

Dec. 2, 1941.

C. F. ENGERT ET AL

2,264,629

ADVERTISING MEDIUM

Filed Feb. 26, 1940

2 Sheets-Sheet 1

Fig. 1

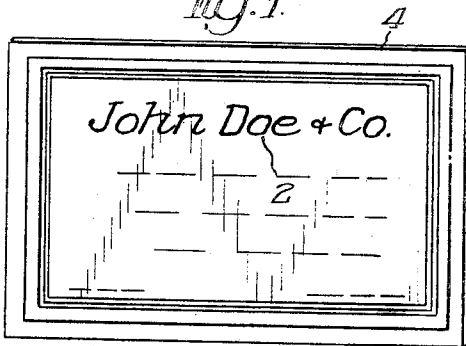


Fig. 2

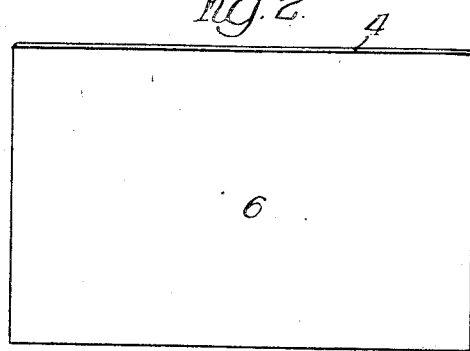


Fig. 3

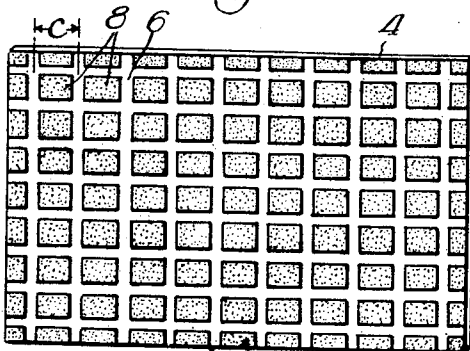


Fig. 4

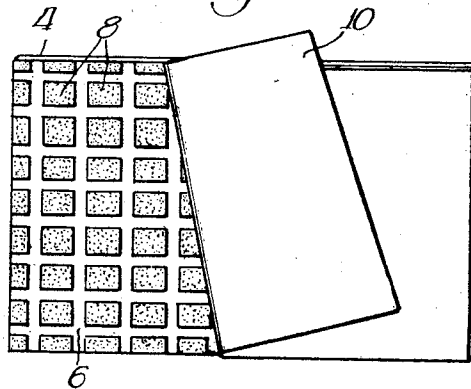


Fig. 5

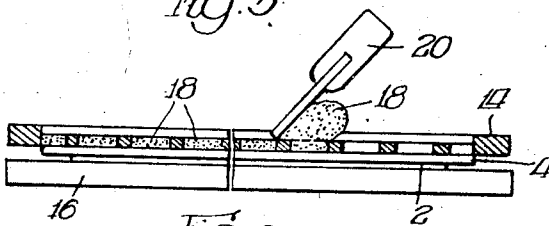


Fig. 6

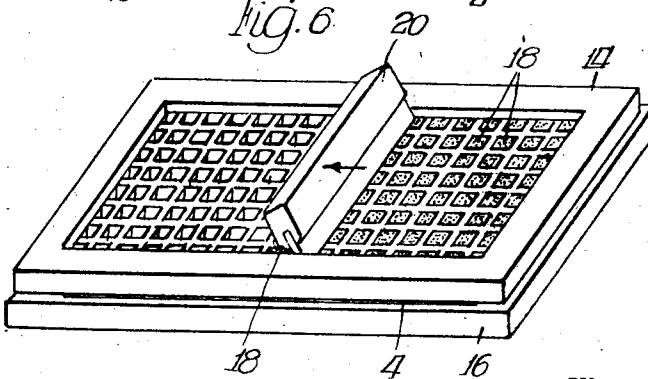
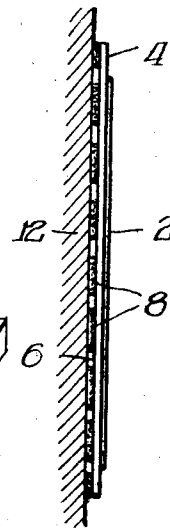


