(No Model.)

A. B. DICK.

STENCIL SHEET.

No. 559,687. Patented May 5, 1896

Fig. 1.

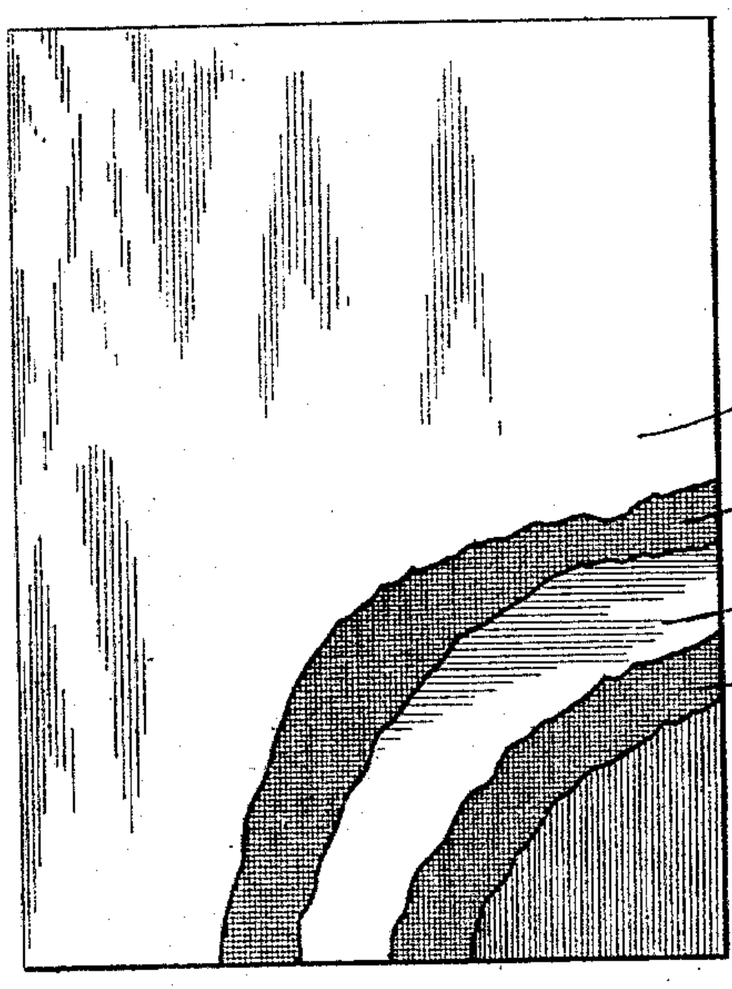

Fig. 2.

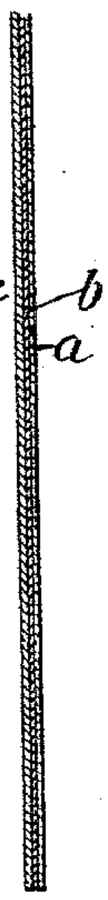

Fig. 3.

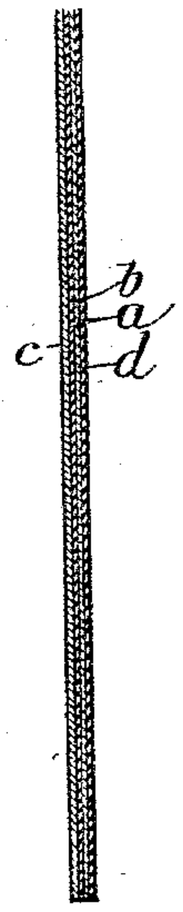

Fig. 4.

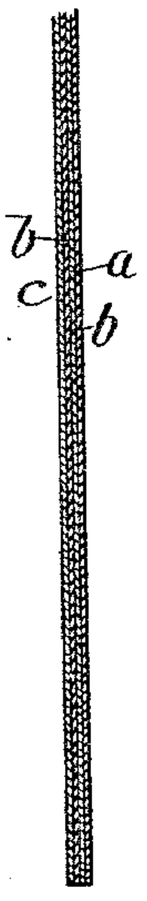

Fig. 5.

