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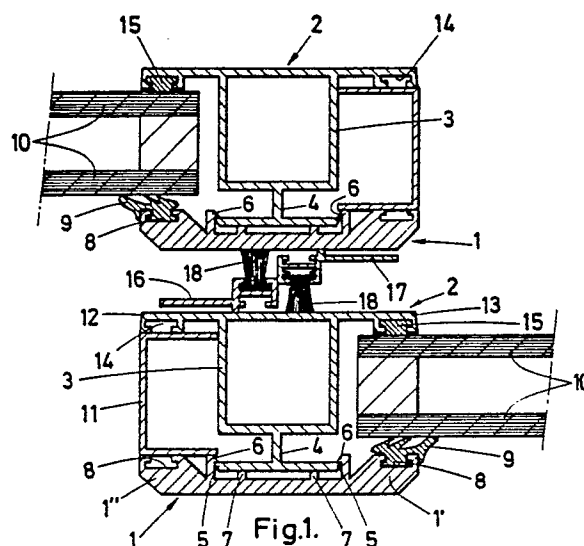
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54 **Profile structure to be used in assembling fixed or sliding windows made of aluminium profiles and appropriate glazing.**

57 The invention concerns a profile structure to be used in assembling fixed or sliding windows made of aluminium profiles, characterized in that it consists, on one hand, of a lath that serves simultaneously as an element provided for opposing condensation at said window-frames and as a glazing bead for these windows and that it comprises for this purpose, two continuous projections (6) which are hook-shaped in the transverse section and that are pointing, when in use, toward the aluminium profile (2) concerned and that are "snapped" thereon and, on the other hand, of an aluminium profile comprising next to a hollow chamber (3) thereof and at a distance from this chamber, two longitudinal edges (5, 31) for the purpose of making the "snapping-on" of said lath (1) possible.



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Profile structure to be used in assembling fixed or sliding windows made of aluminium profiles and appropriate glazing

The invention relates to a profile structure to be used in assembling fixed or sliding windows as well as revolving doors or windows made of aluminium profiles and appropriate glazing.

The object of the invention is to devise a new and original profile structure wherein the window profiles made of aluminium with no break in the thermal bridge and therefore with condensed water developing along the profile side pointing toward the interior when the outside temperature drops significantly and when there is an ambient temperature on the inside. This condensed water phenomenon will become more pronounced if the air on the inside has a high content of moisture.

The drawbacks of such profiles are well known and have led to the development of profiles with a thermal break. Applying a thermal break requires additional processing not to be underestimated and that significantly affects the cost-price of such profiles, even when such processing are carried out according to sophisticated mechanized techniques.

The object of the invention is now to devise a profile structure that provides an excellent solution for the existing problem while it improves, furthermore, the look of the aluminium profile on the side of the interior.

A further object of the invention is to embody the component parts that are co-operating to produce the profile structure according to the invention in such a manner as to solve the existing problem in a wide variety of situations.

To make this feasible according to the invention, the profile structure according to the invention consists, on one hand, of a lath which serves simultaneously as an element for opposing the condensed water on the windows concerned and as a glazing bead for these windows, and therefore comprises two continuous projections that are hook-shaped in the cross section and that, when in use, are pointing toward the aluminium profile involved and are "snapped" thereon and, on the other hand, of an aluminium profile which comprises next to a hollow chamber thereof and at a distance from this chamber, two longitudinal edges designed so as to make the "snapping-on" of said lath possible.

Still according to the invention, said lath extends, when in use, so far along both sides of said T-shaped wing that on one hand, it reaches with one edge the level of the aforesaid glazing of the window in order to serve as a glazing bead and, on the other hand, reaches with the other edge the level of the profile of a neighbouring window or of a fixed profile with which it can be brought into close

contact via sealing means such as small brushes.

One remarkable feature of the invention consists in that said lath comprises longitudinal edges which extend partly at an angle of 45° in relation to the longitudinal plane of symmetry of the lath, in such a manner that the aforesaid laths, when they are snapped onto two profiles of two windows that connect one with the other at an angle of 90° , connect one with the other with their longitudinal edges.

