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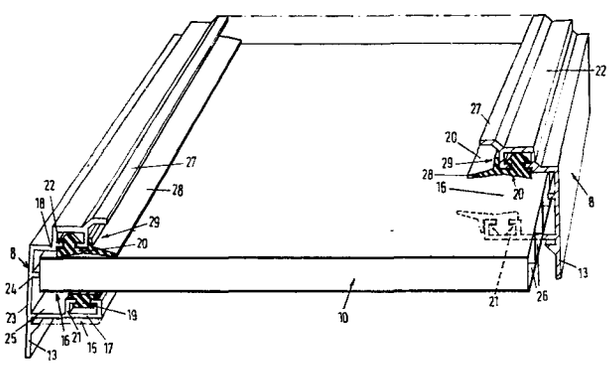
(54) A ventilating hatch.

(57) A ventilating hatch mountable on a roof or in a facade, comprising a frame the opening of which is closable by a cover including e.g. a hollow, synthetic plastics slat clampable in specific U-shaped sections. On the insides of the legs of the sections, there are disposed strips of flexible material. An extension is moulded integrally with at least the one leg of the section hinged to the frame and positioned on the outside of the slat for forming a trough together with the strips of flexible material and with the slat installed. There is provided a ridge on the bottom of the U-shaped section serving as a stop for the slat for discharging any condensate from the cavities of the slat.



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Title: A ventilating hatch.

The present invention relates to a ventilation hatch comprising a frame to be mounted on the roof or in the façade of a building, the opening of said frame being divided into a plurality of compartments by cross members of substantially U-shaped section having outwardly oriented legs, each compartment being closable by a separate hinged cover and the top edge of each compartment including a resilient, elastic packing coacting with an associated cover, the covers being positioned on the same side of the compartments.

A ventilating hatch of this type is known and is marketed by Applicants. In this known construction the covers are made of a translucent material, e.g. a synthetic plastics material. It is conventional for such covers to be manufactured by extrusion, wherein the top panels of the covers are extruded in one piece with the cover edges that are parallel to the cross members after which the extruded product is cut to the desired length and the cut ends are provided with an edge section to be applied separately and to which studs can be attached for hinging movement of the covers.

A drawback of such an extrusion process is that the die is suitable only for one specific width and, moreover, can mostly process not more than one type of synthetic plastics material.

If a different translucent synthetic plastics material is to be processed, e.g. pvc, macraton, hostalite, plexiglass, etc., a different die is required for each type of material. If one wishes, moreover, to have the possibility of various width dimensions, a different die should also be employed for each width dimension. It is clear that many dies will be required and since the dies are rather expensive, the manufacture of covers of different widths and types of material is quite expensive.

If a large cover area is desired, additional stiffeners are to be applied for imparting sufficient stiffness to the synthetic plastics section. These stiffeners may be formed e.g. by manufacturing the cover from two spaced, parallel, opposing plates interconnected by spaced partitions extending transversely to said plates. There is

thus produced a box-like construction consisting of a plurality of elongated hollow boxes. When such a box-like construction is to be extruded in one piece with the cover edges moulded integrally therewith, the axes of the hollow boxes will be parallel to the cover edges. This extrusion process not only requires very expensive dies, but moreover condensation may occur in the hollow boxes and due to the fact that the direction of the hollow boxes is parallel to the direction of the cover edges, when the cover construction thus made pivots about one of its cover edges moulded integrally therewith, the condensate formed will remain in the boxes.

Another drawback is that due for instance to rain, a layer of water may be formed on the exterior of the cover, especially if the cover when closed occupies a horizontal position. When said cover is opened after a rain-shower, the water will flow towards its lowest side, i.e. in the direction of the ventilating hatch and possibly into the subjacent space. True, the U-shaped cross members can serve as a discharge trough but since these are designed in general as narrow as possible, from an aesthetic viewpoint, and for maximizing the ventilating opening, it is possible that the water flowing downwardly along the cover arrives over the cross members into the next compartment.

