July 8, 1969 A. S. GIESECKE 3,453,761

SIGN AND METHOD

Filed Nov. 16, 1966

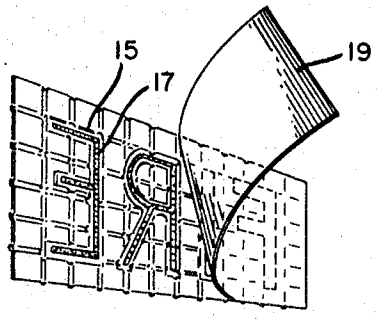


FIG. 1.

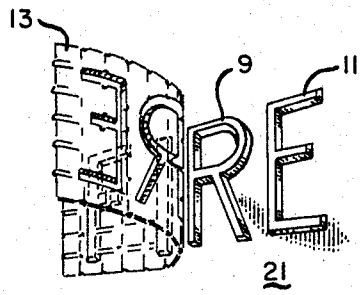


FIG. 2.

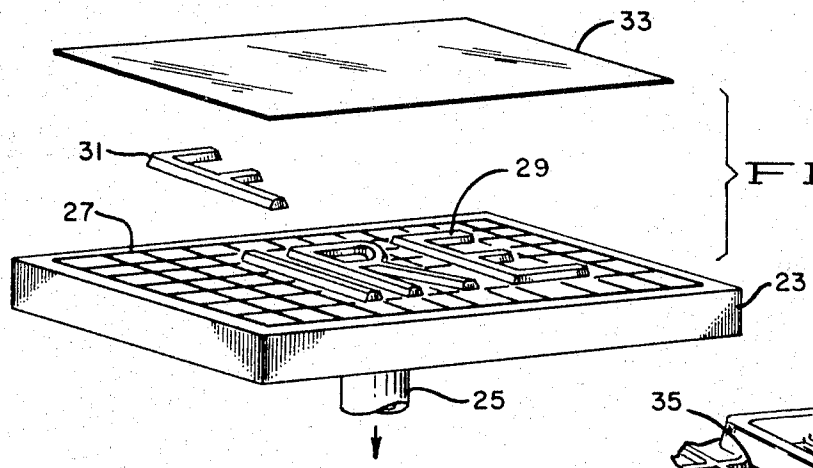


FIG. 3.

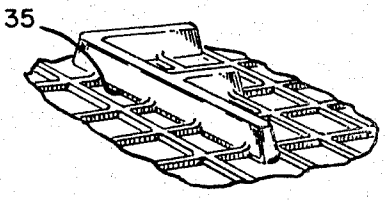


FIG. 4.

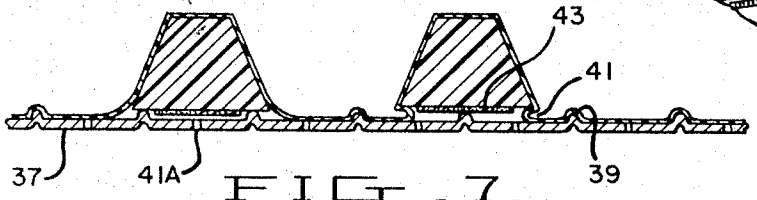


FIG. 7.

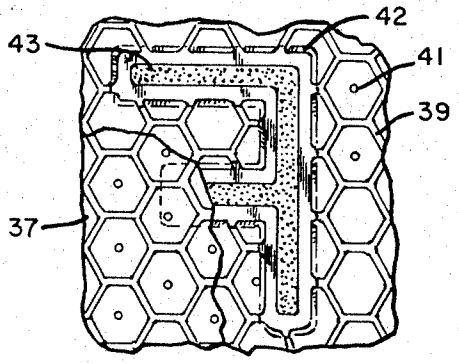


FIG. 5.

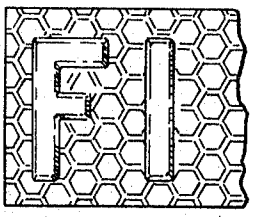


FIG. 6.

