

# UNITED STATES PATENT OFFICE.

EUGENIO DE ZUCCATO, OF LONDON, ENGLAND.

## MANUFACTURE OF STENCIL-SHEETS.

SPECIFICATION forming part of Letters Patent No. 548,116, dated October 15, 1895.

Application filed March 4, 1895. Serial No. 540,496. (Specimens.)

*To all whom it may concern:*

Be it known that I, EUGENIO DE ZUCCATO, manufacturer, a subject of the King of Italy, residing at 15 Charterhouse Street, in the city of London, England, have invented an Improved Manufacture of Stencil-Sheets, of which the following is a specification.

My invention relates to an improved manufacture of stencil-sheets—that is to say, of the material or fabric from which stencils may subsequently be made.

My improved material is particularly adapted for use in making stencils by means of a type-writer. It has heretofore been the custom to use for such purposes a kind of Japanese paper well known in the trade, treated with stearine, paraffine-wax, or similar substances, such paper so treated possessing the property of allowing the types of the type-writer when the paper is placed upon a suitable surface—such, for instance, as a piece of silk gauze resting on the platen of the machine—to form their characters in said paper without thoroughly punching it out or breaking it through. Such paper remains impermeable to the ink which is brought into contact with it when employed for stenciling except at those places where the paper has been impressed by the types of the type-writer. It is found, however, that the aforesaid paper made in this manner when used with a type-writer for the purpose of making stencils has certain disadvantages. For instance, sometimes the wax becomes detached from the paper and clogs the silk gauze or other surface upon which it rests. Such waxed paper is, moreover, exceedingly brittle and requires great care in handling to avoid injury to the same.

According to my invention I produce improved stencil-sheets consisting of thin paper or other fabric coated with a resin or gum or a similar substance and rendered limp and pliable by being impregnated with glycerine.

In carrying my invention into practice I proceed as follows—that is to say, I use a very thin and light paper of good quality free, as far as possible, from pin-holes and preferably possessing a long fiber. A good thin tissue-paper, for example, will be found serviceable for this purpose. I coat the same with a solution of shellac in alcohol, such as gilder's

lacquer, or any other suitable varnish. This may be done by means of a brush, and several coatings may be applied, according to the substance of the paper and according to the body of the varnish. When this coated or varnished paper is dry, I impregnate it with pure glycerine or a solution of glycerine and water or glycerine and spirit to permanently moisten the paper, thus rendering the sheet limp and plastic.

When properly soaked, the paper is blotted with paper to get rid of the surface moisture, or such moisture is removed by any other suitable means.

According to another and preferable method of producing the stencil-sheets I mix the glycerine with the resin or alcoholic varnish and then coat the paper with this mixture, thus impregnating the paper with the glycerine and coating it with the resin or varnish at one and the same operation. The proportions of the glycerine and resin that I have found to give satisfactory results are about one pint of glycerine to about one gallon of gilder's lacquer. This mixture may be diluted with a suitable quantity of spirits of wine even up to an equal part of its bulk, by measure, for the purpose of rendering it thinner consistency, as I find that a thin mixture adheres better to the paper. I coat the paper three or four times with this mixture on one or both of its sides, it being understood that in coating both sides of the paper the number of coatings above mentioned should be distributed between the two sides.

I wish it to be understood that I do not limit myself to the precise proportions above stated, as such will vary according to the quality and thickness of the paper employed and according to the quality and body of the resin or alcoholic varnish used. The object of using the resin or alcoholic varnish is to fill up the pin-holes of the paper and to make it ink-proof, as far as possible, without, however, interfering with the plasticity imparted to the paper by the glycerine.

It is well known that glycerine at ordinary temperatures does not readily change its state. Hence paper treated as above described will remain in a moist and plastic condition for a considerable length of time.

The glycerine with which the varnished



paper is impregnated renders it very pliable, flexible, and plastic and capable of being perforated with innumerable interstices at those parts where the types strike the paper during the type-writing operation without the characters formed by the said types in the paper being cut or broken out or punched out altogether, which would be the case with ordinary tissue-paper and other similar papers, if the same were hard and stiff.

Although my improved stencil-sheets are particularly adapted for use with a typewriter, it is clear that they may be employed as stencils for other uses.

I am aware that sheets of paper coated with a solution of resin have before been used in the so-called "papyrograph" process, for which I obtained United States Patent No. 157,161; but such sheets were used to obtain

an entirely different result to that now in view and would not in any wise be suitable for my present purpose.

What I claim is—

1. The method of rendering paper suitable for making typewriter stencils therefrom by treating the same with resin and glycerine, substantially as described.

2. A stencil sheet composed of paper having an adherent film of resin and impregnated with glycerine, substantially as and for the purposes specified.

In testimony whereof I have hereunto set my hand this 18th day of February, 1895.

EUGENIO DE ZUCCATO.

Witnesses:

P. H. BUDGEN,  
T. F. BARNES.