

- [54] **GRILLE OR DIVIDER FOR A WINDOW SASH**
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Primary Examiner—Price C. Faw, Jr.

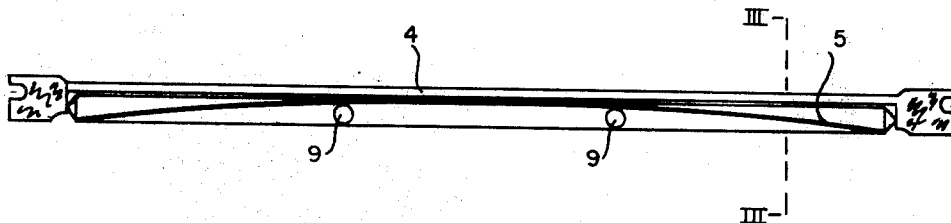
- [52] U.S. Cl..... **52/456; 52/222**
- [51] Int. Cl.²..... **E06B 9/01**
- [58] Field of Search..... 52/455, 456, 222, 223 R, 52/746, 717, 631, 741, 506

[57] **ABSTRACT**

A divider grille for a window sash comprising at least one elongated grille element, and an arced reinforcing member housed within at least one grille element and resiliently urging the divider grille into flat engagement with the glazing pane in the window sash.

- [56] **References Cited**
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1 Claim, 5 Drawing Figures



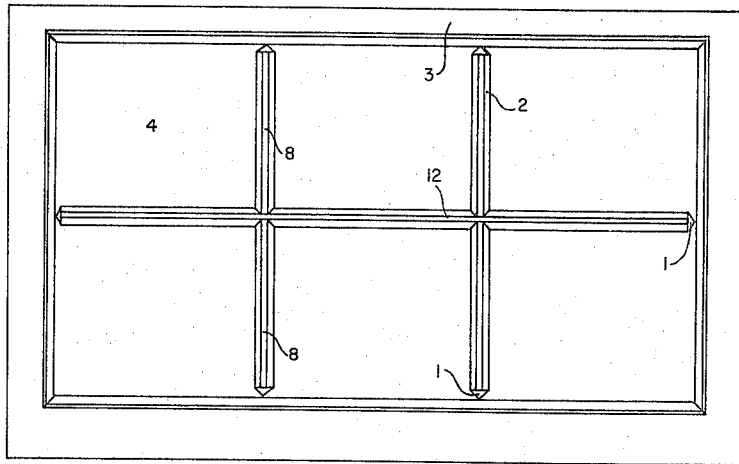


Figure I

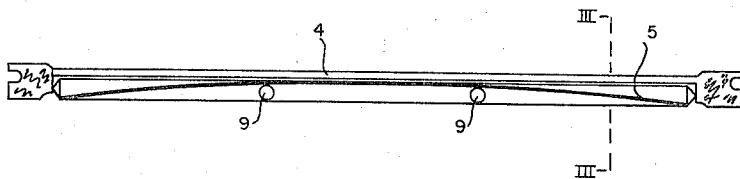


Figure II

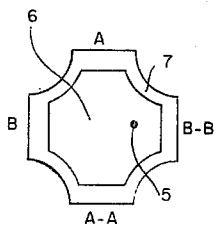


Figure III

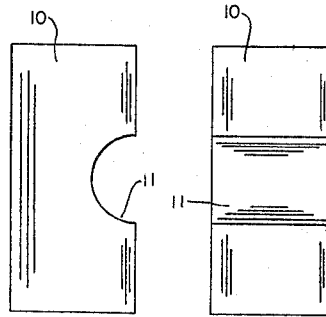


Fig. IV A

Fig. IV B

GRILLE OR DIVIDER FOR A WINDOW SASH

This invention relates to an improvement in divider grilles for window sashes of the type including a large area glazing pane.

The said divider grille partitions one solid plate of glass into several sections. Most known in this field is one plate of glass sectionalized into six parts by the grille which fits into the inner portion of the sash.

My invention relative to the grille consists of the combination and arrangement of parts as set forth in the following specifications and particularly pointed out in the claims thereof.

Referring to the drawings:

FIG. I is a front view of a sash with my improved grille attached thereto;

FIG. II is a cross-sectional view of the horizontal portion of the grille depicting the reinforcing rod when positioned;

FIG. III is a cross-sectional view, taken along line III-III of FIG. II.

FIGS. IVa and IVb give two views of the opening in the cylindrical wall of the dowel or pin.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings: the elements of said grille are constructed of extruded polymer in the form of a hollow octagon (FIG. III), though other forms such as a half octagon or other geometric figures may be used, and such variations in form or size are included in the scope of this patent, with a one-half inch radius comprising the distance to the outer wall, and a three-eighths inch radius comprising the distance to the inner wall. The wall surrounding the hollow area is, therefore, one-eighth of an inch thick 7. For design purposes, the opposite sides A and A—A, B and B—B, are usually flat, while the adjoining opposite sides can be convex as depicted in FIG. III, though variation in design is permissible.

The grille is so constructed with these dimensions and with indefinite lengths. It is obvious to those skilled in the field that the extruded indefinite length material has to be measured up. Therefore, whether the sash is of wood or other constructible material, for the purpose of having said grille measured and fitted for use with the sash, the grille is constructed at the site of the sash construction.

Because the lengths of a particular grille are measured for a sash of a definite size, there are installed tips 1 on all exterior ends of the grille made of rubber or of similarly suitable material. Said tips serve the dual purpose of acting as soft ends, and of being wedges which retain the grille 2 in a permanent position as part of the window sash 3, so that said grille appears to be part of the sash itself (FIG. I).

