E. A. COX.

STENCIL SHEET.

APPLICATION FILED OCT. 6, 1909.

1,066,585. Patented July 8, 1913.

Fig. 1.

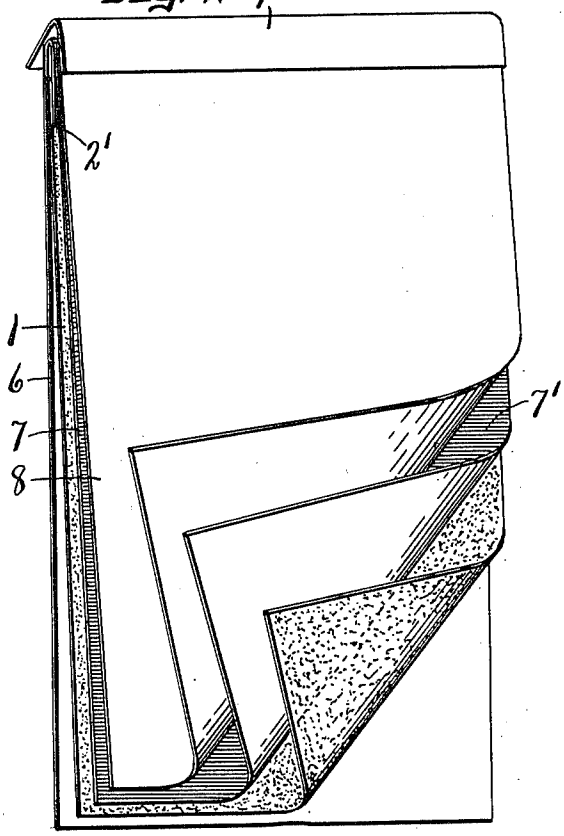

Fig. 2.

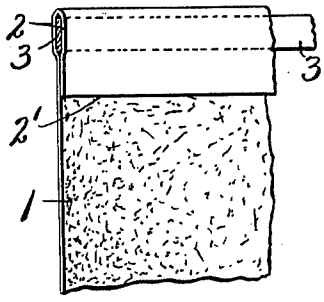

Fig. 3.

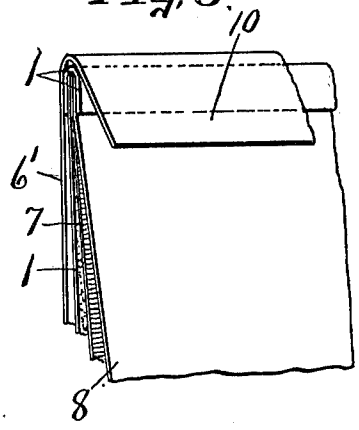

Fig. 4

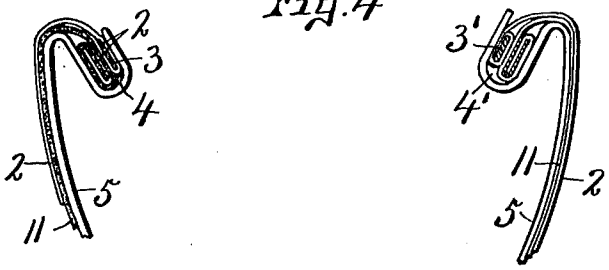

Fig. 5.

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UNITED STATES PATENT OFFICE.

EDWIN A. COX, OF IRVINGTON, NEW JERSEY, ASSIGNOR TO THE ROTOSPEED COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

STENCIL-SHEET.

1,066,585. Specification of Letters Patent. Patented July 8, 1913.

Application filed October 6, 1909. Serial No. 521,291.

To all whom it may concern:

Be it known that I, EDWIN A. COX, of Irvington, in the county of Essex, in the State of New Jersey, have invented new and useful Improvements in Stencil-Sheets, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in stencil sheets involving the use of the usual waxed sheet in which printed matter is adapted to be cut in a typewriting machine and afterward placed in a suitable duplicating machine for reproducing the typewritten work.

Some of the special features of my improved stencil render it particularly useful in connection with the duplicating machine forming the subject matter of my pending application No. 471,704, filed January 11, 1909, while other features have a general application to any stencil adapted to be used in any one of the duplicating machines now in common use. For example one of the specific objects of my present invention is to provide one end of the wax sheet with a loop or overturned fold for the reception of an attaching strip or bar of metal, wood, celluloid, card-board or other equivalent material constituting a retainer by which one or both ends of the stencil may be retained in my duplicating machine referred to.