Fig. 7



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2 Sheets-Sheet 2

Fig. 8

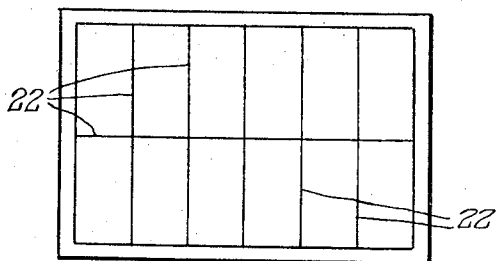


Fig. 10

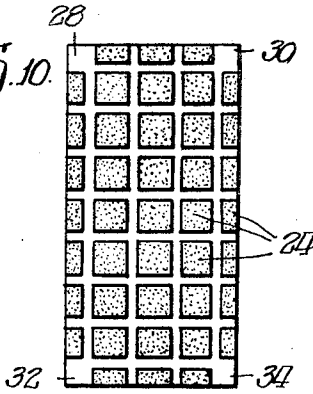


Fig. 9

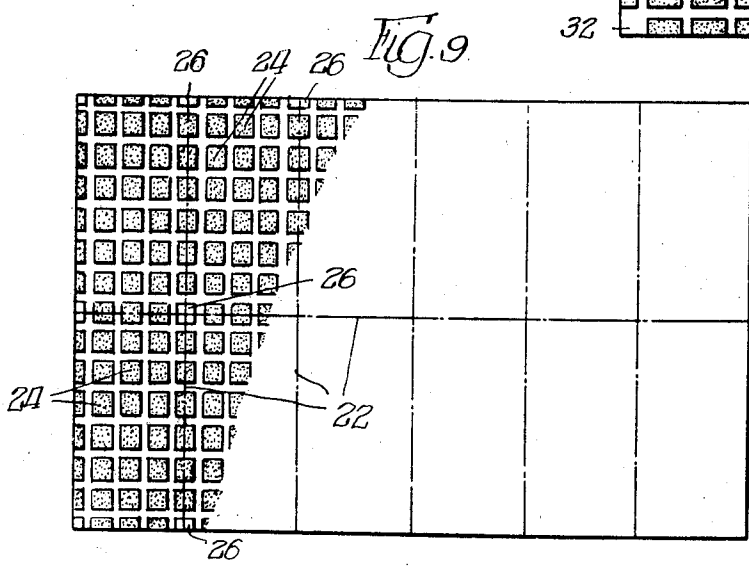


Fig. 11

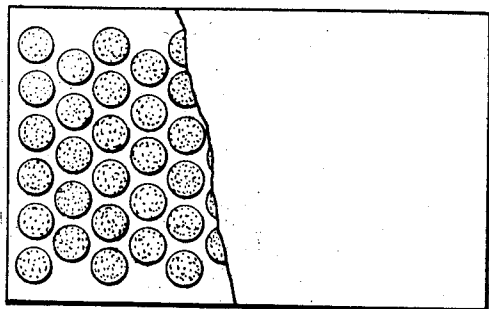
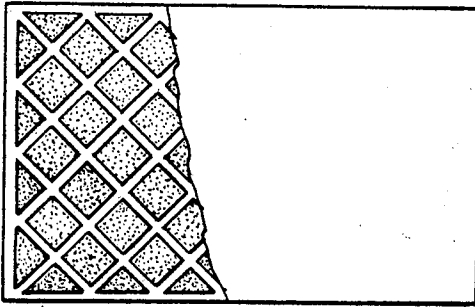


Fig. 12



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2,264,629

ADVERTISING MEDIUM

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Application February 26, 1940, Serial No. 320,872

5 Claims. (Cl. 40—2)

This invention relates to a new and improved type of advertising material or medium and to a new and improved method for the manufacture thereof. The invention is concerned more particularly with an advertising medium and a method of making an advertising medium in which an advertising indicia or design is carried on the face or front surface of a flexible sheet material which contains on its rear surface a coating of a pressure sensitive adhesive of such character that the advertising medium is adapted to be attached and is readily removable from plane surfaces.

An advertising medium of this general character has heretofore been manufactured from a base material sold under the trade name of "Lexide," which comprises paper impregnated with latex. Certain coatings were applied to the face of the base material to facilitate printing an advertising indicia or design thereon and a pressure sensitive adhesive covered with holland cloth served as a coating on the rear face of the base material.

In manufacturing such a material, the pressure sensitive adhesive coating was applied by calendering machines. The methods used in applying this coating have been such that it has been impractical to print the design on the base material first and to thereafter coat the base material with the pressure sensitive adhesive by the calendering process.