Further details and advantages of the invention will result from the description below of a profile structure according to the invention. This description is provided as an example only and does not restrict the invention. The reference numbers are referring to the figures appended hereto.

Figure 1 shows the sectional view of two window frames which co-operate one underneath the other and which consist of aluminium profiles according to the invention, onto each of which is snapped a lath according to the invention.

Figure 2 shows the sectional view of two window frames movable on wheels next one beside the other and parallel one to the other.

Figure 3 shows partly two profiles that are forming an angle of 90° and that are provided with laths according to the invention; although the figures and the pertaining description are referring essentially to sliding frames, it should be pointed out that the invention is also applicable to revolving doors and windows.

The profile structures as presented by the figures have resulted as described below, from the combination of a lath used for opposing condensed water with a profile onto which this lath can be snapped.

The words "opposing condensed water" do not mean that the formation of condensed water is being prevented but rather that the condensed water will not have bothering effects any longer. The structural design of the aforesaid lath 1 can be seen from figure 1 that also clearly shows the structural design of the aluminium profile co-operating with this lath 1.

Profile 2 that, depending on requirements, may display a different cross section, consists of a hollow chamber 3 with, at one side, a T-shaped wing 4 with two longitudinal edges 5 onto which the lath 1 can be "snapped" for the purpose of opposing condensed water.

In order to make the "snapping-on" of this lath 1 feasible, it presents, when in use, two continuous hook-shaped projections 6 at the side pointing to

the T-profile 4 (actually toward the interior).

These hook-shaped projections 6 and the aforesaid longitudinal edges 5 of the lath 1 are scoured in such a manner that subsequent to the "snapping-on" a solid connection will exist between the lath 1 and the T-shaped wing 4 of the profile 2.

In order to strengthen the snap-on effect, there are preferably two continuous ribs 7 provided for along the so-called inside of the lath, which ribs, when in use, press against the T-shaped wing 4. The lath 1 that projects so far from the T-shaped wing 4 serves at one end as a glazing bead. This end 1' comprises at the so-called inside of the lath a continuous groove 8 designed to take a resilient sealing strip 9 that presses against the glazing 10.

The lath 1 thus serves here as a glazing bead which, theoretically, would be possible at the other end 1", too. In practice, however, use is made of a different profile which is able to support the glazing along both sides of the profile 2.

According to figure 1, the lath 1 extends at the other end to the level of a U-shaped open profile 11 that is connected with the wing 12 that extends at one side of the hollow chamber 3. A similar wing 13 extends along the other side of this hollow chamber. Both wings 12 and 13 display continuous grooves 14 in a conventional manner. Groove 14 opposite the glazing 10 houses a sealing strip 15.

If two frames are co-operating one underneath the other as shown in figure 1, the surface areas of a lath 1 and of a profile 2 that face one another will be provided with a profile 16, respectively 17 that are both fitted with sealing elements such as small brushes 18. The profile 17 serves as a stop while the sealing is obtained through the small brushes 18.

In figure 2 we can see two frames 19 and 20 movable on wheels one next to the other and the profiles whereof are fitted along the inside i.e. the side pointing toward the interior, with condensation-proof laths 1 of the type as described above. As both window frames 19 and 20 are moved at their bottom side on wheels along a profile 21 designed for this purpose and serving as a rail, the wings 12 are provided with small brushes that establish contact with the rising sides 23, when in use, of the bulge 24 which serves as a rail for the frames that move on wheels. In order to perform this function, each bulge 24 comprises a continuous triangular thickening 25 for the purpose of guiding the small wheels 26 with which the profiles 2 at the bottom of the frames 19 and 20 have been fitted.

The small wheels 26 are adjusted in the plane of symmetry between two glazing elements so that the weight of the frames will be taken exactly by the wheels 26 and the triangular thickening of the bulge 24 that serves as a rail.

