

July 16, 1963

C. A. BANKHEAD

3,097,594

ASSEMBLED COMPOSITION PRINTING PROCESS

Filed Feb. 14, 1962

2 Sheets-Sheet 1

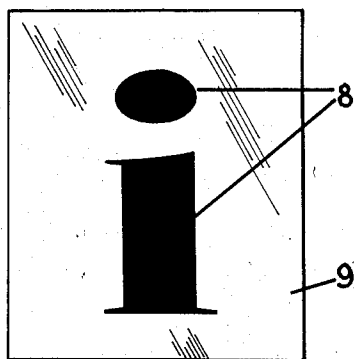


Fig. 1

Fig. 2

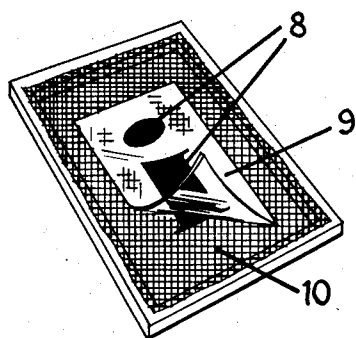
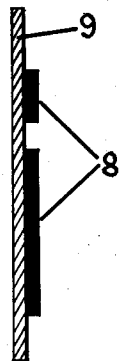


Fig. 3

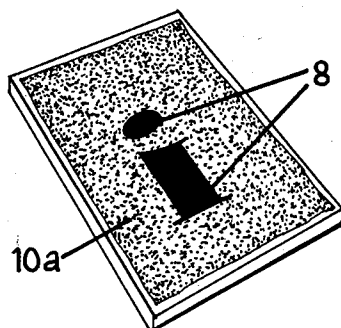


Fig. 4

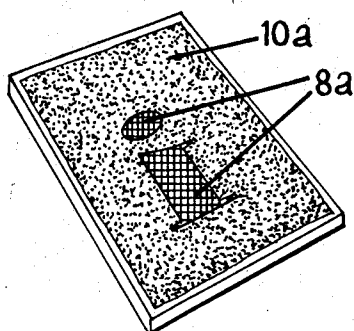


Fig. 5

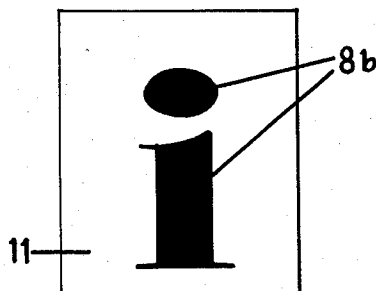


Fig. 6

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ASSEMBLED COMPOSITION PRINTING PROCESS

