Aug. 8, 1939 T. H. WAY 2,169,062

METHOD OF SURFACE-TREATING LABELED ARTICLES

Filed Feb. 1, 1938

Fig. 1.

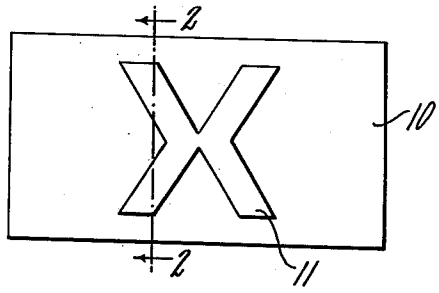


Fig. 2.

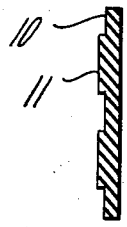


Fig. 3.

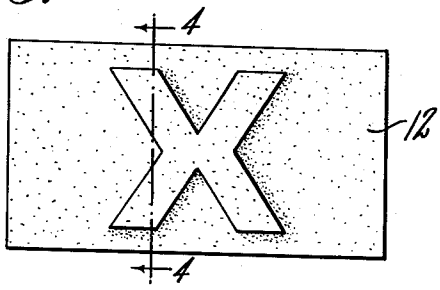


Fig. 4.

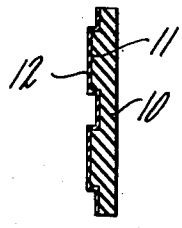


Fig. 5.

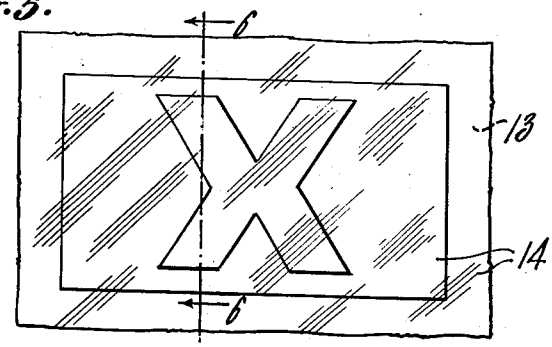
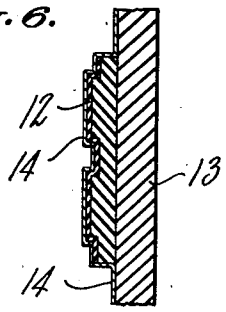


Fig. 6.



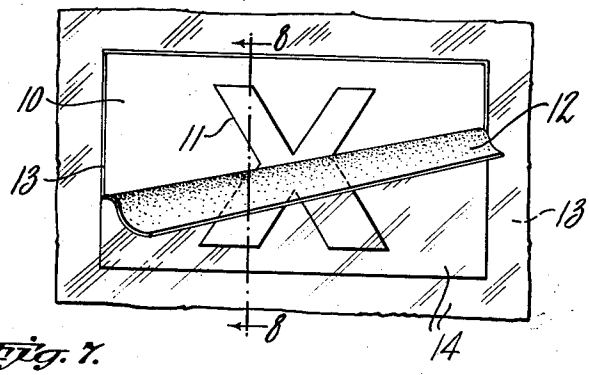
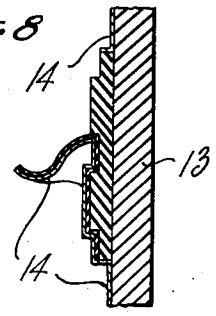


Fig. 7.

Fig. 8



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METHOD OF SURFACE-TREATING LABELED ARTICLES

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Application February 1, 1938, Serial No. 188,043

20 Claims. (Cl. 216—62)

This invention relates to methods of surface treating labeled articles and more particularly to methods of treating the surface of an article to which a label has been applied, while maintaining the label in an untreated condition.

The invention is adapted to the application of a label to an article, the surface of which article is to be subjected to a treating operation, while the label is to remain unaffected by the treating operation. It is particularly applicable to the manufacture of an article having a rubber label such as an embossed label attached to the article, where it is desired to finish the surface of the article as by varnishing without coating the face of the label with the varnish, and where the label cannot readily be applied to the article after the varnishing operation.

