general way, while I have, in the above description, disclosed what I deem to be practical and efficient embodiments of the present invention it should be well understood that I do not wish to be limited thereto as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of the present invention as comprehended within the scope of the appended claims.

What I claim is:

1. A method of vacuum packing products formed of small particles which comprises filling a fluidtight container formed of a thin flexible plastic material with the selected product, compressing the product in the container to form a compressed mass which serves as a support for the container, closing said container with a lid to form a sealed package, providing at least one hole in said package, exhausting the air through said holes to produce a vacuum in the interior of the package and sealing said holes, the compressed mass being in intimate contact with the lid and container so long as the vacuum is maintained and serving as a support for and preventing the collapsing of the container and lid due to atmospheric pressure.

2. A method of vacuum packing products formed of small particles which comprises filling a fluidtight container formed of a thin flexible plastic material with the selected product, compressing the product in the container to form a compressed mass which serves as a support for the container, sealing said container with a lid formed of the same material as the container by the use of a solvent of the material of which the container is made, thereby producing a sealed package having a welded joint between said lid and container, providing at least one hole in said package, exhausting the air through said holes to produce a vacuum in the interior of the package and sealing said holes, the compressed mass being in intimate contact with the lid and con-

tainer so long as the vacuum is maintained and serving as a support for and preventing the collapsing of the container and lid due to atmospheric pressure.

3. A method of vacuum packing products formed of small particles which comprises filling a fluidtight container formed of a thin flexible cellulose acetate sheet with the selected product, compressing the product in the container to form a compressed mass which serves as a support for the container, closing said container with a lid to form a sealed package, providing at least one hole in said package, exhausting the air through said holes to produce a vacuum in the interior of the package and sealing said holes, the compressed mass being in intimate contact with the lid and container so long as the vacuum is maintained and serving as a support for and preventing the collapsing of the container and lid due to atmospheric pressure.

4. A method of vacuum packing products formed of small particles which comprises filling a fluidtight container formed of a thin flexible cellulose acetate sheet with the selected product, compressing the product in the container to form a compressed mass which serves as a support for the container, sealing said container with a lid formed of the same material as the container by the use of a solvent of the material of which the container is made, thereby producing a sealed package having a welded joint between said lid and container, providing at least one hole in said package, exhausting the air through said holes to produce a vacuum in the interior of the package and sealing said holes, the compressed mass being in intimate contact with the lid and container so long as the vacuum is maintained and serving as a support for and preventing the collapsing of the container and lid due to atmospheric pressure.

5. A method of vacuum packing ground coffee which comprises filling a fluidtight container formed of a thin flexible plastic material with ground coffee, compressing the ground coffee in the container to form a compressed mass which serves as a support for the container, sealing said container with a lid to form a sealed package having a welded joint between said lid and container, providing at least one hole in said package, exhausting the air through said holes to produce a vacuum in the interior of the package and sealing said holes, the compressed mass being in intimate contact with the lid and container so long as the vacuum is maintained and serving as a support for and preventing the collapsing of the container and lid due to atmospheric pressure.

6. A method of vacuum packing ground coffee which comprises filling a fluidtight container formed of a thin flexible cellulose acetate sheet with ground coffee, compressing the ground coffee in the container to form a compressed mass which serves as a support for the container, sealing said container with a lid formed of the same material as the container by the use of a solvent of the material of which the container is made, thereby producing a sealed package having a welded joint between said lid and container, providing at least one hole in said package, exhausting the air through said holes to produce a vacuum in the interior of the package and sealing said holes, the compressed mass being in intimate contact with the lid and container so long as the vacuum is maintained and serving as a support for and preventing the collapsing of

the container and lid due to atmospheric pressure.

7. An airtight sealed package comprising a fluidtight container formed of a thin flexible plastic material having a lid sealed thereto, the joint between said lid and container being airtight, said package containing the contents in a compressed state and under vacuum, the compressed contents being in intimate contact with the lid and container so long as the vacuum is maintained and serving to support said container and lid against collapsing due to atmospheric pressure.

8. An airtight sealed package comprising a fluidtight container formed of a thin cellulose acetate sheeting having a flat bottom and an open top, a lid sealed thereto, the joint between said lid and container being airtight, said package containing the contents in a compressed state and under vacuum, the compressed contents being in intimate contact with the lid and container so long as the vacuum is maintained and serving to support said container and lid against collapsing due to atmospheric pressure.

9. An airtight sealed package comprising a fluidtight container formed of a thin flexible plastic material having a lid sealed thereto, the joint between said lid and container being airtight, said package containing ground coffee in a compressed state and under vacuum, the compressed ground coffee being in intimate contact with the lid and container so long as the vacuum is maintained and serving to support said container and lid against collapsing due to atmospheric pressure.

10. An airtight sealed package comprising a fluidtight container formed of a thin cellulose acetate sheeting having a flat bottom and an open top, a lid sealed thereto, the joint between said lid and container being airtight, said package containing ground coffee in a compressed state and under vacuum, the compressed ground coffee being in intimate contact with the lid and container so long as the vacuum is maintained and serving to support said container and lid against collapsing due to atmospheric pressure.

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