Dec. 9, 1947. Z. V. BRANTLEY 2,432,377

METHOD OF FORMING CASTING MATRICES

Filed May 1, 1944 2 Sheets-Sheet 1

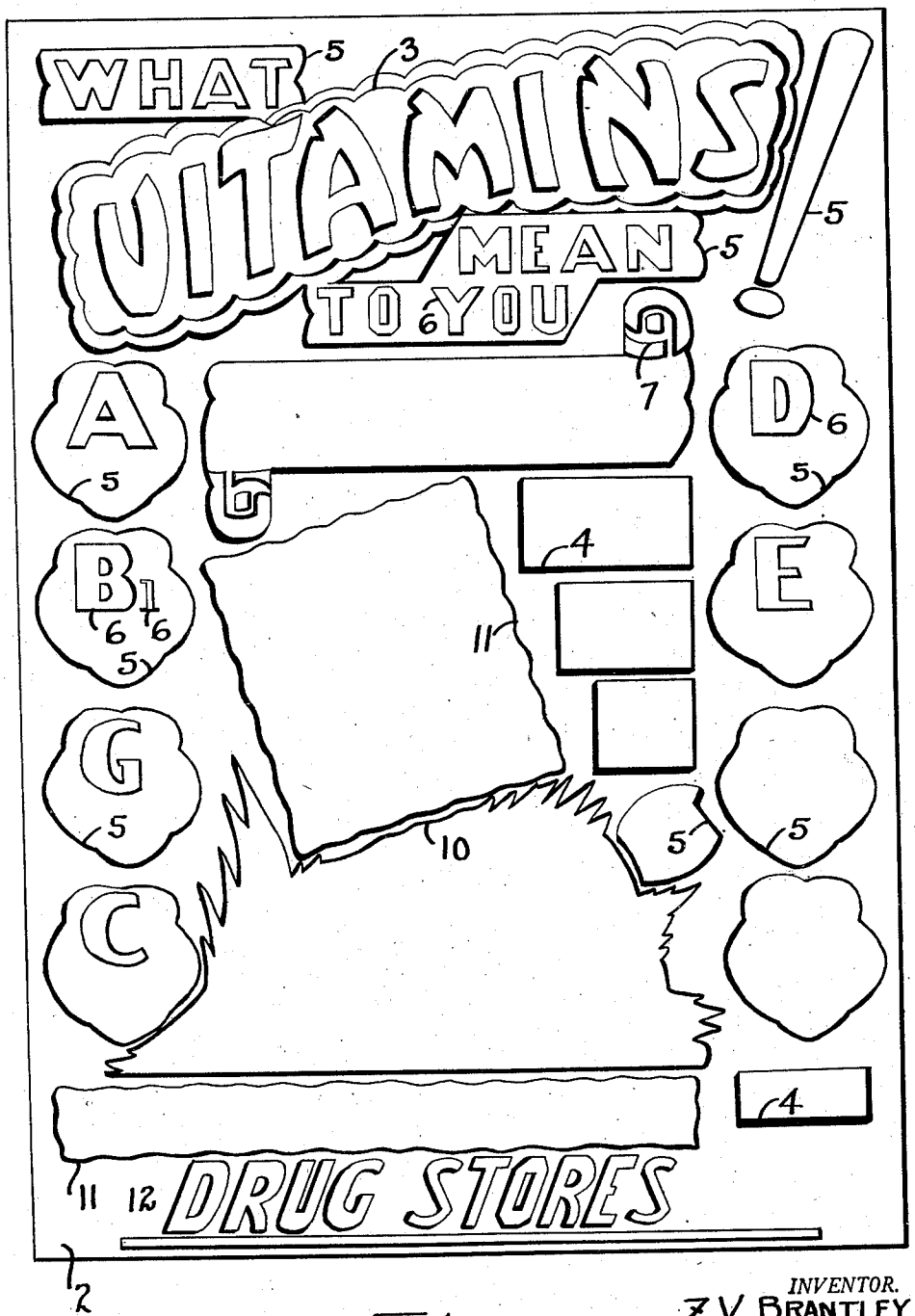


Fig. 1.

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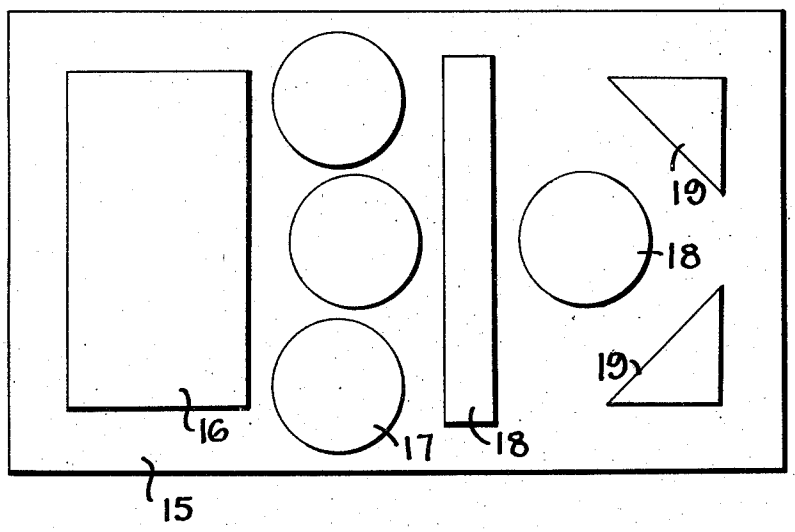


Fig. 2.

