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(73) Proprietor: **THE EXPANDED METAL COMPANY LIMITED**
P.O. Box 14,
Longhill Industrial Estate (North)
Hartlepool TS25 1PR (GB)

(72) Inventor: **Rabbits, George c/o The Expanded Metal Co. Ltd.**
P.O. Box No. 14
Longhill Industrial Estate(North)
Hartlepool, TS25 1PR (GB)
Inventor: **Cristison, Ian c/o The Expanded Metal Co. Ltd.**
P.O. Box No. 14
Longhill Industrial Estate(North)
Hartlepool, TS25 1PR (GB)

(74) Representative: **Skerrett, John Norton Haigh et al**
H.N. & W.S. Skerrett
Charles House
148/9 Great Charles Street
Birmingham B3 3HT (GB)

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Description

This invention relates to the construction of walls, and it is particularly concerned with an improved design of wall anchorage device for use in building an extension wall of bricks or building blocks onto an existing wall structure and tying it in place in an angular relationship thereto.

For building an extension brick wall onto an existing brick wall and for tying or anchoring it in place, it is already known to provide a so-called wall plate of a kind comprising a longitudinally flanged elongate metal plate which is fixed vertically to the face of the existing wall and used as a guide to align and position the end bricks of the extension wall as these are laid in position in abutting relationship with the wall plate, with the extension wall being tied in position and bonded to the existing wall by associated wall tie elements which are anchored to the wall plate and which extend into and are embedded and keyed into mortar joints between adjacent courses of the extension wall. The use of such a wall plate and wall tie elements is for example disclosed in British patent specification No. 1604941.

Hitherto, wall ties used with such wall plates have been separate elements, for example standard butterfly type wire ties or profiled metal strip ties, which are clipped or interlockingly engaged with the wall plate. However, although these known arrangements can be functionally satisfactory, the need to provide separate wall tie elements which have to be positioned and anchored to the wall plate during the construction of the extension wall can be a disadvantage.

The present invention provides an improved form of wall anchorage device in the form of a wall plate generally of the kind referred to above having integral portions thereof adapted to form the requisite associated wall tie elements.

It is acknowledged that GB-A-2014640 discloses various forms of strip devices for use in building, especially in connection with the bonding of brickwork. However, there is no specific disclosure therein of such devices, which generally comprise a plate-like web with integral flanges that project therefrom, being useful or suitable for the particular purpose of facilitating the building and tying in of an extension wall onto the face of an existing wall structure.

More particularly, the invention provides a wall anchorage device for use in building and tying in place an extension wall of bricks or building blocks extending outwardly in angular relationship from a substantially vertical face of an existing wall structure, said anchorage device comprising an elongate plate which has a generally flat body portion and which is formed with upstanding integral longitudinal

flange means along at least one edge thereof, said plate being adapted to be fixed in use in a vertical orientation to the face of the existing wall so as to provide a means for assisting the positioning of the end bricks or blocks of the extension wall as these are laid in abutting relationship with said body portion, said body portion being connectable to said extension wall by wall tie elements that can be arranged to extend into and to be embedded and keyed into jointing material between adjacent courses of the extension wall as it is being built thereby to tie said extension wall in position and bond it to the existing wall, characterised in that at least one series of integral elongate tongues extending in a direction substantially longitudinally of the plate and spaced apart at intervals along the length of said plate is formed from out of the material of the body portion of said plate, said tongues being raised at a shallow angle to the plane of said body portion whereby the free ends of said tongues project outwardly of the surface of said body portion of the plate by a distance which is at least as great as the thickness of the material forming said tongues at their free ends such that, in use, after the plate is fixed vertically in position to the face of the existing wall structure said tongues can be readily caught hold of and bent outwards so as to project substantially at right angles in a horizontal plane thereby enabling them to extend into and to be embedded and keyed into the joints between adjacent courses of the extension wall during construction and to serve as said wall tie elements.

Preferably, the tongues of the device or so-called wall plate are suitably profiled and/or apertured to key most effectively in an interlocking manner into the jointing material or mortar of the extension wall and are spaced along the length of the plate at predetermined regular intervals corresponding to the distance between the adjacent courses of the extension wall or to a multiple thereof.

Generally, the tongues will have a length which is at least five times greater than the width at their root end. It is preferred to arrange the aforesaid series of integral wall tie tongues either in a single row or in two side-by-side rows in which all the tongues extend initially in the same general longitudinal direction. Also, preferably, the design and material is such that the tongues can each readily be bent out by hand about a transverse axis so as to extend away from the plane of the body portion of the wall plate at any position in the region adjacent their root end, not necessarily actually at their root end, up to a point at least one third of the way along their length from their root end. The shallow angle with respect to the plane of the body portion at which the tongues are initially raised is

preferably less than 10° and is conveniently in the range of 1° to 5°.

The body portion of the wall plate will also generally be formed with a number of apertures, transverse slots for example, along its length for accommodating fixing elements such as bolts for securing it to the face of the existing wall and/or for also keying in mortar or sealing material applied in this region. Furthermore, shallow stand-off projections are preferably provided to space the main part of the body portion slightly away from the surface of the existing wall, thereby to assist in accommodating irregularities in the latter and leaving a space for filling with mortar. Where the body portion of the wall plate is provided with an upstanding longitudinal brick locating flange along one edge only, the opposite longitudinal edge may also be bent over rearwardly to provide a shallow lip which acts as an additional stand-off or spacing projection and as a reinforcing beading. Moreover, when apertures are provided in the integral wall tie tongues for keying with the mortar jointing in the extension wall these may be formed with a shallow raised rim to facilitate even more effective keying and bonding with the mortar.

The invention also provides a method of building a wall of bricks or building blocks as an extension outwardly in angular relationship to a face of an existing wall structure, said method comprising applying a wall anchorage device as hereinabove defined to said face and fixing thereto said anchorage device plate in a vertical orientation, laying at least partially the lower courses of the bricks or building blocks of the extension wall until the upper surface of the endmost brick or block of the course being laid, which brick or block is butted up to the body portion of said plate, lies adjacent the level of the root end of the lowermost tongue in said body portion, bending said lowermost tongue outwards until it extends in a substantially horizontal plane lying immediately above said upper surface of the endmost brick or block of the last laid course, applying jointing material and laying the next course of bricks or blocks whereby said lowermost tongue is embedded in said jointing compound and is sandwiched between the two last laid courses of bricks or blocks, and continuing in the same manner laying successive courses and bending outwards each successive tongue as the level of the upper surface of the endmost brick or block of the last laid course reaches a level adjacent the level of said each successive tongue so that said tongues are each arranged to serve as integral wall tie elements bonding the extension wall in place.

The wall plates may be used with the tongues all initially directed either upwardly or downwardly as hereinafter described so that where there is a single longitudinal locating flange along one edge

only this may be placed either to the left or to the right hand side.

In the accompanying drawings various exemplary embodiments are illustrated of wall plates in accordance with the invention.

FIGURE 1 is a front elevational view of a length of the wall plate of a first embodiment shown partially broken away;

FIGURE 2 is a side edge view of the wall plate of FIGURE 1;

FIGURE 3 is a cross-sectional view on line III-III of FIGURE 1;

FIGURE 4 is a perspective fragmentary view showing the wall plate of said first embodiment being used in a first manner in constructing an extension brick wall;

FIGURE 5 is a view similar to FIG. 4 showing the wall plate being used in an alternative second manner in constructing an extension brick wall;

FIGURE 6 is a vertical section on line VI - VI of FIG. 4 showing schematically an ideal structure in which the courses of bricks in the extension wall are regularly spaced;

FIGURE 7 is a view similar to FIG. 6 but showing in a somewhat exaggerated form an arrangement when the courses of bricks in the extension wall have irregular spacings;

FIGURE 8 is a fragmentary front elevational view of a length of the wall plate of a second embodiment;

FIGURE 9 is a cross-sectional view on line IX - IX of FIGURE 8;

FIGURE 10 is a front elevational view of a slightly modified wall plate of a further embodiment;

FIGURE 11 is an enlarged fragmentary front view of the lower end portion of the wall plate of FIGURE 10;

FIGURE 12 is a cross-sectional view on line XII - XII of FIGURE 11, showing also in broken lines the head of a fixing bolt in place and the surface of an existing wall as when in use;

FIGURE 13 is a cross-sectional view on line XIII - XIII of FIGURE 11; and

FIGURE 14 is a side elevational view of the portion of the wall plate shown in FIGURE 11.

