

A. B. DICK.
METHOD OF PREPARING A STENCIL.
APPLICATION FILED OCT. 18, 1913.

1,146,852.

Patented July 20, 1915.

Fig. 1

WITNESSES
L. M. Intish
A. Hadenhorst

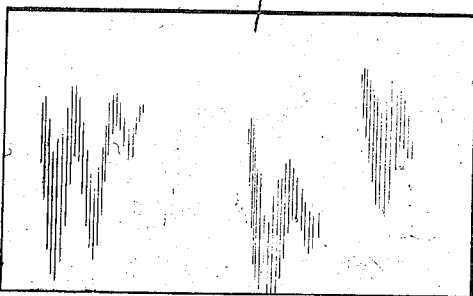


Fig. 2,

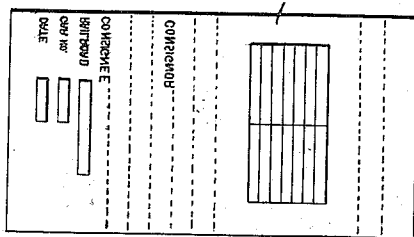


Fig. 3,

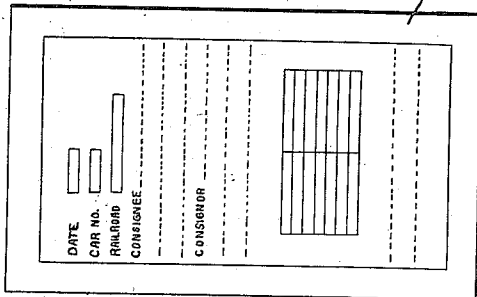


Fig. 4,

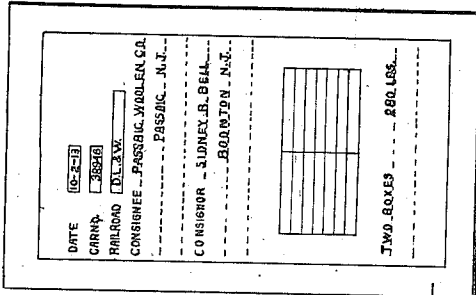


Fig. 5,

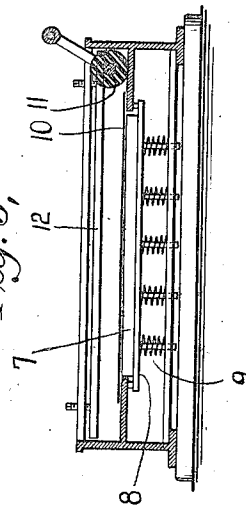
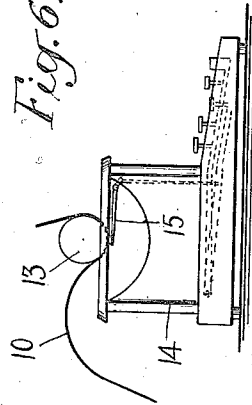


Fig. 6.



UNITED STATES PATENT OFFICE.

ALBERT B. DICK, OF LAKE FOREST, ILLINOIS, ASSIGNOR TO A. B. DICK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

METHOD OF PREPARING A STENCIL.

1,146,852.

Specification of Letters Patent.

Patented July 20, 1915.

Application filed October 18, 1913. Serial No. 795,843.

To all whom it may concern:

Be it known that I, ALBERT B. DICK, a citizen of the United States, residing at Lake Forest, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Methods of Preparing a Stencil, of which the following is a specification.

This invention relates to the art of stencil-duplicating and particularly to the art of preparing a stencil for use upon a duplicating machine in making multiple copies.

The invention is directed to the provision of a novel method of preparing a stencil by which the process of stencil-duplicating is adapted for a class of work which has heretofore been done by other methods.

The invention involves the cutting of a stencil to adapt it for use in duplicating partly by an impression received from an electrotpe or similar printing member and partly by impressions received from the type of a typewriter in the usual manner.

In many classes of work, particularly railway and shipping work, it has been common to prepare multiple copies of various printed forms and to fill in the blanks on these forms with a typewriter. The work of filling in these blanks has always been a laborious one, and in many instances where the same matter has to be filled in in many copies of the same form, effort has been made to employ other methods than the use of a typewriter in the ordinary manner. It has been proposed to fill in these forms with a stencil-duplicator, but this has heretofore been impractical for the reason that proper registration of the new matter with the matter of the printed form has not been obtainable. The lines of the printing constituting these forms are usually comparatively close together so that much of an error in registration might be quite serious in that it might be great enough to result in matter applying to one line of printing being placed opposite another.

Although stencil-duplicating machines have heretofore been made with a special view to obtaining accurate registration, these machines have not been susceptible of use in filling in these printed forms where accuracy of registration is important. In many instances, this is due to the fact that these forms are printed in very large quantities and to accomplish the work of print-

ing them expeditiously, it is common to print from four to sixteen copies on a single large sheet and suitably cut the sheets thereafter. As a result of this method of procedure, the margin around the printed matter is different on the different sheets. Accuracy in the width of the margin of printed forms made by this method of procedure seems to be impossible of attainment. As a result, an attempt to print upon such forms with a stencil-duplicator in the ordinary manner would show results which are very bad in the matter of registration.

In order to permit of employing the art of stencil-duplicating in preparing matter of the character above referred to and thus decrease the amount of labor and time consumed in the production of such matter, I have devised a novel method of procedure in the preparation of a stencil for use in stencil-duplicating. In accordance with this method, a stencil is cut partly by the application thereto of a printing member such as an electrotpe and partly by a typewriter. This stencil is then used for printing in the ordinary manner upon blank sheets. Thus, so far as registration is concerned, it is only necessary for the operator of the typewriting machine to so adjust the partially cut stencil in the machine that the type-written matter will register exactly with the matter cut in the stencil by the electrotpe. Also, it will be evident that the operations involved in this method of procedure include passing the sheets through a printing machine but once instead of once for printing the form upon the sheets and again for printing the matter to be inserted in the form.

