Feb. 5, 1935. A. A. HEATH 1,989,922

STENCIL CUTTING SHEET

Filed Nov. 22, 1932

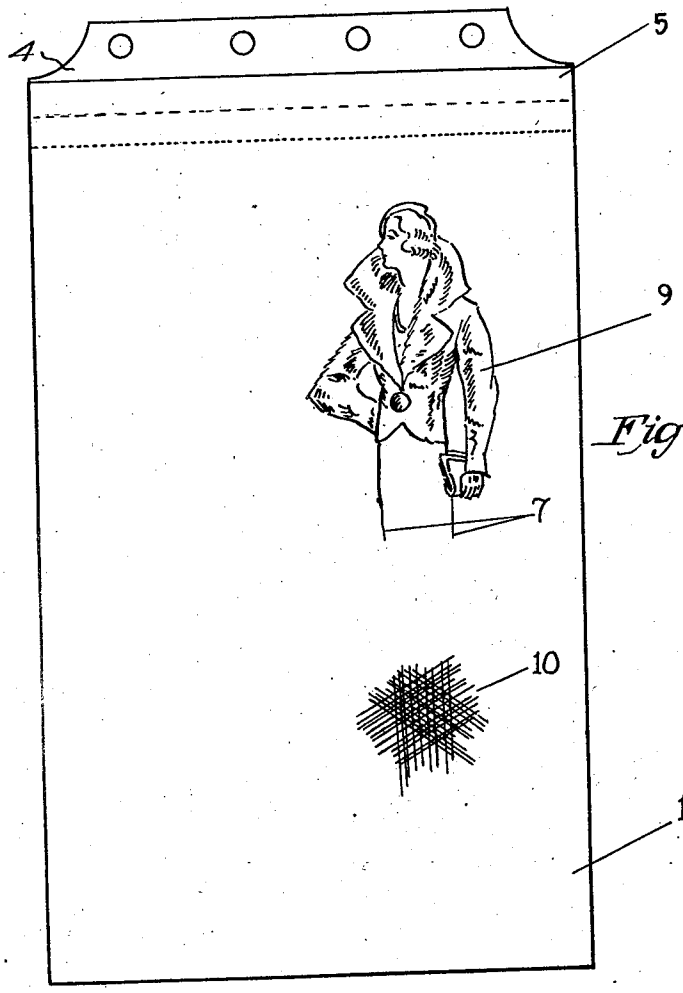


Fig. 1.

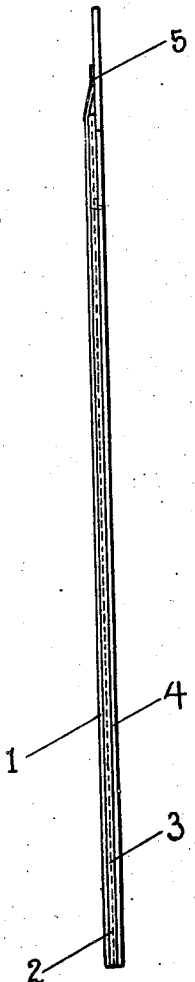


Fig. 2.

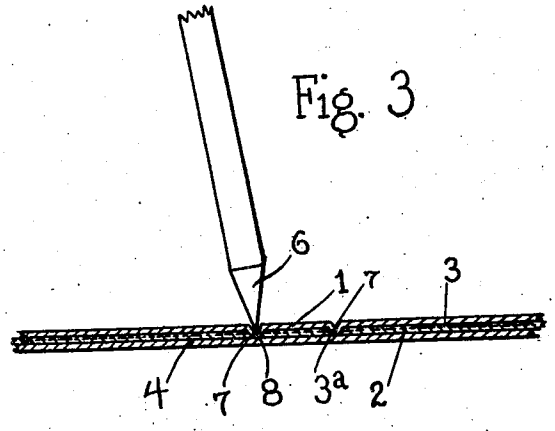


Fig. 3

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STENCIL CUTTING SHEET

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16 Claims. (Cl. 41—3.5)

This invention relates generally to stenciling, and has among its salient objects, to provide for use in combination with a stencil sheet, a stencil cutting sheet adapted to be placed over the stencil sheet for receiving impressions from a stenciling instrument and transmitting the same onto said stencil for effecting a cutting thereof, whereby said stencil sheet may be subjected to cutting without becoming directly engaged by the stenciling instrument; to further provide a cutting sheet of the character referred to, which has a non-fibrous structure that is characterized by its ability to absorb the dragging effect produced when a stylus is moved thereover, without transmitting said drag onto the stencil sheet, thus producing clean cut lines in the stencil sheet, which are free from ragged edges; and to still further provide such a stencil cutting sheet on which letters, figures, or designs may be imprinted for the purpose of tracing, thus facilitating the stencil cutting operation and rendering the stencil more adaptable to general use.

