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E. DAVIS

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COATING COMPOUND AND APPARATUS FOR USING SAME

Filed April 25, 1934

Fig. 1.

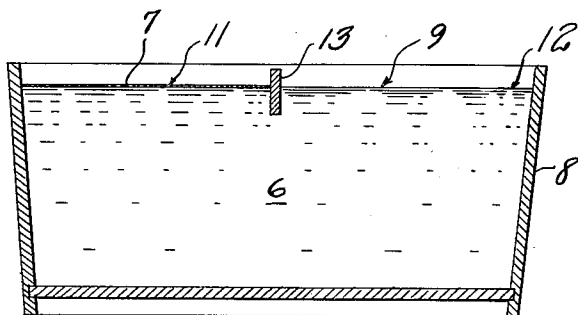
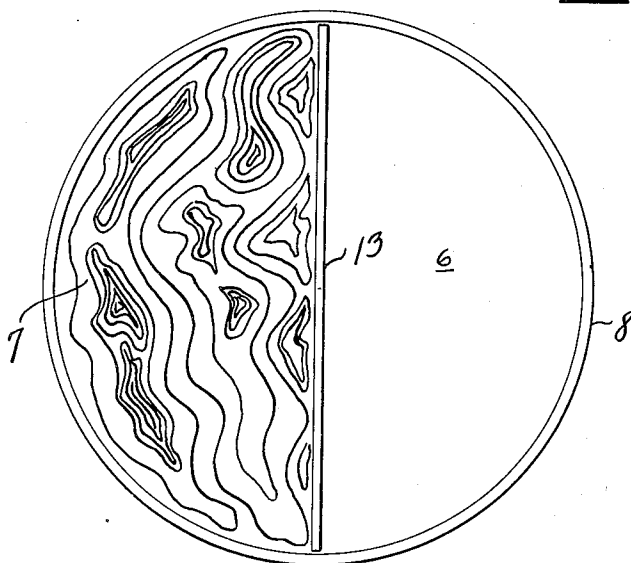


Fig. 2

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COATING COMPOUND AND APPARATUS
FOR USING SAMEEdward Davis, San Leandro, Calif., assignor to
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Application April 25, 1934, Serial No. 722,324

1 Claim. (Cl. 91—68)

The invention relates to paints or similar coating preparations known generally in the art as "floating oils" and which are used to coat an article of merchandise by a process usually involving the floating of a film of the paint on water to afford a pattern of various colors and outlines and then dipping the article into the water and through the film to cause a depositing of the latter thereon.

In the type of preparations of the character above described, and which have been heretofore available, the portions of the coating of a different initial color would on being placed together on the water surface tend to run together and produce, especially at their contacting surfaces, a portion of blended color. In this manner only a pattern of generally blended colors was possible, and any attempt to produce sharp color contrasts or a scattering of one color through a background of another, necessarily failed. In accordance with my invention, however, and as a principal object thereof, I have provided a surface coating of the character described which may be floated on water with the portions thereof of different color arranged in side-by-side relation and intimate contact without blending in color. In this manner not only is it possible to scatter a portion of one color through a field of a sharply different color and still maintain the initial colors, but a fine thread of one color may be drawn in a variety of patterns through a background of one or a plurality of colors without the pattern losing its strikingness imparted by the individual and unchanged colors. Thus a further advantage flows from the preparation of my invention in that a perfect control over both coloring and patterns may be had.

Another disadvantage present in the preparations heretofore available was the difficulty in obtaining a floating film of a variety of colors without portions of one color underlying portions of another color. For instance where one color was to predominate in a pattern, the practice is generally to first place a film of this color on the water and then add smaller amounts of the other colors to be used. However, with the preparations heretofore used, the colors last added would tend to lay in superimposed relation on the first placed film so that when the article was dipped through the resultant pattern, portions of the article would be coated with double layers of coloring. As may be understood in instances where the first laid film was a deep predominate color, it frequently occurred that the colors last

added, and which were sub-imposed under the predominate color on the article, would not be visible except perhaps as blended combinations with the predominate color. In accordance with my invention, however, and as a further objective thereof, the different colored portions of the mixture floated on the water will each gravitate to a common level in side-by-side relation rather than one superimposed over the other. Thus with my coating compound a fullest spread of the individual colors is obtained and the piling up of color layers on the coated article in this manner avoided.

A further object of the invention is to provide a coating compound of the character described which, when used in accordance with the process above mentioned, will deposit on the article to be coated a colorful film which will be dried and hardened into a tough, tenaciously adhering coating during and by the end of the dipping operation whereby the articles may on emersion be immediately handled, stacked, or made ready for shipment without possibility of marring or otherwise injuring the coating.

Still a further object of the invention is to provide an improved apparatus for carrying out the use of my coating compound.

The invention possesses other features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claim.

Referring to said drawing:

Figure 1 is a plan view of my improved apparatus above referred to.

Figure 2 is a sectional view of the apparatus shown in Figure 1 and taken substantially on the plane of the line 2—2 of Figure 1.

Preparations of the character described which have been heretofore available have in the main consisted of paints in one form or another, and using generally an oil as the vehicle or liquid medium of the paint. Since there is practically no affinity between the oil vehicle and the water on which the paint is floated, the different colored paint portions applied to the surface of the water each maintained on contact with the water its substantially complete identity as a paint. As such it will be clear the different portions will readily mix with each other and blend in color.