This method of applying the coating of pressure sensitive adhesive to the base material prior to printing has had a number of disadvantages. For instance, in many cases it is desirable to print a varied colored design on the face of the material and several printing operations are required with intermediate drying between each printing. The nature of the pressure sensitive adhesive coated material is such that the drying step between the printing operations often causes shrinkage of the material so that the second printed design is not in register with the first. This often results in a product which is not acceptable to the trade and must be discarded. The net result is a waste of material and an increase in the cost of the process and the product. The printing operation by methods heretofore used in connection with such pressure sensitive adhesive coated material has also been relatively slow, partly because of the increased bulk of the material due to the adhesive thereon, and partly because of the necessity for printing the material in such a way as to avoid shrinkage as much as possible.

The method heretofore used of applying the pressure sensitive adhesive coating prior to printing the design has also had the undesirable feature that an improperly printed or poorly printed design which had to be discarded represented a loss not only of the base material but also of the pressure sensitive adhesive, and hence, from the economic point of view such a process has left much to be desired.

One of the further problems which has arisen in connection with advertising display materials of this type is the formation of bulges due to entrapped air or air pockets when the material is applied to a supporting surface such as a wall, mirror, or the like. With the larger advertising displays, it is extremely difficult to avoid the formation of such air pockets which give rise to undesirable and unbecoming bulges and make the posting of the display more difficult and time consuming.

Another problem which arises in connection with advertising indicia containing a pressure sensitive adhesive is concerned with the removal of the covering from the pressure sensitive adhesive when the poster or placard is about to be applied. As previously indicated, a covering such as holland cloth is applied over the pressure sensitive adhesive in order to protect it and to keep it from sticking to other objects before use. As a general rule the longer the pressure sensitive adhesive remains in contact with the protective covering the greater is its tack or adhesive power so that the separation of the covering is sometimes rather difficult. This is particularly true where the base material on which the advertising matter is printed and to which the pressure sensitive adhesive is applied is made of paper, because the paper is apt to tear or split when the protective covering is separated therefrom. Tearing or splitting is not so likely to occur with base materials such as "Lexide" but there is still a problem of separating the protective covering from the pressure sensitive adhesive coated on the "Lexide" because as previously pointed out, according to present methods of making such material the entire surface of the material is coated with adhesive.

With the foregoing in mind, one of the objects of the present invention has been to prepare an advertising medium which is an improvement upon the type of advertising medium previously described and which is free from the disadvantages of the aforesaid type of advertising medium. To the accomplishment of this object a feature of this invention provides a new type of pressure

sensitive adhesive coating in which the pressure sensitive adhesive is applied in the form of a spotted or spaced design of such character that air is free to escape in the spaces in the adhesive pattern, thereby preventing the formation of bulges when the material is posted.

A further object of this invention is to provide a new and improved type of advertising medium made from a base material having a pressure sensitive adhesive thereon characterized by the feature that the base material containing the adhesive is readily removable from a protective covering or from any support to which it is attached.

Still a further object of the invention is to provide a new and improved type of advertising medium of the character described in which the base material is made of paper containing a pressure sensitive adhesive characterized by the feature that the paper containing the adhesive may be readily separated from a protective covering such as holland cloth or from a support without tearing.

Another object of this invention has been to provide a new sequence of operations in preparing advertising materials of the character described and a new method of applying the pressure sensitive adhesive whereby the design is printed on the base material prior to the application of the adhesive and the difficulties heretofore attendant proper registry of the design as well as the waste involved in the procedures heretofore used are avoided while at the same time the speed of the printing operation is increased and substantial economies are effected. The accomplishment of this object has been attained by printing the design on the base material before applying the pressure sensitive adhesive thereto and by applying the pressure sensitive adhesive to the rear of the base material by means of a stencil having, let us say, a pattern of uniformly spaced small openings therein.

This method of applying the pressure sensitive adhesive through a stencil after the design has been printed on the base material has a number of important advantages. In the first place, it makes it possible for the printer to apply the pressure sensitive adhesive coating, whereas heretofore because of the calendering operation involved it has been necessary in practice to have the adhesive coating applied by a rubber coater especially equipped for the purpose. Secondly, a defect in the printing results only in a waste of the base material, whereas heretofore the pressure sensitive adhesive coating has also been a part of the waste. Thirdly, the rate of printing is increased by the present invention as compared to methods heretofore employed. Thus, the printing operation may be as much as 30% faster when preparing printed advertising materials in accordance with this invention. Fourthly, the problems of shrinkage and improper registry due to the pressure sensitive adhesive no longer exist because the pressure sensitive adhesive is no longer present on the material during the printing operation.

