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(54) Wire wall tie

(57) A wire wall tie (5), consisting of a wire element (10) having one outer end provided with a hook (6) bent through approximately 90° and having the other outer end provided with a wavy profile (8) extending over a certain length of the wire element (10), which wavy profile (8) is provided in a plane (R) intersecting the plane (XY) through the wire element (10) and the hook (6) at an angle of approximately 30°-60°, preferably approximately 45°.

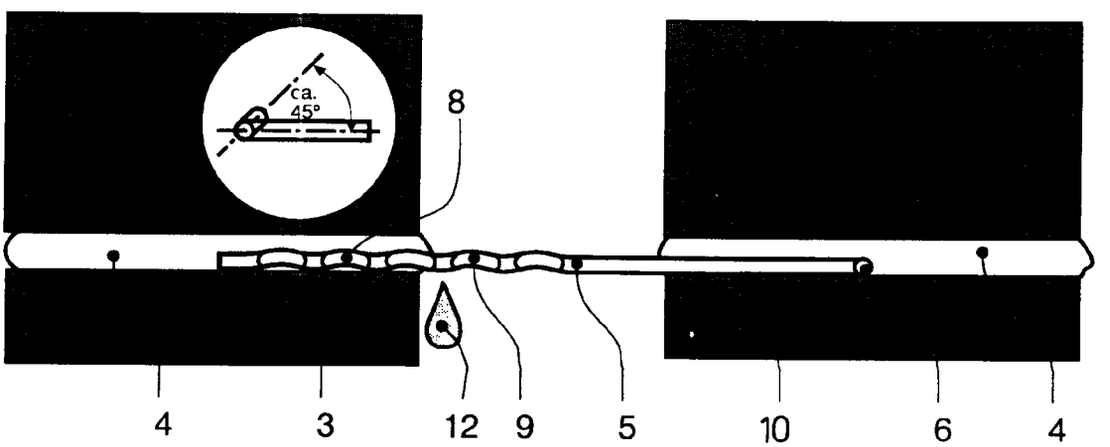

Fig. 3

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Description

The invention relates to a wire wall tie, consisting of a wire element having one outer end provided with a hook bent through approximately 90° and having the other outer end provided with a wavy profile extending over a certain length of the wire element.

Such wall ties have been used for many years, in particular with cavity walls having insulating material provided therebetween. Such a cavity wall is put up in three stages, being: (see Fig. 1)

1. Masoning the inner wall 1, for instance from sandlime blocks. At spread points, wall ties 5 are pressed into the wet mortar 4, the hooks 6 of which should produce sufficient adhesive power to hold the wall tie 5 in position and to prevent it from tilting away.
2. Insulating material 2 is slid over the wall ties 5 projecting from the inner wall 1. The insulating layer 2 is then secured against the inner wall 1 by means of insulation clamping rings 7.
3. Masoning up the outer wall 3, and securing the freely projecting, wavy outer ends 8 of the wall ties 5 therein.

If the wavy profile 8 is surrounded by the mortar of the joints in the outer wall 3 on all sides, a high pull value is obtained.

Because the joints of the outer wall 3 are only rarely at the same level as the joints of the inner wall 1, the freely projecting wavy profiles 8 of the wall ties 5 are bent in upward or downward direction on a facing brick when the outer wall 3 is masoned up. Accordingly, the face of the wavy profile 8 will rest on the top face of a facing brick and, after mortar has been applied, the wavy profile 8 is surrounded by that mortar to an insufficient extent. This has a highly adverse effect on the pull value of the wall tie.

The object of the invention is to overcome this drawback and to that end, the invention provides a wall tie wherein the wavy profile is provided in a plane which intersects the plane through the wire element and the hook at an angle of approximately 30°-60°.

The optimum value for the cutting angle is approximately 45°.

An embodiment of the wall tie according to the invention will be specified with reference to the accompanying drawings, wherein:

Fig. 1 shows a cavity wall in construction, as discussed hereinabove;
Fig. 2 shows the wall tie according to the invention; and
Fig. 3 shows a wall tie according to Fig. 2 in bricked-in condition.

