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F. WILLIAMS

2,221,890

PEBBLED SURFACE

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Fig. 1.

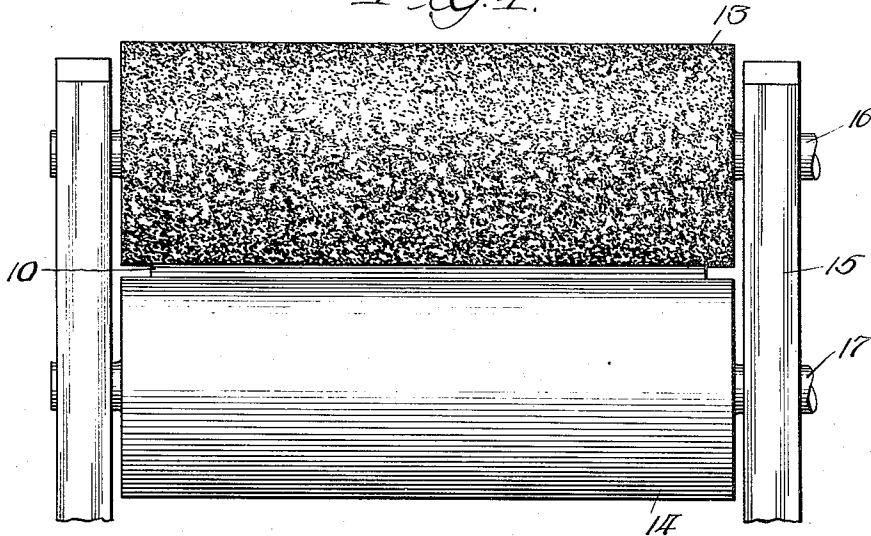


Fig. 2.

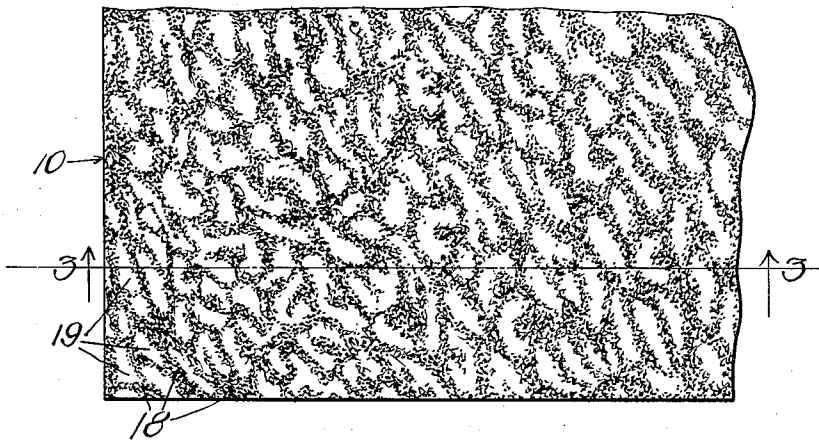
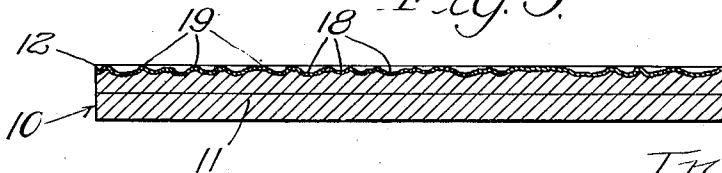


Fig. 3.



Invention:
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UNITED STATES PATENT OFFICE

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PEBBLED SURFACE

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2 Claims. (Cl. 88—105)

This invention relates to a pebbled surface, and more particularly to a pebbled reflecting surface adapted to diffuse light falling thereon.

One feature of this invention is that it provides a very good diffusing reflecting surface; another feature of this invention is that it may be readily and cheaply manufactured; yet another feature of this invention is that it may be very conveniently handled; a further feature is that it provides a very effective surface for display purposes; other features and advantages of this invention will be apparent from the following specification and the drawing, in which:

Figure 1 is an elevation showing pebbling means; Figure 2 is a fragmentary top plan view of a board embodying this invention; and Figure 3 is a sectional view along the line 3—3 of Figure 2.

