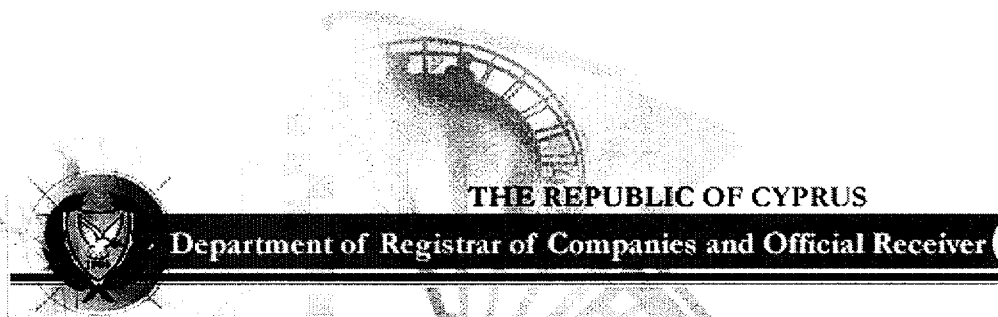




**ΚΥΠΡΙΑΚΟ ΓΡΑΦΕΙΟ ΔΙΠΛΩΜΑΤΩΝ
ΕΥΡΕΣΙΤΕΧΝΙΑΣ
THE PATENT OFFICE OF CYPRUS**

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(58) Field of search

E1D

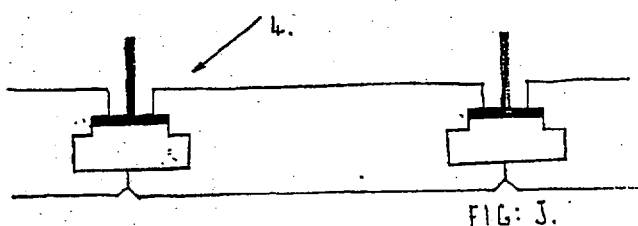
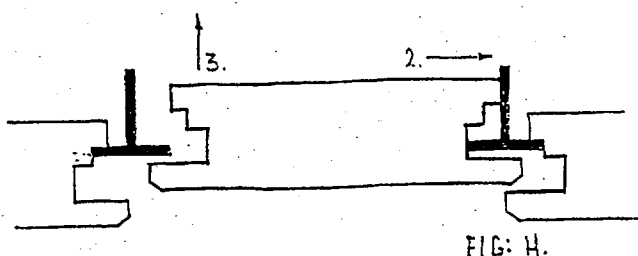
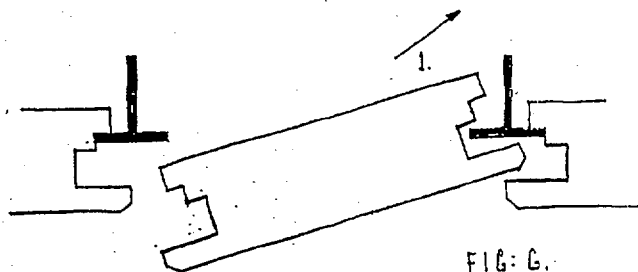
E1W

