(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 063 964**
A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **82302202.5**

(22) Date of filing: **29.04.82**

(51) Int. Cl.³: **E 06 B 7/14**

(30) Priority: **29.04.81 GB 8113233**

(43) Date of publication of application: **03.11.82 Bulletin 82/44**

(84) Designated Contracting States: **BE DE FR GB NL**

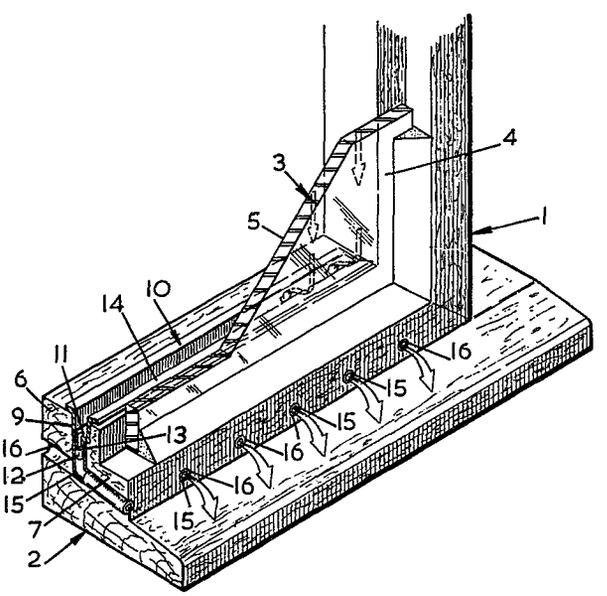
(71) Applicant: **Condensation Systems Limited, Trafford House 36 Peter Street, Manchester M2 5GR (GB)**

(72) Inventor: **Pritchard, Joseph, Norlands Monsall Road Monsall, Manchester, M10 9NQ (GB)**

(74) Representative: **Daunton, Derek, Barlow, Gillett & Percival 94, Market Street, Manchester M1 1PJ (GB)**

(54) **Improvements in or relating to windows.**

(57) A window frame assembly 1 includes a channel member 10 provided in the region of the bottom interior edge of the window pane 3. The channel member 10 serves to collect condensation which may form on, and run off, the interior of the window pane 3. The channel member 10 has drainage outlets 12 through which the collected water may drain, e.g. via flexible plastics tubes 15, to the outside of the frame assembly 1.



EP 0 063 964 A2

The present invention relates to windows, and more particularly to the drainage of condensation from windows.

The problems associated with condensation on the inside of windows are numerous. For example, the condensation will run down the window and collect as pools on, for example, the window sill. The removal of such pools is a tedious operation. More seriously however is the rotting of wooden frames due to continued appearance of condensation.

Condensation may be avoided by providing double glazing but this can be expensive. The rotting of wooden/window frames can of course be avoided by use of metallic frames, but once again the cost of replacing all of the wooden window frames in a house can be considerable.

It is an object of the invention to provide a window frame assembly which obviates or mitigates the problems of condensation.

According to a first aspect of the present invention there is provided a window frame assembly having a window pane in a window frame, the assembly having a channel provided in the region of the bottom interior edge of the window pane and adapted to receive condensation running from the pane, said channel having at least one drainage outlet communicating with conduit extending through the frame to drain water from the channel.

According to a second aspect of the present invention there is provided a drainage device for draining water which runs from a window pane, the device comprising a channel section member having in the base thereof a plurality of drainage apertures, and a plurality of integral pipes each communicating with a drainage aperture.

According to a third aspect of the present invention there is provided a window frame having a channel provided in the region at which the bottom interior edge of a window pane will locate in use of the frame and adapted to receive condensation, said channel having at least one drainage outlet communicating with conduit extending through the frame to drain water from the channel.

The invention will be further described by way of example only with reference to the accompanying drawings, in which:

Fig. 1 is a sectional perspective view of one embodiment of window frame assembly in accordance with the invention,

Fig. 2 is an exploded perspective view of a drainage channel incorporated in the window frame assembly of Fig. 1, and

Fig. 3 is similar to Fig. 1 but shows a modified window assembly.

