Dec. 9, 1952 K. R. G. FISH ET AL 2,620,522

DOUBLE GLAZED PANEL

Filed March 17, 1950

Fig. 2

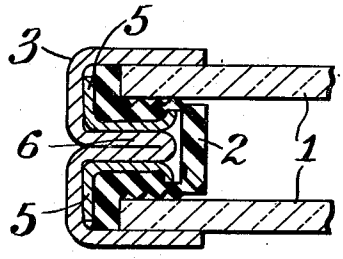
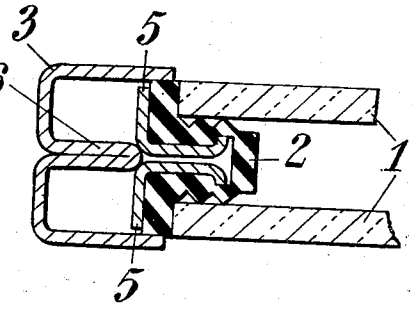


Fig. 1



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DOUBLE GLAZED PANEL

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3 Claims. (Cl. 20—56.5)

1

This invention relates to double glazed panels.

Double glazed panels consist of two sheets of glass, spaced apart by a distance usually of the order of three eighths of an inch, and are used to give heat, and to some extent sound insulation. Many attempts have been made to produce them in an efficient and economical form for use in windows, doors, roof glazing and greenhouses, etc.

The desirable features of such panels are—that the space between the glasses must be entirely free from any moisture, i. e. filled with dry air or other gas, or even a liquid under certain circumstances; and that as owing to the heat resisting properties of the panel, one sheet of glass (usually the one outside the building, in the summer and vice versa in the winter) will become hotter than the other causing expansion, this expansion must be provided for in the design.

One way of achieving this result is to provide an hermetically sealed panel. Another way is to provide an unsealed type having provision for "breathing" and for excluding all moisture and dust. This invention is intended to relate mainly to the "sealed" type of panel, although it could be incorporated in the unsealed type.

For the sealed type of panel two methods have been tried. In the first of these two sheets of glass, with a suitable spacing frame between are fixed together with some form of adhesive, and dry air introduced into the space. This type is subject to breakdown due to the expansion conditions mentioned above. Also there is no really good adhesive for sticking glass to a second material owing to the smooth and substantially non-porous surface of the glass. In the second method a spacing frame is provided either made from, or covered with, some resilient material such as rubber, and the whole clamped together in various ways.

The present invention consists of a method of constructing a double-glazed panel having a sealing strip made from or covered with rubber or other compressible resilient material inserted between the two sheets all round, a metal frame member or members fitted all round over the sealing strip and sheet edges, in which the metal frame itself is used to compress the sealing strip in assembly and retain it in the compressed position, the metal frame holding the two edges of the sheets while expanding means are forced into a slot in the sealing strip to compress the resilient material on each side between the expanding means and the two edges of the sheet. The

2

expanding means may be formed integral with the metal frame.

The invention further consists in a double glazed panel comprising a sealing strip made from or covered with rubber or other compressible resilient material inserted between two sheets of glass or the like all round and consisting of a portion between the edges of the glass sheets and a wider portion outside these edges forming shoulders against which the edges of the glass sheets abut, and a metal frame with lips bent over the sheet edges and acting to compress the sealing strip into intimate contact with the surface of the glass sheets, the metal frame being of E-section, the central limb of the E being inserted in a slot or channel in the sealing strip.

The invention will be further described with reference to the accompanying drawings.

Figure 1 is a transverse cross-sectional view through the edge of a double glass panel construction before sealing, and

Figure 2 is a similar view of the same panel after sealing.

The sealing strip **2** is shown formed with a slot or channel on the outside into which fit two L-section metal strips **5**. The frame **3** is of E-section and the central limb **6** of the E is arranged to fit in between the strips **5** so as to force these apart while the outer limbs of the E slide over the outer faces of the glass sheets **1** and resist the forcing apart of the glass sheets; hence the parts of the sealing strip between the glass sheets and the L-section metal strips are compressed to make an hermetic seal between the two glass sheets. The air between the glass sheets may be exhausted and replaced with dry air or gas in the usual way.

Various other modifications will be possible within the scope of the invention.

We claim:

1. A double-glazed panel comprising parallelly aligned sheets of glass, an E-section metal frame retaining said sheets a maximum distance apart, and a resilient sealing strip under compression within said frame and between the peripheral portions of said sheets, the central limb of said E being constituted by an inwardly directed corrugation of the periphery of said frame and constituting expanding means embraced by said sealing strip.

2. A double-glazed panel comprising parallelly aligned sheets of glass, an essentially U-section resilient, sealing strip extending between the periphery of said sheets and formed with out-

wardly-directed shoulder portions against which the edges of said sheets abut, and an E-section metal frame set round said sheets, the outer flanges of said frame retaining said sheets and the central limb between said flanges entering and compressing said sealing strip against said sheets.

3. A double-glazed panel as set forth in claim 2, further comprising L-section strips of tough material interposed between said frame and said sealing strip, one arm of said L overlying the respective shoulder portion of said sealing strip and the other arm of said L entering between said sealing strip and said central limb.

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