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⑪ Publication number : **0 449 430 A1**

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EUROPEAN PATENT APPLICATION

⑳ Application number : **91301708.3**

⑤① Int. Cl.⁵ : **E04C 3/02, E04C 1/39,
E04B 2/12**

㉔ Date of filing : **01.03.91**

③① Priority : **01.03.90 GB 9004605**

④③ Date of publication of application :
02.10.91 Bulletin 91/40

⑧④ Designated Contracting States :
CH DE FR GB IT LI NL SE

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⑤④ Architectural arch.

⑤⑦ A curved brickwork arch construction comprising a series of arch bricks 17 and a series of support bricks 21-25. The arch bricks 17 are tapered so that when laid side by side they define an arch form. The support bricks 21-25 have flat bases and curved upper surfaces so that when laid end to end they progressively define a segment whose curve corresponds to the under surface curve of the arch form. The bottom surface of each arch brick has a channel 18 while the upper surface of each support brick has a ridge 26 which fits into the channel 18.

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ARCHITECTURAL ARCH

The present invention relates to architectural arches, in particular curved brickwork arches. The term "brick" in this context is intended to embrace any form of constructional unit used in building, regardless of shape or material composition.

Curved arches are frequently incorporated in building structures over architectural features such as windows or doors. In many cases, the architectural feature itself may have a straight top edge, in which case there will be a segment-shaped area between the bottom of the arch and the top of the feature. Traditionally, this space was filled with parts of brick which were cut to size on site, a very skilled and time-consuming operation.

More recently, infill panels have been adopted. These are used in conjunction with standard metal lintols which lie above the feature and span the cavity in the case of a cavity wall. However, these panels, which are generally made of a plastics material, tend to be rather unsatisfactory from an aesthetic point of view and furthermore, the join between the top of the panel and the undersurface of the arch is frequently less than waterproof.

It is an object of the present invention to provide a curved brickwork arch construction which is aesthetically pleasing, substantially watertight and relatively easy to construct.

According to the invention, a curved brickwork arch construction comprises a series of arch bricks laid side by side defining a curved arch form and a series of support bricks located beneath the arch bricks, the arch bricks each having a bottom surface which has a cut away portion extending from one side of the arch brick to the other, the support bricks each having an upper surface with a protrusion extending from one side of the support brick to the other, the cut away portions and the protrusions being so arranged that they interengage, the upper surfaces of the support bricks also being progressively inclined to match the curved undersurface of the arch form defined by the series of arch bricks.

Thus, the cut away portions define a continuous cut away along the undersurface of the arch form itself while the protrusions form a continuous raised land along the top of the support bricks. The interengagement then provides an upward step which effectively interlocks the arch bricks and the support bricks and helps to prevent the ingress of moisture.

The arch bricks may be tapered to produce the curved arch form. The upper surface of the support bricks may be curved to follow more closely the curved undersurface of the arch form. The bottom surfaces of the support bricks are preferably flat in order to sit on a standard metal lintol over the feature.

The cut away portion may be in the form of a

channel and the protrusion may be in the form of a ridge. The channel and ridge sides may be tapered for ease of manufacture and for ease of construction. Alternatively, the cut away portion may be a rebate and the protrusion may be a shoulder. The side of the rebate and the side of the shoulder may be inclined for ease of manufacture and for ease of construction.

The upper surface of the support bricks, particularly the centre unit, may be marked with the correct position of arch bricks to be placed above. The front surfaces of the support bricks may be faceted or inclined for aesthetic reasons, or may even be a different shade. The support bricks may also be thinner than standard so that their front surfaces may be set back. Alternatively or in addition, the arch bricks may be thicker, to stand proud.

In the case of a wide arch, the rise of the arch may exceed the depth of the support bricks. An undercourse of bricks would then be located beneath the support bricks and additional end support bricks would be positioned at each end of the undercourse.