INVENTOR.
ALBERT S. GIESECKE

BY Erlich & Slis
ATTORNEYS

United States Patent Office

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SIGN AND METHOD

Albert S. Giesecke, 400 Montgomery St., San Francisco, Calif. 94104

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ABSTRACT OF THE DISCLOSURE

A sign or the like is provided wherein a series of characters having a pressure sensitive back surface are held in alignment by a thin plastic film which conforms to and covers the front display side of the characters and which extends slightly under the rear side of the characters at intervals, releasably holding them and with a strippable backing member over the back side of the characters. To use the article, the backing member is stripped off and the characters are placed against a flat surface and are held onto the surface by the pressure sensitive adhesive, whereupon the thin plastic film over the characters can be stripped off. The invention also relates to the method of making the article.

This invention relates to a new article of manufacture comprising a series of legible characters such as letters or numbers which are held in a prealigned condition so that they can be easily applied as a unit to a flat surface. The invention also relates to the method of forming such groups of characters.

Letters and numbers in three dimensional form are well known which can be used for forming signs having various notations thereon. Such letters may be made of any material such as paper, wood or metal but ordinarily they are made of plastic with a pressure sensitive adhesive on the back with a protective covering over the adhesive. To apply such letters to a flat surface, it is necessary that the letters be individually aligned and placed so that it becomes a tedious operation and one requiring some skill to secure the precise alignment and spacing between the letters which will provide a professional looking job. Further, with such individual letters and numbers, it is almost impossible to hold the entire desired messages temporarily in place in order to experimentally determine the best placement of the message.

In accordance with the present invention, the above difficulties are obviated by providing a plurality of legible characters which are held in a predetermined precise alignment by a plastic film which conforms closely to the outer or reading surface of the characters and which extends slightly under the characters so that they will not fall out but at the same time allows the plastic overcoating to be readily stripped from the letters after the letters are in place on a surface. Such letters have a pressure sensitive back surface and this surface is ordinarily protected by a stripable cover which is left in place until the letters are to be applied to the desired surfaces. In accordance with a preferred embodiment of the invention, the protecting backing member is of a gridlike structure and is utilized in the manufacturing process as is later explained in detail.

In the drawing forming part of this application:

FIGURE 1 is a perspective view of the back side of an article embodying the present invention showing the protective backing material partially stripped away;

FIGURE 2 is a perspective view of the front side of an article embodying the present invention showing its method of application to a surface with the front cover partially stripped away;

FIGURE 3 is an exploded view of a process for forming the aligned characters of the present invention;

FIGURE 4 is an enlarged perspective view of the front surface of a letter held in its protective covering;

FIGURE 5 is a back view of a preferred embodiment of the invention, wherein the grid also serves as a protective covering;

FIGURE 6 is a front view of the structure shown in FIGURE 5; and

FIGURE 7 is an enlarged section of a portion of FIGURE 6.

Referring now to the drawings by reference characters and particularly to FIGURES 1 and 2, there is shown a plurality of letters **9** and **11** having a transparent plastic covering **13** thereover which covering embraces substantially the entire front surface of the letters closely conforming thereto and holding the letters in alignment. In addition, the front covering **13** underlies the letters very slightly as is best seen at **41** so that the letters are held within the covering **13** so that they will not fall out of their own weight. Because the overlap is slight, the plastic can be pulled off of the letters after the letters have been applied to a surface.

Each of the letters has a pressure sensitive adhesive **17** on the back thereof and a protective sheet **19** is employed to protect the pressure sensitive adhesive during transit and storage. When one wishes to apply such a series of preformed letters to a flat surface such as the wall **21**, one can leave the protective covering **19** in place and move the assembly of letters over the surface until one selects the exact location in which it is desired to place the letters. When the location has been determined, the protective covering **19** is stripped off and the whole assembly pressed onto the wall **21**. At this point, the letters adhere much more strongly to the surface **21** than they do to the protective covering **13** so that the covering **13** may be merely lifted off as is shown in FIGURE 2, leaving the letters in perfect alignment on the surface.