The profile 21 comprises two contiguous con-

tinuous hollow chambers 27 and 28 that are separated by a partition 29. At one side of the profile 21 i.e. at the side 30, a condensation-proof lath 1 is snapped on. This is made possible by the existence of longitudinal edges 31 at the side 30. These edges are co-operating with the hook-shaped projections 6 of the laths 1.

Figure 3 shows schematically how the laths 1 are fitting, in view of opposing condensed water, onto two profiles 32 and 33 mounted orthogonally one with respect to the other and fitting one the other and to a vertical profile 34.

The longitudinal edges 35 of the laths 1 are, as a matter of fact, chamfered at an angle of 45° on one hand, and they end, on the other, with a section 36 extending at right angles on the longitudinal plane of the lath. A similar profile of the ends of the laths 1 provides a perfect fit as shown clearly by figure 3.

It is also possible to assemble two laths 1 in line if a profile of the type that matches the profile 21 is made in double. This double embodiment refers to a profile made symmetrically with respect to the plane of symmetry to which the straight line A-B (figure 2) belongs. Such a profile is used as a vertical post and serves to take double glazing along both sides of the post.

The description above of the profile structures according to the invention shows that both the cross section of the aluminium profiles and that of the lath co-operates therewith for the purpose of opposing condensed water, can solve all the problems in connection with opposing condensed water.

To note, furthermore, that in consequence of the symmetric form of the profiles and of the glazing beads, the ends of the profiles and of the glazing beads, cut at an angle of 45°, provide two mitre-joint possibilities in the event of a mitre joint connection.

However, the invention is not limited to the form of embodiment described here above and numerous changes may be made therein without departing from the scope of the invention.

Claims

1. Profile structure to be used in assembling fixed or sliding window frames as well as revolving doors or windows made of aluminium profiles and appropriate glazing, characterized in that it consists, on one hand, of a lath that serves at the same time as an element for opposing condensed water on said windows and as a glazing bead for these windows and, for that purpose, is provided with two continuous projections (6) which are hook-shaped in the cross section and which, when in use, are pointing toward the aluminium profile (2)

concerned and are "snapped" thereon and, on the other hand, of an aluminium profile which comprises next to a hollow chamber (3) and at a distance from this chamber two longitudinal edges (5, 31) provided for "snapping-on" of said lath (1).

2. Profile structure according to claim 1, characterized in that said longitudinal edges (5) belong to a T-shaped wing (4) which projects from said hollow chamber (3) and is a part thereof.

3. Profile structure according to claim 1, characterized in that said longitudinal edges (31) belong to a rectangular bulge (30) of a hollow aluminium profile (21) that serves as a rail.

4. Profile structure according to one of the claims 1 and 2, characterized in that said lath (1) extends, when in use, on both sides of said T-shaped wing (4) so far that on one hand, it reaches with one edge (1') the level of said glazing (10) of the window in order to serve as a glazing bead and, on the other hand, it reaches with the other edge (1'') the level of a neighbouring window or of a fixed profile with which it can be brought into close contact, possibly through the intermediate of sealing means such as small brushes.

5. Profile structure according to one of the claim 1 to 4, characterized in that said lath (1) comprises longitudinal edges which extend for one section (35) at an angle of 45° with respect to the longitudinal plane of symmetry of the lath (1) in such a manner that said laths (1), when they are "snapped" onto two profiles of two windows that connect one with the other at an angle of 90°, connect one against the other with their longitudinal edges.

6. Profile structure according to claim 5, characterized in that said lath (1) comprises longitudinal edges which comprise, past the section (35) extending at an angle of 45°, one section (36) extending at right angles on this lath.

