March 10, 1936. J. MRAZEK 2,033,204

LIGHT PERMEABLE MATERIAL

Filed Sept. 2, 1933

Fig. 1

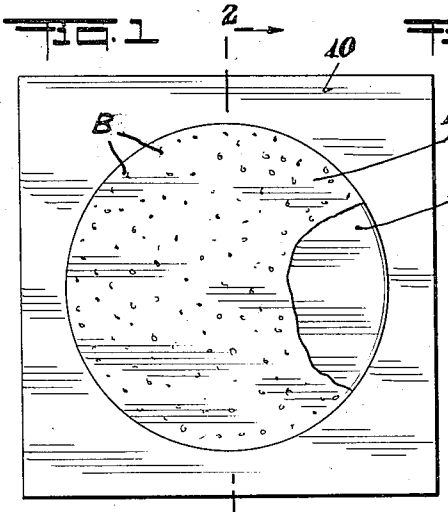


Fig. 2

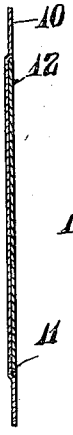


Fig. 3

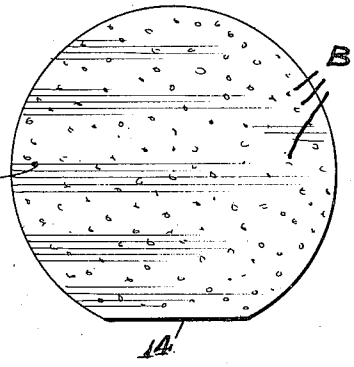


Fig. 4

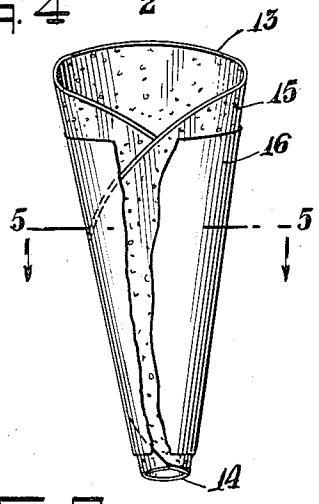


Fig. 5

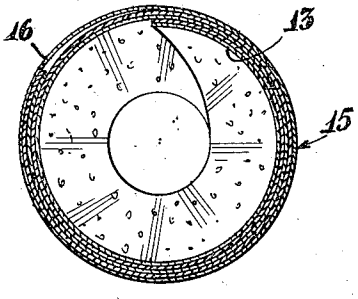


Fig. 7

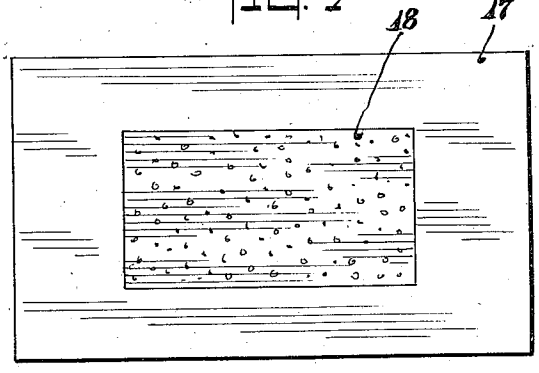
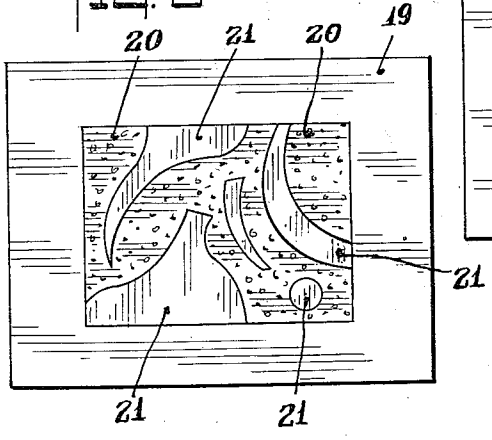


Fig. 6



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LIGHT-PERMEABLE MATERIAL

Joseph Mrazek, Woodside, N. Y.

Application September 2, 1933, Serial No. 688,076

1 Claim. (Cl. 18—51)

My invention relates to a new and improved light-permeable material, and a new and improved method of making the same, it being understood that the claims for the article of manufacture are not to be limited to the specific method disclosed herein.

One of the objects of my invention is to provide a light-permeable material which is flexible and resilient and which can be made so as to assume a pre-determined shape, so that the article of manufacture can be used as a lampshade and for numerous other purposes.

Another object of my invention is to provide a material of this type having enclosed air bubbles of varying size so as to regulate the light permeability of the material, and to produce a lustrous and ornamental appearance.

Another object of my invention is to provide a simple and improved method of making this type of article.

Other objects of my invention will be set forth in the following description and drawing which illustrates a preferred embodiment thereof, it being understood that the above general statement of the objects of my invention is intended merely to generally explain the same and not to limit it in any manner.

Fig. 1 is a plan view illustrating one method of producing the article.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 illustrates a form which has been made from the blank which has been produced in Fig. 1.

Fig. 4 illustrates how the form shown in Fig. 3 is molded or shaped, prior to the time that the material has finally dried and set.

Fig. 5 is a sectional view on the line 5—5 of Fig. 4.

Fig. 6 diagrammatically illustrates how metal or other inlays can be included in the article of manufacture.