Selected US specifications from IPC sub-class

E04B

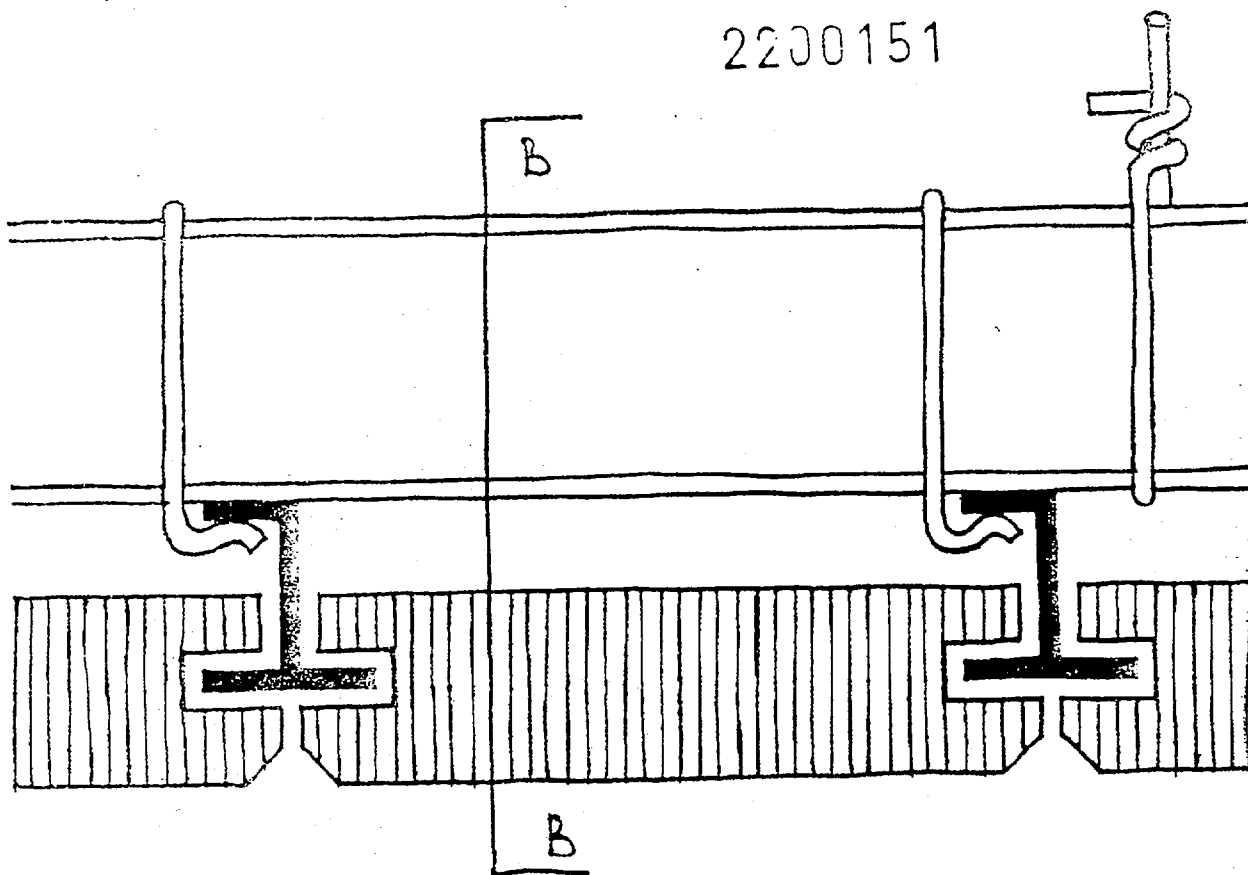
(54) Ceiling tile

(57) A ceiling tile 1 with specially designed side edge details of cut out sections 9 on two opposite edges of the tile and slots 5 & 6 and edges 7 & 8 on the other two sides to enable the tile to be positioned figs. G, H & J in a standard "exposed grid system" such that when the tile is fixed in position it conceals the gridwork and is fully demountable.

