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ADHESIVE MEANS FOR ATTACHING ARTICLES TOGETHER

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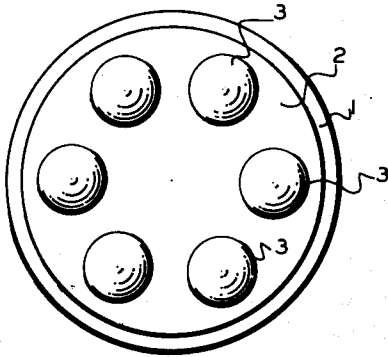


FIG. 1

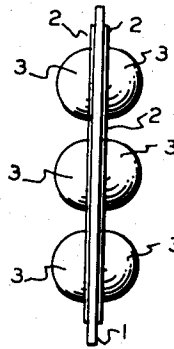


FIG. 2

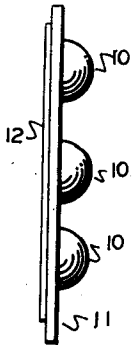


FIG. 5

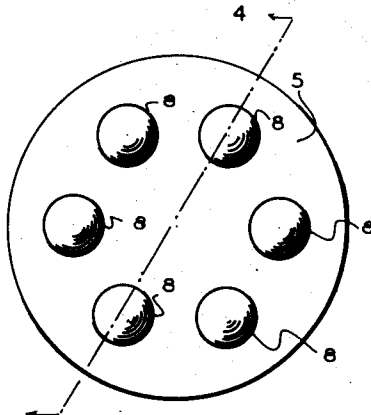


FIG. 3

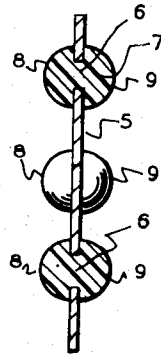


FIG. 4

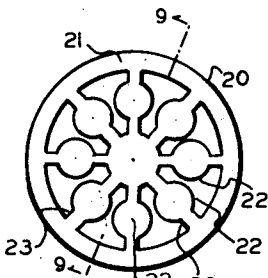


FIG. 8

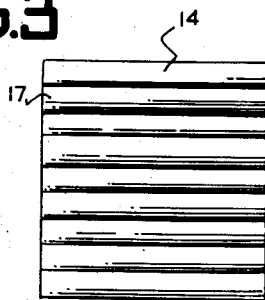


FIG. 6

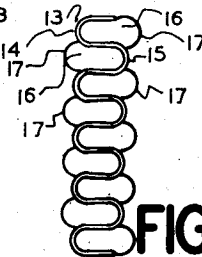


FIG. 7



FIG. 9

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ADHESIVE MEANS FOR ATTACHING ARTICLES TOGETHER

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4 Claims. (Cl. 24-67)

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The present invention relates to an adhesive element which is used as a substitute for thumb tacks or the like, by means of which such things as paper, card-board, metal, plastic, glass sheets or plates may be secured to one another or to some desired surface.

The present invention may be used in place of thumb tacks to hang calendars or the like, notices, cards and so forth on walls and will accomplish the same purpose as such tacks without making a hole in the surface. It therefore has a broader use since it enables one to attach a sheet to a surface which cannot be pierced by a thumb tack. As will be noted from the description in the article in the specification set forth below, it has many other uses and therefore provides great utility.

Without further describing the merits and advantages of the present invention, the invention will be described in the specification below in connection with the drawings annexed hereto illustrating an embodiment thereof, in which:

Figure 1 shows an elevation of the invention.

Figure 2 shows a plan view looking from the side of Figure 1.

Figure 3 shows in elevation a modification of the invention shown in the position of Figure 1.

Figure 4 shows a section on the line 4-4 of Figure 3.

Figure 5 shows a side elevation shown in the position of Figure 2 of a still further modification of the invention.

Figure 6 shows a still further modification of the invention.

Figure 7 shows a side elevation of Figure 6 as viewed from one side thereof.

Figure 8 shows a still further modification of the invention, and

Figure 9 shows a section on the line 9-9 of Figure 8.

In the arrangement described in Figures 1 and 2, a plate 1 of card-board, plastic, fibre, metal or other composition is coated on both sides with a synthetic plastic 2 which covers a greater portion of the surface and which on spaced points over the surface of the plate 1 is provided with hemispherical projections 3 of the same material. While it is preferable to have these projections in the shape of hemispheres, other forms of projections may be used, such for instance as cones, cylinders and polygons, the chief criterion being that the cross sectional area of the projections be substantially smaller than the area of the plate on which they are mounted. The materials of which the projections 3 may be made