It is customary when applying a rubber identifying emblem or label to a rubber article such as a boot, overshoe, length of hose, or other rubber goods, to apply the vulcanized, partially vulcanized, or unvulcanized label directly to the surface of the article before vulcanization thereof so that the label may be permanently adhered to the article. This process is adequate in the case of unvarnished rubber goods but when the article is to be varnished or otherwise treated, after application of the label, the previously adhered label is also subjected to the same treatment with the result that, in the case of varnishing, the label itself is covered with the varnish so that its original color or appearance, which may be of contrasting color from the article itself, is hidden from view. If a rubber article is varnished before application of the label, firm adhesion of the label thereto by vulcanization is prevented by the presence of the intermediate film of varnish. If a metal article is varnished before application of the rubber label to be vulcanized thereto, the heat necessary for vulcanization of the rubber to the metal may destroy the varnish, or, if the rubber is to be attached to the metal by an adhesive alone, the adhesive often will not properly stick to the varnish. In the case of emblems or labels which have raised lettering or other configuration on their faces, a coat of varnish over the label may in some cases fill the interstices between the letters, or at any rate will render the article as a whole all of the same color so that the label will be visible only by reason of such surface irregularities as may still appear. In practising these prior methods of applying the label and subsequently varnishing the article, it has heretofore been impossible to produce a finished treated or varnished article which has an attractive colored label vulcanized thereto and which at the same time stands out in its original brilliance. Also in these methods, if the article was varnished before attaching the rubber label thereto, the bond between the label and the article was weakened by the intermediate varnish film.

The present invention provides a process for treating, as by finishing or varnishing, the surface of an article, particularly of a rubber article, which has a label, for example of rubber composition, applied thereto, while maintaining the face of the label in an untreated condition. According to this process, a temporary readily removable film of protective material is deposited from a fluid medium onto the face of the label prior to the treatment of the surface of the article proper. The back of the label is attached, as by adhesion, to the surface of the article, so that the over-all surface of the article includes the temporary film protecting the face of the label. The desired portions of the surface of the article, including all or part of the surface of the temporary film, are then subjected to the surface treatment. The film completely covers and closely adheres to the surface of the label even where the label has irregular or raised and depressed surface configurations, so that the treatment or treating material cannot come into contact with the face of the label which is sealed therefrom. The film is then removed from the label, revealing the face of the label firmly secured to the article and presenting its original and unaltered aspect.

Referring to the drawing, a present preferred embodiment of a method according to the invention is illustrated, in which:

Fig. 1 is a plan view of an unvulcanized rubber label having a raised letter formed or printed on its surface;

Fig. 2 is a cross-sectional view taken along the section line 2—2 of Fig. 1;

Fig. 3 is a plan view of the lettered label after being coated with a protective film of latex;

Fig. 4 is a cross-sectional view taken along the section line 4—4 of Fig. 3;

Fig. 5 is a plan view of the label after being applied to a fragmentary portion of an article, and after the article and coated label have been varnished;

Fig. 6 is a cross-sectional view taken along section line 6—6 of Fig. 5;

Fig. 7 is a view similar to Fig. 5 showing the

latex film partially removed from the label to reveal the original aspect thereof, and

Fig. 8 is a cross-sectional view taken along section line 8—8 of Fig. 7.

This process is of particular value when a rubber label having raised or depressed letters or other configurations on its surface is coated with a protective film of latex before application to the article and before varnishing, since the latex film not only coats the entire area of the face of the label but conforms tightly to the surface configuration thereof, thus receiving on its exterior all the varnish subsequently applied to the area where the label is located and preventing, by its sealing action, any of the varnish from coming in contact with the face of the label. The latex may be conveniently applied to a single label or a unitary block of labels or a group of separate labels before their application to the articles, for example, by spraying one or more coats upon the face or faces thereof to form a thin film, or the coating may be applied in any other desired manner, as by dipping or brushing. The use of latex for this purpose is also advantageous since, when properly compounded, it may be vulcanized to attain high cohesive strength in order to facilitate removal as by stripping, without tearing of the thin rubber film. The latex film is also flexible and resilient, so that it will not flake or crack before or during removal. When this latex protective coating is employed to cover a printed block of uncut labels, its transparency is of assistance in determining the proper position of the dies for cutting out the individual labels. When applied to labels having printing or other marking as, for example, by a rubber ink, the latex film applied according to the present process may be stripped therefrom without defacement or damage to the design or lettering printed on the label.

