

AMENDED**AUSTRALIA***Patents Act 1990***PATENT REQUEST : STANDARD PATENT / PATENT OF ADDITION**

We being the person(s) identified below as the Applicant, request the grant of a patent to the person identified below as the Nominated Person, for an invention described in the accompanying standard complete specification.

Full application details follow:

[71/70] Applicant/Nominated Person:

IPC Technologies Inc.

Address:

No. 102, 17957 55th Avenue, Surrey, British Columbia, V3S 6C4, Canada

[54] Invention Title:

Grid for producing a pattern on a surface

[72] Name(s) of actual inventor(s):

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Bruce L. Burton

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BASIC CONVENTION APPLICATION(S) DETAILS:

[31] Application No.	[33] Country	Code	[32] Date
08/237,153	United States	US	3 May, 1994

A handwritten signature in dark ink, appearing to be "A. Smith".

26 November, 1996

A member of the firm of DAVIES COLLISON CAVE
for and on behalf of the applicant

A U S T R A L I A

P/00/008 : Section 29

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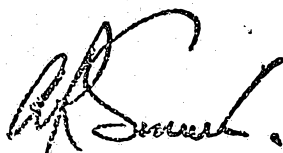
NOTICE OF ENTITLEMENT

IPC TECHNOLOGIES INC. being the Nominated Person in respect of Application No. 23004/95 state the following :

The Nominated Person is entitled to the grant of the patent because the Nominated Person derives title to the invention from the inventors, GERRY B. OLIVER and BRUCE L. BURTON, by assignment.

The Nominated Person is entitled to claim priority from the basic application listed on the declaration under Article 8 of the PCT because the Nominated Person is the applicant in respect of the application listed in the declaration under Article 8 of the PCT, and because the application was the first application made in a Convention country in respect of the invention.

Dated this 18th day of April, 1997.



a member of the firm of
DAVIES COLLISON CAVE
for and on behalf of
the applicant(s).



AU9523004

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(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 679367

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GRID FOR PRODUCING A PATTERN ON A SURFACE
- International Patent Classification(s)
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- (56) Prior Art Documents
EP 160315
- (57) Claim

1. A grid for producing a pattern on a surface, said grid including a plurality of elongated members connected at intersections and extending about a plurality of open areas to form a mesh-like structure, each of said elongated members having a body portion which is fixed to said surface and remains set in place to form a simulated grout line, characterised in that :

(a) said body portion comprises a molded material; and

(b) said elongated members further comprise an outer layer which is removable in a single step to expose said body portion.

20. A method of producing a grid-like pattern on a surface including :

(a) placing on the surface a grid which includes a plurality of elongated members connected together at intersections and extending about a plurality of open areas;

(b) spreading a liquid coating over the surface in the open areas between the elongated members of the grid; and

(c) allowing the liquid coating to substantially set;

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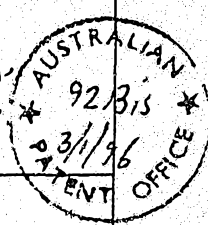
characterised in that each elongated member comprises a fixed body portion which remains set in place on said surface to form a simulated grout line and an outer layer located on said body portion; and wherein said method further comprises the step of:

(d) removing said outer layer from said elongated member in a single step after said liquid coating has substantially set, thereby exposing said fixed body portion.



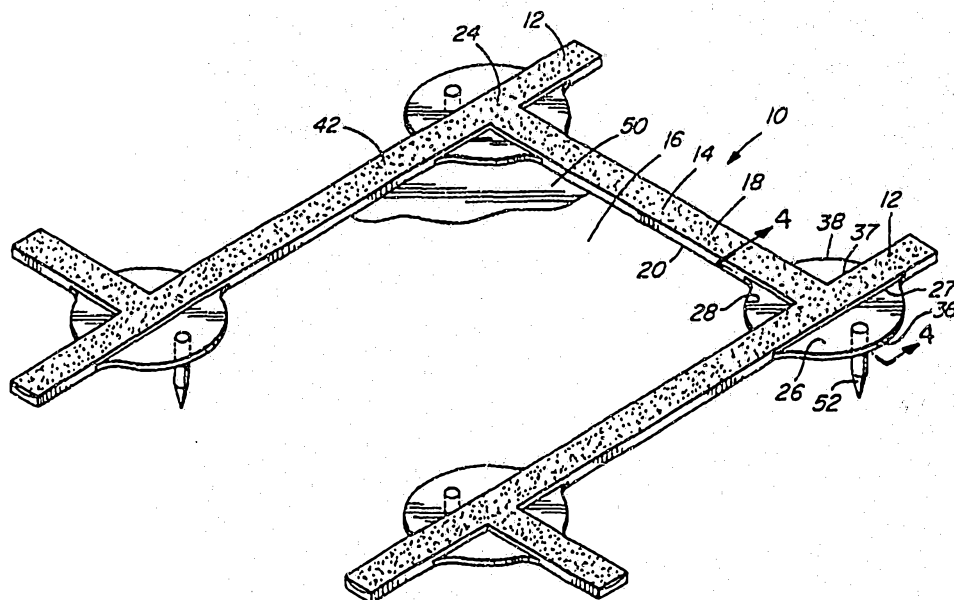
(51) International Patent Classification 6 : B44F 9/04, E04F 21/04	A1	(11) International Publication Number: WO 95/29820 (43) International Publication Date: 9 November 1995 (09.11.95)
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(21) International Application Number: PCT/CA95/00236 (22) International Filing Date: 21 April 1995 (21.04.95) (30) Priority Data: 08/237,153 3 May 1994 (03.05.94) US (60) Parent Application or Grant (63) Related by Continuation US 08/237,153 (CIP) Filed on 3 May 1994 (03.05.94) (71) (72) Applicants and Inventors: OLIVER, Gerry, B. [CA/CA]; 3738 Mission Springs Drive, Kelowna, British Columbia V1Y 3M1 (CA). BURTON, Bruce, L. [CA/CA]; Rural Route #5, Site #4, Compartment #2, Kelowna, British Columbia V1X 4K4 (CA). (74) Agent: BAILEY, Thomas, W.; Oyen Wiggs Green & Mutala, 480 - 601 West Cordova Street, Vancouver, British Colum- bia V6B 1G1 (CA).	(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SZ, UG). Published With international search report. (71) IPC TECHNOLOGIES INC. <i>Suite 90, 1480 Foster Street White Rock, British Columbia V4P 3X7 Canada No. 102, 17957 55th Avenue, Surrey, British Columbia, V3S 6C4, Canada.</i>
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(54) Title: GRID FOR PRODUCING A PATTERN ON A SURFACE



