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UNITED STATES PATENT OFFICE

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COATED PAPER

REISSUED

No Drawing. Original application filed March 19, 1924, Serial No. 700,426. Divided and this application filed April 8, 1925. Serial No. 21,700.

Coated papers are ordinarily employed in instances where the outline of a printed picture or of type is desired to have great clearness. The requisite of such paper is that its surface should resist the absorption of ink and color, and it is also necessary for the coated paper to have a high resistance to wear and to tearing even after the paper has been flexed a great number of times. It has been the practice to treat the surfaces of suitable papers with mixtures of fine clays or other inert mineral substances with or without a pigment, and with an adhesive. Casein has ordinarily been employed as an adhesive, and is usually preferred over glue and starch. Papers made with such combinations have been used with some success, but are ofttimes expensive and not infrequently too low in resistance to the penetration of ink and color.

The object of the present invention is to provide a coated paper which has a higher resistance to ink absorption than the papers heretofore produced and which has more strength and better flexing properties, while at the same time having a high degree of adhesion between the coating and the paper itself. Another object of the invention is to provide a coated paper which has been prepared by coating paper with a mixture of a suspension of rubber in water and a filling material, together with an adhesive of the resin type which has been rendered dispersable in water.

With a preferred example in mind, but not desiring to place undue limitations upon the invention beyond what may be required by the prior art, the invention consists in treating paper with a mixture of a rubber dispersion and filling material including a resin product. More particularly the invention comprises treating paper with a mixture of a rubber latex, a filling material and a shellac product. As an example of the preferred embodiment of the invention, the following may be employed: 15 pounds of shellac are dispersed in 3 gallons of water containing 3 pounds of borax. With this 100 lbs. of finely divided clay are carefully mixed. To the resulting mixture sufficient rubber latex, containing approximately 1% of ammonia as a preservative, is added to produce 10 lbs. of rubber solids in the mixture. The resulting mixture is then applied in the usual manner to paper, to produce a coated paper.

The appearance of the coated papers produced by the above processes is similar to the appearance of other commercial coated papers, but their properties are quite different. The papers of the present invention resist absorption or blotting of ink 5 to 15% greater than other coated papers. In addition they are superior to the ordinary coated papers in resistance to wear. As an index to the increase in strength of paper the following data determined by the folding test was obtained on papers of equal weights:

Rubber solids	Other components	Folding test			
		Number of times folded before tearing occurred			
		Not calendered		Calendered	
		Machine	Cross	Machine	Cross
None	Case in 20 lbs. Clay 100 lbs.	Folded 13 times	Folded 5 times	Folded 33 times	Folded 6 times
10 lbs.	Borated shellac 10 lbs. Clay 100 lbs.	Folded 38 times	Folded 21 times	Folded 93 times	Folded 37.5 times

This application is a division of Serial No. 700,426, filed March 19, 1924.

The above folding data was obtained according to standard procedure on a Schopper machine.

The rubber content may be reduced to 5% if desired. Other finely divided mineral substances such as satin white, blanc fixe, Paris white and other products may be used instead of the clay. Generally speaking better results may be obtained when the total quantity of rubber solids plus other binder is present in amounts greater than 12% of the weight of the clay or other filler, although this may vary somewhat depending upon the kind of clay.

Material for carrying out subsequent vulcanization may be added to the coating mixture or may be applied before, during or after coating, and vulcanization carried out, preferably below 200° F. Other resins or lacs of the same general nature as shellac may be employed, and the invention also comprehends the use of other dispersion agents for the shellac. Borax, however, is quite satisfactory and possesses the additional advantage of being relatively inexpensive.

Having thus described our invention, what we claim and desire to protect by Letters Patent is:

1. A coated paper consisting of paper coated with a mixture of rubber latex and filling material including a shellac product and a dispersing agent therefor.

2. A coated paper consisting of paper coated with a mixture of rubber latex and filling material including a borated shellac.

3. A coated paper consisting of paper coated with a mixture comprising rubber latex, clay, and shellac treated with borax.

Signed at Boston, county of Suffolk, State of Massachusetts, this 2nd day of April, 1925.

GUSTAVUS J. ESSELEN, JR.

Signed at New York, county of New York, State of New York, this 21st day of March, 1925.

REED P. ROSE.