Referring first to FIGURES 1 to 4 of the drawings, the wall plate 8 is a sheet metal structure, formed for example of stainless steel about 0.7 mm thick, comprising a main elongate flat plate-like body portion 10 provided along one longitudinal edge with an integral flange 12 upstanding at right angles to the plane of the body portion. The opposite longitudinal edge portion is turned over to provide a shallow rearwardly directed lip 14. The flange 12 has a series of plain holes 15.

At regular predetermined intervals along its length which are multiples of the normal vertical

spacing between courses of standard size building bricks or blocks, the body portion 10 is provided with a series of integral elongate tongues 16 which all extend in alignment in the same longitudinal direction forming, in this embodiment, a single row or column. Each tongue 16 has a slightly outwardly divergent tapering profile and is formed by punching or stamping the material of the wall plate so that the tongue is left integrally joined at its root end to the body portion 10 of the wall plate. Small holes 17 are formed at the root ends, as shown, to safeguard against cracks developing and initially each tongue lies slightly raised at a shallow angle, conveniently within a range of 1° to 5°, to the plane of the body portion whereby the free ends of said tongues project outwardly of the surface of said body portion of the plate by a distance which is at least as great as the thickness of the material forming said tongues at their free ends as shown in full lines in FIGURE 2. The material forming these tongues 16 is sufficiently ductile that when required for use these tongues 16 can readily be bent up, simply by hand pressure, so as to project outwardly substantially at right angles as indicated in FIGURE 2, or they may be bent through an even greater angle, up to substantially 180°, as required in some cases according to the manner of use as hereinafter described.

The wall tie tongue portions 16 are also formed, in the region extending over the outer two-thirds of their length, with a number of holes or apertures 18 punched out to leave a surrounding shallow raised rim 20 giving each hole or aperture a bell-shaped mouth.

A further series of apertures in the form of short transverse slots 22 is provided in the body portion 10 throughout its length, one such slot being located between each adjacent pair of tongues 16, for receiving bolts, screws or similar fixing elements in order to secure the wall plate 8 to the face of an existing wall structure as hereinafter described. Each of these slots 22 is also punched out to provide a bell-shaped mouth and a surrounding raised rim 24 which projects rearwardly of the body portion 10 so as to act, in use, as a stand-off projection to space the body portion from the face of the existing wall structure.

Referring now to FIGURE 4, this shows a stage in the construction of an extension wall 30 at right angles to the face of an existing wall structure 32 using in one manner the wall plate 8 hereinabove described. In this operation, the wall plate 8 is first securely fixed in a vertical position at the required location to the face of the existing wall structure 32 which is drilled and plugged to receive fixing elements, such as the bolt 34 indicated in the drawing, engaging in the slots 22. In setting up the wall plate 8, ideally it is positioned so that the trans-

verse axes "T" defining the root ends of the wall tie tongue portions 16 each lie at the level of a mortar joint between adjacent proposed courses of the extension wall and, as indicated in FIGURE 4, these tongue portions initially extend upwards from their root ends. Also, as already indicated, the main body portion 10 of the wall plate 8 is set forwards slightly from the face of the wall 32 by the stand-off projections or spacers provided by the raised rim portions 24 around the fixing slots 22, and also by the shallow lip 14.

The bricks 29 of the extension wall 30 are then laid course-by-course in the usual way with each end brick being butted up to the body portion 10 of the wall plate and aligned by abutting engagement with the retaining guide flange 12 at the one side. Upon reaching each wall tie tongue portion 16, however, the latter is bent outwards so as to extend in a substantially horizontal plane which will lie immediately above an end brick in a course of the extension wall. An example of this is clearly shown in FIGURE 4 in relation to the uppermost brick laid in the extension wall. Each integral wall tie tongue 16 is thus sandwiched between different courses of bricks in the extension wall, and it will be appreciated that as the jointing compound or mortar is applied it will surround these tongues and key into the holes or apertures 18. The raised rims 20 of these holes or apertures 18 in each tongue 16 enhances the keying effect and ensures that space is left to accommodate a sufficient thickness of mortar. The mortar will also generally penetrate into and key with adjacent holes 15 in the retaining guide flange 12 and into any open adjacent holes or apertures in the body portion 10.

By this means, the extension wall 30 is readily built-up in the correct position and orientation with respect to the existing wall structure 32, and is soundly tied in and bonded to the latter without need for any separate wall tie elements, thereby effecting a simplification in the number of parts required in the construction operation itself.

It will of course be appreciated that the initial shallow inclination of the wall tie tongues 16 with respect to the plane of the body portion 10 enables their free ends readily to be grasped and the tongues can be bent outwards into their "in-use" positions during the operation of building up of the extension wall, after the wall plate has been fixed to the existing wall. Generally it will be most convenient for storage and transport and for ease of use to defer the outwards bending operation until the wall plate is in place and the extension wall is being constructed.

As so far described it has been assumed that the courses of the extension wall 30 have a perfectly regular spacing and that the wall plate 8 is positioned such that the transverse axes defining

the root ends of the tongues 16 lie at a level of the joint between two adjacent courses. This is the ideal situation in which the tongues 16 are each bent outwardly about their root ends in order to extend at right angles in the correct position to lie between two adjacent courses of the extension wall and is illustrated in the fragmentary sectional view of FIGURE 6. On the other hand, in practice, the courses of the extension wall may possibly not be spaced with perfect regularity, perhaps using bricks of different dimensions and/or the wall plate may not be fixed in quite the correct position. Or, the spacing of the tongues 16 may not match the spacing of the bricks. However, the sheet metal of which the wall plate is composed and the form of the tongue portions 16 is such that they can be readily bent not only at their root ends but also at any point in the region adjacent their root ends extending up to at least a third of the way along their length. This is in fact indicated in FIGURE 7. Tests have shown, somewhat surprisingly, that a strong bond and good stability can be obtained in many cases even if the point at which the tongues are bent lies at least as far as one third along their length. If necessary, the tongues may sometimes even be folded with a double bend. Thereby, irregularities in the vertical spacing of the courses in the extension wall and/or a certain degree of misalignment of the wall plate can be readily accommodated, as schematically indicated for example in FIGURE 7.

In the manner of using the wall plate 8 illustrated in FIGURE 4 it will be noted that the flange 12 lies on the righthand side of the extension wall. Usually, in the finished structure, the flange 12 will be concealed by cladding but this may not be possible if the right-hand side of the extension wall is to be an exposed exterior face, and it may be desired to have the flange 12 on the opposite left-hand side. This can readily be arranged simply by turning the wall plate into a reversed position before securing it to the existing wall 32. In this case, however, the tongue portions 16 will initially be directed downwards so that each of them needs first to be bent upwards through an angle of more than 90°, possibly even an angle approaching 180°, before laying the bricks of the adjacent course or courses of the extension wall. These tongues are then bent back downwards into a substantially horizontal position, at right angles to the body portion 10, after laying the brick course immediately below. This alternative second manner of using the wall plate is illustrated in FIGURE 5, and the bending of a tongue portion 16 from its initial position "A", beyond 90° to an upwardly directed second position "B", and then back to a 90° horizontal position "C" is indicated in phantom lines in FIGURE 2.

The wall plate 8 is preferably composed of a material such as stainless steel to avoid any corrosion problems and may of course be manufactured in a series of standard lengths which can if necessary be cut, or joined in overlapping aligned relationship, to suit the required height of the extension wall which is to be built. Sheet metal thicknesses in the range of 0.5 mm to 1.00 mm are generally suitable and enable easy bending of the wall tie tongues.