The spotted design of adhesive serves the full purpose of the former solid coating and additionally prevents the formation of air pockets and bulges which interfere with the usefulness of the product. Base materials such as paper may now be used in accordance with this invention to produce advertising displays of superior quality. According to a feature of the

invention the adhesive pattern is applied to the base material in such a manner that at least one corner portion of the base material is free of adhesive thereby permitting the ready separation of the adhesively coated base material from holland cloth or other protective covering or from a support to which the advertising display is attached. This feature of the invention makes it possible to use paper as the base material without danger of tearing.

Other features and advantages of the invention will be apparent by reference to the accompanying drawings, in which:

Figure 1 represents the front face of an advertising material bearing a printed design;

Figure 2 represents the rear face of the same material prior to the application of a pressure sensitive adhesive coating by a stenciling operation;

Figure 3 represents the material of Figure 2 after a spotted design of pressure sensitive adhesive has been applied to the rear face thereof by a stenciling operation;

Figure 4 represents the same material with a covering of holland cloth or other suitable material over the pressure sensitive adhesive and partially stripped therefrom;

Figure 5 illustrates diagrammatically the manner in which the pressure sensitive adhesive is applied to the base material of the advertising medium by a stenciling operation;

Figure 6 is a view in perspective of the stenciling operation for applying the pressure sensitive adhesive illustrated in Figure 5;

Figure 7 is a side sectional view showing the manner in which the advertising material is applied to a wall or other plane surface;

Figure 8 illustrates a method of practicing the invention in which a number of displays are printed simultaneously;

Figure 9 illustrates a method of forming the adhesive pattern for die cutting in a predetermined manner when the invention is practised as in Figure 8;

Figure 10 illustrates a display medium prepared as in Figure 9;

Figures 11 and 12 illustrate modified types of adhesive patterns which may be used in accordance with the invention.

Generally stated, the method of the present invention comprises the following steps: (1) printing an advertising indicia or design on a suitable base material which may be a flexible rubber impregnated material such as Lexide or a paper of suitable texture, and (2) applying a pressure sensitive adhesive to said base material by a stenciling operation after the design has been printed.

Figure 1 illustrates a printed advertising indicia 2, which has been applied to one face of a suitable base material 4. At the time this printed indicia is applied to base material 4, the opposite face 6 of the material 4 contains no pressure sensitive adhesive, as shown by Figure 2. Once the printing operation is complete, however, a pressure sensitive adhesive is applied to face 6 by means of a stencil and this may be accomplished by the use of a mechanical stenciling machine or a manually operated stenciling machine consisting of a perforated plate or screen having openings therein of the desired size and shape and provided with a squeegee or equivalent device for causing the pressure sensitive adhesive to be pressed through the openings in the stencil.

It might be expected that the application of an adhesive in this manner would be difficult because of the tendency of any adhesive to clog the openings in the stencil, but the practice of the invention has demonstrated that such is not the case. The product thus obtained will have a pressure sensitive adhesive spotted design 8 on the rear surface thereof as shown in Figure 3. The adhesive squares may be, say, 0.2 inch square with the distance c from the center line of the spaces about 0.25 inch, or they may be 0.25 inch square with $\frac{1}{8}$ inch between the centers of the spaces. It will be understood of course that this design may be of a different pattern. Thus, the adhesive spots may be triangular, rectangular, parallelogram, round or other shape. They may also be relatively smaller or relatively larger. They may, if desired, be in the form of small dots. The nature, amount and spacing of the pressure sensitive adhesive should be such as to substantially avoid the formation of entrapped air and the attendant bulges caused thereby.

In many instances, although not in every case, it will be found to be desirable to cover the spotted adhesive design with holland cloth 10 or other suitable type of covering material such as illustrated in Figure 4. This is accomplished merely by applying the holland cloth or other suitable material over the spotted pressure sensitive adhesive with pressure sufficient to cause adherence between the holland cloth and the adhesive. The resultant material may then be shipped in flat or roll form. When the material is ready for use the holland cloth is stripped off and the rear surface of the material is pressed against a wall 12, or other surface, as shown in Figure 7, so that the spotted design is intermediate between the base material and the wall.

