June 2, 1936. F. L. BUCHANAN ET AL 2,042,501

PAPERBOARD

Filed Oct. 22, 1934

Fig. 1

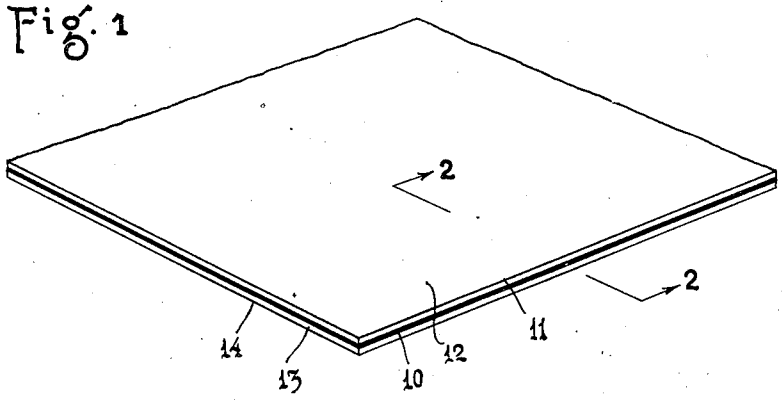


Fig. 2

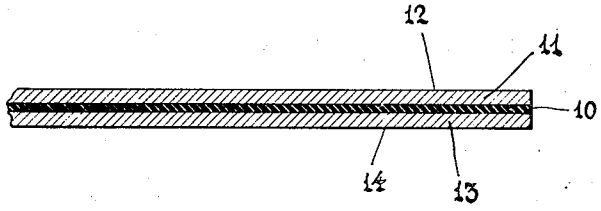
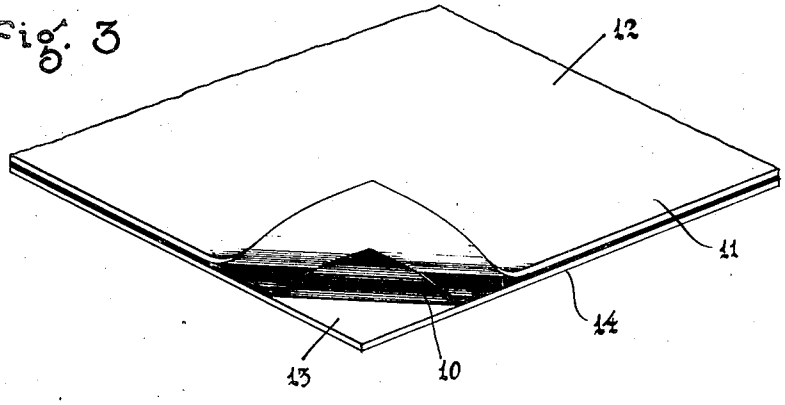


Fig. 3



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Patented June 2, 1936 2,042,501

UNITED STATES PATENT OFFICE

2,042,501

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Application October 22, 1934, Serial No. 749,389

2 Claims. (Cl. 92—40)

Our invention relates to paper stock and particularly to paper stock for use in constructing receptacles for fatty foods, such as butter and similar products.

An object of the invention resides in providing a paper stock by means of which the products kept within containers constructed from such stock will be preserved and the chemical action tending to make such products rancid will be greatly retarded.

It has been found that rancidity in butter and other fats, oils, greases and waxes may be produced by certain light rays of certain wave length which have a photo-chemical action on such substances and that the exclusion of such light rays from these substances will retard the chemical action tending to make them rancid. The present invention utilizes this principle by providing a paper stock which can be used in exactly the same manner as paper stock now employed for the purpose of constructing containers for butter and like substances and which at the same time will absorb and thereby exclude certain light rays from penetrating the container and reacting on the substances contained within the same.

An object of the invention resides in providing a paper stock comprising a body portion which absorbs substantially all of the light rays of the visible spectrum.

Another object of the invention resides in providing a paper stock having a black body portion.

A feature of the invention resides in providing a facing for the body portion secured thereto and constructed with a white or colored paper or paper pulp and upon which printing or other embellishments desired for containers of the particular type may be placed.

An object of the invention resides in constructing the paper stock with a liner, said liner being formed of any material suitable for the purpose which may or may not be treated with preparations to render the same non-absorbent.

A still further object of the invention resides in providing a paper stock having a body portion impregnated with calcium oxide.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a perspective view of a piece of paper stock illustrating an embodiment of my invention.

Fig. 2 is a cross sectional view taken on line 2—2 of Fig. 1 and drawn to a larger scale.

Fig. 3 is a view similar to Fig. 1 showing the various sheets or films constituting the paper stock partially separated from one another.

