

May 21, 1940.

R. A. DALTON

2,201,953

TOP PRINTED STENCIL AND METHOD OF MAKING

Filed Aug. 3, 1939

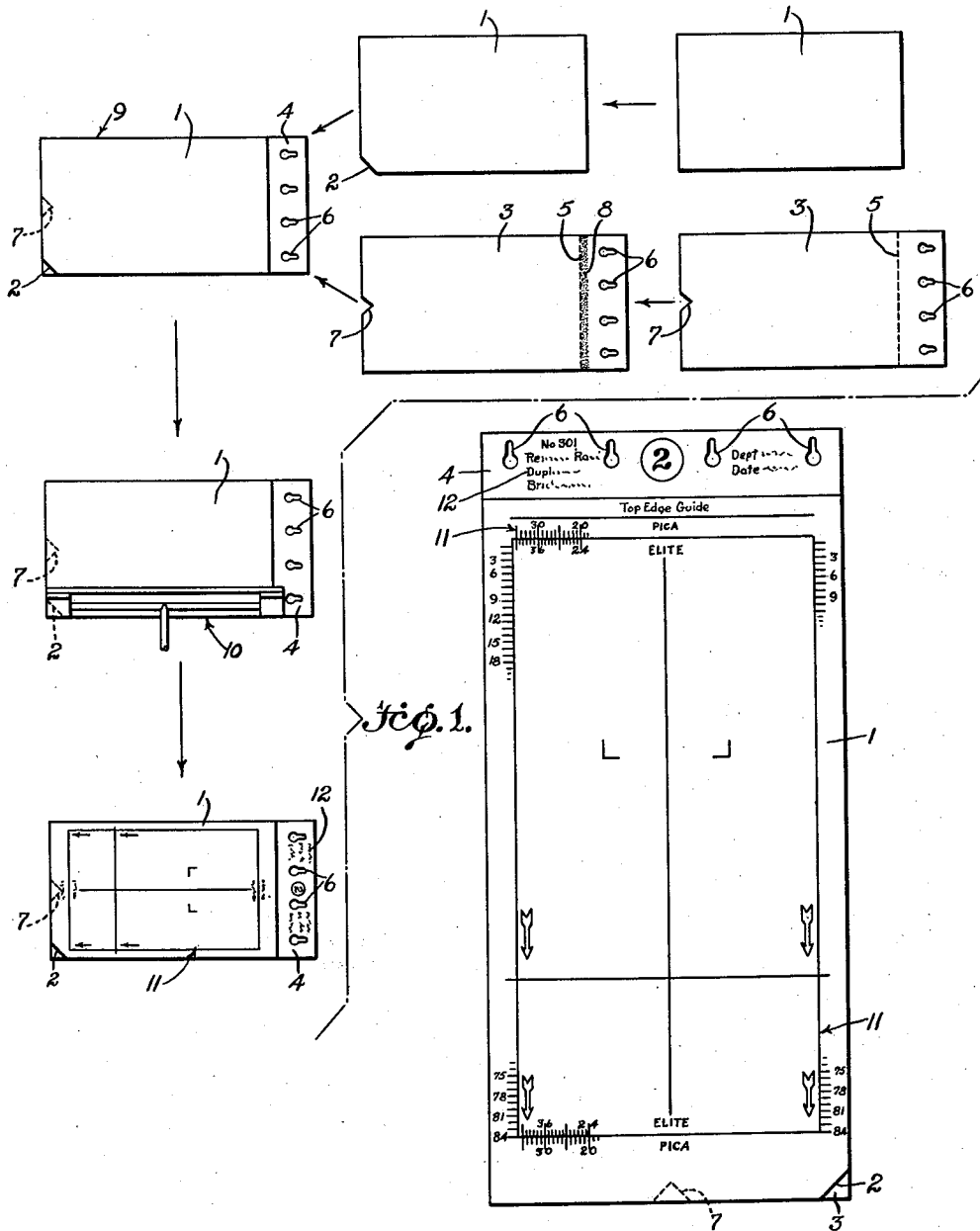


Fig. 2.

