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(71) Applicant: **VIMAX A/S**

**N-2380 Brumunddal(NO)**

(72) Inventor: **Mykløy, Svein**

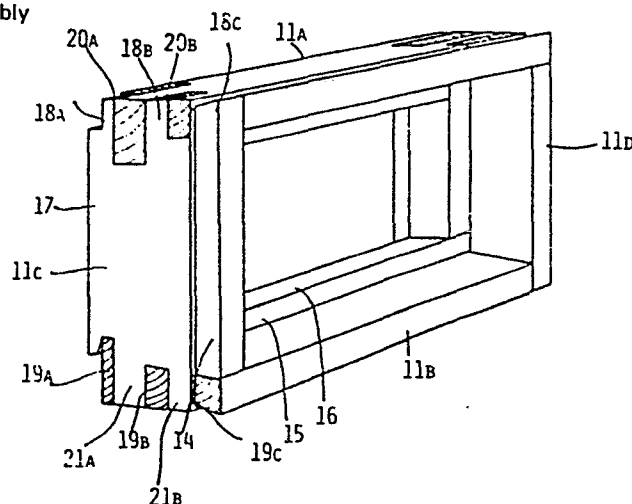
**N-2380 Brumunddal(NO)**

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

(54) **Window sash or frame.**

(57) The side jambs (11C, 11D), the sill (11B) and the frame head (11A) of a window sash or frame all have substantially the same profile. Each element is provided with one or more tenons (18A, 18B, 18C) at one end which correspond in shape and position to an equal number of mortices (19A, 19B, 19C) at the other end so that the elements can readily be joined to one another at the corners of the sash or frame. This should simplify and decrease the cost of production and assembly of window frames and sashes.

**Fig. 2**



WINDOW SASH OR FRAME

The invention relates to a window sash or frame construction wherein side jamb, sill and frame head elements are joined at the corners by mortice and tenon joints.

- 5        In known wooden sash and frame constructions for windows, materials with different profiles have always been used for the sill, side jambs and frame head. This has caused high costs, has demanded centralization of production and has led

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to disadvantages in the event of requirement for non-standard sizes. Such sizes have required relative long delivery time still at high cost. The conventional design of wood sashes and wood frames have, in general, made the production of the components and the installation of the products both time consuming and costly. Even large manufacturers have problems in keeping a component stock for all possible variations, a factor which has complicated the production process resulting in long delivery times.

The main purpose of the invention is to provide a sash or frame construction for windows resulting in simplified production and further making it possible to keep in stock all possible variations of components and desirable elements. A special purpose is to provide a construction which is so simple that the assembling and mounting can be decentralized to local manufacturers.

Generally there is an object of providing a sash or frame construction giving decreased production costs.

According to the invention this can be achieved by designing the sash or frame such that the side jambs, the sill and the frame head have substantially the same profile and such that each element is  
5 provided with one or more tenons at one end corresponding in shape and position to an equal number of mortices at the other end.

The invention also includes elements for the manufacturing such window sashes and frames.

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

Fig. 1 is a front view of an embodiment of a window with both sash and frame designed in accordance with the invention;  
15

Fig. 2 is a perspective view of an alternative window frame in accordance with the invention, without sash and pane;

Fig. 3 is a vertical section through a top-  
20 hinged window with sash and frame according to the

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invention; and

Fig. 4 is a horizontal section through a side-hinged window with sash and frame according to the invention.

5        Fig. 1 shows a rectangular window comprising a frame 11 and a sash 12 equipped with a pane 13. The sash 12 is hinged to the frame 11 with appropriate hinge mountings (not shown).

10        The frame consists of a frame head 11A, a sill 11B, and side jambs 11C, 11D. Corresponding to this the sash comprises a frame head 12A, a sill 12B and two side jambs 12C and 12D. The pane 13 is preferably an insulating lamination of glass and can be mounted in an appropriate known way by means of lists.