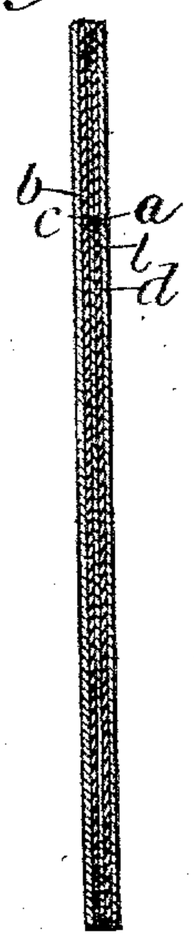

Fig. 6.

Fig. 7.

Chicago, June 25, 1887

Mess. Alpha, Betta & Koppa

Gentlemen

Yours of the

18 inst. rec'd. &c.

a

Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

ALBERT B. DICK, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE A. B. DICK COMPANY, OF SAME PLACE.

STENCIL-SHEET.

SPECIFICATION forming part of Letters Patent No. 559,687, dated May 5, 1896.

Application filed October 11, 1887. Serial No. 252,003. (No specimens.)

To all whom it may concern:

Be it known that I, ALBERT B. DICK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Processes of Preparing Duplicating-Stencils, of which the following is a specification.

My object is to enable the production upon any ordinary type-writing machine of a stencil on which a large number of copies can be printed, which copies will accurately resemble ordinary type-written matter.

I have found that by the employment of a sheet of thin and open paper coated with paraffin or other suitable ink-proof substance and a covering-sheet on either or on each side of fine open-mesh fabric, such as bolting-cloth, the striking of the type upon the coated sheet or the fabric sheet causes the coating to be forced into the meshes of the fabric and to adhere to the same upon the lines which form the faces of the type, so that when the fabric is removed from the coated sheet the coating on the lines struck by the type will be removed, partially or wholly, with it, and the coated sheet is then a stencil with the fiber of the paper exposed and uncovered where the coating has been removed on the lines struck by the type. This stencil so produced can then be used to print duplicates from in the manner well understood, the remaining coating preventing the ink from passing through, except on the lines struck by the type.

An open paper that I have found suitable for my purpose is that known as "yoshino" in Japan or as "dental" paper in this country. This paper possesses the open-work characteristics of a lady's veil, and is at the same time thin and of considerable toughness. Thin veiling, having its openings fine and close together, might also be employed as the base of the stencil-sheet, but is more expensive than the yoshino paper referred to. As a coating for the paper base I prefer to employ paraffin having a melting-point of about 120° Fahrenheit, such paraffin being soft in its nature and capable of being readily expressed or driven from the openings in the base.

The silk bolting-cloth I employ is more durable than other finely-woven fabrics, being adapted for many successive uses, and not becoming limp or sleazy because of the necessary washings with benzin or other solvent to remove said coating. The bolting-cloth also acts to increase the resemblance of the prints from the stencil to ordinary type-written matter.

The invention consists in the process of forming the stencil as hereinafter pointed out by the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is a plan view with one corner broken out to show the different materials used in the stencil. Figs. 2, 3, 4, and 5 are details in section, showing several forms of arranging the layers to produce the stencil. Fig. 6 is a bottom view showing the manner of securing the layers together for insertion in the type-writer. Fig. 7 is a plan view showing the stencil and the matter to be copied thereon.