(57) Abstract

A grid (10) for producing a pattern on a surface. The grid includes elongated members (12) connected together at intersections (24) and extending about a plurality of open areas (16) to form a mesh-like structure. Connecting members (26, 28) are connected to the elongated members at the intersections. The connecting members extend outwardly from at least one said elongated member. The connecting members have a thickness less than the thickness of the elongated members. The bottoms of the connecting members and bottoms of the elongated members are flush. The grid is placed on a surface and a liquid coating is spread over the surface in the open areas between the elongated members. The liquid coating is allowed to set. Preferably there is a removable coating on the grid which is removed after the liquid coating is set.

GRID FOR PRODUCING A PATTERN ON A SURFACE

- 5 This invention relates to an apparatus and method for imprinting a surface with a design similar to bricks or stones and mortar.

Various apparatuses and methods have been devised to
10 simulate the appearance of bricks and mortar or stones and mortar on horizontal or vertical surfaces such as drive-ways, floors or walls. Typically a paint or concrete mixture is applied in a thin coat on the surface with contrasting colors used for the bricks or stones and the
15 mortar. The method commonly used is to apply a coating having the desired color of the mortar on the surface. Masking tape is then placed over this coating in a grid-like pattern to simulate the mortar. A second coating is then applied over the surface in the desired color of brick
20 or stone. Finally the masking tape is removed, leaving lines of "mortar" between the "bricks" or "stones". However this method is labour intensive because of the considerable amount of work in laying out the pattern of masking tape and the requirement to apply two separate
25 coatings to the surface.

Various products and methods have been developed in the past to simulate the appearance of brick or stone on other surfaces. One example is United States Patent No.
30 4,379,187 to Seman. This discloses a method of simulating mortar lines on a brick wall using a preformed, grid-like structure. The grid is removed after the brick-like material is applied.

35 United States Patent No. 4,239,820 discloses a method of creating a simulated stone surface or the like. A pattern is partially die cut and has an adhesive on one side. United States Patent No. 5,186,983 to Brown shows a process for decorating a hard surface. A template with holes is
40 used. However, the "mortar" is first applied by means of coloured paint.

United States Patent No. 4,647,000 dated 3 March, 1987 and corresponding European Patent Application No. EP-A-0 160 315 (Osada) relate to a method for forming patterns on a wall surface or the like. The Osada process is primarily designed to produce distinctively sharp, square-profiled mortar joints or grout lines. A grid-like molding frame comprised of a main body and a removable covering is first placed on the substrate to be treated. A settable material is then sprayed or trowelled over the substrate between the frame grids (to form the simulated bricks or stones) and also over the molding frame itself. The next step in the Osada procedure is to peel away the removable covering of the molding frame together with the layer of settable material thereon. Later on, after the settable material has dried, the main body of the molding frame is removed to fully expose a masonry joint having a distinctively sharp, square profile. In an alternative embodiment of the Osada invention, the method may include the step of embedding flat plate members formed from aluminum or the like underneath the molding frame at predetermined masonry joint locations. The plate members are exposed when both the outer covering and the main body portion of the molding frame is removed.

A commercially significant drawback of the Osada method is the fact that it requires at least a two-step process for exposing the masonry joint. First, the removable covering of the molding frame is removed approximately one hour after application of the settable material and then the main body of the frame is removed after the settable material has dried (approximately 24 hours later). This necessitates a minimum of two separate visits to the job site which increases applicator costs.



