March 24, 1970 G. G. MITCHELL ET AL 3,501,879

PREFABRICATED FLOOR

Filed May 6, 1968 2 Sheets-Sheet 1

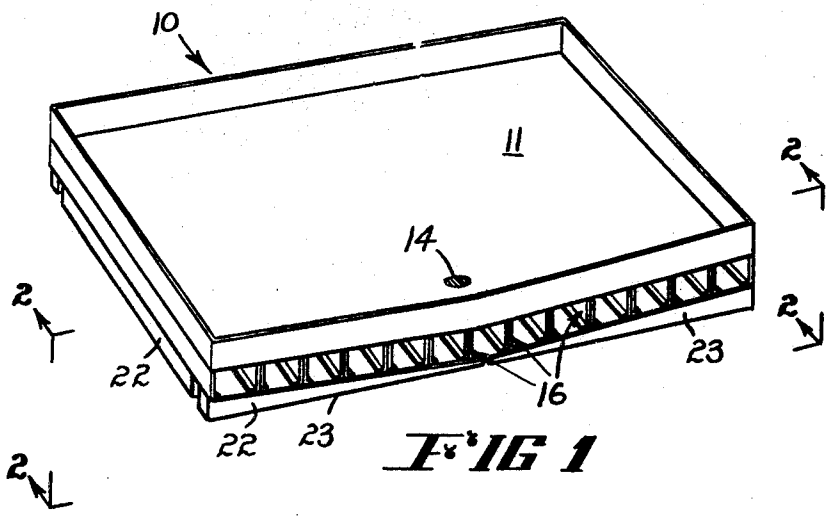


FIG 1

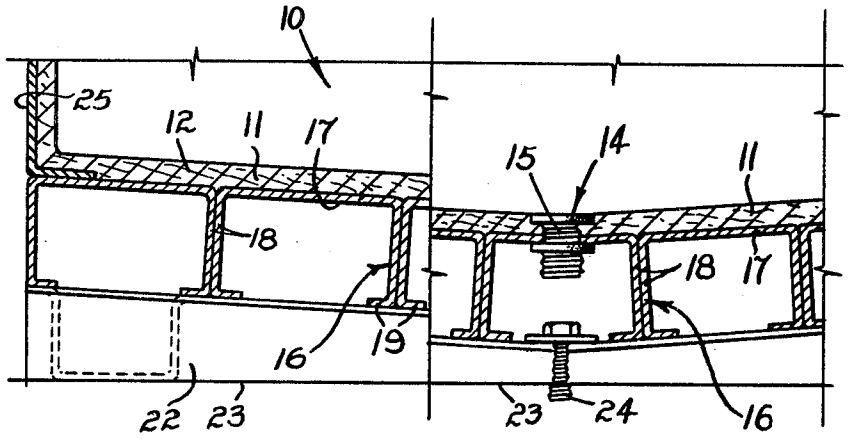


FIG 2

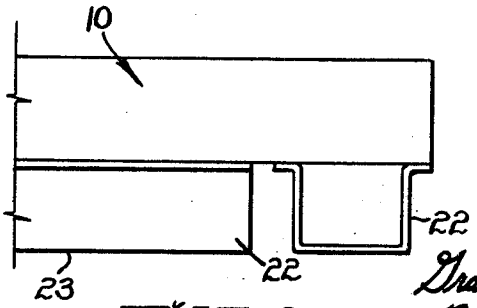


FIG 3

INVENTORS
Graham George Mitchell
Ronald John Roach
By Oldham & Oldham
ATTYS

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PREFABRICATED FLOOR

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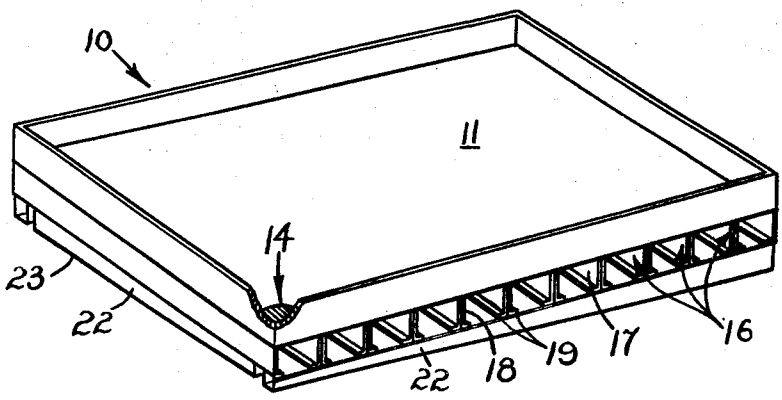