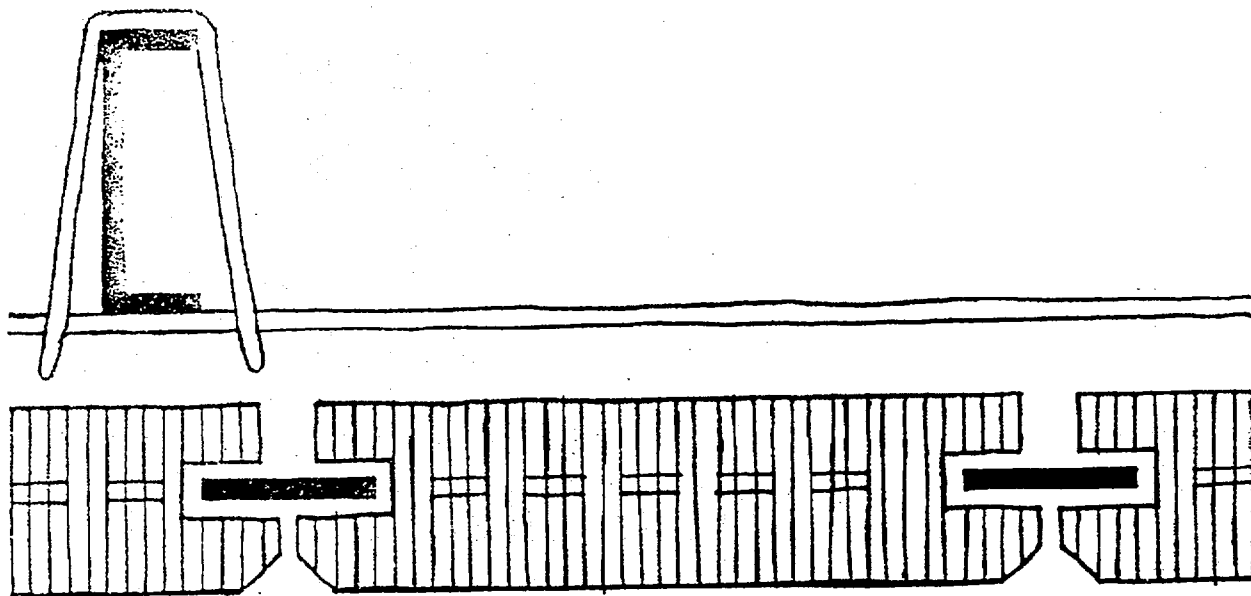


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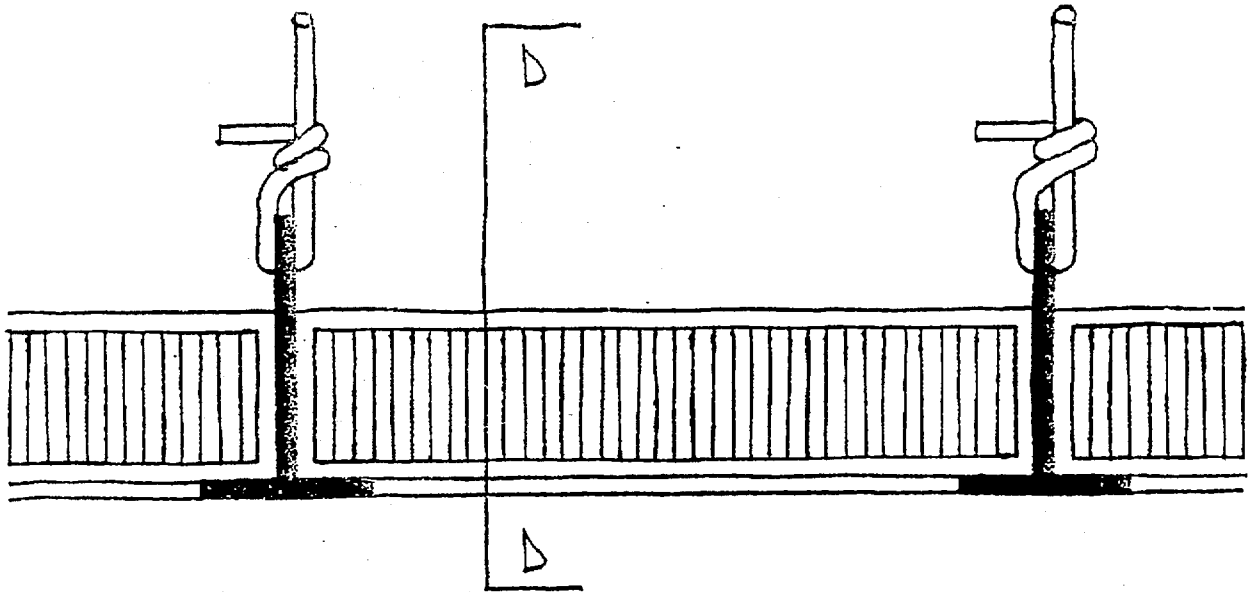
DETAIL A



