United States Patent [19]

Cuenca

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[54] VISUAL TYPESETTER

[76] Inventor: **Eduardo Cuenca,** 2735 Bel-Aire Circle, Tampa, Fla. 33614

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[52] **U.S. Cl.** **95/4.5,** 355/115, 95/85, 355/3

[51] **Int. Cl.** **B41b 13/02**

[58] **Field of Search** 95/4.5, 85; 355/3

[56] **References Cited**

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Primary Examiner—John M. Horan
Attorney—Stefan M. Stein

[57] **ABSTRACT**

A device and method for setting copy comprising placing various copy, in the form of indicia-bearing material, half-tones, or other art work, onto a translucent plaque having an electrostatic charge thereon. The copy is capable of carrying the electrostatic charge such that it is removably positioned thereon yet maintains the desired position until further processing. A photographic sheet is then placed over the pre-arranged copy and exposed to light transmitted through the translucent plaque whereupon a positive or negative is formed. The sheet is then used in lithography, typography, engraving, silk screen printing, sign making and similar technologies which utilize photographic sheets.

3 Claims, 5 Drawing Figures

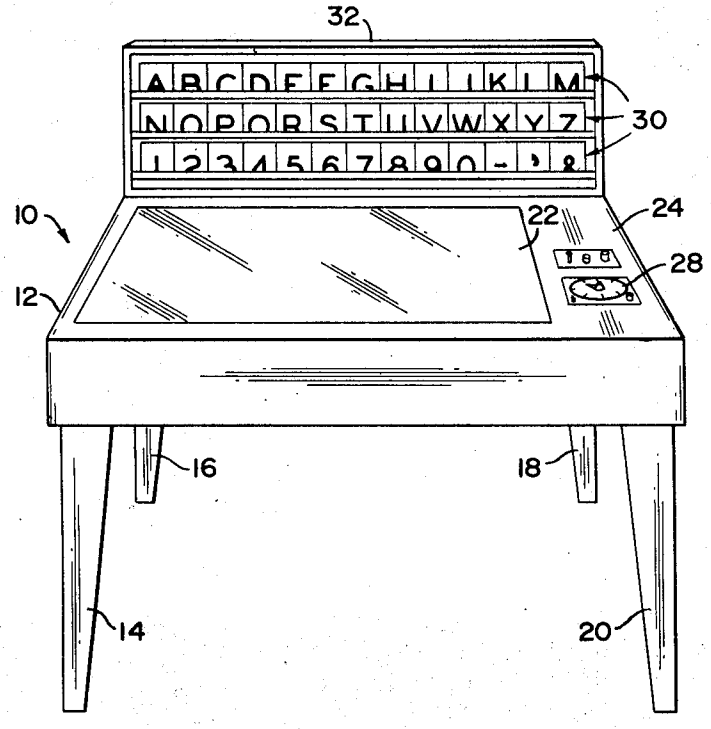


FIG. 1

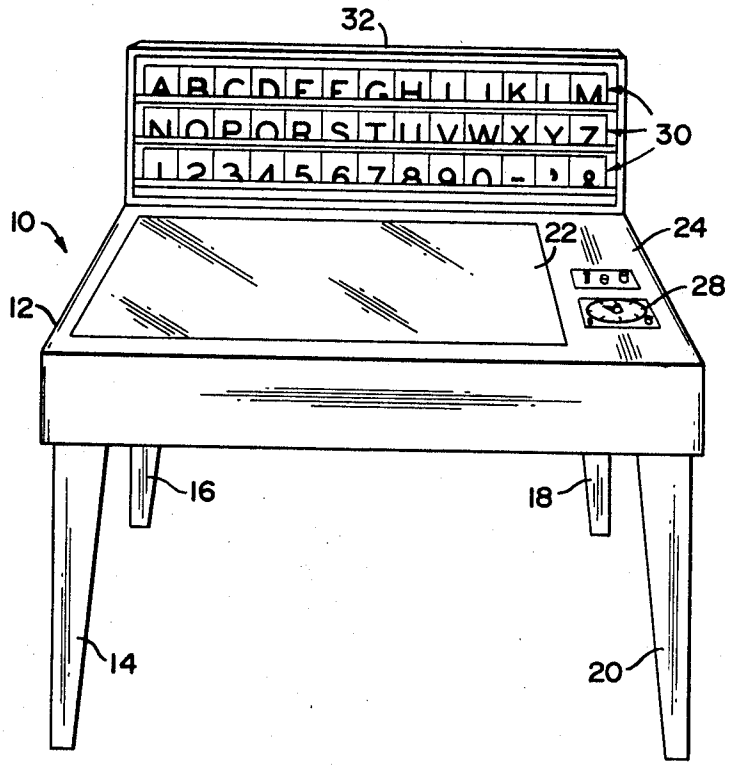


FIG. 2

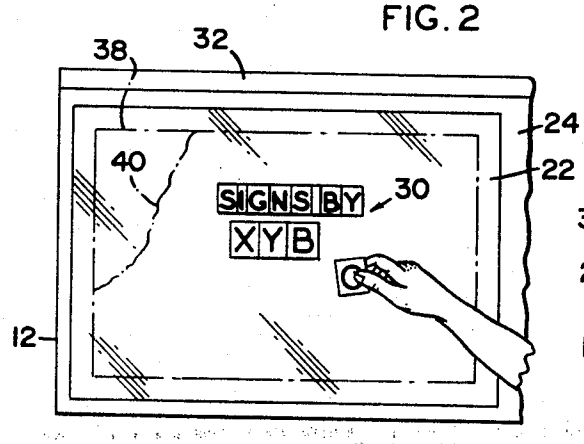


FIG. 3

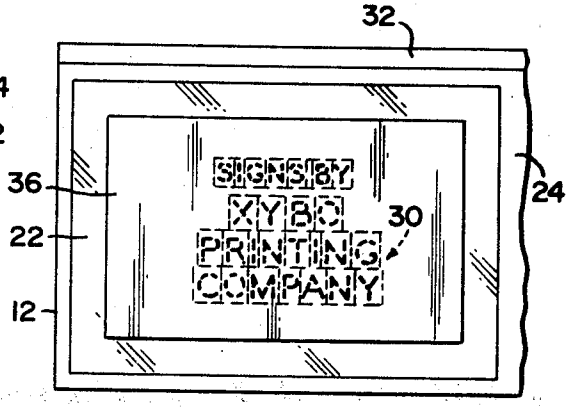


FIG. 4

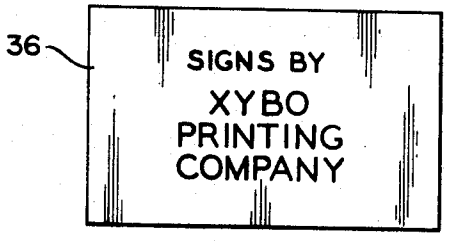
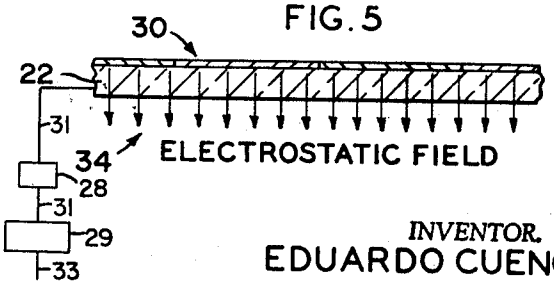


FIG. 5



INVENTOR.
EDUARDO CUENCA

BY Law Offices of Stefan M. Stein

ATTORNEY.

VISUAL TYPESETTER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a device and method for setting copy and producing photographic sheets or plates therefrom by utilizing the principal of electrostatic attraction which allows arrangement and maintenance of said copy on a translucent plaque in a desired position. A photographic sheet, which may act as a positive or a negative in further processing, is then exposed to said copy by transmitting light through the plaque.

2. Description of the Prior Art