As will be appreciated, the arch construction according to the invention can be assembled relatively easily without the need to cut the supporting bricks on site. The appearance will be consistent with the remainder of the building and join between the arch and the support bricks will be both firm and relatively watertight. It will also be appreciated that all the arch bricks will be identical while in the case of the support bricks, corresponding left-hand and right-hand units will be identical, thus minimising the number of special units required.

The invention may be carried into practice in various ways and some embodiments will now be described by way of example with reference to the accompanying drawings, in which:-

Figure 1 is an isometric view, partially cut away, of an arch construction in accordance with the present invention;

Figure 2 is a vertical section through the centre of the arch construction of Figure 1, looking generally in a direction along the arch;

Figure 3 is a view similar to Figure 2 showing an alternative embodiment;

Figure 4 is an elevation of the arch construction of Figures 1 and 2 or Figure 3; and

Figure 5 is an elevation of an alternative wider form of arch construction.

Figures 1 and 2 show a cavity wall 11 forming part of a building, comprising an outer leaf 12 and an inner leaf 13. The wall 11 includes a window 14 which has a flat top. A standard metal lintol 15 is located above the window 14 and spans the cavity between the outer and inner leaves 12, 13. An arch construction generally indicated 16 is located on the lintol 15.

The arch construction 16 comprises a series of arch bricks 17 and a series of support bricks 21, 22, 23, 24 and 25. The arch bricks 17 are identical and are tapered so that when laid side by side, they define an arch form. The support bricks 21-25 have flat bases and curved upper surfaces so that when laid end to end, they progressively define a segment whose curve corresponds to the undersurface curve of the arch form. The support bricks comprise a centre unit 23, a pair of identical end units 21, 25 and a pair of identical intermediate units 22, 24. They are thinner than the arch bricks and the bricks forming the remainder of the outer leaf 12 and, are therefore somewhat recessed.

The bottom surface of each arch brick 17 has a channel 18 with inclined sides 19. When the arch bricks 17 are placed side-by-side, the individual channels 18 form a continuous channel over the entire extent of the arch. The upper surface of each support brick 21-25 has a ridge 26 with inclined sides 27. When the support bricks 21-25 are placed end-to-end the individual ridges 26 form a continuous ridge which fits into the continuous channel.

In practice, of course, the support bricks 21-25 would first be laid on the lintol 15, thereby defining the continuous ridge. The arch bricks 17 would then be laid on top, starting over the centre unit 23, which could be marked with the required positions of the overlying arch bricks 17.

The embodiment shown in Figure 3 differs only in form of the interengaging surfaces of the arch bricks 31 and the support bricks 32 (only one of which is shown). The bottom surface of each arch brick 31 has a rebate 33 at the rear with an inclined side 34. The upper surface of each support brick 32 has a corresponding shoulder 35 with an inclined side 36. The rebates 33 and shoulders 35 interlock in the same way as the channels 18 and ridges 26 in the previous embodiment.

The appearance of the two embodiments described above will be as shown in Figure 4.

Figure 5 shows an alternative but similar construction in the form of a significantly wider arch. The arch construction includes a series of arch bricks 37, which may be identical to the support bricks 21-25 or 32. However, the rise of the arch in this case is greater than the depth of the support bricks 41-45. An undercourse of bricks 46 is therefore included between the lintol (not shown) and the support bricks 41-45 and two end support bricks 47, 48 are located one at each end of the undercourse.

Claims

1. A curved brickwork arch construction (16) comprising a series of arch bricks (17) laid side by side defining a curved arch form and a series of

support bricks (21-25) located beneath the arch bricks (17), characterised in that the arch bricks (17) each have a bottom surface which has a cut away portion (18) extending from one side of the arch brick to the other, and the support bricks (21-25) each have an upper surface formed with a protrusion (26) extending from one side of the support brick (21-25) to the other, the cut away portions (18) and the protrusions (26) being so arranged that they inter engage, the upper surfaces of the support bricks (21-25) also being progressively inclined to match the curved undersurface of the arch form defined by the series of arch bricks (17).

