

[54] PLASTIC PANEL PAD CONSTRUCTION  
FOR SPACING CONCRETE PANELS

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214/10.5; 428/131; 428/166; 428/179

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[58] Field of Search ..... 161/130, 122, 121, 48,  
161/109; 52/173, 98; 214/10.5 R

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[57] ABSTRACT

Panel pads are provided which are useful in spacing concrete panels and the like for purposes of curing, storage, packing and shipping. The pad construction consists of a plurality of pad bases connected together by parallel straps in serial alignment, the bases being provided on one side thereof with a plurality of hemispherical projections peaking in a common plane and arranged in three parallel rows, the projections in the outer rows of which are aligned with each other and are equally spaced. The projections in the innermost of the three rows are staggered with respect to the projections in the outer rows and are divided into two groups of three projections each on each respective pad base. These groups are spaced to leave a gap therebetween. Each base is provided with at least one hole passing therethrough which permits affixing the pads to wooden supports or the like. The bases are scored so that they may be hingeably displaced into separate sections or so that they can be broken apart to form separate sections.

9 Claims, 7 Drawing Figures

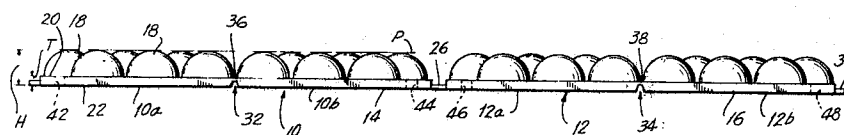


FIG. 1

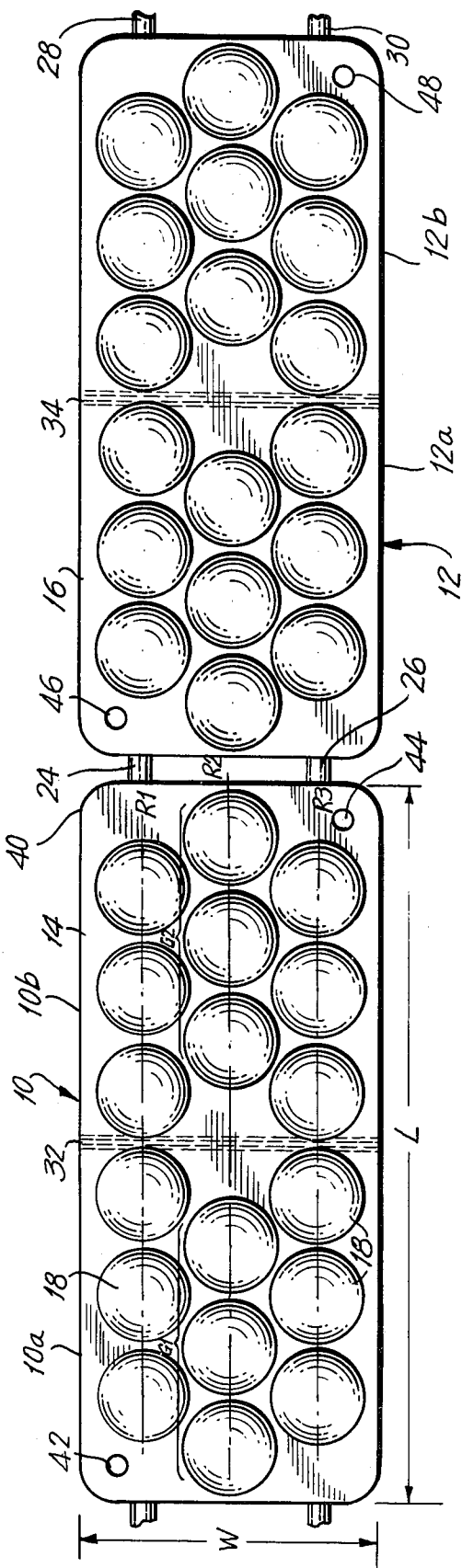
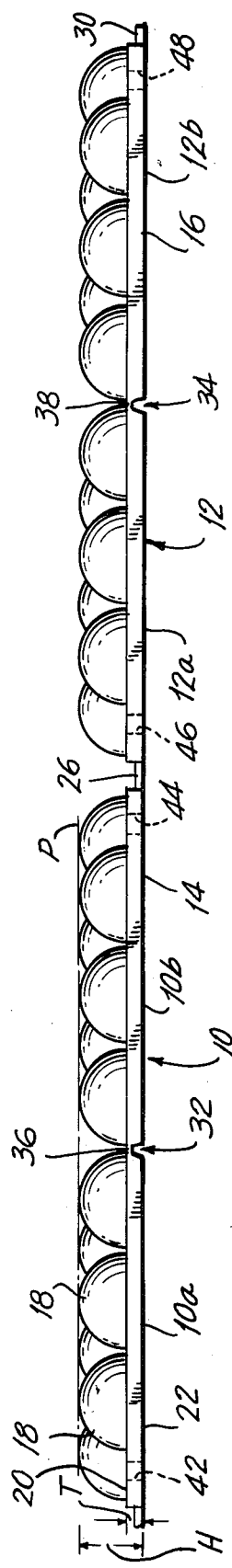
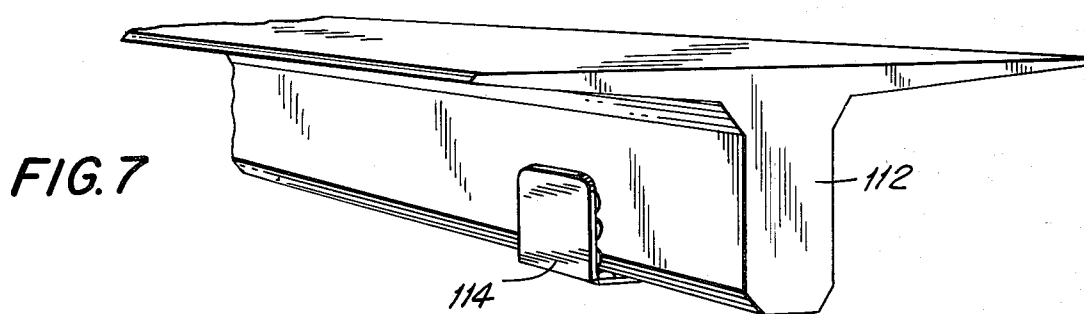
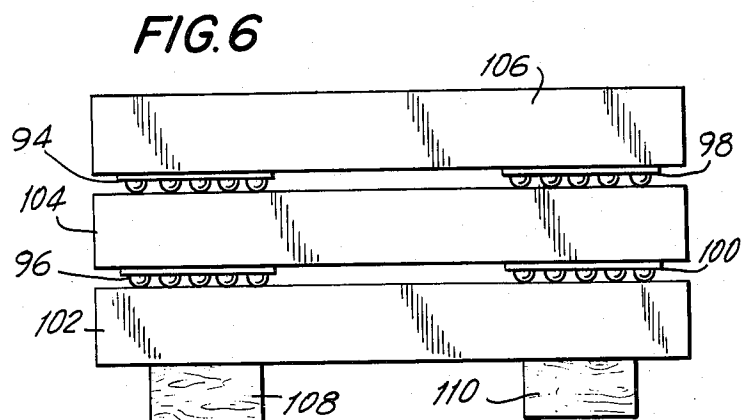
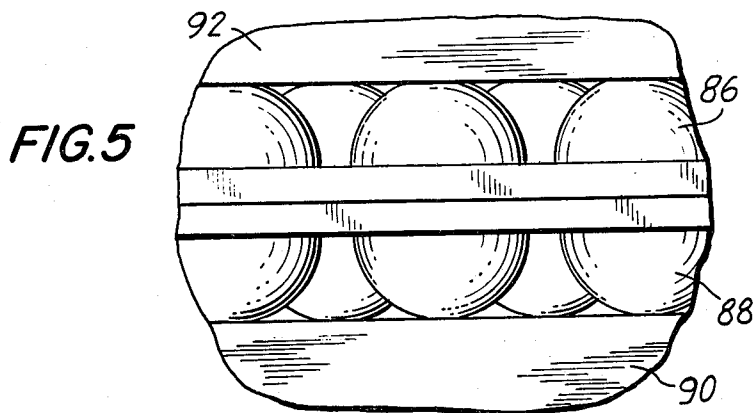
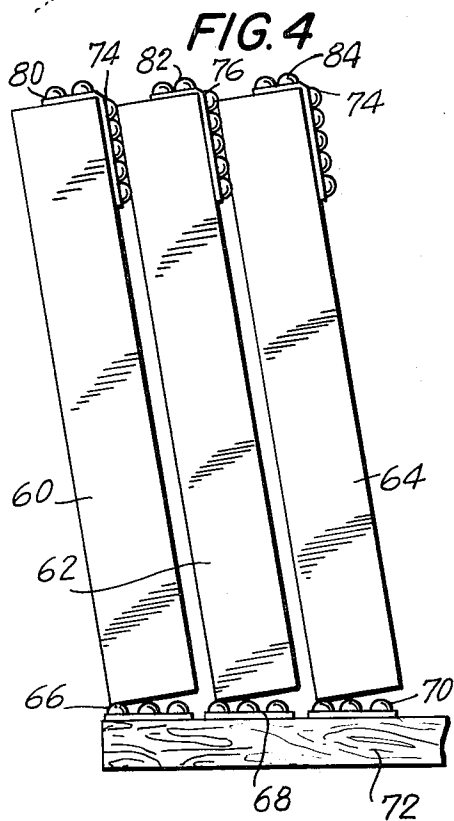
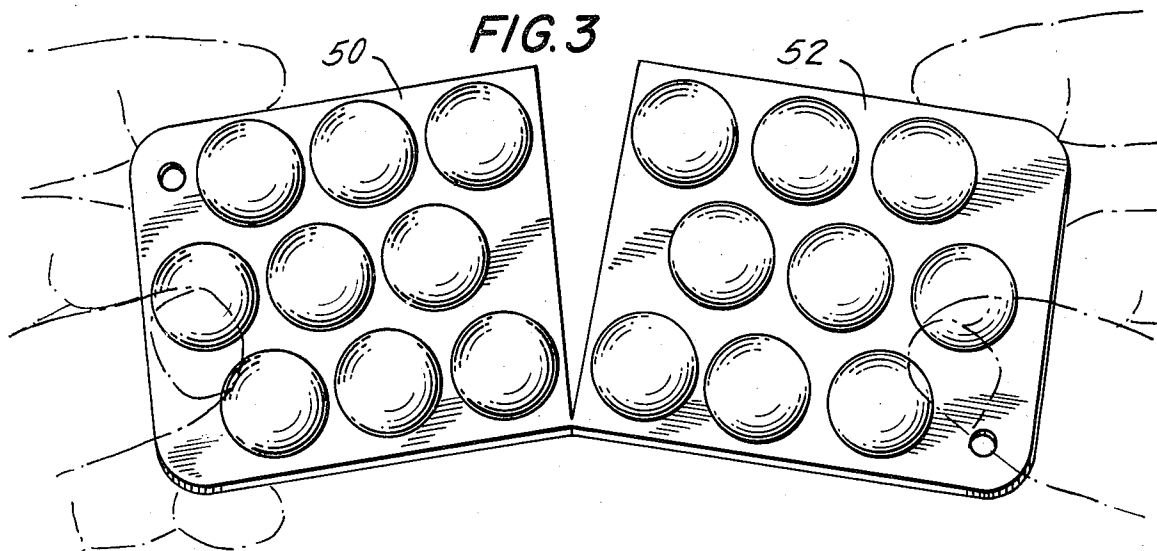