When the grille is thus wedged into position, it is to remain tightly against the plate of glass 4 at all points. It is known to those skilled in the field that a grille so constructed of wood or expensively set plastic will usually remain tightly in place. It is also known to those skilled in the craft that grilles made of other plastics or synthetics are not strong enough to remain in their original elongated shape. These grilles have a tendency to float away from the said plate of glass 4 in the said sash 3.

It is known to those skilled in the craft that to date, no reasonable adjustment has been made to prevent the said grille from floating away from said plate of glass.

A previous patent discloses a removable plastic window grille, with the grille elements thereof being semi-rigid and distortable so that they are bendable along their length to permit the ends thereof to engage and disengage the window sash. However, that disclosure has not solved the problem of the grille's floating away from the glazing pane. The present invention deals directly with that floatation problem, and includes an elongated reinforcing member housed within the grille element, the reinforcing member being arced along its length with the protuberant portion of the arc nearer the glazing pane than the end portions of the arc, so that the divider grille is thereby urged resiliently into contact with the glazing pane, thus opposing the normal tendency of the grille to float away from the glazing pane when the grille is installed in the window sash.

The said grille is constructed with a hollow area throughout 6. It is thereby possible to use this said hollow area for a reinforcer 5.

It is known to those skilled in the art of metal work that some metals can be extruded into rods of various dimensions or shapes and can also be permanently set or tempered. A rod thus tempered will keep its original form if it is not crushed or reheated.

The reinforcer is housed within the interior of the horizontal extruded bar (or bars if the grille is enlarged) of the grille (FIG. II). Said reinforcer is an extruded rod having a diameter of one-eighth of an inch, and is tempered into an arc. This reinforcing rod is measured and fitted into the horizontal section of the grille with the protuberant portion of the arc positioned nearest the face of the grille element which is to contact the plate of glass 4. Thus, the protuberant portion of the arced reinforcer will be positioned nearer to the glass-contacting face of the grille element than will its end portions. The diameter and length of said reinforcing rod would vary in relation to the size of the grille. Those skilled in the craft of metal working know that this tempered roding does not have to be overextended to allow the arc to exert the necessary pressure to tightly hold the grille in place against the plate of glass, which position will eliminate the floating problem in the said grille.

It will also be known that the said grille with the reinforcing rod through it will have an inward bend to it when separated from the window sash. This is a natural result of the improved construction. Said improved construction necessarily changes the purpose of the rubber tips 1 at the ends of the said grille. These rubber tips will now act not only as soft ends and wedges for the grille, but will be a binding joint between the grille with the reinforcing rod and the window sash at the time of construction or modification. These said tips will thus be fitted into a recessed area constructed into the window sash, thereby avoiding ejection of the tips from the window sash, which ejection might occur due to the pressure of the arcing rod.

It is obvious to those in the field that the six partition grille consists of one horizontal length of grille element and two vertical lengths of grille element within a sash containing but a single large plate of glass. In this construction these several elements are arranged in a crossing gridwork with their glass-contacting faces substantially coplanar. This construction gives the appearance of six equal small plates of glass within the sash (FIG. I).

The horizontal length is constructed with no separations. Each vertical bar is constructed into two equal parts which allow the horizontal length 12 to be continuous. The two parts of each vertical bar 8 are fastened together to complete the construction.

Those skilled in the craft of making grilles know that pins or dowels are used to fasten said vertical sections together. The pins or dowels must pass through an opening in the horizontal length 9. When the dowel or pin is positioned in the said opening of the horizontal length, the vertical portion is pressed into position by aligning the parts with the pin and pressing the parts together. The pins or dowels have a diameter which is slightly larger than that of the inside diameter of the octagonal tubing, thereby causing the pin or dowel to exert a slight pressure when pressing together the divided vertical portions of the grille.

These pins or dowels 10 as they are now used would form a blockage for the reinforcing rod in the horizontal portion of the grille. This invention provides that an opening 11 be drilled through the pins or dowels 10 used to fasten the vertical parts 8 together. It will then be possible to pass the reinforcing rod through this opening, since the yet flexible grille can be maneuvered to allow for the passing of the said rod. It is only logical that the opening in the pin or dowel must then be positioned so as to allow the passage through it of the reinforcing rod and large enough 11 to allow for the reinforcing rod to pass through the opening without any hesitation. Although a specific embodiment of my invention has been illustrated and described herein, it is apparent that various changes and alterations may be

made therein by those skilled in the art without departing from the spirit of the invention. Accordingly, I do not desire to be limited to the specific details of the precise embodiment disclosed by way of example; rather, the scope of the invention is as defined in the appended claim.

I claim:

1. A divider grille for use in a window sash of the type including a large-area glazing pane to simulate subdivision of said pane into the appearance of a plurality of smaller panes, said divider grille comprising:

- 1. at least one elongated grille element, having an element face adapted to engage the glazing pane when said divider grille is installed in said window sash;
- 2. said grille element housing an elongated reinforcing member extending within the grille element interior for substantially the length of the grille element;
- 3. said reinforcing member being of tempered resilient material preset by said tempering into an arced configuration along its length;
- 4. the protuberant portion of the arc configuration being positioned in said grille element nearer to said element face thereof than are the ends of the arc configuration;
- 5. whereby upon installation of said divider grille in said window sash, said reinforcing member resiliently urges said grille element face into contact with said glazing pane and resiliently opposes floatation of said divider grille away from said glazing pane.

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