Many techniques exist for making sheets or plates for lithography, typography, engraving, silk screen printing, sign or poster manufacture and the like. The majority of these, however, involve a slow, expensive process.

Previously in lithography, a linotype machine was used to cast type. Then the type was set and a plate made therefrom for subsequent use in the printing press.

Phototypsetting then came into use wherein strips of copy were adhered to a base sheet, using wax, glue or adhesive tape. The sheet with the copy thereon was then photographed and the negative therefrom used to make a printing plate, actually a positive metal lithograph plate.

Typography and engraving involve variations in the above techniques.

In silk screen printing, the negative made by photographing the set copy is used to make a mat. The mat is then placed on the silk screen to block desired portions of the screen against paint, dye or ink transmission. Subsequently, paint, dye or ink is forced through the unblocked areas in the screen. The prohibitive cost of producing the mat, especially when an intricate design is involved, and the relatively short wearability of the paint, dye or ink on the sign or poster makes silk screening a relatively expensive method of duplication and it is used sparingly.

In sign or poster manufacture, a dye transfer technique is also frequently used. Here a dye containing photographic positive is placed on a dye absorbing mat. The dye is then transferred to a base sheet made of glass, plastic, paper, etc. and the base sheet used to print the sign or poster. Expensive apparatus and intricate procedures are involved making it too costly for every day low-coat sign or poster manufacture.

SUMMARY OF THE INVENTION

The present invention relates to a visual type-setter device and method for visually setting copy utilizing the principal of electrostatic attraction. The operator lays out the copy in the form of indicia-bearing material, half-tones, or other art work and may even rearrange the copy as desired on the device before producing a photographic positive or negative of said copy. This positive or negative is then used in the particular duplication process employed.