FIG. 2





# PLASTIC PANEL PAD CONSTRUCTION FOR SPACING CONCRETE PANELS

## FIELD OF THE INVENTION

This invention relates to spacers and supports and more particularly to spacers and supports for use in connection with concrete panels or the like.

## BACKGROUND

In the curing, storing, packing and shipping of concrete panels or the like, it is usually necessary to build up stacks of panels or to lean the panels against one another in inclined attitudes so that one panel will bear the weight of one or more other panels.

If the panels are allowed to come into contact with one another, this might prevent curing or will at least prevent curing in a proper manner. In addition, it is possible that the panels will cause stains on one another or will introduce defects into adjacent panels which will be intolerable with respect to both quality of product and economy.

In addition, during the shipping and handling of such panels as have been referred to generally above, there may occur breakage, chipping and cracking if the panels are permitted to come into contact with one another and this must be avoided if an economical procedure is to be achieved.

In the handling of panels of the above-noted type, it is not uncommon to encounter loads in excess of, for example, twenty tons and even more. Thus, provision must be made to support loads of such magnitudes in an economical manner.

Additionally, provision has to be made, in the case of curing, to allow air to circulate in and about the panel faces in order to prevent curing stains. Moreover, in the processing of such panels and the curing thereof, there will frequently be confronted materials which are of an acidic or alkaline nature.

Additionally, panels are generally of parallelepiped form as a consequence whereof there are adjoining and angularly related faces with respect to which it may be necessary to provide spacing, bracing or support.

