Patented Feb. 9, 1943 2,310,292

UNITED STATES PATENT OFFICE

2,310,292

GUMMED BODY

Ferdinand W. Humphner, Oak Park, Ill., assignor to Mid-States Gummed Paper Co., Chicago, Ill., a corporation of Delaware

No Drawing. Application August 5, 1940, Serial No. 351,550

5 Claims. (Cl. 117—76)

This invention relates to gummed bodies and more particularly to providing surfaces of a body with layers of adhesive to make the same resistant to higher humidities.

Re-moistening type gummed tape, labels, etc. are today manufactured by applying dextrine, animal glue or other highly water-soluble adhesive to the paper strip and drying the same. The product is cheap and satisfactory in many respects but its life is often short and rolls of the product are often destroyed by reason of higher humidities. The humidity of the air or room is often sufficiently high to cause the tape or strip to adhere or become blocked by its own weight or pressure, thus rendering the product unuseable.

An object of the present invention is to provide simple and inexpensive means whereby a gummed body product may be assured of long life and may be safeguarded against becoming blocked or adhered by reason of high humidities, etc. A further object is to provide a means and method whereby adhesive tape, labels, wrappers and other products which are provided with inexpensive adhesive layers may still be manufactured in the usual economical manner while at the same time being protected against higher humidities. Other specific objects and advantages will appear as the specification proceeds.

In the practice of my invention, I prefer to manufacture the tape, labels or other products in the usual manner, applying by means of regular equipment a coating of adhesive materials such-as dextrine, animal glue and combinations of both to any ordinary or suitable paper. After the coating has been thus formed, I apply a very lightweight coating of a humidity resistant adhesive. The second coating may be either a continuous or discontinuous film and may be applied in any desired thinness or thickness.

Any suitable humidity-resistant material which can be rendered ineffective by the application of water is found to be satisfactory. By way of example, polyvinyl alcohol may be employed since it is resistant to higher humidities while at the same time, it is sufficiently water-soluble to dissolve when water is applied thereto.

A specific procedure illustrative of the method and product may be set out as follows:

A polyvinyl alcohol, ranging in coating weight from one-half pound to two pounds or heavier may be employed, the coating being of a suitable concentration depending on the type of equipment used and the material or adhesive applied. For most general types of application, I find that a concentration in which ninety parts are water and ten parts polyvinyl alcohol, is satisfactory. After the main adhesive coating has been applied and allowed to dry, a thin coating of polyvinyl alcohol in a suitable concentration, as described above, is applied and allowed to dry. The product may then be rolled or otherwise formed for shipment.

In operation, it is found that the protective coating prevents the more sensitive or active adhesive base from being brought into action even when subjected to high humidity, thus preventing the product from becoming blocked or adhered prior to the time when it is desired to use it. The product may thus be preserved over long periods of time and under adverse humidity conditions without deterioration. When it is desired to apply the product, the surface is moistened with water, thus causing the protective film to disintegrate, the excess water being taken up by the main adhesive base or layer and thus brought into action. The tape, label, or other product with the main adhesive layer thus rendered active may be applied to another surface. It will be noted that the outer adhesive film, which is resistant to humidity conditions, and which breaks down under the direct application of water, disintegrates with geometric rapidity after the application of water because of the quick dissolving action of the layer therebelow supporting it. Thus we find a product which is quick to become effective as an adhesive tape, label, etc., upon the application of water but which prior to such application is resistant to higher humidities, etc.

By referring to water-soluble adhesives, adhesives which are dispersed in water rather than actually dissolved are, of course, intended to be included. Most of the gummed adhesives being of a colloidal nature are actually dispersed in water rather than dissolved, and such adhesives are intended to be used in the water-soluble layer of applicant's product.

While in the foregoing disclosure, I have set forth one mode of preparing the product, it will be understood that a wide variation in the materials, etc. and in the composition of the layers employed may be used by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A gummed body having a surface thereof provided with a layer of highly water-soluble adhesive, and a thin layer of polyvinyl alcohol over said first-mentioned layer.

2. A gummed body having a surface thereof provided with a layer of active water-soluble adhesive substantially non-resistant to high humidities, and a very thin continuous coating of polyvinyl alcohol thereon, the coating of polyvinyl alcohol serving to protect the adhesive layer therebeneath from humidity while being dissolved readily upon the application of water.

3. A gummed body having a surface thereof provided with a layer of highly water-soluble adhesive, and a thin layer of polyvinyl alcohol over said first-mentioned layer, the polyvinyl alcohol being water-soluble but resistant to humidity.

4. A gummed body having a surface thereof provided with a layer of active water-soluble animal glue substantially non-resistant to high humidity, and a thin coating of polyvinyl alcohol thereon, the polyvinyl alcohol being water-soluble but humidity-resistant whereby the glue layer is protected from humidity while being dissolved readily upon the application of water.

5. A gummed body having a surface thereof provided with a layer of a water-soluble dextrine adhesive substantially non-resistant to high humidity, and a very thin continuous coating of polyvinyl alcohol on said layer, the coating of polyvinyl alcohol being water-soluble but resistant to humidity whereby the dextrine adhesive layer is protected from humidity while being readily dissolved upon the application of water.

FERDINAND W. HUMPHNER.