The illustrated window frame assembly 1 includes a wooden bottom window frame member 2 and a glass pane 3, having an outer surface 4 and inner surface 5.

/next page 3a

Frame member 2 is of generally stepped cross-section and includes an upper step-portion 6,

intermediate step-portion 7, and lower step-portion 8. Window pane 3 is located in position against the riser of upper step-portion 6, e.g. by putty or beading.

The top surface of upper step-portion 6 has a rebate 9 inwardly of the surface 5 of pane 3. Rebate 9 extends along the length of frame member 2 and has a depth corresponding to that of step-portion 6.

The rebate 9 serves to receive a plastics (or alternatively metal) rectangular U-section channel member 10 which is of a depth corresponding to that of rebate 9 and extends along the length of pane 3. Channel member 10 includes a plurality of drainage outlets 11 spaced along its base, each such outlet 11 being associated with a short length drainage pipe 12. The pipes 12 are accomodated in apertures 13 drilled in the base of rebate 9 at suitable intervals therealong. The channel member 10 additionally includes on its edge adjacent pane 3 a flap portion 14 inclined upwardly towards the pane 3 and in water tight abutment thereagainst.

Each drainage pipe 12 is attached to a short length of flexible PVC tubing 15 extending outwardly through an aperture 16 bored through step-portion 7 from the inside to the outside of frame member 2.

Channel member 10 may be located in position as follows. Firstly the rebate 9 is formed with a rebate

plane and apertures 16 are bored through frame member 2 with a drill. Apertures 13 are then drilled in the base of rebate 9 to meet with apertures 16.

Lengths of flexible PVC tubing 15 may then be inserted through each aperture 16 and the inner end drawn upwards through aperture 13 by any suitable implement. The drainage pipes 12 may now be inserted in the lengths of tubing 15 and the channel member 10 seated in position in the rebate 9.

Any condensation formed on the inside surface 5 of window pane 3 will run downwardly onto the flat 14 and thence into channel member 10. Water received in channel member 10 will drain therefrom through the drainage outlets 11 into the tubing 15. Consequently condensation water collected in the channel member 10 will be drained through the tubing 15.

In a modification of the above described embodiment, the rebate 9 may be formed at the lower inner edge of the window pane 3, in which case water will run directly into channel member 10 without the need for a flap portion 14. Such an embodiment is however more suited to the case where the window pane 3 is not in position when the rebate 9 is formed, since otherwise the formation of the rebate may crack the glass.

In a further modification illustrated in Fig. 3 the channel member 10 may be seated atop the lower window frame member 106.

The rear wall of the channel member 100 locates against the glass pane 3 whereas the front of the channel member 100 may be in the form of quadrant shaped beading for decoration purposes. In the case of this channel member, the positioning of the drainage pipe 112 and flexible tubes 115 is analogous to the method described with reference to Fig. 1, the only difference being that the channel member seats on the bottom frame member 106 as opposed to in a rebate. In fixing this channel shaped member in position (e.g. by screws as illustrated) sealing material may of course be provided between the bottom of the channel shaped member 100 and the top of the frame member 106. Additionally, stop ends (not shown) may be provided at each end of the channel member 100 to contain water in the channel. This modification is eminently suitable for conversion of existing window frame units since the channel shaped member (with quadrant front) may be supplied in standard lengths to be cut to size for the particular window to be converted. Stop ends may also be supplied with the channel member for positioning at the ends thereof when it has been cut to length. It is in fact convenient to supply a conversion kit which includes the channel shaped member, the stop ends, the flexible plastic pipes and possibly also sealant material.

It will thus be appreciated that the invention provides a simple and effective solution to the problem of condensation.

CLAIMS

1. A window frame assembly having a window pane in a window frame, the assembly having a channel provided in the region of the bottom interior edge of the window pane and adapted to receive condensation running from the pane, said channel having at least one drainage outlet communicating with conduit extending through the frame to drain water from the channel.