The general method of applying the adhesive to the base material is illustrated by Figures 5 and 6. As shown, the pressure sensitive adhesive is applied by placing the base material 4 bearing printed design 2 beneath a stencil or perforated screen 14 with the rear surface 6 of the base material in contact or in close proximity to the stencil and the lower surface bearing the printed design 2 supported by any suitable supporting surface 16. The adhesive 18 is then placed on the top of the stencil and is pressed through the holes in the stencil by means of a squeegee 20 which is adapted to move over the perforated screen 14. As previously stated, the movement of the squeegee may be accomplished either by manual or mechanical means. A plan view of this operation is illustrated in Figure 6, showing the appearance of the stencil 14 after a portion of the pressure sensitive adhesive 18 has been applied by squeegee 20.

As shown in Figure 8, a number of displays may be printed at the same time in a single printing operation and then separated from each other by die cutting along lines 22. In this event, the adhesive pattern may be applied as shown in Figure 9 so that the die cuts pass through the squares of adhesive 24 thereby insuring that the adhesive runs to the margins. Otherwise, if the die cut ran through the spaces between the adhesive the margin would be uncoated and the display might tend to turn up or peel off from its supporting surface. It will be understood that the printed design is preferably dried prior to the application of the adhesive.

According to the preferred embodiment of the invention, certain of the holes or perforations in

the stencil are stopped up so that no adhesive is applied in the areas 26 which form the corner portions of the display when it is die cut. The adhesive coating on the display material thus formed is illustrated in Figure 10, in which the corner portions 28, 30, 32 and 34 contain no adhesive. This makes it possible to strip holland cloth or other covering material from the adhesive easily without injuring the base material. One or all of the corner portions of the adhesively coated side of the base material may be free of adhesive.

The patterns illustrated in Figures 11 and 12 represent modifications of the invention. In Figure 11, the adhesive pattern consists of spaced staggered circular spots. In Figure 12, the adhesive pattern consists of diagonally disposed squares and triangles so arranged that a horizontal or vertical die cut, or series of die cuts necessarily produces a display in which adhesive lies along the margin. This latter arrangement is especially useful where a number of displays are made at once, as described with reference to Figures 8 and 9.

It will be observed that the adhesive-free areas or spaces in every case connect with one or more marginal spaces thus permitting entrapped air to escape and avoiding bulges in the display.

It will be understood that certain variations may be made in the method described without departing from the invention. For example, the type of pressure sensitive adhesive employed is subject to wide variation. An excellent type of pressure sensitive adhesive for the practice of this invention is one made from a pure crepe or gum rubber base which has been thinned with a slow drying rubber solvent which may contain a diluent. The rubber base may be dissolved in the solvent to form a solution that is very viscous. The rubber composition itself, which is used for making the pressure sensitive adhesive, does not form a part of this invention because there are many and varied types of pressure sensitive adhesives that could be employed. The pressure sensitive adhesive need not be made from a rubber base but may be made from combinations of various kinds of resins either alone or in conjunction with a rubber base.

When the base material is a rubber impregnated fibrous material such as Lexide the pressure sensitive adhesive may ordinarily be applied directly, although if desired, an intermediate anchor coat of some other type of material such as a rubber cement may be applied. Where the base material is a paper, an anchor coat of rubber cement is especially desirable.

The term "pressure sensitive adhesive" as employed herein is intended to cover any type of adhesive which derives its adhesive action merely from pressure and which is capable of being removed from an object to which it is fastened likewise by pressure in the opposite direction. The choice of the adhesive should be such that the adhesive will cling to a fibrous material of the type used as a base material herein more strongly than to a plane non-fibrous surface. Since this property is characteristic of most pressure sensitive adhesives, the proper choice of an adhesive will readily be recognized by those skilled in the art. Likewise, it will be recognized that the adhesive should be one which can be applied in the form of a solvent solution of such viscosity that it is capable of being passed through the perforations or holes in the stencil. Here again the proper choice of an adhesive may readily be as-

certained by one skilled in the art. After being applied at least a portion of the solvent in the adhesive is removed by drying or evaporation.