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2 Sheets-Sheet 2

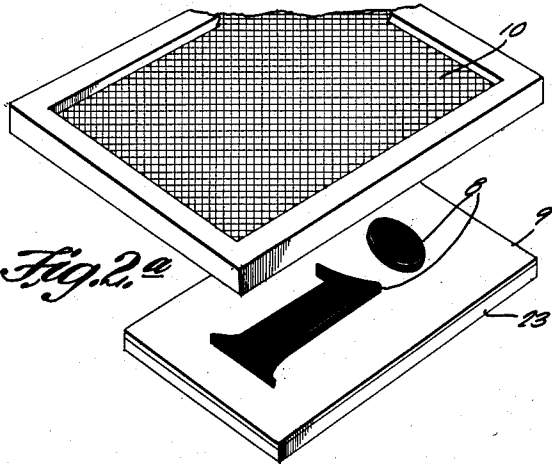


Fig. 1a

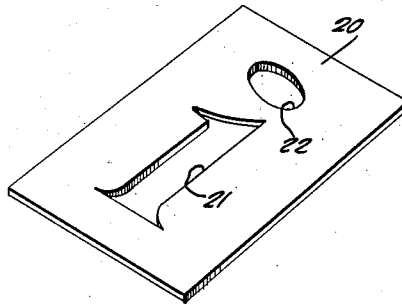


Fig. 3a

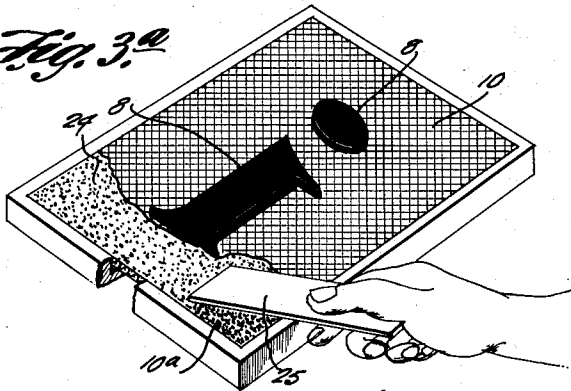


Fig. 7

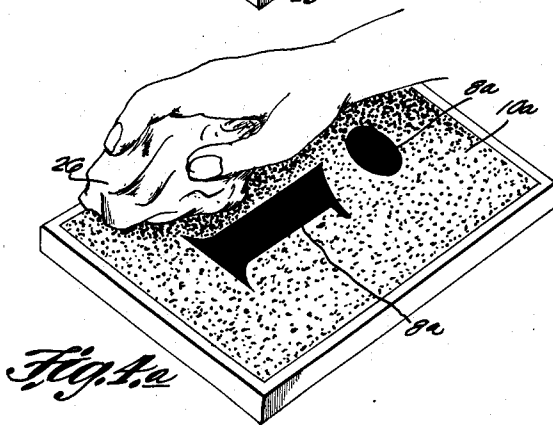
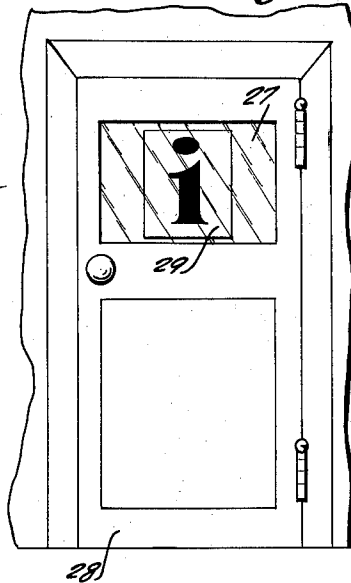


Fig. 4a

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3,097,594

ASSEMBLED COMPOSITION PRINTING PROCESS

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3 Claims. (Cl. 101-128.4)

The present invention is a continuation-in-part of application No. 733,201, filed May 5, 1958, now abandoned.

The present invention relates to a process of preparing a silk screen stencil from movable type units and to the method of preparing the type units.

A primary object of the present invention is to provide a new and useful method of preparing a silk screen for use in printing on any type of surface such as paper, wood, plastic, or glass.

Another object of the present invention is to provide a method or process of preparing a silk screen using movable type units which may be produced in quantity and stored until used, the process being economical in execution and simple to perform.

A further object of the present invention is to provide an inexpensive method of producing identical signs, posters, and the like such as are presently used by civic organizations, church groups, schools, businesses, or others having need for inexpensively produced stenciled signs.

These and other objects will be fully apparent from the following description when considered in the light of the drawings and in which the steps of the method of the present invention are illustrated, and in which:

FIGURE 1 shows indicia such as a letter of the alphabet formed of a gum substance as applied by a conventional stencil to a backing sheet,

FIGURE 1a shows a conventional stencil for use with the silk screen in the present invention,

FIGURE 2 is a cross sectional view of the assembly shown in FIGURE 1.

FIGURE 2a shows the assembly of FIGURE 1 in position on a support block in a silk screen in position to be lowered onto the block,

FIGURE 3 shows the screen of FIGURE 2a inverted and the backing sheet partially removed from the gum letter,

FIGURE 3a shows glue being spread on the screen after removal of the backing sheet,

FIGURE 4 shows the screen and the gum letter prior to removal of the gum,

FIGURE 4a shows the gum letter being removed with a solvent,

FIGURE 5 shows the final screen as prepared according to the present invention,

FIGURE 6 shows a sheet printed with the letter of the alphabet shown in FIGURE 1, using the screen prepared according to the present invention, and

FIGURE 7 is a view of a door having a glass panel against the far side of which is positioned a sheet having a letter printed thereon by using the screen and letter unit of the present invention.

In carrying out the method of the present invention, first a conventional stencil 20 is employed with a backing sheet 9, and a unit of indicia or plurality of indicia units such as a letter or letters of the alphabet is defined by the cutout portions 21 and 22 of the stencil 20.

A substance in liquid or semi-liquid form is painted or squeezed through the stencil 20 onto the backing sheet 9 to form the indicia body 8, as in FIGURES 1 and 2, the body 8 being relatively thick in comparison with the thickness of the sheet 9. The gum substance or indicia body 8 may be selected from such materials as tar, pitch, ester gums, or the like which are water repellant but are

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soluble in such products as gasoline, acetone, benzol, or similar substance.

Using pitch, for example, the sheet 9 is next placed on a support block 23. Next, a silk screen 10 is inverted as in FIGURE 2a and is lowered onto the sheet 9 and body 8 and the screen 10 is firmly pressed onto the body 8 so as to have the body 8 firmly adhered thereto.

The surface of the body 8 may be rendered tacky by the application of a suitable solvent such as gasoline or gasoline and acetone mixed.