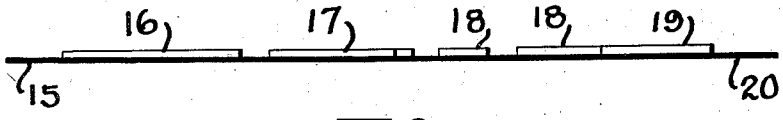


Fig. 3.

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METHOD OF FORMING CASTING MATRICES

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2 Claims. (Cl. 101—401.2)

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The invention relates to a means and method of preparing printing mats and particularly the type used in newspaper advertising cuts and the like.

In following the generally established practice a mat from which the metal can be cast is formed from an engraved plate which engraving is made upon zinc sheets. Any type to be set or preformed cuts can be arranged in the engraved sheet as desired and then the mat of pressed paper is made therefrom and the metal printing plate cast from such mat. Such procedure is not only time consuming and expensive, but requires the services of a skilled engraver and artist, and utilizes a large volume of zinc metal.

The present invention contemplates that a mat can be quickly and economically made by the use of card board and the metal cast thereon so as to avoid both the employment of an engraver and the use of the zinc plates. The type or cuts can be inserted or arranged the same as with an engraved plate.

It is one of the objects of the invention to provide a card board or the like mat from which a metal printing plate can be cast.

Another object is to cast a metal printing plate from a card board or the like mat which has been formed with the boxes, circles, shapes or flashes in relief thereon so as to provide equivalent depressions in the metal plate to receive the printing forms.

Another object is to provide a printing mat of a card board or the like sheet with the areas arranged thereon in relief which are to provide the depressions or openings in the cast metal plate.

Another object is to provide a card board or the like mat for forming metal borders, frames and outlines wherein a sheet of material has affixed thereon in relief the headings, designs, arrangement and outlines of the various items which are to make up the mat.

The present invention contemplates that a mat can be quickly and economically made from cutout card board blocks regardless of whether they are cut by hand or die cut.

Another object of the invention is to cast a border or frame of metal from a card board mat.

Another object is to provide a mat made up of a card board sheet with outlines arranged thereon of another thickness of card board so that a metal plate cast therefrom will be formed with depressions of the outlines.

Another object of the invention is to provide temporary sheets having outlines thereon of the

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shapes and configurations which are to be printed or to receive printing plates so that a composite metal plate can be cast therefrom.

Another object is to affix outlines of forms on a supporting sheet and from which a metal plate may be cast.

Another object is to provide a procedure for constructing a card board or the like printing mat wherein cutouts are made and affixed in position on a supporting card.

Still another object is to provide a method of casting metal plates from a card board or the like mat.

Other and further objects will be readily apparent when the following description is considered with the accompanying drawings wherein:

Fig. 1 is a top plan view looking down on a mat constructed of cardboard and the like and illustrating a typical arrangement of outlines, headings, flashes, boxes, and borders making up the mat from which the metal printing plate may be cast which will have the configuration of the mat.

Fig. 2 is a plan view of a sheet upon which the layout and arrangement has been made and the forms cut therefrom.

Fig. 3 is a side elevation of the support sheet having the forms cut from the sheet of Fig. 2 affixed thereon.

In practicing the method two sheets of suitable card board or like material may be used, as an illustration, four ply blank card board may be satisfactory. One side of the sheets should have a glazed finish. One sheet is placed upon a smooth surface, a sheet of carbon paper placed thereon, the second card board sheet placed on the carbon, and another sheet of carbon paper placed on such second sheet. A sketch, on any thin paper, showing the various forms, outlines, headings, flashes, boxes, circles or configurations is then placed on the top carbon. The sketch is then traced with a hard pencil or other instrument using sufficient pressure to cause both carbons to transfer the lines through onto each of the card board sheets. If desired the sketch may be made directly on the top carbon or on a sheet of layout paper placed thereon if the sketch has not been theretofore prepared.

It is desirable to make all of the shapes, etc. of the exact size because in casting, the metal is cast directly upon the cutouts so that there is not the shrinkage which occurs in the usual procedures for making the mats from engravings. The space for the signature cuts should be made

the exact size as obtained on the proofs rather than the size usually obtained from the printer which are generally of a size to allow for shrinkage.