Two such wall plates arranged in side-by-side mirror image relationship can be used to construct a thick extension wall. Preferably, however, in such cases a wider form of wall plate with a plurality of rows or columns of integral tongue portions will be used. By way of example one design of such wider form of wall plate 8a is shown in FIGURES 8 and 9. This is basically the same as the wall plate 8 already described but there are two spaced columns or rows of integral wall tie tongue portions 16a and 16b arranged in horizontal pairs as shown, and also horizontal pairs of fixing slots 22a, 22b, are provided between each pair of tongues 16a, 16b. Otherwise the structure corresponds with that already described, corresponding parts being indicated by the same reference numerals, and is used in substantially the same way. It will be noted that in this embodiment the tongues 16a and 16b of each adjacent pair again each extend in the same longitudinal direction and each have their root ends aligned in a common transverse plane so that when they are bent up at right angles to the body portion 10 they can both lie in side-by-side relationship in a common transverse plane.

Instead of the body portion of the plates having fixing element apertures formed with a bell-shaped mouth providing a surrounding raised rim projecting rearwardly, in an obvious alternative modified form the body portion of the plate can be formed with a series of dish-like depressions and the apertures for the fixing elements are formed in a substantially flat base portion of such dish-like depressions. An example of such modified construction is illustrated in FIGURES 10 to 14.

The wall plate shown in FIGURES 10 to 14 is basically the same as that described in connection with FIGURES 1 to 3 and the same reference numerals are again used to indicate similar parts. For fixing the wall plate to the face of an existing wall, however, the body portion 10 is provided with short transverse slots 22' formed in a substantially flat base 70 of each of a series of dish-like depressions 72 located along the length of the wall plate. Each dish-like depression 72 has a shallow peripheral sloping wall 74 and the flat base part 70 is set rearwards from the main plane of the body part of the wall plate by a distance approximately equal to the depth of the edge lip 14 and together with the

latter again act as stand-off projections to space the main body portion 10 from the face of the existing wall structure 32 when fixed to the latter.

The fixing elements used for securing the wall plate to the existing wall will generally be headed screw-threaded fasteners such as the bolt 34 indicated in broken lines in FIGURE 12 and a flat washer 35 will be fitted under the head of this bolt, the dish-like depressions 72 being sufficiently large for such washer (e.g. 30mm diameter washer) to be accommodated wholly therein and to lie against the flat base 70.

Although by way of example in the illustrated embodiments the spacing between the tongues 16 has been shown as corresponding generally to the depth of two courses of bricks, in fact for use at least in the United Kingdom the spacing will generally be set to correspond to the depth of three courses of standard size bricks or one course of standard size building blocks.

If desired, the wall plates could have a retaining guide flange along each longitudinal edge, and many other detail modifications can be made within the scope of the invention, especially in relation to the arrangement and form of the apertures and of the integral wall tie tongues.

Claims

1. A wall anchorage device for use in building and tying in place an extension wall of bricks or building blocks extending outwardly in angular relationship from a substantially vertical face of an existing wall structure (32), said anchorage device comprising an elongate plate (8;8a) which has a generally flat body portion (10) and which is formed with upstanding integral longitudinal flange means (14) along at least one edge thereof, said plate (8;8a) being adapted to be fixed in use in a vertical orientation to the face of the existing wall (32) so as to provide a means for assisting the positioning of the end bricks or blocks (29) of the extension wall (30) as these are laid in abutting relationship with said body portion (10), said body portion (10) being connectable to said extension wall (30) by wall tie elements that can be arranged to extend into and to be embedded and keyed into jointing material between adjacent courses of the extension wall (30) as it is being built thereby to tie said extension wall in position and bond it to the existing wall, characterised in that at least one series of integral elongate tongues (16;16a,16b) extending in a direction substantially longitudinally of the plate (8;8a) and spaced apart at intervals along the length of said plate is formed from out of the material of

the body portion (10) of said plate, said tongues (16;16a,16b) being raised at a shallow angle to the plane of said body portion whereby the free ends of said tongues project outwardly of the surface of said body portion (10) of the plate by a distance which is at least as great as the thickness of the material forming said tongues at their free ends such that, in use, after the plate (8;8a) is fixed vertically in position to the face of the existing wall structure (32) said tongues (16;16a,16b) can be readily caught hold of and bent outwards so as to project substantially at right angles in a horizontal plane thereby enabling them to extend into and to be embedded and keyed into the joints between adjacent courses of the extension wall (30) during construction and to serve as said wall tie elements.

2. A wall anchorage device as claimed in Claim 1 wherein the root ends of the tongues (16;16a,16b) are spaced along the length of the plate (8;8a) at predetermined regular intervals corresponding to the distance expected between adjacent courses of the extension wall (30) or to a multiple thereof.

3. A wall anchorage device as claimed in Claim 1 or 2 wherein the tongues (16;16a,16b) are apertured (18) and/or have a divergent tapering profile so as to key into the jointing material of the extension wall (30) in an interlocking manner.

4. A wall anchorage device as claimed in any of the preceding claims wherein said tongues (16) are all arranged along the body portion of the plate (8) in a single row in which they all extend initially in the same general longitudinal direction.

5. A wall anchorage device as claimed in any of claims 1 to 3 wherein said tongues (16a,16b) are all arranged in transversely aligned pairs along the body portion of the plate (8a) providing two side-by-side rows in which they all extend initially in the same general longitudinal direction.

6. A wall anchorage device as claimed in any of the preceding claims wherein the plate (8;8a) is composed of sheet-metal having a thickness within the range of 0.5 - 1.0 mm and the tongues (16;16a,16b) are sufficiently ductile as to be manually bendable about a transverse axis at any position between their root ends and a point at least one third of the way along their length.

7. A wall anchorage device as claimed in Claim 6 wherein the thickness of the sheet-metal of which the plate (8;8a) is composed is approximately 0.7 mm.

8. A wall anchorage device as claimed in any of the preceding claims wherein the tongues (16;16a,16b) each have a length which is at least five times the width at their root end.

9. A wall anchorage device as claimed in any of the preceding claims wherein the angle to the plane of the body portion (10) of the plate at which the tongues (16;16a,16b) are raised in their initial condition before use lies in the range of 1° - 5° .

10. A method of building a wall of bricks or building blocks as an extension outwardly in angular relationship to a face of an existing wall structure, said method comprising applying a wall anchorage device as claimed in any of the preceding claims to said face and fixing thereto said anchorage device plate (8;8a) in a vertical orientation, laying at least partially the lower courses of the bricks or building blocks (29) of the extension wall (30) until the upper surface of the endmost brick or block of the course being laid, which brick or block is butted up to the body portion (10) of said plate, lies adjacent the level of the root end of the lowermost tongue (16;16a,16b) in said body portion, bending said lowermost tongue outwards until it extends in a substantially horizontal plane lying immediately above said upper surface of the endmost brick or block (29) of the last laid course, applying jointing material and laying the next course of bricks or blocks whereby said lowermost tongue (16;16a,16b) is embedded in said jointing compound and is sandwiched between the two last laid courses of bricks or blocks, and continuing in the same manner laying successive courses and bending outwards each successive tongue as the level of the upper surface of the endmost brick or block of the last laid course reaches a level adjacent the level of said each successive tongue so that said tongues are each arranged to serve as integral wall tie elements bonding the extension wall (30) in place.

11. A method of building an extension wall as claimed in Claim 10 wherein the anchorage device plate (8;8a) is fixed to the face of the existing wall (32) with the tongues (16;16a,16b) in the body portion thereof initially directed upwardly before being bent.

12. A method of building an extension wall as claimed in Claim 10 wherein the anchorage device plate (8;8a) is fixed to the face of the existing wall (32) with the tongues (16;16a,16b) in the body portion (10) thereof initially directed downwardly, and wherein said tongues are then bent upwards about their root ends each through an angle substantially greater than 90° so as to be directed upwardly before laying at least each lower adjacent course of bricks or blocks (29) of the extension wall (30) and before finally bending each said tongue back downwards and outwards so as to extend in a substantially horizontal plane in order to serve as a said wall tie element.

