Oct. 9, 1962 W. SWARTZ 3,057,073

LABEL POSITIONING APPARATUS

Filed Dec. 14, 1956

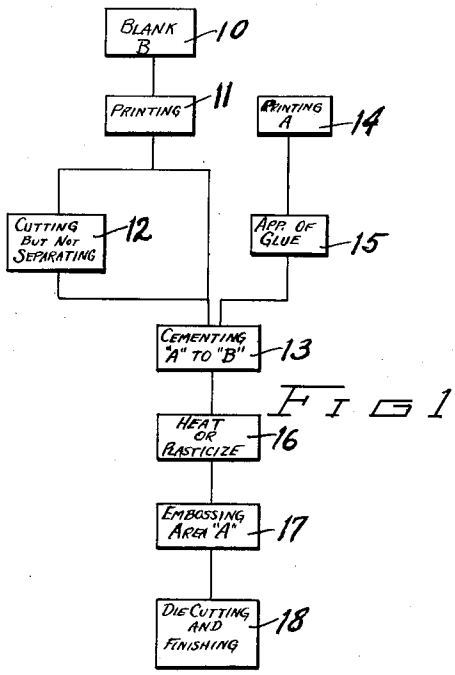


FIG 1

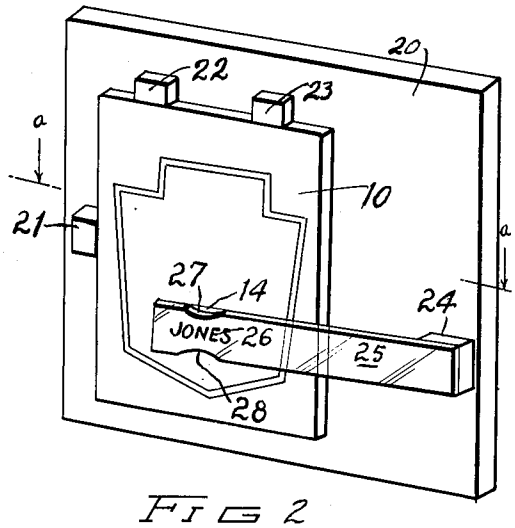


FIG 2

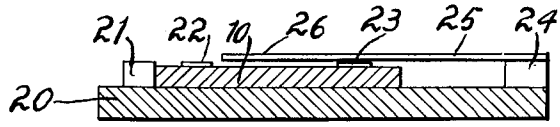


FIG 2a

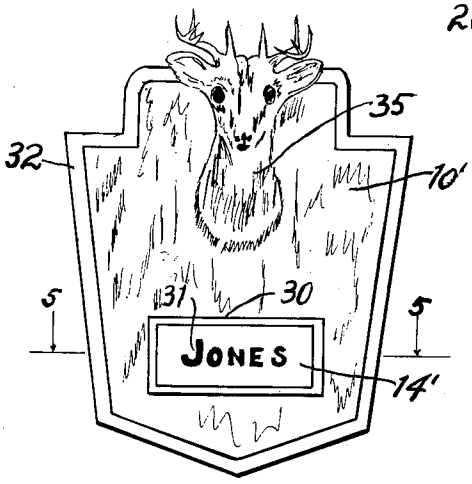


FIG 4

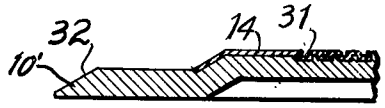
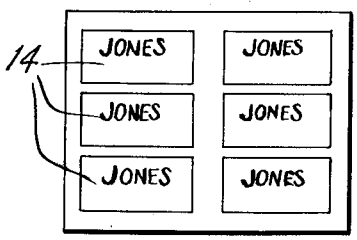


FIG 5

FIG 3



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LABEL POSITIONING APPARATUS

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This invention relates to the process and apparatus for manufacturing three dimensional display and advertising devices from flat sheets of moldable material.

The process of the invention is especially adapted for manufacturing displays from heavy cardboard and similar fibrous materials but it is also adapted for manufacturing such displays from thermoplastic moldable sheets.

In the manufacture of such displays from inexpensive materials such as cardboards it is desirable to provide a name plate of contrasting color preferably metallic which is more decorative than the cardboard. It is the name plate portion which is most effective when made in three dimensional form by an embossing process, for example.

Heretofore the only acceptable method of making good display plaques with a three dimensional name plate or similar portion has been by a process which may be called post finishing. By this post finishing process the display plaque is first embossed, then colored by rollers, air gun sprays with stencils or hand finishing. Post finishing is an awkward, clumsy and expensive process.

This invention is based on the discovery of a method whereby excellent three dimensional display items may be made by a prefinishing process, i.e., by first printing and later embossing. According to the process the name plate or similar portions to be embossed are separately printed in large numbers, then cut out and separately applied to the sheet from which the plaque is to be formed just prior to embossing the sheet. Heretofore, any method which printed prior to embossing was undesirable or impractical because it was impossible to obtain even fair registration between the printed portion (such as a name plate area) to be embossed and the portion which is actually embossed. By gang printing a multiplicity of the name plate portions separately from the cardboard backing the printing is done more accurately and at less expense. A special apparatus is provided for fixing the name plate or embossable sections to the backing in the proper position so that registration is always obtained.

