COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952-1969

CONVENTION APPLICATION FOR A PATENT

(This form may be signed by the applicant or by the Australian Patent Attorney.)

We CATNIC COMPONENTS LIMITED, of PontyWNDy Estate, Caerphilly, Glamorganshire, CF8 2WJ, England, hereby apply for the grant of a Patent for an invention entitled

"A STRUCTURAL COMPONENT"

which is described in the accompanying complete specification. The application is a Convention application and is based on the application(s) for patent or similar protection made in GREAT BRITAIN

on 19th June, 1974 under No. 27264/74

Our address for service is care of A. WALLACE SMITH & CO. Patent Attorneys, of Cromwell Building, 374 Bourke Street, Melbourne, in the State of Victoria Commonwealth of Australia.

Dated this 11th day of June, 1975

(a) Signature(s) of applicant(s).
If a Company, form to be executed in a manner binding on the Company according to its Articles of Association or the laws of the country.
(b) Seal of Company (if any).

Note: Initial all alterations.

To:
THE COMMISSIONER OF PATENTS
COMMONWEALTH OF AUSTRALIA
PATENTS ACT 1952-1969

DECLARATION IN SUPPORT OF CONVENTION OR NON-CONVENTION APPLICATION FOR A PATENT OR PATENT OF ADDITION

(The declaration shall be made by the applicant, or, if the applicant is a body corporate, by a person authorized by the body corporate to make the declaration on its behalf).

In support of the Application made for a patent or patent of addition for an invention entitled "A STRUCTURAL COMPONENT"

We, Brian Robinson, of 158 Cefn Road, Rogerstone, Monmouthshire, Wales, United Kingdom,
do solemnly and sincerely declare as follows:-

1. (a) I am the applicant for the patent or patent of addition

or (b) I am authorized by Catnic Components Limited the applicant for the patent or patent of addition to make this declaration on its behalf.

2. (a) I am the actual inventor of the invention

or (b) Brian Robinson, of 158 Cefn Road, Rogerstone, Monmouthshire, Wales, United Kingdom, is the actual inventor of the invention and the facts upon which the applicant is entitled to make the application are as follows:-

The said applicant is the assignee of the said actual inventor.

(Paragraphs 3 and 4 apply only to Convention applications).

3. The basic application as defined by Section 141 of the Act were made in the United Kingdom on the 19th June 1974 by Catnic Components Limited.

4. The basic application referred to in paragraph 3 of this Declaration were the first application made in a Convention country in respect of the invention the subject of the application.

Declared at Caerphilly, this 9th day of June 1975.

BRIAN ROBINSON
The following statement is a full description of this invention, including the best method of performing it known to us:
The invention relates to structural components, and concerns structural components such as lintels which have means secured thereto to enhance the adhesion of cement, mortar, plaster rendering or the like, hereinafter referred to in this specification as "cement".

According to one aspect of the invention there is provided a structural component having a surface to which cement is to be secured and means adapted to enhance the adhesion of cement to said surface, the arrangement of the means with respect to the surface being such that part at least of the means is angularly disposed with respect to the surface.

The means thus projects into the thickness of the cement in use and can strengthen the body of the cement and its bond with the face.

The adhesion enhancing means may comprise an elongate member such as a wire in which said part which is angularly disposed may be a loop or other deformity displaced from the length of the elongate member or wire.

There may be a plurality of said loops or other deformities in the elongate member, which may be secured to the surface at positions intermediate adjacent loops or other deformities.

The loops or other deformities may be of substantially 'V'-configuration. Limbs of adjacent loops may also form a 'V'-shape which may comprise the part which is angularly disposed with respect to the face.

There may be a plurality of elongate members disposed in a generally parallel arrangement along said face.
The V-shapes of adjacent elongate members may then comprise a chevron-like array. Or the elongate members may be so arranged that the V-shapes of adjacent wires are staggered or are out of phase by one or more loop or deformity.

The or each elongate member may preferably be secured to the face by welding. The welds may be positioned between each loop or deformation.

According to another aspect of the invention there is provided a method of making a structural component comprising utilising a continuous production line, part of which includes a station at which means for enhancing adhesion of cement is secured to a surface of the structural component as by being welded, brazed, soldered or otherwise secured to said surface. Thus the production line may not be interrupted during securing of the adhesion enhancing means.