FIG 4

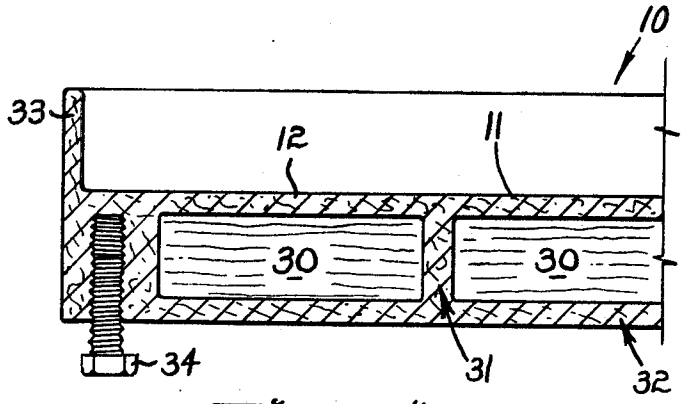


FIG 5

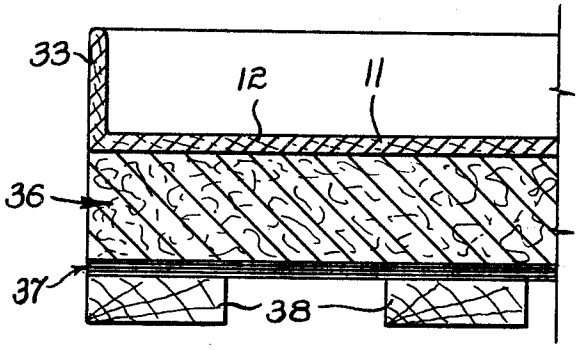


FIG 6

INVENTORS

Graham George Mitchell

Ronald John Roach

By Oldham & Oldham

ATTYS

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3,501,879

PREFABRICATED FLOOR

Graham George Mitchell and Ronald John Roach, Blair Athol, South Australia, Australia, assignors to Gramall Industries Proprietary Limited, Blair Athol, South Australia, Australia

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U.S. Cl. 52—198 3 Claims

ABSTRACT OF THE DISCLOSURE

A prefabricated drain flooring suitable for example for a bathroom having floor stiffening means between the draining floor surface and slope control members which vary in depth so that the floor surface slopes downwardly towards a drain opening therein.

This invention relates to a prefabricated drain flooring and in particular it relates to floorings for bathrooms, verandahs, or any locality where it is necessary to slope the flooring to achieve required draining.

It is well known in the art of prefabrication to provide flooring of all types and attempts have also been made to provide satisfactory flooring for bathrooms or the like where the floor is subject to water and draining of the water to a drain outlet must be achieved.

The usual method in the past of course has been to form the floors of cement, terrazzo or the like which can readily have its surface shaped to drain to a drain outlet, but this involves skill and considerable work and is not particularly suitable for prefabricated structures and also does not allow a standard unit to be used as the position of the drain in each case may vary and therefore the flooring must be similarly varied in its slope.

It will be known also that a problem in bathrooms and similar floors is to incorporate the plumbing by means of which the water is removed from the floor.

Thus in the art of forming flooring which must incorporate draining means much is desired if simplicity of construction and ready adaptability is to be achieved and it is the object of this invention to provide an improved form of flooring in which firstly a simple construction results and secondly ready control is achieved of the slope of the flooring to give selective and adequate draining.

It will be realised that according to this invention a floor such for instance as a bathroom floor could be constructed to a module size and could be supplied as a prefabricated unit without the unit having any slope in itself, but by supplying the necessary control members which can be fixed to the unit if required, the floor can be put down into position and will then have the required characteristics for the particular purpose.

Four embodiments of the invention are described hereunder in some detail with reference to and are illustrated in the accompanying drawings, in which:

FIG. 1 is a perspective view of a bathroom floor according to a first embodiment,

FIG. 2 is a fragmentary section on plane 2–2–2–2 of FIG. 2, drawn to an enlarged scale,

FIG. 3 is an end elevation, also drawn to an enlarged scale,

FIG. 4 is a perspective view of a similar floor to that shown in the first embodiment of FIGS. 1, 2 and 3, but having a drain in one corner,

FIG. 5 is a fragmentary section according to a third embodiment, and

FIG. 6 is a fragmentary section according to a fourth embodiment.

Referring to the first embodiment of FIGS. 1, 2 and 3 a bathroom floor **10** has a draining floor surface **11** defined by a layer of fibre glass reinforced polyester resin **12** (although of course any one of a wide range of materials may be used). The draining floor surface **11** is provided with a drain opening **14** constituted by a standard drain member **15** passing through the draining floor surface **11**, and also through floor stiffening means **16**.