15        The frame 11 is manufactured with identical material in the sill, the side jamb and the frame head 11A to 11D, and the sash 12 is correspondingly manufactured with identical material in the sills, the side jambs and the frame head 12A to 12D.

20        Examples of suitable profiles are shown in Figs. 2 to 4, and will be described in more detail in

the following.

The frame 11 and the sash 12 are joined at the corners by respective mortice and tenon joints, the mortices and tenons being antisymmetric at the two ends of each element in a way which will be described below. By this procedure the two parts of the window can be linked together by identical means.

Fig. 2 shows a rectangular window frame with greater width than height. The frame in Fig. 2 is formed by a frame head 11A, a sill 11B and two side jambs 11C and 11D. The frame head 11A and the sill 11B are of equal length as are the side jambs 11C and 11D. Except from the difference in length, the four elements are identical in profile and general design. The form of these elements as regards the hinge connection will be described with reference to one of the side jambs 11C.

In the example the frame is shown with its outer face in front. Along the outer face the profile is provided with a projection 14 which makes an inwardly positioned ledge 15 towards the central main part 16 of the profile material. On the ledge

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15 a window pane (not shown) can be mounted directly  
and fixed permanently with lists. Another possibility  
is the placement of a sash (not shown) that can be  
designed in an arbitrary manner and be fixed per-  
5 manently or with hinges as required.

On the inner side of the sash the profile  
has a similar projection 17.

The projections 14 and 17 both serve as bases  
for lists and other elements required for the  
10 mounting of the window in a manner known per se,  
for instance by protruding on the frame head 11A  
and the sill 11B.

The side jambs 11C has, at the upper part of  
Fig. 2, three tenons 18A, 18B and 18C which have  
15 corresponding shapes and positions as regards  
three mortices 19A, 19B and 19C at the other end  
of the side jamb. Between the tenons 18A and 18C  
two mortices 20A and 20B are provided, these mortices  
being arranged opposite to two tenons 21A and 21B  
20 which are placed between the mortices 19A to 19C  
at the other end of the side jamb 11C.

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The mortices 19A to C and 20A to B are prepared by appropriate known equipment.

The dimensions of the mortices and the tenons in the horizontal direction of the side jambs is adapted to the form of the profile of the frame head 11A and the sill 11B, which are identical with the profile of the side jambs 11C, 11D. In this way the frame can, with the corresponding, anti-symmetrical design of the other elements 11A, 11B and 11D, be linked together at the corners.

Fig. 3 is a vertical section through a window with a frame 22 and a sash 23. The sash 23 is connected to the frame 22 by a hinge 24. In the illustrated example that is a top hinge with a frame connecting part 24A and a frame sash connecting part 24B both having the form of a rail and being shaped in a manner known per se. The hinge 24 allows the sash 23 to turn from the shown position to the left in the Figure, pivoting on an axis line arranged perpendicularly to the plane of the drawing at the connection between the two hinge parts 24A, 24B.



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The frame 22 is made from four frame elements in the manner described above. On the side provided to face the room the frame profile is formed with a groove 25 for a list (not shown). In the side 26 facing the sash 23, a groove 27 suitable for a weatherstrip (not shown) is formed.

The sash 23 is also made up of frame elements as described above.

A triple insulating pane 28 is, in a manner known per se installed in the sash 23 using weatherstrips both inside and outside, 29A and 29B, respectively, and a set of outside windowlists 30 are mounted with screws 31.

The window in Fig. 3 is provided with the necessary means (not shown) to keep the sash 23 in a closed position or in a ventilation position.

In Fig. 4 a horizontal section through a window similar to the window in Fig. 3 is shown, but here a sash 33 is connected to a frame 32 by means of side hinges 34. The side hinges 34 can be of a suitable known design.

