

Nov. 27, 1956

E. A. SCHAUM

2,771,646

MATRIX USED IN PRINTING AND METHOD OF MAKING THE SAME

Filed June 7, 1951

Fig. 1.

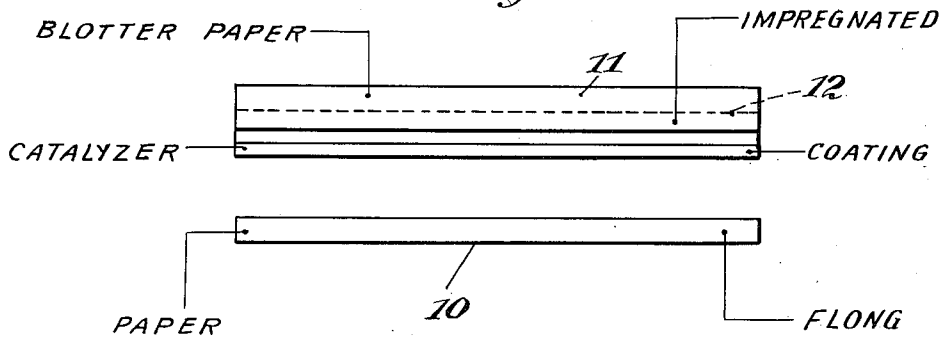
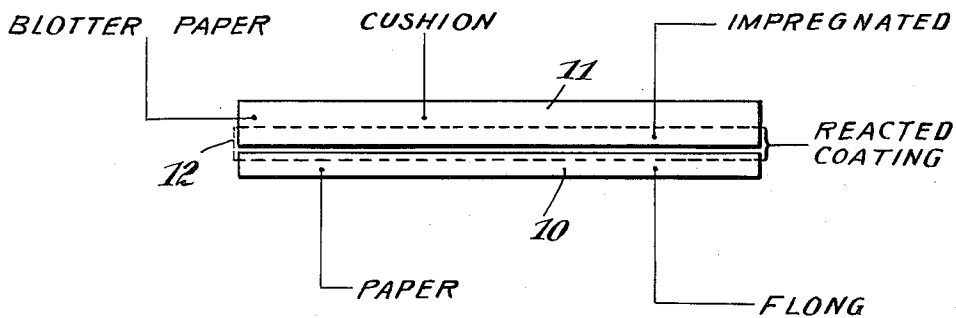


Fig. 2.



INVENTOR.

Eduard A. Schaum

BY

C. P. Goepel

his ATTORNEY

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MATRIX USED IN PRINTING AND METHOD OF MAKING THE SAME

Eduard A. Schaum, Malverne, N. Y., assignor of one-half to Fred W. Hoch, Forest Hills, N. Y.

Application June 7, 1951, Serial No. 230,383

3 Claims. (Cl. 22—5.5)

This invention relates to a matrix used in printing and to a method of making same.

A printing matrix consists of a paper card, known as the flong, to which the type form is applied under pressure to reproduce it in reverse (intaglio). The depressions are then filled with lead to form the printing plate (stereotype), known as a mat, from which the printing is done.

It has been found that in the flongs now used, the material behind the intervening spaces between the larger type lines as well as the material behind the spaces between the type and the pictures, known as the relief, is too weak to sustain the weight of the metal while making the printing plate, and the relief of the matrix is forced up to the printing surface, whereby the printing plate reproduces the unwanted inked relief part on the sheet being printed, resulting in what is known as a shallow plate where dead metal is printing.

It has been sought to overcome this drawback by using pieces of "felt" or other paper suitably cut to size and glued in such blank spaces to reinforce the above relief in order to prevent dead metal printing between the lines of type, etc. This procedure is very costly and time consuming.

The present invention relates to a matrix which consists of a blotting or other absorbent paper, one surface of which is treated with a coating and impregnating preparation penetrating about one-half of the blotting paper thickness, and of the paper known in the printing industry as a flong. The coated surface of the treated side of the blotting paper is first sprayed with a catalyst or hardening agent, and the blotting paper with its impregnating preparation and surface catalyst is applied to the flong before the impregnant is completely reacted. The type form is then applied to the flong under pressure. By the time the impression in the flong with its improved layers is completed, the catalyzed impregnant also partially penetrates the adjacent surface of the flong and is completely reacted so that a rigid matrix is obtained without the necessity of manually reinforcing the flong.

