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(54) Lintel.

(57) A lintel has first and second angle sections (1, 2). Each angle section has a lateral flange (10, 20) for supporting a corresponding leaf (3, 4) of a cavity wall. Each angle section (1, 2) also has a respective upwardly-extending panel (11, 21). To secure the two angle sections (1, 2) together, there is provided a locking member (30) which secures upper free edges of the upwardly-extending panels (1, 2) together.

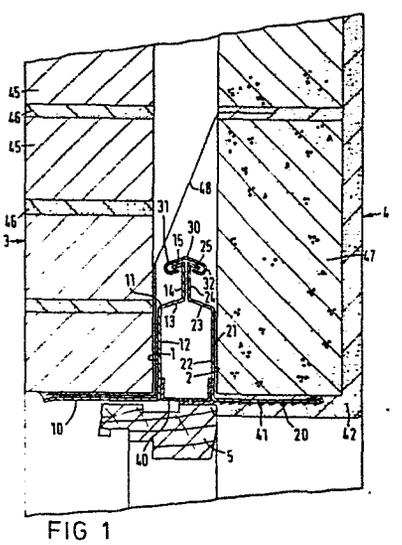

FIG 1

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LINTEL

This invention relates to a lintel, suitable for use over an aperture in a cavity wall comprising two spaced leaves.

The terms "lateral", "upwardly", "upper", and "lower" and similar terms are used in the following description and claims. It is to be appreciated that these terms are used to define the relative location and orientation of different parts of a lintel, when in use.

According to the present invention there is provided a lintel, suitable for use over an aperture in a cavity wall comprising two spaced leaves, which lintel comprises first and second angle sections and a locking member, each of the angle sections comprising a lateral flange for supporting, in use, a portion of a respective leaf of the cavity wall above said aperture, and an upwardly-extending panel, with upper free edges of the upwardly-extending panels secured together by the locking member.

The two angle sections can be symmetrical about a vertical plane.

It is expected that the provision of two separate angle sections, which are held together by a separate locking member should have a number of advantages. The construction need not include any

welds, thus eliminating problems due to weld failure. The lintel can be assembled simply by sliding or clipping the locking member onto the two angle sections. Thus, the lintel can be assembled on a building site, and the final selection of the two types of angle section for a lintel only has to be made immediately prior to assembly. There is the possibility of using different angle sections in one lintel. In current building practice, most of the imposed loads on a cavity wall are applied to the inner leaf. If heavy loads are applied, it is possible that the inner angle section supporting the inner leaf would have to carry 75% of the load, whilst the outer angle section supporting the outer leaf would only have to carry 25% of that load. To allow for this, the angle section for the inner leaf can be made from heavier gauge steel; for example, the inner angle section could be 10 gauge and the outer angle section 12 gauge.

There is also the possibility that different finishing treatments could be applied to the two angle sections. For example, the inner angle section could be made from pre-galvanised steel, i.e. from steel sheet which is galvanised before it is formed into the angle section, whilst the outer angle section could be post-galvanised, i.e. the galvanising treatment is applied after the steel sheet has been formed into the angle section. Pre-galvanising tends to be less expensive than post-galvanising, but it has the disadvantage that raw steel edges are left in the finished angle section; nevertheless, this may be acceptable for the inner angle section. Use of pre-galvanised steel for the external angle section can lead to unsightly rust marks resulting from rusting of the exposed raw edges. This is prevented by the use of post-galvanised steel for the outer angle section.

Also, as the lintel can be assembled on site, the angle sections can be stacked for transportation.

For a better understanding of the present invention, and to show more clearly how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawing in which Figure 1 is a vertical cross-section through a lintel (a modification being shown in Figure 1A) and corresponding sections through a cavity wall.