It is an object of the present invention to obviate the above drawbacks and to provide such a modified construction of the covers that the many specific dies can be dispensed with, and a single die will suffice for a great many different cover thicknesses, irrespective of the type of material, and that, at the same time, a provision for appropriately discharging water lying on a cover can be realized - with the same die - in a simple manner.

To achieve the above object, according to the present invention, the top panel of each of the covers is a separate slat, and that at least the adjoining edge of the covers extending parallel to a cross member is a profiled longitudinal section including a U-shaped portion, and that to the insides of the legs there are attached strips of flexible material for sealingly clamping the slat to be arranged between the two legs of a U-shaped portion, and that there is integrally moulded with the one leg situated on the outside of the frame, a portion extended relatively to its top face for forming a trough

together with the strip of flexible material and with the slat installed.

When it is ensured that the perpendicular distance between the legs of the U-shaped portion of the longitudinal section is large enough so that a slat of conventional thickness, in combination with a suitable choice of the thicknesses of the strips of flexible material, can be sealingly clamped therebetween, a single longitudinal section will be substantially sufficient.

It is also achieved with the present invention that the wall of a clamped slat, together with the associated strip of flexible material forms the one portion, and the extended portion moulded integrally with the one leg forms the other portion of the trough. Due to this specific trough formation, the longitudinal section, and hence the die, remain comparatively simple.
The width of the trough may be enlarged, if desired, by bending the extended portion moulded integrally with the one leg outwardly relatively to said leg.

In a preferred embodiment of the present invention, the strip of flexible material attached to the side of the one leg, is provided with an integral sealing edge projecting beyond the extended integrally moulded portion of said leg, in such a manner that it rests clampingly against the slat installed and against the end of the one leg, the arrangement being such that said sealing edge together with the associated slat and the extended portion moulded integrally with the one leg, not only forms the trough, but also provides for proper watertightness towards the interior of the longitudinal section. Moreover, this projecting sealing edge offers a maintenance mechanic the possibility of visually and conveniently inspecting whether said sealing edge still functions properly, i.e. whether or not it is torn, has become brittle or no longer rests properly against the slat.

According to the present invention it is also advantageous that each longitudinal section within its U-shaped portion comprises a ridge disposed on the bottom thereof and serving as a stop for the slat to be clamped, and a discharge trough for discharging any condensate, with one of the walls of said discharge trough being formed by the bottom, and the other wall thereof being formed by the strip of flexible material of the U-shaped portion projecting from one of the

legs.

The construction according to the present invention enables the installation of many commercially available types of material as slats, such as various types of synthetic plastics slats, whether or not with colour addition, or whether or not provided with the above construction with hollow chambers. Besides, the slats may be glass panes, whether or not of reinforced glass or differently coloured.

When the slat consists of the above box construction with hollow boxes, such a slat can be clamped between the longitudinal sections in such a manner, that the axial direction of said boxes points towards the longitudinal sections so that any condensate present in the hollow boxes can be discharged through the discharge troughs.

All these kinds of slats can be mounted in a very simple manner, while the water-tightness of the cover made is ensured. Moreover, it has become possible in a simple manner to provide successive covers of a ventilating hatch with different slats, for creating special light effects.

If the building where the ventilating hatch is installed entails an increased fire risk, the slats are preferably made of glass or wire glass.

The present invention additionally provides a highly universal construction which, as regards the choice of the slats, can be adjusted to suit circumstances.

One embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Fig.1 is a perspective view of a ventilating hatch having a plurality of covers;

Fig. 2 is a perspective view showing the construction of a cover illustrated in Fig. 1.

The ventilating hatch shown in Fig. 1 comprises a frame 1 mountable on the roof or in the façade of a building. The hatch opening is divided into compartments 5 by a plurality of U-shaped, intermediate members 2,3,4 having outwardly oriented legs, each compartment being surrounded by a separate circumferential frame 6, which frames 6 are spaced apart about the width of the intermediate members.