13. A method of building an extension wall as claimed in any one of Claims 10 to 12 wherein at least some of said tongues (16;16a,16b), in being bent outwards so as to extend in substantially horizontal planes in order to serve as said wall tie elements are bent about a transverse axis spaced from their respective root ends.

14. A method of building an extension wall as claimed in Claim 13 wherein said transverse axes about which said at least some tongues (16;16a,16b) are bent each lie in a region of the respective tongue that is intermediate the root end thereof and a point one third of the way along the length of said respective tongue and closer to said point than to said root end.

Patentansprüche

1. Mauerankerelement zur Verwendung beim Bau und zum Anbinden einer aus Ziegelsteinen oder Mauersteinen bestehenden Anschlußwand, die sich winklig nach außen von einer im wesentlichen vertikalen Außenfläche einer vorhandenen Mauerkonstruktion (32) erstreckt, enthaltend eine längliche Platte (8;8a), die einen im wesentlichen flachen Körperabschnitt (10) aufweist und die entlang mindestens eines ihrer Ränder mit einem integralen, aufrechtstehenden, längsverlaufenden Flansch (14) versehen ist, wobei diese Platte (8;8a) bei ihrer Verwendung in einer vertikalen Ausrichtung an der Außenfläche der vorhandenen Mauer (32) befestigt werden kann, um eine Einrichtung zu bilden, die das Positionieren der End-Ziegelsteine oder -Mauersteine (29) der Anschlußwand (30) unterstützt, wenn diese in Anlagestellung mit diesem Körperabschnitt (10) aufgeschichtet werden, der mit dieser Anschlußwand (30) mittels Mauerbinder-Elementen verbindbar ist, die so angeordnet werden können,

- daß sie sich in das Verbindungsmaterial zwischen benachbarten Lagen der Anschlußwand (30) während ihres Aufbaues erstrecken und in dieses Verbindungsmaterial eingebettet und damit verriegelt werden, um diese Anschlußwand in ihrer Position relativ zu der vorhandenen Mauer zu verankern und damit zu verbinden, dadurch gekennzeichnet, daß mindestens eine Reihe von integralen, länglichen Zungen (16;16a, 16b), die sich in einer Richtung im wesentlichen in Längsrichtung der Platte (8;8a) erstrecken und in Intervallen über die Länge dieser Platte im Abstand voneinander liegen, aus dem Material des Körperabschnittes (10) dieser Platte herausgeformt ist, daß diese Zunge (16;16a,16b) unter einem kleinen Winkel gegenüber der Ebene dieses Körperabschnittes angehoben sind, wodurch die freien Enden dieser Zungen gegenüber der Oberfläche dieses Körperabschnittes (10) der Platte um einen Abstand nach außen ragen, der mindestens so groß ist wie die Dicke des diese Zungen an ihren freien Enden bildenden Materials, derart, daß, nachdem die Platte (8; 8a) vertikal in Position an der Außenfläche der vorhandenen Mauerkonstruktion (32) befestigt ist, diese Zungen (16;16a,16b) bei der Benutzung, leicht ergriffen und nach außen umgebogen werden können, so daß sie im wesentlichen rechtwinklig in einer horizontal Ebene vorspringen, so daß sie sich während des Baus der Anschlußwand in die Fugen zwischen benachbarten Lagen dieser Anschlußwand (30) erstrecken und darin eingebettet und verriegelt werden, um als diese Mauerbinderelemente zu dienen.
2. Mauerankerelement nach Anspruch 1, bei dem die Wurzelansätze der Zungen (16;16a,16b) über die Länge der Platte (8;8a) in vorgegebenen, gleichmäßigen Intervallen verteilt sind, die dem erwarteten Abstand oder einem Vielfachen davon zwischen benachbarten Lagen der Anschlußwand (30) entsprechen.
 3. Mauerankerelement nach Anspruch 1 oder 2, bei dem die Zungen (16;16a,16b) Öffnungen (18) und oder ein divergierend abgeschrägtes Profil aufweisen, so daß sie in das Verbindungsmaterial der Anschlußwand (30) verriegelnd eingeschlossen sind.
 4. Mauerankerelement nach einem der vorhergehenden Ansprüche, bei dem sämtliche Zungen (16) entlang des Körperabschnittes der Platte (18) in einer einzigen Reihe angeordnet sind, in der sie sich anfänglich in der gleichen allgemeinen Längsrichtung erstrecken.
 5. Mauerankerelement nach einem der Ansprüche 1 bis 3, bei dem diese Zungen (16a,16b) alle als in Querrichtung ausgerichtete Paare entlang des Körperabschnittes der Platte (8a) angeordnet sind und zwei nebeneinanderliegende Reihen bilden, in denen alle Zungen sich anfänglich in der gleichen, allgemeinen Längsrichtung erstrecken.
 6. Mauerankerelement nach einem der vorhergehenden Ansprüche, bei dem die Platte (8;8a) aus Metallblech mit einer Dicke im Bereich von 0,5 bis 1,0 mm besteht und die Zungen (16;16a,16b) ausreichend verformbar sind, so daß sie von Hand um eine Querachse in jeder Position zwischen ihren Wurzelansätzen und einem Punkt biegsam sind, der auf mindestens einem Drittel des Weges entlang ihrer Länge liegt.
 7. Mauerankerelement nach Anspruch 6, bei der Dicke des Metallbleches, aus dem die Platte (8;8a) besteht, etwa 0,7 mm beträgt.
 8. Mauerankerelement nach einem der vorhergehenden Ansprüche, bei dem die Zungen (16;16a,16b) jeweils eine Länge haben, die mindestens das Fünffache der Breite im Bereich ihres Wurzelansatzes beträgt.
 9. Mauerankerelement nach einem der vorhergehenden Ansprüche, bei dem der Winkel, unter dem die Zungen (16;16a,16b) in ihrer Ausgangsstellung vor ihrer Benutzung gegenüber der Ebene des Körperabschnittes (10) der Platte angehoben sind, im Bereich von 1° bis 5° liegt.
 10. Verfahren zum Errichten einer Wand aus Ziegelsteinen oder Mauersteinen als eine Anschlußwand, die sich nach außen in winkelliger Anordnung an eine Außenfläche einer bestehenden Mauerkonstruktion anschließt, indem man ein Mauerankerelement gemäß einem der vorhergehenden Ansprüche an dieser Außenfläche anbringt und daran diese Anker-elementplatte (8;8a) in einer vertikalen Orientierung befestigt, mindestens teilweise die unteren Lagen der Ziegelsteine oder Mauersteine (29) der Anschlußwand (30) aufschichtet, bis die Oberseite des letzten gegen den Körperabschnitt (10) dieser Platte anliegenden Ziegel- bzw. Mauersteines der verlegten Lage im Höhenbereich des Wurzelansatzes der untersten Zunge (16;16a,16b) dieses Körperabschnittes liegt, diese unterste Zunge nach außen biegt, bis sie sich in eine im wesentliche horizontale Ebene erstreckt, die unmittelbar über der Oberseite

dieses Endziegel- oder - Mauersteines (29) der letzten verlegten Lage liegt, Verbindungsmaterial aufträgt und anschließend die nächste Ziegelstein- oder Mauersteinlage verlegt, wodurch diese unterste Zunge (16;16a,16b) in dieses Verbindungsmaterial eingebettet und zwischen den beiden letzten Ziegelstein- oder Mauersteinlagen eingefügt ist, und in der gleichen Weise fortfährt und folgende Lagen verlegt und die jeweils folgende Zunge nach außen umbiegt, wenn die Oberseite des Endziegelsteins oder Endmauersteins der letzten verlegten Lage ein Niveau im Bereich der Höhenstellung von der jeweils folgenden Zunge erreicht, so daß diese Zungen so angeordnet sind, daß sie als die integrierenden Mauerbinderelemente dienen und die Anschlußwand (30) verankern.