The lintel comprises a first angle section 1 supporting a part 3 of an outer leaf of the cavity wall, and a second angle section 2 supporting a part 4 of an inner leaf of the cavity wall. The ends of the angle sections 1 and 2 are supported on portions of the cavity wall which are not shown and which are located on either side of the aperture below the lintel. A window frame 5 is located immediately below the lintel.

The first angle section 1 comprises a lateral, generally horizontal flange 10 and an upwardly-extending panel 11. The part 3 of the outer leaf is supported on the flange 10. The angle sections 1 and 2 are substantially symmetrical about a vertical plane between the two angle sections 1 and 2. The angle section 2 similarly comprises a lateral, generally horizontal flange 20 and an upwardly extending panel 21.

The upwardly-extending panel 11 comprises a lower portion 12 which extends substantially vertically from the respective flange 10. An intermediate portion 13 is inclined to the lower portion 12 and extends from the lower portion 12 towards the other panel 21. From the end of the intermediate portion 13, an upper portion 14 extends substantially vertically and it has a free edge region 15 which is inclined downwardly away from the

other upwardly-extending panel 21. The upwardly extending panel 21 of the second angle section 2 correspondingly comprises a lower portion 22, an intermediate portion 23 and an upper portion 24 which has a free edge region 25.

A locking member 30 engages the free edge regions 15 and 25. The locking member 30 is generally cap shaped, and its edges 31 and 32 curve under the free edge regions 15 and 25 to enclose them. The locking member 30 can be fitted by sliding it longitudinally relative to the two angle sections 1 and 2. The locking member is preferably of such a shape and size that, when fitted, it holds the angle sections 1 and 2 rigidly together.

The lower portions 12 and 22 can be maintained spaced apart by various means, such as blocks or lengths of wood or other material. a continuous U-shaped channel or intermittent flat or U-shaped straps. The drawing shows a U-shaped channel 40. In the case of such a U-shaped channel 40 or intermittent strips formed of metal, they can be secured by welding, although it is preferable if welding is avoided. One possibility is to design the angle sections 1 and 2 and the locking member 30 so that when the lintel is assembled and unstressed, the portions 12 and 22 converge slightly from top to bottom. The channel 40, or other spacing means, can then be retained in place by the resulting clamping action.

The lintel can be provided with a mesh 41 or similar means to act as a plaster key for plaster 42.

The outer leaf of the wall can comprise, in known manner, bricks 45 and mortar 46, whilst the inner leaf, supported on the flange 20, could comprise block work 47. Additionally, a damp proof course 48 is provided. Typical dimensions of a

cavity wall are given in millimetres at the head of the drawing.

The two angle sections 1 and 2 can be made from different gauges of material, for supporting different loads, bearing in mind that most imposed loads on the wall are carried by the inner leaf. Furthermore, the two angle sections 1 and 2 can have different finishes, for example the outer angle section 1 could be post-galvanised, whilst the inner angle section 2 is only pre-galvanised.

If desired, the lintel can include a thermal break. The thermal break can be provided by a layer of insulating material between the upper portions 14 and 24, and also by a layer of insulating material between the locking member 30 and the free edge regions 15 and 25 to prevent heat transfer from one angle section to the other via the locking member 30.

A further advantage of the lintel described is that, before assembly of the lintel, the two angle sections 1 and 2 can be nested with each other and with the corresponding parts of other similar lintels. This reduces the space occupied by the lintels during transport and storage. It is envisaged that lintels as described could be delivered to a building site in the knocked-down condition. Workmen on site could then assemble lintels with the required dimensions and characteristics when they are called for as work progresses.

In the modification of Figure 1A the free edge regions 15A, 25A of the panels 11A and 21A are slightly more steeply inclined than the regions 15, 25 of the panels 11 and 21 so far described and a locking member 30A replacing the locking member 30 described above is of generally diamond configuration in section open along its lower edge. When in its locking position the locking member 30A bears upon the

upper portions 14A and 24A of the panels 11 and 21 approximately mid-way therealong. By gripping the panels in this fashion the locking member 30A not only holds the panels together but also acts to resist angular movement apart of the panels pivotting about the upper edges of the upper portions 14A and 24A.