Fig. 2 shows an orthogonal coordinate system XYZ, wherein the wall tie 5 according to the invention is drawn in. The wire element 10 of the wall tie 5 extends according to the X-axis, and the outer end 6, bent so as to be hook-shaped, extends according to the Y-axis. The free outer end of the wire element 10 is over a certain length provided with a wavy profile 8 whose waves lie in a plane R intersecting the Y-Y'-axis at an angle of 45°. The center-to-center distance of the waves of the wavy profile 8 is 12-25 mm, while the wave height is approximately 6 mm. The waves of the wavy profile 8 do not lie on two sides of the center line of the wire element 10, but project from this wire element 10 on one side only, as a result of which the tangent line 11 - shown in dotted lines - at the bottom crests of the waves of the wavy profile 8 coincides with a surface line of the wire element 10. In Fig. 2, the hook 6 and the wavy profile 8 lie on two sides of the plane XZ. Of course, the hook 6 can also be oriented according to the Y'-axis, in which case the hook 6 and the wavy profile 8 are located on the same side of the plane XZ.

The length of the wavy profile 8 is chosen so that in bricked-in condition (see Fig. 3), a part 9 of the wavy profile 8 projects from the outer wall 3 in the cavity space. This has the advantage that the wavy profile 8 also serves as a water barrier, as indicated by the falling drop 12. Accordingly, in this case, no so-called water spout needs to be provided in the wall tie, as is conventional with other types of wire wall ties. As Fig. 3 demonstrates, in bricked-in condition, the wavy profile 8 is surrounded by the mortar 4 to a sufficient extent, so that the pull value of the wall tie 5 remains sufficiently great, even though the bottom crests of the wavy profile 8 lie on the top face of a brick of the outer wall. With the known wall ties, the wavy profile would fully rest on the top face of such a brick.

Claims

1. A wire wall tie, consisting of a wire element having one outer end provided with a hook bent through approximately 90° and having the other outer end provided with a wavy profile extending over a certain length of the wire element,
characterized in that
the wavy profile (8) is provided in a plane (R) intersecting the plane (XY) through the wire element (10) and the hook (6) at an angle of approximately 30°-60°.

2. A wire wall tie according to claim 1, characterized in that
the cutting angle is approximately 45°.

3. A wire wall tie according to claims 1-2, characterized in that
the wavy profile (8) projects from the wire element (10) on one side only.

