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PRINTING PLATES FOR ADDRESSING MACHINES

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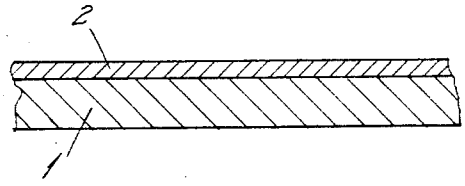


Fig. 1.

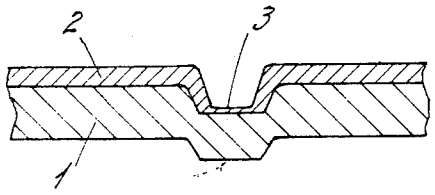


Fig. 2.

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PRINTING PLATES FOR ADDRESSING MACHINES

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2 Claims. (Cl. 250—67)

The present invention relates to an improvement in plates for the production of embossed printing matrixes for addressing machines in order to render such plates suitable also for the photographical reproduction of the embossed text by means of X-rays, such as for marking radiographical films.

Hitherto the following methods have principally been employed for marking radiographical films:

(1) Manual marking with blacklead or a special ink, either in a dark room before development, or after the film has dried after development thereof.

(2) Marking by means of incandescent-lamp light and perforated patterns, and typewritten marking strips which are reproduced on the radiographical film in the dark room before development.

(3) Marking of cartridges with leaden numbers which are directly co-exposed into the picture.

Since at several hospitals they have presently begun to use for the forms pertaining to a patient addressing machines operating with embossed metal matrix plates, it would be of great advantage if these plates could be utilized also for the marking of radiographical film by reproducing the embossed text of the plate onto a certain portion of the films by means of X-rays, suitably while the film is still in situ in its cartridge.

The known matrix plates for addressing machines are generally made of light metal (aluminium or aluminium alloy), iron or zinc. Attempts made to reproduce photographically the embossed text of such plates by X-rays show, it is true, that a picture of the text will result, but that this picture lacks a satisfactory blackness and clearness. The best result is obtained with zinc plates owing to the greater degree of absorption of this metal, but also the result obtained with zinc plates is unsatisfactory.

The present invention overcomes the drawbacks stated above and provides matrix plate for an addressing machine which, besides its use for printing purposes, can be used with quite satisfactory results also for transferring the embossed text to a photographical film by means of X-rays. The matrix plate according to the invention is mainly characterized in that it consists of a base plate of a material suitable for the embossment of text matter, and superimposed thereon a thin layer of a material which is softer and less permeable to X-rays and which is adapted on embossing the text matter to be partly displaced laterally at the bottom areas of the embossments being formed, thereby imparting increased permeability to X-rays to these areas.

The base plate may be a matrix plate of a conventionally used material, such as, for instance, light metal, iron or zinc, and may have a thickness of about 0.5 mm., for example. However, the base plate may consist, alternatively, of any other material which is suitable for the purpose concerned, such as a plastic. What is essential is that on being subjected to embossing the same will provide a printing matrix which is adapted for use in an addressing machine.

According to the invention there may be applied to that face of the base plate from which the embossing operation takes place a thin, for instance 0.06 to 0.1 mm. thick, foil of lead. Then, on embossing the assembly, one obtains in the usual manner a plate suitable as a printing matrix, and the lead foil will have no unsettling effect.

However, during the embossing operation the softer lead is displaced laterally at the bottom areas of the embossments causing the foil at these areas to become much thinner so as to let through the X-rays to the required extent, whereas the remaining portions of the plate are more or less impermeable to X-rays. Therefore, the plate may be used with good results for transferring by means of X-rays onto a photographical film within a cartridge the text matter present on the matrix plate, whereby this text matter will appear on the film with a good clearness and deep blackness.

It would be possible, of course, to use instead of a lead foil any suitable other soft and strongly X-ray-absorbent material, such as, for example, foils of other suitable metals, or even foils for instance plastic foils incorporating a finely divided material with low permeability to X-rays, such as, for example, finely divided metals of high atomic numbers, such as, for example, lead, or metal oxides, such as, for instance, lead trioxide (Pb_2O_3) or lead monoxide (PbO), or any suitable other chemical compounds, such as, for example, barium sulfate, or on the whole substances adapted to arrest X-rays to a higher degree than the material of the base plate. The plastic material of the plastic foils must be of such a nature, of course, as in the embossment operation to flow laterally or getting thinned in the embossed portions in a manner similar to lead.

The foils may be bonded to the base plate by means of a suitable glue, it being also possible, however, to spray any suitable foil-forming material on to the base plate, or to apply a suitable layer on to the base plate by galvanic metallization.

To elucidate the invention, reference is made to the accompanying drawing, in which:

Fig. 1 shows a section through a matrix plate for an addressing machine according to the invention prior to the embossment thereof.

Fig. 2 in the same manner shows an embossed plate. Both figures are drawn on an exaggerated scale.

Designated by **1** is the base plate and by **2** the layer or foil of a less X-ray-permeable material superimposed thereon. In the embossment operation the material of the softer layer **2** is displaced laterally over the bottom area **3** of the embossed portions so as to become much thinner there than at the other portions, thus enabling the matrix plate to be used for photographical reproduction of the embossed text matter by means of X-rays with a quite satisfactory result.

Various modifications are, of course, conceivable within the scope of the claims.

What I claim is:

1. As a new article of manufacture, a blank usable both as a printing plate for addressing machines and the like and as an identifying plate for use with X-ray photography, said blank comprising a base plate of a relatively hard material capable of being embossed and relatively permeable to X-rays and a thin layer of relatively softer material and less permeable to X-rays than said base plate, whereby said blank may be embossed with identifying indicia, the embossings on the base plate serving to make the blank a printing plate and serving to locally reduce the thickness of the said layer to permit X-rays to pass through said blank at the embossings.

2. As a new article of manufacture, a blank usable

both as a printing plate for addressing machines and the like and as an identifying plate for use with X-ray photography, said blank comprising embossable and relatively X-ray permeable base plate means, and embossable and relatively X-ray impermeable layer means on said base plate means, whereby said blank may be embossed to enable said base plate means to function as a printing plate and to locally decrease the thickness of said layer means to permit X-rays to penetrate the thinned areas thereof.

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