Feb. 11, 1941. C. M. VERHAGEN 2,231,514

DOUBLE GLASS SASH

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Fig. 1.

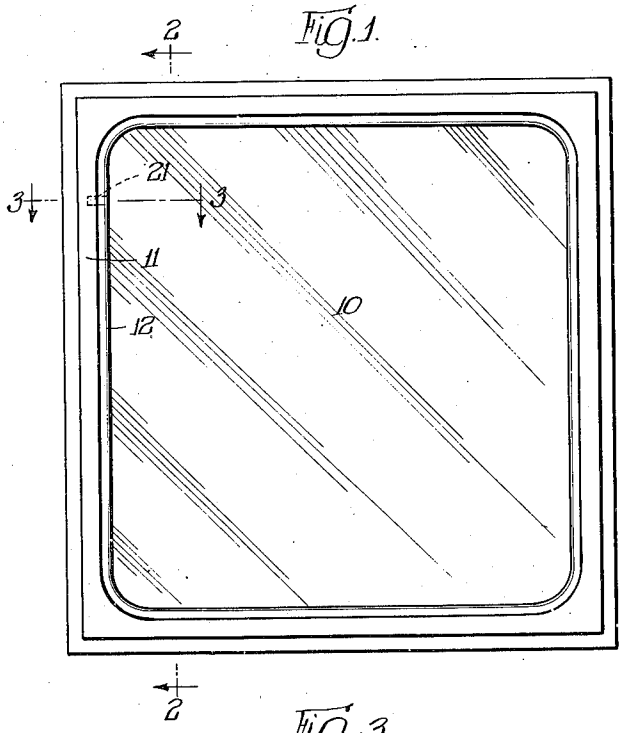


Fig. 2.

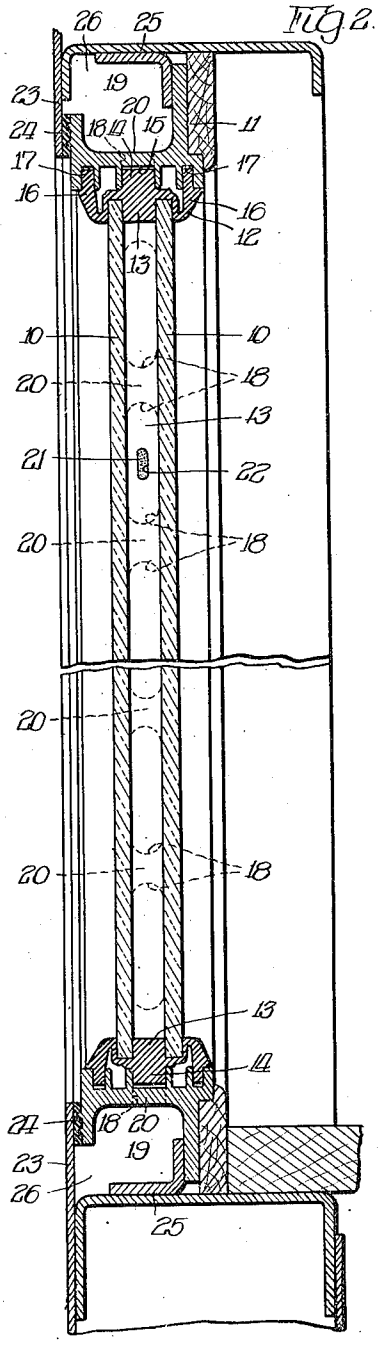


Fig. 3

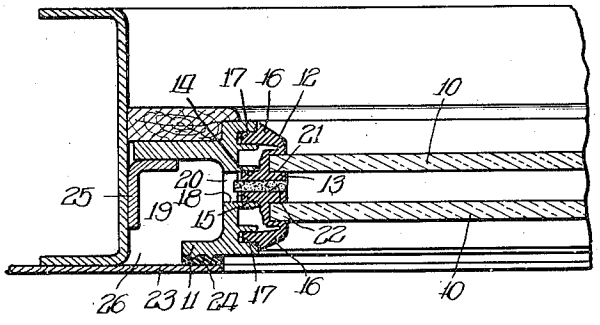
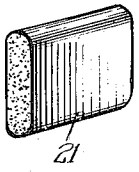


Fig. 4



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DOUBLE GLASS SASH

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3 Claims. (Cl. 189—64)

This invention has to do with double glass sash of the type in which the air cell between the panes of glass is vented to permit equalization of pressure during atmospheric changes.

The principal object of the invention is to provide improved venting means which can be easily and inexpensively incorporated in a double glass sash, will thoroughly filter any incoming air, and will accurately control the rate at which the air is permitted to enter and leave.

The improved venting means preferably consists of a short length of ceramic rod which is inserted in a small hole provided in a soft rubber sealing strip located between the panes. The ceramic rod, because of its very slight porosity, acts as a breathing device for the air cell between the panes while preventing the entry of any great amount of air and wholly excluding the entry of any undesirable matter.

