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SIMULATED STONE PRODUCT AND METHOD OF FORMING SAME

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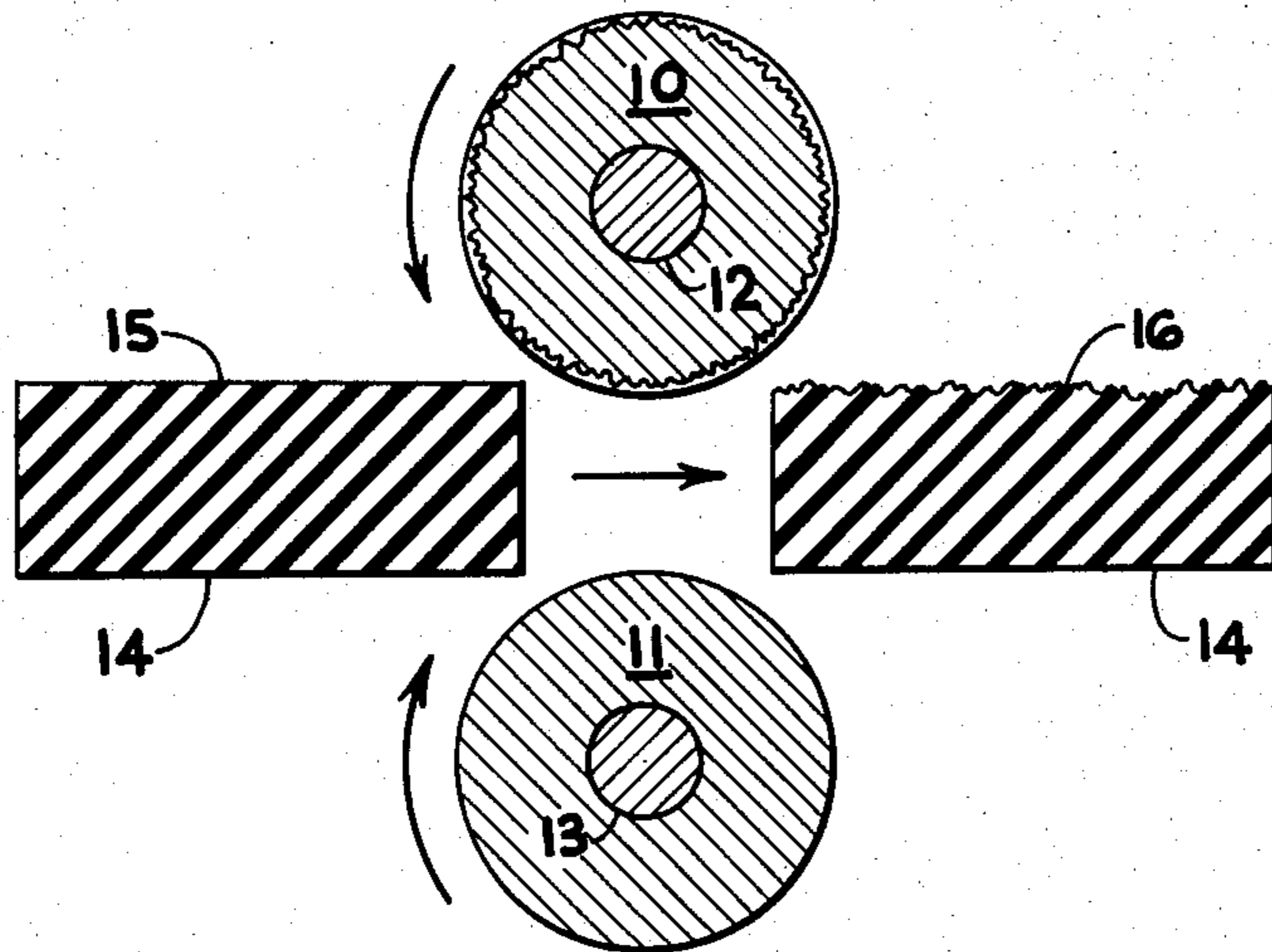