If headers, mats, engravings, or setups are available from usual service they may be used, but the cutout to receive them should be made by providing a cutout or card board of the exact size as the piece to be inserted.

After the outlines, borders, etc., have all been traced so that both sheets of card board are marked the assembly is taken apart. One of the sheets of card board, preferably the top is then coated on the side opposite to the markings with a suitable mucilage which will dry, but which will thereafter become adhesive when moistened. A suitable mucilage may be made from powdered gum acacia. This mucilage is allowed to dry.

The next step is to use a suitable sharp instrument and follow the outlines of the markings so as to cut out the areas, letters, and various figures which have been marked. A swivel knife has been found satisfactory.

The cutting should be carefully done and clear cut edges provided, preferably the knife should be held slightly at an angle to provide a taper on the edges of the cutouts similar to the taper on a pattern from which a mold is to be made in casting. This permits the mat to be readily drawn from the metal after casting.

The cutouts of all the items are now moistened on the back so as to make the mucilage adhesive and pressed firmly into place on the second sheet of card board on the outline which was marked by the carbon paper. Suitable weights or a press may be used to hold the cutouts firmly in place until the mucilage dries. Small slabs or pieces of glass have been found suitable.

The mucilage and procedure described are used to avoid any excess of mucilage occurring around the base of the cutouts on the support sheet. If any excess mucilage should ooze out around the cutouts it may be removed.

The composite mat thus made is now ready for the casting operation. The raised cuts are in relief on the support sheet and cause identical depressions or openings in the metal casting.

Referring to Fig. 1 the support sheet is shown at 2 and has had the various cutouts affixed thereto which are shown as the header 3, the blocks 4, the outlines 5 which may have letters 6 or other configurations 7 cut therefrom. The flash 10, design 11, and the titles 12 are all positioned so as to stand out in relief on the support sheet. The composite sheet thus formed is of double thickness where the cutouts are affixed.

It seems obvious that the designer has no limit to the arrangements, configurations, cutouts and patterns which may be used. Existing cuts can be fitted in with newly designed cuts and a great latitude for imagination and design is provided. No engraving is required and the card board material may be used repeatedly or new cuts inexpensively arranged.

In practice it has been found that the card board serves as an admirable mat or pattern and that the desired frame, border or plate can be cast therefrom.

While Fig. 1 has been described as showing the card board mat, it is obvious that the metal plate made from such mat will be identical in appearance so that no additional view of the plate is required.

If a Ben Day finish is desired the support sheet is first run through the mat machine over the top of a slab of Ben Day finish material. In fact it may be treated the same as any newspaper mat made from a zinc cut. The mat may be used several times if desired, but new and different mats can be so readily and economically designed that reuse is hardly desirable.

Fig. 2 shows a slightly modified procedure where a card board sheet 15 is coated with mucilage on one side which is allowed to dry and then the other side is marked with outlines such as 16, 17, 18 and 19 and then cut out. The sheet 15 having the openings therein can then be placed upon the support sheet such as 20 of Fig. 3. The configurations of the openings are now outlined on the support sheet. The cutout sheet removed and the cutouts moistened and affixed as described in connection with Fig. 1.

Broadly the invention contemplates a means and method of making printing mats from fibre or the like material from which the printing plate may be directly cast.

What is claimed is:

1. A method of arranging a cardboard mat for the casting of a metal plate thereon which comprises, providing a pair of cardboard sheets each having a glazed face, positioning a carbon paper on the glazed face of one sheet, positioning the other cardboard sheet on the carbon paper, positioning a second carbon paper on the glazed face of said second sheet, disposing an outline sketch of the designs, letters or forms to be cast in the metal upon said second carbon paper, tracing the outlines of the sketch with sufficient pressure to carbon the outlines of both sheets, cutting the outlines of one sheet, affixing the designs, letters or forms thus cut on the carboned outlines of the other sheet, and affixing them to such sheet whereby the metal cast thereon will be formed with depressions corresponding to the designs, letters or forms.

2. A method of arranging a cardboard mat for the casting of a metal plate thereon which comprises, providing a pair of cardboard sheets each having a glazed face, positioning a carbon paper on the glazed face of one sheet, positioning the other cardboard sheet on the carbon paper, positioning a second carbon paper on the glazed face of said second sheet, disposing an outline sketch of the designs, letters or forms to be cast in the metal upon said second carbon paper, tracing the outlines of the sketch with sufficient pressure to carbon the outlines of both sheets, cutting the outlines of one sheet, affixing the designs, letters or forms thus cut on the carboned outlines of the other sheet, and affixing them to such sheet whereby the metal cast thereon will be formed with depressions corresponding to the designs, letters or forms where the second sheet has a coating of mucilage thereon.

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