

[54]	SOUND INSULATING WINDOW	3,064,320	11/1962	Blaszowski.....	52/403
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[58] Field of Search..... 52/202, 203, 397-400, 52/403, 616, 208, 627, 398; 49/DIG. 1

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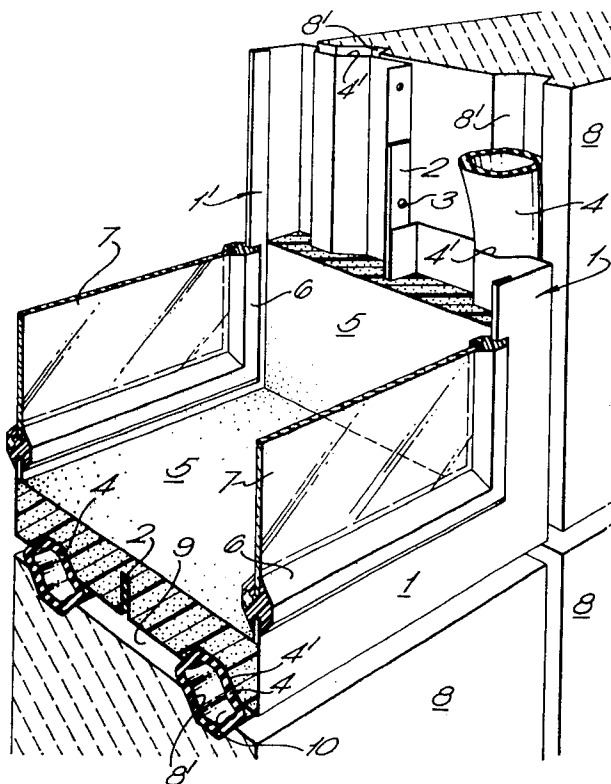
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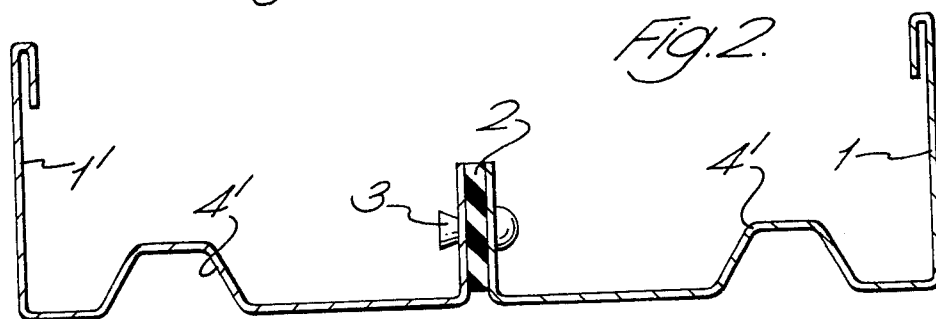
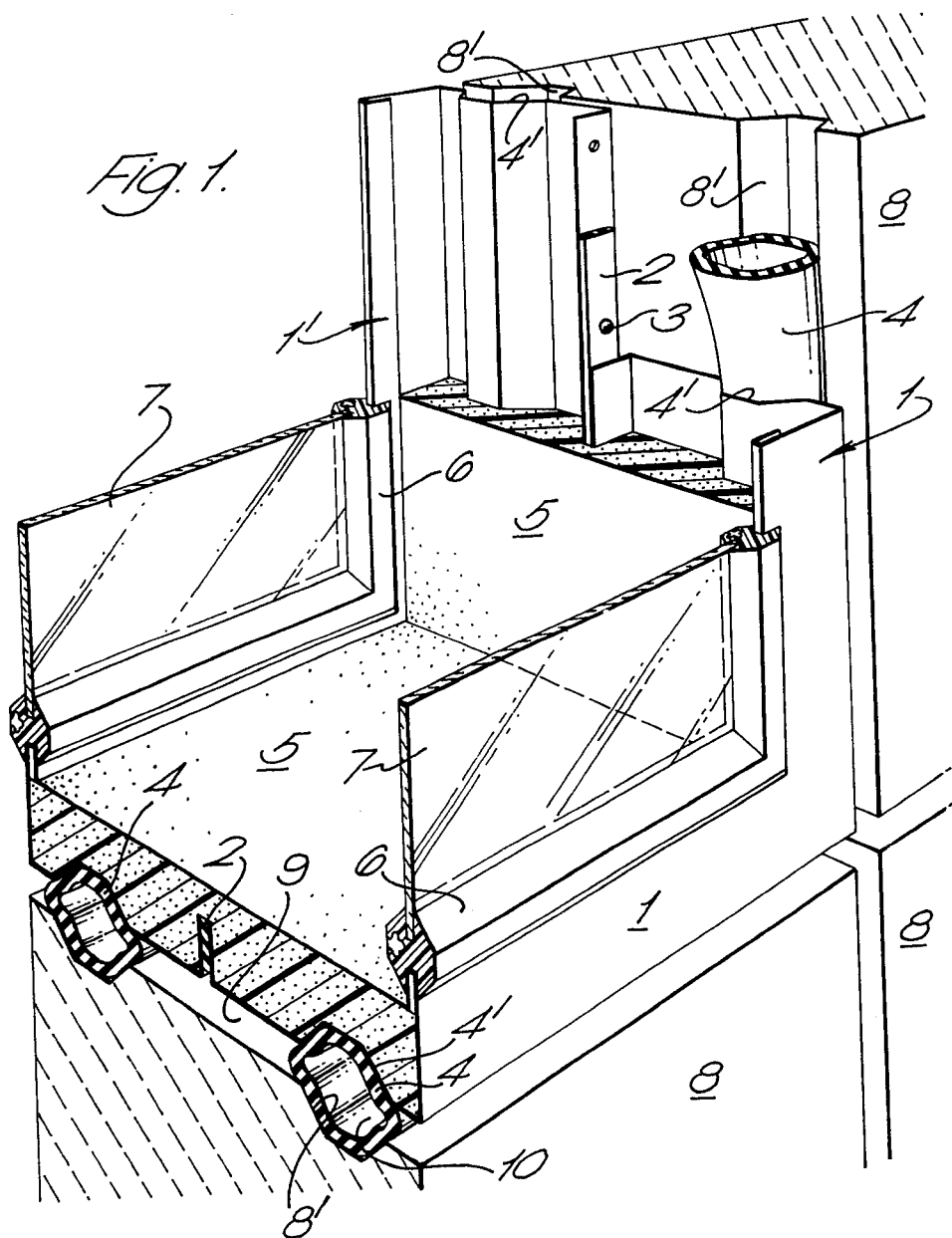
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[57] ABSTRACT