Other objects of the invention, are to provide a cutting medium of the character described, for use with a stencil sheet, whereby to prevent the cutting or injuring of the foraminous sheet forming the body structure thereof, thus preserving the original resistance of the stencil to the strains incident to its use in a stenciling machine; to preserve and protect the coating of the stencil sheet at all times; to provide a cutting medium having a smooth non-resisting surface for the stylus or other stenciling instrument, facilitating the cutting of the stencil; and to further provide such a medium by which smooth, clean cut lines are obtainable, whereby to permit the crossing and interlacing of lines without impairing the excellence of the letter, figure, or design.

Still further objects are, to provide in combination with a stencil sheet, a backing member and a stencil cutting cover sheet of the character heretofore referred to, which is adapted to be impressed by a cutting device for effecting the cutting of said stencil sheet and without being pierced by said stenciling instrument; and to further provide a stencil cutting unit comprising a backing member and a stencil cutting sheet attached thereto along one edge, whereby the stencil sheet may be inserted therebetween for cutting the same.

This invention possesses many other advantages and has other objects which may be made more easily apparent from a consideration of one embodiment thereof. For this purpose I have shown one form in the accompanying drawing and forming part of the present specification. I shall now proceed to describe this form in detail, which illustrates the general principles of my invention; but it is to be understood that this descriptiton is not to be taken in a limiting sense since the scope of the invention is best defined in the appended claims.

Although the novel cutting-sheet provided by my invention, is adaptable for use in cutting stencils in general, I find it particularly useful in cutting the commonly used dry-process stencil. Such stencils comprise a foraminous sheet having thereon an impressible coating which requires no moistening or other treatment prior to cutting the same. The coating on said stencils is adapted to be displaced as by pressure from a stylus or other cutting instrument for defining characters therein, thus permitting ink to penetrate through the foraminous sheet for reproducing copies of the characters appearing on the stencil sheet.

In depending solely upon the skill of the user and the present consistency, the usefulness of the stencil is limited and the quality of the work is impaired, by reason of the fact that the stylus or other cutting instrument frequently damages the foraminous sheet and coating, thus causing blemishes and ragged imperfect lines, as well as weakening the structure of the stencil.

Instead of depending solely on the skill of the operator, I employ, in the cutting of stencils, a flexible cutting sheet of the character heretofore described. I find the following materials to possess the characteristics necessary for the desired purpose, namely, regenerated cellulose, gelatine, celluloid, prepared paper, prepared cloth and other sheets having a non-fibrous structure. In practice, the flexible cutting-sheet is superimposed on the face of the stencil, and may be attached or unattached thereto, thus providing a protection for the coating and foraminous sheet of the stencil at the point of contact with the stylus or other stenciling instrument, making it practically impossible to damage the stencil. The cutting sheets referred to, are particularly useful when it is desired to cut stencils by hand, as by the aid of a stylus. Such sheets have a smooth, flexible, non-resisting surface and are characterized by their ability to absorb the dragging effect produced by the movement of a stylus thereover, without transmitting said drag onto the stencil. In other words, the cutting sheets seem to possess the faculty of being able to transform the undesirable dragging force produced by the pressure of a moving stylus, into a pressure that is vertical with respect to the plane of the cutting-

sheet, thus making it possible to produce lines in a stencil, which are clean-cut and free from ragged and broken edges. Thus it will be seen, that the use of a stylus on the surface of such sheets, produces a smooth, firm line, affording an opportunity for individual expression in the use of a wider range of shading, including the various styles of Ben Day, crossing and interlacing lines, and other freehand work unobtainable in any other manner.

In the drawing:

Figure 1 is a plan view of a stencil sheet and backing, with my stencil cutting-sheet superimposed on the face thereof.

Figure 2 is a side elevation of the device shown in Figure 1; and

Figure 3 is a fragmentary view showing how the stencil cutting-sheet is impressed by a stylus for effecting a cutting of the stencil.

Referring more in particular to the accompanying drawing, my flexible stencil cutting-sheet is designated numeral 1. Said sheet is superimposed on the face of the stencil-sheet 2—3, which comprises a foraminous sheet and wax-like coating respectively. The stencil-sheet is mounted on a backing sheet 4. Figures 2 and 3 show the various sheets to be much thicker than they are in actual practice. The stencil-sheet particularly, is very thin and appears as one substance, since the foraminous sheet 2 is filled or impregnated with the wax-like material forming the impressible coating 3 of the stencil sheet.