The floor stiffening means **16** in this embodiment are constituted by a series of narrow mouth channel members **17**, the vertical walls **18** of which are contiguous, and the lower flanges **19** constitute tension portions when the floor is loaded.

In FIG. 1 it will be seen that the floor is much less rigid across the stiffening members than along them, and use is made of this fact to slightly bend one edge downwardly in its centre adjacent the drain opening **14**. The floor is retained in this shape by means of slope control members **22** which are of "top hat" section sheet metal and the under surfaces **23** of the slope control members **22** lie in a single flat plane so that the floor can be peripherally supported for example by a building foundation dwarf wall or the like.

FIG. 2 illustrates a bolt **24** which can if desired be used to prevent any upward spring of the floor **10** at the locality of the drain opening **14** but in general this is not deemed necessary. In the embodiment of FIGS. 1, 2 and 3 the slope control members on three sides are of identical height throughout their length, one side only having slope control members of varying length.

With bathrooms it is usual to provide a periphery coving upstanding from the floor surface and in this embodiment coving is formed from the layer of reinforced resin **12** supported along the edge by upstanding L section members **25**. The drawings exaggerate the slope in order to illustrate the principles of this invention, but in general it is found that the slight degree of slope required is not noticeable on the upper edge of the coving.

The second embodiment of FIG. 4 is substantially similar to the first embodiment of FIGS. 1, 2 and 3 but in this embodiment the drain opening **14** is positioned near one corner and the draining floor surface **11** is a substantially flat plane. To achieve the draining effect the slop control members **22** all vary in height along their lengths, the corner diagonally opposite the drain opening **14** being the highest portion of the floor.

In both embodiments of FIGS. 1 and 2, the metal reinforcement members are first constructed as a subassembly and are positioned over the layer of reinforced fibre glass while this is still on a mild adhesion between the metal surface and the wet resin enabling the reinforcement members to reinforce almost the entire area of the resin layer **12**, thereby avoiding the need for the use of large quantities of resin.

In the third embodiment of FIG. 5 however the layer of resin **12** is first placed over a mould (not shown) and a series of spacer batts **30** are positioned over the rear surface of the layer **12**, more resin and fibre glass then being spread over and between the batts **30** to form a grid-like structure **31** having a backing membrane **32** providing considerable strength to the layer **12**. The covering portion **33** is also made self-supporting, and forms portion of the unitary member of fibre glass reinforced plastic. This embodiment also illustrates an alternative slope control means in the form of jacking screws **34**, one of which is shown in FIG. 5. These screws can be spaced at desired intervals and readily adjusted to provide required slope to the draining floor surface **11**.

FIG. 6 illustrates a still further embodiment wherein the layer **12** again is unitary with the upstanding covering **33** as in the embodiment of FIG. 5 but is supported by a low cost backing member **36** which can conveniently be

ormed from wet vermiculite chips or the like retained ogether with a urea formaldehyde resin, this being car- ied on a plywood base member **37** (marine grade ply)eing preferred) and this plywood base member **37** is upported by blocks **38** which, being of varying heights :onstitute slope control means.

A consideration of the above embodiment will indicate hat the invention can be brought in to effect in any one)f a number of ways, but allows a floor to be moulded)n a single mould regardless of the slope requirements vhich will of course vary in different installations. Even n the use of the stiffening members shown in the first wo embodiments, it will be seen that capillary attraction 'or moisture is very small since the slope control mem-)ers lift the stiffening members away from the founda- ions. It will also be appreciated that the layer **12** can be)rovided with a surface **11** which contains gelling and)ther surface materials, or can be moulded direct to tiles vithout necessarily having crevices which will tend to re- :ain dirt.

What we claim is:

1. Prefabricated drain flooring having a floor member)f slightly flexible material with a draining floor surface, a drain opening in the draining floor surface, rigid floor stiffening means beneath and supporting the floor surface, the floor stiffening means being constituted by a series)f narrow mouthed channel members formed from sheet metal and positioned side by side with their vertical walls :ontiguous, and slope control members positioned be- neath the flooring near its periphery and supporting the floor stiffening means, the undersides of the slope control members lying in a substantially flat plane but the height of the slope control members varying so that the floor surface slopes downwardly towards the drain opening.

2. Prefabricated drain flooring according to claim **1** wherein the slope, imparting members are constituted by pressed metal members secured to and extending along the undersides of the floor stiffening means.

3. Prefabricated drain flooring according to claim **1** wherein a peripheral coving is upstanding from and unitary with the floor member.

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HENRY C. SUTHERLAND, Primary Examiner

SAM D. BURKE III, Assistant Examiner

U.S. Cl. X.R.

4—146; 52—302