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WATERPROOFING SOLUTION FOR GLUE

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This invention relates to glue, and particularly to the preparation of a waterproofing solution for glues as now used in the wood working and plywood industries; it being the principal object of the invention to provide a waterproof glue. It also is an object of the invention to provide a solution that may be added to the glue after the latter has been prepared for use and which will combine with the glue to render it waterproof.

I have discovered, by experiment, that waxes, which may be of mineral, animal, vegetable or artificial origin, dissolved in a suitable solvent, or solvents, may be mixed with glues containing animal or vegetable casein or protein and will render the glue and the joint made by the glue impervious to water or moisture; the theory of the action being that after the glue has dried between the joined surfaces the dissolved wax forms a film about the dry glue and also fills the pores in the surfaces joined so as to prevent the entry of water or moisture which would destroy the function of the glue.

The desirability of a waterproof glue is readily apparent, especially for use in the manufacture of plywood products which are to be exposed to weather and changing climate conditions.

In carrying out the invention, I prefer to use a paraffine wax as the waterproofing agent because of its being relatively inexpensive, although other forms of wax may be used. The wax is dissolved in carbon bisulphide alone, or a mixture of carbon bisulphide and carbon tetrachloride; the latter not being absolutely essential but is added for the purpose of rendering the solution fire-proof as a factor of safety. The carbon bisulphide, while being a ready solvent for the wax, also has a well-known chemical action in combining with vegetable proteins and caseins, forming a sulphur compound and also forming insoluble compounds with heavy metals.

In preparing the waterproofing solution for the glue, it has been found that eight parts, by weight, of carbon bisulphide and eight parts, by weight, of carbon tetrachloride mixed together with one part, by weight, of wax dissolved therein are very satisfactory proportions, although these may be varied as required to best suit the various kinds of glue with which it is to be mixed. The solution is added to the glue after the latter has been properly prepared; the most desirable proportion being three pounds of the solution to one hundred pounds of dry glue, the term "dry glue" being used to designate the mass of glue in a dry state prior to its being

softened and rendered liquid for use by mixing it with hot or cold water according to the directions given for mixing any particular glue used.

As examples of the use of this solution in glues are the following:

Example 1.

100 lbs. dry casein glue.
225 lbs. cold water.
3 lbs. of solution.

Example 2.

100 lbs. of dry vegetable protein glue.
325 lbs. of water (either cold or hot).
3 lbs. of solution.

The proportions above given may be varied within reasonable limits.

It is to be understood that in the preparation of the waterproofing solution, solvents other than those above mentioned may be used but those mentioned have been found to be most desirable, and it is to be understood also that the proportions of the substances used in preparing the solution and also those used in mixing the glue with the waterproofing solution may be varied.

The solution is inexpensive and readily prepared, and readily mixes with the liquefied glue and, when mixed therewith in the proper proportion, gives a very superior waterproof glue. It has been further discovered that this waterproofing solution, on account of its wax content, has a very beneficial effect on the working qualities of the glue, making it spread more evenly and eliminating foam in the glue.

Having thus described my invention, what I claim as new therein and desire to secure by Letters-Patent, is:

1. An adhesive consisting of liquefied glue mixed with a solution consisting of wax dissolved in carbon bisulphide and carbon tetrachloride.

2. An adhesive consisting of liquefied glue mixed with a solution consisting of one part carbon bisulphide, one part carbon tetrachloride and one-sixteenth part wax.

3. The method of preparing waterproof glue, which consists of mixing with one hundred parts liquefied glue three parts of a solution consisting of one part wax dissolved in eight parts carbon bisulphide and eight parts carbon tetrachloride.

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