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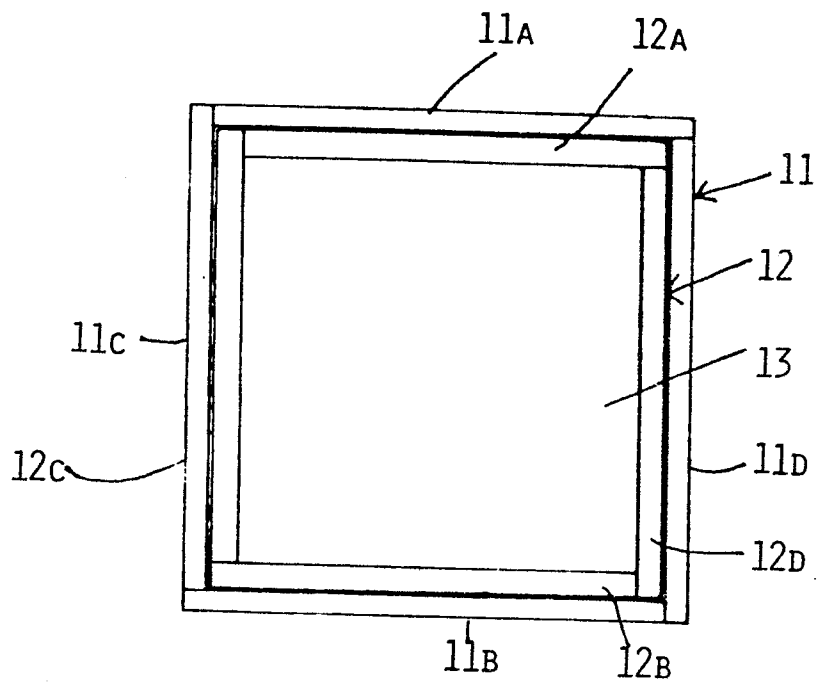
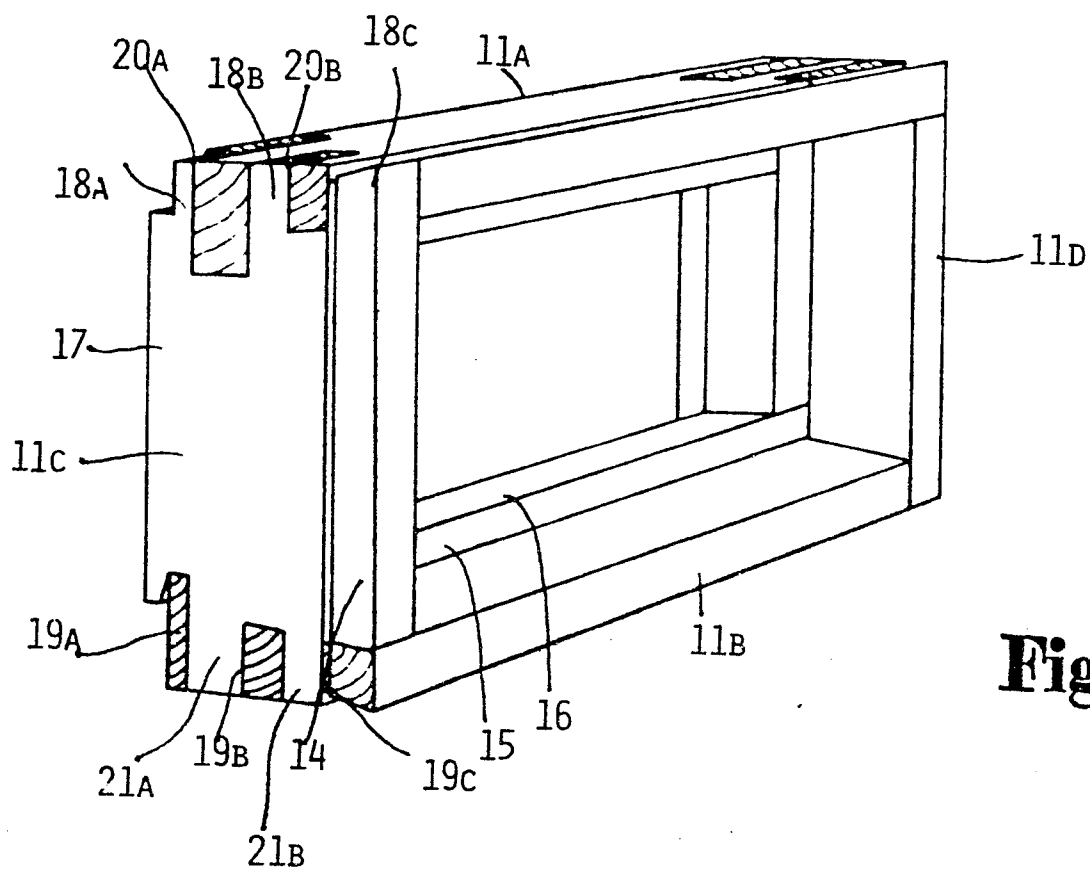
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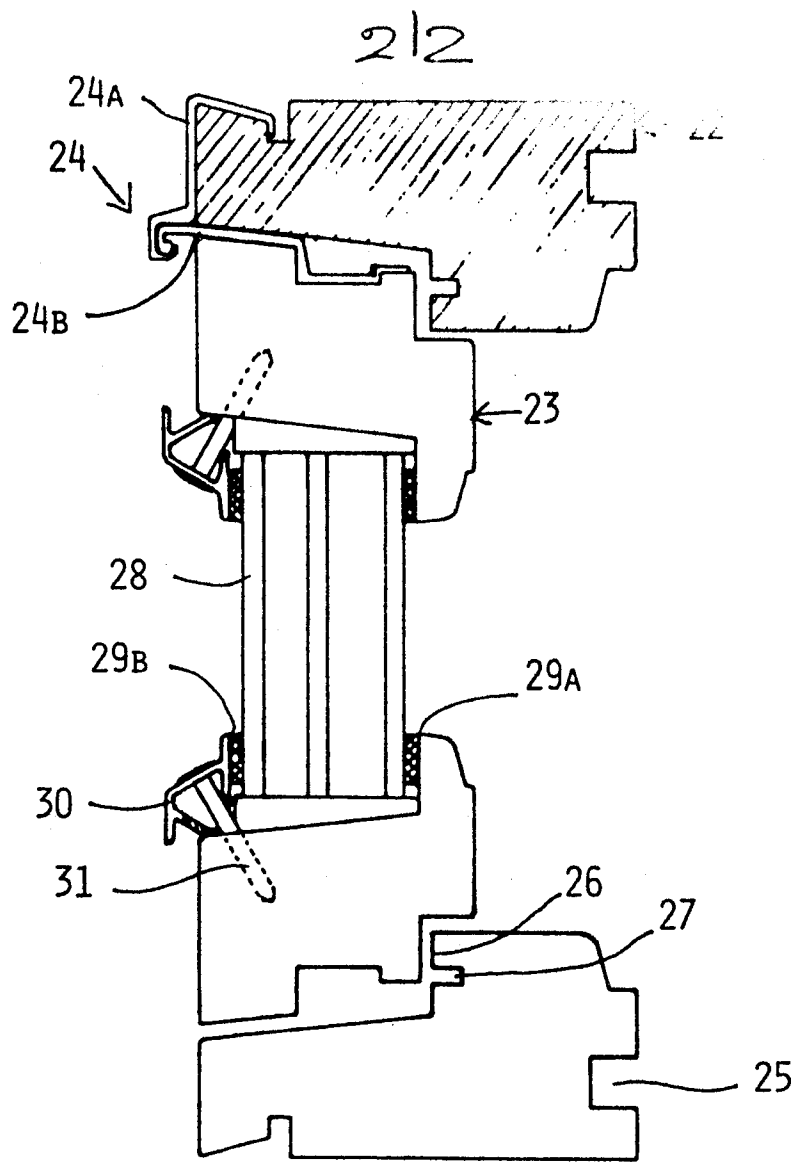
1. A window sash or frame of timber comprising side jamb, sill and frame head elements joined at the corners by mortice and tenon joints, characterised in that the side jambs (11C, 11D, 12C 12D)  
5 the sill (11B, 12B) and the frame head (11A, 12A) have substantially the same profile and that each element is provided with one or more tenons (18A, 18B, 18C) at one end corresponding in shape and position to an equal number of mortices (19A, 19B,  
10 19C) at the other end.
2. A window sash or frame according to claim 1 wherein each element (11A to 11D, 12A to 12D) is provided with three tenons (18A, 18B, 18C) at the one end and three mortices (19A, 19B, 19C) at the  
15 other end.
3. A building element for a window sash or frame according to claim 1 having a profile including a ledge or recess (15) for accommodating a window pane (13) or a sash (12) with a window pane res-  
20 pectively, characterised in that each element (11A to 11D, 12A to 12D) is provided with one or

