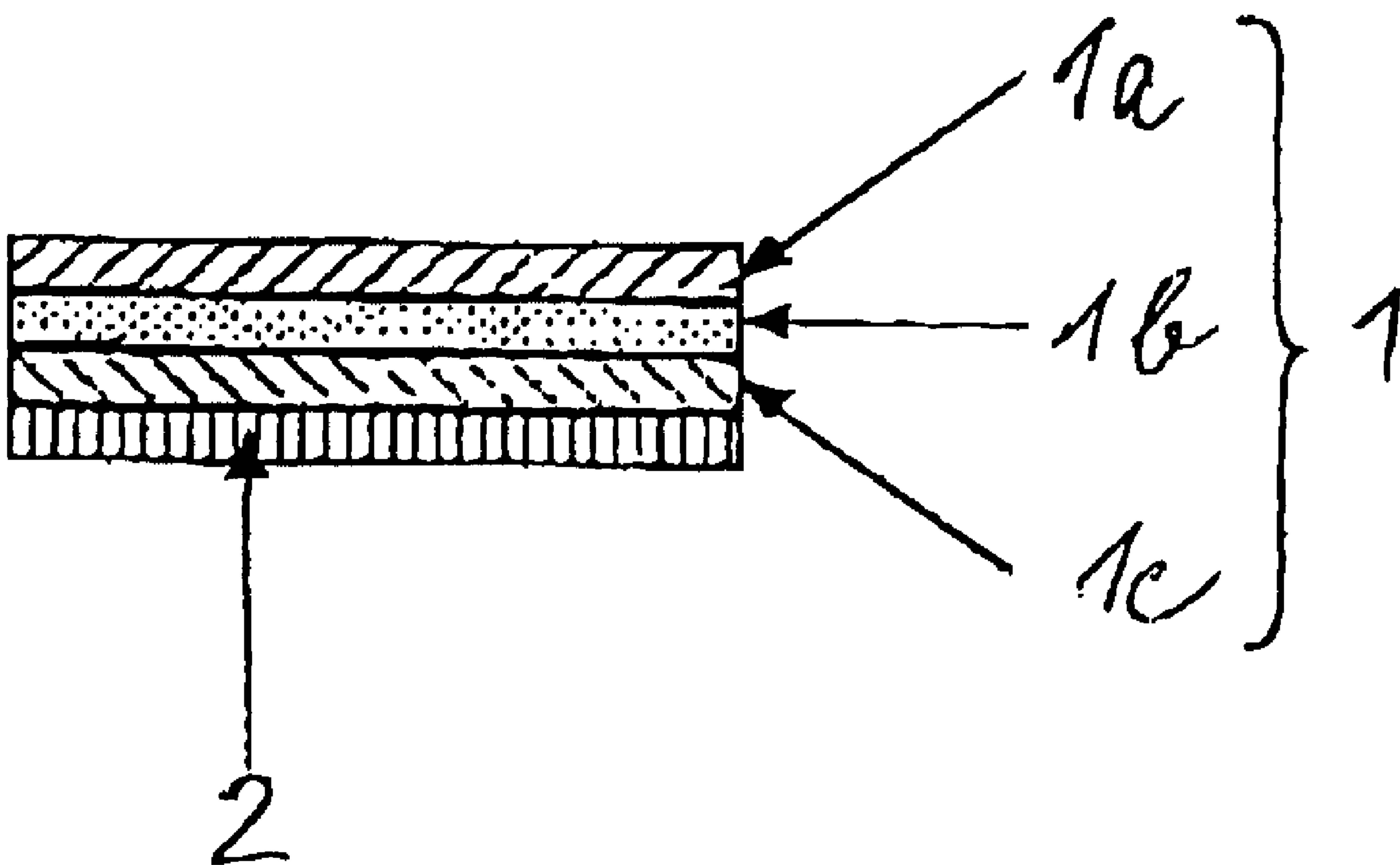




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(54) Title: FOOD WRAP



(57) Abrégé/Abstract:

The invention concerns a food barrier wrap for food which is boiled or cooked in the wrap, in particular for cooking or simmering sausages, ham, pickled products or soft cheeses. The wrapping has an inner layer firmly connected with it consisting of absorbent material and this inner layer is impregnated with colouring and/or flavouring agents.