2. A window frame assembly as claimed in claim 1 wherein the channel is provided by a channel section member.

3. A window frame assembly as claimed in claim 2 wherein the channel section member has a plurality of integral drainage outlet pipes each communicating with a drainage aperture in the base of the channel section member, said pipes being located in the frame of the assembly.

4. A window frame assembly as claimed in claim 3 wherein each of said pipes is attached to a respective flexible tube extending substantially to the exterior of the frame.

5. A window frame assembly as claimed in claim 4 wherein the flexible tubes turn intermediate their length so as to extend transversley to said pipes.

6. A window frame assembly as claimed in any one of claims 2 to 5 wherein the channel section member is of plastics material.

7. A window frame assembly as claimed in any one of claims 2 to 6 wherein the channel section member is provided is a rebate in the frame.

8. A window frame assembly as claimed in any one of claims 2 to 6 wherein the channel section member seats on top of the frame.

9. A drainage device for draining water which runs from a window pane, the device comprising a channel section member having in the base thereof a plurality of drainage apertures, and a plurality of integral pipes each communicating with a drainage aperture.

10. A window frame having a channel provided in the region at which the bottom interior edge of a window pane will locate in use of the frame and adapted to receive condensation, said channel having at least one drainage outlet communicating with conduit extending through the frame to drain water from the channel.