11. Verfahren zum Errichten einer Anschlußwand nach Anspruch 10, bei dem die Verankerungselementplatte (8;8a) so an der Außenfläche der bestehenden Wand (32) befestigt wird, daß die Zungen (16;16a,16b) in dem Körperabschnitt davon anfänglich nach oben gerichtet sind, bevor sie umgebogen werden.

12. Verfahren zum Errichten einer Anschlußwand nach Anspruch 10, bei der die Ankerelementplatte (8;8a) so an der Außenfläche der bestehenden Wand (32) befestigt wird, daß die Zungen (16;16a,16b) in dem Körperabschnitt (10) derselben anfänglich nach unten gerichtet sind, wobei diese Zungen dann um ihre Wurzelansätze jeweils über einen Winkel von mehr als 90° nach oben gebogen werden, so daß sie nach oben gerichtet sind, bevor zumindest jede untere, angrenzende Schicht von Ziegel- oder Mauersteinen (29) der Anschlußwand (30) verlegt wird, und bevor man abschließend jede dieser Zungen zurück nach unten und außen verbiegt, so daß sie sich in einer im wesentlichen horizontalen Ebene erstrecken, um als dieses Mauerbinderelement zu dienen.

13. Verfahren zum Errichten einer Anschlußwand nach einem der Ansprüche 10 bis 12, bei dem mindestens einige dieser Zungen (16;16a,16b) bei dem Auswärtsbiegen in im wesentlichen horizontalen Ebenen, damit sie als diese Mauerbinderelemente dienen können, um eine Querachse verbogen werden, die im Abstand von ihren jeweiligen Wurzelansätzen liegt.

14. Verfahren zum Errichten einer Anschlußwand nach Anspruch (13), bei dem diese Querachsen, um die mindestens einige dieser Zungen (16;16a,16b) gebogen werden, in einem Bereich der jeweiligen Zungen liegen, der zwi-

schen dem Wurzelansatz derselben und einem Punkt liegt, der sich auf einem Drittel des Weges entlang der Länge dieser jeweiligen Zunge befindet und dichter an diesem Punkt als an diesem Wurzelansatz liegt.

Revendications

1. Dispositif d'ancrage de mur destiné à être utilisé dans la construction et à la fixation en place d'un mur d'extension en briques ou parpaings s'étendant vers l'extérieur avec une certaine relation angulaire depuis une face sensiblement verticale d'une structure de mur existante (32), le dit dispositif d'ancrage comportant une plaque allongée (8, 8a) qui présente une partie de corps généralement plane (10) et qui est formée avec des ailes longitudinales d'une seule pièce s'étendant verticalement (14) le long d'au moins un de ses bords, la dite plaque (8; 8a) étant prévue pour être fixée avec une orientation verticale par rapport à la face du mur existant (32) de façon à fournir un moyen destiné à assister le positionnement des briques ou parpaings d'extrémité (29) du mur d'extension (30) lorsque ceux-ci sont posés en butée contre la dite partie de corps (10), la dite partie de corps (10) pouvant être reliée au dit mur d'extension (30) par des éléments d'accrochage de mur qui peuvent être disposés de façon à s'étendre dans et être logés et bloqués dans la matière des joints entre des rangs adjacents du mur d'extension (30) lorsque celui ci est construit de façon à accrocher le dit mur d'extension en position et le fixer au mur existant, caractérisé en ce que au moins une série de pattes allongées (16; 16a, 16b) faisant partie intégrante de et s'étendant dans une direction sensiblement longitudinale à la plaque (8; 8a) et espacées avec intervalles sur la longueur de la dite plaque est formée dans la matière de la partie de corps (10) de la dite plaque, les dites pattes (16; 16a, 16b) étant relevées avec un léger angle par rapport au plan de la dite partie de corps, grâce à quoi les extrémités libres des dites pattes se projettent vers l'extérieur de la surface de la dite partie de corps (10) de la plaque sur une distance qui est au moins aussi grande que l'épaisseur de la matière formant les dites pattes à leurs extrémités libres de telle sorte que, lors de l'utilisation, après que la plaque (8; 8a) ait été fixée verticalement en position sur la face de la structure de mur existante (32), les dites pattes (16; 16a, 16b) puissent être facilement saisies et pliées vers l'extérieur de façon à se projeter sensiblement à angle droit dans un plan horizontal en leur

permettant de s'étendre dans et être logés et bloqués dans les joints entre des rangs adjacents du mur d'extension (30) au cours de la construction et de servir d'éléments d'accrochage de mur.

2. Dispositif d'ancrage de mur selon la revendication 1, dans lequel les bases des pattes (16; 16a, 16b) sont espacées le long de la longueur de la plaque (8; 8a) à intervalles réguliers prédéterminés correspondant à la distance prévue entre des rangs adjacents du mur d'extension (30) ou à un multiple de celle ci. 10
3. Dispositif d'ancrage de mur selon la revendication 1 ou 2, dans lequel les pattes (16; 16a, 16b) sont pourvues d'ouvertures (18) et/ou ont un profil conique divergent de façon à se bloquer dans la matière des joints du mur d'extension (30) d'une manière verrouillée. 20
4. Dispositif d'ancrage de mur selon l'une quelconque des revendications précédentes, dans lequel les dites pattes (16) sont toutes disposées le long de la partie de corps de la plaque (8) sur une seule rangée dans laquelle elles s'étendent toutes initialement dans la même direction longitudinale générale. 25
5. Dispositif d'ancrage de mur selon l'une quelconque des revendications 1 à 3, dans lequel les dites pattes (16a, 16b) sont toutes disposées par paires alignées transversalement le long de la partie de corps de la plaque (8a) en prévoyant deux rangées côte-à-côte dans lesquelles elles s'étendent toutes initialement dans la même direction longitudinale générale. 30 35
6. Dispositif d'ancrage de mur selon l'une quelconque des revendications précédentes, dans lequel la plaque (8; 8a) est réalisée en tôle ayant une épaisseur dans la fourchette de 0,5 à 1,0 mm et les pattes (16; 16a, 16b) sont suffisamment ductiles pour être facilement pliées à la main autour d'un axe transversal dans n'importe quelle position entre leur base et un point à au moins un tiers de la distance le long de la longueur. 40 45
7. Dispositif d'ancrage de mur selon la revendication 6, dans lequel l'épaisseur de la tôle dans laquelle la plaque (8; 8a) est réalisée est approximativement de 0,7 mm. 50
8. Dispositif d'ancrage de mur selon l'une quelconque des revendications précédentes, dans lequel les pattes (16; 16a, 16b) ont chacune une longueur qui est au moins cinq fois plus

grande que la largeur à la base.

9. Dispositif d'ancrage de mur selon l'une quelconque des revendications précédentes, dans lequel l'angle par rapport au plan de la partie de corps (10) de la plaque suivant lequel les pattes (16; 16a, 16b) sont relevées dans leur état initial se trouve dans la fourchette de 1° à 5°. 5
10. Procédé de construction d'un mur en briques ou parpaings sous forme d'une extension vers l'extérieur avec une certaine relation angulaire depuis une face d'une structure de mur existante, le dit procédé comprenant l'application d'un dispositif d'ancrage de mur tel que revendiqué dans l'une quelconque des revendications précédentes sur la dite face et la fixation de la dite plaque de dispositif d'ancrage (8; 8a) avec une orientation verticale, la pose au moins partielle des rangs inférieurs de briques ou parpaings (29) du mur d'extension (30) jusqu'à ce que la surface supérieure de la brique ou du parpaing le plus extrême du rang soit posé, lequel parpaing ou brique bute contre la partie de corps (10) de la dite plaque et repose de façon adjacente au niveau de la base de la patte la plus basse (16; 16a, 16b) dans la dite partie de corps, le pliage de la dite patte la plus basse vers l'extérieur jusqu'à ce qu'elle s'étende dans un plan sensiblement horizontal se trouvant immédiatement au dessus de la dite surface supérieure de la brique ou du parpaing le plus extrême (29) du dernier rang posé, l'application de la matière du joint et la pose du rang suivant de briques ou parpaings, la dite patte la plus basse (16; 16a, 16b) étant logée dans le dit mélange de joint et étant enserrée entre les deux derniers rangs posés de briques ou de parpaings, et la poursuite de la même manière de la pose de rangs successifs et de pliage vers l'extérieur de chaque patte successive lorsque le niveau de la surface supérieure de la brique ou du parpaing le plus extrême du dernier rang posé atteint un niveau adjacent au niveau de chaque patte successive de telle sorte que les dites pattes sont disposées chacune de façon à servir d'éléments d'accrochage de mur d'une seule pièce fixant le mur d'extension (30) en place.
11. Procédé de construction d'un mur d'extension selon la revendication 10, dans lequel la plaque de dispositif d'ancrage (8; 8a) est fixée sur la face du mur existant (32) avec les pattes (16; 16a, 16b) dans la partie de corps initialement dirigées vers le haut avant d'être pliées.

