

Singapore

PATENT SPECIFICATION

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(54) FASTENING ELEMENT

(71) I, ARTUR FISCHER, a German Citizen, of D-7241 Tumlingen, Altheimerstrasse 219, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a fastening element for anchoring in masonry to secure a building component, such as a facing plate, in spaced relation to the masonry.

When using a known fastening element for fixing a facing plate at a distance from masonry, a portion of the fastening element projects from the masonry and is thus exposed to environmental influences. If this projecting portion consists of a material which is not resistant to corrosion, then it may be attacked or even destroyed by the presence of a corrosive such as moisture. Although it is possible to produce such fastening elements from stainless steel such as V2a steel or V4a steel, the manufacturing costs would be very high because of the high cost of the material itself and because of the difficulty in machining such stainless steels.

The present invention provides a fastening element for anchoring in masonry to secure a building component in spaced relation to the masonry, the fastening element comprising a portion which can be anchored in a bore in masonry and a portion which, in use, projects from said bore to provide support for a building component, wherein the fastening element is provided with a longitudinally compressible sleeve which completely surrounds the projecting portion when the fastening element is in position securing the building component in spaced relation to the masonry, the sleeve being braced, in use, between the building component and the masonry so that the projecting portion of the fastening element is completely surrounded by the sleeve for a range of values of the spacing between the building component and the masonry.

The sleeve which uncompressed is somewhat longer than the projecting portion of the fastening element, is placed onto the projecting portion after the element has been

anchored in the bore in the masonry and before the building component is secured to the element. Thus, when the building component is secured to the fastening element the sleeve is compressed between the component and the masonry surrounding the bore. As a result of this compression the sleeve makes a good seal against both the building component and the masonry so that the projecting part of the fastening element is shielded from moisture or other corrosive liquid. Consequently, there is no need for the fastening element to be made from expensive stainless steel.

Preferably, the sleeve is made of resilient plastics material and is concertinad in the compressed state. This resilient concertinad form of sleeve is capable of longitudinal adjustment over a relatively large distance so that it is possible to utilise such a sleeve with fastening elements arranged to secure building components to masonry at distances lying within a relatively large range.

One form of fastening element constructed in accordance with the invention will now be described, by way of example, with reference to the accompanying drawing, the single figure of which is a part-sectional elevation of the element shown in position securing a facing plate to a wall.

Referring to the drawing, the fastening element, indicated generally by the reference numeral 1, comprises an expansible sleeve 2 in the form of a "block spring" wound from copper wire, an expansion member 3 and a fixing screw 4 having first and second portions 4a and 4b separated by a step 4c. Throughout this specification the term "block spring" should be taken to mean a helical spring being so closely wound that adjacent turns are in contact so as to provide a generally tubular sleeve. The portion 4b has a diameter larger than that of portion 4a and equal to that of a bore 5a in a wall 5. The element 1 is anchored in the bore 5a by drawing the expansion member 3 into the sleeve 2 by turning the screw 4.

When the element 1 is anchored in the bore 5a, part of the portion 4b projects from the bore so that a facing plate 6 can be fastened

- thereto by means of a screw 7 engaging in a threaded blind bore 8 in its free end. A sleeve 10 which can be compressed longitudinally in the manner of a concertina is placed over the projecting portion 4b prior to the fixing of the facing plate 6. This sleeve 10 is slightly longer than the projecting portion 4b so that it is slightly compressed when the plate 6 is fixed to the element 1. The sleeve 10 thus presses resiliently against both the wall 5 and the rear surface of the plate 6 so as to provide a good seal at each end of the sleeve and so shield the element 1 from moisture or other corrosive liquid.
- 15 The use of the present invention involves the use of the invention described and claimed in British Patent Specification No. 1,376,524.

WHAT I CLAIM IS:—

- 20 1. A fastening element for anchoring in masonry to secure a building component in spaced relation to the masonry, the fastening element comprising a portion which can be anchored in a bore in masonry and a portion which, in use, projects from said bore to pro-

vide support for a building component, wherein the fastening element is provided with a longitudinally compressible sleeve which completely surrounds the projecting portion when the fastening element is in position securing the building component in spaced relation to the masonry, the sleeve being braced, in use, between the building component and the masonry so that the projecting portion of the fastening element is completely surrounded by the sleeve for a range of values of the spacing between the building component and the masonry.

2. A fastening element as claimed in claim 1, wherein the sleeve is made of resilient plastics material and is concertinad in the compressed state.

3. A fastening element substantially as hereinbefore described with reference to, and as shown in, the accompanying drawing.

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