A b s t r a c t

Food Wrap

The invention concerns a food barrier wrap for food which is boiled or cooked in the wrap, in particular for cooking or simmering sausages, ham, pickled products or soft cheeses. The wrapping has an inner layer firmly connected with it consisting of absorbent material and this inner layer is impregnated with colouring and/or flavouring agents.

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Food Wrap

The invention concerns a food barrier wrap for food which is boiled, cooked or otherwise heated in the wrapping, in particular for sausages to be cooked or simmered, ham, pickled products or soft cheese.

In food of this type, a colour and/or flavour transfer from the wrapping to the food is increasingly desired during the cooking or simmering process.

Sausages to be simmered and pickled products to be cooked are still being produced to a large extent, in a more or less country-specific manner, in cellulose fiber casings. This cellulose fiber casing has a high steam and gas permeability in order to smoke the products during the production process.

It is also known to impregnate cellulose fiber casings with liquid smoke in order to shorten the smoking time.

However, due to the steam and gas permeability of the wrapping, the production of food in a cellulose fiber casing is always associated with a loss in weight, taste and flavour during the production process, during cooling and during storage.

Products produced in the cellulose fiber casing thus have a very short, limited shelf life and must be wrapped a second

time as quickly as possible after production by means of a barrier wrapping to compensate for this disadvantage. A recontamination or reinfection which represents a loss in quality and shortening of shelf life can also not be ruled out with the additional wrapper and, moreover, involves additional costs.

To avoid the disadvantage of steam and gas permeability, plastic wrappings were developed, especially for big industry, consisting of materials which have a steam and gas impermeability, so-called cook + ship, i.e. cooking and shipping without an additional second wrapping.

When using plastic wrapping of this type, there is no loss in weight, flavour and taste during the production process nor during storage and shipping, however, the finished product does not have the typical smoked taste which consumers desire and expect in many products.

The impregnation of pure plastic wrapping with flavours was also not successful since the plastics used cannot adequately absorb and store impregnating agents and these are stripped off again during manufacture and when filling the plastic wrappers since it cannot be absorbed and stored in a sufficient amount by the plastic layers.

In order to lend the product finished in the plastic wrapping the desired smoked taste and the typical colour, the plastic wrapping must be removed after the production process and the product smoked in a conventional manner or processed with liquid smoke. In this subsequent process, there is again the possibility of a loss in weight, flavour and taste, in addition, the danger of recontamination and reinfection and a

second wrapping is again absolutely imperative after the processing.

Therefore, the object of the present invention is to provide a food barrier wrap which exhibits, on the one hand, high density but, on the other hand, also good absorption power and storage capacity for the desired flavours and/or colouring agents and distinguishes itself by a later, sufficient transfer of these substances to the food product.

According to the invention, this object is solved therein that the wrapping consists of at least one steam and/or gas impermeable foil and has an absorbent inner layer connected therewith consisting of individual fibers or a weave, fabric, knit, preferably a fleece, and that this inner layer is impregnated with colouring agents and/or flavouring agents.

More specifically, the present invention provides a food barrier casing for enclosing a foodstuff to be boiled, cooked or otherwise heated in the casing and for imparting a colour and/or flavour to the foodstuff, wherein the casing comprises at least one steam and/or gas impermeable plastic foil, and an absorbent inner layer joined to an inner side

4a

of the impermeable plastic foil, the inner layer comprising fibers selected from the group consisting of woven fibers, fabric, knits, and fleece, and wherein the inner layer is impregnated with colouring and/or flavouring agents in an amount sufficient to impart colour and/or flavour to the foodstuff when the food barrier casing encloses the foodstuff.