Next the gasoline or gasoline and acetone mixture is wiped across the reverse side of the screen in order to effect a better bonding of the body 8 to the screen 10. Excess solvent is blotted up as pressure is applied to the reverse side of the screen 10 to make the body 8 adhere thereto.

In the next step, the sheet 9 is peeled from the body 8, as shown in FIGURE 3 leaving the body 8 on the screen 10 with clean and sharp marginal edges. Preferably the sheet 9 has a non-adhesive face and waxed paper or waxed cardboard is an example of a material which lends itself to employment as the sheet 9.

The next step of the method of the present invention is to coat the surface of the screen 10 with a water soluble material such as glue 24, as in FIGURE 3a. This may be done by spreading it with a blade 25 or by brushing or by any other method desired.

After allowing time for the glue 24 to dry, the next step is to remove the pitch body 8 from the screen 10. This is accomplished by scrubbing the screen 10 in the area of the body 8 with a rag, such as at 26 in FIGURE 4a, the rag 26 being saturated with a substance which will dissolve the body 8. This substance if pitch, is soluble in gasoline or gasoline and acetone.

This results in leaving the screen 10 permeable in the area 27 and 28 formerly occupied by the body 8 and such area is bounded by the glued area 10a as in FIGURE 5. The permeable area is designated by the numeral 8a.

The finished screen 10 is now employed to print the letter indicia as at 8b on a surface such as surface 11 in FIGURE 6.

This surface may be paper, cardboard, a wall, a door surface or the like. If desired the screen 10 may be employed to imprint a legend in reverse on a paper backing sheet having a surface to which the painted word or legend has little adhesion, then the legend may be transferred to the glass 27 of a door 28, as in FIGURE 7, and paper backing stripped from the legend. The glass 27 may be of the surface contoured type as the paper backing permits pressing the legend in a tacky condition into the contour prior to stripping the paper from the legend, the paper being designated by the reference numeral 29 in FIGURE 7.

The present invention provides an economical method of assembling the letter units to make a legend and making a stencil from the same, and then printing the legend formed by the units on any surface desired.

The present invention is not to be limited to the use of tar, pitch, or any particular gum substance, nor to water soluble glue or the like. The letter unit may be formed from a more soluble substance for instance and the screen can be coated with a substance soluble in gasoline, alcohol, or other substance.

The letter units may be prepared in advance and stored in a dry condition and softened by any method desired prior to placing on the silk screen, such methods including heating, applying a solvent, or the like. Preferably the units are formed on a paper which is non-curling in order that they be handled quickly and efficiently.

When the letters or legends are prepared in advance and are to be stored, the wet paint may be sprinkled with a

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dry adhesive such as powdered shellac or the like as the letters or legends are being printed. When the letter is to be placed on the screen the shellac is softened with a proper solvent such as alcohol. Ester gum is a preferred substance to be employed with shellac as the screen coating in place of glue.

It has been found that ester gum may be utilized as the positive transfer image material on an appropriate temporary support or backing sheet and bonded by any one of several means to a foraminous silk screen, and then removed from its temporary support sheet or backing sheet. A coat of spirit-dissolved shellac may be scraped across the fabric and across the ester gum image so as to result in the weakening of the shellac at the image area. When dry, the image area may be removed by scrubbing the entire screen surface with a rag charged with naphtha or other ester gum solvent which does not dissolve shellac. The shellac coating thus becomes a positive printing stencil.

Although only a preferred form of the invention is shown and described, other methods of providing a silk screen having letter units or legends thereon and preparing the movable type for such a screen may be employed within the scope of the appended claims.

What is claimed is:

1. A method of preparing movable type and converting it to a screen stencil which consists in forcing a composition of water repellant gum through a screen stencil onto a backing sheet, dividing the sheet into legends or letter units bearing gum bodies, placing a silk screen over the gum bodies and in contact therewith, causing the gum bodies to adhere to the screen, pressing and blotting the

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screen into said gum bodies, removing the backing sheet, applying a coating of water soluble glue to the screen, drying the glue coating, and removing the gum bodies by the application of a solvent.

2. A method of preparing a silk screen comprising forming on a sheet a gum body soluble in a first material, applying said gum body to a perforated screen, removing said sheet from said body, coating said body and the screen portion bounding said body with a second material insoluble in said first material, and dissolving said body in said first material to leave said screen pervious in the area from which said gum body was removed.

3. The method of preparing a silk screen comprising stenciling a gum body onto a sheet, said gum body representing a letter of the alphabet, drying said gum body, applying a solvent to said gum body, pressing said gum body into a perforated screen, removing said sheet from said body, coating said body and the screen portion bounding said body with a material, dissolving said body in a material in which said first named material is insoluble, and removing said body from said screen to leave said screen pervious in the area from which said gum body was removed.

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