Oct. 31, 1939. H. M. CARSCALLEN 2,177,768

STENCIL SHEET

Filed Dec. 21, 1937

Fig. 1.

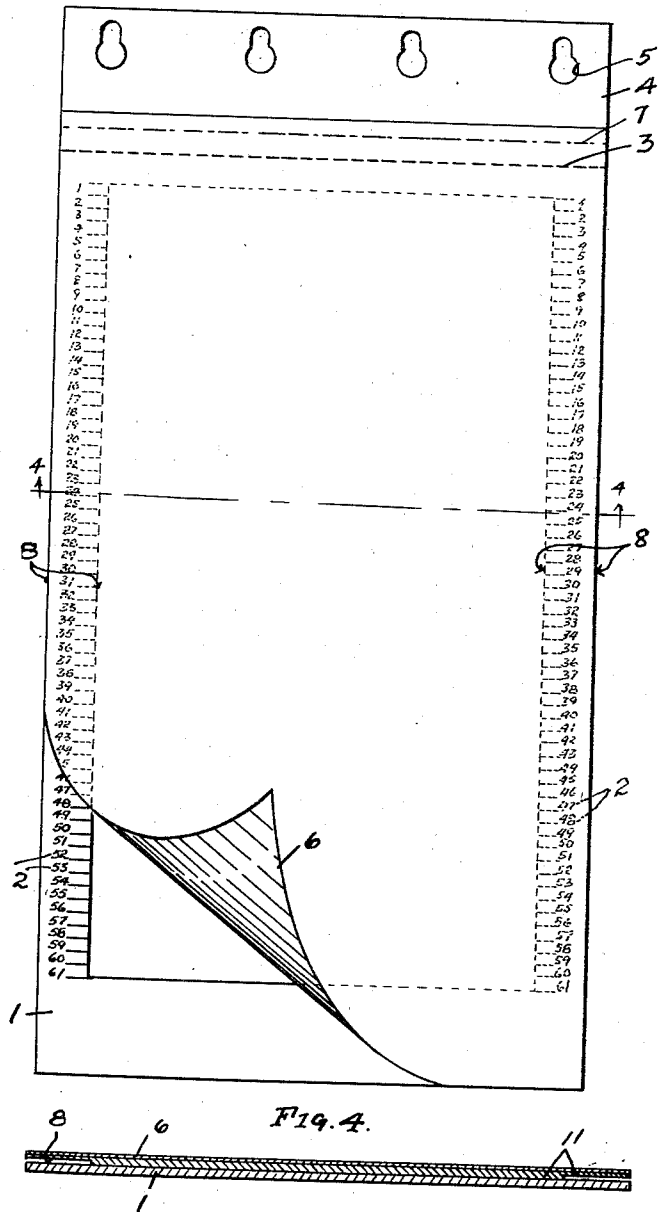


Fig. 2.

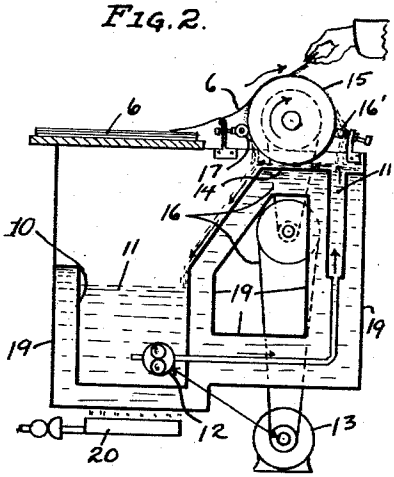


Fig. 3.

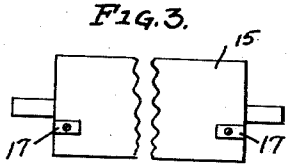


Fig. 4.

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STENCIL SHEET

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5 Claims. (Cl. 41—38.6)

This invention relates to stencil sheets for duplicating machines and method of making the same, and has for one of its objects the provision of an improved stencil sheet adapted for use on the conventional drum-type duplicating machines, which sheet is formed to facilitate reading the printed matter on a standard backing sheet attached to the stencil sheet while preserving the essential physical characteristics of the stencil sheet and backing sheet insofar as size, coating, weight of material and the like are concerned. Another object is an improved method for rapidly and economically forming stencil sheets of the above character. Other objects and advantages will appear in the following specification and drawing annexed thereto.

In the drawing, Fig. 1 is a plan view of my improved stencil sheet on a standard backing sheet, with the lower end of the stencil sheet turned back.