The construction of the angle sections 1 and 2 may be such that the portions 12 and 22 tend to diverge from each other from top to bottom when the locking member 30 or 30A is fitted. In such a case, a series of retaining straps may be provided along the length of the lintel, each strap being welded at one end to the flange 10 and at the other to the flange 20.

In another modification, the clamping effect at the top of the lintel may be enhanced by providing spacer plates distributed along the length of the lintel and disposed between the portions 14 and 24. These plates may be retained in position by tack welding.

CLAIMS

1. A lintel, suitable for use over an aperture in a cavity wall comprising two spaced leaves, which lintel comprises first and second angle sections each of which comprises a lateral flange for supporting, in use, a portion of a respective leaf of the cavity wall above the aperture, and an upwardly-extending panel, characterized in that upper free edges of the upwardly-extending panels are secured together by a locking member.

2. A lintel as claimed in claim 1, characterized in that each upwardly-extending panel comprises: a lower portion which extends substantially vertically from the respective flange; an intermediate portion which is inclined to the lower portion and which extends from the lower portion towards the other panel; and an upper portion which extends substantially vertically from the intermediate portion and is adjacent the upper portion of the other panel.

3. A lintel as claimed in claim 2, characterized in that, for each angle section, the upper portion includes a free edge region which extends away from the upper portion of the other angle section.

4. A lintel as claimed in claim 3, characterized in that each free edge region extends downwardly and away from the other free edge region.

5. A lintel as claimed in claim 3 or 4, characterized in that the locking member is substantially cap-shaped.

6. A lintel as claimed in claim 5, characterized in that the locking member is sheet-form and in that free side edges of the locking member are curved so that they extend back towards a centre of the locking member, so that the free edge regions of the angle sections are enclosed by the locking member.

7. A lintel as claimed in claim 3 or 4, characterized in that the locking member is of generally

diamond configuration in section and is open along its lower edge, the locking member gripping the upper portions of the panels at places spaced from the upper edges of these upper portions to oppose angular movement apart of the panels.

8. A lintel as claimed in any one of the preceding claims, characterized in that the angle sections are formed from sheet steel of different gauges.

9. A lintel as claimed in any one of the preceding claims, characterized in that one angle section is formed from pre-galvanised steel and the other angle section is formed from post-galvanised steel.

10. A lintel as claimed in any one of the preceding claims, characterized in that the first and second angle sections are substantially symmetrical about a vertical plane between them.

11. A kit of parts for assembly into at least one lintel in accordance with any one of the preceding claims, the kit comprising, for each lintel to be assembled, the first angle section, the second angle section and the locking member.