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Another drawback of the Osada method is that it is specifically designed to produce deep, square-profiled masonry joints. Such joints have a tendency to chip along their edges when subjected to wear. Moreover, square-profiled joints are more prone to damage in some climates when subjected to cycles of freezing and thawing. Masonry joints or grout lines having a curved, concave profile are better able to resist these problems and are also generally easier to clean. With respect to the alternative embodiment of the Osada invention having embedded plates formed from metal, stone or wood, an additional drawback is that the embedded material would have a different coefficient of thermal expansion than the settable material which forms the simulated bricks or stones. Since the embedded plates and settable material would expand and contract at different rates, this would result in cracking and intrusion of water into the simulated bricks, especially in climates having severe freeze-thaw cycles.

Moreover, since the Osada method relies on the use of an adhesive to fasten the molding frame to the substrate, it would not work well on uneven surfaces, such as stucco surfaces, unless extensive preparatory work was first undertaken.

The art described above has one thing in common. All of the art relies on removing a peelable layer along the lines of "mortar" or "grout" to expose a layer having a distinct colour and appearance compared to the "brick". This generally requires the application of two separate coatings to the surface, or two separate removal steps, thus increasing the amount of work and time involved. Furthermore, the appearance of the "mortar" is not always true to life because the effect is limited to the preexisting surface or an embedded flat plate exposed when a peelable layer is removed.



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The art described above has one thing in common. All of the art relies on removing a peelable layer along the lines of "mortar" to expose a layer having a distinct colour and appearance compared to the "brick". This generally requires the application of two separate coatings to the surface thus increasing the amount of work and time involved. Furthermore, the appearance of the "mortar" is not always true to life because the effect is limited to the preexisting surface or coating exposed when a peelable layer is removed.

According to one aspect of the present invention there is provided a grid for producing a pattern on a surface, said grid including a plurality of elongated members connected at intersections and extending about a plurality of open areas to form a mesh-like structure, each of said elongated members having a body portion which is fixed to said surface and remains set in place to form a simulated grout line, characterised in that :

(a) said body portion comprises a molded material; and

(b) said elongated members further comprise an outer layer which is removable in a single step to expose said body portion.

According to another aspect of the present invention there is provided a method of producing a grid-like pattern on a surface including :

20

(a) placing on the surface a grid which includes a plurality of elongated members connected together at intersections and extending about a plurality of open areas;

(b) spreading a liquid coating over the surface in the open areas between the elongated members of the grid; and

(c) allowing the liquid coating to substantially set;

characterised in that each elongated member comprises a fixed body portion which remains set in place on said surface to form a simulated grout line and an outer layer located



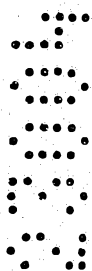
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on said body portion; and wherein said method further comprises the step of:

(d) removing said outer layer from said elongated member in a single step after said liquid coating has substantially set, thereby exposing said fixed body portion.

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Compared to prior art apparatuses and methods, the invention provides significant advantages. The appearance of mortar is achieved by applying a grid which is left in place instead of being removed as in the prior art. Thus the surface of the mortar can have a more convincing shape and texture than can be achieved simply by exposing the preexisting surface
10 or an earlier applied liquid coating. Furthermore, the time to do the job can be appreciably reduced since only a single liquid coating is necessary (although a sealing coat may be applied if desired).



Preferred embodiments of the invention will be hereinbefore described with reference to the
15 accompanying drawings.



Fig. 1 is a top plan of a grid for producing a pattern on a surface according to an embodiment of the invention;

20 Fig. 2 is an enlarged, fragmentary isometric view thereof;



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Fig. 3 is a view similar to Fig. 2 showing a grid after a liquid coating has been applied therebetween; and

5 Fig. 4 is a sectional view taken along line 4-4 of Fig. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 1 shows a grid 10 for producing a pattern on a surface. The grid includes a plurality of first elongated members 12 which extend in parallel relationship along the length of the grid. The first members 12 are interconnected by a plurality of second members 14 which are parallel to each other and extend perpendicularly between adjacent members 12. The members 14 are staggered so that open areas 16 between the members 12 and 14 are rectangular and form a brick-like pattern with the members 12 and 14 mimicking lines of mortar between. It should be understood however that other patterns of brick, stone or the like could be simulated by the grid as well by using other configurations of elongated members including curved elongated members instead of the straight members illustrated in Fig. 1. Elongated members 12, 14 form a mesh-like structure with the open areas 16 therebetween.

25 With reference to Figs. 2 and 4, each of the elongated members 12 and 14 has a top 18, a bottom 20 and a thickness 22 extending therebetween as seen in Fig. 4. Elongated members 12, 14 are preferably 0.35 to 0.64 cm. in thickness. However, this is not critical.

The elongated members 12 and 14 may be connected together by a plurality of intersections 24. A plurality of connecting members 26 and 28 may be positioned at each intersection 24. The connecting members 26 are semi-circular while the members 28 are quarter-circular. However they may be other shapes as well.

