

UNITED STATES PATENT OFFICE.

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GLUE AND METHOD OF PREPARING THE SAME.

No Drawing.

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To all whom it may concern:

Be it known that WILLIAM R. LONG, a citizen of the United States of America, residing in the city of St. Louis and State of Missouri, has invented certain new and useful Improvements in a Glue and Method of Preparing the Same, of which the following is a specification.

The object of my invention is to produce glue and a method of manufacturing it, which will be inexpensive and produce a glue that is practically odorless, will not jell, but will remain in a flowing liquid condition, one that can be used hot or cold and that can be shipped in liquid condition.

A further object is to produce a vegetable glue which will prevent practically all of the warping that now takes place in boxes in which ordinary glue is used; one that will hold labels to tin or other metal and imitation leather and cloth to sheet metal, leather to leather, etc. The conventional method of manufacturing vegetable glue is the following:—

To 100 pounds of starch impregnated with muriatic acid, 1000 pounds of starch or tapioca flour or a mixture of both is added. This mixture is placed in a revolving drum which is continually rotated, during which operation it is subjected to heat until the material tests 4 to 1, i. e., four parts of water and one part of glue. After this test point is reached, a sufficient amount of soda ash is added so as to neutralize the acid originally contained in the impregnated starch. During this operation, the application of heat is discontinued. Twelve per cent by weight of borax is then added, which acts as an emulsifier. The batch is then removed and cooled, when it is ready to be bagged.

If liquid glue is desired, the above dry glue may be mixed with water and maintained at a temperature of 212 degrees Fahrenheit until the proper consistency is obtained.

A suitable mixture of canary corn dextrine, tapioca cream dextrine, tapioca gum, corn starch gum, glucose, glycerine, borax, soda ash, cooked in sufficient water to produce a gravity test of 25 degrees at boiling on a Beaumé syrup hydrometer, will also produce a good vegetable liquid glue.

In these and other methods, the materials used are relatively expensive and the results obtained are unsatisfactory in that they fail partially or entirely in accomplishing my objects as heretofore outlined.

With these and other objects in view, my invention has relation to certain novel features of composition and method of manufacture that will be hereinafter described and pointed out in the claims.

Nearly all mineral matter, such as lime, barytes, talc, magnesia and cement is more or less plastic when mixed with water in the proper proportion. If such a substance of the proper texture could be found that was cheap enough in price to be used in glue, it would materially reduce the cost of the glue and improve its quality. After a great many experiments, applicant has found that kaolin (Georgia clay) hydrous aluminum silicate meets all of these requirements. The kaolin has been used in varying proportions by applicant but he finds that the best results are obtained with about equal parts by weight of dry glue and kaolin. This substance blends perfectly with the glue inasmuch as there is no separation between the glue proper and the kaolin and there is no grit. The mixture is so perfect that any difference in smoothness of body is not apparent when spread on a surface in a thin film. The product applicant has produced is almost snow white when liquefied. The plasticity of the kaolin and the fact that it blends so perfectly with the glue is largely responsible for its advantageous properties.

The use of glue as a binder in coating for paper and sizing is not new but in applicant's product it is not a question of glue as a binder but of making an actual gluing substance out of a plastic material. It is safe to state that this product will reduce the cost of glue to the manufacturer 40 to 50 per cent.

My method of manufacture consists in producing the ordinary glue as outlined herein or as used in the manufacture of conventional animal glue and adding an equal amount of pulverized kaolin after which borax is added, heating, and mixing until the entire mass is homogeneous, and then permitting it to cool, when it is ready to be

placed in bags or other containers. Any other plastic material having similar qualities to kaolin may be used instead of kaolin.

What I claim and mean to secure by Letters Patent is—

1. A glue consisting of glue and kaolin in equal amounts by weight.

2. A process of preparing a glue which consists in mixing glue with an equal amount of kaolin, and agitating in the presence of heat to produce a homogeneous mixture. 10

In testimony whereof I affix my signature.

WILLIAM R. LONG.