Fig. 2 is a diagrammatic view illustrating apparatus and method employed in making my improved stencil sheets, the apparatus being shown in section for clarity.

Fig. 3 is a diagrammatic view showing the position of the small scrapers or rollers at ends of the main roller of Fig. 2, which main roller carries the ink proof wax-like coating fluid with which the stencil sheets are coated.

Fig. 4 is a sectional elevation on line 4—4 of Fig. 1.

Briefly described, the stencil sheets of my invention are of the type used in duplicating typewriting, or drawings, which sheets are coated with a wax-like coating, generally blue in color. The sheets are light tissue of fibrous material that will resist cutting by the type of a typewriter, or by a stylus, while permitting the wax-like coating following the contour of the type or line of pressure of the stylus, to be removed from along such contour or line thereby enabling ink to pass through the sheet along the desired lines only and onto a sheet of paper adjacent the stencil sheet. This method of duplicating printing, writing or drawings, is generally known as "Mimeographing". The standard backing sheet attached to the stencil sheet, bears numbers or symbols along its side margins for enabling the operator to properly position the cut stencil in carrying out the process and heretofore these symbols have been extremely difficult to read through the colored wax-like coating on the stencil sheet. Since it is desirable that the stencil sheet and backing sheet be of the same width, but not materially wider than the inking drum on which the stencil sheet is ultimately attached, it is necessary that the stencil bear the wax-like coating over its full side. The coating is colored relatively dark to enable the operator to see what has been cut on the stencil, since the impression on the stencil sheet appears light relative to the surrounding dark area.

My stencil sheet overcomes the objection to difficult reading of the printed matter at the margin of the backing sheet by providing a marginal coating on the stencil sheet lighter in color than the portion of said sheet adapted to bear the matter to be printed, and which result I preferably accomplish by an improved method whereby the stencil sheet is coated on one side by the wax-like material, in one operation.

In detail, my finished product comprises a backing sheet 1, bearing printed matter 2 along its opposite margins. The backing sheet 1 is perforated transversely thereacross along line 3 adjacent the upper end thereof, providing a strip 4 along the upper end of the backing sheet easily detachable from the rest of said sheet. Said strip 4 is formed with the usual row of conventional shaped openings 5 for attaching to the inking drum of a conventional duplicating machine.

The stencil sheet, generally designated 6, is of the same width as the width of the backing sheet, and is secured at its upper end by paste, glue or the like to the strip 4 along line 7 just above the line of perforations 3, while the lower end of the stencil sheet terminates even with the lower end of the backing sheet. The entire side of said stencil sheet outwardly of the backing sheet, with the exception of the portion glued to the strip 4, is coated with a wax-like material that is applied in a fluid condition, but which solidifies upon drying.

This wax-like coating readily receives the impression from the type of a typewriter or from a stylus, such type or stylus cutting through the wax to the tissue of the stencil sheet, the sheet itself being of a character readily passing ink therethrough. Hence when ink is applied to one side of a cut stencil, such ink will readily pass through the lines where the wax coating is cut through to the tissue, but will not pass through the wax-like coating.

The margins 8 of the stencil sheet are covered with a wax-like coating of an appreciably lighter color than the area of the sheet between said margins, thus enabling the operator to readily read the printed matter on the backing sheet 1 through the stencil sheet and coating thereon at said margins. The coating on the stencil sheet

between the margins 8 is preferably of dark blue color, whereby any inscribing or cutting of the coating to the tissue of the sheet will show the white color of the tissue, such tissue sheets being ordinarily pure white in color before being coated.

In Figs. 2 and 3 I show, diagrammatically a preferred method of coating the stencil sheets 6 with the wax-like material, in which method I employ a supply tank 10 for the wax-like material 11, from which tank the material 11 is pumped by a pump 12 driven by motor 13 to flow over an elevated shelf 14. Over said shelf 14 is a rotatably mounted cylinder 15 driven through any suitable means, such as by belt connections 16 connected with the motor 13. The drum is rotated in the direction of the arrow with its lower side positioned within the wax-like material flowing over shelf 14, thus drawing the wax-like material over the drum sides. An adjustable strip 16' engaging a side of the drum from end to end thereof at a point just before the drum sides pass into the wax-like material cleans the drum sides of said material, thus insuring a uniform thickness of said material on the drum ahead of said strip. At the side of the drum opposite the strip 16' are adjustable rollers or scrapers 17 positioned at the margin of the drum which are adjusted to remove some of the material from the sides of the drum at its margins, but not all of the material.

The excess coating material flows past the drum and down an inclined drain plate 18 back into the tank.