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Two members 28 and one member 26 form a disc-like flange at each complete intersection. Inner edges 27 and 37 of the members 26 and 28 are connected to at least one elongated member while edges 36 and 38 are convexly curved. The members 26 and 28 have bottoms 30 and 32 respectively which are flush with the bottoms 20 of the members 12 and 14 as seen in Fig. 4. However, the connecting members 26 and 28 have a thickness 34 substantially less than the thickness 22 of the members 12 and 14. In the illustrated embodiment the thickness 34 of the connecting members 26 and 28 is one half the thickness 22 of the elongated members 12 and 14.

In one embodiment the outer edges 36 and 38 of the connecting members are tapered as seen in Fig. 4, which helps to hide the outer edges of the connecting members when the grid is used as described. The preferred material for the grid is concrete with a polymer additive. This provides compatibility with the liquid coating applied in the areas 16 as described below. The coating applied in areas 16 and the grid therefore have similar properties such as thermal expansion to ensure a durable long life for the finished surface. The grid can be made from a mixture of silica sand, cement powder and polymer with added fibres and/or other improved wear materials.

25

The function of connecting members 26, 28 is to strengthen the corners of grid 10 where elongated members 12, 14 intersect and to provide a narrow bearing flange against which the concrete acts to maintain grid 10 securely in place on surface 50. As discussed further below, connecting members 26, 28 also act as a surface for manually securing grid 10 to the underlying surface 50 with fasteners 52 (Figure 2). In alternative embodiments of the invention, connecting members 26, 28, or similar narrow flanges extending into open areas 16, could be located anywhere along the length of elongated members 12, 14 and not necessarily at intersections 24. In a further alternative embodiment, connecting members 26, 28 could be omitted entirely and the edges of elongated members 12, 14 could be

outwardly inclined to act as bearing surfaces against which the weight of the concrete could act to maintain grid 10 in position. These alternative embodiments would be suitable if grid 10 is constructed from a material not requiring reinforcement at intersections 24 in order to confer sufficient structural strength.

As seen in Fig. 4, each of the elongated members 12 and 14 has a transversely concave top 40 which initially is covered by a removable layer 42. The removable layer 42 could consist of various materials including wax (such as candle wax or bees wax), molded plastic (such as polyethylene or polypropylene), or peel-off tape. Removable layer 42 may also consist of suitable water-soluble coatings.

Removable layer 42 may be formed in a first mold having a concave bottom and a grid-like shape. The removable layer 42 is then removed from the first mold, inverted and placed in a second grid shaped mold having a flat bottom. The polymer enhanced concrete, or other material forming the permanent portion of grid 10, is poured on top of the curved surface of removable layer 42 and is allowed to set within the second mold. The grid is then removed from the second mold so that removable layer 42 faces upwards as shown in Fig. 2.

Alternatively, after removable layer 42 is formed in the first mold, an adhesive may be applied to its curved surface. A thin layer of fibre may then be applied to the curved surface such as by blowing fibre particles onto the adhesive coating. The removable layer is then dipped in a tray of cementitious material such as polymer enhanced concrete which is allowed to set to form grid members 12, 14. This step could be performed on site or at the factory. The layer of fibre provides a surface for the cementitious material to bond to and also provides grid 10 with enhanced structural strength and wearability.

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In the alternative embodiment described above the application of fibre to removable layer 42 prior to dipping is optional. Layer 42 could be dipped directly into cementitious material of an appropriate consistency, either once or multiple times. After the dipping step, removable layer 42 may be set on a flat sheet of material to allow the cementitious material to set to the desired shape.

10

Method

In use, the grid 10 is applied over a surface 50 where a brick-like or stone-like pattern is desired. The grid could be secured to the surface by an adhesive, such as some of the prior art grids, but no such adhesive is used in this example. This allows the grid to be moved about and positioned adjacent other similar such grids to achieve the desired effect. Once the grid is in the proper place, it is secured by fasteners 52 shown in Fig. 2. Various types of fasteners could be used, such as screws, nails or staples, but in this example lead or plastic plugs are preferred.

A concrete drill is used to drill through the connecting members 26 or 28 and into the surface to a depth of approximately 1 cm. The lead or plastic plugs are then inserted through the connecting members and hammered into place there. It should be noted that these plugs are only required on low spots or dips in the surface. They hold the grid against the surface despite irregularities therein. If the surface is perfectly flat and generally horizontal then the grid may be held in place only by the liquid coating as described below. On the other hand, an adhesive or fasteners are essential when a vertical surface, such as a wall, is to be coated.

Alternatively, the existing surface may first be prepped with a thin layer of the polymer concrete before applying the grid. This may be applied with a squeegee, doing a

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small portion at a time. The grid is applied while the coating is still damp, thus avoiding voids or air pockets under the grid. The coating acts as an adhesive so fasteners are not required. The remaining liquid coating is
5 applied after the grid is positioned. The coating goes over the connecting members 26, 28 and dries there permanently, thus further securing the grid in place.

Once the grid is in place a liquid coating 60, as shown in
10 Fig. 3 is applied to the areas 16 between the elongated members 12 and 14. Such liquid coatings are known and commercially available and are made of concrete with a polymer additive and a colouring agent added thereto. A
15 typical formulation is 1 part portland cement, 2 parts silica sand, 1 part polymer, 2 parts water and colouring as required. The polymer in this example is available from Concrete Solutions, 6160 Fairmount Avenue, P.O. Box 600526, San Diego, CA 92160 although other polymers may be substituted. The coating can be smoothed flush with the tops of
20 the members 12 and 14 using a suitable tool such as a squeegee.