0063964

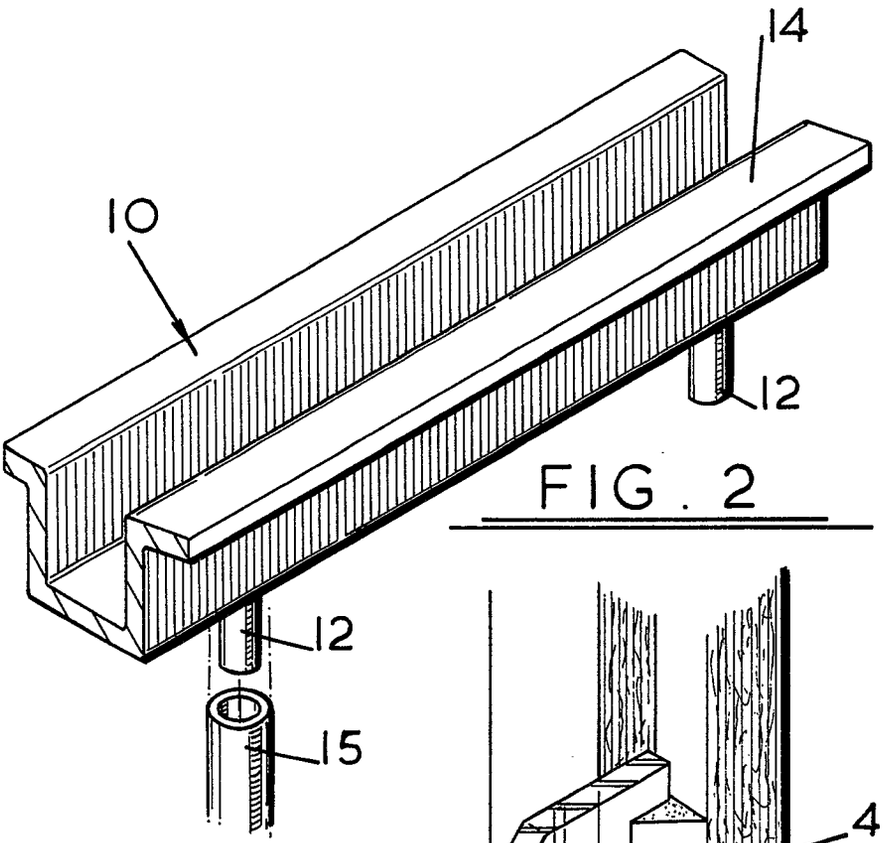


FIG. 2

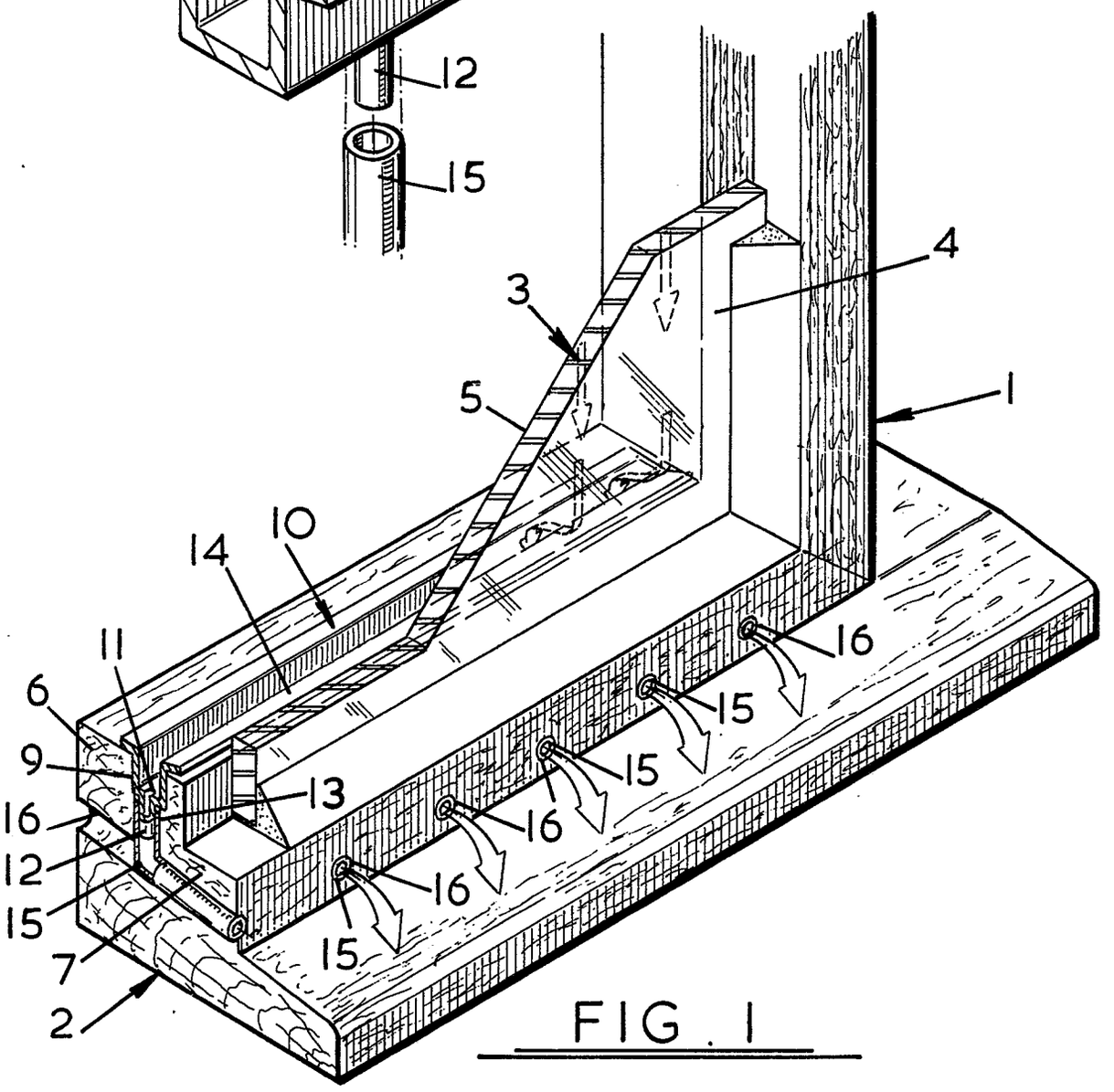


