

July 15, 1958

C. A. STEVENSEN

2,842,884

DEBOSSSED PRINTED BOOK COVER

Filed Sept. 2, 1954

2 Sheets-Sheet 1

Fig. 1

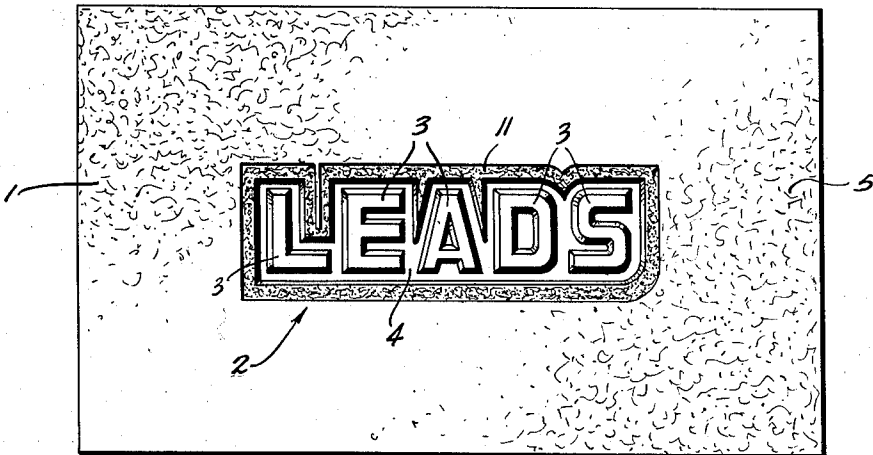


Fig. 2



Fig. 3



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2 Sheets-Sheet 2

Fig. 4

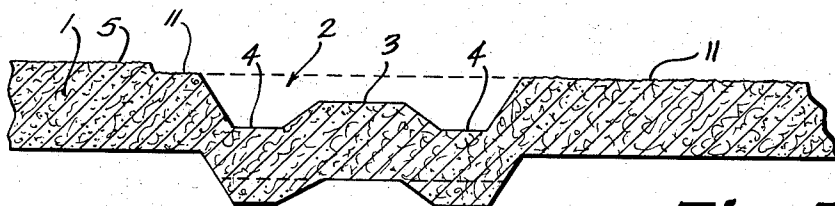
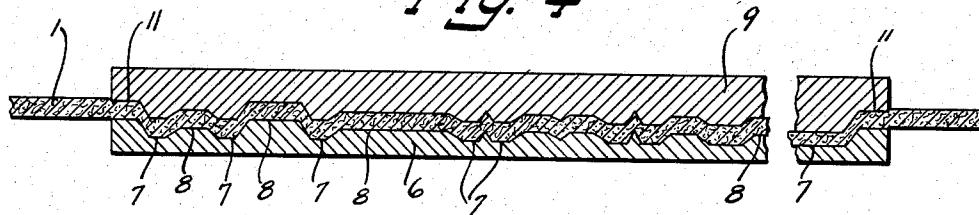
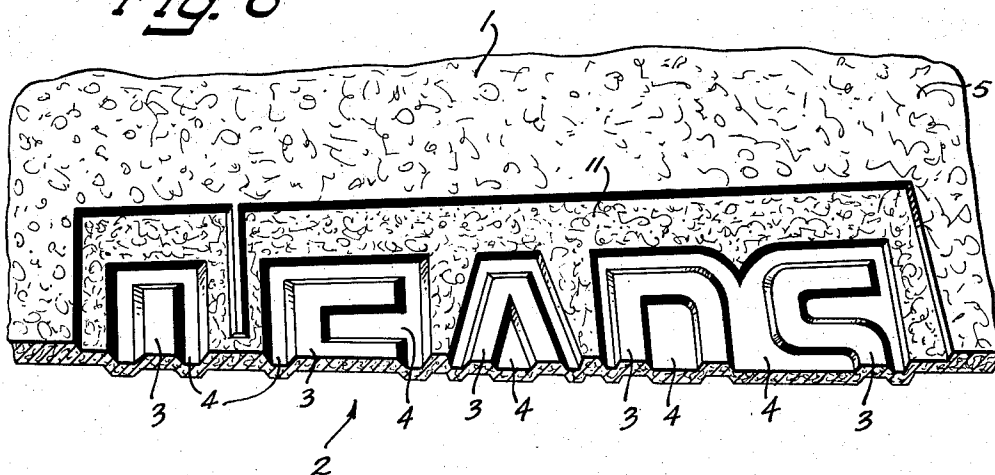