2. An arch construction as claimed in Claim 1, characterised in that the arch bricks (17) are tapered to produce the curved arch form.
3. An arch construction as claimed in Claim 1 or Claim 2, characterised in that the upper surface of each of the support bricks (21-25) is curved to follow more closely the undersurface of the arch form and/or the bottom surface of each of the support bricks (21-25) is flat.
4. An arch construction as claimed in any preceding Claim, characterised in that the cut away portion is in the form of a channel (18) and the protrusion is in the form of a ridge (26), the channel and ridge sides preferably being tapered.
5. An arch construction as claimed in any of Claims 1 to 3 in which the cut away portion is a rebate and the protrusion is a shoulder, the side of the rebate and the side of the shoulder preferably being inclined.
6. An arch construction as claimed in any preceding Claim, characterised in that the upper surface of each of the support bricks (21-25) is marked with the correct position of the arch bricks (17) to be placed above.
7. An arch construction as claimed in any preceding Claim, characterised in that the front surfaces of the support bricks (21-25) are faceted, inclined or have a different shade.
8. An arch construction as claimed in any preceding Claim, characterised in that the support bricks are either thinner than standard so that their front surfaces are set back or alternatively are thicker than standard in which case their front surfaces stand proud.
9. An arch construction as claimed in any preceding Claim in which the rise of the arch exceeds the

depth of the support bricks (41-45) and an under-course of bricks (46) is located beneath the support bricks and additional end support bricks (47,48) are positioned at each end of the under-course.