After the coating has been applied, it is allowed to set to produce a waterproof surface. The next step is to remove
25 layer 42 from the tops of the members 12 and 14. If removable layer 42 comprises wax or a water-soluble coating, layer 42 could be removed by pressure-washing to reveal elongated members 12, 14. Alternatively, if layer 42 comprises molded plastic or tape, layer 42 could be
30 manually peeled off. The removal of layer 42 exposes the concave tops 40 of the members 12 and 14 which yields a mortar-like appearance (Figure 3). The members 12 and 14 typically have a suitable contrasting color compared to the coating 60, thus giving a brick-like or stone-like appearance when the process is completed. The mortar-like
35 appearance of the members 12 and 14 is enhanced by their concave tops 40, an effect not achieved by prior art devices and methods.

Alternatives and Variations

The grid may be made of other materials besides the polymer
5 enhanced concrete. Epoxy has been found suitable, for
example G-2 epoxy available from Industrial Formulators of
Canada, Ltd., 3824 William Street, Burnaby, Canada V5C 3H9.
A fill of glass fibre and silica sand is mixed with the
liquid epoxy and poured cold into a mold. Another option
10 is plastic materials, such as injected molded plastic.

It would be understood by someone skilled in the art that
many of the details provided above are by way of example
only and are not intended to limit the scope of the inven-
15 tion which is to be interpreted by reference to the fol-
lowing claims.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A grid for producing a pattern on a surface, said grid including a plurality of elongated members connected at intersections and extending about a plurality of open areas
5 to form a mesh-like structure, each of said elongated members having a body portion which is fixed to said surface and remains set in place to form a simulated grout line, characterised in that :

(a) said body portion comprises a molded material; and

- 10 (b) said elongated members further comprise an outer layer which is removable in a single step to expose said body portion.

2. A grid as claimed in claim 1, wherein said body portion comprises a cylindrically concave outer surface.

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3. A grid as claimed in claim 2, wherein substantially all of said outer surface is exposed when said outer layer is removed from each of said elongated members.

4. A grid as claimed in claim 1, wherein said outer layer is unitary.

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5. A grid as claimed in claim 4, wherein said outer layer is selected from the group consisting of wax coating, plastic coating and peelable tape.

6. A grid as claimed in claim 1, wherein an upper surface of said outer layer is
25 substantially flush with upper edges of said body portion.

7. A grid as claimed in claim 1, wherein said body portion is formed from a cementitious material.

- 30 8. A grid as claimed in claim 1, wherein the thickness of said body portion is greater



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than the thickness of said outer layer such that a shallow cavity is exposed upon removal of said outer layer.

9. A grid as claimed in claim 1, further comprising connecting means for physically
5 connecting said grid to said surface, wherein said connecting means extends from said elongated members into said open areas.

10. A grid as claimed in claim 9, wherein the thickness of at least part of said connecting
10 means is less than the thickness of said elongated members.

11. A grid as claimed in claim 9, wherein said connecting means comprises a plurality of
flanges connected to said elongated members for connecting said grid to said surface.

12. A grid as claimed in claim 9, wherein said connecting means comprises connecting
15 members connected to said elongated members at said intersections, said elongated members each having a bottom surface, each said connecting member extending outwardly from at least one elongated member, each said connecting member having a top, a bottom and a thickness extending between the top and the bottom of said each connecting member which is less than the thickness of said one elongated member, the bottoms of the connecting members and the
20 bottom surfaces of the elongated members being flush with each other.

13. A grid as claimed in claim 12, wherein the connecting members have inner edges
connected to the elongated members and outer edges distal therefrom, the outer edges being
convexly curved.

14. A grid as claimed in claim 13, wherein the connecting members are tapered towards
the outer edges thereof.

15. A grid as claimed in claim 1, including a plurality of first elongated members and
30 second elongated members, the first elongated members being perpendicular to the second



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elongated members and being connected thereto at said intersections.

16. A grid as claimed in claim 12, wherein there is a plurality of connecting members at each said intersection, forming a disc-like flange.

5

17. A grid as claimed in claim 16, wherein there are three said connecting members at each said intersection, one said connecting member being semi-circular and two said connecting members being quarter-circular.

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18. A grid as claimed in claim 12, wherein the elongated members are 0.35 to 0.64 cm. thick.

19. A grid as claimed in claim 12, wherein the connecting members are approximately half the thickness of the elongated members.

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20. A method of producing a grid-like pattern on a surface including :

(a) placing on the surface a grid which includes a plurality of elongated members connected together at intersections and extending about a plurality of open areas;

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(b) spreading a liquid coating over the surface in the open areas between the elongated members of the grid; and

(c) allowing the liquid coating to substantially set;

25

characterised in that each elongated member comprises a fixed body portion which remains set in place on said surface to form a simulated grout line and an outer layer located on said body portion; and wherein said method further comprises the step of:

(d) removing said outer layer from said elongated member in a single step after

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said liquid coating has substantially set, thereby exposing said fixed body portion.