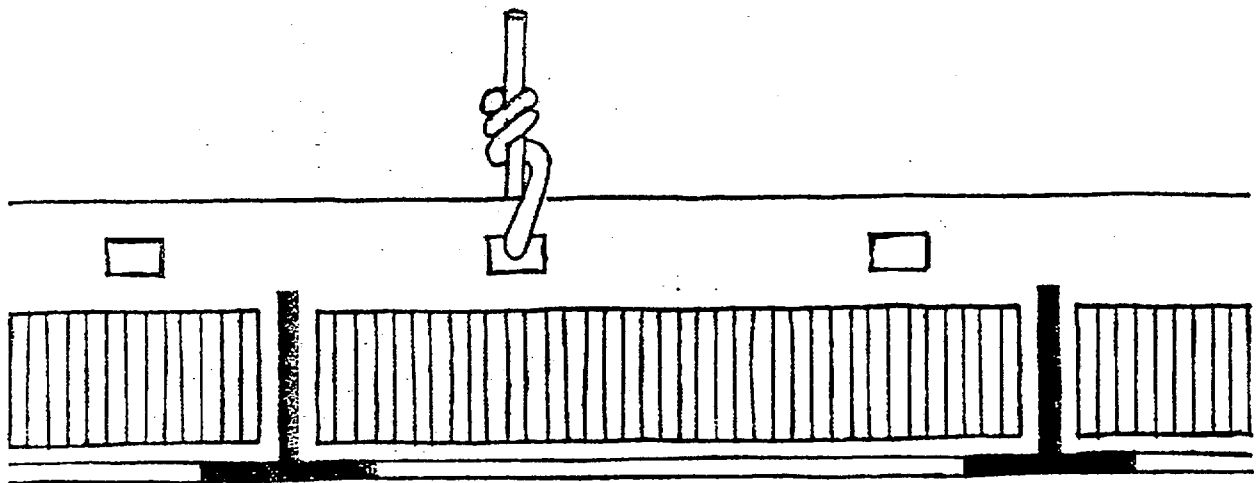
SECTION B-B

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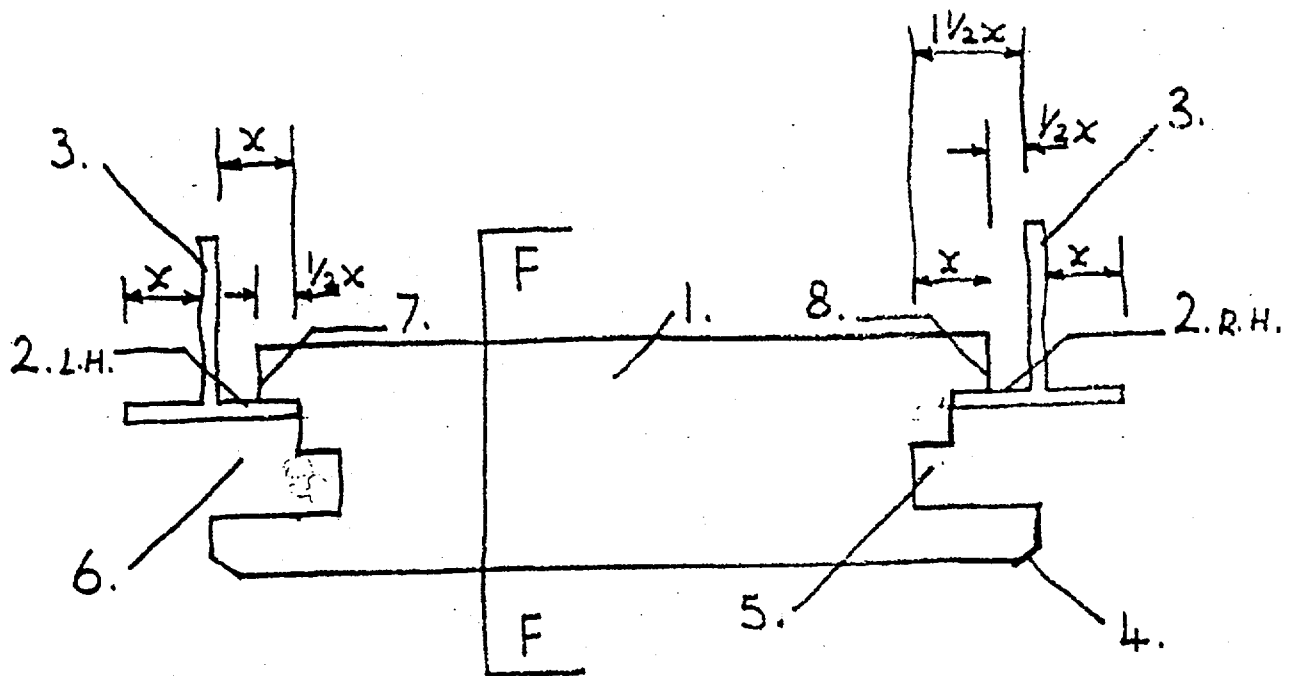
DETAIL C



