

UNITED STATES PATENT OFFICE.

NATHANIEL B. AUKERMAN, OF INGRAM, PENNSYLVANIA.

NON-CURLING ADHESIVE FOR MOUNTING PHOTOGRAPHS, &c.

No. 906,499.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, NATHANIEL BARNHART AUKERMAN, a citizen of the United States, residing at Ingram, in the county of Allegheny and State of Pennsylvania, have invented a new and useful composition of matter in the form of a non-curling adhesive to be used for the purpose of mounting photographs, engravings, scrap-pictures, or in any case where expansion and contraction are to be overcome, thus avoiding warping or cockling.

The principal objection to pastes and other adhesives heretofore on the market has been the large percentage of water which they contain, the moisture expands the article to be mounted and on drying contracts which warps the mount to such extent as to make it impractical to use in many cases. Also water mixed adhesives will strike through into the mount and are very liable to dissolve and distribute to the print injurious chemicals which will ruin it irredeemably often destroying a work which is invaluable and cannot be replaced.

It will be observed that in my formula and process hereinafter described that I have reduced the amount of water to a very low percentage. The small amount of water remaining is held in subjection by other non-expanding ingredients.

My composition consists of the following ingredients, combined in substantially the proportions given and in the manner specified, viz.

Glue (No. 1 white flake).....	18 ozs.
Alcohol (wood or grain).....	63 ozs.
Nitric acid C. P.....	7 drams
White dextrin.....	45 ozs.
Glycerin.....	12 ozs.
Perfume (Essence of peppermint) (Oil of lavender) } equal parts.....	2 drams.

No. 1 white glue is specified in formula. Other forms of glue, however, work successfully and may be used, if so desired.

These ingredients are combined in the following manner: The glue is immersed for thirty seconds in a three per cent. solution of nitric acid made by adding three ounces of nitric acid to one hundred ounces of cold water, after which it is drained of all surplus fluid and allowed to remain tightly covered for twelve or still better twenty four hours. This allows the moisture to thoroughly penetrate the glue which aids in its dissolving, also aids it in combining with the other ingredients. Ordinarily the glue will become

liquid by heating after this treatment, if however the glue flakes are of such thickness that the former treatment will not suffice then it may be again immersed and drained immediately. The glue treated as above is now placed in a double boiler or similar arrangement where an even temperature may be maintained not to exceed the boiling point, which will bring the glue to a liquid mass.

When thoroughly melted, the alcohol containing the nitric acid is added slowly while the mass is violently agitated or stirred, the mixture in the meantime being allowed to cool gradually until it has reached a temperature of eighty degrees Fahrenheit on the final addition of alcohol. The dextrin is then added which having a strong affinity for water takes up the moisture contained in the mixture which in turn is held imprisoned by the glycerin which follows. The glycerin also prevents adhesive from drying too rapidly when being used.

The perfume specified makes an agreeable combination however essential oils as desired may be used.

In using the above named composition it is essential that the article to be mounted be thoroughly dry, the adhesive is then applied with bristle brush or finger as in the case of ordinary adhesives or pastes. Owing to its lack of water it will not make the print limp therefore it is necessary to keep it in contact with mount under pressure until paste sets which will take place in a few minutes.

Photographs etc. mounted with this preparation retain all their natural luster and brilliancy and on account of its peculiarly dry consistency does not strike through either print or mount but instead only adheres to each thereby forming a wall of protection between the two thus preventing injurious chemicals in mount from escaping into the print which is a valuable feature owing to its being a well known and deplorable fact that hyposulfite of soda and other chemicals used in the manufacture of card boards and papers is the mortal enemy of nearly if not all photographic processes.

I am aware that compositions consisting principally of glue and alcohol have been used, these however to my knowledge all contained enough free moisture as to render them unsuccessful and impractical to use owing to their not maintaining a working con-

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sistency when cold and on heating became so thoroughly liquid as to make it impractical if not impossible to do clean careful work.

5 My composition while affected to some extent by high or low temperatures may be so adjusted as to adapt it to varying climates or seasons, this is accomplished by increasing or diminishing the quantities of nitric acid and glycerin.

10 I claim.

1. The herein described composition of matter consisting of glue, alcohol, nitric acid, dextrin, glycerin and perfume substantially as described and for the purpose specified.

2. The herein described composition of matter for mounting photographs, engravings or in any case where expansion and contraction is to be avoided consisting of glue, eighteen ounces, alcohol sixty three ounces, nitric acid seven drams, white dextrin forty five ounces, glycerin twelve ounces, oil of lavender and essence of peppermint equal parts two drams substantially as described.

N. B. AUKERMAN.

Witnesses:

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