Various features and advantages of the novel method and matrix will become apparent and will be pointed out in detail in the course of the following description of the embodiment illustrated in the accompanying drawing wherein,

Fig. 1 is a diagrammatic view of the flong and partly impregnated blotting paper before assembly; and

Fig. 2 is a view of the assembled matrix.

The proportions in dimensioning of elements in the drawing are inaccurate for better illustration.

The base sheet 10 of paper is of a kind such as heretofore used in the making of flongs. The reinforcing blotting paper 11 is treated with a preparation 12 which partly penetrates the paper 11 and forms a coating or layer thereon. This layer is then sprayed with a catalyst.

The coated sheet 11 is applied to the flong 10, and the two sheets are gently squeezed together to form an integral member.

The solution which is used to impregnate the reinforcing

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sheet 11 consists of urea formaldehyde to which may be admixed a water-soluble dye in amounts sufficient to give the impregnant a distinctive color, whereby the extent of penetration of the impregnant into the adjacent layers of blotting paper 11 and flong 10 can be determined.

The catalyst may consist, for example, of three parts by weight of ammonium chloride, three parts by weight of alcohol and fifty parts by weight of water. Other inorganic acid salt hardeners may be used instead of ammonium chloride to lower the pH of the catalyst. Variations in the acidity of the catalyst increase or decrease the speed of reaction needed in various types of work.

The percentage of alcohol used in the catalyst may be varied depending on the hardness of flong 10. The penetration of the impregnant is increased by increasing the alcohol content. Some flongs are made of very tightly woven papers and require impregnants with rather high alcohol content.

The advantages of the improved matrix are the following:

Increased rigidity that is necessary for a successful matrix.

Liberation of water resulting in uniform shrinkage.

Substantially uniform deliquescence.

Complete reaction of impregnant within the time necessary to make the mat.

Improved resistance to repeated casting temperatures. Substantial savings in time.

Furthermore, while in the previous processes the very first cast is usually thrown away because of moisture blemishes, the first and any subsequent casts manufactured in accordance with my method are immediately usable.

What I claim and desire to protect by Letters Patent is:

1. A matrix comprising a first flong layer of a blotting paperlike material having an upper and a lower surface, a second flong layer of like material having an upper surface and a stereotype casting lower surface, a layer of urea formaldehyde intermediate the lower surface of said first flong layer and the upper surface of said second flong layer, said urea formaldehyde partly penetrating said first flong layer through its lower surface and said second flong layer through its upper surface, said urea formaldehyde being completely reacted, said stereotype casting surface of said second flong layer carrying type impressions to be reproduced and relief portions therebetween, said relief portions being formed of said three layers, and said upper surface of said first flong layer having a contour closely following said relief portions formed of said three layers, whereby said matrix is given sufficient rigidity to withstand casting pressures.

2. The method of making a matrix which consists in subjecting a first side of a first sheet of a blotting paperlike material to urea formaldehyde for partial penetration of said first sheet, adding a catalyst to said urea formaldehyde, placing a second sheet of like material in facing relationship with said first side of said first sheet, whereby said urea formaldehyde partially penetrates said second sheet, subjecting the second side of said second sheet to pressure for forming stereotype depressions therein having relief portions therebetween and for completely reacting said urea formaldehyde to form a unitary relatively rigid member, with the said reacted urea formaldehyde between and partially penetrated into said first and said second sheet, said unitary member having a contour closely following said stereotype depressions and relief portions, whereby said member is adapted to retain the contour of said stereotype depressions and of said relief portions during the casting process.

3. The method of claim 2, wherein said urea formaldehyde has admixed thereto a suitable coloring agent to indicate the thickness of said urea formaldehyde layer

and the extent of penetration thereof into said first and said second sheet.

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