A sound insulating window structure having at least two coextensive frames assembled together with an insulating spacer between them, a flexible insulating gasket surrounding each frame and reposing in recesses in the frame and the window opening. Acoustic material lines inwardly facing recesses between the glazing.

8 Claims, 2 Drawing Figures





SOUND INSULATING WINDOW

This invention relates to a sound insulating window.

It is known to apply double or even triple glazing to insulate a building both against heat loss and against external noise. However, such glazing is not always effective enough in noisy conditions such as by an airport and neither is it easily installed.

The object of this invention is to provide an efficient sound insulating window structure which can be simply and effectively installed.

In accordance with the invention, a window frame structure comprises at least two frames shaped in section to have several angles to inhibit the passage of sound through the material from which the frames are made, said frames being secured coextensively with a sound insulating spacer therebetween, the two frames, or at least the outermost frames, being glazed and being provided with peripheral recesses in which flexible gaskets are respectively received for spacing said frames from a window opening.

Preferably, each frame defines an inwardly facing cavity filled with sound insulating material.

Preferably, said gaskets are hollow and are stressed onto the respective frames to act as an air seal.

Each frame can be made of sheet metal and preferably includes as many acute angles as possible to help reduce the transmission of sound through the metal.

An embodiment of the invention will now be described with reference to the accompanying drawings, in which:

FIG. 1 is a perspective sectional view of a window structure according to the invention, and

FIG. 2 is a section through the frames of the window structure.

The window structure shown in the drawings comprises two frames 1, 1' made of pressed metal and having a section, as shown in FIG. 2, with several angles, each as acute as possible for inhibiting the passage of sound through the material from which each frame is made. Frames 1, 1' are secured coextensively with a spacer 2 therebetween made of material, different from the frames, such as solid neoprene. The spacer 2 and frames 1, 1' are secured by rivets 3 again of different material, e.g. plastic.

The frames 1, 1' are mounted in a window opening, defined by wall 8, by means of hollow neoprene gaskets 4 fitted in recesses 4' in the respective frames. Gaskets 4 are preferably seated in corresponding recesses 8' in the window opening. The gaskets are of a size and constitution such that, when located between the recesses 4', 8', they tend to recover an original form, such as circular, to exert forces to establish the seal to block air paths for sound. (Hollow gaskets can be evacuated to assist fitting and subsequently allowed to be filled with air.) Moreover, the gaskets support and locate the frames in isolation from vibrations transmitted in the wall 8. Cavities 9 between adjacent gaskets 4 and cavities 10 within the gaskets 4 also assist in sound insula-

tion.

The upper edges of each frame are folded over and are received in a glazing strip 6 which receives glazing materials 7. Glazing strip 6 is preferably made of neoprene.

The inwardly facing recesses defined by each frame 1, 1' are filled or lined with acoustic material 5 to assist in further sound absorption.

Alternative material to neoprene should have similar acoustic properties to obtain the best results.

The scope of the invention is defined by the following claims.

What I claim is:

1. A sound insulating window structure comprising two frame members constructed from sheet material, each frame member in transverse cross-section being of a generally U-shaped configuration defined by a pair of flanges joined by a web, said frame members being positioned in coextensive side-by-side relationship with a first flange of each frame member being adjacent each other and a second flange of each frame member being remote from each other, said first flanges being disposed between said second flanges, resilient sound insulating means located between said first flanges, means connecting said two frame members in their coextensive side-by-side relationship, a peripheral outwardly opening recess formed in each of said webs bounding the respective frame members, sound insulating material located within said U-shaped frame members, a resilient glazing strip peripherally extending about and secured to said second flanges, glazing material secured by said resilient glazing strips to each of said frame members, and flexible gasket means received in each of said recesses and extending about the periphery of said frame members for supporting the latter in an associated window opening.

2. The sound insulating window structure as defined in claim 1 wherein said flexible gasket means constitute the sole means for securing said window structure in an associated window opening.

3. The sound insulating window structure as defined in claim 1 wherein said connecting means span across and connect together said first flanges.

4. The sound insulating window structure as defined in claim 1 wherein said flexible gasket means are normally generally circular in transverse cross-section.

5. The sound insulating window structure as defined in claim 4 wherein said connecting means span across and connect together said first flanges.

6. The sound insulating window structure as defined in claim 1 wherein said flexible gasket means are tubular hollow elements.

7. The sound insulating window structure as defined in claim 6 wherein said flexible gasket means are normally generally circular in transverse cross-section.

8. The sound insulating window structure as defined in claim 6 wherein said connecting means span across and connect together said first flanges.

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