In the drawings, *a* represents the stencil-plate on which the matter to be reproduced is impressed by a type-writer or other writing instrument, as a stylus. This plate is made of a sheet of thin open-work material, such as yoshino, coated with a suitable coat adapted to be expressed or driven from, in whole or in part, the openings in the open-work material. This sheet may be of any desired dimensions—as, for instance, suitable to run through an ordinary type-writing machine.

b is a sheet of thin fine open-mesh fabric, such as silk bolting-cloth or other similar materials having a fine open mesh.

c is a backing of paper or other material that will present a firm and solid backing for the fabric and waxed paper.

d is a sheet of tissue or other thin paper used for inclosing the waxed paper and fabric and holding them in place.

e are securing-strips for holding down the corners of the tissue-paper when the edges are turned onto the bottom of the backing *c*.

The stencil-paper, fabric, and backing can be arranged in several different ways to produce on the coated paper or stencil-plate *a* the matter to be copied. In Fig. 2 the coated

paper or stencil-plate *a* is laid on the fabric *b* and both laid onto the backing *c*, so that the waxed paper will receive the impression direct from the type of the machine.

In Fig. 3 the sheet of tissue-paper *d* is laid over the waxed paper or stencil-plate *a*, and this tissue-paper forms the means for holding the waxed paper, fabric, and backing together, and also serves the purpose of receiving the face of the type and preventing any ink thereon from being transferred to the waxed paper or stencil-plate *a*.

As shown in Fig. 4, an outer sheet of fabric *b* is employed to overlie the sheet of waxed paper or stencil-plate *a* and receive the face of the type.

As shown in Fig. 5, the arrangement of Fig. 4 has added thereto a sheet of tissue-paper, as in Fig. 3, and the arrangement of Fig. 5 is shown in Fig. 1 by the broken-out corner.

In Fig. 6 the tissue sheet *d* is shown turned over the edges and the corners secured by the strips *e* for holding the several sheets together for passing the same through a type-writer to produce the required matter on the coated paper or stencil-plate *a*, as shown in Fig. 7.

The backing, the fabric, and the coated paper arranged in any of the modes shown or in a mode which will bring together the coated paper, a sheet of fabric, and a backing to have the type-matter produced on the coated paper and of a size to run through a type-writing machine (if type-writing is to be stenciled) to receive the matter to be reproduced from the stencil-plate is run through the type-writer in the ordinary manner, the ink-ribbon, however, not being employed, and the face of the type will be produced on the coated paper or stencil *a* without removing the coating from the paper, except to the extent of the type-surface, by reason of the action of the fabric, which forms a receptacle by which only the surface of the waxed paper or stenciled plate that is struck by the type-face will be removed, leaving on the waxed paper or stencil-plate *a* an exact reproduction of the type-face, as before described. When a sheet of tissue-paper is laid over the waxed paper to receive the face of the type, said sheet also acts as a receptacle to some extent for the coating, and at the same time prevents the ink from the type being transferred to the stencil-sheet.

The stencil-plate thus produced can be laid over a sheet of letter or other paper and an inking-roller run thereon, transferring to the letter or other paper the matter on the stencil-plate, and it will be seen that the matter thus reproduced will be in form and arrangement a duplicate of the work produced by the type-writer in all respects as to the character of the letters and the lines of printing.

The stencil *a* can be produced with the arrangement of parts shown in Figs. 1 and 5, but a stencil from which copies can be produced can be made with the arrangement shown in either Fig. 2, 3, or 4.

I am aware that it has heretofore been proposed to provide the type of a type-writing machine with perforating-points, and also to employ other perforating means—such, for instance, as sandpaper in connection with waxed sheets of paper—but my process differs from such proposed means in that the stencil-sheet I employ has for its base a material already provided with openings, which material is provided with a coating easily removable from said openings, so that when said stencil-sheet is subjected to pressure the coating will be expressed or removed from the openings in the base thereof on the lines of pressure, thus leaving ink-passages without actually perforating the material of the base.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination of a sheet of open material coated with a wax-like substance, and a sheet of bolting-cloth, such sheets being superimposed, substantially as set forth.

2. The combination with a stencil-sheet of a sheet of paper in front thereof and a sheet of bolting-cloth in the rear thereof, substantially as set forth.

ALBERT B. DICK.

Witnesses:
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