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comprise the group of tacky synthetic elements which may be deformed slightly by pressure and which have the ability to adhere to most any surface. Such materials include synthetic plastics as for instance polystyrene to which a plasticizer has been added, such for instance as glycerine. Many other synthetic plastic materials when mixed with a plasticizer will provide the same characteristic materials. Where desired the projections 3 may be mounted directly on the holding plate 1 so that in this case the lining surface 2 on similar plastic material may be omitted. In the form of the invention indicated in Figures 1 and 2, the hemispherical projections 3 are mounted on both sides of the plate 1 projecting from the coating surface 2 extending over the plate. When the elements shown in Figures 1 and 2 are used, one presses the element against the surface to which the sheet or plate is to be attached. The projections pressed against the surface will flatten out slightly and not only become adhesively attached to the surface because of the tacky quality of the plastic material, but will also be held securely because of the intimate contact area which the deformed surface makes with the surface to which it is pressed. This is partly due to the same action perhaps which holds a vacuum cup to a surface, but perhaps is held more strongly because the deformed material is forced into the surface openings or irregularities because of the pressure. It is for this reason that the area of contact of the hemispheres with respect to the area of the plate be a fraction, preferably less than one half, so that the ordinary pressure exerted by the thumb may be increased in the smaller areas of contact with the surface to which the element is held. After the element has been secured to the wall or other surface to which the sheet is desired to be attached, the sheet is pressed against the other side of the plate bringing the sheet which is to be hung or attached in contact directly with the projecting hemispheres of the plate. The sheet may be secured to one or more such elements depending upon its size and weight.

Figures 3 and 4 show a modification of the arrangement of Figures 1 and 2. In Figures 3 and 4 the sheet or plate 5 is perforated with holes 6 which are filled with suitable tacky adhesive plastic material 7 which extend over the surface of the plate in the vicinity of the hole rounded similarly as a rivet. On each side of the surface of the plate 5 therefore are projecting hemispherical elements 8 and 9 which may have contours similarly as the hemispherical ele-

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ments 3 of Figures 1 and 2. The hemispherical elements 8 and 9 may be distributed over the surface of the plate as indicated in Figure 3. The contact area of these hemispherical elements with the surface to which they are to be attached is to be a relatively small proportion of the whole area of the plate as in the modification of Figures 1 or 2.

In the modification indicated in Figure 5, the projections 10 from one side of the plate may be similar to those of Figure 3 or Figure 1 and may be directly adhered to the surface of the plate 11 or through a coating sheet as shown in Figure 2. The other side of the plate 11 may be coated with an adhesive tacky substance 12 which would preferably serve to hold the attaching sheet after the element had been pressed against the wall or other surface against which the sheet is to be secured.

In the arrangement indicated in Figures 6 and 7, a corrugated sheet 13 is provided which may be of paper, card-board, plastic or other similar sheet material having a fair degree of flexibility but deformable when the corrugated sheet is pressed together cross-wise of the corrugations. The corrugated sheet should preferably be formed as indicated in Figure 7 with deep U-shaped reverse corrugation elements 14 and 15 which are filled with plastic adhesive material 16 of a nature similar to that used for the projecting members in the other figures. The tacky adhesive material between successive corrugations projects outward from the U-shaped successive sections bulging into rounded ribs or ridges 17 as indicated in Figure 7. The rounded ribs 17 serve in general in the manner similar to the elements of Figures 1 to 5 except that the sheet of Figure 6 is intended to be cut in desired sizes when used and then used similarly as the elements of Figures 1 to 5 in place of thumb tacks or the like.

One of the chief merits of the elements in place of thumb tacks or other means of mounting that is commonly used, is that when the plate is removed from the surface, the adhesive material that still clings to the finished surface may be simply polished off with a dry cloth and no marks will be left. In this way there is no fear, as for instance, in use of walls, doors, desks or other finished surfaces of marring the finish in any way.

A somewhat different modification is shown in Figures 8 and 9. Here the card 20 may be entire-

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ly coated with the plastic adhesive 21 on both faces. The card is then stamped out to bring out spaced adhesive areas 22 connected together by strip 23 which form the support for the areas. In this way the areas while held together as one unit may have pressure independently exerted upon them when pressed to the surface to which they are to adhere. The connecting strips 23 will be likewise coated but by masking all but the round areas 22, these alone may be coated.

Having now described my invention, I claim:

1. As an article of manufacture a non-piercing thumb tack comprising a thin plastic plate element having smooth continuous surfaces on both sides coated with a thin layer of solid, yielding, deformable tacky adhesive material, readily removable from surfaces with which it may come in contact, the adhesive on at least one of said sides being formed with spaced areas projecting outward from the surface of said coating.
2. An article as in claim 1 in which the spaced projecting areas are formed of substantially hemispherical elements.
3. An article as in claim 2 in which the total exposed projecting areas of the hemispherical elements are less than one-half the area of said plate.
4. As article as in claim 1 in which the spaced areas are in the form of mounds with comparatively smaller surface areas at their exposed ends than at their bases and are spaced over the whole surface of the plate.

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