

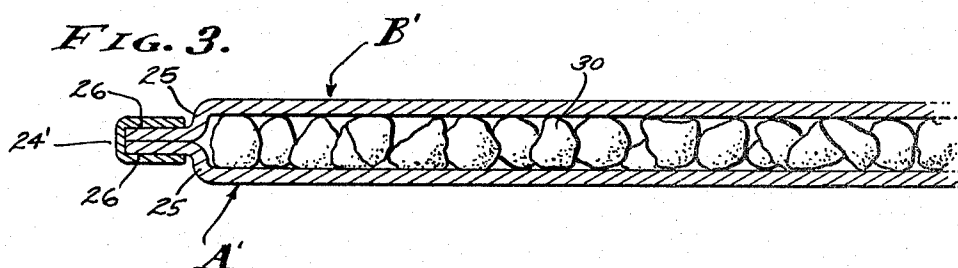
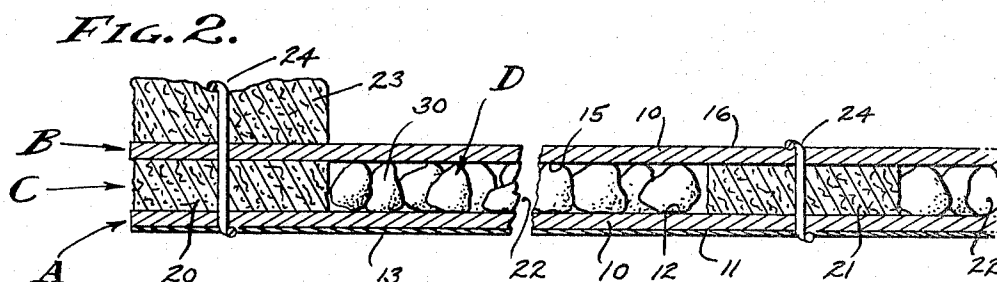
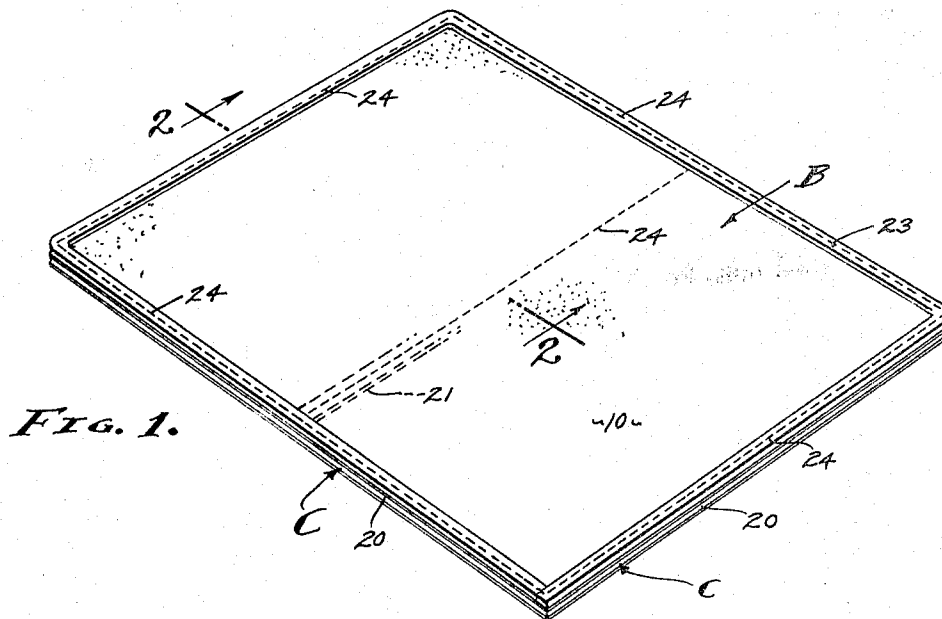
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ABSORBENT PAD

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ABSORBENT PAD

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1 Claim. (Cl. 161-83)

This invention relates to an absorbent pad and is particularly concerned with absorption or taking up of liquids into said pad to be retained and stored therein, a general object of this invention being to provide an article of manufacture that is particularly suited for use as a floor covering or the like and adapted to receive and store liquids contacting the same, while affording protection to the underlying floor. By "floor" I mean to include broadly any supporting surface whether it be that of a building structure, vehicular body or container, etc.

There are many circumstances where liquids drip or spill, or cases where liquids are uncontrollably discharged. It is often desirable to protect a floor surface, and I mean to include irregularities and therefore contemplate application of this invention to specially shaped floors, with an overlying protective cover. In most instances covers of the type under consideration act only as a shield to shed liquid, and there are covers in the form of trays that catch liquids in puddles. In any case, liquid-proof covers and trays are ineffective when it is desired to use the underlying floor for the support of objects and for the support of one's self. For example, it is ordinarily impractical for a person to walk upon such a protective cover. One solution to the problem is to provide a grating in the floor with a sump beneath the grating, this being an expensive procedure. Another solution to the problem is to provide a blotter that covers the surface, this blotter being a very limited collector of liquid. That is, among other drawbacks, a blotter does not hold any great volume of liquid.