Another object is to utilize the overturned edge of the loop or fold as a means for determining the minimum head-space to be left on the stencil and also on the sheets which are printed by the duplicating machine.

A further object is to associate with the wax sheet suitable protective tissues arranged in such manner as to not only obviate the liability of filling up the type with wax, but also to avoid entirely cutting out or mutilating the loop letters, such as "e, o, a, g" and the like, as is invariably the case when the usual single wax retaining sheet is alone employed. In other words I have sought to arrange these protective tissues so that when the stencil is cut by the type and the tissues removed preparatory to placing the stencil in the duplicating machine, the characters in the stencil will remain intact and reproduce the copies in the duplicating machine as nearly like the original typewritten matter as may be possible.

A still further object is to utilize one of the protective sheets for showing up to the operator the matter which has been cut in the stencil by the type or for the purpose of bringing previously printed or copied matter to which other matter is to be added, in alinement therewith by cutting such additional matter in the stencil for reproduction in the duplicating machine.

Other objects and uses will be brought out in the following description.

In the drawings: Figure 1 is a perspective view of one form of my improved stencil blank preparatory to being cut in a typewriting machine. Fig. 2 is a fragmentary view of a portion of a waxed stencil sheet after being cut, showing the protective tissues removed and the retaining bar in the loop ready to be inserted in the duplicating machine. Fig. 3 is a slightly modified form of a fragmentary portion of a stencil sheet showing the wax sheet and protective tissues as clasped together at one end and inserted in a suitable fold in one end of the backing sheet, the edge of the fold serving in this instance to determine the minimum "head space" to be left on the printed sheets. Fig. 4 is an end view of a portion of the drum or platen of a duplicating machine showing the manner of attaching the stencil sheet thereto. Fig. 5 is an edge view of a portion of the transfer tissue.

In Fig. 1, I have shown a wax retaining sheet —1— of suitable dimensions having one end folded over upon itself forming a loop —2— in which is adapted to be inserted a comparatively stiff strip or bar —3— of metal, wood, celluloid, card-board or other equivalent material capable of being inserted edgewise with the end of the wax sheet thereon into a suitable retaining groove —4— on the platen —5— of a duplicating machine for effectively holding the wax sheet in place upon said platen. The overturned end, as 2′, of the wax retaining sheet extends some distance beyond the loop —2— and is secured adhesively or in other suitable manner to the main body with its edge disposed at substantially right angles to the longitudinal edges of the sheet to form an indicator line which determines the minimum "head space" to be left in printing.

In cutting the wax sheet in a typewriting machine, I prefer to employ backing sheet

—6— and protective tissues —7— and —8—, said backing sheet and tissues being practically co-extensive with the area of the wax retaining sheet. The backing sheet —6— is preferably made of some medium-heavy paper or card-board and is usually interposed between the wax sheet and platen of the typewriting machine so as to afford a comparatively hard and smooth backing for the stencil proper to assure a more perfect cutting of the stencil blank. The sheet —7—, adjacent to the front face of the wax retaining sheet, consists of a porous fiber tissue commonly known as "yoshino" which is thin but tough while the sheet —8— which is brought nearest the type in the stencil cutting machine and which may be termed the type sheet, is of close made tissue. These two tissues take the place of and are substantially equal in thickness to the thickness of the displaced ribbon in the operation of cutting the stencil and serve to prevent the wax from filling up the type and at the same time protect the loop letters from being cut out altogether. This makes a more perfect stencil capable of producing a better imitation of typewriting in the duplicating machine, by reason of the fact, that the type may be operated with greater force in cutting the stencil.

It is desirable to provide some means whereby any errors in cutting the stencil may be readily detected before removing the stencil from the cutting machine and for this purpose the face of the porous tissue —7— adjacent to the type tissue —8— is preferably coated or saturated with a copy ink or other medium —7'— capable of transferring the impressions made by the type from the transfer sheet to the adjacent face of the type tissue —8— which, being more or less transparent and always in view, enables the operator to read the matter cut in the stencil and thereby detect any errors before the stencil is removed from the machine. This operation of correcting errors may be conveniently done by simply lifting the separable tissue sheets from the wax retaining sheet sufficiently to expose the error in the stencil and permit such error to be obliterated and afterward re-cut in the usual manner.