- 12.** Procédé de construction d'un mur d'extension selon la revendication 10, dans lequel la plaque de dispositif d'ancrage (8; 8a) est fixée sur la face du mur existant (32) avec les pattes (16; 16a, 16b) dans la partie de corps initialement dirigées vers le bas, et dans lequel les dites pattes sont ensuite pliées vers le haut autour de leur base chacune sur un angle sensiblement supérieur à 90° de façon à être dirigées vers le haut avant la pose d'au moins chaque rang adjacent inférieur de briques ou de parpaings (29) du mur d'extension (30) et avant de plier finalement chacune des dites pattes vers le bas et vers l'extérieur de façon à s'étendre dans un plan sensiblement horizontal afin de servir comme élément d'accrochage de mur.
- 13.** Procédé de construction d'un mur d'extension selon l'une quelconque des revendications 10 à 12, dans lequel au moins certaines des dites pattes (16; 16a, 16b), lorsqu'elles sont pliées vers l'extérieur de façon à s'étendre dans un plan sensiblement horizontal afin de servir comme élément d'accrochage de mur, sont pliées autour d'un axe transversal espacé de leur base respective.
- 14.** Procédé de construction d'un mur d'extension selon la revendication 13, dans lequel les dits axes transversaux autour desquels certaines des dites pattes (16; 16a, 16b) sont pliées, se trouvent chacun dans une région de la patte respective qui est intermédiaire entre la base et un point à un tiers de la distance le long de la longueur de la patte respective et plus près du dit point que de la dite base.

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FIG. 1.

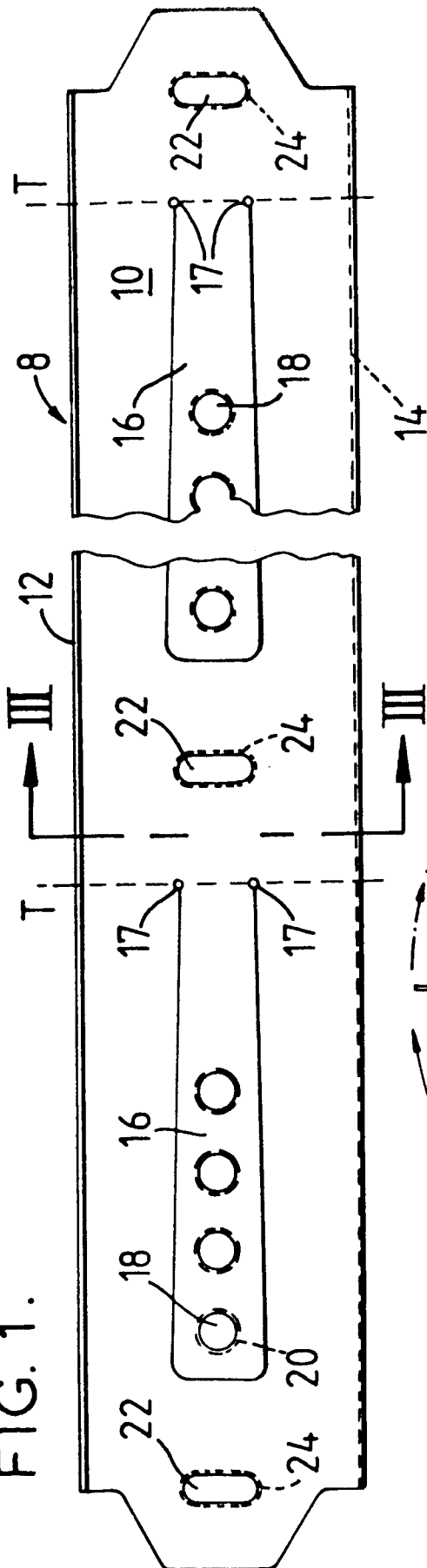


FIG. 2.

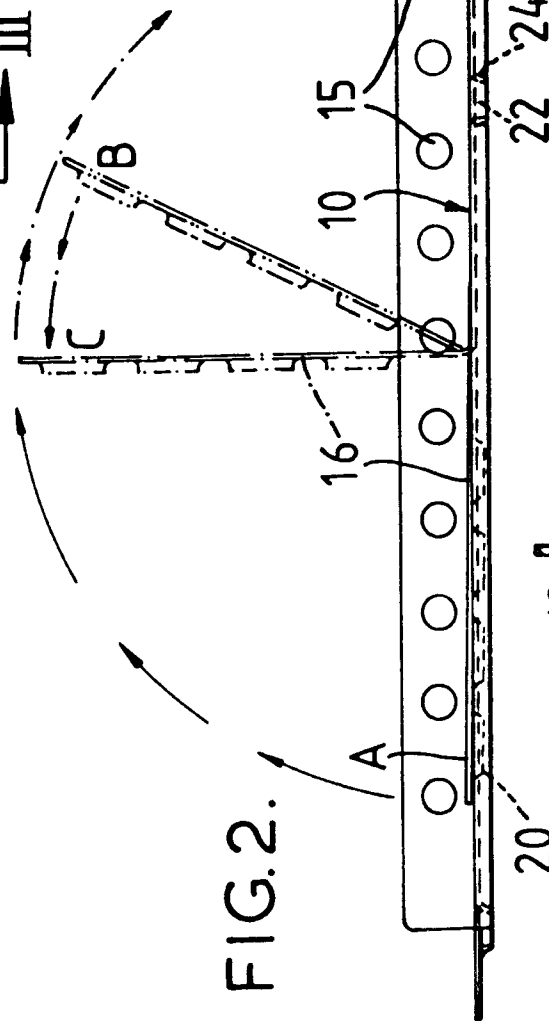


FIG. 3.

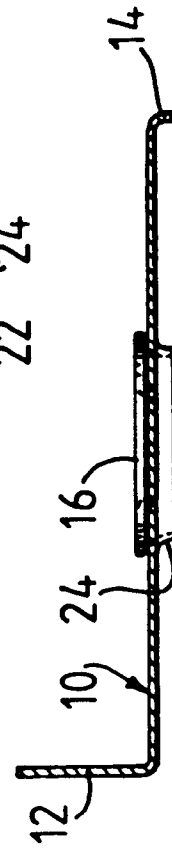


FIG. 4.