Referring particularly to the drawing, a process according to the present invention is described merely by way of illustration and it is, of course, not intended to limit the invention thereto. A rubber label 10 having a raised letter 11, while in an unvulcanized, vulcanized or partially vulcanized condition, as desired, is sprayed with a latex coating 12 of the desired composition. In order to facilitate the subsequent removal of the latex film 12 from the label 10 and letter 11, it may be desirable to first coat the label with a coagulant such as a 30% acetic acid-alcohol solution, in which case the film 12 of latex may be built up to the desired thickness by continuously spraying the latex over the coagulant. Alternatively the label may first be coated with a lubricant such as talc, a spray of latex then applied and allowed to dry, and in this case the desired thickness is attained by subsequently spraying additional coats of latex and alternately allowing them to dry in order to attain the desired thickness of the film 12, as shown in Figs. 3 and 4. The back of the label is then applied, with or without an adhesive, as by gentle pressure, to the desired portion of a rubber article 13, after which the entire article is brushed or sprayed or dipped with a rubber paint or varnish 14, which usually in the case of rubber boots or shoes is of a dark color. At this stage, as shown in Figs. 5 and 6, the original face of the label having the rubber film is completely covered by reason of the presence of the varnish. Because of the completeness with which the latex film 12 covers the label by conforming exactly to the surface configurations thereof, actual contact of any of the varnish 14 against the face of the label is prevented. Figs. 7 and 8 show the final step of the process in removing the latex film 12 from the label 10, as by separating it at one corner and then pulling the film off in one entire piece. Vulcanization of the label to the article may be accomplished at any desired stage in the process so long as it does not injure the varnish. After removal of the film, the label stands out distinctly from the adjacent portions of the surface of the article, revealing its original color, form and aspect.

In the case of attaching a rubber label to the surface of material other than rubber, as, for example, a metal pipe or tank, the back of the label may be first coated with an adhesive as a temporary adherent, then attached to the metal surface, and finally vulcanized at elevated temperature to the article, after which the article and protective film may be varnished, and the film subsequently removed. In this manner the varnish coating is spared from subjection to the damaging temperatures often necessary for such rubber-to-metal vulcanization. In the case of applying certain rubber labels, or labels of other materials, to surfaces other than rubber, it may be desirable merely to employ an adherent, without vulcanization, to effect the bond between the label and the article to be labeled.

While the invention is particularly adapted to varnishing any article without varnishing a label attached thereto, it may be practiced with advantage in connection with other surface treatments of rubber articles as will occur to those skilled in the art. For example, the label may be of another material than of rubber, and the protective film may be of other fluid depositable material than rubber latex, so long as it conforms to the surface configuration of the surface to be protected, insures that the underlying surface is unaffected by the treating process, and can be readily removed. The surface to be protected may, for example, be a portion of the surface of the article itself, adjacent to a portion which is to be subjected to the treatment. Instead of protecting a label, it may be desired to protect the obverse side of a layer of rubber or other material, the reverse side of which is applied to the surface of the article, while the adjacent portions of the surface of the article are to be treated. In the case of a label or super-imposed layer of material, the removable protective film may be deposited thereon after the application of the label or superimposed layer to the surface of the article, care being taken to confine the area of the film to that surface which is to be protected from the treating process.

The term "latex" in the description and claims is used to designate broadly coagulable dispersions of elastic materials, including artificial dispersions of rubber or rubber-like materials as well as natural latex, which may be preserved or compounded or otherwise treated as desired, as by vulcanization, and which may be in a normal, diluted, concentrated, or purified condition produced by methods well-known in the art.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:

1. The process of surface treating an article which comprises applying the back of a label to the surface of the article, the face of said label having a readily removable protective film deposited thereon from a fluid medium, surface treating desired portions of the surface of the article and also portions of the surface of the pro-

tective film, and subsequently removing said film from the face of the label.

2. The process of surface treating a rubber article which comprises applying the back of a colored label to the surface of the article, the face of said label having a readily removable protective film deposited thereon from latex, surface treating desired portions of the surface of the article and also portions of the surface of the protective film and subsequently removing said film from the face of the label.

3. The process of surface treating an article which comprises depositing a readily removable protective film of latex onto the face of a label having irregular surface configurations and to be applied to the article, applying the back of the label to the surface of tht article, surface treating desired portions of the surface of the article and also portions of the surface of the protective film and subsequently removing said film from the face of the label.

4. The process of varnishing an article which comprises depositing a removable protective film from a fluid medium onto the face of a colored label having irregular surface configurations and to be applied to the article, applying the back of the label to the surface of the article, varnishing desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the face of the label.

5. The process of surface treating an article which comprises depositing a removable protective film from a fluid medium onto the face of a rubber label to be applied to the article, applying the back of the label to the surface of the article, surface treating desired portions of the surface of the article and also portions of the surface of the protective film and subsequently removing said film from the face of the label.

