Oct. 18, 1938. L. J. BURKE 2,133,914

ADVERTISING MEDIUM

Filed Sept. 8, 1936

Fig. 1

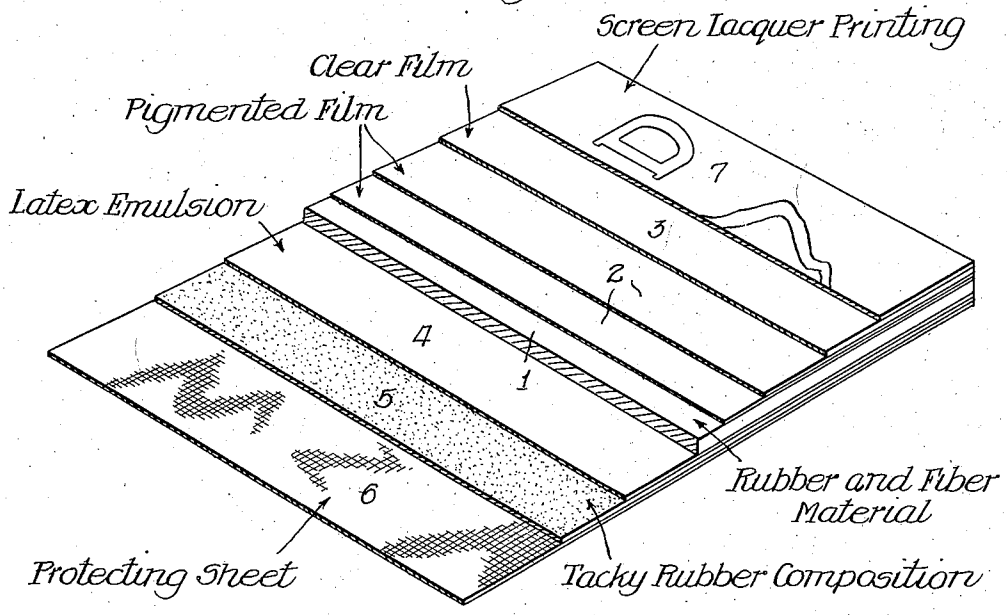
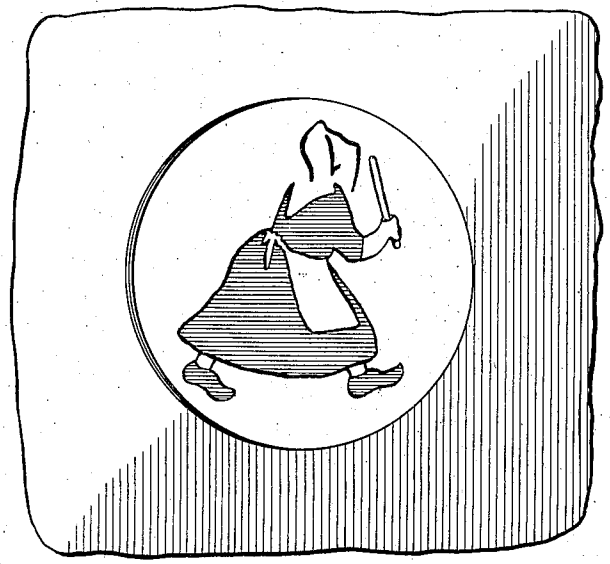


Fig. 2



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Attg.

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UNITED STATES PATENT OFFICE

2,133,914

ADVERTISING MEDIUM

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8 Claims. (Cl. 41—26)

This invention relates to an advertising and display medium, more particularly a new and improved weather-resistant article of manufacture carrying a sign or similar advertising device, and capable of being attached or detached by hand pressure to any clean, smooth, hard surface, such as, for example, glass, metal, painted walls, woodwork, and the like. The invention further relates to a new and improved method of making an article of manufacture of the character described.

It is known to prepare symbols or letters having a continuously sticky backing whereby the symbol or letter may be attached to an object, removed by a superior force, and reattached to another object. Thus, Segall, U. S. Patent 1,259,787, described symbols or letters having a continuous sticky backing and a Celluloid face, preferably with a textile material between the backing and the face, or made from a Celluloid sheet having a fabric back.

Rendall, British Patent 345,066, describes labels, tabs, index markers and the like made from paper, fabric, thin metal, or paper or fabric coated with metal foil, having a non-drying adhesive thereon in order that they may be attached to paper or other sheet material, and when not required can readily be removed for further use. If desired, the adhesive side may be protected by a covering of gauze or other like material which can readily be removed before the article is put into use.

