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COMPOSITION AND METHOD FOR PREVENTING PUTTY STAINS

Roy E. Reno, Detroit, Mich.

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The present application is a continuation in part of copending application, Serial No. 558,836, filed January 13, 1956, now abandoned.

The invention relates to a composition and method for preventing putty stains on colored glass windows.

Colored glass windows are employed in buildings, principally office buidings and factories, to eliminate and/ or reduce glare from the sun. The color of the glass is obtained by acid etching prior to installation of the panes in their frames. The acid etching process leaves the window panes in such condition that when they are being installed in their frames linseed oil from the putty (used to hold each pane in its frame) gets onto the glass and into the etched surface so as to mark or stain it. Attempts at washing out this stain have been unsuccessful.

Under the present invention the linseed oil is prevented from staining the window pane by the application of a protective coating on the window pane prior to its installation in the frame. In order that the coating be effective for its intended purpose it must:

(1) Be impervious to linseed oil.

(2) Dry fairly soon after application on the pane so as to allow handling of the pane for installation purposes, and

(3) Be easily removable from the pane after installation.

An object of the present invention is to provide a coating composition having the above-identified characteristics.

Another object is to provide a method for preventing putty stains on etched glass, wherein the above discussed composition may be employed.

Other objects of this invention will appear in the following description and appended claims.

The coating composition of the present invention is preferably made up of:

16 to 32 parts by weight of liquid animal glue having a liquid-solids ratio of between 1 and 4,

1 to 2 parts by weight of powdered methyl cellulose or, liquid polyethylene glycol having a molecular weight in the range of 300 to 600,

48 to 128 parts by weight of water.

When methyl cellulose is being employed, the composition is made by first mixing the water and methyl cellulose together, and allowing the mixture to stand until it thickens. Thickening of the mixture usually takes place within 20 minutes. After the mixture thickens, the animal glue is added thereto. The composition may then be bottled and stored until needed, or used immediately.

When liquid polyethylene glycol is being employed the ingredients can be mixed together in any desired order.

The coating composition may be applied to an etched colored glass window pane by brushing or spraying. In the summer heat from the sun is sufficient to quickly dry the coating on the pane. In the winter a fan plus a heating lamp are sometimes required to quickly dry the coating. After the coating is dried on the pane the pane is installed in its frame. During installations the coating protects the pane from the linseed oil in the putty (which

is applied against the pane edges to hold the pane in the frame). The coating is relatively hard and adheres firmly to the pane so that when the pane is handled the coating does not rub off or otherwise permit linseed oil from the glazier's putty-coated fingers to stain the pane. After the pane is installed in the window frame the coating may be washed off of the pane by simply wiping water over the coating. In this connection it will be noted that the above composition requires animal glue; i. e. a glue which has the characteristic of dissolving in water after having been set or hardened on the glass.

The glue is primarily responsible for the protecting action of the coating. The methyl cellulose and polyethylene glycol contribute also to the protecting action, but the primary function of the cellulose and polyethylene glycol is to quickly harden the coating and prevent it from remaining sticky after application of the coating to the pane. The coating must harden in order that any stacked panes will not stick to one another, and in order that the panes can be handled by the glazier who installs the pane in the frame. If the coating were to be "flowable" or "disturbable" on the pane each time the glazier handled the pane the putty from his fingers would "fingerprint" the pane with a linseed oil stain.

The above specified proportions of glue, methyl cellulose, polyethylene glycol, and water may be varied while still obtaining some stain-preventing action. Generally however, when less than the specified proportion of water is employed, the coating remains tacky to the touch and refuses to dry as quickly as when the proportion of water is within the limits specified. It is not known exactly why a lessening of the amount of water produces a tacky condition but it is believed that a lesser amount of water causes the glue to become so thick that the air in the atmosphere is prevented from getting beyond the coating surface into the coating interior so as to dry said coating. The best results are obtained when the relative amount of water is about 80 parts by weight in the above specified composition. When more than the above specified relative amount of water is employed the coating becomes relatively thin and is less desirable from the stain-preventing standpoint.

The relative amount of glue employed depends to certain extent on the viscosity of glue used. For reasons of economy it is desirable to maintain the relative amount of glue as low as possible, and in this connection the relative amount of glue may be successfully held in the vicinity of 16 parts by weight when a relatively viscous liquid glue manufactured by the Le Page's Company of Glouster, Massachusetts and sold under the trade-name "Le Page's No. 31" is used. When other glue-like substances of lower viscosity are used it is necessary to increase the relative amount of glue up to about 32 parts by weight.

The proportions of methyl cellulose and polyethylene glycol may be varied slightly while still obtaining satisfactory results. Generally however, when more than the above specified amounts of methyl cellulose or polyethylene glycol are employed the coating for some reason tends to remain sticky or tacky after application to the window pane. Preferably therefore the amount of methyl cellulose or polyethylene glycol is limited to that specified above.

I claim:

1. A coating composition for protecting glass from putty stains consisting essentially of 16 to 32 parts by weight of liquid animal glue; 1 to 2 parts by weight of a material selected from the group consisting of methyl cellulose and polyethylene glycol; and 48 to 128 parts by weight of water.

2. A coating composition for protecting glass from putty stains consisting essentially of 16 to 32 parts by

weight of liquid glue having the characteristic of dissolving in water after once been hardened; 1 to 2 parts by weight of methyl cellulose and 48 to 128 parts by weight of water.

3. A coating composition for protecting glass from putty stains consisting essentially of 16 to 32 parts by weight of liquid glue having the characteristic of dissolving in water after once been hardened; 1 to 2 parts by weight of polyethylene glycol; and 48 to 128 parts by weight of water.

4. The method of protecting glass from putty stains comprising the steps of applying a mixture consisting essentially of 16 to 32 parts by weight of liquid animal glue, 1 to 2 parts by weight of a material selected from the group consisting of methyl cellulose and polyethylene glycol, and 48 to 128 parts of water to the glass prior to its installation in a frame; and after installation of the glass washing the mixture off the glass with an additional quantity of water.

5. The method of protecting glass from putty stains

comprising the steps of applying a mixture of 16 to 32 parts by weight of liquid glue having the characteristic of dissolving in water after once been hardened, 1 to 2 parts by weight of methyl cellulose, and 48 to 128 parts by weight of water to glass prior to its installation in a frame; and after installation of the glass washing the mixture off the glass with an additional quantity of water.

6. The method of protecting glass from putty stains comprising the steps of applying a mixture of 16 to 32 parts by weight of liquid glue having the characteristic of dissolving in water after once been hardened, 1 to 2 parts by weight of polyethylene glycol, and 48 to 128 parts by weight of water to glass prior to its installation in a frame; and after installation of the glass washing the mixture off the glass with an additional quantity of water.

References Cited in the file of this patent

UNITED STATES PATENTS

2,339,200	Sowa	Jan. 11, 1944
2,603,574	Holmes	July 15, 1952