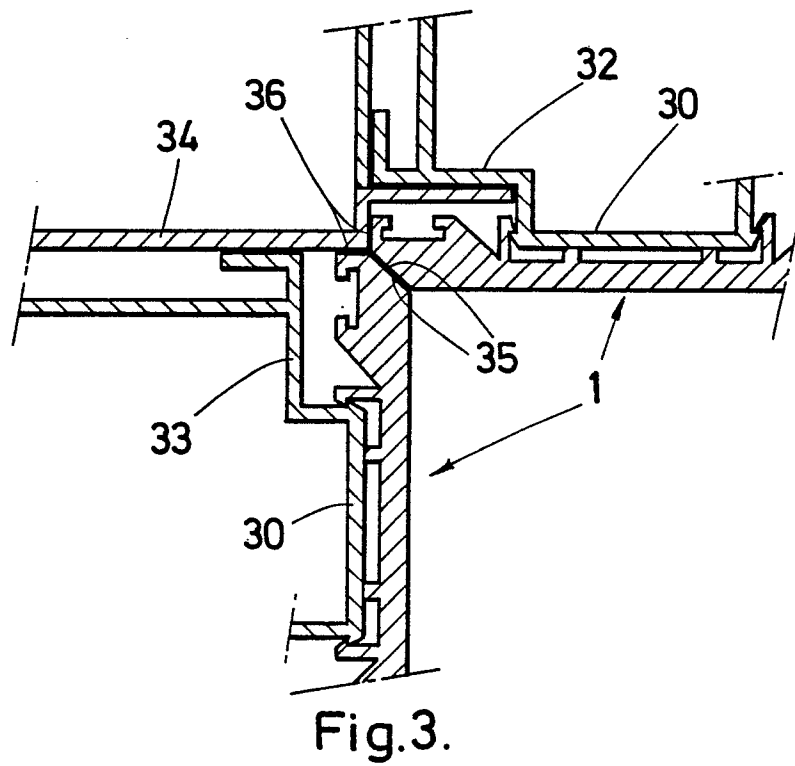
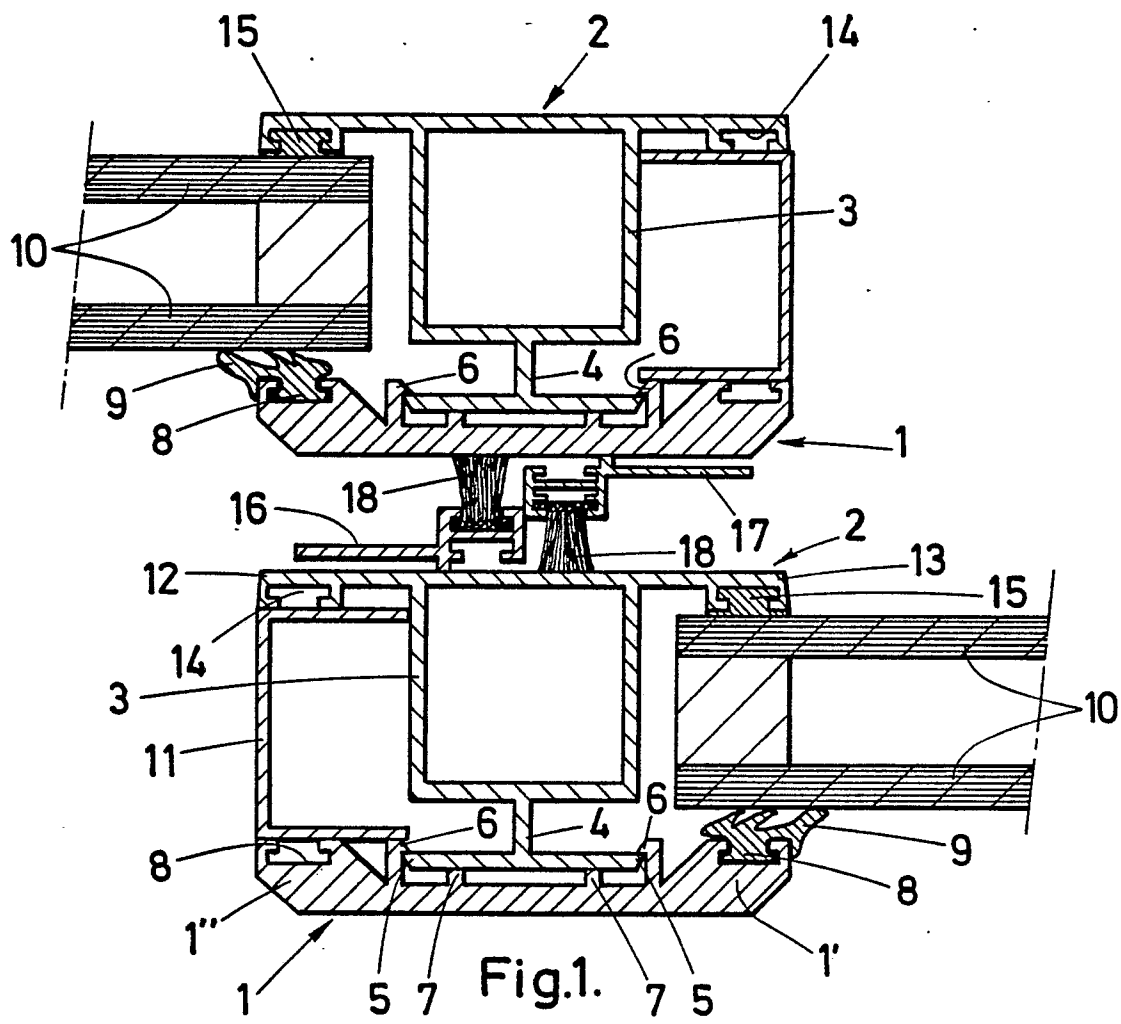
7. Profile structure according to one of the claims 1 to 6, characterized in that said lath (1) comprises at least one, but preferably two continuous ribs 7 between two of said continuous hook-shaped projections (6), which ribs are held pressed against the aluminium profile involved during the "snapping-on" operation.