Also the greater attraction for the paint portions for each other than for the water is to a large extent productive of the layer effect of the portions hereinbefore mentioned. In addition the comparative slowness with which oil oxidizes, and dries after coating an article, made handling of an article which was dipped in accordance with this process difficult for hours after application of the coating.

In distinction to the foregoing, I have provided a preparation which on being floated on a supporting medium such as water will change form to deposit on the surface of the medium a partially precipitated film of body and pigment which in contrast to the previous preparations, and by reason of its partially set form, will adhere to but not blend with adjoining surface portions. In further distinction to the oil paints heretofore used, the aforesaid precipitated film will, on being drawn through the supporting medium on the article, emerge fully hardened into a tough, tenaciously adhering film. Also in contrast to the oil vehicle paints, I include in my compound an element which has a decided attraction to the supporting medium, whereby portions of the preparation successively applied to the surface of the medium will each be drawn into a substantially common plane with the separate portions in intimate side by side relation.

As a preferred embodiment of my invention in carrying out the novel operating relation between the coating compound and the supporting medium therefor, I may use for the coating compound one of several cellulose base lacquers at present available in combination with water as the supporting mediums. One explanation for the specific functioning of this combination lies in the following. As is well known the lacquer of this type consists essentially of cellulose body, a solvent therefor and a color pigment. In the usual use of the lacquer for coating an object, and as is understood, the solvent which in most instances is highly volatile, evaporates to leave deposited on the object a tough adherent film of the lacquer cellulose body and pigment. Analogous with this action, and as is known in the lacquer art, the addition of one of a group of liquids, of which water is a member, to the lacquer, will cause an interabsorption between the liquid and the solvent and a resultant precipitation of the cellulose body and pigment. In the present case this latter characteristic of the lacquer is employed in a most novel manner. On floating a film of lacquer on the surface of the water, an almost instantaneous partial precipitation of the cellulose body and pigment at the water surface takes place which, if allowed to stand for a few minutes, will follow through to a complete precipitation of a cellulose body film. As a result the adjoining portions of the lacquer thus floated quickly lose their identity as a lacquer and especially in the absence of an abundance of solvent are unable to mix with one another to produce a blending of colors. However where different colored portions of lacquer are applied to the surface of the water, the partially precipitated film of each portion will retain sufficient tackiness to produce an adhesion of the portions together even though neither portion is sufficiently fluid to cause a blending of the colors. Thus I have found that by first applying lacquer of one color to the water surface, lacquer of additional colors may be added to the first and stirred therethrough to afford practically any desired

weaving of color schemes without any of the colors blending or departing in any way from their original hue or intensity. Also the subsequently added lacquers, even though applied on an existing layer of lacquer, are, for the apparent reason of the affinity of the solvent and water, immediately drawn through the under layer and down to the water in side by side relation to the first layer.

In accordance with my invention the various colored lacquers are added to the water surface and stirred to produce a desired pattern and then the object to be coated is dipped through the pattern and into the water. As will be understood the film forming the pattern by reason of its partially set and cohesive nature will, on submersion of the object, be drawn across the surface of the water and onto the object as the latter moves into the water. In this manner the cellulose body film is deposited on the object in advance to its submersion, and the wetting of the surface of the object is thus reduced to a minimum. As a particularly important feature of my invention, and as may be understood, just as a partial precipitation of the cellulose body occurred on contact of the lacquer with the water so will the submersion of the object and the resultant washing of the coating carry this process to completion. Thus on withdrawal of the object from the water the coating thereon will be completely set and hardened into a tough cellulose body film with the original colors therein included.

In order that the withdrawal of an object from the water may not incur the reengagement of the coating on the object with any film left on the surface of the water, I have designed a special dipping apparatus as shown in the drawing. As here disclosed the water 6 for supporting the lacquers 7 is contained in a tub 8 which may be of any convenient size or depth depending on the size and shape of the article to be dipped. Extending across the tub 8 and engaging and dividing the surface 9 of the water into isolated areas 11 and 12 is a partition 13 which as here shown need extend but a short distance into the water. As will be understood, the lacquers may be applied to the surface area 11 and are prevented from spreading to the area 12 by the partition 13. Thus an article to be coated may be submerged through the film of cellulose body formed on the area 11 and passed through the water and under the partition and removed from the surface area 12 without again contacting any lacquer.

While, as hereinbefore indicated, many of the lacquers available in the trade will function at least to a degree in practicing my invention, I have found that, to procure a maximum spreading of the coating on the supporting medium and a proper speed of setting of the coating as well as realizing to a maximum the other desirable capabilities of my coating and process, an abundance of solvent is preferably used in the lacquer. Such a lacquer may be prepared by using approximately equal amounts of solvent and cellulose body. A satisfactory lacquer may consist of about 48% cellulose body, 48% solvent and 4% pigment.

While I prefer to use the combination of lacquer and water for carrying out my invention, it is clear that probably other liquids in the group mentioned for precipitating the cellulose body could be used in the place of water. Or I may change the combination to include a supporting

medium which will have a similar precipitating action on the body or binder of a different type of surface coating.

I claim:

- 5 The method of coating an object with a lacquer base film which comprises the floating of a relatively thin layer of lacquer on a liquid supporting medium which is interabsorbent with

the lacquer solvent to cause a precipitation of said base, moving said object to the surface of said medium to adhere said layer to said object, and then submerging said object in said medium until said layer is substantially completely 5 hardened.

EDWARD DAVIS.