A water jacket 19 encloses the tank 10 around the sides and bottom and extends under plate 18, shelf 14 and around the line leading from the tank to said shelf, the water in said jacket being heated by a burner 20 positioned below the tank 19. Thus the coating material is readily heated to render the same of the desired consistency throughout its path of flow and is maintained at such consistency by any suitable conventional means (not shown) such as thermo-responsive control means caused to actuate the burner 20 according to the temperature of the coating material.

When the machine is in operation, the operator grasps a sheet of uncoated stencil paper at its end margin and allows the same to drop against the rotating roller 15 at the desired point adjacent said margin. The sheet instantly is picked up by the wax-like material on the roller, and is drawn thereover, the material adhering to one side of the sheet in proportion to the amount of material on the surface of the roller. The operator merely draws the sheet away from the roller without tensioning the same to cause slippage, and then hangs the sheets from their upper margins on any suitable drying rack or frame, such racks being conventional.

The resulting sheet, has a coating of wax-like material over one side with the exception of the margin held by the fingers of the operator, and which coating is relatively heavy on the area between the margin where the wax-like material has been partially removed from the roller 15.

It is obvious that mechanical means may be employed to draw the stencil sheet from the roller, and to feed the sheets to the roller, but the method remains generally the same.

After the stencil sheets are dried, they are then pasted along their uncoated margin to the strips 4 of the backing sheets, one to each of the latter, with the lighter colored margin of the stencil sheets overlying the printed matter along the margin of the stencil sheets.

The following claims are intended to cover any obvious modifications of the product described that come within the scope of the invention.

Having described my invention, I claim:

1. A stencil sheet of the character described comprising a single, substantially rectangular sheet of relatively transparent, paper-like material pervious to the passage of ink therethrough provided with a coating of wax-like material impervious to the passage of ink, covering one side of the sheet including opposite margins thereof and bonded to said sheet whereby said sheet with the coating thereon form a unitary structure, the said coating along at least one of said margins being sufficiently transparent to enable the rapid reading therethrough of printed matter adapted to be covered by said one of the margins and the coating extending away from said one of the margins being of appreciably lesser transparency and of a relatively dark color and of a color contrasting with the color of said sheet to facilitate the reading of characters cut therethrough to the sheet preparatory to using the stencil with ink for printing, and for providing a visible differentiation between said one of the margins and the said coating extending therefrom along a line at their juncture to facilitate the positioning of the said characters during their cutting relative to said line.

2. A stencil sheet for mimeotyping, adapted to be used upon an opaque, hard backing sheet, having indicating indicia along at least one margin, which stencil sheet is substantially rectangular in shape, of transparent paper-like material, pervious to the passage of ink therethrough, having a colored coating of wax-like material covering one side of said sheet and bonded thereto, said coating being transparent along at least one margin for the width of the indicia upon the backing paper, and of lesser transparency over the area of the sheet extending away from said margin.

3. In a stencil sheet assembly for use in mimeographing, which assembly comprises a backing sheet having indicating indicia along at least one margin thereof, and a stencil sheet of transparent paper, pervious to ink, secured to said backing sheet at one edge, the improvement which comprises a colored coating of partially transparent wax-like material covering one of the sides of said stencil sheet and of which coating at least one margin, that lying above the indicia, differs in its transmission of light from that of the portion leading away from said margin.

4. A stencil sheet for mimeotyping comprising a single, substantially rectangular sheet of tissue-like paper pervious to the passage of ink therethrough and provided with a continuous surface coating of wax-like material impervious to the passage of ink therethrough covering one side of said sheet and bonded with said sheet whereby the sheet with the coating thereon form a unitary sheet, the portion of said coating on at least one of the margins of the sheet of paper being of a color characteristic visibly distinguishing the coating on said margin from the portion of the coating connecting with and extendng away from said margin over the central portion of the sheet of paper to facilitate the positioning and arrangement of the stencil symbols, or the like, to be cut in said coating, relative to said margin.

5. A stencil sheet for mimeotyping comprising

a single, substantially rectangular sheet of thin, tissue-like paper pervious to the passage of ink therethrough, single means rendering said sheet impervious to passage of ink therethrough and visibly distinguishing the area of at least one of the margins of said sheet from the area of the sheet extending away from said margin to the edge of the sheet opposite said margin, said single means comprising a coating of wax-like material integral with the sheet extending completely across the sheet from the edge thereof along said margin to the aforesaid edge of the sheet opposite said margin said wax-like material being relatively soft to enable cutting therethrough to the sheet by the type of a typewriter to permit passage of ink through said sheet where the coating is so cut.

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