Goldmann, French Patent 715,626, relates to letters, figures, signs, ornaments or pictures made of embossed thin sheet metal containing on the hollow side a small amount of a continuously sticky adhesive which will flatten out when the letters are applied to a suitable surface.

It will be apparent from the foregoing patents that the art of applying a non-drying or continuously sticky adhesive to various materials is not a new one. Furthermore, the general principles involved are well recognized in the rubber industry, and particularly in the tire industry. However, the principal use of this device in advertising has heretofore been concerned with making letters or similar characters. For this purpose, Celluloid, felt and a wide variety of other materials, both white and colored, have been used.

The making of suitable colored letters or symbols is relatively simple because the letters or symbols may be cut from a previously colored sheet of the material. Thus, from a red sheet of material, red symbols may be cut, etc. The problem becomes more difficult, however, when it is desired to prepare a sign or a picture of different colors, and particularly one which is weather-resistant, has a pleasing feel and appearance, and does not check or crack.

With the foregoing desiderata in view, it is an object of this invention to prepare a new and useful advertising and display medium carrying a sign or similar advertising device which is weather-resistant, flexible, has a pleasing feel and appearance, does not check or crack, and is capable of being attached or detached by hand pressure to any clean, smooth, hard surface. A further object is to provide a new and improved method of preparing such an article of manufacture, and which involves especially the preparation of varied colored, weather-resistant designs which are firmly bonded and do not tend to chip off from the surface of the material when it is flexed. Other objects will appear hereinafter.

The invention contemplates in its broader aspects the preparation of an advertising medium or device in which a sign or any desired type is silk screen printed with a pigmented screen lacquer on the glazed surface of a sheet material having both a glazed and unglazed surface, and having attached to the unglazed surface a non-drying or continuously tacky bonding agent. This is accomplished more specifically by coating a resilient rubber- and fiber-containing sheet material with a pigmented cellulose derivative composition coating, drying, then applying a layer of a clear cellulose derivative composition on said pigmented coating, drying, treating the unglazed side with an aqueous latex emulsion, thereafter applying a non-drying or continuously tacky rubber composition coating to the latex emulsion, covering the resultant pressure-sensitive adhesive coating with gauze, holland cloth or similar material, if desired, embossing the glazed surface, then silk screen printing on the glazed surface with a pigmented screen lacquer, and finally, die cutting the printed material to the desired shape.

In this manner a sign may be produced, which has a glossy, pleasing appearance, is weather-resistant, flexible, resilient, has a soft feel, does not wrinkle, and is particularly characterized by the fact that the design or ornamentation does not tend to check, crack or peel.

Other features of the invention will become apparent from a reading of the following specification, in the light of the accompanying drawing, in which

Figure 1 represents a view in perspective of a material prepared in accordance with the invention, showing the various coatings or layers;

Figure 2 is a plan view of a typical design prepared by silk screen printing on the laminated material with a pigmented screen lacquer, and showing the advertising display attached to a wall, mirror, or other plane surface.

In Figure 1, the base material 1, preferably a mixture of rubber and fiber in the form of a sheet, has on the top thereof a pigmented cellulose derivative composition 2, preferably a plurality of layers of pigmented cellulose derivative composition on which is a clear cellulose derivative composition coating 3. On the opposite side of the base material 1 is a very thin film of latex emulsion 4 which is used to bond the non-drying or tacky rubber composition 5 to the base material. The tacky rubber composition 5 is protected prior to use by a sheet of holland cloth or similar material 6.

The sheet material prepared as above described is silk screen printed according to well-known methods for silk screen printing, except that it is important for the purposes of the present invention that a pigmented screen lacquer be used in the printing to thereby produce a better bonding with the cellulose derivative composition coating, greater weather resistance, and a much higher degree of pliability without cracking than it is possible to obtain by printing with oil paints or by other similar methods of printing. The printed design layer is illustrated by layer 7 in Figure 1.

The flexible base material 1, which is preferably employed in accordance with this invention is a rubber- and fiber-containing material which has some of the properties of paper and likewise some of the properties of rubber. It normally tends to be absorptive by reason of fine holes throughout its surfaces and in this respect is analogous to paper. On the other hand, it has the resilient and waterproofing properties of rubber, and the combined qualities of both rubber and paper in that it is flexible without cracking. This base material may be prepared as described in U. S. Patents 1,500,500; 1,567,646; 1,675,959; 1,756,035 and 1,773,201. Other modifications of the material may be used, as sold, for example, under the trade name of "Lexide".