In accordance with the invention, an electrotpe or other printing member is prepared just as it has been heretofore for the purpose of printing the form-matter upon the sheets. Instead of using this electrotpe for printing however, it is used for partially cutting the stencil. The electrotpe is placed in a suitable press, the stencil-sheet is applied to its face and then pressure is brought to bear so as to press the stencil against the electrotpe with such force as is necessary to cut the stencil along the lines of the raised portions of the electrotpe. The stencil is then withdrawn from the press and inserted in the typewriting machine where the remainder of the

characters to be printed are cut in the stencil by operation of the typewriting machine in the usual manner, care being observed to secure exact registration of these characters with the matter previously cut in the stencil with the electrotype. The stencil is then completely cut and may be applied to the drum of a stencil-duplicating machine for use in printing multiple copies from the stencil in the usual manner.

I have illustrated in the accompanying drawings the several steps of my improved process and also I have shown diagrammatically apparatus which may be employed in practising the process.

In these drawings, Figure 1 shows a stencil-sheet, Fig. 2 shows an electrotype for printing form-matter, Fig. 3 shows a partially cut stencil-sheet, Fig. 4 shows a completely cut stencil-sheet, Fig. 5 is a diagrammatic view of a press for cutting a stencil and Fig. 6 is a diagrammatic view of a typewriting machine for use in cutting a stencil.

Referring to these drawings, Fig. 1 shows the blank stencil-sheet with which the operator starts in practising the improved process and Fig. 2 shows the electrotype arranged for printing form-matter. Such an electrotype may be arranged for printing partially completed lines of words which are to be completed thereafter and lines of words with rectangles following them into which rectangles printed matter is to be subsequently inserted. The first step in the process of cutting the stencil is to apply the stencil to the face of the electrotype and press it upon the electrotype so that the stencil will be cut along the lines of the raised portions of the electrotype. When this has been done, the stencil is partially prepared and is then in the condition indicated by Fig. 3 which shows the stencil-sheet after the operation of cutting it with the electrotype has been concluded. When this has been done, the operator places the partially cut sheet in a typewriter and cuts the balance of the stencil by operation of the typewriter in the usual manner, making the typewritten matter register exactly with the matter cut by the electrotype. When this has been done, the stencil is completely cut and ready for use in a stencil-duplicating machine, its condition then being that indicated by Fig. 4.

Fig. 5 shows diagrammatically apparatus which may be employed in effecting the cutting of the stencil with the electrotype. The electrotype is shown at 7 mounted upon a spring-supported bed 8, any form of springs 9 being arranged to support this bed yieldingly. The stencil-sheet is shown at 10 superimposed upon the electrotype 7. A platen or pressure-roller 11 is arranged for movement over the stencil-sheet 10 to press the matter down upon the electrotype 7 with

the requisite pressure. The ends of the shaft of roller 11 pass under pressure-bars 12 whose position may be adjusted vertically as is necessary. I have found that a substantial degree of pressure is necessary in order to make an electrotype of the character which would be used in practising the process of this invention suitably cut a stencil. Particularly is this true when the stencil-sheet is of the character now extensively employed having the coating thereof consisting of a coagulated protein. For this reason, it is highly desirable that the pressure be applied to the stencil-sheet and electrotype by a rolling motion. In this way, the sheet is pressed against but a portion of the surface of the electrotype at a time as a result of which the pressure necessary for cutting the stencil may be obtained more rapidly and with less effort. For this reason, the platen or pressure-member is here shown in the form of a cylinder or roller 11 which is adapted to be rolled over the surface of the electrotype after the stencil-sheet has been applied to that surface in order to effect the cutting of the stencil with the electrotype.

In Fig. 6, a typewriting machine is shown diagrammatically for completing the cutting of the stencil after the latter has been partially cut by application to the electrotype 7. The sheet is shown at 10 passing around the platen 13 of the typewriting machine 14 in position to be struck by the type-levers 15 of the typewriting machine to cut the desired letters in the stencil in the blanks provided for their reception by the partial cutting of the stencil with the electrotype.

Having described my invention, what I claim as new therein and desire to secure by Letters Patent of the United States is:

1. The method of preparing a stencil, which consists in pressing the stencil-sheet into contact with a printing member of extended area such as a form of type or an electroplate, and then cutting additional characters individually in the stencil-sheet within the limits of the impression received by the sheet from such printing member, as by placing the sheet in a typewriting machine and operating the machine so that the type-levers thereof strike the stencil-sheet, substantially as set forth.

2. The method of preparing a stencil, which consists in placing the stencil-sheet in contact with a printing member of extended area such as a form of type or an electroplate, then pressing the sheet against the printing member by a rolling motion so as to cut the stencil along the raised portions of the printing member, and then cutting additional characters individually in the sheet within the limits of the impression received by the sheet from said printing

member, as by placing the partially cut stencil in a typewriter and operating the typewriter so that the type-levers thereof strike the sheet, substantially as set forth.

5 3. The method of preparing a stencil, which consists in pressing the stencil sheet into contact with a printing member of extended area, such as a form of type or an electro-plate, and then cutting additional
10 characters individually in the stencil sheet,

as by placing the sheet in a typewriting machine and operating the machine so that the type levers thereof strike the stencil sheet, substantially as set forth.

This specification signed and witnessed 15
this 14th day of October, 1913.

ALBERT B. DICK.

Witnesses:

W. A. WATERBURY,
W. G. ARNOLD.