June 16, 1925. 1,542,564

P. LIESE

GRID WINDOW

Filed Sept. 13, 1923

Fig. 1 Fig. 2 Fig. 3 Fig. 4 Fig. 5

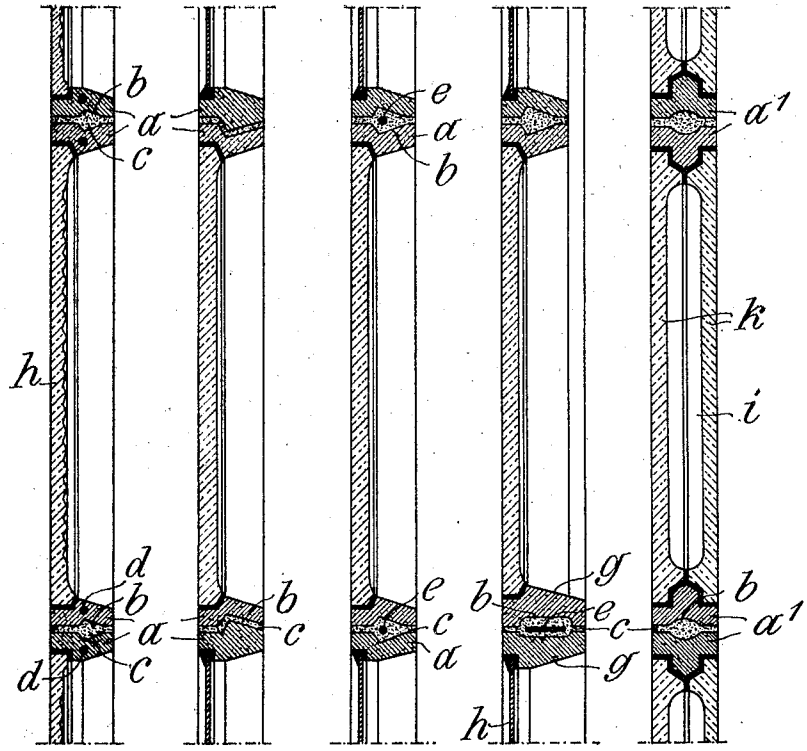
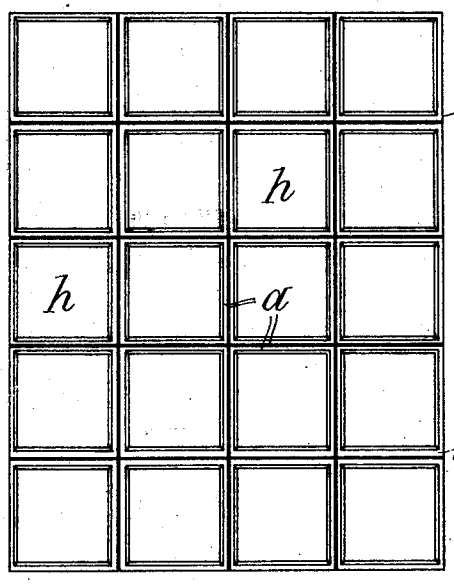


Fig. 6



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UNITED STATES PATENT OFFICE.

PAUL LIESE, OF TEMPELHOF, GERMANY.

GRID WINDOW.

Application filed September 13, 1923. Serial No. 662,450.

To all whom it may concern:

Be it known that I, PAUL LIESE, a citizen of Germany, residing at Tempelhof, Germany, have invented a certain new and useful Improvement in Grid Windows, of which the following is a specification.

My invention relates to improvements in grid windows or glazed grids which are composed of separate frames set side by side and one above the other, and are fitted with panes or bodies of glass. According to my invention, these frames, which are made of artificial stone or ceramic mass, are provided externally with circumferential grooves. When these frames are fitted together, there are cavities between them owing to the provision of the said grooves. By filling said cavities with mortar the frames are securely joined to each other vertically and transversely. This method is not only very economical but enables the windows to be fitted by unskilled persons. By using for the frames artificial stone or a ceramic mass, such as cement, burnt clay, chamotte, gilson, or the like, which is sufficiently absorbent to make in a short time a strong and tight joint with the mortar, the grids are rendered very resistant notwithstanding the simplicity of their construction and the ease with which they can be made.

My invention is illustrated in the annexed drawing, in which like reference characters indicate like parts. Figs. 1 to 5 show by way of example several forms of construction in vertical section, whereas Fig. 6 is an elevation of a finished window.

The grid windows made according to my invention are composed of frames made on a factory scale by casting, pressing, or the like and being provided externally with circumferential grooves *b*, so that when the frames *a* are fitted together there are cavities *c* enabling the frames set side by side and one over the other to be joined together by a layer of mortar to make a single grid, as shown in Fig. 6. The setting of the mortar in the cavity *c* is facilitated by the fact that the frames *a* are made of absorbent building material.

The longitudinal and transverse layers of mortar between the frames form, when hard, a grid which is intimately united with the frames and is, therefore, very strong. The strength of this grid may be increased either by providing the frames *a* themselves with metallic insertions *d* as shown in Fig. 1 or by placing metallic insertions *e* in the mortar joints as shown in Figs. 3 and 4.

The thickness of the frame may be greater or less, according to the size of the aperture to be filled. Where it is required to have a thicker grid at some particular part of the grid window, as, for example, at *f* in Fig. 6, one uses frames *a* as shown in Fig. 4, having one side wall *g* of increased thickness.

Whereas in Figs. 1 to 4 each frame *a* receives only one pane attached by suitable means, for example by means of putty, Fig. 5 shows a form of construction in which the frame *a* is stepped inwardly on both sides and is glazed on both sides by means of panes *k* having a cavity *i* between them. The cavities *i* form a very effective air insulation which is desirable where the grids are used for the window apertures of refrigerators, and the like.

Of course, the invention is not confined to those forms of construction of grid windows which have been illustrated.

What I claim is:—

1. A non-metallic frame member for grid windows provided externally with circumferential grooves and adapted to be glazed.

2. A frame member for grid windows composed of artificial stone and provided externally with circumferential grooves.

3. A frame member for grid windows composed of ceramic material and provided externally with circumferential grooves.

4. A grid window composed of frames set side by side and one above the other and each being provided externally with a circumferential groove which is filled with mortar in order to join the frames vertically and transversely to form a grid.

5. A unit frame member for grid windows provided with a circumferential groove, adapted to be assembled with other similar members to form a grid structure and to be glazed.

6. A wall structure composed of a plurality of unit frame members, each of said members being provided with an external circumferential groove, said units associated edge to edge, the space between said units being filled with retaining material which penetrates into the grooves and forms with the units a substantially monolithic grid structure.

Signed at Berlin, Germany, this 21st day of August, 1923.

PAUL LIESE.