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HECTOGRAPH BLANKET HAVING A COPY
MASS CONTAINING A BILE SALTRobert W. Tatge, Chicago, Ill., assignor to Ditto,
Incorporated, Chicago, Ill., a corporation of
West VirginiaNo Drawing. Application August 8, 1942,
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5 Claims. (Cl. 117—35.6)

This invention relates to a method of obtaining an improved bond between a plasticized gelatin mass and a backing, and more particularly relates to a hectograph blanket having a copy mass securely bonded to a backing through an intermediate bonding layer of a drying oil.

A principal object of the invention is to provide a hectograph copy mass which is securely bonded to a drying oil coated backing.

Other objects and advantages of the invention will become apparent as the following detailed description progresses.

Linseed oil and other types of drying oils when applied as a thin film to a fibrous sheet and after drying to a point where there is just a slight noticeable degree of tack, have the property of adhering tightly to a gelatin mass when the latter is applied as a hot melt and allowed to cool. If, however, this film of linseed oil has not been allowed to dry to the proper degree of tack, or if it should be allowed to dry beyond this optimum, as often occurs when a batch of backing material is held over from the previous day, the bond of the finished hectograph roll may be poor. Also there may be spots in the roll where, due to the lack of uniformity of the backing material, the drying oil has penetrated into the fibers, thereby resulting in imperfect bond on these places. This type of imperfection is known as spotty bond. Then too the gelatin mass itself may for reasons of copy brightness, ease of paper stripping, etc., contain added ingredients which by their very nature tend to interrupt this bond. As a general rule, it may be said that hydrophobic materials such as mineral oil, hydrocarbons, waxes and resins tend to impair the quality of this bond.

I have found that the addition of a small percentage of animal bile to the gelatin mass provides for the formation of a very good bond between the drying oil film and gelatin mass, even under such adverse conditions as described above. Animal bile is composed chemically of inorganic salts, bile pigments and salts of the various bile acids. After further experimentation, I discovered that the salts of the bile acids comprise the active ingredients in this capacity.

The amount of bile which will impart good bond to a gelatin mass may be varied within wide limits, but preferably the bile should be present in minor amount in the gelatin mass. Amounts of solid bile between .1% and 5% have been found effective. The pure bile salts are effective even in smaller quantities than .1%, such as, for example, .05%.

Suitable animal biles include ox-gall (a liq-

uid bovine bile), hog bile concentrates (prepared by Wilson & Company, Chicago), and ox bile concentrates.

Suitable bile salts which have been tried and found to work effectively include the following:

- Sodium glycocholate
- Sodium alpha-hyodeoxycholate
- Sodium alpha-glycohyodeoxycholate
- Potassium glycocholate
- Potassium alpha-glycohyodeoxycholate
- Potassium desoxycholate
- Sodium taurocholate
- Sodium chenodesoxycholate

Examples of hectograph compositions which embody the features of this invention are given in the following examples, it being understood that these examples illustrate several embodiments which have given satisfactory results and are not intended to restrict the invention thereto:

Example A

	Parts
25 Gelatin	150
Water	224
Glycerin	1,550
Ethylene glycol	200
Custard (10 parts corn starch, 20 parts glycerin, 20 parts water)	150
30 Gluflax	200
Hog bile solid	10

Example B

	Parts
35 Gelatin	150
Water	225
Glycerin	1,550
Hercolyn	200
Ox gall solution (20% solids)	50
40 Custard (10 parts corn starch, 20 parts glycerin, 20 parts water)	200

Example C

	Parts
45 Gelatin	150
Water	225
Glycerin	1,550
Petrex resin	30
Ox gall solution (20% solids)	20

Example D

	Parts
50 Gelatin	150
Water	225
Glycerin	1,650
55 Methyl oleate	100
Ox gall solution (20% solids)	20

In the above compositions, the term Gluflex is the trade name for an 80% invert sugar solution made by the Numolin Co. The term Hercolyn is the trade name for dihydromethylabietate, made by the Hercules Powder Company. Petrex is the trade name for a resinous polybasic acid of terpene origin made by the Hercules Powder Company.

In place of the solid animal bile used in the above examples, any of the bile salts mentioned above may be substituted in about half the proportion of the animal bile with substantially the same results.

All the above compositions are difficult to bond to a drying oil coated backing without the animal bile or bile salts. All give excellent bond when prepared as above stated.

While there have been shown and described certain embodiments of the invention, it is to be understood that it is capable of many modifications. Changes, therefore, may be made without departing from the spirit and scope of the invention as described in the appended claims, in which it is the intention to claim all novelty inherent in the invention as broadly as possible, in view of the prior art.

I claim:

1. A hectograph blanket comprising a backing, a gelatinous copy mass comprising gelatin and containing a bile salt, and an intermediate bonding layer comprising a drying oil.
2. A hectograph blanket comprising a backing, a gelatinous copy mass comprising gelatin and containing an animal bile, and an intermediate bonding layer comprising a drying oil.
3. A hectograph blanket comprising a backing, a gelatinous copy mass comprising gelatin and having a minor proportion of a bile salt dissolved therein, and an intermediate bonding layer of a drying oil.
4. A hectograph blanket comprising a fibrous backing, a gelatinous copy mass comprising gelatin and containing a relatively small percentage of a bile salt, and an intermediate bonding layer of linseed oil.
5. A composite product comprising a layer of plasticized gelatin containing a bile salt, a backing, and an intermediate bond layer of a drying oil.

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