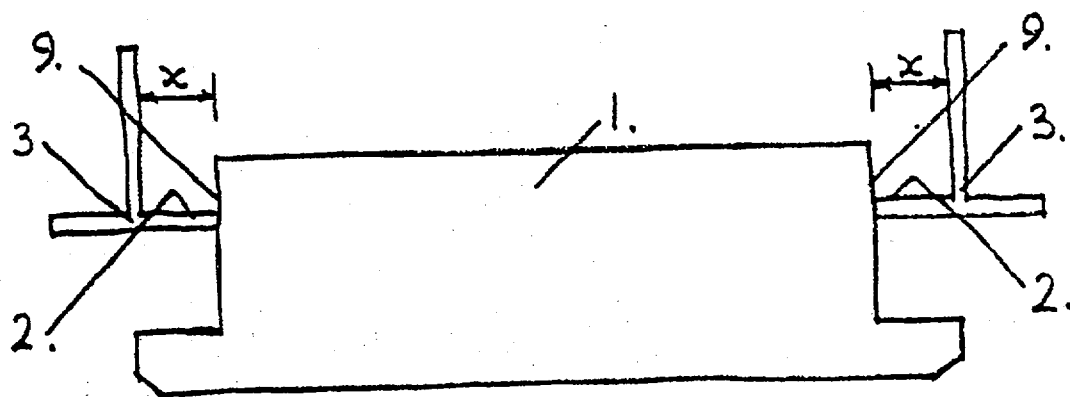
SECTION D-D

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DETAIL E

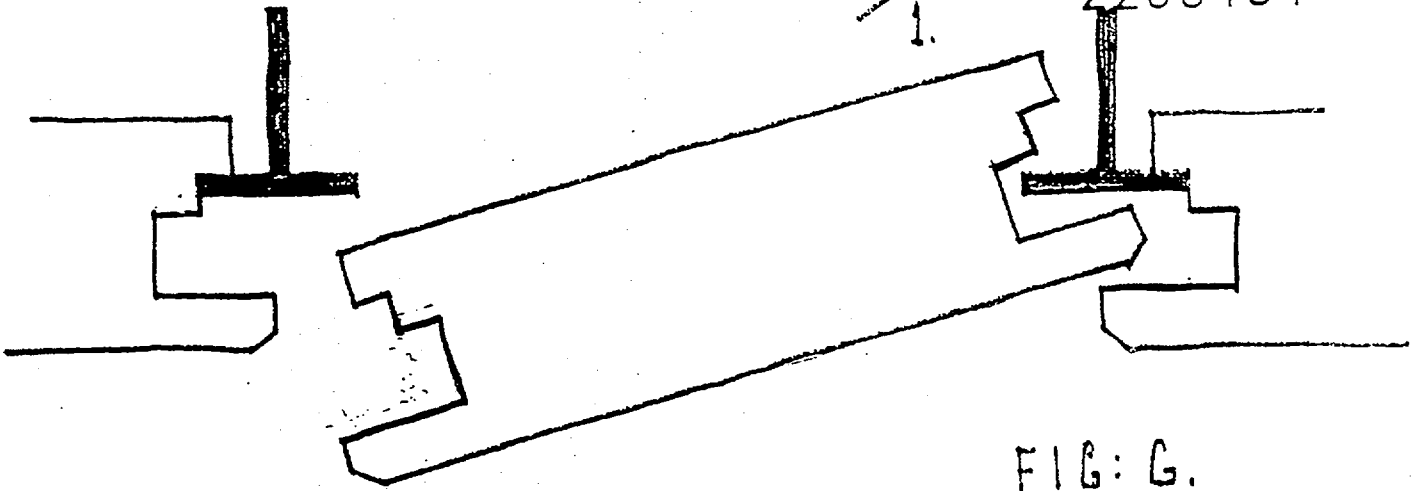


SECTION F-F