Inventor

Robert A. Dalton,

By

Paul T. Burt
Attorney

UNITED STATES PATENT OFFICE

2,201,953

TOP PRINTED STENCIL AND METHOD OF MAKING

Robert A. Dalton, Fairfield, Conn., assignor to
Remington Rand Inc., Buffalo, N. Y.

Application August 3, 1939, Serial No. 288,184

4 Claims. (Cl. 270—1)

This invention relates to the method of making stencils.

The present invention comprehends the making of a stencil by taking the usual backing sheet provided with a line of perforations at one end portion forming a separable stencil heading and suitable means for attaching the heading to a duplicating machine, and taking a stencil independently and removing one corner, then applying the end of the stencil, opposite to the end from which the corner has been removed, to the stencil heading of the backing sheet adjacent to the line of perforations by means of suitable adhesive. With the stencil prepared in this manner, the corner of the backing sheet opposite to the heading is exposed by the cut-off corner of the pencil. This exposed corner of the backing sheet and the stencil heading are then used to pick up the stencil by suitable feed mechanism of a printing press so that the stencil is fed sideways into the printing mechanism of the press for simultaneously printing the top of the stencil and the stencil heading with ink of different colors.

The removal of the corner of the stencil to expose the lower corner of the backing sheet provides for this sidewise feeding of the stencils through the printing press so that the stencil and the backing sheet may be held together during the feeding and printing operation. This enables the printing of two different colors on the stencil and stencil heading simultaneously in one printing operation. The provision of the removed corner of the stencil exposing the corner of the backing sheet provides a stencil construction that cooperates with conventional feed devices of conventional printing presses.

The stencil construction provided by the invention has one end of the stencil suitably attached to the backing sheet by adhesive or the like adjacent to the line of perforations dividing the sheet into a stencil heading at one end detachable from the remainder of the sheet which underlies the stencil, while the free end of the stencil has a corner removed to provide an angular edge exposing one corner of the stencil backing sheet opposite to the stencil heading. This provides a stencil structure wherein the exposed corner of the backing sheet at the lower end of the stencil facilitates the separation of the stencil from the backing sheet after it has been cut or whenever desired, in addition to providing a suitable structure for cooperating with the feed means of a printing machine for feeding the stencil during the printing operation. This exposed corner

of the backing sheet provides a particularly advantageous stencil construction where the central portion of the backing sheet is formed with a notch so that the stencil may be manually gripped in separating it from the backing sheet, while the backing sheet is held by the lower exposed corner.

In the drawing:

Fig. 1 is a diagrammatic illustration showing the various steps of operation on a stencil and backing sheet for illustrating the method of making stencils according to this invention.

Fig. 2 is a plan view of a stencil incorporating the features of the present invention.

In making a stencil according to the present invention, the Yoshino paper base for the stencil is coated in the usual manner to provide finished stencil sheets. These sheets are cut into rectangular form into one of the conventional sizes generally used for stencils. The completed rectangular stencil sheet is indicated diagrammatically at 1 in Fig. 1. These sheets according to the present invention then have a corner cut off as indicated at 2 to provide an angular edge at one corner of the stencil.

The usual type of backing sheet is used in connection with the present invention as indicated at 3 in Fig. 1. These backing sheets are rectangular in form and slightly longer than the stencil. They are constructed to provide a stencil heading 4 detachably connected with the remainder of the backing sheet 3 by means of a line of perforations 5 or any equivalent means. The stencil heading is always located at the top of the stencil and forms the upper or top end of the backing sheet. A plurality of apertures 6 of any desired shape are formed in the stencil heading 4, in a manner well known in the art, in order to provide attaching means for mounting the stencil on the cylinder of a duplicating machine. The lower end of the backing sheet is formed with a notch 7 in the central portion that facilitates the manual gripping of the lower end of the stencil when it is desired to separate the stencil from the backing sheet.

With a backing sheet constructed as above described, the next operation is to apply a strip of adhesive on the stencil heading 4 adjacent to the line of perforations 5 in the manner indicated at 8 in Fig. 1. The backing sheet is then ready to have the stencil applied thereto.