FIG. 1

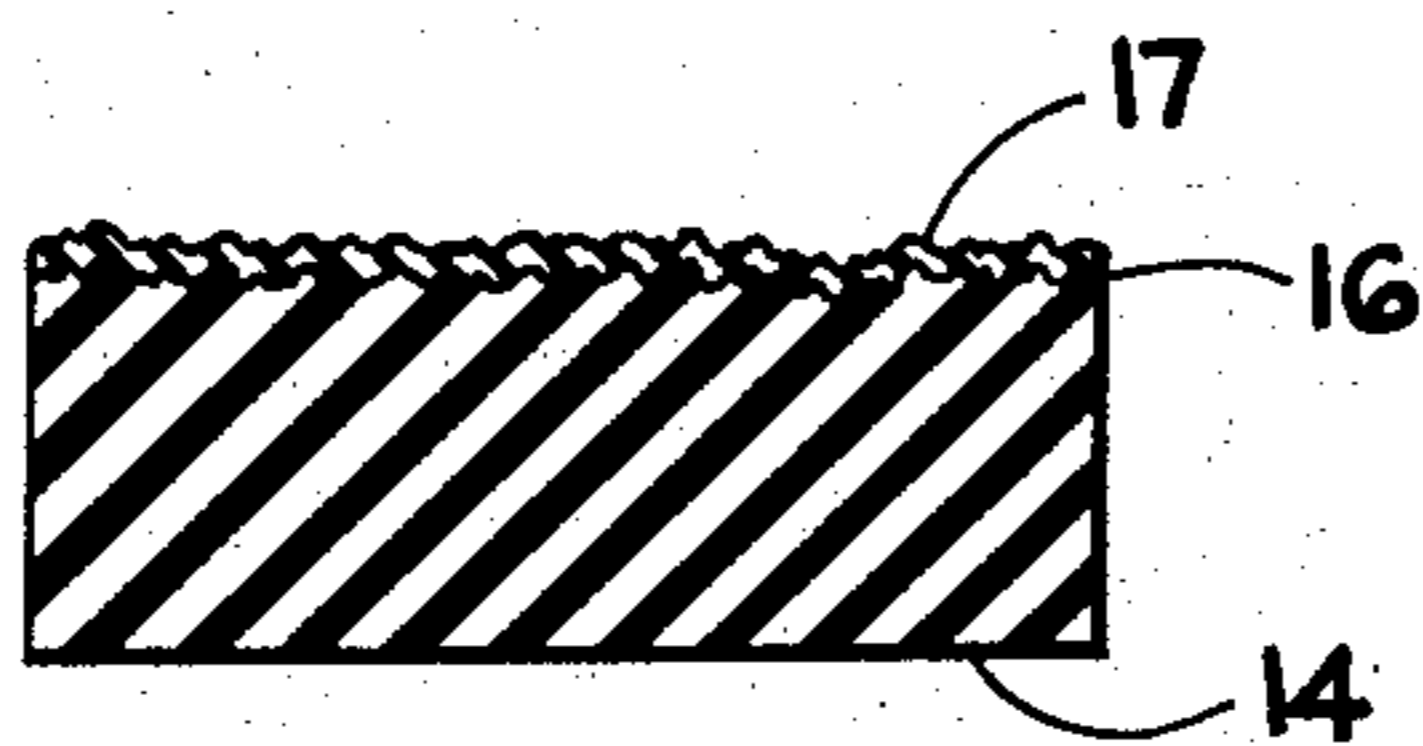


FIG. 2

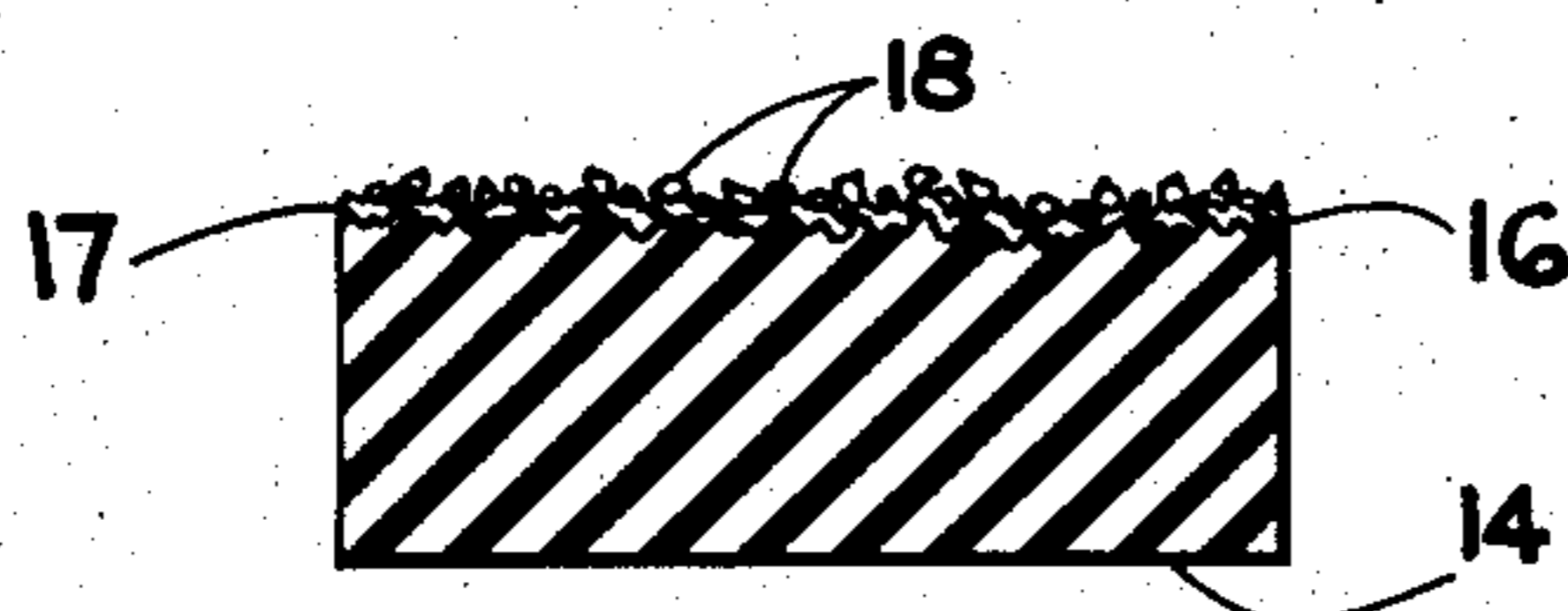


FIG. 3

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2,953,469

## SIMULATED STONE PRODUCT AND METHOD OF FORMING SAME

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3 Claims. (Cl. 117—9)

This invention generally relates to a method of forming and composition for a simulated stone product. More particularly, the invention concerns an artificial plastic stone which has primary application in conjunction with home and office interiors although the product of the present invention may also be applied under other conditions, for example, in protected areas of exterior landscaping or the like.

It is apparent that natural stone and rock materials, although oftentimes used functionally for fireplaces and the like, also serve a decorative purpose to form a part of the interior design of homes and offices. Such materials are usually formed into a solid wall by means of a bonding of cementitious composition. It will be appreciated, however, that rocks and stones, because of their weight and bulkiness are sometimes difficult to conveniently transport to the job site as well as to assemble and position during the construction process. Furthermore, such stone and rock materials are oftentimes not available in the quantity and size desired in areas near the building construction and considerable expense may be required to procure these materials.

It is, therefore, an object of the present invention to provide a composition for and a method of forming a simulated stone or rock-like material, which is relatively light in weight, and which may be readily manufactured at economical price levels.

Another object of the present invention is to provide a composition for forming a simulated stone and rock-like product which will yield the appearance of natural stone and yet which embodies a composition of materials requiring a relatively simple manufacturing process.

Still another object of the present invention is to provide a method and composition for a simulated stone or rock-like product, which if desired, may be completely formed by painters or other tradesmen at the site of the building construction at the time the interior finishing work is being completed.

These and other objects and advantages of the present invention are generally achieved by providing a composition for a simulated stone or rock product consisting of a foamed plastic substance having coated thereover a paint material layer. The paint layer has imbedded therein sand particles to yield the appearance of a natural stone surface. Of course, a paint is used which has a stone or rock-like color so as to simulate as closely as possible the natural surface coloring of stone and rock materials.

A preferred method of making the simulated stone or rock product of the present invention comprises the step of first subjecting an exterior portion or surface area of a foamed plastic material to a given pressure to impress therein an irregular contour characterized by lands and grooves of different shapes. For this purpose, the plastic material is of a type which necessarily will set in its deformed shape when subjected to a given pressure. Thereafter, once the irregular contour has been formed,

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the layer of paint is coated over the exterior portion either by brush or spray methods or the like. While the paint is still in a wet condition, sand particles are sprayed or otherwise deposited upon the paint to become imbedded in the paint layer and cells of the plastic material to thereby form a simulated stone or rock appearance upon drying of the paint.

