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IMPROVEMENTS IN FOUNDATION CONSTRUCTION

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(57) Claim

1. A spacer/reinforcing support for use in concrete foundation construction, wherein said foundation includes a plurality of elements spaced apart so as to define at least one channel therebetween; said spacer/reinforcing support including a body having a base portion and an upper cover portion defining one or more recesses to locate reinforcing material and side members which extend outwardly therefrom and relative to said base portion; the arrangement being such that in use said base portion is located in a channel defined between adjacent spaced apart elements; underside surfaces of said side members being seated on upper surfaces of said adjacent, spaced apart elements, such as to position said one or more recesses in position above said channel and said elements.

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ORIGINAL

COMPLETE SPECIFICATION

PETTY PATENT

Invention Title: "Improvements in Foundation Construction"

The following statement is a full description of the invention, including the best method of performing it known to us:

THIS INVENTION relates to improvements in the formation of concrete foundations for buildings and the like. In particular, the present invention relates to an improved spacer/reinforcing support for use in connection with the formation of such concrete foundations.

The formation of concrete foundations using spaced apart elements, which form channels within an area defined by outer formwork, is known. For example, such arrangements are known from Australian patent specifications Nos 562334, 584769 and 591816.

We have developed an improved method of constructing concrete foundations and have developed spacers for use in connection therewith. These are described in our co-pending patent application.

In our co-pending patent application we describe a method whereby spacers are provided to extend between inner surfaces of formwork and outer surfaces of spaced apart elements, and within channels formed between spaced apart elements within the area defined by formwork. We have also described that in many cases the use of sheets of reinforcing mesh is unnecessary, although this has been previously known and used. For example, reinforcing mesh has often been placed over upper surfaces of elements within the area defined by the outer formwork, immediately prior to the pouring of concrete. In our co-pending patent application we describe the use of a fibre-reinforced concrete, which avoids the need to use reinforcing mesh.

It is however desirable to provide a spacer/reinforcing support which can be engaged with upper surfaces of the spaced elements within the area defined by the formwork, such as to additionally space the elements one from the other,

thus forming channels therebetween, and/or providing additional support for elongate reinforcing material.

The present invention sets out to provide a straightforward spacer/reinforcing support.

Other objects of this invention will become apparent from the following description.

According to one aspect of this invention there is provided a spacer/reinforcing support for use in concrete foundation construction, wherein said construction includes a plurality of elements spaced apart to form channels therebetween; said spacer/reinforcing support including a body defining a base portion and an upper cover portion which includes one or more recesses to locate reinforcing material; side members being provided, which extend outwardly therefrom and relative to said base portion; the arrangement being such that in use said base portion is located in a channel defined between adjacent spaced apart elements; underside surfaces of said side members being seated on upper surfaces of said adjacent spaced elements, such as to position said one or more recesses in position above said channel and upper surfaces of said elements.

According to a further aspect of this invention there is provided a spacer/reinforcing support for use in concrete foundation construction, including a plurality of spaced apart foamed plastic elements forming channels therebetween; said spacer/reinforcing support including a body having a base portion and an upper cover portion which defines one or more recesses to locate reinforcing material; side members being provided, which extend outwardly therefrom and relative to said base portion; underside surfaces of said side members being provided with at least one securing spike extending downwardly therefrom, the arrangement being such that in use

the base portion is located within a channel between adjacent, spaced apart foam plastic elements and the securing spikes are engaged within upper surfaces of the spaced apart foam plastic elements, to locate undersides of the outwardly extending side members relative thereto; said one or more recesses being thereby positioned above said channel and upper surfaces of said foam plastic elements.

This invention will now be described by way of example only and with reference to the accompanying drawings, wherein:

Fig. 1 a perspective view of a spacer/reinforcing support according to one form of the present invention, and

Fig. 2 is a diagrammatic cross-sectional view of a spacer/reinforcing support according to one form of the present invention, engaged within a channel and between two spaced apart elements within the area defined by outer formwork.