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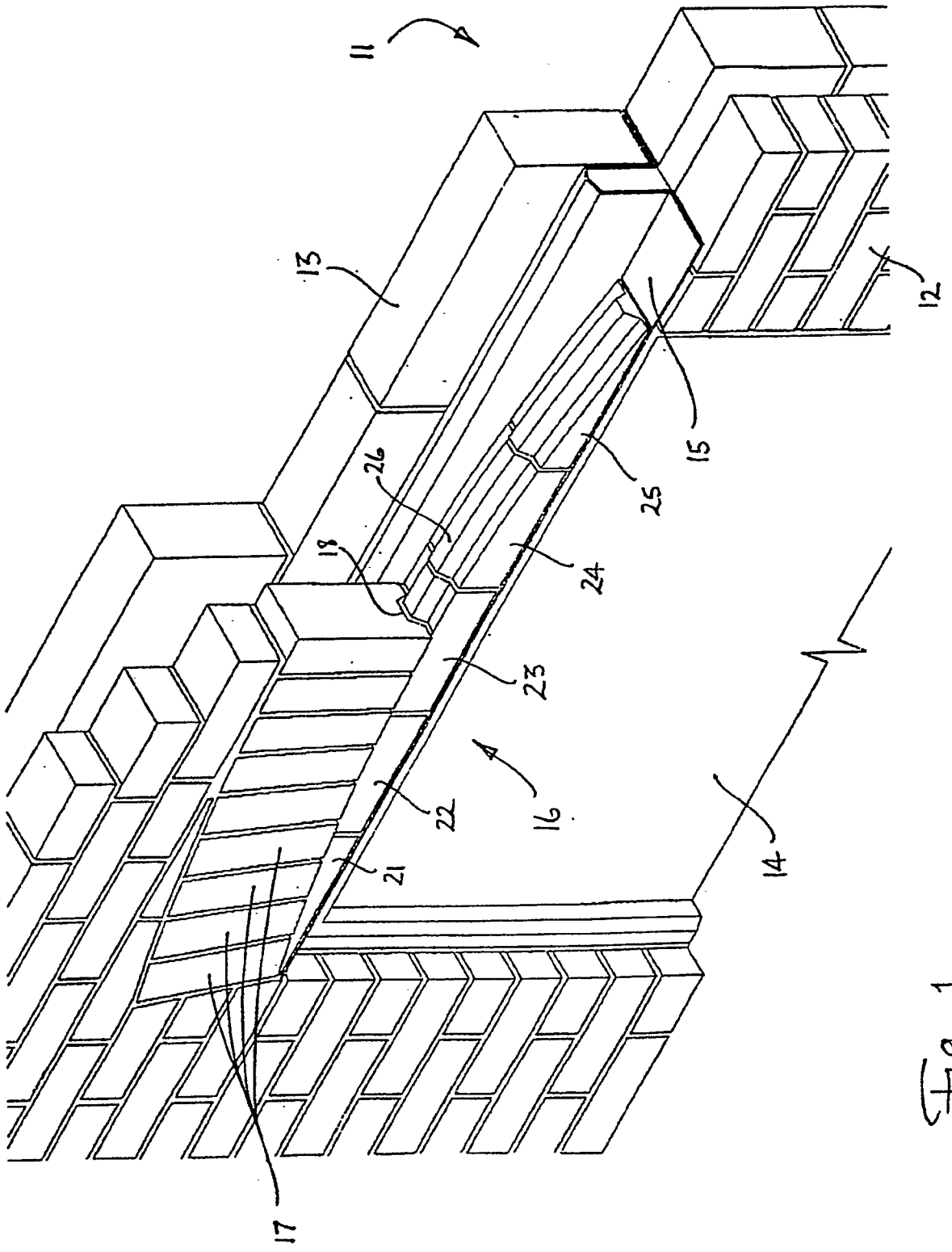
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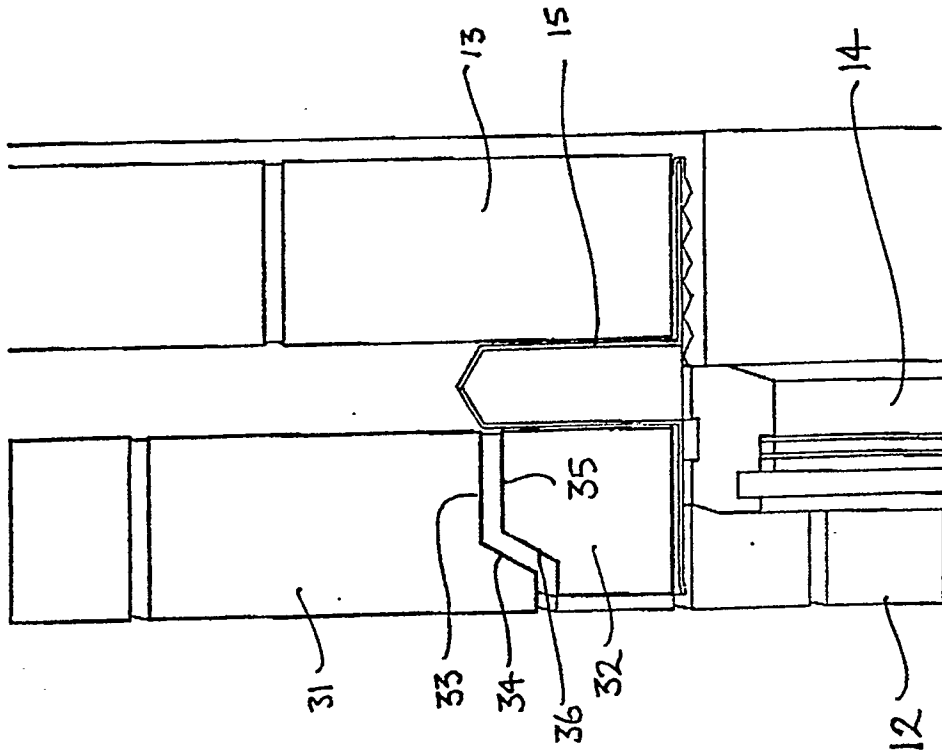