Heat-treated metal or a synthetic plastics material can be used as a material for these frames, or possibly a light metal.

As shown in Fig. 1, each compartment 5 is closable by a cover 7 to be manufactured in a simple manner, one of which is indicated in opened position. Each cover comprises a frame including two parallel, longitudinal sections 8, two parallel transverse sections 9 and a top panel 10 clampable between the longitudinal sections 8 in a manner to be described with reference to Fig. 2.

Each cover is provided with pivots 11,12 whose pins are attached to the transverse sections 9.

Owing to the presence of the U-shaped intermediate members 3, actually being channels, these can discharge rain water in a direction transversely to the ventilating hatch. When the covers are opened, the water lying thereon will also be discharged through all channels.

By providing the longitudinal and transverse sections with downwardly directed edges 13 (see Fig. 2), there can be obtained a draught-free, water-tight and snow-proof seal, which becomes still more effective when the top edge 14 of the cover frames 6 includes a resilient packing 15, which may alternatively also be mounted on the longitudinal and transverse sections 8 and 9. (In Fig. 2 packing 15 is indicated with a dotted line).

Fig. 2 shows in perspective view how the top panel 10 can be clamped in the longitudinal sections 8. The two longitudinal sections, preferably extruded aluminum sections, each consist of a U-shaped portion 16, with strips of flexible material 19,20 being attached removably to the inside of the legs 17,18, either direct or e.g. in suitable rebates 21,22, for sealingly clamping the top panel 10 insertable between the two legs.

In order to collect any rain water present on the outer surface of the top panel or slat 10, when the ventilating hatch is opened after a rain shower, an extension 27 is moulded integrally with the leg 18 and also a sealing edge 28 projecting beyond the U-shaped portion 16 is moulded integrally with the strip of flexible material 20, which sealing edge is designed so as to clampingly rest against the top panel 10 installed, as well as to sealingly abut against the end of the leg 18 in order to form a trough 29 together with the extension 27. Said trough 29 can be enlarged by bending the extension

27 outwardly, as clearly shows in Fig. 2.

The longitudinal sections 8 also include a ridge 24 installed on the bottom 23 of the U-shaped portion 16, said ridge serving as a stop for the top panel 10 to be clamped. Due to the presence of container 21, there is produced between said container and said bottom 23 a discharge trough 25 serving for discharging any condensate.

Top face 10 is made of a translucent material, e.g. a synthetic plastics material, consisting in the embodiment shown of a wafer construction having partitions for forming elongated hollow boxes 26. Such constructions are commercially available.

If a cover 7 of a given size is required, the wafer construction or slat 10 is cut to the desired size and is subsequently clamped between the two longitudinal sections 8. In the case of the wafer construction shown, the slat 10 is preferably clamped in such a manner that the axial direction of the elongated boxes 25 points in the direction of the bottom 23 of the longitudinal sections, for discharging any condensate present in the boxes through the discharge trough 25. The ridge 24 serves as a stop to ensure there is a connecting channel between discharge trough 25 and the interior of boxes 26.

It is clear that, in addition to the slat 10 shown, slats of a different type of translucent material, e.g. glass or certain types of synthetic plastics materials, may be employed and that the constructive design of the slat may differ from that shown, e.g.just a solid panel.

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* CLAIMS *

1. A ventilating hatch comprising a frame to be mounted on the roof or in the façade of a building, the opening of said frame being divided into a plurality of compartments by substantially U-shaped cross members having outwardly oriented legs, each compartment being closable by a separate hinged cover, and the top edge of each compartment including a resilient, elastic packing coacting with an associated cover, the covers being positioned on the same side of the compartments, characterized in that the top panel 10 of each of the covers 7 is a separate slat and that at least the adjoining edge of the covers extending parallel to a cross member 2,3,4 is a profiled longitudinal section 8 including a U-shaped portion 16, and that to the insides of the legs 17,18 there are attached strips of flexible material 19,21; 20,22 for sealingly clamping the slat 10 to be arranged between the two legs 17,18 of a U-shaped portion 16, and that there is integrally moulded with the one leg 18 situated on the outside of the frame 1, a portion 27 extended relatively to its top face for forming a trough 29 together with the strip of flexible material 20 and with the slat 10 installed.

