Patented Apr. 2, 1940 2,195,926

UNITED STATES PATENT OFFICE

2,195,926

HECTOGRAPH MASS CONTAINING COLOR INTENSIFIERS

William Hoskins, Jr., La Grange, Ill., assignor to Ditto, Incorporated, Chicago, Ill., a corporation of West Virginia

No Drawing. Application January 31, 1938, Serial No. 187,911

11 Claims. (Cl. 41—31.6)

The invention relates to the art of duplicating. More particularly, it relates to hectograph duplicating devices, hectograph duplicating compositions and to the reproduction of color designs from such duplicating devices and compositions.

An object of the invention is to provide an efficient and inexpensive hectograph mass for duplicating purposes.

Another object is to provide a duplicating mass from which copies of high color intensity may be prepared.

One form of the invention is a gelatinous duplicating mass of the hectograph type containing a salt of a hydroxy acid.

The gelatinous duplicating mass may suitably comprise an albuminous substance such as glue or gelatin, water, and a water-soluble salt of a hydroxy acid, compatible with glue or gelatin, such as sodium lactate, sodium oxy-butyrate, sodium citrate, and ammonium lactate. Preferably, however, it will also contain a water soluble high boiling liquid plasticizer such as glycerine or ethylene glycol.

The proportion of solvent and plasticizer (glycerine, water and salt of hydroxy acid) to binder (glue or gelatin) may vary widely. Preferably, however, the ratio of solvent and plasticizer to binder should be within 5 to 20 times the weight of the binder. This ratio will give a commercially suitable hectograph blanket.

By way of illustration, several suitable formulae for hectograph blankets are given in the following table:

Ingredients	Example I	Example II	Example III
	Parts by weight	*Parts by weight*	*Parts by weight*
Gelatin	30	30	30
Water	45	45	45
Glycerine	250	200	
Sodium lactate	100	20	100
Invert sugar		80	
Diethylene glycol			250

Other suitable formulae are given in the following table:

	IV	V	VI
Sodium, potassium or ammonium lactate	50-25	50-25	
Invert sugar	50	50	
Gelatin			30
Glue (disaggregated gelatin)	30	30	
Water	60	60	75
Glycerine	200	160	300
Sodium citrate			30

It will be understood that the above gelatinous compositions may be adhered to a flexible backing to form a duplicating roll constituting another embodiment of this invention.

Copies of color designs may be made from the compositions of this invention by carrying out the steps of the ordinary hectograph process. In this process a design formed of a soluble dye is applied to a sheet by writing, typing or the like. This sheet with the design is called the master copy. The design of the master copy is then contacted with the duplicating mass, whereupon the dye of the design is largely transferred to the duplicating mass. Copies are then made by contacting copy sheets with the design on the duplicating mass.

The invention makes it possible to produce a large number of color designs of high color intensity. As far as is known, the copies are much brighter than have hitherto been made by the use of prior art gelatinous duplicating masses of similar desirable mechanical and weather resisting properties.

While there have been shown and described certain forms of this invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement 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.

In the claims the term "gelatin" is intended to include ordinary glue, sometimes called impure gelatin, but which more strictly is a decomposition product resulting from the breakdown of gelatin molecules into molecules of less molecular weight.

I claim:

1. A hectograph blanket of such shape and flexibility as to be capable, when secured to a flexible backing, of being wound into a roll and used in a hectograph machine, said hectograph blanket having incorporated therein a salt of a hydroxy acid as a color intensifier.

2. A hectograph blanket of such shape and flexibility as to be capable, when secured to a flexible backing, of being wound into a roll and used in a hectograph machine, said hectograph blanket comprising an albuminous substance and a water soluble salt of a hydroxy acid.

3. A hectograph blanket of such shape and flexibility as to be capable, when secured to a flexible backing, of being wound into a roll and used in a hectograph machine, said hectograph blanket comprising gelatin, water, a polyhydroxy

alcohol and a water soluble salt of a hydroxy acid.

4. A hectograph blanket of such shape and flexibility as to be capable, when secured to a flexible backing, of being wound into a roll and used in a hectograph machine, said hectograph blanket comprising gelatin, water, glycerine and a water soluble salt of a hydroxy acid.

5. A hectograph blanket of such shape and flexibility as to be capable, when secured to a flexible backing, of being wound into a roll and used in a hectograph machine, said hectograph blanket comprising gelatin, water, glycerine and an alkali metal salt of a hydroxy acid.

6. A hectograph blanket of such shape and flexibility as to be capable, when secured to a flexible backing, of being wound into a roll and used in a hectograph machine, said hectograph blanket comprising gelatin, water, glycerine and an alkali metal salt of lactic acid.

7. A duplicating roll comprising a backing in the form of a flexible band, having secured thereto a gelatinous duplicating mass comprising gelatin, water, glycerine and a salt of a hydroxy acid.

8. A duplicating roll comprising a backing in the form of a flexible band, having secured thereto a gelatinous duplicating mass comprising gelatin, water, glycerine and sodium lactate.

9. A duplicating roll comprising a backing in the form of a flexible band, having secured thereto a gelatinous duplicating mass comprising gelatin, water, glycerine and an alkali metal salt of a hydroxy acid.

10. A hectograph composition comprising gelatin, water and a plasticizer including diethylene glycol and a water soluble salt of a hydroxy acid, the amount of water and plasticizer to gelatin being within approximately five to twenty times the weight of the gelatin.

11. A hectograph composition comprising the following ingredients in the weight proportions stated: gelatin, 30, water, 45, sodium lactate, 100, diethylene glycol, 250.

WILLIAM HOSKINS, JR.