A stencil sheet is next applied to a backing sheet by having angular corner 2 arranged to be at the lower end of the assembly with the lower end of the stencil in coincident relation with the lower

end of backing sheet 3. The stencil being shorter than the backing sheet and the lower ends in coincident relation, positions the upper end of the stencil so that the upper margin will engage the adhesive coated surface of stencil heading 4 and be firmly attached thereto with the side edges of the stencil sheet coincident with the side edges of the backing sheet. This step in the method of making the stencil is illustrated at 9 in Fig. 1 which shows the stencil applied to the backing sheet in the manner described.

With the stencil applied to the backing sheet as shown at 9 in Fig. 1 it is then ready to receive the printed matter. Stencils are successively produced, as above described, into the form shown at 9, and then they are piled one on top of another with the stencil sheet on top of its backing sheet and the edges arranged in coincident relation with the angular edge 2 of all stencils arranged at the same corner of the pile.

A pile containing a desired number of stencils is then placed on the feed table of a printing machine having the desired type composition for printing respectively on the faces of the stencil sheet and stencil heading. Since it has been found that the same kind and color of ink is not readily adaptable to printing both the stencil heading and the stencil sheet, it has been found desirable and preferable to print the top face of the stencil sheet with one color and kind of ink and the face of the stencil heading with another color and kind of ink. The pile of stencils is arranged so the side edge extending from angular edge 2 is the leading edge in being fed sideways through the printing machine. The feeding mechanism of a printing press is then arranged to engage the stencil heading at this leading side edge and at the same time engage the stencil and backing sheets at the exposed corner adjacent to angular edge 2.

A conventional printing press and feeding mechanism thereon is used for printing the stencils in accordance with the present invention, a suitable type of press for performing the operation being known as the "Miehle vertical press." This press has a suction feeding device that operates to engage the top stencil on the pile positioned on the feed table, and by means of suction operating through suction feet respectively engaged with the stencil heading and the exposed corner of the backing sheet and stencil sheet adjacent angular edge 2, picks the top stencil off the pile and feeds it sideways. This is indicated diagrammatically at 10 in Fig. 1. This sidewise feeding of the stencil in the printing machine is continued so that each stencil is fed successively through the printing machine.

In being fed sidewise through the printing machine, the stencil is received by the printing mechanism of the press for top printing the stencil sheet with the printed form indicated diagrammatically at 11 in Figs. 1 and 2, while the printing mechanism also prints stencil heading 4 with the printed form indicated at 12. It has been found preferable to print form 11 with aluminum ink, due to the fact that this ink is more readily visible on the dark blue stencils having the conventional blue color most generally used in trade. Of course other colors may be used as desired. The stencil heading is preferably printed in black and the printing of the stencil heading and the top face of the stencil is obtained simultaneously in one printing operation by this side feeding of the stencil. This is obtained by providing the ink fountain of the

printing press with a suitable conventional divider and dividing the ink feed rolls of the printing press so that in transferring ink from the fountain to the type, the black ink will be transferred to the type for printing the stencil heading while aluminum or other colored ink will be transferred from the ink fountain to the type for printing the top faces of the stencil sheets.

This printing operation completes the manufacture of the stencil which, upon delivery from the printing press, are ready for packaging and use in the usual manner. The top printing of the stencil sheet is highly desirable because it gives a clear view of the form used to guide the operator in cutting the stencil.

With stencils colored differently than the dark blue commonly used, it will be understood that other colors of ink can be used for top printing the stencil sheet in order to provide the proper contrast between the color of the top printing and the color of the stencil sheet.

A simultaneous printing of the heading and top printing of the stencil sheets also enables the position of the printed form on the stencil heading and the stencil sheets to be fixed with relation to one another while the position of this printed matter on the stencil sheet and backing sheet can be controlled to a better advantage in a single operation than would be the case where it was necessary to run the stencil through two printing operations to independently top print the stencil sheet and the stencil heading.

Figure 2 illustrates the completed stencil produced by the method described above in which the top printing of the stencil sheet with the form 11 and the application of the printed matter 12 on stencil heading 4 is performed in one operation. With the stencil completed, as illustrated, it is then ready for use.

In using a stencil as shown in Fig. 2, it is customary to insert a cushion sheet between the stencil and backing sheets before cutting the stencil sheet. Angular edge 2 of the stencil sheet facilitates gripping of the lower corner of the backing sheet between the fingers of one hand while the fingers of the other hand grip the stencil sheet in the central portion of the bottom margin through notch 7 whereupon the stencil sheet may be more readily separated from the backing sheet and the cushion sheet inserted in place. The cushion sheet is positioned with its edges coincident to the backing and stencil sheets with the corner adjacent angular edge 2 exposed over the corner of the backing sheet.