While the foregoing statements are indicative of the nature of the invention, other more specific objects and advantages will be apparent to those skilled in the art upon a full understanding of the improved breather.

In the accompanying drawing:

Fig. 1 is a face view of a double glass sash equipped with the improvement of the invention;

Fig. 2 is a vertical section through the sash, taken on the line 2—2 of Fig. 1, showing the sash mounted in a car window opening;

Fig. 3 is a transverse section through one side of the sash, taken on the line 3—3 of Fig. 1; and

Fig. 4 is a perspective view of the ceramic insert which constitutes the air filtering and control means.

The sash shown in the drawing consists of two panes 10 of glass, a metal frame 11, and a soft rubber glazing strip 12. The strip 12 spans the edges of both panes in air-tight engagement with the same and is removably seated in the frame.

The strip 12 is provided on its inside with a centrally located rib 13 which uniformly spaces the panes, is provided on its outside with a centrally located rib 14 which fits within an inwardly opening groove 15 in the frame, and is provided along its sides with relatively thin flexible flaps 16 which resiliently hold the panes against the rib 14 and are detachably interlocked with the frame by being tucked into inwardly opening grooves 17 in the latter. While this form of rubber glazing strip permits quick removal of either pane and may therefore be used to advantage, other forms of rubber glazing strips which include merely something corresponding to the spacing rib 13, may be used with good results.

The frame 11 is provided along the bottom of the centrally located groove 15 with a plurality of elongated slots 18, which slots extend through to the outside of the frame in communication with a channel 19 surrounding the latter. These slots 18—which are separated from each other by narrow webs 20—serve to materially reduce heat conduction through the frame, and one of the slots also serves as an opening through the frame for the passage of air to and from the hereinafter described breather. While the employment of a number of the slots is desirable in order to reduce heat conduction, it will of course be appreciated that only one of the slots is needed so far as the breather itself is concerned.

The breather consists of a short rod-like piece 21 of hard fine slightly porous material—preferably ceramic material. This rod may be of any desired cross-section but is preferably of oval cross-section. A small hole 22 is cut or otherwise formed in the spacing rib 13 of the soft rubber strip 12, from the inside of the strip to the outside of the latter, and the rod 21 is pressed into this hole. The rod should be at least as long as the hole, so as to prevent the soft rubber from closing over either of the ends of the rod, and the inner end of the rod should be flush with the inside of the spacing rib 13 of the strip to render the same inconspicuous and add to the appearance of the assembly. After the rod has been inserted the tendency of the soft rubber to resiliently constrict the same will hold the rod frictionally against displacement.

The sash is shown in Figs. 2 and 3 mounted in a window opening of an air-conditioned railway car. One face of the sash is sealed against the exterior plating 23 of the car by packing 24, and the top, bottom and side rails of the sash are attached respectively to the header, sill and side post members of the opening by angle strips 25, forming of the outwardly opening chamber 19 in the sash a boxed-in chamber 26 which extends completely about the sash. This chamber, with which the air cell between the panes 10 is vented by the breather 21, may be in turn vented to the atmosphere by one or more small holes in the plating 23, although the addition of such holes is not essential in view of the fact that a certain amount of air will always find its way into the chamber.

By utilizing a breathing device in the form of a hard rod-like member forced into a hole in a resiliently yieldable member, a uniform degree of porosity is assured without any danger of over-packing or under-packing of the filtering medium,

no special wadding receptacles, conduits or screens are required, the filtering element can be easily changed whenever there is occasion for the same, and practically no expense is involved in making and installing the device. The material of the rod, furthermore, may be of such character as to dehydrate any air passing through the same, thereby avoiding condensation of moisture within the air cell between the panes.

I claim:

1. In a double glass sash, two panes of glass which are spaced apart to provide an air cell between the same, a frame about the panes having an air passage adjacent the air cell, a soft rubber strip which seals off the air cell between the panes, and a ceramic breathing element which is carried by the rubber strip independently of the frame in a closely fitting hole formed in the strip and extends from the inside of the strip to the outside of the same in communication at the outside with the air passage in the frame.

2. In a double glass sash, two panes of glass which are spaced apart to provide an air cell between the same, a frame about the panes having an air passage adjacent the air cell, a soft rubber strip which seals off the air cell between the panes, and a short rod of hard slightly porous material which is carried by the rubber strip independently of the frame in a closely fitting hole formed in the strip and extends from the inside of the strip to the outside of the same in communication at the outside with the air passage in the frame.

3. In a double glass sash, two panes of glass which are spaced apart to provide an air cell between the same, a metal frame about the panes provided with a plurality of slots in the plane of the air cell for reducing the conduction of heat from one side of the frame to the other, a soft rubber glazing strip which is seated in the frame in engagement with the edges of both panes and is provided with a center portion which spaces the panes and covers the slots in the frame, and a breathing element which is carried by the center portion of the rubber strip independently of the frame in a closely fitting hole formed in the center portion in register with one of the slots in the frame.

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