21. A method as claimed in claim 20, wherein said liquid coating is spread in step (b) such that it does not substantially cover said elongated members.

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22. A method as claimed in claim 20, wherein said body portion comprises a settable material formed in a mold, wherein the coefficient of thermal expansion of said settable material is substantially the same as said liquid coating.

10 23. A method as claimed in claim 22, wherein said settable material comprises cement with polymer additives.

24. A method as defined in claim 20, wherein said body portion comprises a cylindrically concave outer surface, and wherein substantially all of said outer surface is exposed when said
15 outer layer is removed.

25. A method as claimed in claim 24, wherein the thickness of said outer layer is less than the thickness of said fixed body portion such that a shallow cavity is exposed upon removal of said outer layer.

20

26. A method as claimed in claim 24, wherein the outer surface of said body portion and said liquid coating have contrasting colours.

27. A method as claimed in claim 20, wherein the grid has connecting members extending
25 outwardly from the intersections of the elongated members, said connecting members and elongated members having bottoms which are flush, the connecting members being thinner than the elongated members, the liquid coating being applied over the connecting members.

28. A method as claimed in claim 27, wherein the grid is secured to the surface by
30 fasteners extending through the connecting members.



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29. A method as claimed in claim 20, wherein the outer layer is removed by pressure washing after the liquid coating is set.

30. A method as claimed in claim 20, wherein a layer of the liquid coating is applied to
5 the surface before placing the grid thereon and more coating is applied after the grid is placed.

31. A grid substantially as hereinbefore described with reference to the accompanying
drawings.

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32. A method of producing a grid-like pattern substantially as hereinbefore described with reference to the accompanying drawings.

Dated this 18th day of April, 1997

15 **IPC TECHNOLOGIES INC**

By Their Patent Attorneys

DAVIES COLLISON CAVE



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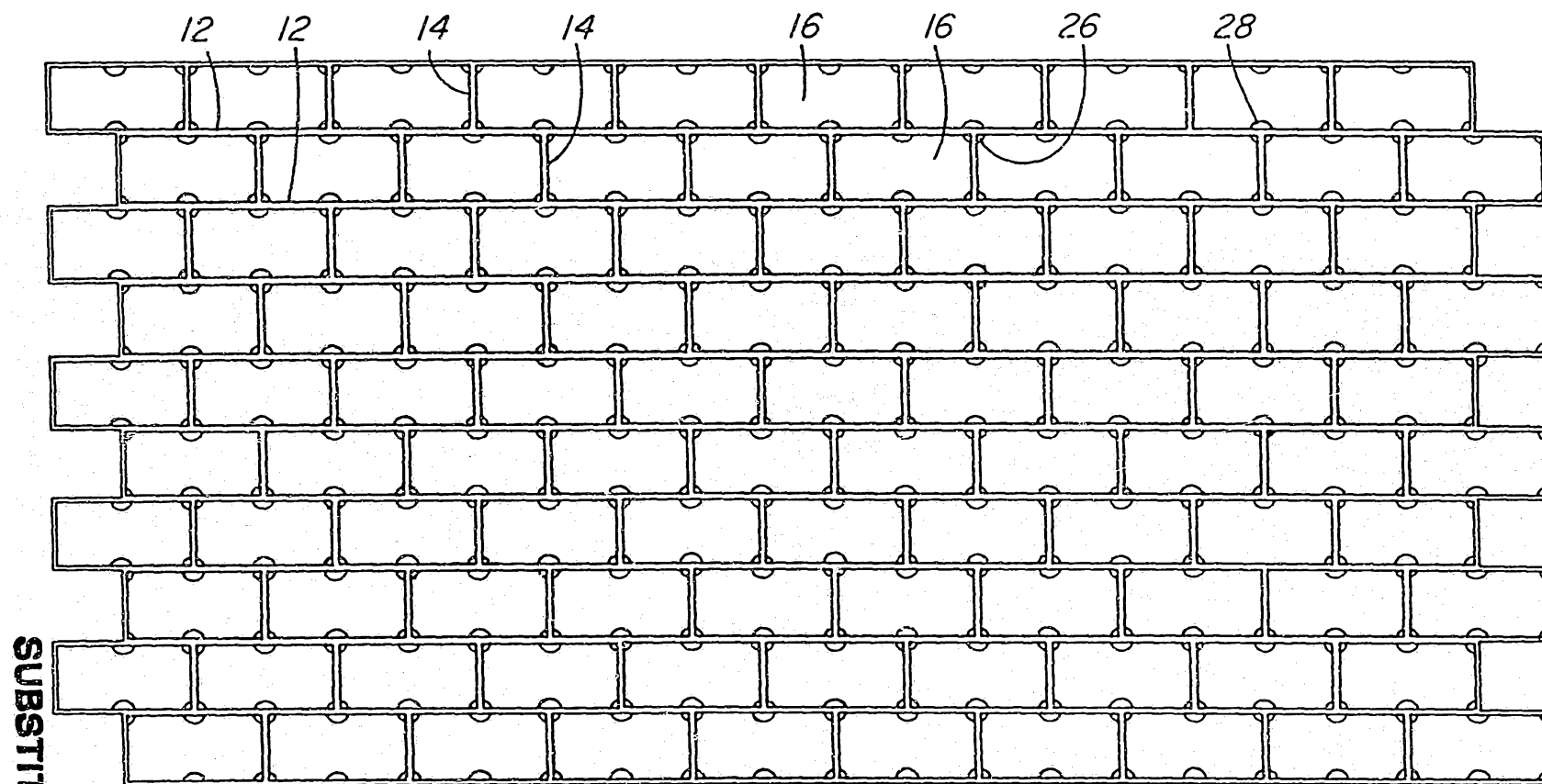