Since the article of the present invention is closely analogous to a blotter, the particular drawbacks to said ordinary blotter should be considered. Reference is made to blotters comprising a soft loosely compacted paper of substantial thickness. Such blotter material is not durable, especially when wetted, and discharge of liquid occurs when the material is compressed. Therefore, a simple layer of blotter material is highly impractical when contemplating an absorbent pad adapted to overlie a working surface, a surface upon which objects are to be supported and upon which persons or the like can walk or stand and perform other duties.

An object of this invention is to provide an article in the form of a pad that is adapted to absorb liquids dropped or spilled thereon, and such that a substantially large volume of liquid is retainable therein.

Another object of this invention is to provide an article in the form of a liquid absorbent pad and which is adapted to overlie and protect a surface, while being used in a normal manner, for example to support objects and to be walked upon by persons or the like.

It is still another object of this invention to provide a liquid absorbent pad of the character thus far referred to and which does not discharge said liquid when pressure is applied thereto for the support of objects or persons or the like.

It is still another object of this invention to provide a liquid storing pad of the character thus far referred to and which can transfer liquid or moisture into dry objects upon contact therewith. With the pad structure that I provide liquid storing laminations have capillary qualities and function to transfer the liquids that are stored therein. Thus, a dry object coming into contact with the wet

pad will be wetted by withdrawal of liquid from the pad by means of capillary attraction.

The various objects and features of this invention will be fully understood from the following detailed description of the typical preferred forms and applications thereof, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a perspective view showing a typical embodiment of the absorbent pad.

FIG. 2 is an enlarged detailed sectional view of a portion of the pad and taken as indicated by line 2-2 in FIG. 1.

FIG. 3 is a view similar to FIG. 2 and shows a modified form of the pad.

The absorbent pad hereinafter disclosed is useful as above indicated and for example it is useful as bed pads or trays. A specific use is in animal cages as employed in transporting animals in baggage compartments, to prevent animal discharges from spreading onto other baggage and luggage. Thus, it will be apparent that there are many situations where highly absorbent pads are useful.

In the drawings I have shown several forms of the invention wherein the absorbent pad involves, generally, a bottom or base lamina A, an upper or surface lamina B, a spacer means C separating the laminae A and B, and a liquid retainer D occupying the space intermediate the two laminae. The elements A through D are made of inexpensive materials that are highly effective for the functions to be performed, and they are combined in a cooperative relationship with each other so as to provide a highly utilitarian article. As illustrated in its simplest form, the pad is rectangular in plan configuration being a flat article of initially light weight and of a very clean and sanitary character.

The bottom or base lamina A and the top or surface lamina B are preferably made of the same material, a paper felt 10 that is in itself highly absorbent. The particular paper material that I prefer to employ is fifty pound felt 10 of the type and quality used in the manufacture of "tar-paper" sometimes referred to as "asparagus-paper." The reference to "asparagus-paper" is pertinent inasmuch as there is a widespread use of this paper used in the shipping of vegetable produce, with great success, to retain moisture and to keep the produce fresh while in transit. This felt paper is highly developed and absorbs approximately 190% of its weight in coal oil, it has reasonably good mechanical properties including wearing capabilities and strength. Above all, it is a very inexpensive material that can be readily cut into any desired flat pattern, and it can be formed with the application of moisture (steam) and/or heat and pressure. However, by itself it has the limitation of absorbing about twice its own weight in water (water being slightly heavier than coal oil) and pressure constantly applied will squeeze liquid from this material.

In accordance with the invention a layer or lamina of felt 10 is used to construct both the bottom and top laminae A and B, although in some instances, it may be desired to construct the bottom lamina A of other materials. For instance, the lamina A can be made of thick or thin board of liquid-proof material, unless it is to have liquid absorption qualities. Thus, the lamina A has a lower face 11 for support engagement and an upper face 12. Or, as shown, the lamina A can be of felt 10 with a liquid impervious film 13 underlying the same, thereby preventing liquids from discharging beneath the pad.

The top or supporting lamina B is of felt 10, as above specified or the equivalent, and overlies the lamina A in spaced relationship therewith. Thus, the lamina B has a lower face 15 for supporting engagement and it has an upper service face 16. It is to be understood that the two laminae are of the same plan configuration, one being

spaced from and carried over the other. It will be apparent that the exposed service face 16 will absorb and take in any liquid that it contacts, thereby saturating the felt 10 up to its inherent absorption capacity (190%). However, before reaching this maximum absorption condition liquid will be transferred and stored in a liquid retainer D as later described.