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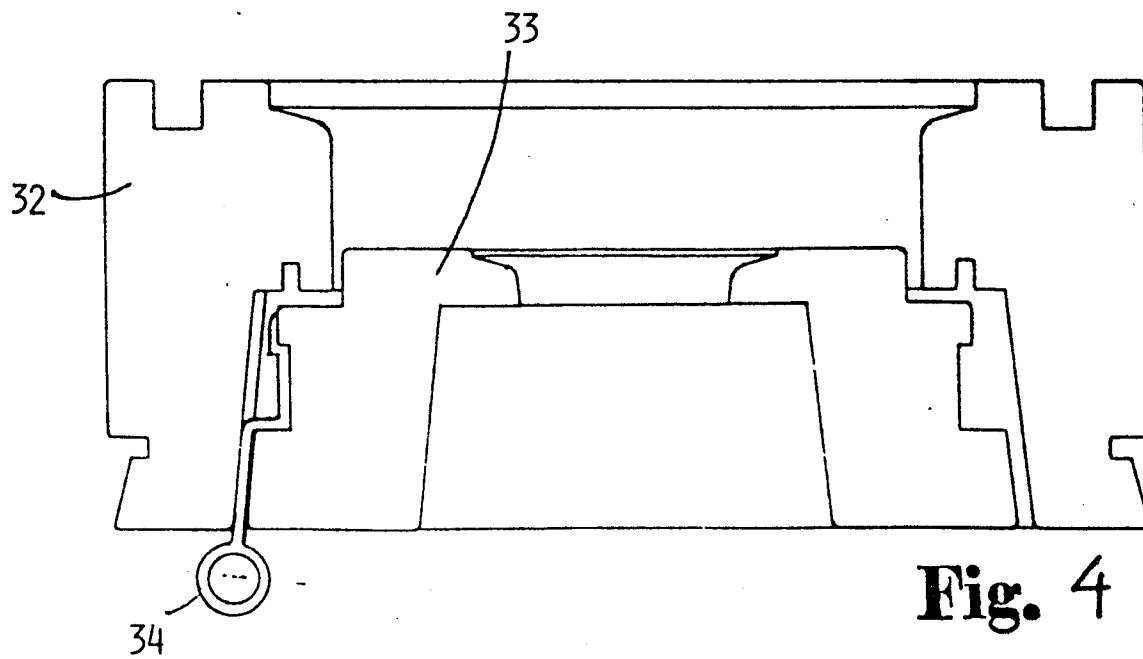
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or more tenons (18A, 18B, 18C) and an equal number of mortices (19A, 19B, 19C) of corresponding shape and position at the other end so as to be capable of being joined at right angles to identical elements.

**Fig. 1****Fig. 2**



**Fig. 3**



**Fig. 4**