This cushion sheet may be any of the various forms in common use, such as a carbon sheet or just plain tissue. The cutting of the stencil sheet in a typewriter or by any other means frequently causes the stencil sheet to adhere to the cushion sheet. Angular edge 2 is again useful in providing for the gripping of the cushion sheet and its more convenient separation from the stencil sheet.

After the stencil sheet is cut, stencil heading 4 may be removed from the remainder of the backing sheet along the line of perforations 5, whereupon the stencil is ready for application to the duplicating machine in a manner well known in the art.

The exposure of the bottom corner of the backing sheet by removing the corner of the stencil sheet to provide angular edge 2 is necessary in order to feed the stencil sideways in a printing press for obtaining the simultaneous printing of

the heading and stencil sheet with two colors or kinds of ink, and at the same time obtain proper registration and positioning of the printed matter on the stencil with respect to the position of apertures 6 in the stencil heading so that uniformity may be obtained between the apertures 6 and top printing 11 on all stencils. This uniformity is highly desirable to the proper uniform reproduction from stencils in a duplicating machine so the margins of groups of sheets will be uniform on successive sheets of a group printed from different stencils.

What is claimed is:

1. A method of making top printed stencils which consists in taking a stencil sheet and a backing sheet, removing a corner of the stencil sheet and attaching the opposite end to said backing sheet leaving an adjacent end portion of said backing sheet exposed to provide a stencil heading, the removed corner of said stencil leaving the adjacent corner of said backing sheet exposed, gripping said stencil and backing sheets at said removed and exposed corner and at said heading, feeding said stencil and backing sheets sideways while gripped, and printing on said stencil sheet with one color and on said heading with another color during the movement of said stencil sideways.

2. A method of making top printed stencils consisting in providing a rectangular stencil sheet, cutting a corner from said sheet, independently providing a rectangular backing sheet having one end formed with a row of perforations to define a detachable stencil heading at one end of said sheet, applying adhesive to said stencil heading adjacent said row of perforations, applying the end margin of said stencil opposite the one having the removed corner to the adhesive coated portion of said stencil heading with the remainder of said stencil superimposed on said backing sheet with one corner of said backing sheet exposed at said cut corner of said stencil, gripping a stencil and backing sheet at said stencil heading and exposed corner, feeding said gripped stencil and backing sheet side-

ways, and simultaneously printing on said stencil with one color and on said stencil heading with another color during sidewise movement of said stencil and backing sheet.

3. A method of making top printed stencils, which consists in taking a stencil sheet and a backing sheet, removing a corner of the stencil sheet and attaching the opposite end to said backing sheet leaving an adjacent end portion of said backing sheet exposed to provide a stencil heading, the removed corner of said stencil sheet leaving the adjacent corner of said backing sheet exposed, piling a plurality of said attached stencil and backing sheets on top of one another with corresponding ends at the same end of the pile and with each stencil sheet on top of its backing sheet, engaging the top stencil sheet with its backing sheet on the top face at said heading and at the exposed corner of said backing sheet, applying suction with said engaging of said top stencil sheet and backing sheet to lift said top stencil sheet and its backing from the pile and feed it sideways, and printing one color on said stencil sheet and another color on said stencil heading during sidewise feeding.

4. A method of making top printed stencils, which consists in taking a stencil sheet and a backing sheet, removing a corner of the stencil sheet and attaching the opposite end to said backing sheet leaving an adjacent end portion of said backing sheet exposed to provide a stencil heading, the removed corner of said stencil sheet leaving the adjacent corner of said backing sheet exposed, piling a plurality of said attached stencil and backing sheets on top of one another with corresponding ends at the same end of the pile and with each stencil sheet on top of its backing sheet, picking up the top stencil sheet and its backing sheet with suction operating at the removed corner and at the stencil heading, then feeding said stencil sideways from said pile, and printing one color on said heading and another on said stencil sheet during said sidewise feeding.

ROBERT A. DALTON. 45