As shown clearest in Figure 3, the flexible stencil cutting-sheet 1, is superimposed on the foraminous sheet 2 of the stencil sheet 2—3, thus providing a smooth non-resisting surface for the stylus 6 as it is moved over the cutting-sheet in tracing and impressing therein the lines 7—7 of the character 9 and shading 10 shown in Figure 1. The characters to be traced may be imprinted directly onto the surface of the stencil cutting-sheet as shown in Figure 1, or may be provided on a separate sheet which can be positioned in back of the stencil sheet. It should be understood, that the stylus does not penetrate the stencil cutting-sheet and therefore does not directly engage the stencil sheet. As shown in Figure 3, the lines 7—7 have been impressed by the stylus point in the stencil cutting-sheet 1. The impressible coating 3 of the stencil sheet, is in turn displaced along the line of contact 8 between the impressed lines in the cutting-sheet and the stencil, thus leaving the foraminous sheet 2 free of the wax-like coating and undisturbed. The line walls 3a at the point of contact 8 are left smooth, clean and clear, whereby to produce a sharp, clear-cut image, instead of the ragged, bleeding lines common to the present methods of cutting stencils. In addition to serving as a cutting medium, the stencil cutting-sheet 1 also serves to protect the impressible wax-like coating 3 from damage in handling and preserves it from deterioration. It is desirable in certain instances to permanently attach the stencil cutting-sheet to the backing sheet forming a part of the commonly used stencil. The drawing shows the cutting sheet 1 attached to the backing sheet 4 as indicated at 5 in Figures 1 and 2, and said cutting sheet is adapted to be detached from the backing sheet prior to mounting it with its accompanying stencil sheet onto the duplicating machine. However, the stencil-cutting sheet and a backing sheet could be made as a unit connected along one edge and between which the stencil sheet could be inserted during the cutting operation.

In the type of duplicating machine most widely used, the stencil is mounted on a cylindrical surface to which it must conform and in the printing operation is subjected to considerable strain. The use of a stencil-cutting sheet as heretofore described, results in the production of stencils which have superior resistance to the necessary bending and stresses to which they are subjected.

The commonly used stencil sheet, comprising a thin foraminous sheet having a soft coating of an impressible nature, is very fragile. It is obvious that in cutting stencils of this nature, how the foraminous sheet is easily cut or torn through, weakening the entire stencil sheet. My flexible stencil cutting-sheet prevents the tearing or cutting of the foraminous sheet because the point of the stylus or other cutting instrument does not come in direct contact with either the impressible coating or foraminous sheet of the stencil sheet. The impression is made on the smooth, flexible cutting-sheet which, when impressed, displaces the impressible coating of the stencil, thus leaving the foraminous sheet intact and undisturbed, thereby preserving the original resistance of the stencil and increasing the number of prints available therefrom.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with a dry-process stencil sheet, of a backing sheet and a stencil-cutting sheet consisting of a regenerated cellulose body adapted to be impressed by a stencil cutting device without piercing said cutting sheet, whereby said dry-process stencil sheet may be subjected to cutting without becoming engaged and injured by said stylus or stenciling instrument.

2. The combination with a dry-process stencil sheet, of a backing sheet and a stencil-cutting sheet consisting of regenerated cellulose and having thereon characters adapted to be traced by a stenciling device, whereby said stencil-cutting sheet receives the impressions from said device and effects a cutting of the stencil.

3. A stencil cutting device for use in cutting stencils of the type having an impressible coating which does not require treating prior to cutting the same, consisting of a backing sheet and a stencil cutting cover sheet of non-fibrous material which is adapted to be impressed without being perforated by a stenciling device for producing corresponding impressions in the stencil coating, said cutting sheet being characterized by its ability to absorb the dragging effect produced by the stenciling device without transmitting the same onto the stencil, thus producing clean cut lines in the stencil which are free from broken edges which cause a bleeding effect when printing therefrom.

4. A stencil cutting device for use in cutting stencils of the type having an impressible coating which does not require treating prior to cutting the same, consisting of a backing sheet and a stencil cutting cover sheet attached along one side to said backing sheet whereby to receive the stencil therebetween, said stencil cutting sheet being of non-fibrous material adapted to be impressed without being perforated by a stenciling instrument to cause corresponding impressions in the stencil coating and characterized by its ability to absorb the drag of the stenciling instrument without transmitting the same onto the stencil, thus producing clean cut lines which are free from broken edges which cause a so-called bleeding effect when printing from said stencil.

5. A stencil cutting device for use in cutting

stencils of the type having an impressible coating which does not require treating prior to cutting the same, consisting of a backing sheet and a stencil cutting cover sheet of non-fibrous material attached along one side to said backing sheet whereby to receive the stencil therebetween for cutting the same, said cutting sheet having characters thereon which are adapted to be traced and impressed therein by a stenciling instrument without perforating said sheet to produce corresponding impressions and characters in the stencil coating and being characterized by its ability to absorb the drag of the stenciling instrument without transmitting the same onto the stencil, thus producing clean cut lines which are free from broken edges which cause a so-called bleeding effect when printing from said stencil.