## SUMMARY OF THE INVENTION

It is an object of the invention to provide improved spacers or pads for spacing or supporting panels fabricated of concrete or the like.

It is a further object of the invention to provide improved panel pads which are capable of withstanding, for example, loads in excess of twenty tons.

It is yet another object of the invention to provide improved panel pads of the above-noted type which are reuseable.

Still another object of the invention is to provide an improved panel pad of the above-noted type which provides for the venting of air and allows air to circulate against the faces of the panels supported in order to prevent curing stains.

It is still a further object of the invention to provide low cost and highly protective panel pads which are superior to those which have been heretofore available.

Yet another object of the invention is to provide an improved panel pad construction which enables the same to be divided simply into one or more subsections capable of being used independently.

Still a further object of the invention is to provide an improved panel pad construction which enables the

elimination of breakage, chipping and cracking during the storage, packing and shipping of panels of the above-noted type.

Further objects of the invention include the provision of improved pads which will not themselves stain the panels which are supported, braced or spaced and which are improvements over panels made, for example, of wood, foams, metal, asbestos, hay and so forth.

Still a further object of the invention is to provide an improved panel construction which is inert with respect to acids and alkalis.

Still a further object of the invention is to provide an improved panel pad of the above-noted type which provides readily for affixing the same to wooden frames and supports.

To achieve the above and other objects of the invention, there is provided an improved panel pad construction which comprises a base means having opposite sides and, at least on one of said sides, a plurality of spaced projections of equal height peaking at points in a common plane whereby there results only a point contact with the panel which will be supported, spaced or braced thereby.

Preferably, the projections of the pad of the invention are hemispherical in shape in order to provide for an optimum distribution of the forces involved and in order to provide for a point contact with the panels to be handled while avoiding penetration into the same.

Preferably, the projections provided on the base means of the invention are aligned in parallel but staggered rows. In particular, said base means may include at least one base forming a monolithic structure with the afore-noted projections. These projections are preferably solid in order to provide for handling loads of the above-mentioned magnitude.

The base means as noted above includes at least one base. This base is preferably provided with a hole passing therethrough and there may be additional holes provided in order to facilitate nailing the same to an associated wooden support or frame.

In accordance with a feature of the invention, the base mentioned hereinabove is provided with a scoring service to divide the base into hingeably connected sections or to enable the base to be broken into separate sections which can be separately employed.

According to a further feature of the invention, the base is of generally rectangular shape and is provided with rounded corners.

According to still another feature of the invention, the base means may include a plurality of the aforementioned bases and relatively thin straps will be provided connecting the bases in serial alignment.

According to still another feature of the invention, the projections extend outwardly from the base to an extent which is about three times the thickness of the base.

With respect to a specific embodiment of the invention, the base means and projections are of a monolithic construction formed of a high density polymer. Preferably, the polymer will have a specific gravity of about 0.92 to 0.95.

According to still another specific embodiment of the invention, the afore-mentioned base will have a substantially constant thickness of about 1/16th to 3/8ths of an inch.

According to still another specific embodiment of the invention, the projections are arranged in three parallel

rows, the outer two of which include six evenly spaced mutually aligned projections and the inner row of which includes six projections arranged in two spaced groups of three projections, each of which are staggered relative to the projections of the outer rows.

The projections as will be seen hereinafter are preferably spaced by at least one-eighth of an inch and the base means and projections are preferably of a material which is inert to acids and alkalis.

The above and other objects, features and advantages of the invention will be found in the detailed description which follows as illustrated in the accompanying drawing.

### BRIEF DESCRIPTION OF THE DRAWING

In the drawing:

FIG. 1 is a top plan view of a panel pad construction provided in accordance with a preferred embodiment of the invention and illustrating two pads connected in series and indicating that additional pads may be connected thereto;

FIG. 2 is a side view of the panel pad construction illustrated in FIG. 1;

FIG. 3 is a view showing how a panel pad of the invention may be separated into separate sections;

FIG. 4 is a side view of three panels in inclined attitudes showing a particular use of the panel pads of the invention;

FIG. 5 illustrates pads in back-to-back relationship in a further use of panel pads of the invention;

FIG. 6 illustrates still a further use of the panel pads of the invention; and

FIG. 7 illustrates still a further use of the invention in the form of a T cradle.