A better understanding of the present invention will be had by reference to the drawings merely illustrating schematically an improved method and composition for the simulated stone or rock material of the present invention, and wherein:

Figure 1 is a schematic representation of the pressure contouring of the surface of a foamed plastic sheet material as the first step of the method of the present invention;

Figure 2 is a view of the foamed plastic sheet after application of a paint layer thereto; and

Figure 3 is a sectional view of the plastic sheet in completed form with the sand particles imbedded in the dried paint layer.

Referring now to Figure 1, there are shown a pair of spaced rollers 10 and 11 adapted to be driven in opposing directions as indicated by the arrows. Roller 10 is drivingly mounted on a shaft 12; similarly, roller 11 is drivingly mounted on a shaft 13. The rollers 10 and 11 may be driven through their respective shafts by any conventional driving means, for example, geared motors or the like.

The roller 10 is provided on its peripheral surface with an irregular contour defined by various lands and grooves simulating the surface roughness of natural rock and stone materials. The irregular contour characterizing the peripheral surface of the roller 10 is adapted to be impressed upon the base material or plastic sheet 14 and more particularly the upper surface 15 thereof as the sheet of plastic material 14 passes in the direction of the arrow between the rollers 10 and 11. Thus, the rollers 10 and 11 are spaced slightly closer to each other than the thickness of the plastic material 14.

The plastic material 14 is preferably formed of a polystyrene plastic expanded into a non-permeable multicellular mass, for example, as characterizes the trademarked product, "Styrofoam," manufactured by the Dow Chemical Company. Of course, other types of foamed plastic materials (for example, foamed cellulose acetate) may be employed so long as they are characterized by a multi-open cellular construction and so long as they are thermo-plastic to the extent that they will deform and remain in the deformed condition upon being subjected to a given pressure.

It should be noted, however, that foamed plastic materials cannot be used which have the characteristic of "springing back" to their original shape upon removal of the pressure forming member. Thus, synthetic sponge cellulose products presently on the market are not satisfactory for purposes of the present invention.

After the polystyrene plastic sheet 14 has been forced through the rotating rollers 10 and 11, the upper surface 15 thereof will be formed into the irregular contour denoted by the numeral 16. It is apparent that this irregular contour could equally well be formed by an embossing punch or die although the roller apparatus method enables contouring the surface of the plastic material continuously and conveniently over long lengths of panels or sheets thereof.

After formation of the simulated stone surface or roughened contour 16, a layer of colored adhesive material 17 is applied to the surface 16, as indicated by the numeral 17 in Figure 2. Preferably, an oil base paint is employed for this purpose which is characterized by

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a color upon drying similar to that of the surface coloring of stone or rock. Conventional oil base paint, because of its chemical composition, has been found to satisfactorily adhere to the foamed plastic material 14 as well as provide a suitable base material for the final step of applying sand-like particles 18 (as shown in Figure 3) to most closely approximate and simulate natural stone or rock.

In this regard, before the paint 16 has dried and preferably immediately after its application either by spraying or brushing, sand particles 18 are blasted or otherwise deposited onto and into the paint layer 17 such that they become partially imbedded therein to co-operate with the paint and the cells of the plastic material 14 to simulate a rock-like surface. As the paint 17 dries, the sand particles will become relatively firmly fixed therein and in some instances partially imbedded in the cells of the plastic sheet 14 whereby an unusually similar appearance to natural rock is attained.

Although sand particles 18 are preferably employed, it is, of course, conceivable that synthetic particles or other equivalent material may be employed of similar appearance and size to sand particles. However, because of the availability of sand particles and the relatively economical cost involved, such material is preferred.

It will be appreciated that certain changes and modifications may be made in the materials employed and the steps of the present invention without departing from the spirit and scope thereof as set forth in the following claims.

What is claimed is:

1. The method of making a simulated stone product

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comprising the steps of: subjecting an exterior portion of a foamed polystyrene plastic material to a given pressure of an embossing member to effect the formation of an irregular contour in said exterior portion; forming a layer of an oil base paint coating over said exterior portion conforming to and retaining said irregular contour; and, depositing sand particles on said paint layer prior to the drying thereof.

2. The method of making a simulated stone product according to the steps of claim 1, in which said paint includes coloring matter simulating upon drying the natural color of stone or rock.

3. The method of making a simulated stone product comprising the steps of subjecting an exterior portion of an expanded polystyrene plastic material to a given pressure of an embossing member to effect the formation of an irregular contour in said exterior portion; forming a layer of colored adhesive over said exterior portion conforming to and retaining said irregular contour; and depositing sand particles onto said colored adhesive layer prior to the drying thereof.

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