FIG. 1

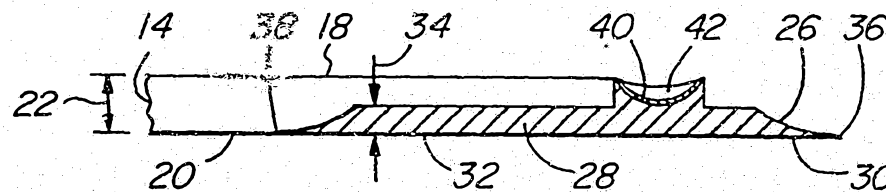


FIG. 4

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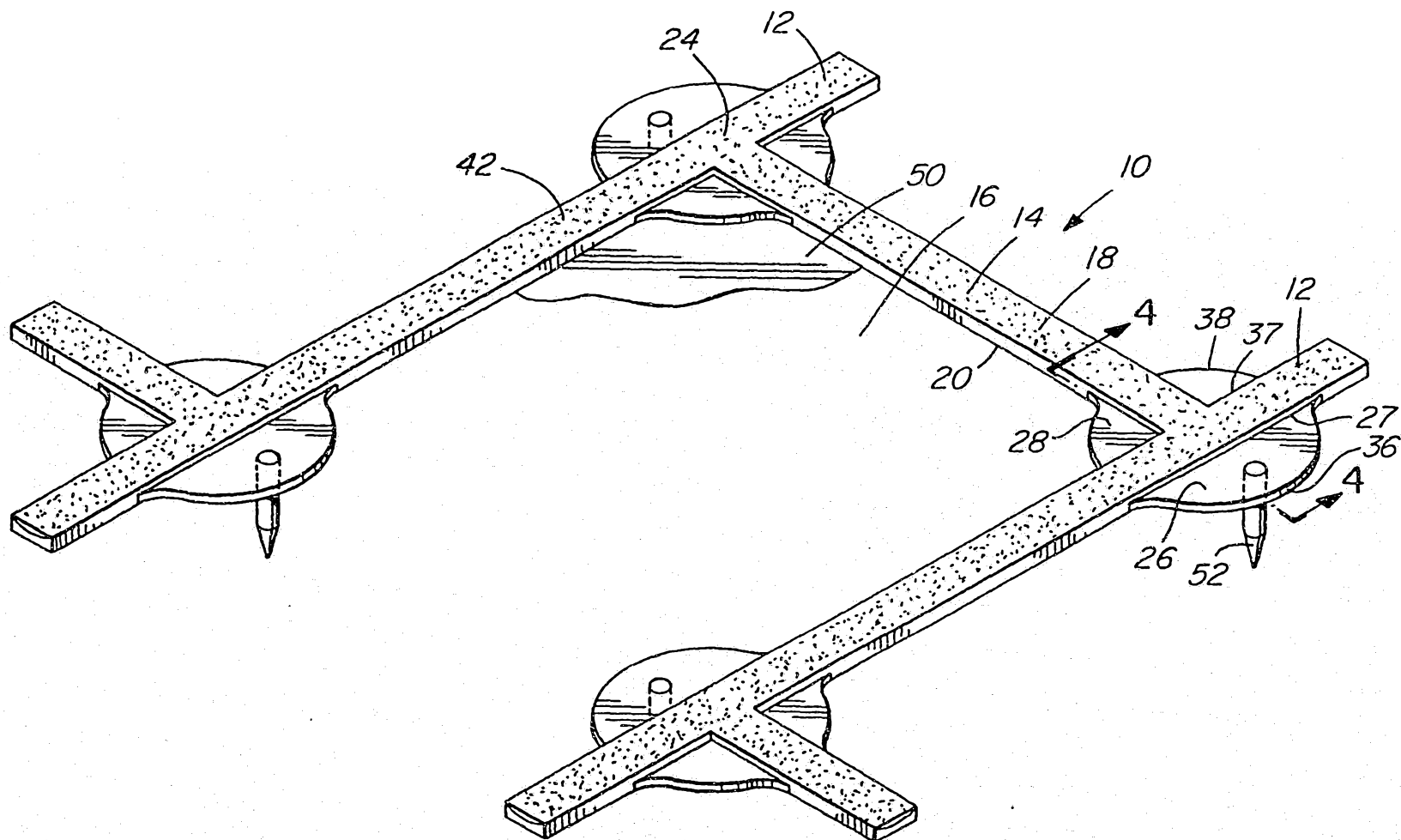