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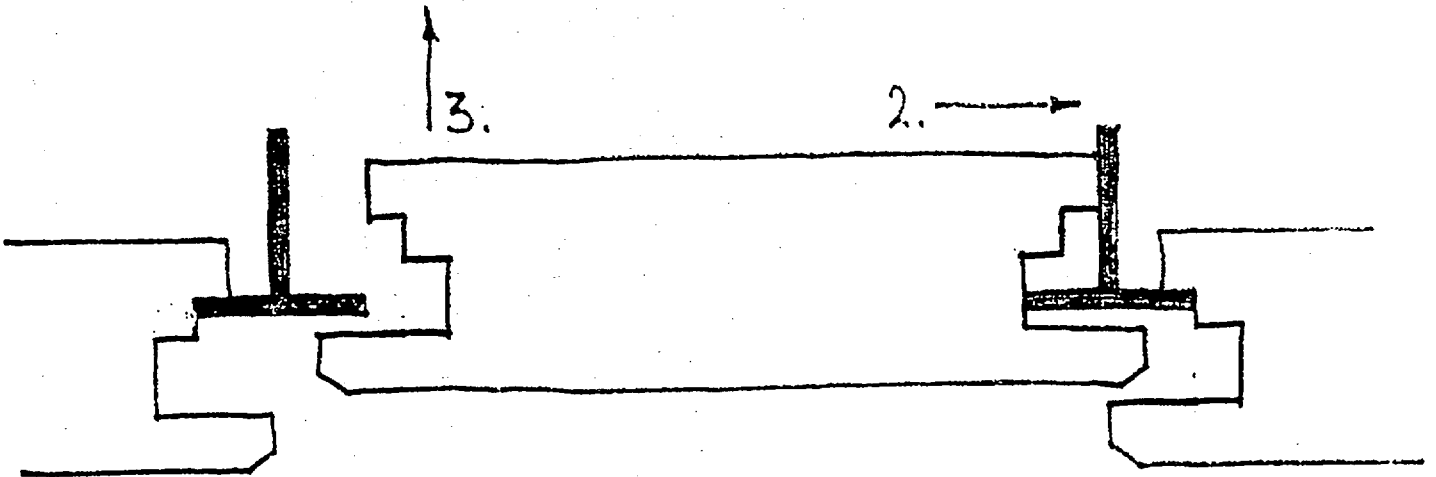
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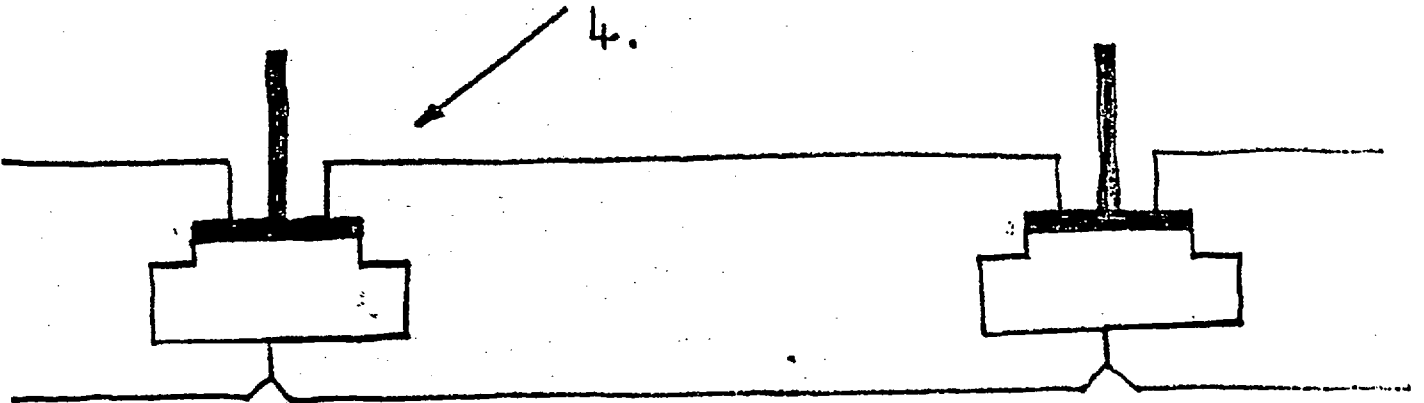


3.

2.



4.



