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PAINT AND VARNISH REMOVER

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The present invention relates to the removal of paint and varnish from surfaces of wood, metal, or other material, and more particularly to a new liquid composition of matter suitable for such use.

An object of the present invention is accordingly to provide such a material that will be safe and effective to use, economical to manufacture, adapted to apply by conventional methods and substantially non-corrosive as regards such surfaces after the removal therefrom of paint and varnish and other materials of similar nature. Another object is to make such a compound that will be substantially free from the hazards of fire and combustion when used in the usual way under conditions that ordinarily obtain. Other objects and advantages will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the features hereinafter fully described and particularly pointed out in the claims, the following description setting forth in detail one approved combination of ingredients embodying our invention, such disclosed means constituting, however, but one of various forms in which the principle of the invention may be used.

Most compounds or mixtures of compounds of the type in question in present use consist of a solvent, e. g. benzol, in which is dissolved a wax, fat, or fatty acid or other protective skin forming, evaporation retarding material and a paint solvent such as acetone. By use of a brush or cloth, the compound or cleaner is then applied to the paint or varnish to be removed, which in turn softens or dissolves so that it may be scraped off with a scraper or rubbed off with a cloth. In many of these paint and varnish removers the volatile constituents thereof soon evaporate, and unless a scraper follows very closely after the applying of the remover the paint or varnish again becomes hard and resistant and more of the remover has to be applied, which is expensive and wasteful. Very often too these cleaning compounds become grainy upon standing and hence less effective to use and difficult to apply. Many of them also, are dangerous to use because of the liability incurred due to fire or explosion. The alkali type remover is of limited utility, due both to the danger of injuring a surface to which such cleaning agent is applied, and to the inconvenience and danger of bodily injury to which a user must expose himself when applying such highly corrosive agent.

We have discovered that a composition of matter consisting of a mixture of ortho-dichlorobenzene, acetone, benzene, carbon tetrachloride and propylene dichloride in varying proportions constitutes an effective and economical remover of paint and varnish and of other material of similar nature. Not only is the same safe to apply, but, on account of the so called "wetting" characteristic of the ortho-dichlorobenzene, the evaporation of the other constituents of the mixture is thereby retarded, the material to be removed is maintained in a softer and more easily removable condition, and the volatile dissolving elements of the composition are conserved to a considerable extent. This allows a wider range of use of our cleaning agent to the workmen employing the same, for a much thicker coating of varnish or paint can be softened and removed at a single effort. Furthermore, the surface of the wood or metal is left in a clean and satisfactory condition. In the case of wood or similar material there is the added advantage that a portion of the ortho-dichlorobenzene is absorbed therein and the surface of the wood to an appreciable depth is thus made resistant to the ravages of insects or other organisms, which may be imbedded therein or may seek to gain entrance into the pores thereof during the interval of time between the cleaning of the surface and the application of a new coating of varnish or paint. This portion of the ortho-dichlorobenzene retained in the wood, although small in amount and entirely without effect on the new coating of paint applied thereto, is yet sufficient to effect a substantial result in the respect just described. It is also noted that ortho-dichlorobenzene alone, or when mixed with propylene dichloride, forms an effective solvent and remover of paint, varnish and substances similar in character. Our new composition of matter may be thought of as a mixture of ortho-dichlorobenzene and propylene dichloride dissolved in other suitable paint or varnish solvents. Both carbon tetrachloride and propylene dichloride are well adapted to be used in such a compound because of their well recognized qualities as solvents and as fire extinguishers. Both are readily substituted for much more costly solvents, such as acetone, with satisfactory results. Mono-brom methane may be substituted under certain conditions for either carbon tetrachloride or propylene dichloride in whole or in part, or other well recognized solvents such as amyl ester, etc., may be substituted for acetone when such solvent is included in the

mixture. The ortho-dichlorobenzene used may be of technical grade and thus include small amounts of mono-chlorobenzene, para-dichlorobenzene, or the higher chlorinated derivatives of benzene.

The following are examples of preferred compositions of matter in parts by volume of the several constituents embodying our invention:—

Example 1

Ortho-dichlorobenzene ----- 7 parts
 Propylene dichloride ----- 6 parts
 Benzene ----- 1 part
 Carbon tetrachloride ----- 1 part

Example 2

Ortho-dichlorobenzene ----- 1 part
 Propylene dichloride ----- 3 parts
 Benzene ----- 1 part
 Carbon tetrachloride ----- ½ part
 Acetone ----- ½ part

The mixture shown in Example 1 may advantageously be used where the paint or varnish layer to be removed is thick and where a long time of contact therewith of the solvent action is required. This applies especially in the case of wood or fiber composition surfaces. Example 2 is best adapted to use where the paint or varnish covering is thin and may be removed more quickly, as on metal or glazed surfaces.

All of the several compounds composing our paint and varnish remover are liquids which may be handled and mixed in the usual way for such materials. Also, when mixed together a stable liquid with a low freezing point is obtained, varying of course with the relative proportions of the several compounds used. The same may be applied with a brush or cloth to the surface to be cleaned and the paint or varnish thus softened is then removed in the usual manner. The surface thus treated will be clean from paint and varnish and uninjured in any way.

We have described a paint and varnish remover that is adapted to be used under the usual conditions imposed. It has the added features of being substantially free from the hazards of fire and explosion. By securing a longer "wetting" time the more volatile constituents of our paint and varnish remover are

retained longer with a consequently superior result at less cost, and in the case of wood or fiber the added security against insect ravages and attack of other organisms in the outer layers thereof is meanwhile obtained. The constituents composing our compound are comparatively inexpensive, readily available and require only a minimum of equipment for compounding and application.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the materials employed, provided the ingredients stated by any of the following claims or the equivalent of such stated ingredients be employed,

We therefore particularly point out and distinctly claim as our invention:—

1. A paint and varnish remover comprising ortho-dichlorobenzene and propylene dichloride.

2. A new composition of matter for removing paint, varnish, and substances similar in character consisting of a mixture of ortho-dichlorobenzene, propylene dichloride, benzene, carbon tetrachloride and acetone, the combined volumes of the ortho-dichlorobenzene and propylene dichloride of said composition of matter exceeding that of the combined volume of the other constituents thereof.

3. A paint and varnish remover consisting of a mixture of seven (7) parts ortho-dichlorobenzene, six (6) parts propylene dichloride, one (1) part benzene and one (1) part carbon tetrachloride, all parts being by volume.

4. A paint and varnish remover consisting of a mixture of one (1) part ortho-dichlorobenzene, three (3) parts propylene dichloride, one (1) part benzene, one-half (½) part carbon tetrachloride and one-half (½) part acetone, all parts being by volume.

5. A paint and varnish remover consisting of ortho-dichlorobenzene and propylene dichloride and a paint and varnish solvent selected from the class consisting of benzene, carbon tetrachloride, and acetone, the combined volumes of the ortho-dichlorobenzene and propylene dichloride exceeding the volume of said paint and varnish solvent.

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