The spacer means C can vary, as shown herein by the disclosure of two forms of the invention. In FIGS. 1 and 2 of the drawings I have shown a form wherein a spacer lamina 20 is positioned between faces 12 and 15 of the two laminae, to hold them in positive predetermined spaced relationship. The lamina 20 is primarily a marginal element that extends continuously around the periphery of the laminae A and B. It is preferred that said lamina 20 be a layer of hair-felt or strips thereof having constant thickness whereby there is uniformity in the parallel relationship of the two laminae A and B. Further, as the size of the pad increases it becomes necessary to compartmentalize the pad, in which case partition lamina 21 of the same character as lamina 20 are installed between opposite edges of the pad. As a result, one or more flat and laterally co-extensive compartments or chambers 22 are formed between the laminae A and B.

In carrying out the first form of the invention the three laminae are secured together as by lines of stitching or sewing 24.

In FIG. 3 of the drawings I have shown a form wherein the margins of the laminae A' and B' are flanged normally at 25 and have lips 26 disposed so as to engage and space the laminae A' and B'. The lips 26 are in a plane offset from the planes of the two spaced laminae and thereby hold the two said laminae parallel with each other. In carrying out the second form of invention the two spaced laminae are secured together as by means of cementing or as by means of a marginal clamping band 24', as shown.

Further, and in accordance with the present invention, the lamina 23 or hair-felt are installed so as to establish a dam projecting upwardly from and surrounding the top lamina B (see FIG. 1). Thus, excess liquid applied too quickly will be contained over the lamina B until sufficient time elapses for its absorption.

In accordance with the invention the liquid retainer D is provided to occupy or form a lamina between the first two mentioned laminae A and B (A' and B'). The material forming the retainer D can vary widely from that of a solid sheet of material to that of the granular material 30 of uniform size that I prefer to employ. In the case illustrated there are pellets or grains of absorbent clay sized to comfortably fit between the faces 12 and 15. For example, the clay that I employ is fuller's earth, a sorptive earthen material, which is highly liquid absorbent and which is reasonably strong and crush-resistant. Ordinarily this material will absorb 70% to 165% of its dry weight in S.A.E. #10 cutting oil, it retains its size, and pressure applied to this material within reasonable limits does not change its shape or squeeze liquid therefrom.

From the drawings it will be seen that the pellets or grains of absorbent granular material 30 fully occupy the chamber or chambers 22 acting under compression between the faces 12 and 15 to space the laminae A and B. Therefore, positive and continuous pressure contact is maintained between material 30 and surfaces 12 and 15, and as a result the granules of material 30 indent into the said surfaces. Consequently, there is substantial surface contact with each granule and transfer of liquid into the said granules is thereby made possible and is efficiently achieved.

From the foregoing it will be seen that all of the materials employed are of liquid absorbent character, with the exception of the underlying film 13 or modified lamina A used when circumstances require. Liquid, whether it be oils, paints or fuels, etc. when spilled upon or contacted with the service face 16 of the pad will be quickly absorbed into the felt 10. Upon sufficient saturation of the felt 10 in lamina B there will be a transfer of liquid into the sized grains of material 30 to be stored therein. It will be apparent that any over-saturation of the lamina B will be readily and quickly corrected by absorption into the said granules of material 30, until such time as said granules are also fully saturated. During saturation of the pad of the present invention the service face 16 is usable for the support of objects and it has sufficient wear resistant qualities so as to be walked upon without crushing grains of material 30 and without pressing liquid so as to discharge from the pad. When the pad is used for the wetting of objects such as vegetable produce, it is first saturated with water and placed in contact engagement with said produce. The felt 10 contacts the vegetable and the supply of water within the pad is withdrawn slowly by capillary attraction into the said vegetable.

Having described typical preferred forms and applications of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications or variations that may appear to those skilled in the art and fall within the scope of the following claim.

Having described my invention, I claim:

A laminated floor pad for standing support and for storing liquid contacting the same and including:

- (a) a base lamina of liquid absorbent paper felt with an impervious film on its lowermost supported face,
- (b) a top surface lamina of liquid absorbent paper felt spaced from and overlying the base lamina,
- (c) a marginal spacer separating said laminae with a chamber space therebetween,
- (d) and a liquid retaining lamina comprised of a single layer of loose liquid saturable crush resistant pellets occupying the chamber space between said laminae and engageably supporting the surface laminae in order to uniformly space the first two mentioned laminae and to receive liquid therefrom and to store said liquid.

References Cited by the Examiner

UNITED STATES PATENTS

468,353	2/1892	Maussner	184—106
2,057,162	10/1936	Richey	184—106
2,145,930	2/1939	Herron	156—107
2,300,041	10/1942	Bradley	47—38
2,619,653	12/1952	Young	4—112
2,649,759	8/1953	Gibbs	119—1
2,707,352	5/1955	Fischer	161—162 X
2,757,478	8/1956	Borland	184—106
2,895,873	7/1959	Sawyer et al.	119—1
2,912,152	11/1959	White	184—106
3,062,323	11/1962	Oganovic	184—106
3,186,896	6/1965	Clem	161—133

FOREIGN PATENTS

741,475 12/1955 Great Britain.

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