In a preferred form of the present invention the spacer/reinforcing support 1 is used in connection with spaced apart elements 2 within an area defined by outer formwork 3, the spaced apart elements 2 being formed of a foam plastics material. This is however by way of example only. If desired, the present invention can be used with other spaced apart elements, such as for example hollow elements or cardboard elements, such as referred to in Australian patent specifications Nos 562334, 591816 and 584769.

Referring to the accompanying drawings, the spacer 1 of the present invention is formed of an appropriate material such as for example plastic material and is moulded therefrom. The spacer can however be constructed of other materials, if

desired. The spacer 1 is preferably formed with voids or hollows 4 therein, through which concrete can pass, so as to securely engage and bond the spacer 1 (and any reinforcing material its supports) within the concrete.

The spacer preferably has a base portion 5 of a width appropriate to be placed within a channel 6 formed between the spaced apart elements 2; for example, as shown in Fig. 2 of the accompanying drawings.

The spacer 1 also has an upper cover portion 7 which defines a substantially central recess 8 which is a reinforcing support recess. In use, a plurality of spacer elements 1 will be positioned end on end along channels formed between elements 2, and the recesses 8 of such spacers 1 will be substantially aligned, so that reinforcing material can extend through such substantially aligned recesses 8; for example, metal reinforcing rods.

While the invention is described with reference only to a single recess 8, it should be appreciated that the cover 7 portion can be formed to incorporate a plurality of recesses to locate reinforcing material, should this be desired.

The cover portion 7 extends into two outwardly extending and angled side members 9 which extend outwardly from the recess to each side of and above the base portion 5. The angled side members 9 of the cover 7 have substantially planar undersides 9a which extend outwardly at substantially right angles to the vertical axes of the sides of the base 5.

In the preferred form of the invention, the underside surfaces 9a of the side members 9 are provided with one or more downwardly depending engagement spikes 10.

In a preferred form of the invention and as shown in Fig. 2 of the accompanying drawings, the base portion 5 is located within the channel between the elements 2. The underside portions 9a of the sides 9 then come into contact with upper surfaces of the elements 2. Where the elements are, in the preferred form of the invention, formed of a foam plastic material, the securing spikes 10 engage therewithin, so as to bring the undersides 9a in substantial abutment with the upper surfaces of the elements 2. The location of the base 5 in the channel and spikes 10 in the upper surfaces of the foam plastic elements 2 will hold the spacer/reinforcing support 1 securely in a position, in which it will assist in spacing the elements 2 one from the other and allow for location of reinforcing material in the recess 8, above the channel 6 and above the upper surfaces of the elements 2, but within the area defined by formwork 3.

In a further form of the invention (not shown in the accompanying drawings) the spacer of the present invention can be formed without the securing spikes 10 so that the spacer 8 will be engaged within a channel 6 such as shown with reference to Fig. 2 of the accompanying drawings, by the base 5 being located within the channel 6. In such a form of the invention however, the undersides 9a of the side members 9 will merely be placed on, or sit on upper surfaces of the elements 2.

It will be appreciated that there are substantial advantages with using the present invention in association with foam plastic elements 2, in that the engaging spikes will securely engage within the foam plastic. It is however envisaged that the invention could be used with other elements and hollow elements such as hollow and/or cardboard elements, where the spikes 10 could also pass through the upper surfaces of the material to hold the spacer/reinforcing support 1 in position. While the invention has been described by way of

example only, with reference to the underside of each side member 9 having only one spike 10, it should be appreciated that any number of spikes or similar securing means can be used if desired. Further, other forms of engagement can be used if desired.

It has been found that the spacer/reinforcing support of the present invention is particularly useful and advantageous.

It should be appreciated that modifications and improvements may be made to the invention without departing from the scope thereof as defined by the appended claims.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A spacer/reinforcing support for use in concrete foundation construction, wherein said foundation includes a plurality of elements spaced apart so as to define at least one channel therebetween; said spacer/reinforcing support including a body having a base portion and an upper cover portion defining one or more recesses to locate reinforcing material and side members which extend outwardly therefrom and relative to said base portion; the arrangement being such that in use said base portion is located in a channel defined between adjacent spaced apart elements; underside surfaces of said side members being seated on upper surfaces of said adjacent, spaced apart elements, such as to position said one or more recesses in position above said channel and said elements.