An entire combination of sheets may be alined and temporarily held together preparatory to being inserted in the cutting machine and during the operation of making the stencil by a suitable binding strip —9— of metal, celluloid, card-board or other similar thin but comparatively stiff material folded over upon itself so as to clasp between the opposite sides the head ends of said sheets. This folded strip —9— may also be used to clasp the head ends of the wax retaining sheet and tissues, as shown in Fig. 3 during the stencil cutting operation and afterward by tearing off the tissues the same strip may be used as a retaining bar adapted to be inserted in the groove —4— to hold one end of the wax stencil in the duplicating machine.

The folded strip —9—, shown in Fig. 1, is practically the same as that shown in Fig. 3, except that in Fig. 1, one side of the fold is left open for the reception of the head end of the backing sheet —6—, while in Fig. 3, I have shown a backing sheet —6'— as having its head end folded over upon itself and upon the folded strip —9— forming a flap —10—. The free edge of this flap, like the folded end of the wax sheet —1—, is straight transversely and determines the minimum "head space" which is to be left in the copy.

In some instances the stencil method of printing is merely used in combination with press printed matter, the latter being common to any number of sheets while the former may require indefinite modification, for example, in making out price lists the names of the articles may be tabulated in an ordinary press while the prices (more or less fluctuating) are left blank and require filling in. In such cases a fac-simile of the printed matter common to all of the lists is made from the printing press copy on to the back of a type tissue, either by copying direct from the original print or by treating the printing ink with a suitable chemical which will render it transferable on to the type tissue after which this type tissue is placed in the combination for the stencil and the entire stencil placed in the typewriting machine where the prices opposite their respective items may be readily cut in the stencil in exact alinement, and then the stencil may be used to print the prices on the press sheets in the duplicating machine in the usual manner for duplicating.

In placing the stencil upon the platen —5— of the duplicating machine the loop end or head —2— of the wax sheet with the bar —3— therein is inserted edgewise, in the manner described, in the groove —4—, the remaining portions of the stencil being wrapped around the platen against a suitable pad —11— thereon and its opposite end is wrapped around a bar —3'— similar to the bar —3— and then inserted edgewise in a similar groove —4'— in the opposite side of the platen as clearly shown in Fig. 4.

The use of the porous fiber and type protecting tissues, arranged as described, between the wax sheet and type when in the cutting machine produces an impression in the wax to more clearly imitate typewritten matter when reproduced in the duplicating machine, otherwise the letters cut would leave a sharp impression in the wax and not resemble ribbon work. The front tissue

—8— serves to prevent the wax from entering and filling up the type of the cutting machine while the fiber sheet —7—, being more or less porous, allows the wax cut from the stencil to enter and to adhere to the same and at the same time cushions the blow of the type and renders the type tissue less liable to puncture.

In placing the stencil in the cutting machine the head ends of the sheet are temporarily bound together by the clasp —9— which has the effect of lining up the sheets one with the other whereupon the sheets are then inserted in the usual manner, head first, into the machine with the backing —6— next to the platen and the protective issue —8— next to the type. During the cutting of the stencil the impressions made in the wax are transferred by the copying tissue —7— to the adjacent face of the protective tissue —8—, thereby imprinting a proof of the work upon said protective tissue which proof may be easily read during the progress of the work and if any correction is necessary the loose ends of the tissues may be readily separated from the wax sheet and the error obliterated and corrected without displacing any of the sheets from the machine. By this method I am enabled to preserve the exact alinement of the sheets throughout the cutting of the stencil so that before the stencil is removed from the machine the accuracy of the work may be assured. After the stencil has been removed from the cutting machine preparatory to placing it in the duplicating machine the backing sheet and tissues may be readily removed from the wax stencil sheet and the latter inserted in the duplicating machine in the manner previously described.

What I claim is:

1. In combination with a wax retaining stencil sheet, a backing sheet of stiffer material across the back of the wax retaining sheet, a porous paper fiber sheet across the front of the wax retaining sheet and having its front face coated with a transfer substance, and a type protective paper tissue sheet across the coated surface of the porous sheet.

2. In combination with a wax retaining stencil sheet, a backing sheet of stiffer material across the back of the wax retaining sheet, a porous paper fiber sheet across the front of the wax retaining sheet and having its front face coated with a transfer substance, and a type protective paper tissue sheet across the coated surface of the porous sheet, one of said sheets having an upper straight edge folded over a predetermined distance to determine the minimum amount of head space to be left in the copy.

In witness whereof I have hereunto set my hand on this second day of October 1909.

EDWIN A. COX.

Witnesses:
F. A. RYERSON,
ALFRED S. CHAPMAN.