### DETAILED DESCRIPTION

In FIGS. 1 and 2 are seen a preferred panel pad construction provided in accordance with a preferred embodiment of the invention. Therein appear panel pads 10 and 12 consisting respectively of bases 14 and 16 upon which are provided a plurality of projections 18. The bases 14 and 16 have upper and lower sides and, in the preferred embodiment, the projections 18 extends upwardly from the upper side 20 of the respective pads, the lower side 22 thereof being devoid of projections and therefore being at least substantially planar.

The pads 10 and 12 are connected by parallel straps 24 and 26 which are relatively short and narrow. For example, where the length L of a pad is six inches and the width W thereof is 2½ inches, the straps 24 and 26 will be approximately one-eighth to one-fourth of an inch in length and will be approximately one-eighth of an inch in width.

Additional straps 28 and 30 are indicated since the arrangement is preferably provided as a group of three or more pads and since, additionally, as many further pads as desired may be added in serial arrangement as may be particularly advantageous for a particular use.

The pad 10 is provided with a scoring indicated generally at 32. In FIG. 2 this scoring is seen to be of inverted V shape and is provided so that sections 10a and 10b of the pad 10 may be considered as hingeably connected or as capable of being separated into two separate sections which may be individually employed.

Similarly, pad 12 is provided with a scoring indicated at 34 and of the same shape, nature and use as has been discussed with respect to pad 10. Thus, it is clear that

pad 12 is also separable into separate sections 12a and 12b which may be considered as hingeably connected or as separable into two independent sections which may be separately employed.

Actually, the sections are connected by a bridge 36 or 38 which is of a thickness capable of holding the sections 10a and 10b, on the one hand, and sections 12a and 12b, on the other hand, fairly rigidly in coplanar relationship.

In the preferred embodiment of the invention, the scores or scorings 32 and 34 are preferably rectilinear in nature and divide their respective pads 10 and 12 into equal sections. Thus, for example, pad 10 can be broken into two separate sections which are 3½ inches long and 2½ inches wide according to the example dimensions provided hereinabove.

As best seen in FIG. 2, the tops of the projections preferably peak in a common plane indicated at P. The purpose of this is so that the pads can engage against a planar face of a panel without one of the projections exerting a greater force on the panels than any of the other projections.

In addition, while point engagement with a panel is preferred, it is essential that the projections not pierce into the panels such as to form holes, scorings or weak points therein. For this purpose, the projections 18 are preferably of hemispherical shape or the like, such description being intended to include, by reference, projections which are ovoid, pyramidal and the like. It is to be noted, however, that the pads of the invention are intended to maintain loads of substantial magnitude and the hemispherical shape is preferred with respect to large loads since the loads and the stresses and strains resulting therefrom are very evenly and advantageously distributed.

The bases 14 and 16 as indicated hereinabove are preferably rectangular in shape and are provided with rounded corners such as indicated at 40. The thickness T of the base has a preferred relationship to the overall height of the pad which is indicated at H which advantageously is equal to 4 T.

The bases and projections extending therefrom are preferably of a monolithic construction with the projections being solid along with the base. The projections are preferably formed of a high density polymer which may be, for example, polyethylene. Preferably, the polymer will have a specific gravity of about 0.92 to 0.95. At the same time, the bases will each have a substantially constant thickness of about 1/16th to 3/8th of an inch.

As has been seen in FIG. 1, the projections on each pad are arranged in three parallel rows. These are indicated for the pad 10 as rows R1 and R2 and R3. Rows R1 and R3 are the outer rows and the projections therein are equally spaced. The projections of row R1 are aligned with the projections of row R3.

The projections of inner row R2 are divided into spaced groups G1 and G2 of three projections each, the projections of inner row R2 being staggered with respect to the projections of rows R1 and R3. Group G1 is thus spaced from group G2.

In addition to the afore-mentioned provisions and features, the pad 10 is provided with holes 42 and 44 passing therethrough at diagonally disposed corners thereof, while pad 12 is provided with similarly positioned holes 46 and 48. The purpose of these holes is

to facilitate the nailing of the bases to wooden forms, supports, braces and the like.

Finally, it should be noted that the projections are all spaced from one another, this being by a minimum of about one-eighth of an inch and preferably more to provide the passage of air therebetween when concrete panels are resting against the pads or are spaced or braced by the pads in a manner to be indicated in greater detail hereinafter.