2. A ventilating hatch according to claim 1, characterized in that at least the strip of flexible material 20 attached to the side of the one leg 18 has a sealing edge 28 extending beyond the U-shaped portion 16, said edge resting clampingly against the slat 10 installed and against the one leg 18, and that said sealing edge 28 together with the extended portion forms the trough 29.

3. A ventilating hatch according to claim 1 and 2, characterized in that each longitudinal section 8 within its U-shaped portion 16 comprises a ridge 24 arranged on the bottom 23 thereof, said ridge serving as a stop for the slat 10 to be clamped, and a discharge trough 25 for discharging any condensate, and in that one of the walls of said discharge trough is formed by the bottom 23, with the other wall thereof being formed by the strip of flexible material 19,21 of the U-shaped portion 16 projecting from one of the legs.

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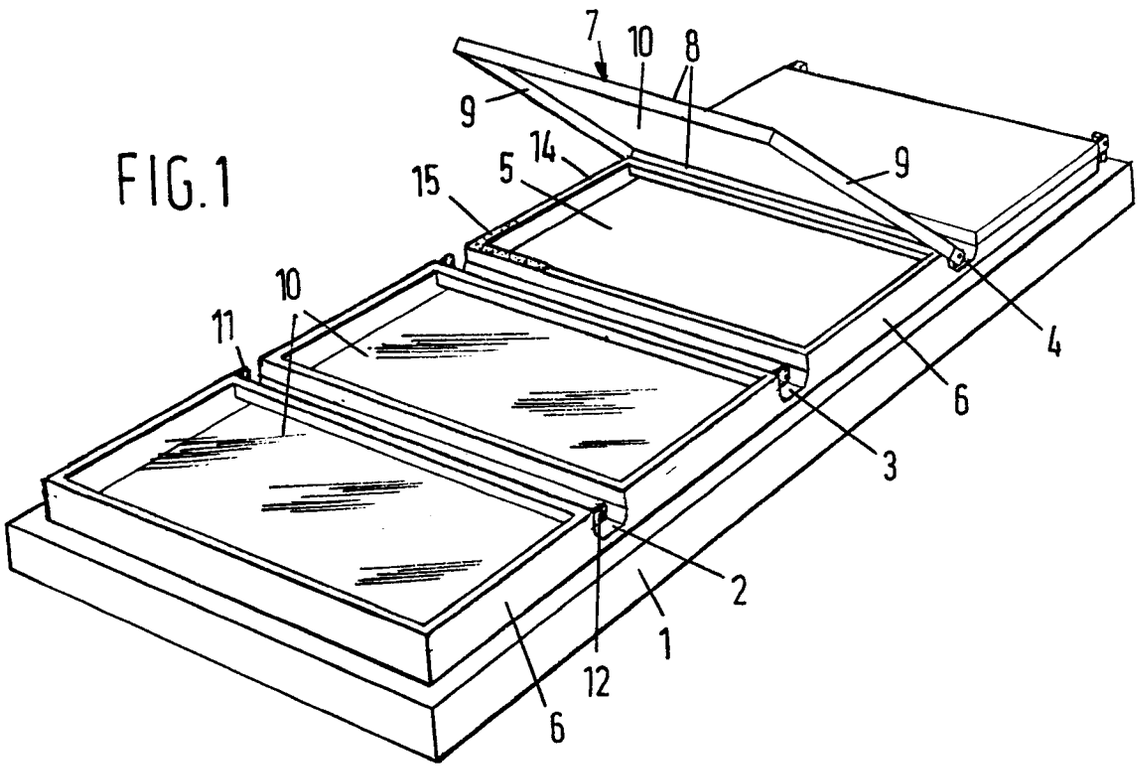
FIG.1