More particularly, the visual typesetter device of this invention comprises a housing on which is mounted a translucent plaque. The plaque is capable of being charged with static electricity. Copy, preferably in the form of sheets or strips of transparent or translucent plastic sheet with indicia formed thereon, such as letters of any given style or configuration or half-tones or

other art work, is then set, by the operator, on the plaque. The electrostatic charge on the plaque not only maintains the copy in the desired position, but also allows the operator to rearrange the copy if necessary. Aids such as a dummy layout sheet or grid may first be laid on the plaque and covered with a transparency. Alternatively, the electrostatic attraction between the copy and the aids and the plaque may be established by placing an electrostatic charge on the copy rather than on the plaque. A lighting system contained within the interior of the housing is then used to accomplish exposure of a photographic sheet which is laid over the copy.

This invention accordingly comprises the several steps and relation of one or more of such steps with respect to each of the others and the apparatus embodying features of construction, combination of elements, and arrangement of parts which are adapted to effect such steps, all as exemplified in the following detailed disclosure, and the scope of the invention will be indicated in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in combination with the accompanying drawing in which:

FIG. **1** is a perspective view of the visual typesetter.

FIG. **2** is a top plan view of the electrostatic plaque with various copy placed thereon.

FIG. **3** is a top plan view of the plaque showing the next step in the process with a photographic sheet placed over the copy.

FIG. **4** is a view of the photographic sheet with the copy reproduced thereon.

FIG. **5** is a sectional view of the plaque and copy material arranged thereon in a removably fixed relation through the use of an electrostatic field.

Similar reference characters refer to similar parts throughout the several views of the drawing.

DETAILED DESCRIPTION OF THE INVENTION

The visual typesetter device of the present invention is shown generally in FIG. **1**. It comprises a housing **12** mounted on four support legs **14, 16, 18** and **20.** The housing encloses a conventional lighting system (not shown). A plaque **22,** capable of being electrostatically charged is mounted on the top surface **24** of the housing **12.** It is preferably made of a translucent material, such as frosted glass. As shown schematically in FIG. **5** an electrical circuit which may include including timer switch **28,** charges the plaque **22** so that an electrostatic field is created. More specifically an electrostatic charge generating means **29** is electrically connected to plaque **22** by conductor means **31.** Timer switch **28** may be inserted in the circuit as shown and can also be connected to the light system to simultaneously actuate the light system as discussed below. Conductor **33** may lead to an applicable power source. Copy **30** is then set on the plaque in a desired arrangement. The copy **30,** as shown, may be in the form of indicia-bearing miniature transparent placards. However, strips, sheets, etc. with other copy thereon, such as half-tones or other art work may also be used. For ready access, the copy may be stored on racks **32** extending upwardly from the rear of housing **12.**

As shown in FIGS. 2 and 5, the copy 30 is maintained on the plaque in its set arrangement by the attraction of electrostatic field 34 of plaque 22. The electrostatic field is strong enough to maintain the copy 30 in the set arrangement on plaque 22 but is weak enough to allow an operator to rearrange or remove the copy to form any given layout. In the alternative, the copy 30 may be electrostatically charged so that it adheres to the plaque 22.

After the copy has been arranged to create the desired configuration, a photographic sheet 36 is placed on plaque 22 over the copy 30 (FIG. 3). Sheet 36 is then exposed for a predetermined length of time by setting and actuating timer switch 28 to energize photograph activating light behind plaque 22. Switch 28 may be electrically connected in the circuit comprising the electrostatic charge generating means 29 so as to first actuate the generating means 29 and then, when the copy 30 is set as desired, the light source may be actuated through the timer switch or by separate controls or the like, which may be mounted on the switch itself for convenience. Switch 28 may be further electrically connected to both generating means 29 and the light source so as to automatically de-activate them simultaneously after they have been operating concurrently as described above. The sheet 36 is then developed and used in the particular duplication process being employed.

To aid in arranging the copy, a grid 38 covered by a transparent film 40 may first be laid on the plaque. If desired, film 40 may be electrostatically charged so that it can be removed from the plaque with the copy adhering thereto. This film 40 with the adhered copy may then be used for other duplication methods such as silk screen or offset printing.

It will thus be seen that the objects made apparent from the preceding description are efficiently attained, and since certain changes may be made in the carrying out of the above process, in the described product, and

in the construction set forth without departing from the scope of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Now that the invention has been described,

What is claimed is:

1. A visual typesetter comprising: a housing, a light permeable plaque mounted on said housing capable of carrying an electrostatic charge, an electrostatic charge generating means mounted on said housing and electrically connected to said plaque for generating an electrostatic charge thereon, copy arranged on said plaque, said copy being formed of a material capable of adherence to said plaque when subjected to an electrostatic charge, a lighting system within said housing capable of transmitting activating light through said plaque, a lighting system activating means and a timer switch, said timer switch electrically connected to said electrostatic charged generating means and said activating means electrically connected to said lighting system, whereby said electrostatic charge generating means may be activated for a predetermined time period and concurrent with said lighting system.

2. The visual typesetter of claim 1 wherein said copy comprises miniature transparent placards being stored on a rack extending from said housing.

3. The visual typesetter of claim 1 further including a transparent film mounted on said plaque and being formed of a material capable of being charged with an electrostatic charge to cause adherence of said copy thereto after said copy is arranged on said typesetter.

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