Fig. 5

Fig. 6



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DEBOSSSED PRINTED BOOK COVER

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2 Claims. (Cl. 41—24)

This invention relates to debossed printed sheets and a method of making the same, and more particularly to improvements in printing book binder covers and the like.

In the manufacture of book binder covers for use in the trades, schools, etc., it has often been desirable to place printed advertising, slogans or other matter on the outside of the binder covers.

An embossed printed sheet, and method of making it is described in U. S. Patent No. 2,071,031, issued to C. H. Franz, Jr., on February 16, 1937, and assigned to the assignee of the present inventor. In that patent, the sheet was placed on a suitable matrix and letters or other markings were then embossed on the sheet by means of a die. In the finished product, there were several horizontal embossed surfaces, each one disposed a certain vertical distance from the other. The uppermost embossed surface was above the plane of the cover and formed a raised edge to surround the embossed printed surface to protect the latter against wear. The printed surface was also disposed above the plane of the cover.

A number of disadvantages have been noted in connection with the above-mentioned patent.

First of all, the raised edge which surrounded the printed embossment had to be sufficiently massive to protect the latter. As a result it was so noticeable that the entire embossed area became unsightly and clumsy looking.

Secondly, because the upper surface was a substantial distance above the lowermost surface, some materials tended to break or crack along the edges of the upper surface due to the tension placed on them, thereby rendering the article defective.

In addition, since the various horizontal surfaces were vertically spaced only a few thousandths of an inch from each other, the protective feature of the raised edge was not very effective in some instances. This was particularly true when flexible material was used for the binder cover, or if the back of the cover was embossed. In both of these instances, the embossed area tended to be curved, and this caused the printed surface to be projected above the protecting edge and become extremely subject to wear.

Another disadvantage has been that in order to effect economies of die manufacture, and for other reasons, a narrow strip of the die was left untouched around the area containing the embossing design. This resulted in a smooth and sometimes even glossy strip around the embossed area of the finished product. When the binder cover was of a rough or mottled material, such as is found in some kinds of leather, the shiny area was often visually distracting and unpleasant.

Finally, when a design was embossed according to the Franz patent it was raised above the plane surface of the sheet. Although the embossed portion of a rough sheet is perceptibly smoother than the sheet itself, it has been found that the top surface of the raised design is rougher than the bottom or unraised portions. The raised surface is the one usually printed with inks, dyes, or the like,

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and it has been noted that more than one coating is necessary on this rougher surface so that the coloring will be uniform.

The present invention is based on the discovery that a die which has been stippled around its outer edge may be used to produce a debossed design in a sheet of leather or other suitable material, so that the entire design, although appearing to be raised, is actually beneath the plane of the material so treated.

The unsightly protective edge is dispensed with, for the entire surface of the sheet acts as a protection.

The stippling around the edge of the die may be made to match the grain or other design inherent in the sheet to be debossed. The smooth or glossy strip or border surrounding the debossed area is thereby eliminated, the grain of the sheet appearing to approach the immediate vicinity of the debossed area.

The accompanying drawings illustrate the best mode presently contemplated by the inventor for carrying out the invention:

In the drawings:

Figure 1 is a top elevation of a sheet having a debossed design thereon;

Fig. 2 is a bottom plan view of a die plate, showing the stippled edge;

Fig. 3 is a top plan view of a matrix used in the manufacture of the sheet;

Fig. 4 is a transverse section through a sheet showing the positions of the die and matrix during the debossing operation;

Fig. 5 is an enlarged fragmentary transverse section of the completed sheet, showing the relationships of the various surfaces and the stippled area; and

Fig. 6 is a detailed perspective view of the sheet of Figure 1, with parts broken away and sectioned.