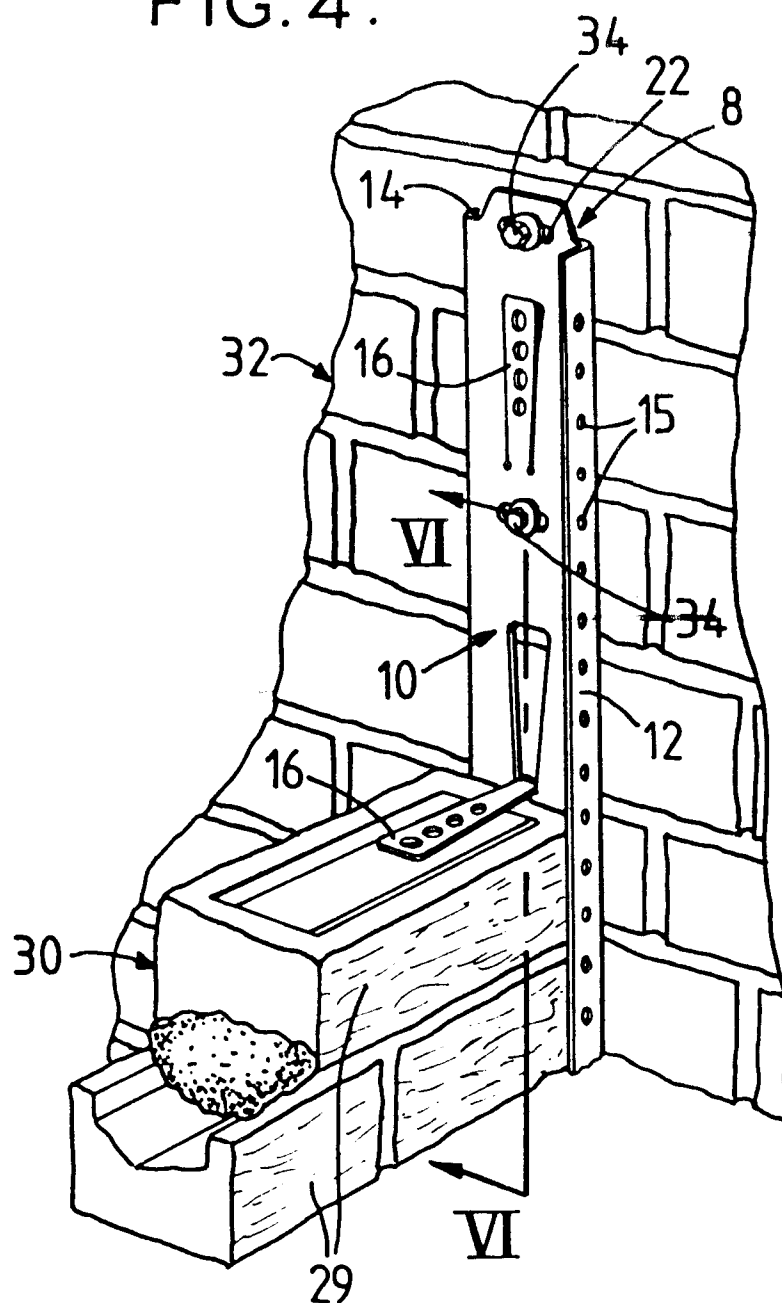


FIG. 5.

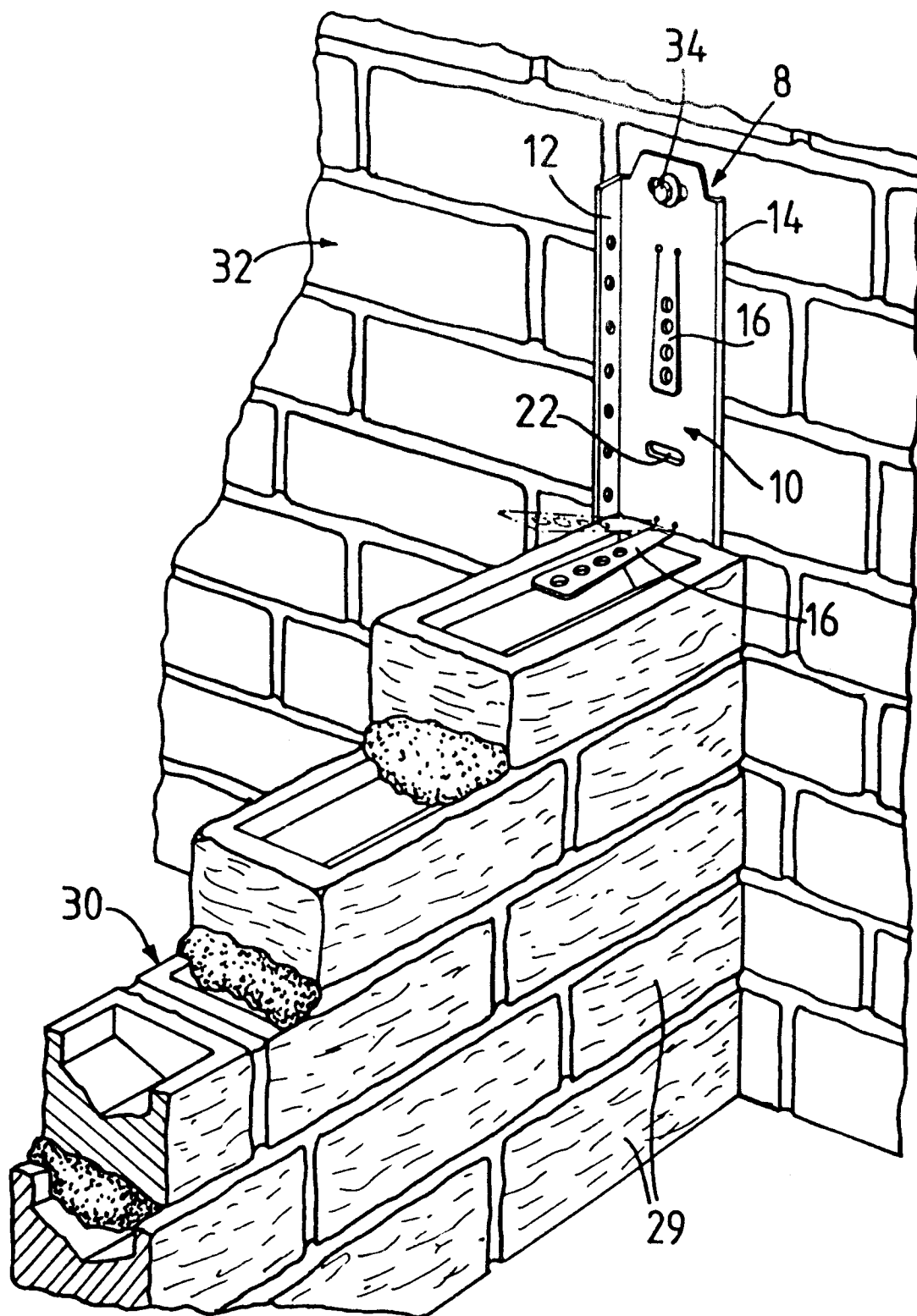


FIG. 6.

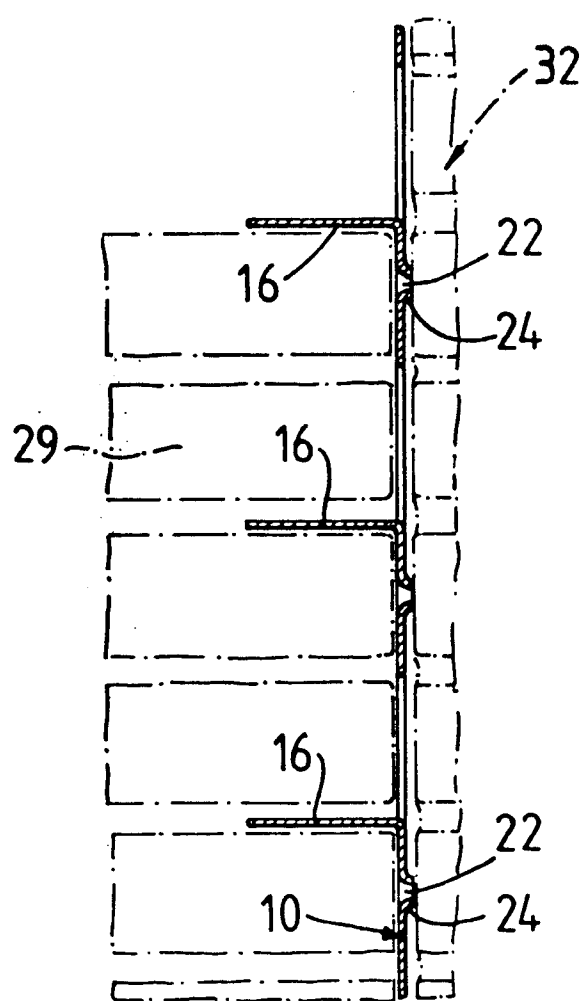


FIG. 7.