Fig. 7 is a plan view which illustrates how a blank can be formed in any desired shape.

Fig. 1 shows a plate 10 which is preferably made of glass or other material having a smooth and non-porous surface. Instead of using glass, I can use any other material, depending upon the ornamental effect which is desired.

The top surface of said plate 10 may be planar, or it may be provided with a recess 11, which may have a circular contour. The material is poured upon said glass plate so as to form a blank 12 which has a circular shape. If the surface of the plate 10 is planar, the material which is poured naturally assumes the shape of a disc, like the shape which is shown in Fig. 1. This material contains numerous air bubbles B.

The material is allowed to dry and it first dries at its edges so that said edges slightly separate from the plate 10 or can be easily separated therefrom. Since the edges of the material dry first, said edges are usually slightly thinner than the body of the sheet of material. Likewise said edge is bent with respect to the body of the material.

Before the material has completely dried, it is stripped from the plate 10, and said material can be cut so as to provide a form 13 which has a straight edge 14. The blank 13 is now rolled so as to provide a cone-like form 15, which is held in place by wrapping ordinary paper 16 around the same.

The material is then allowed to dry so that it has the normal shape shown in Fig. 4. Said member 15 has overlapping edges, as illustrated in Fig. 5. The material is resilient so that it can be bent or unrolled and it then springs back into the shape shown in Fig. 4.

Referring to Fig. 7, the plate 17 can be made of glass or metal, or other suitable material, and it is provided with a recess having a square shape so that the blank 18 has a square shape.

Referring to Fig. 6, the plate 19 can be made of glass or other suitable material, and it is provided with a recess having any suitable shape, in order to form a blank 20. A certain amount of the material can be poured so as to form a film which covers the bottom of said recess, and bendable inserts 21 made of metal or other suitable material, can then be placed upon said initial film. Additional material can then be poured so as to cover said metal inserts and the article is then stripped in the manner previously explained, after the edge has dried sufficiently so as to provide a resilient article having any desired shape, and provided with inserts. Said inserts may be perforate or made of mesh material, so that the device may be as light-permeable as is desired.

The base material which is used for making the ornamental form is essentially a pyroxylin material in solution form. For example, I can use a pyroxylin cement which consists of pyroxylin, a suitable plasticizer such as castor oil, and ester gum, dissolved in any suitable solvent or mixture of solvents. Among the solvents which I can use are ethyl acetate, denatured alcohol, butyl acetate, and benzol. Commercial pyroxylin cements of this type are well known upon the market as for example the DuPont No. 5447 cement.

In addition to using pyroxylin dissolved in the

above mentioned solvents, I can also utilize ether and alcohol as the solvents, and a small percentage of camphor can be used as a plasticizer.

Likewise I can intermix collodion, a paste made by intermixing pyroxylin with alcohol, and an ordinary celluloid cement of the above mentioned type. If the product is to be colored, I can dissolve any suitable aniline dye in the collodion solution, before intermixing the same with the other ingredients. The pyroxylin material should have sufficient fluidity so that it can be poured, and sufficient viscosity so that it forms a film upon a smooth and planar glass surface, said film having the desired thickness, which may be one-sixteenth of an inch or less.

Prior to pouring said material, it is vigorously beaten by means of mechanical beaters so that air bubbles are enclosed in the material, which has sufficient viscosity to retain said air bubbles.

When this material is poured it first dries adjacent the edges thereof, and said edges spring away from the base plate. At this point the material is soft and moldable and it has little or no elasticity, and the edges have not completely dried. The material can then be rolled into the desired shape and it is held in said shape by means of paper or the like, which is tied around the form.

If desired, the material in the semi-dry state can be formed or shaped or molded around a core. I prefer not to use any pressure upon the material but to bend or roll the same into the desired shape, and hold the material in said shape by means of paper which is wrapped around the same. I also prefer not to use a core, although I do not exclude the use of a core.

If the material is rolled or bent without the use of a core, the solvent can readily evaporate therefrom.

When the material has dried, the wrapping paper can be removed and the material is then flexible and it has high resilience so that the article which is shown in Fig. 5 can be bent into substantially planar form, and the material will then spring back in order to assume the shape which is shown in Fig. 4.

The enclosed air bubbles are of varying size, being smaller and closer to each other in the center of the completed sheet of material, and being larger and more widely spaced at the edge of such sheeted material. These bubbles break up the light and give a highly ornamental effect.

If it is desired to make the material imitate "milk" glass or light-diffusing glass of the well known type, the sheet of dried material can be dipped into a solution of gelatin. This solution is prepared by boiling gelatin in hot water, allowing the solution to cool, and adding ethyl alcohol therein. If desired the material can be dipped into the gelatin solution before the material has completely dried. The alcohol is thoroughly intermixed with the gelatin solution, and said alcohol softens the surface of the dried sheet, so that the gelatin adheres thereto. The sheet of material can be dipped into the gelatin solution, (with or without the use of alcohol) before said sheet is rolled into the form shown in Fig. 4.

The gelatin coating which is thus produced gives the desired "milk" color, and it also decreases the fire hazard.

While the insert can be completely enclosed by the pyroxylin material, said insert may be flush with the surface of the completed article, or be otherwise held in said pyroxylin material.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

A light-permeable sheet of pyroxylin material which has enclosed air bubbles, and which is flexible and resilient, said sheet having a coating of gelatin on at least one face thereof.

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