Several factors may work against accurate registration in a prefinishing process. The fibers of the cardboard swell differently in different directions under the influence of moisture. Plastics which may form the entire background material in place of cardboard or which may be applied as a coating on the cardboard have an elastic memory which over long periods of time may distort the printed area. Where the stock must be die cut to unusual shapes the original point of registration is lost and this makes subsequent registration based on the new shape difficult or impossible. According to the present invention the stock is not completely die cut to form until after embossing, and the label or plate is cemented accurately upon the background just before the embossing step so that expansion or contraction due to losses in water content do not throw the plate out of registration. The name plate is treated with a glue just before being applied to the background so that it has a high proportion of water so that it embosses easily without tearing.

In the drawing

FIG. 1 is a flow sheet setting forth the various steps of the process.

FIG. 2 is a top plan view of the apparatus for positioning the printed area to be embossed on the background sheet.

FIG. 2*a* is a cross sectional view of the device of FIG. 2 taken on line *a*—*a* of the latter.

FIG. 3 is a view showing how the areas to be embossed are printed.

FIG. 4 is a view of a finished plaque made according to the invention.

FIG. 5 is a cross sectional view of the plaque taken on line 5—5 of FIG. 4.

As illustrated in the flow sheet of FIG. 1 the sheet **10** is first printed as shown at **11**. This first printing is to provide the desired color effects in the non embossed areas. Thereafter the blank may be at least partially die cut without however separating the die cut portion from the blank as shown at **12** or the printed blank may have the name plate portion (to be embossed) cemented thereto before cutting as shown at **13**. The printed panel or name plate **14** has glue **15** applied just before being positioned and cemented to the blank **10**. After the name plate portion **14** has been applied to the background the assembly is heated or otherwise plasticized at **16** to make it moldable and is then immediately embossed in the area **14** as shown at **17** in an embossing machine having similar positioning blocks as those for the name plate locating means.

Thereafter the plaque is die cut or removed from the remainder of the blank as shown at **18**. Additional finishing steps include painting the beveled edges, etc.

The device for locating the name plate area in the proper position is shown in FIG. 2 and comprises a flat base board **20** with two or more positioning studs **21**, **22**, **23** extending upwardly therefrom. Attached to one side of the baseboard **20** is a block **24** carrying in cantilever fashion a transparent strip **25** of approximately the same width as the height of the area to be embossed. This transparent cantilever **25** bears adjacent its end at least a portion **26** of the printed indicia of the name plate area **14**. The cantilever **25** is spaced above the backboard **20** by block **24** a distance slightly greater than the thickness of the plaque blank **10** so that the plate **14** may be manipulated so that the indicia on the plate **14** exactly matches the corresponding indicia **26** of the cantilever **25**. The cantilever **25** is flexible so that it can be lifted up at the end if desired. The cantilever **25** may be narrower than the printed sheet to be attached at some areas as for example at **27** and **28**. This facilitates the positioning of the printed sheet or name plate **14**. Just before positioning the plate **14** on the blank **10**, the former is coated with glue and may be lightly touched to the area close to where it is to be attached. After manually sliding the plate or area **14** in place as determined by matching the indicia **26** with that of the area **14** the latter is pressed into place.

Thereafter the blank **10** is heated or otherwise placed in a more moldable condition if necessary and passed to the embossing machine. The embossing machine has studs located similarly to studs **21**—**23** of the positioning device so that exact registration is obtained.

A completed plaque is shown in FIG. 4. A three dimensional figure 35 may be attached to the top of plaque **10'**. As shown in FIGS. 4 and 5, the name plate **14** has been embossed and now has an outer bevel **30** and indicia **31** in relief.

The features and principles underlying the invention described above in connection with specific exemplifications will suggest to those skilled in the art many other modifications thereof. It is accordingly desired that the appended claims shall not be limited to any specific feature or details thereof.

I claim:

1. A device for exactly positioning a name plate having indicia thereon to be adhered to a portion of a substantially flat blank for making a display device in which portions of the name plate are later molded to three dimensional form comprising a backboard having a substantially flat surface, a plurality of fixed studs spaced along

and projecting from said surface, said studs being arranged along two lines at right angles to each other which define two sides of a predetermined area on said surface of less extent than said surface which area is adapted to receive a substantially flat blank of relatively rigid material, whereby the blank may be exactly positioned in said area by contact with said studs, a block having a substantially flat outer surface fixed to said flat surface of the backboard, and positioned outside of said area, said block projecting from said surface a distance somewhat greater than the thickness of the blank, a stationary horizontally extending arm of transparent material fixed at one end directly to the outer flat urface of said block and extending therefrom over said area and adapted to extend over said blank when said blank is positioned in said area, the opposite end of the arm being free, said arm being sufficiently rigid to be self-supporting and indicia corresponding to the indicia on the name plate on a portion of the arm extending over said area and blank, whereby when a blank is positioned in said area, a name plate may be inserted between the arm and blank and the indicia thereon matched exactly with said indicia on the arm thereby exactly locating the name plate on the blank.

2. A device according to claim 1 wherein the arm is provided with reentrant portions adjacent said indicia to facilitate manipulation of said name plate in matching it with the indicia.

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