In the construction of containers for fats, waxes and other oily or fatty substances the common practice has been to use ordinary paper stock consisting solely of a body portion of desired thickness and weight and preferably of white color constructed of paper pulp by the usual methods now well known in the paper art. Such paper stock has been coated with paraffin to render the same non-absorbent. Such paper stock, however, offers no assistance in preventing rancidity. So far as we have known the only attempts made to exclude the light rays of the visible spectrum from the product has been accomplished by storing the product in a dark space. This is quite unsatisfactory for as soon as the package is exposed to light, the rays penetrate and photo-chemical action takes place causing deterioration of the product. The present invention provides a stock from which the container may be constructed at an extremely low cost and by means of which the harmful light rays are excluded so that the chemical action taking place within the product and producing rancidity is greatly retarded.

Our invention as shown in the drawing comprises a body portion 10 which is preferably dyed black through any of the suitable dyes now available. The same may if preferred be dyed green or black or any other color closely simulating green or black and which has the property of absorbing light rays from 7700 Angstrom units through 3700 Angstrom units and approaching 136 Angstrom units. The body portion 10 has secured to it on one side a facing 11 which may be white or colored in any suitable manner. This facing preferably has a calendered surface 12 which may be printed or otherwise embellished as is customary in the manufacture of paper containers.

The body portion 10 has secured to it on the side thereof opposite facing 11 a liner 13. This liner is similar to the facing 11 and may be white or the same may be colored in any suitable manner. The liner 13 is preferably constructed with a calendered surface 14 and if desired may be surfaced with paraffin to render the paper stock non-absorbent.

The body 10, facing 11 and liner 13 forming the paper stock of our invention are preferably united in the manufacture of the paper without

the use of any adhesive by running films of paper pulp from separate sources through a suitable machine and by uniting said films together through the adhesive characteristics of such films when pressure is applied thereto. By such method a paper stock is provided in which the body portion, facing and liner are substantially integral, each having its own specific characteristics. If desired, however, the paper stock can be constructed from separate sheets of paper separately formed and subsequently glued, pasted or otherwise secured together to form a composite structure serving the same purpose.

It has been found that certain light rays without the visible spectrum also assist in causing fatty substances to become rancid. We have discovered that the introduction of certain chemical substances into the paper stock will prevent penetration of certain of the invisible short waves of the spectrum. One chemical which is found to have this property is calcium oxide which absorbs certain of these undesirable light rays as well as certain of the light rays of the visible spectrum. To render the paper stock more effective for its intended purpose the body portion 10 is impregnated with calcium oxide. This chemical may be used in addition to the coloring for rendering the body portion black or the same may be used instead of the coloring. In the construction of the paper stock with calcium oxide the liner 13 is preferably free from such chemical so that no chemical reaction between the calcium oxide and the contents of the container can result. However, if desired, the liner or facing may be impregnated with the calcium oxide. In this manner the container constructed from our improved paper stock will have all the advantages of a container constructed of ordinary materials in addition to the specific advantages possible with our invention.

Our improved paper stock may be constructed of any of the common materials used for forming ordinary paper stock and may be of any desired thickness. By using films or sheets of paper of proper thickness the degree of absorption of the light rays can be controlled and also the thickness of the stock.

The use of our invention is the same as other paper stock from which containers are constructed. The stock is cut into desired blanks which may be scored and folded to form containers of any suitable type, size and construction. The particular construction of the paper stock constituting our invention does not affect the flexibility of the stock nor any of the other characteristics which can be procured by the selection of suitable materials and the use of methods now known in the art of manufacturing paper.

Our invention is highly advantageous in that our improved paper stock may be used in the customary manner to construct containers for the desired products without involving any particular precaution or changes in the method of manufacturing and using such containers. With our invention the chemical action which causes fatty substances to become rancid is greatly retarded so that such substances maintain their desired condition for a greater length of time than when kept in ordinary containers. Our invention can be constructed at substantially the same cost as any other paper stock so that the same can readily be substituted for other types of paper stock now used for the purpose. The paper stock constructed in accordance with our invention can be treated the same as other paper stock for the purpose of rendering the stock non-absorbent and water proof. Our improved paper stock is suitable for printing the same as ordinary paper stock.

Changes in the specific form of our invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of our invention.

Having described our invention, what we claim as new and desire to protect by Letters Patent is:

1. A paper stock for use in forming cartons, said stock comprising a body portion, a black coloring in said body portion, a pigment in said body portion including calcium oxide, a liner free from calcium oxide and covering said body portion upon the side thereof adjacent the substance within the carton, a wax like impregnation in said liner, said impregnation rendering said liner relatively non-absorptive and preventing absorption of the fluids, vapors and odors from the substance within the carton and a facing on the other side of the body portion said facing being constructed with a surface capable of reflecting the light rays of the visible spectrum and absorptive to a degree suitable for printing.

2. A paper stock for use in forming cartons, said stock comprising a body portion, a coloring in said body portion of suitable color to cause said body portion to absorb light rays of the spectrum ranging from 4900 Angstrom units to 3700 Angstrom units, a liner covering said body portion on the side thereof adjacent the substance within the carton, a wax like impregnation in said liner said impregnation rendering said liner relatively non-absorptive and preventing absorption of the fluids, vapors and odors from the substance and a facing on the other side of the body portion, said facing being constructed with a surface capable of reflecting the light rays of the visible spectrum and absorptive to a degree suitable for printing.

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