8. Profile structure according to one of the claims 1 to 7, characterized in that said lath (1) comprises continuous grooves (8) provided for taking either a flexible strip (9) along that side of the lath (1) where the latter serves as a glazing bead, or sealing means such as small brushes through which the aforesaid lath (1) comes into close contact with a neighbouring profile.

9. Profile structure according to one of the claims 1 to 8, characterized in that said aluminium profile (2) comprises at that side of said hollow chamber (3) that is turned away from said T-

shaped wing, on both sides thereof, two wings (12, 13) which as well hold the glazing (10) clamped fast by using a sealing strip (15) as they serve, for the fixation of an aluminium profile (11) against one side of which said lath (1) can be pressed.

10. Profile structure according to one of the claim 1 and 3, characterized in that said aluminium profile (21) comprises at least one continuous hollow chamber (27), but preferably two continuous hollow chambers (27) and (28) which comprise each a bulge (24) with a triangular thickening (25) that serves as rail for the purpose of moving a window on wheels.



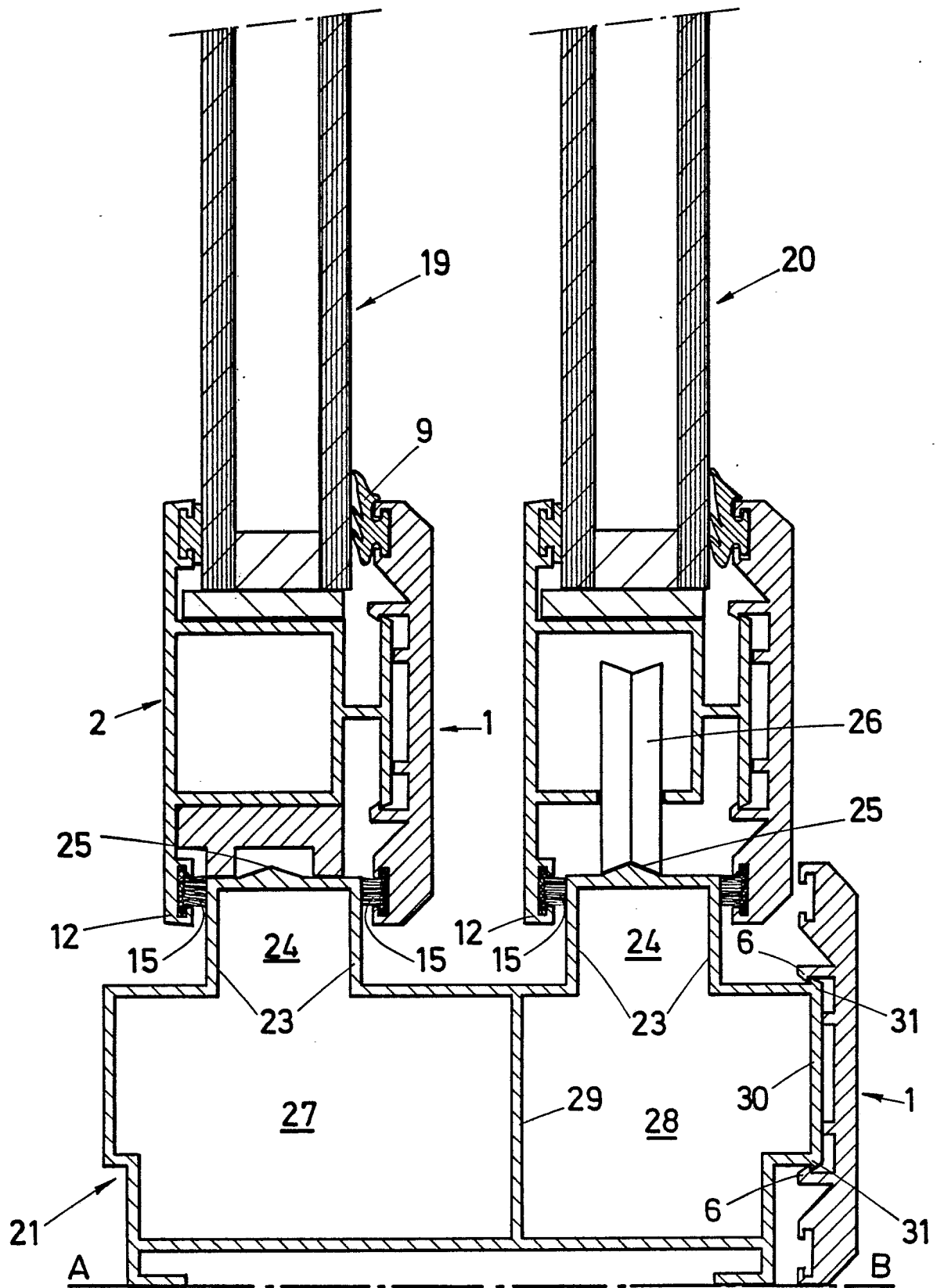


Fig. 2.



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Y	GB-A-2 107 774 (DURAFLEX HOUSECRAFTS) * Page 1, line 111 - page 2, line 9; figures 1-3 *	1,2,4,8	E 06 B 3/26 E 06 B 3/46
Y	GB-A-2 098 647 (S. BEAUMONT) * Page 1, lines 119-130; page 2, lines 16-64; figures 1,2 *	1,2,4,8	
A	---	5	
A	DE-A-2 927 846 (K. ESSER) * Page 3, line 9 - page 3, line 11; figure *	1,2,8	
A	DE-A-2 129 779 (M. ENGELHARDT) * Page 2, paragraph 3; page 3, paragraph 2; page 9, paragraph 2 - page 10, paragraph 1; figures 1,3 *	1	
A	GB-A-2 077 333 (CONSORT ALUMINIUM LTD) * Page 1, lines 4-23,97-104; figures 1,2 *	1,4,7,8	
A	US-A-3 348 349 (W. PETERSEN) * Column 2, line 58 - column 3, line 75; column 4, line 72 - column 5, line 19; column 6, lines 30-69; figures 2,3,7 *	1,2,7	TECHNICAL FIELDS SEARCHED (Int. Cl. 4) E 06 B
A	DE-A-2 340 467 (M. THINET et al.) * Page 6, paragraph 4 - page 7, paragraph 1; figure 2 *	1,7	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 08-03-1989	Examiner VERVEER D.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			