The pigmented film or coating 2, which, as already indicated, preferably consists of a plurality of layers or coats, may be a pigmented pyroxylin coating composition prepared according to well known methods, for example, by bringing together the following materials: Nitrocellulose, ethyl acetate, toluene, ethyl alcohol, and pigment dispsersed in castor oil.

The ethyl acetate acts as a solvent for the nitrocellulose and too rapid evaporation of the solvent is prevented by the toluene and ethyl alcohol, usually referred to as diluents. The castor oil serves as a carrier medium for the pigment and as a plasticizer for the composition. The proportions vary according to well known variations in the art.

In each succeeding pyroxylin coating it is desirable that the amount of castor oil, or other oil serving a similar purpose, be diminished to facilitate the subsequent step of printing. Thus, the second coat of pigmented cellulose derivative composition contains less castor oil than the first. Each coat is preferably dried prior to putting on the next coat.

The clear coating 3, preferably consists of a cellulose derivative composition containing no castor oil or other oil. For instance, when applied it may be a jelly or jelly-like composition having the following ingredients: Nitrocellulose, ethyl acetate, toluene, and alcohol.

The proportions are normally such as to produce a clear non-cracking film in a manner known to those in the art. If desired, other auxiliary agents may be added.

On the side of the resultant sheet material opposite the side coated as above described, is then applied the coating of a continuously tacky or non-drying adhesive 5 having sufficient adhesive strength to support the sheet material but at the same time permitting removal by a hand pull.

Any convenient method may be used in applying these various coatings and, if desired, the coated portion of the material may be embossed, for instance, in what are commonly called "skiver grains", to produce a more pleasing appearance, destroy streaks, remove the fine holes, etc.

This adhesive coating may be applied according to methods well known in the tire industry. For instance, the rubber stock may be prepared on a two roll mill or mixer which plasticizes the rubber and mixes in the necessary chemicals. This stock may then be supplied to a three roll calender machine and as the cellulose ester coated material is run between the middle and bottom rolls, the calender applies a rubber coating of sufficient thickness. It is often desirable to apply the anchor coating of rubber 4 to the fabric before the calender coat to make sure of the adhesion between the fabric and the calendered rubber. This may be done with a rubber solution on a standard spreading machine. On some materials this coat may be omitted. The sheet of holland cloth 6 is applied directly to the tacky rubber surface as it comes from the calender. The resultant material may be rolled as it comes from the calender and while still warm drawn out on a table and cut into the required lengths.

The material is now ready to be printed with the desired design and lettering on the cellulose derivative coating. This is preferably accomplished with a pigmented screen lacquer which may be applied by the silk screen method of printing.

The pigmented lacquer usually consists of a cellulose derivative, e. g., nitrocellulose, cellulose acetate, or ethyl cellulose together with resins, e. g., glycerine-phthalic anhydride resins, plasticizers, e. g., dibutyl phthalate, and oils. These may be compounded according to methods known in the art. Preferred examples are (1) nitrocellulose mixed with plasticizers, pigments and oils; (2) ethyl cellulose mixed with plasticizers, pigments and oils; and (3) cellulose acetate mixed with plasticizers, pigments and oils.

After the design has been printed and dried, the material is die cut to the desired shape, which may conform to the shape of the design. On account of the rather soft, resilient nature of the front face, die cutting produces a beveled edge and a more pleasing appearance on this face. The rear face, the appearance of which is not particularly important, is sharply cut because of the stiffness imparted thereto by the holland cloth. This sharpness of the rear edge allows all of the material to be adhesively sealed to the glass or other plane surface without overhanging portions.

The final product, while flexible, preferably has a substantial thickness, for example, on the order of about $\frac{3}{32}$ of an inch or more. In practice,

most of this thickness is due to the base material 1.

This product presents a neat, glossy or lustrous appearance and has an unusual resistance to the action of the weather. Signs made in the manner described may be attached to the outside of trucks over relatively long periods of time without deterioration and without injury to the paint on the truck when the sign is removed. They may also be attached to new automobiles temporarily, for instance, to advertise the various features thereof, and when removed leave no blemish or stain. Signs made as herein described do not wrinkle as in the case of certain types of signs heretofore used, e. g., those made by ordinary printing on casein treated paper in which the printing is protected by a coating of varnish. Furthermore, the signs made in accordance with my invention are flexible without cracking and do not tend to check or peel, a difficulty which I have encountered in attempting to use oil paints.