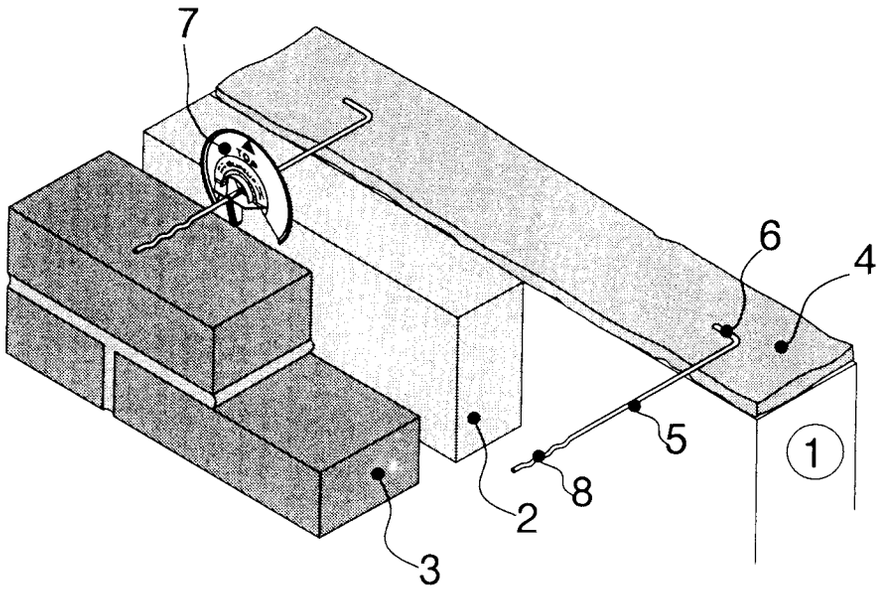

Fig. 1

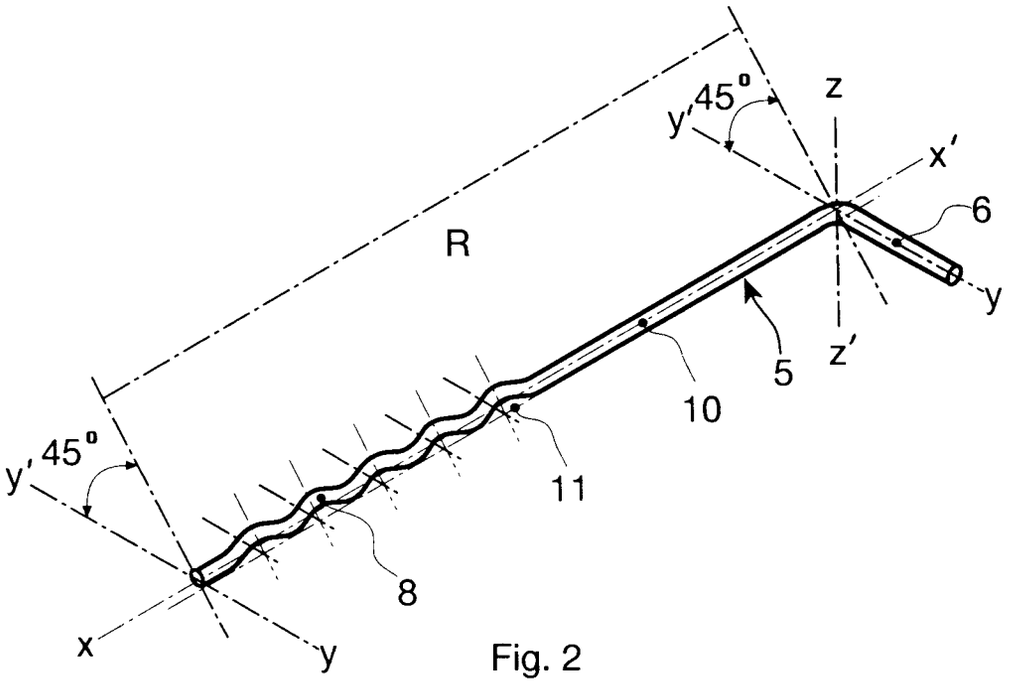

Fig. 2

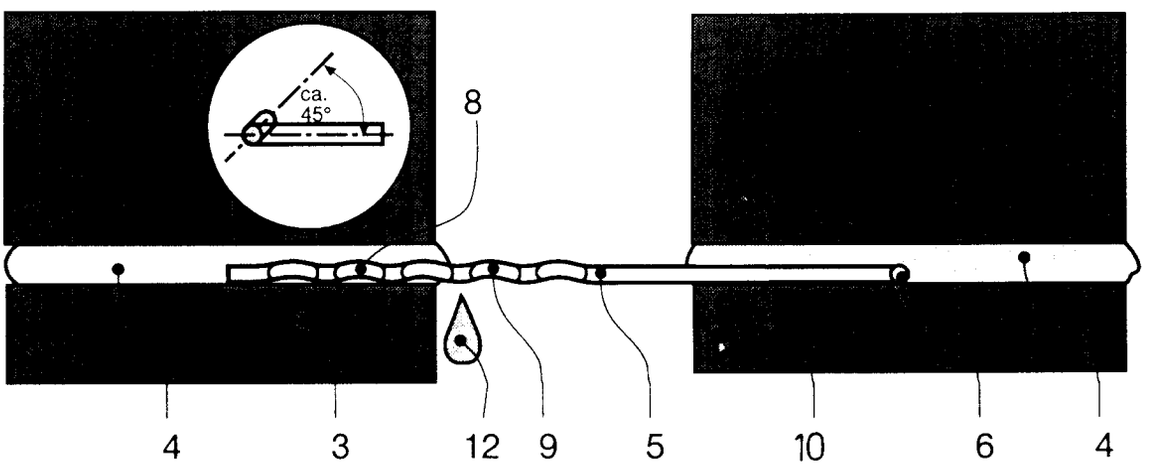

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 96 20 0016

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.6)
A	NL-A-7 902 637 (KUNSTSTOF EN METAALFAB VELTKAM) 7 October 1980 * page 2, line 31 - page 3, line 8; figure * ---	1,3	E04B2/44
A	GB-A-2 190 938 (BODEGRAVEN BV) 2 December 1987 * page 1, line 85 - line 126; figures 1,2,4 * ---	1,3	
A	EP-A-0 279 266 (C. MEYERS) 24 August 1988 * column 2, line 34 - column 3, line 29; figure 1 * -----	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 May 1996	Kriekoukis, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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