From what has been stated hereinabove, it will be noted that a panel pad construction is provided which comprises generally base means having opposite sides and, on at least one of said sides, a plurality of spaced projections of equal height peaking at points preferably arranged in a common plane. Both the base means and projections are for purposes which have been discussed herein of a material inert to acids and alkalis. Preferably, the projections are hemispherical to provide point contact with the panels while at the same time providing optimum distribution of the loads involved.

Reference is next made to FIG. 3 wherein it is seen that, for example, a panel may be split apart into separate sections 50 and 52. This provides a two-for-one advantage so that with a small cut or with a working back and forth of the two sections, it is possible to have two pads for separate use in place of the single original pad.

in FIG. 4 is illustrated a use of the invention involving a plurality of concrete panels 60, 62 and 64. The panel 60 is leaning against a wall or other bracing structure (not shown). The bottoms of the panels are resting on pads 66, 68 and 70 which are of a construction as has been described hereinabove. These pads are resting upon a wooden support beam 72.

At the respective top right corner edges of the panels are provided additional pads 74, 76 and 78. These pads are once again of the construction described hereinabove and the hingeable connection of certain of the sections permit one of the pads to be bent at right angles to the remainder of the pads in the attached group so that part of the pads provide for spacing between the panels whereas the upper sections of the pads indicated at 80, 82 and 84 enable additional panels to be loaded atop the panels 60, 62 and 64.

FIG. 5 illustrates pads 86 and 88 positioned in back to back relationship, one being positioned on the other in order to space panels 90 and 92 which are horizontally disposed and loaded one atop the other.

FIG. 6 illustrates the use of pads 94, 96, 98 and 100 to space panels 102, 104 and 106, these being loaded one on top of the other with the face of the panel upwards and in horizontal relationship, the entire load being supported atop the wooden beams 108 and 110. Although not illustrated, it is to be noted that pads might be interposed between beams 108 and 110, on the one hand, and the lowermost panel 102, on the other hand.

Fig. 7 illustrates a concrete beam 112 with pad 114 being bent into U-shaped form to form a T cradle with the projections on the inner face of the U-shaped construction in order to engage the beam 112 with a multiple point contact.

In all of the above arrangements, the spacing between the projections and the point contact of the projections with the concrete whether it be for purposes of

curing, storage, packing and/or shipping enables air to circulate around the panel faces to prevent cure stains, avoids penetration into the panels, and achieves all of the inventions noted hereinabove. At the same time the panels are low in cost, reusable, unbreakable and long lasting as well as being non-reactive to acids and alkalis.

There will now be obvious to those skilled in the art many modifications and variations of the construction set forth hereinabove. These modifications and variations will not depart from the scope of the invention if defined by the following claims.

What is claimed is:

1. A panel pad construction comprising base means having opposite sides and, on one of said sides, a plurality of spaced solid and substantially non-deformable hemispherical projections of equal height peaking at points in a common plane, said base means includes a plurality of bases, each said base forming a monolithic structure with respective of said projections, each said base being provided with a scoring serving selectively to divide the same into hingeably connected sections adapted to be broken into separate sections each of which has projections thereon, and relatively thin straps connecting the bases in serial alignment, said monolithic structure being of a high density polyethylene having a specific gravity of about 0.92-0.95.

2. A construction as claimed in claim 1 wherein said projections are aligned in parallel but staggered rows in each said base.

3. A construction as claimed in claim 2 wherein said base is provided with a hole passing therethrough.

4. A construction as claimed in claim 3 wherein each said base is rectangularly shaped with rounded corners.

5. A construction as claimed in claim 4 wherein the projections extend about three times the thickness of the base.

6. A construction as claimed in claim 5 wherein said base has a substantially constant thickness of about 1/16 to 3/8 of an inch.

7. A construction as claimed in claim 6 wherein the projections are arranged in three parallel rows the outer two of which include six evenly spaced mutually aligned projections and the inner row of which includes six projections arranged in two spaced groups of three projections each of which are staggered relative to the projections of the outer rows.

8. A construction as claimed in claim 7 wherein the projections are spaced by at least one-eighth of an inch.

9. A panel pad construction comprising base means having opposite sides and, on one of said sides, a plurality of spaced solid and substantially non-deformable hemispherical projections of equal height peaking at points in a common plane, said base means including a plurality of bases, each said base forming a monolithic structure with respective of said projections, each said base being provided with a scoring serving selectively to divide the same into hingeably connected sections adapted to be broken into separate sections each of which has projections thereon, said monolithic structure being of a high density polyethylene having a specific gravity of about 0.92-0.95.

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