FIG. 2

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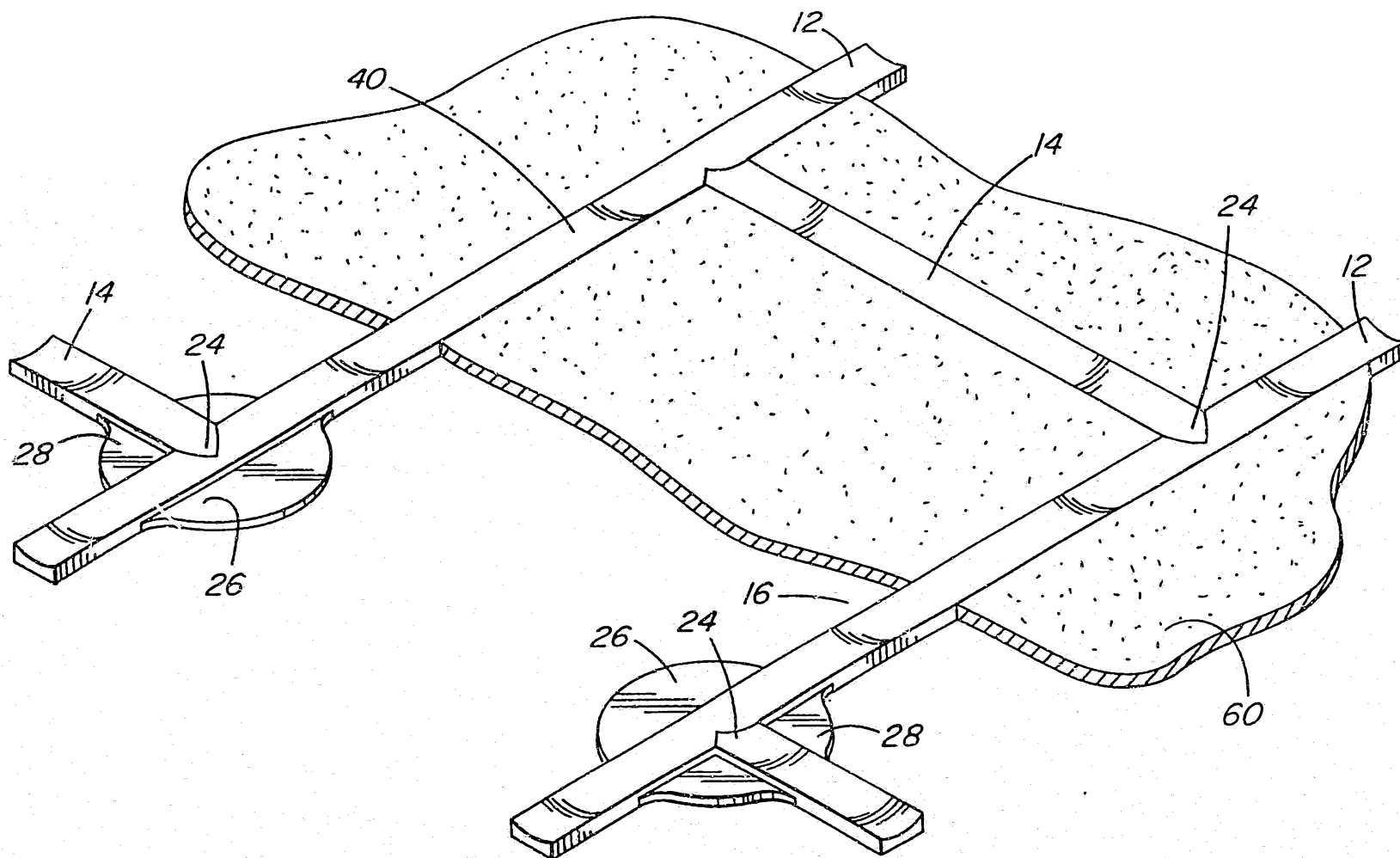


FIG. 3

SUBSTITUTE SHEET

INTERNATIONAL SEARCH REPORT

Intern. Application No

PCT/CA 95/00236

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 B44F9/04 E04F21/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B44F E04F B28B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP-A-0 160 315 (HIDEHARU OSADA) 6 November 1985 see page 6, line 1 - page 15, line 6	15, 20-24
A	---	1, 4, 11-13
A	US-A-3 692 458 (A. KIRSCH) 19 September 1972 see column 1, line 43 - column 2, line 34	1, 10
A	EP-A-0 589 673 (C. A. BAKER) 30 March 1994 see column 2, line 6 - column 7, line 41	1

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

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- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

10 July 1995

Date of mailing of the international search report

17 -07- 1995

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INTERNATIONAL SEARCH REPORT

Intern al Application No

PCT/CA 95/00236

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-160315	06-11-85	JP-B- 5000497	06-01-93
		JP-A- 60233264	19-11-85
		US-A- 4647000	03-03-87

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		US-A- 5391331	21-02-95