First of all, this inner layer has the advantage of a high absorption power and retainability for the colours and/or flavours. Moreover, tests by the applicant have shown that a substantially improved transfer of these substances to the food takes place during the subsequent cooking or boiling process than in conventional wrappings since the impermeability of the wrapping vis-à-vis steam, preferably also vis-à-vis gas, prevents the colour or flavours from being washed out during the cooking process.

It was surprisingly shown that unusually thin wall thicknesses in the order of some hundredths mm to 1/10 mm are already sufficient for the inner layer to absorb the colouring and/or flavouring agents. For this reason, it is especially advantageous if the inner layer consists of individual fibers or a thin fleece. Cotton fibers, cellulose fibers, also

regenerated cellulose fibers, viscose fibers or mixtures thereof are recommended as material herefor. An optimum storage capacity for the colouring or flavouring agents is attained thereby with little material inventory.

Advantageously, the inner layer is connected with the wrapping by lamination and/or coating, so that a one-piece easy-to-handle laminate is obtained. An adhesive can also be used for the connection. Extruded polyethylene in an almost liquid form is especially suitable as adhesive. The absorbent material of the inner layer is laminated to the inner side of the wrapping by means of this extruded polyethylene.

Further features and advantages of the invention can be found in the following description of an embodiment with reference to the drawings, showing:

Figure 1 a cross section through the wrapping with an inner layer and

Figure 2 a top view onto a wrapping in the form of a bag.

According to Figure 1, the wrapping has a barrier wrapping 1 on the outside. It consists of two outer polyethylene layers 1a, 1c and an intermediate layer 1b of polyamide and its function is to protect the food so as to be airtight and gastight, especially against steam and oxygen, so that the food is not washed out during the cooking or boiling process, i.e. does not lose flavour or colour. Advantageously, the barrier wrap is shrinkable, by means of which a crease-free end product results. Moreover, there is no loss in weight at all during the manufacturing process, storage and transport.

On its inner side, the described barrier wrap 1 is coated with an absorbent inner layer 2, e.g. a fleece consisting of cellulose fibers. It serves as a carrier for the desired colouring and/or flavouring agents. This could be caramel, aromatic extracts, smoke components, liquid smoke, marinades, fruit flavours and other substances allowed under the regulations governing food. They can be continuously applied to the absorbent inner layer 2 either by a spray tube along which the wrapper shaped in the form of a tube is guided or by a liquid bath along which the inner wall of the wrapper slides or by means of a liquid bubble which is conveyed through the wrapping.

Instead of this, the inner layer 2 can also be imprinted with the desired colouring and/or flavouring agents in a flat form. After drying, the foil is given the tubular shape by means of a heat-sealable, heat-resistant adhesive tape or by heat-sealing at the overlapping edges.

The impregnated wrapper can be used and processed both in the wet and dry state.

If the wrapping is to be dried after absorbing the colouring and/or flavouring agents through the absorbent inner layer, the use of colours and/or flavours which do not become volatile during drying are recommended.

All of the preceding material layers are laminated to form a film whereby, advantageously, an adhesive agent is used. Its overall thickness is generally less than 1/10 mm. Thus, the thickness of the two polyethylene layers 1a and 1c is 10 to 60 microns in each case, the thickness of the intermediate layer 1b consisting of polyamide being 10 to 20 microns. The

polyethylene layer 1c facing the food is advantageously extruded wet onto the layers 1a and 1b already joined together, so that it functions as an adhesive for the absorbent layer 2 to be subsequently applied.

For the inner layer 2, it is recommended that the absorbent material, i.e. the fleece, the fibers or the like be applied in a material thickness of about 10 to about 30 g/m². This absorbing layer is then impregnated with the desired flavours or colour carriers and produced, if necessary, in the form desired by the customer.

Figure 2 shows the wrapping in the form of a bag. For this purpose, the wrapping is first given a tubular form and joined together at the overlapping longitudinal edges by a band 3 sealable under heat. This band 3 is at least heat-sealed with the layer 1a of the barrier wrapping 1.