2. A spacer/reinforcing support as claimed in claim 1, wherein at least one securing member extends downwardly from an underside of each side member.

3. A spacer/reinforcing support as claimed in claim 1, wherein said foundation construction includes a plurality of spaced apart blocks of foam plastics material.

Dated this 30th day of September 1992

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Its Patent Attorneys

ABSTRACT

A spacer/reinforcing support is provided for use in connection with the formation of concrete foundations, which incorporate the use of a plurality of elements, spaced apart one from the other to form channels therebetween. The spacer/reinforcing support includes a base portion and an upper cover. The upper cover includes one or more recesses to locate reinforcing material and also includes side members which extend outwardly therefrom and relative to the base portion. In use, the base portion is located in a channel between spaced apart elements with undersides of the side members of the cover seated on upper surfaces of the elements. This locates the one or more recesses adapted to locate reinforcing material in position above the channel and the elements.

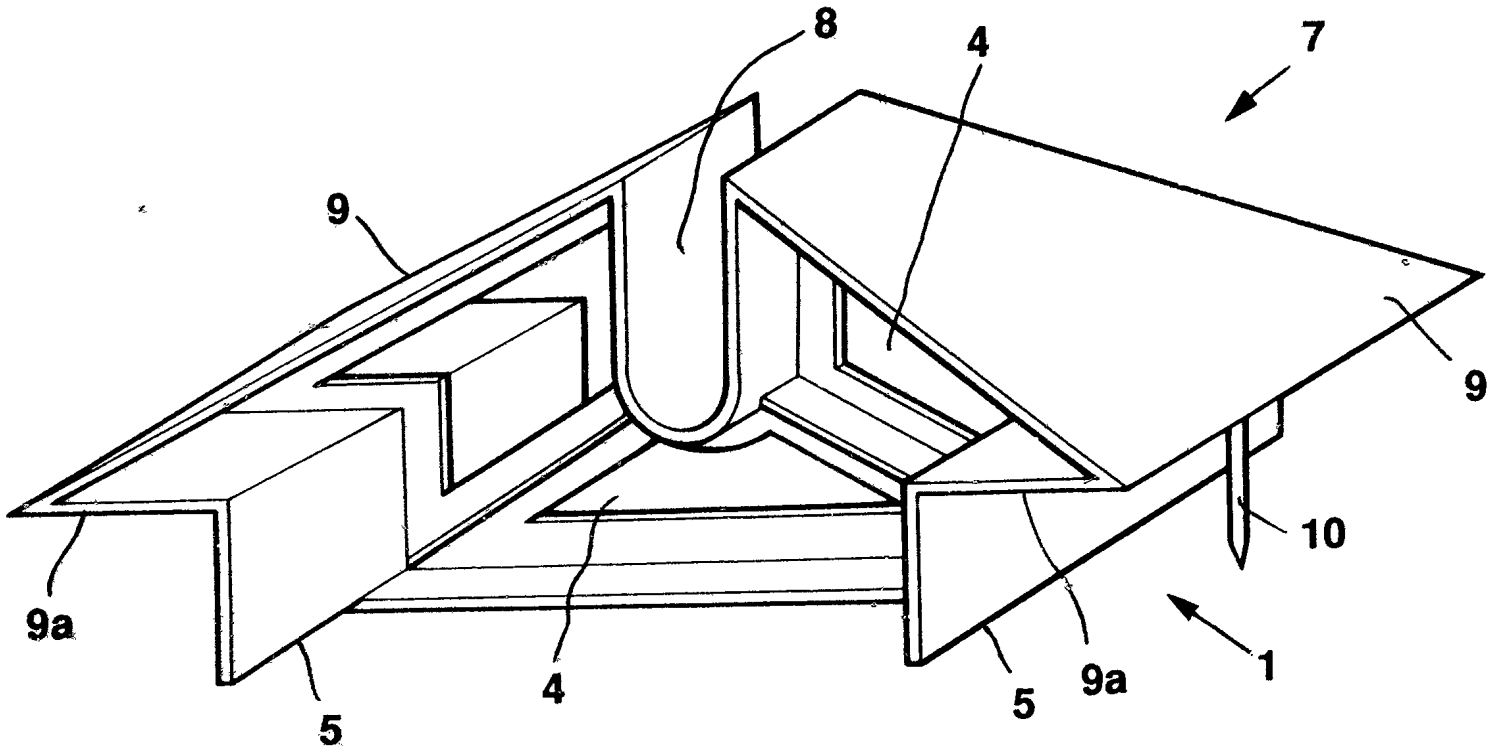

FIGURE 1

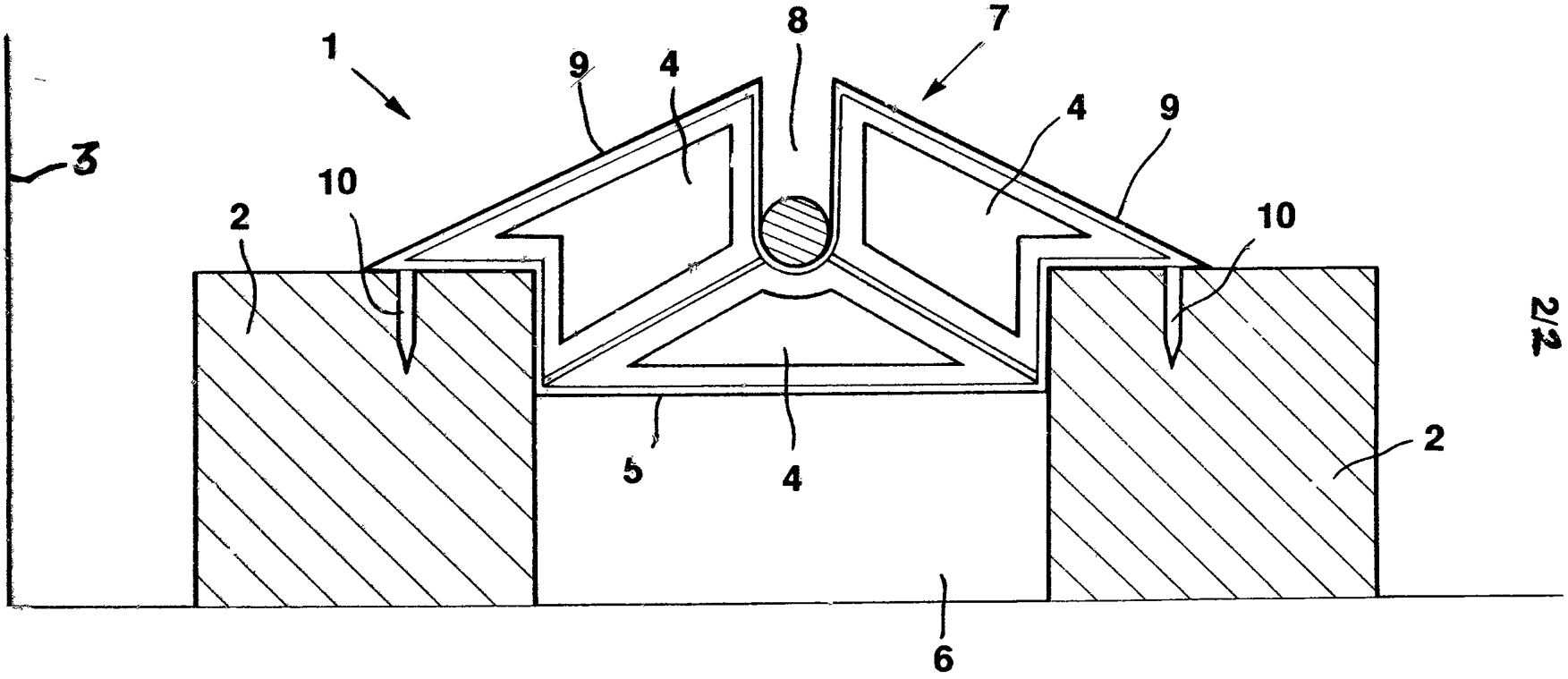

FIGURE 2