The expression "cellulose derivative composition" as herein employed is intended to include and cover cellulose esters and cellulose ethers, e. g., nitrocellulose, cellulose acetate, cellulose propionate, ethyl cellulose, and similar substances.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A varied colored flexible advertising medium comprising a laminated material consisting of a flexible base material, a continuously tacky, pressure sensitive adhesive on one side of said base material, a pigmented cellulose derivative composition containing a plasticizer on the other side of said base material, a pigment-free cellulose derivative composition substantially free of plasticizer on said pigmented coating and a pigmented cellulose derivative screen lacquer design printed on the latter coating.

2. A varied colored, flexible, weather-resistant advertising medium comprising a laminated material consisting of a flexible resilient rubber- and fiber-containing sheet material, a continuously tacky, pressure sensitive adhesive on one side of said sheet material, a pigmented cellulose derivative composition containing a plasticizer on the other side of said sheet material, a pigment-free cellulose derivative composition substantially free of plasticizers on said pigmented coating and a pigmented cellulose derivative screen lacquer design printed on the latter coating.

3. A varied colored, flexible, weather-resistant advertising medium comprising a laminated material consisting of a flexible resilient rubber- and fiber-containing sheet material, a continuously tacky, pressure sensitive adhesive rubber composition joined directly to one side of said sheet material by means of an aqueous latex dispersion, a pigmented cellulose derivative composition coating containing a plasticizer on the other side of said sheet material, a clear, plasticizer free cellulose derivative composition on said pigmented coating and a pigmented cellulose derivative screen lacquer silk screen design printed on the clear coating.

4. A varied colored, flexible advertising medium comprising a laminated material consisting of a flexible resilient rubber- and fiber-containing sheet material, a continuously tacky, pressure sensitive adhesive on one side of said sheet material, a plurality of successive layers of pigmented nitrocellulose coating compositions containing castor oil on the other side of said sheet material, each of said layers containing less castor oil than the preceding layer, an oil-free nitrocellulose coating composition over the outermost of said pigmented coatings and a pigmented cellulose derivative screen lacquer design printed on the oil-free coating.

5. The method of preparing an advertising and display medium which comprises coating one side of a resilient, flexible rubber- and fiber-containing sheet material with a plurality of layers of a pigmented cellulose derivative composition containing a plasticizer, applying a pigment-free plasticizer-free cellulose derivative film over the outermost layer, coating the other side of the sheet material with a pressure sensitive adhesive, applying a protective sheet over said adhesive, and silk screen printing on the pigment-free cellulose derivative film with a pigmented cellulose derivative screen lacquer.

6. The method of preparing an advertising and display medium which comprises coating one side of a resilient rubber- and fiber-containing sheet material with a pigmented cellulose derivative composition containing an oil plasticizer for the pigment, drying, applying a clear cellulose derivative composition substantially free of oil plasticizer over said pigmented coating, drying, then joining a continuously tacky, pressure sensitive adhesive rubber composition to the other side of the sheet material by means of an aqueous latex dispersion, applying a protective sheet over said adhesive, embossing the side containing the cellulose derivative coatings, silk screen printing a pigmented cellulose derivative screen lacquer on the embossed side, and die cutting.

7. The method of preparing an advertising and display medium which comprises coating one side of a resilient, flexible, rubber- and fiber-containing sheet material with a plurality of successive layers of pigmented nitrocellulose coating compositions containing castor oil, each of said layers containing less castor oil than the preceding layer, applying an oil-free nitrocellulose coating composition over the outermost of said pigmented coatings, applying a pressure sensitive adhesive to the other side of the sheet material, then covering the pressure sensitive adhesive with a protecting sheet of holland cloth, silk screen printing a design with a pigmented cellulose derivative screen lacquer on the oil-free coating, and die cutting.

8. The method of preparing a varied colored, flexible advertising and display medium which comprises coating one side of a base material with a ground coat comprising a pigmented cellulose derivative composition containing a plasticizer, drying, applying a clear pigment-free cellulose derivative composition substantially free of plasticizer over said pigmented coating, drying, coating the other side of the base material with a continuously tacky pressure-sensitive adhesive composition and printing a design on top of said clear cellulose derivative coating with a pigmented cellulose derivative screen lacquer.

LAWRENCE J. BURKE.