At the lower end, the wrapping is sealed with a corresponding band 4, whereby the lower edge is e.g. folded over by 180° to ensure a tight heat-seal.

Special machines are required to attach the bands 3 and 4 and they are often not available to the manufacturer of the wrap, the butcher's shop. For this reason, the bag 5 thus formed has an excess length 6 at its open upper edge which extends over the entire periphery and is connected with the bag by means of a sealable band 7. This excess length 6 does not have an absorbent inner layer 2 like the bag 5 but consists only of an easily heat-sealable plastic material, in particular polyethylene, which can be easily sealed by the customer to seal the bag 5 after it has been filled with the meat and evacuated.

TEST EXAMPLE

After the wrapping was impregnated with liquid smoke, a fine sausage emulsion was filled in, sealed by means of an aluminum clip and boiled. The wrapping or sausage filled in this way had a diameter of 80 mm.

The result was as follows:

TEST RESULT

Control parameters	Smoke taste	Loss in weight	Production time
Wrapping			
smoked + boiled cellulose fiber casing	good	8%	100 min.
barrier wrap with absorbent inner layer impregnated with smoke	very good	0%	60 min.
cellulose fiber casing impregnated with smoke	sufficient smoke taste	5%	80 min.
barrier wrap without absorbent inner layer impregnated with smoke	no smoke taste can be ascertained	0%	60 min.

In summary, the invention offers the advantage that the flavour and/or the colour, etc. is maintained on the inner side of the wrapping in high doses, is not lost when the wrapping is gathered and filled and is reliably transferred to the food contained therein during the cooking or boiling process. Since the outer layers of the wrapper are impermeable, the substances cannot be rinsed out during the boiling process. No losses in weight, taste and flavour result during the production and boiling process, during transport and storage and the production time remains short. The product can be delivered directly to the end user without a second wrapping.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A food-barrier casing for enclosing a foodstuff to be boiled, cooked or otherwise heated in the casing and for imparting color and/or flavor to the foodstuff; the casing comprising at least one steam and/or gas impermeable plastic foil, and an absorbent inner layer joined to an inner side of the impermeable plastic foil, the inner layer comprising fibers selected from the group consisting of woven fibers, fabric, knits and fleece, and wherein the inner layer is impregnated with coloring and/or flavoring agents in an amount sufficient to impart color and/or flavor to the foodstuff when the food barrier casing encloses the foodstuff.

2. The barrier casing according to claim 1, wherein the inner layer comprises fibers selected from the group consisting of cotton fibers, cellulose fibers, regenerated cellulose fibers, viscose fibers, and mixtures thereof.

3. The barrier casing according to claim 1 or 2, wherein the impermeable plastic foil comprises a shrink foil which shrinks in a temperature range of about 70°C to about 90°C.

4. The barrier casing according to claim 1, 2 or 3, wherein the casing is coated with the absorbent inner layer to form a laminate.

5. The barrier casing according to any one of claims 1 to 4, wherein the impermeable plastic foil has the shape of a bag and an excess length at an open end of the bag, the

excess length being made without the absorbent inner layer and comprising a heat-sealable plastic foil.

6. The barrier casing according to any one of claims 1 to 5, wherein the impermeable plastic foil comprises on the inner side a layer having an inner surface to which the inner layer is joined by an adhesive.

7. The barrier casing according to claim 6, wherein the adhesive comprises extruded polyethylene.

8. The barrier casing according to any one of claims 1 to 7, wherein the impermeable plastic foil comprises at least two foils laminated together and selected from the group consisting of polyethylene foil and polyamide foil.

9. The food barrier casing according to any one of claims 1 to 8, wherein the impermeable plastic foil comprises two polyethylene foils and a polyamide foil between them, and wherein the inner side of the impermeable plastic foil comprises one of the polyethylene foils extruded wet which functions as an adhesive for joining the absorbent inner layer subsequently applied.

10. The barrier casing according to any one of claims 1 to 9, wherein the foodstuff is selected from the group consisting of cooking sausages, simmering sausages, ham, pickled products, and soft cheeses.