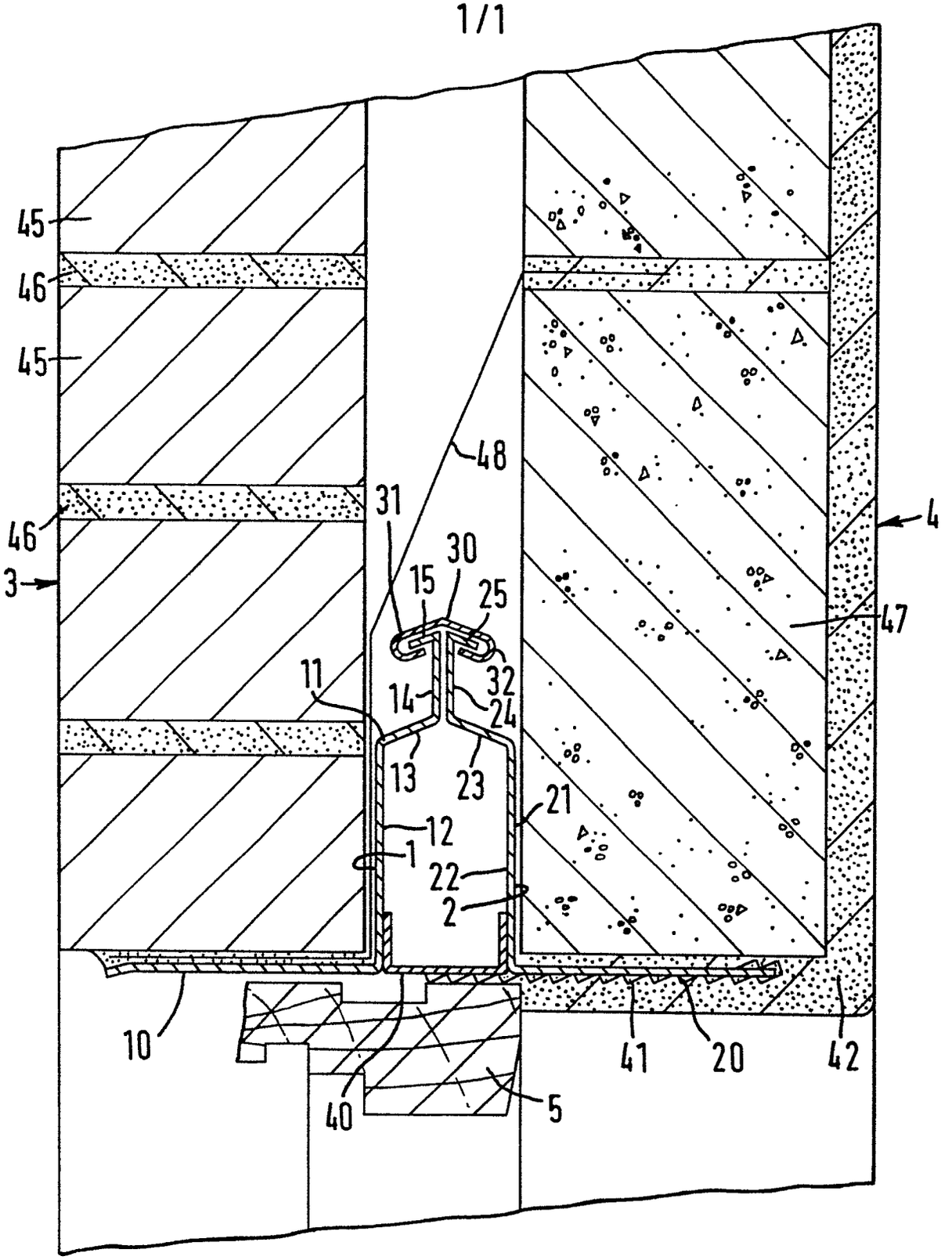
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FIG. 1

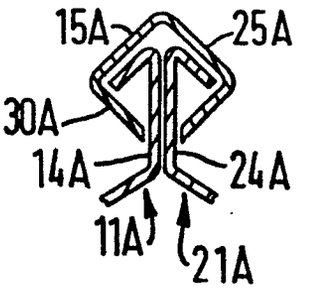
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FIG. 1A

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EUROPEAN SEARCH REPORT

0083863
Application number

EP 82 30 6859

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. ³)
A	GB-A-2 074 212 (ALPHA-KEM LTD.) * Figure 1 ; page 1, lines 29 - page 2, line 21 *	1,2,8	E 04 C 3/02 E 04 C 3/07
A	GB-A-2 054 693 (SEVERNWISE LTD.) * Figures 1, 6-13 ; claims 1-24 ; page 1, line 109 - page 4, line 13 *	1,2,8, 9	
A	FR-A-2 314 984 (AUTOMATIC PRESSINGS LTD.) * Figures 3, 4 *	1,5	
			TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
			E 04 C 3/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	22-02-1983	VON WITTKEN-JUNGNIK

CATEGORY OF CITED DOCUMENTS

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