6. In combination, a stencil consisting of a foraminous sheet having an impressible coating, and a non-fibrous stencil cutting sheet adapted to be impressed as by moving a stenciling device thereover for correspondingly displacing the stencil coating without perforating the stencil cutting sheet, said stencil cutting sheet being characterized by its ability to absorb the dragging effect produced by the stenciling device without transmitting the same onto the stencil, thus producing clean cut lines in the stencil coating which are free from ragged edges and without injuring the foraminous sheet of the stencil.

7. In combination, a stencil consisting of a foraminous sheet having an impressible coating, and a stencil cutting sheet having a non-fibrous structure, with characters thereon which are adapted to be traced and impressed by a stenciling device for defining corresponding characters in the stencil coating without perforating the stencil cutting sheet, said stencil cutting sheet being characterized by its ability to absorb the dragging effect produced by the stenciling device without transmitting the same onto the stencil, thus producing clean cut lines in the stencil coating which are free from ragged edges and without affecting the foraminous sheet of the stencil.

8. In combination, a stencil, and a stencil cutting sheet consisting of a regenerated cellulose body adapted to be impressed by a stencil cutting device without piercing said cutting sheet, whereby said stencil may be subjected to cutting without becoming engaged directly by said stencil cutting device.

9. In combination, a stencil, and a stencil cutting sheet consisting of a regenerated cellulose structure, with characters on said cutting sheet which are adapted to be traced and impressed by a stencil cutting device without piercing said cutting sheet, whereby said stencil may be subjected to cutting without becoming engaged directly by said stencil cutting device.

10. In combination, a backing sheet, a dry-process stencil consisting of a foraminous sheet having a coating thereon parts of which are adapted to be displaced for cutting the stencil, and a stencil cutting sheet of regenerated cellulose over said stencil which is adapted to be impressed by a stencil cutting device, whereby the coating is displaced by the impressed portions of the cutting sheet without being engaged by the cutting device, thus producing clean cut lines which are free from broken edges which cause a so called bleeding effect when printing from said stencil.

11. In combination, a backing sheet, a dry-process stencil consisting of a foraminous sheet having a coating thereon parts of which are adapted to be displaced for cutting the stencil, and a stencil cutting sheet of regenerated cellulose connected along one edge to said backing sheet and which is adapted to be impressed by a stencil cutting device, whereby the coating is displaced by the impressed portions of said cutting sheet without being engaged by the cutting device, thus producing clean cut lines which are free from broken edges which cause a bleeding effect when printing from said stencil.

12. In combination, a backing sheet, a dry-process stencil consisting of a foraminous sheet having a coating thereon parts of which are adapted to be displaced for cutting the stencil, and a stencil cutting sheet of regenerated cellulose connected along one edge to said backing sheet with characters imprinted thereon which are adapted to be traced and impressed by a tracing device, whereby to displace the coating on the stencil for defining similar characters thereon and without penetrating said cutting sheet, thus producing clean cut lines on said stencil which are free from ragged edges which cause a so called bleeding effect when printing therefrom.

13. The combination with a dry-process stencil consisting of a foraminous sheet having a coating thereon parts of which are adapted to be displaced for cutting the stencil, of a backing sheet and a stencil cutting cover sheet of regenerated cellulose attached along one side to said backing sheet, said stencil being adapted to be inserted between the backing and stencil cutting sheets during the cutting of the stencil, said stencil cutting sheet being adapted to be impressed by a device, whereby the coating is displaced by the impressed portions of the cutting sheet without being engaged directly by said device, thus producing clean cut lines in the stencil coating without effecting the foraminous sheet of the stencil.

14. In combination, a stencil consisting of a foraminous sheet having an impressible coating, and a stencil cutting sheet over said stencil which is adapted to be impressed as by moving a stencil cutting instrument thereover for correspondingly displacing the stencil coating without perforating the stencil cutting sheet, said stencil cutting sheet being characterized by its ability to absorb the dragging effect produced by the stenciling instrument without transmitting the same onto the stencil, thus producing clean cut lines in the stencil coating which are free from ragged edges and without injuring the foraminous sheet of the stencil.

15. In combination, a stencil, and a stencil cutting sheet comprising a gelatine body adapted to be impressed by a stencil cutting device without perforating said cutting sheet, whereby said stencil may be subjected to cutting without becoming engaged directly by said stencil cutting device.

16. In combination, a stencil, and a stencil cutting sheet comprising a gelatine body adapted to be impressed by a stencil cutting device without perforating said cutting sheet, with characters on said cutting sheet which are adapted to be traced and impressed therein for affecting the cutting of similar characters in the stencil.

ALMON A. HEATH.