FIG. 1

0063964

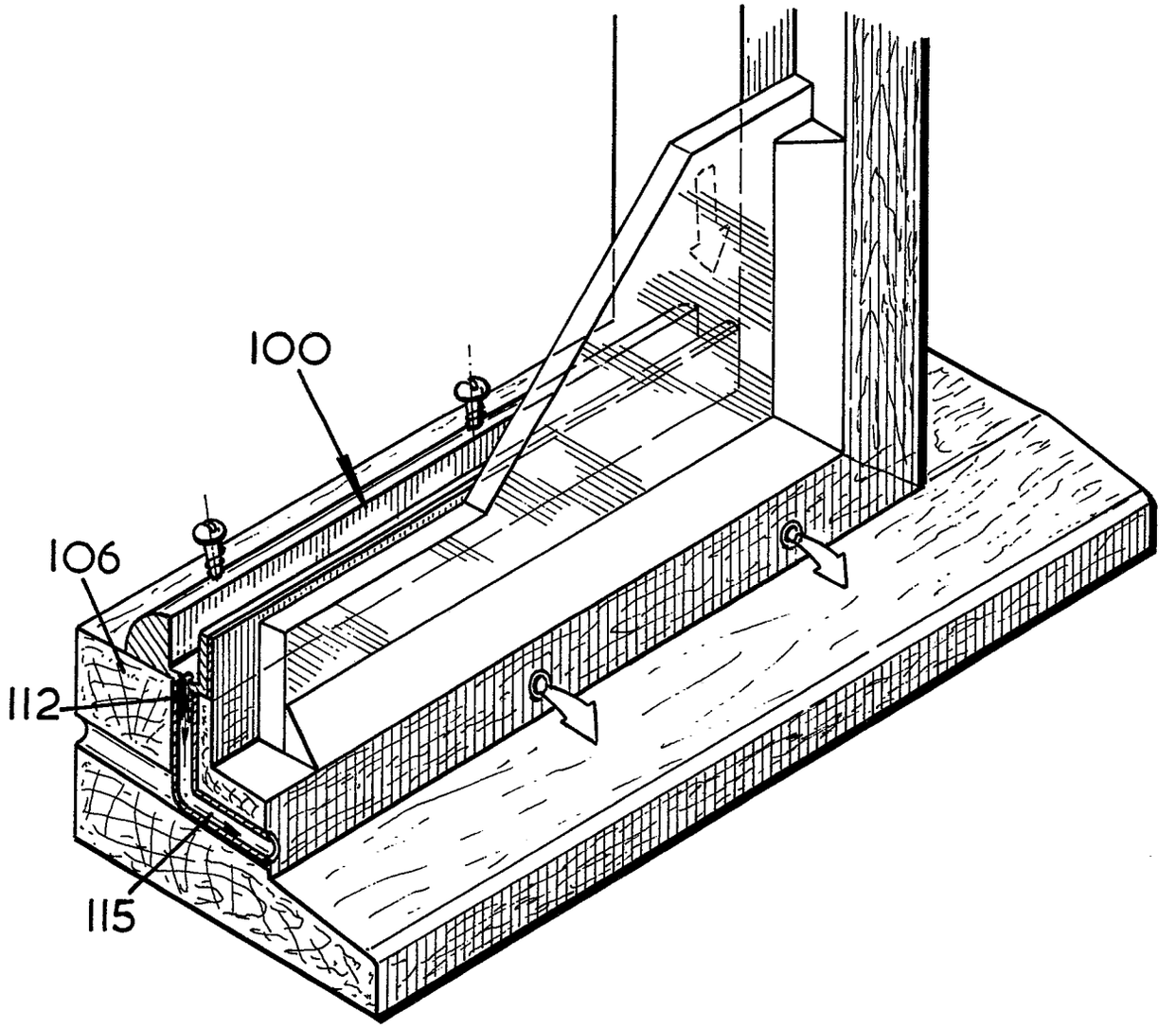


FIG. 3