In FIGURE 3 there is shown the method by which the letters are formed into the new article of manufacture. Here a platen **23** is provided which has a vacuum tube **25** leading therefrom, it being understood that the platen has a number of small holes therein so that when vacuum is applied, a sheet lying on platen **23** will be drawn down by the vacuum. One first places a grid **27** over the platen. This grid can be of ordinary screen wire, such as quarter inch mesh hardware cloth. Although a rectangular pattern has been shown in FIGURE 3, other patterns, particularly hexagonal patterns, are often preferred. Although the grid **27** can be made of ordinary wire material, it can also be made of plastics or other suitable materials. The letters as at **29** and **31** are now placed faced upright in the desired alignment on top of grid **27**. If desired, the letters may be held at this stage in some jig or fixture or they may be aligned by hand. After the letters are in place, a sheet of thermoplastic material **33** is placed over the assembly of letters and the grid. Heat is applied to the thermoplastic material **33** and thereafter vacuum to line **25**, sucking the sheet down and causing it to conform to the front surface of the letters. Further, since the letters are supported by the grid **27**, there is a space under the letters so that the plastic not only conforms to the front surface of the letters but also is drawn slightly under the letters as at **35** between the grid wires. Thus, the letters are now held in the plastic sheet in perfect alignment but at the same time they can be easily withdrawn from the plastic sheet because of the small amount of the underlap, as has been shown at **35** and **41**.

Normally the letters would have a pressure sensitive adhesive on the back of them at this stage but if not, a pressure sensitive adhesive can now be applied on the letters. A protective backing material is then applied to the back surface, completing the manufacture.

In FIGURES 5, 6 and 7 a preferred embodiment of the invention is shown wherein there are two variations of the article and method set forth above. Instead of using the rectangular grid shown above, a hexagonal grid is employed. The disadvantage of the rectangular grid is that with some letters, such as the letter "I", the letter might be imperfectly supported on a rectangular grid. However, by using a small hexagonal grid, letters or numbers of any configuration will be adequately supported. The second variation shown in these figures is that instead of using a separate grid and backing member, the backing member itself takes the form of a grid, eliminating the step of applying the separate backing member and also resulting in a neater looking product. Further, better protection is given to the adhesive area.

In accordance with this embodiment of the invention, a flat sheet **37** has an embossed, raised pattern **39** thereon, preferably of hexagonal cell design. Each of the cells has at least one hole **41A** therein to allow air to escape when subjected to vacuum. Sheet **37** can be made of embossed treated paper or thin embossed plastic or other suitable material. Obviously the sheet must be of such a nature that it has low adherence to the pressure sensitive adhesive. It is utilized in substantially the same manner as was shown in FIGURE 3 except that sheet **37** replaced the grid **27**. When vacuum is drawn and the top sheet heated, the top sheet conforms to the front surface of the letters as before, and the plastic has a tendency to tuck under the letters as at **41** releasably holding the letters in place. Further, since the sheet **37** has some slight adherence to the pressure sensitive material **43**, the sheet **37** serves as a backing material for protecting the adhesive but may be easily stripped away in the manner described above.

The optimum mesh of the grid will depend to some extent on the size of the letters. If the grid is too fine, there will be insufficient "tucking under" or "vacuum trapping" while if it is too coarse, the letters will not be sufficiently supported. Other grid configurations may be employed such as triangular, circular or random.

It will be obvious to those skilled in the art that many variations can be made in the article and method of the present invention without departing from the spirit thereof.

I claim:

1. As a new article:

(a) a plurality of legible characters each having a front display side and a flat back side,

(b) each of said characters having a pressure sensitive adhesive on the flat back side,

(c) a thin plastic film conforming to and covering the front display side of the characters and holding them in alignment,

(d) said thin plastic film extending slightly under the characters releasably holding them, and

(e) a strippable, backing member over the flat back side of the characters, protecting the pressure sensitive adhesive.

2. The structure of claim **1** wherein the backing member is a sheet having upstanding grid lines thereon, with the flat back side of the characters supported by the raised portions of the grid.

3. The structure of claim **2** wherein the grid is in the form of hexagonal cells.

4. The method of forming a plurality of legible characters into a prealigned unit comprising:

(a) placing the characters in a predetermined, desired pattern face up on a grid the grid contacting the bottom surfaces of said characters at spaced areas, while leaving the boundaries of said bottom surfaces relatively free,

(b) placing a thermoplastic sheet over the characters,

(c) heating said sheet and applying a vacuum under said grid whereby,

(d) said sheet conforms to and surrounds the top side of the characters and is drawn under the bottom of the characters at intervals between said spaced areas, thereby releasably holding the characters in predetermined alignment.

5. The method of claim **4** wherein the grid is a formed backing member which is releasably retained on the backs of the characters.

6. The method of claim **4** wherein the grid has a hexagonal pattern.

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EUGENE R. CAPOZIO, *Primary Examiner.*

R. CARTER, *Assistant Examiner.*

U.S. Cl. X.R.

40—135; 156—216, 285