Fig. 1

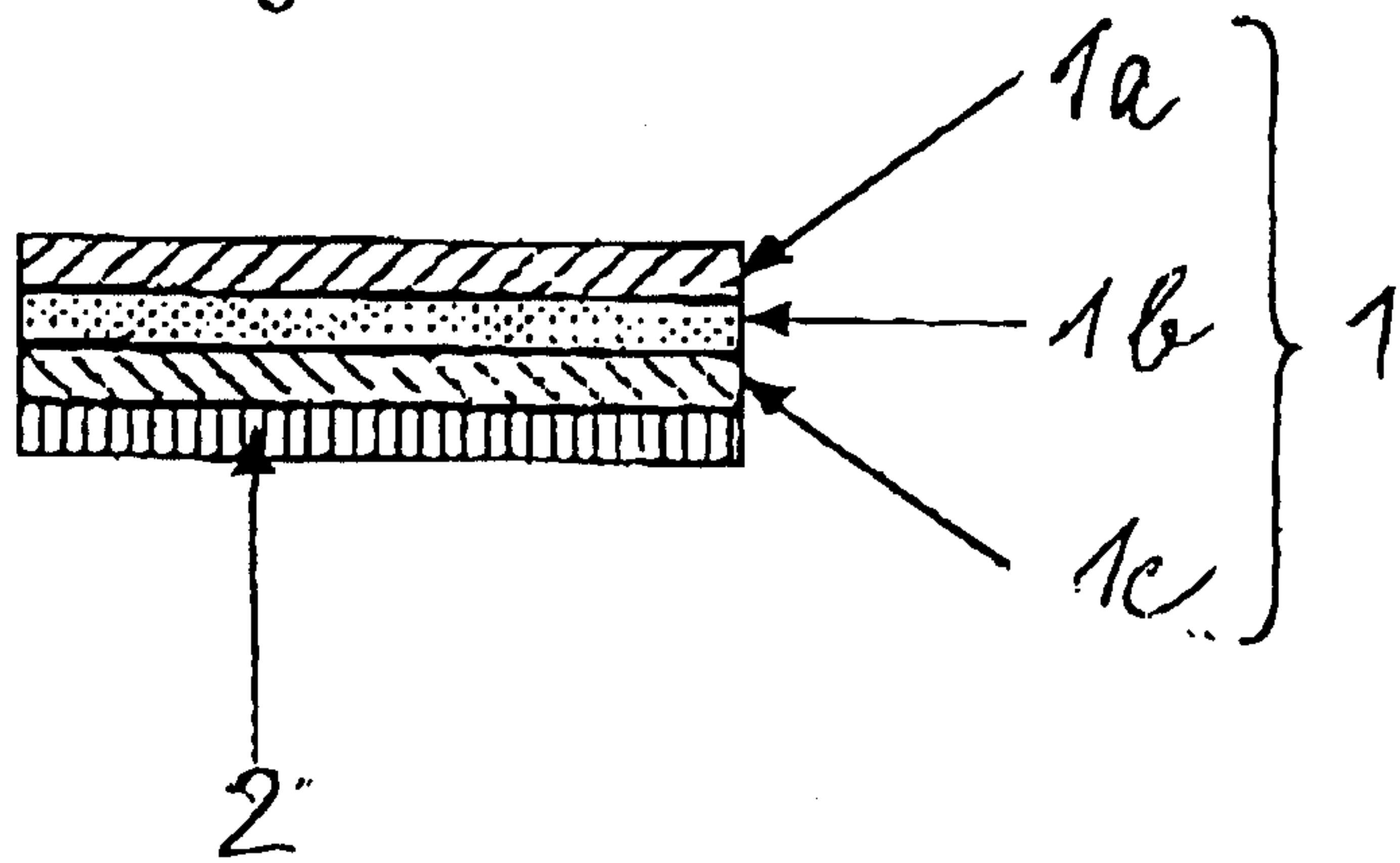
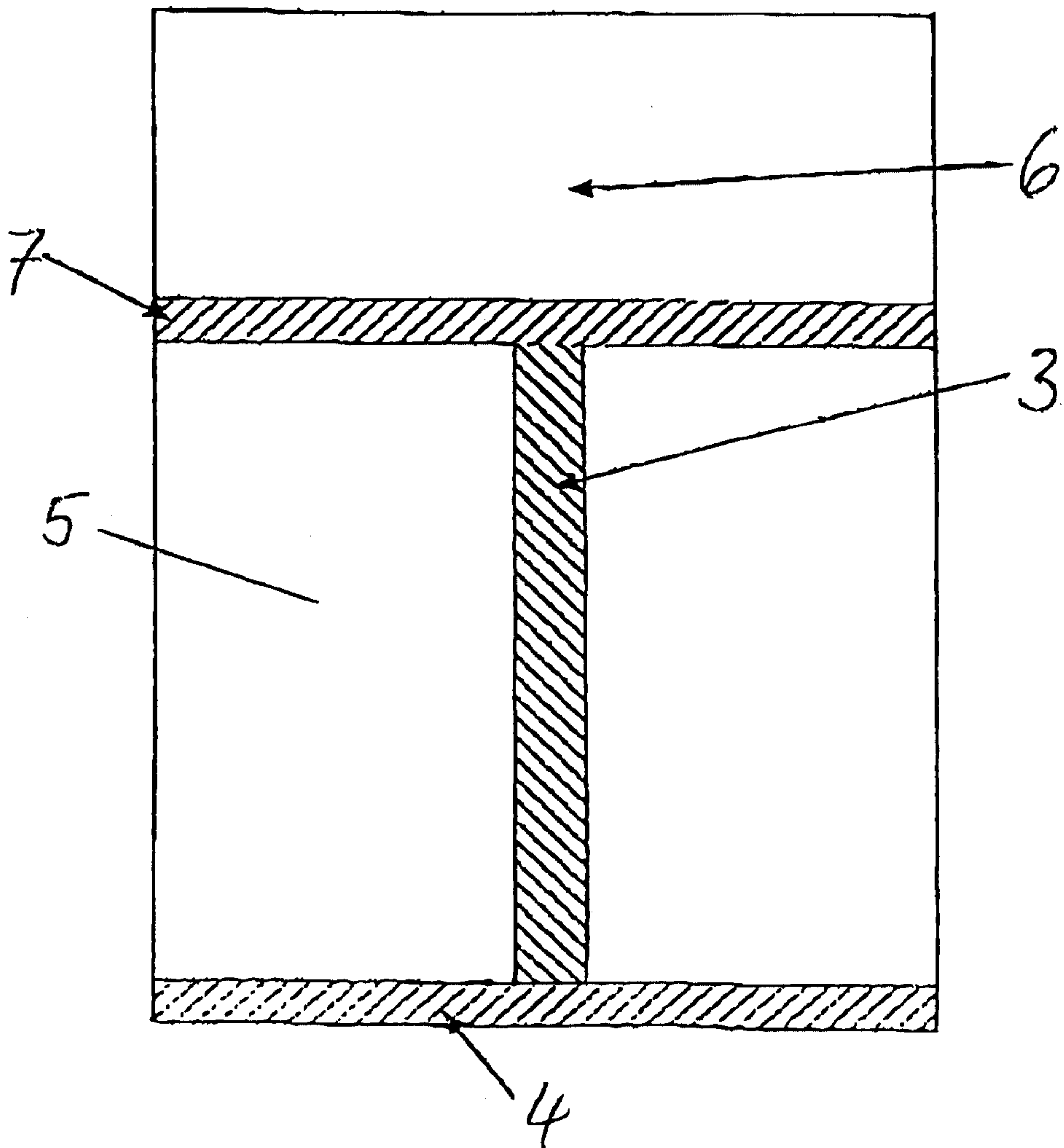


Fig. 2



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