A structural component in the form of a lintel embodying the invention is diagrammatically illustrated, by way of example, in the accompanying drawings, in which:

Figure 1 is a vertical cross-section of the lintel, which is used for spanning cavity walls;

Figure 2 shows a view in the direction of the arrow "A" of Figure 1 of a rear side face of the lintel; and

Figure 3 shows a view in the direction of the arrow "B" of Figure 1 of an underside of the lintel.

Referring to the drawings, the lintel 1 has a rear face or surface 2 and an under face or surface 3 to each of which is secured as by welding means to enhance the adhesion of cement to
the respective faces.

The means is in the form of a plurality of substantially parallel elongate members such as steel wires 4 which have V-shaped loops, undulations, serrations, corrugations or disconformities or th-like 5 angularly disposed with respect to their respective faces so that they protrude therefrom at an angle $\alpha$ which is an acute angle in the preferred embodiment. The loops 4 are directed downwardly, as viewed in Figure 1 and the wire is strong enough to maintain its position spaced from its respective surface when cement is applied.

Straight parts 6 of the wires connecting the loops are secured as by being welded to the respective surface by welds 7. The welds 7 appear on one side of the wire.

The loops 5 of the adjacent parallel wires form a corrugated or chevron-array. The loops stand proud of their respective surfaces.

The wires cover the whole face 2, but only extend over half the area of the under surface 3, in the embodiment shown.

The welds 7 may be formed in a welding process in a continuous or virtually continuous production line producing the lintels, by using a welder such as a multi-head welder. The production line would include a supply of the wire and means for crimping or producing the loops if the wire did not carry them initially. The looped wire is then guided onto a surface of a lintel to which it is to be applied and is then welded to the surface by the welder, which may be a higher frequency single or multi-head welding machine. The machine is synchronised with the
feeding of the wire so that welds are applied at the straight portions 6 as shown.

Although welding at the portions 6 has been described, it will be understood that by appropriate feeding of the wire, welds could be applied at the apex of the V-shaped loops.

The angle $\alpha$ may be varied as desired, provided the loops are angularly disposed with respect to the plane of the surface.
CLAIMS
THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:—

1. A structural component having a surface to which cement is to be secured and means adapted to enhance the adhesion of cement (as herein defined) to said surface, the arrangement of the means with respect to the surface being such that part at least of the means is angularly disposed with respect to the surface.

2. A component according to claim 1, in which the adhesion enhancing means may comprise an elongate member.

3. A component according to claim 2, in which the elongate member is a wire.

4. A component according to claim 2 or claim 3, in which said part which is angularly disposed comprises a loop or other deformity displaced from the length of the elongate member or wire.

5. A component according to claim 4, in which there is a plurality of loops or other deformities in the length of the elongate member or wire.

6. A component according to claim 5, in which the elongate member or wire is secured to the surface at positions intermediate adjacent loops or deformities.

7. A component according to any one of claims 4 to 6, in which the or each loop is of substantially V-configuration.

8. A component according to any one of claims 4 to 6, in which the limbs of adjacent loops comprise the part which is angularly disposed with respect to the surface.

9. A component according to claim 8, in which adjacent loops are connected by substantially straight portions of the
elongate member or wire.

10. A component according to any one of claims 2 to 9, in which there is a plurality of elongate members or wires disposed in a generally parallel array along said surface.

11. A component according to claim 9, in which the loops are arranged in a generally chevron-like array as considered in a direction transversely to the length of the elongate members or wires.

12. A component according to claim 9, in which the elongate members or wires are so disposed that the loops of adjacent parallel elongate members or wires are staggered or are out of phase.

13. A component according to any one of claims 2 to 12, in which the or each wire is secured by one or more welds to the surface.

14. A component according to any one of claims 2 to 13, having elongate members or wires on two surfaces.

15. A method of making a structural component, comprising utilising a continuous production line, part of which includes a station at which means for enhancing adhesion of cement is secured to a face of the structural component.

16. A structural component, substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

17. A method of making a structural component, substantially as hereinbefore described with reference to and as shown in the accompanying drawings.
18. The parts, elements, steps and features referred to or indicated in the specification and/or claims and/or drawings of this application, individually or collectively, and any and all combinations of any two or more of said parts, elements, steps or features.

Dated this 11th day of June, 1975
CATNIC COMPONENTS LIMITED
by its Patent Attorneys
A. WALLACE SMITH & CO.
DRAWINGS
END