Improvements relating to Ceiling Tiles and Exposed Grid
Suspension Systems

The invention relates to the edge detail of ceiling tiles designed to fit into standard exposed grid suspension systems such that when the ceiling tiles are fitted they conceal the grid and are fully demountable

There are two basic forms of suspended ceilings:-

1/ Concealed Grid Systems

The object is to conceal the suspension grid from view when the ceiling tiles are fixed in position. A typical concealed fix ceiling tile edge detail is shown on "detail A" and "section B-B". The concealed grid suspension section is fixed to a channel sub-grid with wire clips, in turn the sub-grid is suspended on wire hangers fixed to the structural soffite, the ceiling tiles are then slid along the grid into position.

2/ Exposed Grid System

"Detail C" and "section D-D" show a typical exposed grid system consisting of inverted tee sections. The main tee is suspended from the structural soffite on wire hangers and cross tees are fixed to the main tee in various ways so as to form a fairly rigid accurate lattice-work with the flanges of main and cross tees at the same level. The ceiling tiles are simply laid on the inverted tee section grid leaving the flange of the grid exposed to view.

The trend in the suspended ceiling market is moving away from concealed suspension systems mainly because the various patented methods with exposed grid systems of connecting main tees to cross tees has led to a quick, accurate and easy to install system popular with on-site operatives and less expensive to the customer.

Suspended ceiling tiles currently produced for either concealed or exposed grid systems cannot be fixed to standard exposed grid systems such as to conceal the grid and be fully demountable. However, a ceiling tile manufactured in accordance with the specification incorporating edges as shown in "detail E" can be fixed to a standard exposed grid system and will conceal the grid from view and each tile will be independently demountable.

Detail E shows a ceiling tile (1) where the dimension 'X' equals the width of the upper part of flange (2) of the inverted tee grid (3) the detail of the ceiling tile (1) below the the flange (2) shows a bevelled edge (4). (This detail can vary to correspond with current concealed type ceiling tiles and could be square, channeled or any desired shape).

The depth of the slots 5 & 6 related to the ceiling tile edges 7 & 8 is critical and must also correspond to the dimension of the flange (2) of the inverted tee (3) (small tolerances will have to be allowed for practical purposes).

The overall dimension of the ceiling tile (1) below the flange (2) of the inverted tee (3) will be the same as the centres of the tee (3) whereas the overall dimension of the back of the ceiling tile (1) will be reduced by 'X' (2 x 0.5 'X' at either edge) the depth of slot 5 will be 'X' to allow the tile to be slid fully onto the R.H. flange (2) of the inverted tee (3) (also figs. G & H) thereafter the ceiling tile (1) is pushed upwards until the slot (6) is level with the L.H. flange (2) of the inverted tee (3) the ceiling tile (1) is then slid onto the left hand flange (2) of the inverted tee (3) (also figs. H & J) and the depth of the top section of slot (6) 0.5 'X' will ensure the ceiling tile (1) is equally supported on half of the available flange (2) i.e. half the possible bearing available.

Section F-F shows the ceiling tile (1) with a cut-out section (9) on the back right and left hand sides and an overall rear dimension which is -2 'X' (2 x 1 'X') less than the inside stalk of the inverted tee (3) this allows the back portion of the tile (1) to fit between the flanges of the inverted tee grid (3).

The detail of Section F-F below the flange (2) is not critical and can be any of the afore mentioned details and could incorporate a slot to receive a spline similar to the standard concealed ceiling grid ceiling tiles (section B-B).

Ceiling tiles manufactured in accordance with the specification incorporating edges shown in "detail E" have the following advantages:-

- Fully demountable
- Combines the advantages of exposed grid systems (economic, popular, accurate) with the asthetic advantage of a concealed grid system ceiling.
- Quicker therefore cheaper to install than conventional concealed systems.
- Existing exposed grid system ceilings can be changed to concealed type ceilings at will or when normal re-placement occurs (approx every 10 years) without removing the existing exposed grid system.
- The new edge detail concealed ceiling tiles are fixed to the exposed grid system within the depth of the exposed grid (impossible with an exposed grid type tile) a great advantage where suspension depth is limited.

CLAIMS

Claim 1 - A ceiling tile with specially designed edge details which allow the tile to be installed in a standard "exposed grid system" such that when the tile is fixed in position the tile conceales the gridwork and is fully demountable.