Fig 3

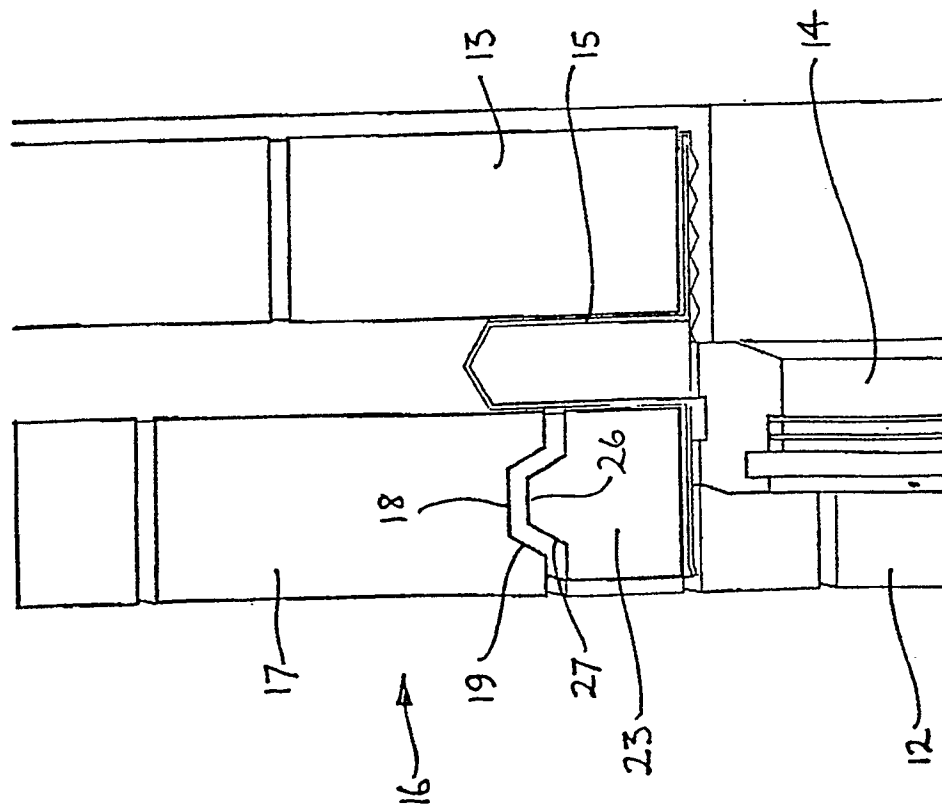


Fig 2

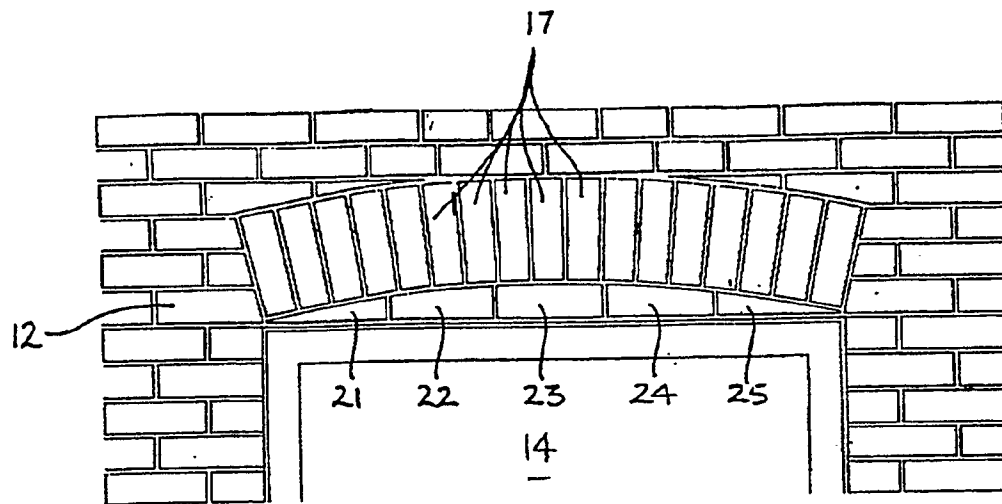


Fig 4

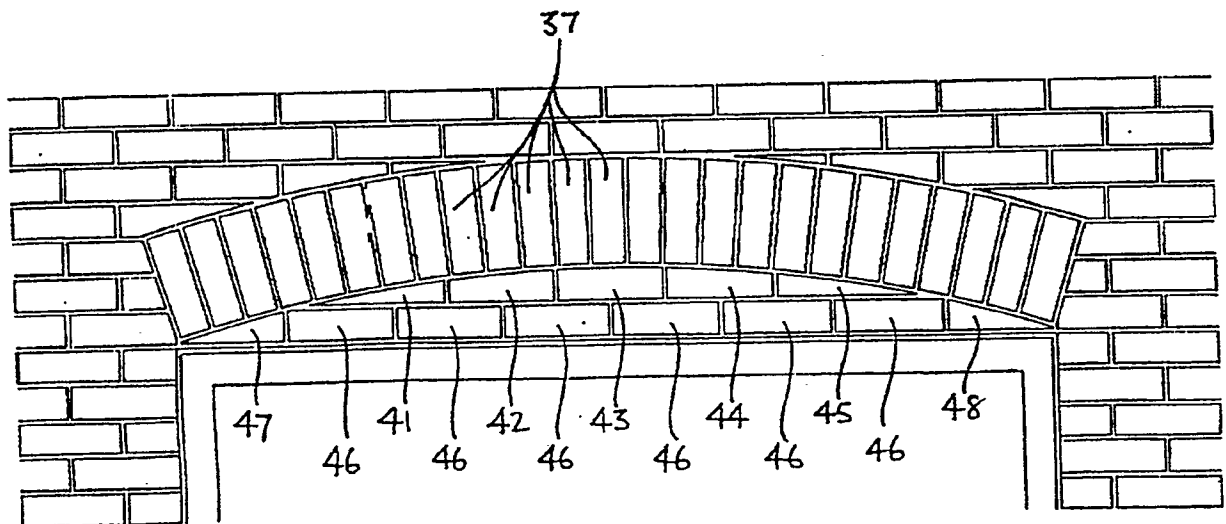


Fig 5.



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EUROPEAN SEARCH REPORT

Application Number

EP 91 30 1708

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.5)
Y	L. ZWIERS 'BOUWKUNDIG WOORDENBOEK' 1920, VAN HOLKEMA & WARENDORF, AMSTERDAM "ONTLASTBOOG" * page 153, column 1, paragraph 6 - page 153, column 2, paragraph 1 *	1, 3, 4, 5, 9	E04C3/02 E04C1/39 E04B2/12
Y	GB-A-2 127 450 (KNOX) * claim 1; figures 1, 2 *	1, 3, 4, 9	
Y	GB-A-2 141 758 (KNOX) * claims 1, 7; figures 1-4 *	1, 3, 5	
A	GB-A-2 183 688 (KNOX) * page 2, line 42 - page 2, line 46; figures 2, 4, 7 *	2	
A	GB-A-2 063 953 (ANDREWS) * page 3, line 8 - page 3, line 31; figures 1, 2 *	1, 6, 8	
A	EP-A-0 168 236 (KNOX) * figures 1-9 * * claims 1, 3, 5, 8 *	1, 7	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	GB-A-2 072 731 (CARRAN) * claim 1; figure 1 *	1	E04C E04B
A	GB-A-2 062 052 (KNOX) * figures 1, 2 *	5	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 MAY 1991	Examiner Hendrickx X.
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 I : document cited for other reasons & : member of the same patent family, corresponding document	

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