6. The process of surface treating a rubber article which comprises depositing a removable protective film of latex onto the face of a rubber label to be applied to the article, applying the back of the label to the surface of the article, surface treating desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the face of the label.

7. The process of varnishing a rubber article which comprises depositing a readily removable protective film from a fluid medium onto the face of a colored rubber label to be applied to the article, applying the back of the label to the surface of the article, varnishing desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the face of the label.

8. The process of varnishing a rubber article which comprises depositing a removable protective film of latex onto the face of a colored rubber label having irregular surface configurations and to be applied to the article, applying the back of the label to the surface of the article, varnishing desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the face of the label.

9. The process of surface treating an article which comprises applying the back of a rubber label to the surface of the article, the face of said label having irregular surface configurations and having a removable protective film deposited thereon from a fluid medium, surface treating desired portions of the surface of the article and also portions of the surface of the protective film and subsequently removing said film from the face of the label.

10. The process of surface treating a selected portion of a rubber article, while maintaining an adjacent portion in an untreated condition, which comprises depositing a removable film of protective material from a fluid medium onto said adjacent portion, surface treating desired portions of the surface of said selected portion and also portions of the surface of the protective film, and subsequently removing said film.

11. The process of varnishing a selected portion of the surface of a rubber article while maintaining a generally contrasting colored adjacent portion in an unvarnished condition, which comprises depositing a removable film of latex onto said colored portion, varnishing both said selected portion and said film, and removing said film.

12. The process of surface treating a selected portion of a rubber article while maintaining an adjacent portion having irregular surface configurations in an untreated condition, which comprises depositing a removable film of protective material from a fluid medium onto said adjacent portion, surface treating desired portions of the surface of said selected portion and also portions of the surface of the protective film, and subsequently removing said film.

13. The process of varnishing a selected portion of the surface of a rubber article while maintaining an adjacent generally contrasting colored portion having irregular surface configurations in an untreated condition, which comprises depositing a removable film of latex onto said colored portion, varnishing both said selected portion and said film, and removing said film.

14. The process of surface treating an article which comprises depositing a removable protective film from a fluid medium onto the obverse surface of a layer of material to be applied to the article, applying the reverse surface of the layer of material to the surface of the article, surface treating desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the obverse surface of the layer of material.

15. The process of surface treating a rubber article which comprises depositing a readily removable protective film of latex onto the obverse surface of a layer of material to be applied to the article, said obverse surface having a color generally contrasting to that of the surface of the article, applying the reverse surface of the layer of material to the surface of the article, surface treating desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the obverse surface of the layer of material.

16. The process of varnishing an article which comprises depositing a removable protective film of latex onto the obverse surface of a layer of material to be applied to the article, said obverse surface having irregular surface configurations, applying the reverse surface of said layer to the surface of the article, varnishing desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from said obverse surface of the material.

17. The process of surface treating an article which comprises depositing a removable protective film from a fluid medium onto the obverse surface of a layer of rubber composition to be applied to the article, applying the reverse surface of the layer of rubber composition to the surface of the article, surface treating desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the obverse surface of the layer of rubber composition.

18. The process of varnishing a rubber article which comprises depositing a removable portective film from a fluid medium onto the obverse surface of a layer of rubber composition to be applied to the article, said obverse surface having a color generally contrasting with the color of the rubber article, applying the reverse surface of the layer of rubber composition to the surface of the article, varnishing the desired portions of the surface of the article and also portions of the surface of the protective film, and removing said film from said obverse surface of the layer of rubber composition.

19. The process of varnishing a rubber article which comprises depositing a removable protective film from a fluid medium onto the obverse surface of a layer of rubber composition to be applied to the article, said obverse surface having irregular surface configurations and being of a color generally contrasting with the color of the surface of the article, applying the reverse surface of the layer of rubber composition to the surface of the article, varnishing the desired portions of the surface of the article and also portions of the surface of the protective film, and removing said film from said obverse surface of the layer of rubber composition.

20. The process of surface treating a rubber article which comprises depositing a removable protective film of latex onto the obverse surface of a layer of rubber composition having irregular surface configurations and to be applied to the article, applying the reverse surface of said layer to the surface of the article, surface treating desired portions of the surface of the article and also portions of the surface of the protective film, and subsequently removing said film from the obverse surface of the layer of rubber composition.

THOMAS H. WAY.