It is frequently desirable, as in display or photographic work, to use a surface having high reflecting ability which will diffuse the light as it reflects it, in order to avoid harsh and strongly defined shadows. While diffusing surfaces of various types are known, the present invention provides a new and improved surface wherein there is little absorption of light during reflection and where the desired diffusion is obtained. This is achieved by pebbling the surface of a board having a thin layer of metallic foil thereon.

In the particular embodiment of this invention illustrated herewith a board 10 is here shown as comprising a foundation or main portion 11 of two plies of fibrous cellulosic material, such as paper or cardboard. This material is deformable in the sense that under pressure various irregularities can be created therein, as depressions and raised portions, which irregularities do not disappear when the pressure is removed. This foundation may be common wall board or other similar laminated board.

The laminated board 11 is here shown as having attached to one surface thereof, as by suitable adhesives, a thin continuous layer of material 12 of high reflectivity, that is, material which will return a very large proportion of the light falling upon it without appreciable absorption loss. This may be a metallic foil, preferably an aluminum foil.

After the paper board 11 has had the layer of foil attached thereto it is next passed between a pair of rolls 13 and 14 suitably journaled in a frame 15. One roll may be power driven and the other may merely idle, or both rolls may be synchronously driven through shafts 16 and 17 by means not here shown, as it forms no part

of the present invention. The roll 13 is here shown as a pebbling roll, having a number of small irregularities etched or otherwise formed on its surface, and the roll 14 is here shown merely as a small backing roll to enable desired pressure to be placed on the board 10 as it is passed under the pebbling roll 13. It is to be understood that the roll 13 is here shown as the only pebbling roll merely because the board 10 is illustrated as having only one surface layer of material of high reflectivity, rather than being similarly surfaced on both sides.

The action of the pebbling roll deforms the surface layer 12 and the foundation material beneath it to form depressions or depressed portions 18. The action of the roll also forms a number of interspersed raised portions 19. These portions are not necessarily raised from their original level, but are merely raised with respect to the surrounding depressed portions. All of these portions are small, the raised portions, for instance, being preferably less than one-sixteenth of an inch across, and merged into one another to form a continuous irregular layer. That is, the foil surface slopes from the depressions to the raised portions, and vice versa, as may be readily seen from Figure 3.

The surface thus formed is one having high reflectivity, and yet very good diffusing properties. Each raised portion serves as a convex reflecting surface which spreads the rays of light falling upon it, and the depressed portions form concave reflecting surfaces which converge the rays to a rather close focus and then cause them to spread beyond that point as they cross. In photography, for example, the surface may be cheaply and readily formed into shapes which will cast a reflected light on objects being photographed in such a way that sharp and unpleasing shadows are eliminated. Similarly, the board 40 may be used in flat or curved form as part of window or other displays in order to show to the best advantage an object to which it is desired to attract attention.

While I have described and claimed certain embodiments of my invention it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims in which it is my intention to claim all novelty inherent in my invention as broadly as permissible in view of the prior art.

I claim:

1. An article of manufacture comprising a base of substantially rigid laminated fibre board capable of surface deformation and having a face surface thereof of substantial extent deformed to provide thereon a pebbled surface of irregular contour composed of depressions and interspersed raised portions, the tops of the raised portions and the bottoms of the depressions respectively being formed as convex and concave surfaces, the major portion of said face surface being formed as slopes at angles to the general extent of said said surface and extending about said raised portions and so as to form the tops of the raised portions and the bottoms of the depressions for the most part without substantial extent in the direction parallel to the extent of said face surface, said slopes being formed at angles differing substantially for the various raised portions and depressions but for the most part merging with said convex and concave sur-

faces thereof, said raised portions for the most part being less than $\frac{1}{4}$ inch across, the dimensions between the raised portions for the most part being greater than the depth of the depressions, and a thin lamina of metallic foil attached to and conforming to the raised portions and depressions in said deformed surface and providing a reflective surface for said face of the board having the same irregular pebbled contour as the deformed face surface of said base from which reflective surface light is reflected at greatly different angles and the amount of light reflected in a given direction from each point of the surface is thereby reduced to secure diffusion.

2. An article of manufacture of the character claimed in claim 1, wherein said base is a rigid laminated board of fibrous cellulosic material and said thin surface layer is aluminum foil.

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