As shown in Figure 1 of the drawings, the invention is embodied in a relatively thin sheet 1 of leather, plastic or the like which may be suitable for use in ring binder covers. A portion of sheet 1 contains a debossed design 2, which comprises a plurality of letters 3 in the drawings. Any other figures or designs are suitable.

As best seen in Fig. 5, letters 3 are raised from and separated by a lower surface 4, which constitutes the portion of deepest penetration into sheet 1. Letters 3 are disposed vertically intermediate lower surface 4 and the top surface 5 of sheet 1 which is grained and comprises the uppermost surface of the article. The upper surface of letters 3 is raised above and surrounded by surface 4 and is actually completely beneath sheet surface 5. Thus the term "debossed."

The entire surface 5 protects letters 3 from wear, which is particularly important when the letters are printed with dyes or ink. There is no need for a raised edge, as was heretofore necessary. The appearance of the treated area is thereby much improved, and the protection given the letters is much more adequate than was heretofore possible.

As shown in Fig. 4, the debossing is accomplished by placing an untreated sheet 1 on a suitable matrix 6. In the area to be debossed, matrix 6 contains a number of depressions 7 and raised portions 8 which correspond with surfaces 4 and letters 3 respectively of the finished product.

Disposed above sheet 1 and matrix 6 is a suitable die plate 9 which is used to deboss the particular design or letters into matrix 6. As seen in Fig. 2, the outer lower edge 10 of die 9 is stippled to reproduce the grain of sheet 1. This stippling may be accomplished in a number of ways, such as by means of a hammer and punch.

The stippled die, in addition to producing the debossed design, creates a narrow border 11 around the debossed

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area of sheet 1 which is integral with and matches the grain of the sheet and is generally disposed in height between the top surface of letters 3 and the top grained surface of sheet 1. The appearance of the design is much improved, for the grain of sheet 1, in effect, extends to the edge of the design itself.

The final product is much improved over that obtainable with the Franz patent.

Since the entire design is beneath the surface of the sheet, the vertical distance between the top surface 5 and the lowermost surface 4 is decreased. This decreases the tension produced in the article, and reduces cracking or breaking to a minimum.

The entire surface 5 of sheet 1, instead of merely a raised edge, protects the lowered design 2. When flexible materials are used, the tendency of design 2 to be projected above the protective surface is substantially eliminated.

Since the entire design is actually pressed beneath surface 5, the top surfaces of letters 3 are just as smooth as surface 4. Printing of these letters may now be done in one operation instead of two or more, for the inks or dyes used will cover with one coating.

Finally, the stippled border surrounding the design and matching the grain of the cover eliminates the distractions caused by the glossy strip heretofore present, and produces a more finished and pleasing appearance.

Various modes of carrying out the invention are contemplated as within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. In a book binder cover having a grained surface, a debossment on said cover providing a wear protected printed design beneath the level of the grained surface of the cover and comprising, a bottom level substantially depressed below said grained surface, and a plurality of separate design portions raised from said bottom level

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and surrounded thereby on all sides to facilitate printing of the design portions, the top level of said design portions being smooth and disposed vertically intermediate said bottom level and the grained surface of the cover whereby the printing thereon is protected from wear by the higher grained surface of the cover.

2. In a book binder cover having a grained surface, a debossment on said cover providing a wear protected printed design beneath the level of the grained surface of the cover and comprising, a bottom level substantially depressed below said grained surface, a plurality of separate design portions raised from said bottom level and surrounded thereby on all sides to facilitate printing of the design portions, the top level of said design portions being smooth and disposed vertically intermediate said bottom level and the grained surface of the cover whereby the printing thereon is protected from wear by the higher grained surface of the cover, and a narrow grained border surrounding said bottom level and with said border being disposed in height between the top surface of said design portions and the cover grained surface and substantially matching the latter.

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