In practicing the invention the area of the base material covered by adhesive is ordinarily from about 30% to about 90% of the total area and thus there is a considerable saving in the amount of adhesive required as compared to methods heretofore used where the entire rear surface of the base material was covered by the adhesive. The perforations in the metal screen of the stencil may likewise be varied from, say, 4 perforations per square inch to as high as 100 perforations per square inch, depending upon the adhesive power of the pressure sensitive adhesive, the thickness of the film and the spacing desired in the adhesive pattern. It is ordinarily preferable to employ a metal stencil having uniform perforations from about 4 to about 10 perforations to the inch.

The adhesive pattern may be placed either on the face of the design or the back of the base material, or on both the face and back. If the adhesive is placed on the face it may be colored and placed in certain portions of the design of the same color so as to appear as part of the design. If the adhesive is transparent it may be spot coated entirely over the design. For some purposes, it is desirable to apply the adhesive pattern only to the border or marginal portions of the back or face of the material, leaving the interior portions adhesive-free. Thus, in making truck signs it is often preferable to spot coat or stencil the pressure sensitive adhesive along the rear border of the sign leaving the interior portion uncoated.

The term "stencil" as employed herein refers to a thin sheet or plate in which a pattern is cut by means of spaces or dots and through which a pressure sensitive material applied to the surface penetrates to a surface beneath. The term "stenciling" is used herein to describe the method by which the pressure sensitive adhesive is applied using a "stencil." An outstanding feature of this invention resides in the fact that stenciling apparatus is normally available in most manufacturing plants where printed designs or displays in color are made and hence, the use of this invention enables a manufacturer of poster displays of the character herein described to apply the adhesive coating in his own plant after the display has been printed rather than being compelled to buy a roll of pre-coated material as has heretofore been the practice.

The invention is particularly important in the manufacture of advertising posters, placards or displays of the type described which are of relatively large area. The use of a pattern of adhesive with interconnecting spaces makes it possible to apply such displays to a supporting surface without trapping air and causing bulges. The invention is particularly important also in making advertising displays, posters or the like whether large or small from a base material of paper. The provision of interconnecting passages in the adhesive pattern makes it possible to produce displays, placards and the like at a lower cost and tends to prevent distortion, warpage and shrinkage of the paper and of the design thereon. Furthermore, as previously pointed out, one of the preferred embodiments of the invention wherein a corner is left free of adhesive is especially important when the base material is paper because it is thereby possible to separate the base material containing the adhesive coating

from holland cloth or other protective coating or from a supporting surface without splitting the paper.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. A poster advertising material of the character described comprising a base material of substantial area in all directions bearing printed advertising indicia and having on one surface of said base material a pattern of pressure sensitive adhesive with interconnecting spaces throughout the adhesive pattern and with adhesive areas and adhesive-free spaces along the margins of the material such that the air can escape through said adhesive-free spaces when the material is applied thereby preventing air pockets and bulges, said interconnected spaces communicating with the margins of said material.

2. A poster advertising medium of the character described comprising a flexible, unified base material of substantial area in all directions having a printed design on one surface thereof and a pattern of pressure sensitive adhesive on the other surface thereof with interconnecting spaces throughout said pattern so arranged as to substantially prevent the formation of air pockets when the material is applied to another surface and with adhesive areas along the margins and areas free of adhesive at corner portions of said material, and a covering material over said adhesive also covering the spaces free of adhesive and capable of being stripped therefrom starting at the adhesive-free corner portions, said interconnected spaces communicating with the margins of said material.

3. A poster advertising material of the character described comprising a base material of substantial area in all directions bearing a printed advertising indicia having thereon a predetermined pattern of pressure sensitive adhesive with interconnecting spaces in said adhesive pattern in sufficient number and so arranged as to substantially prevent the formation of air pockets when said material is applied, said spaces interconnecting with the margins of said material and an area free of adhesive at a corner portion of said material.

4. A poster advertising medium of the character described comprising a base material of substantial area in all directions consisting substantially of paper bearing a printed advertising indicia and having thereon a coating of pressure sensitive adhesive with interconnecting spaces in the adhesive pattern in sufficient number and so arranged as to substantially prevent the formation of air pockets when the material is posted, said spaces inter-connecting with marginal portions of said base material, and an area free of adhesive at a corner portion of said material.

5. A poster advertising material of the character described comprising a paper base material of substantial area in all directions bearing a printed advertising indicia on one surface and having on the other surface a predetermined pattern of pressure sensitive adhesive with interconnecting passages in the adhesive pattern which are free of adhesive, said adhesive being placed at intervals along the margins of said material with said passages extending therethrough to said margins, and areas free of adhesive at corner portions of the adhesively coated side of said material.

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