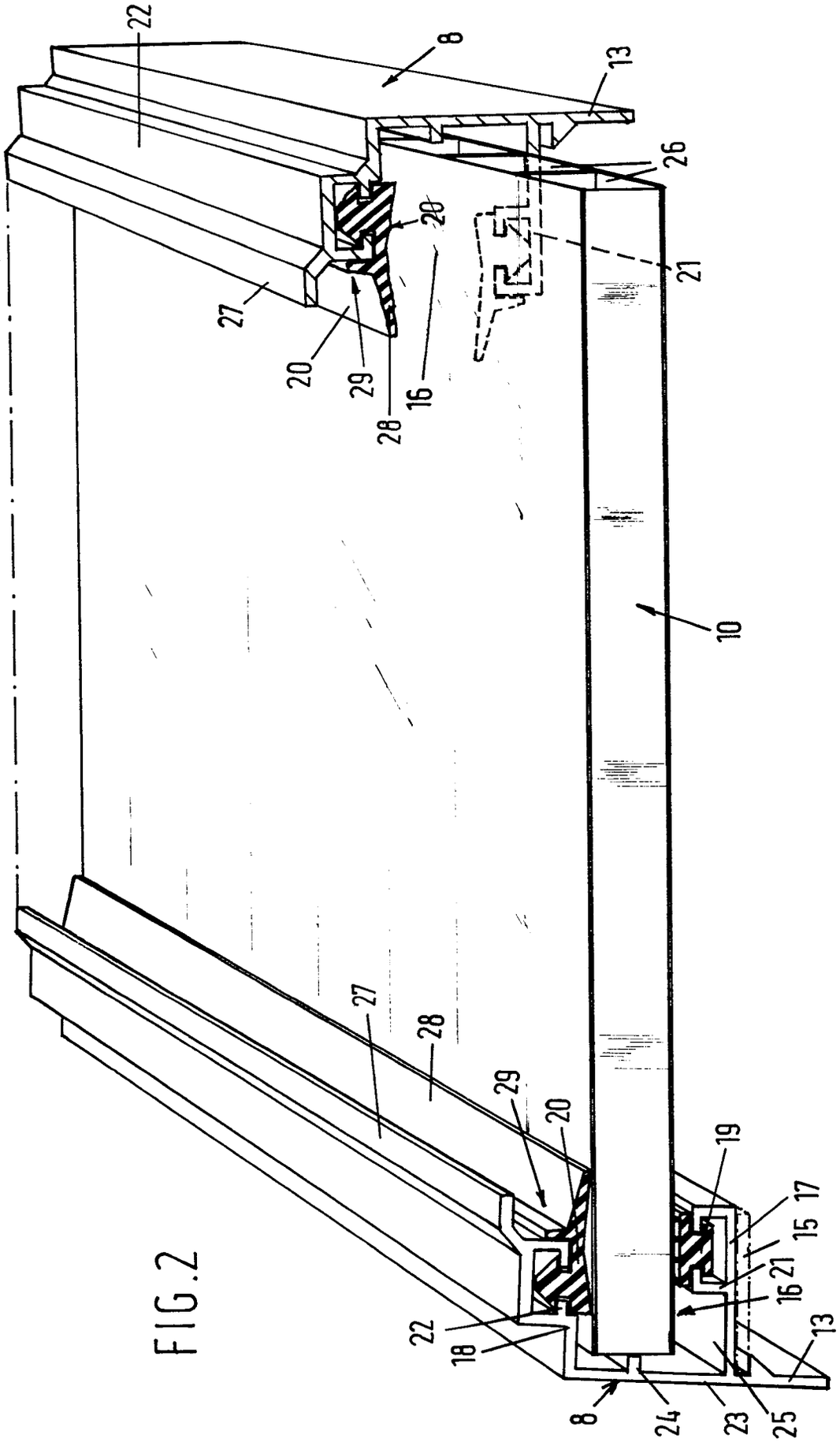

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FIG.2