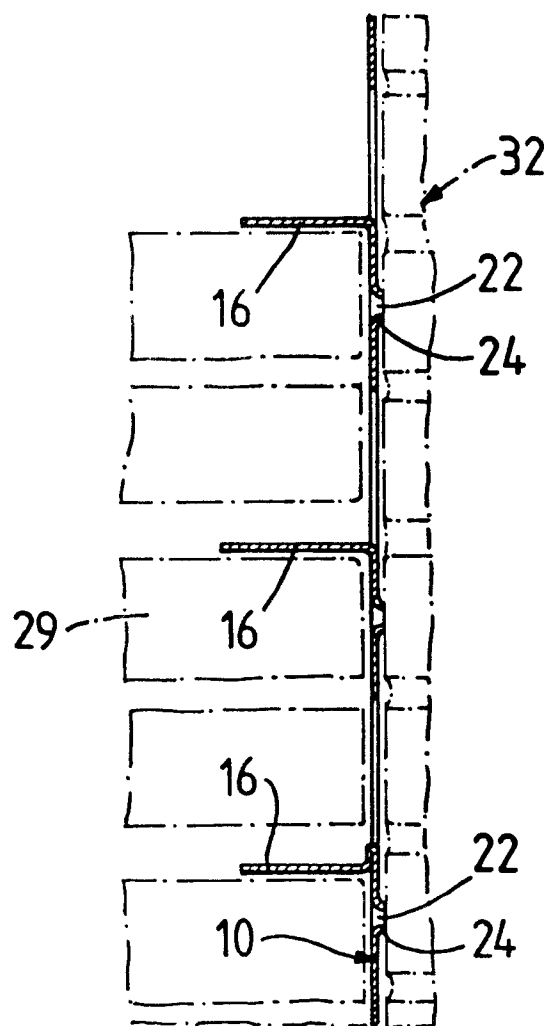


FIG. 8.

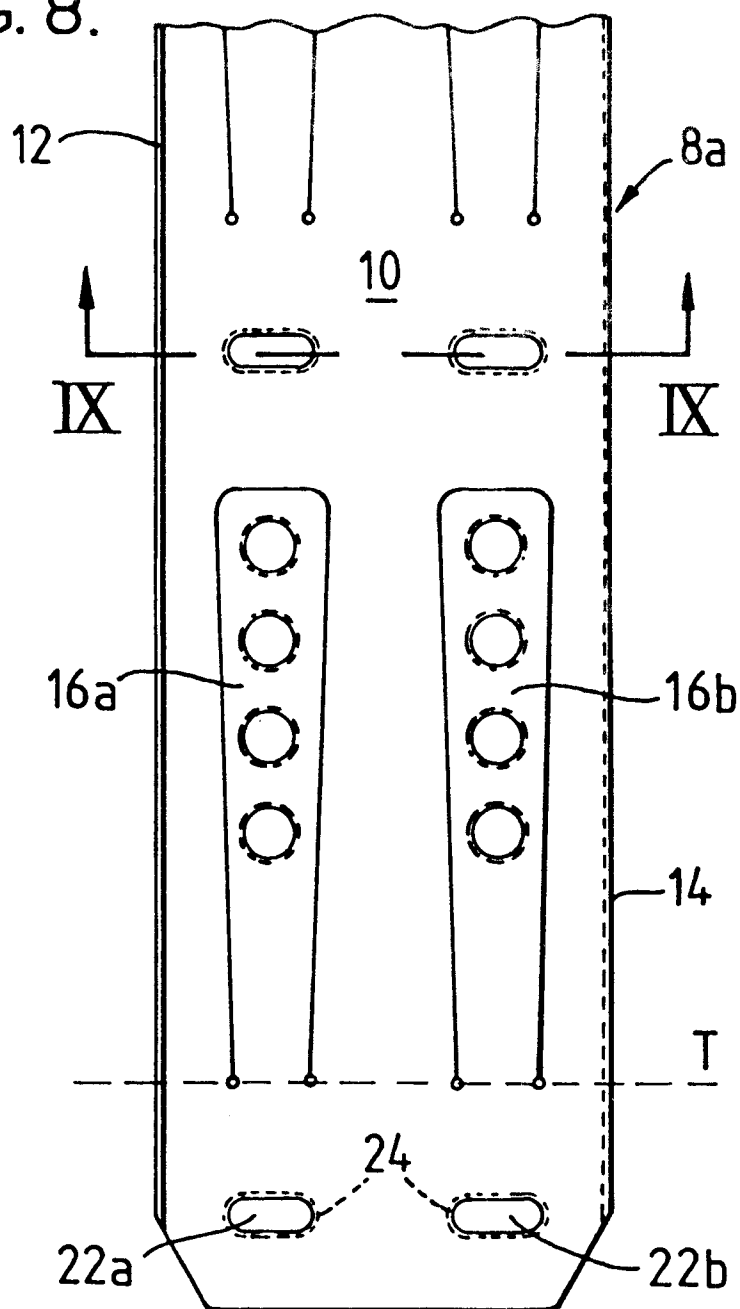


FIG. 9.

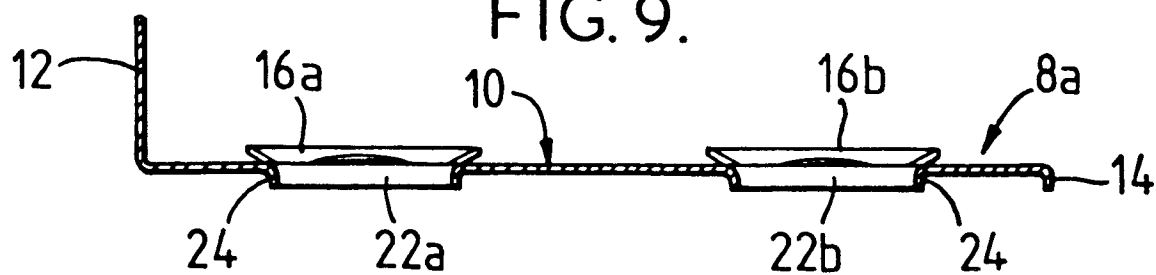


FIG.10.

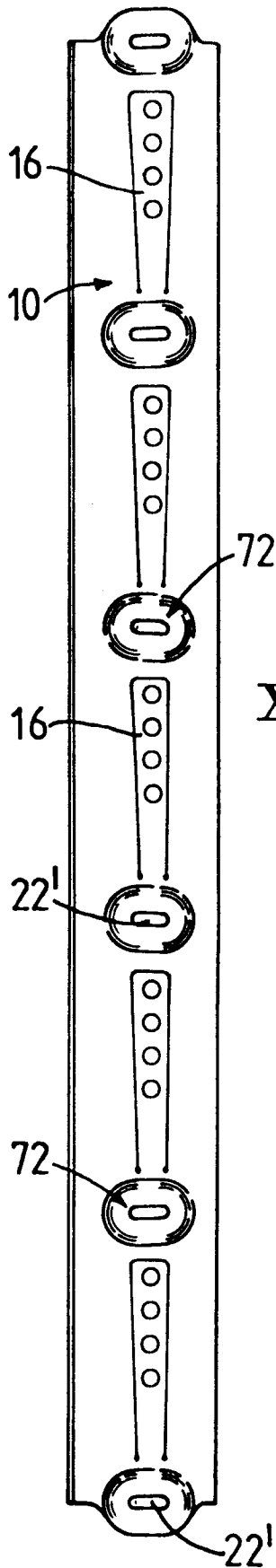


FIG.11.

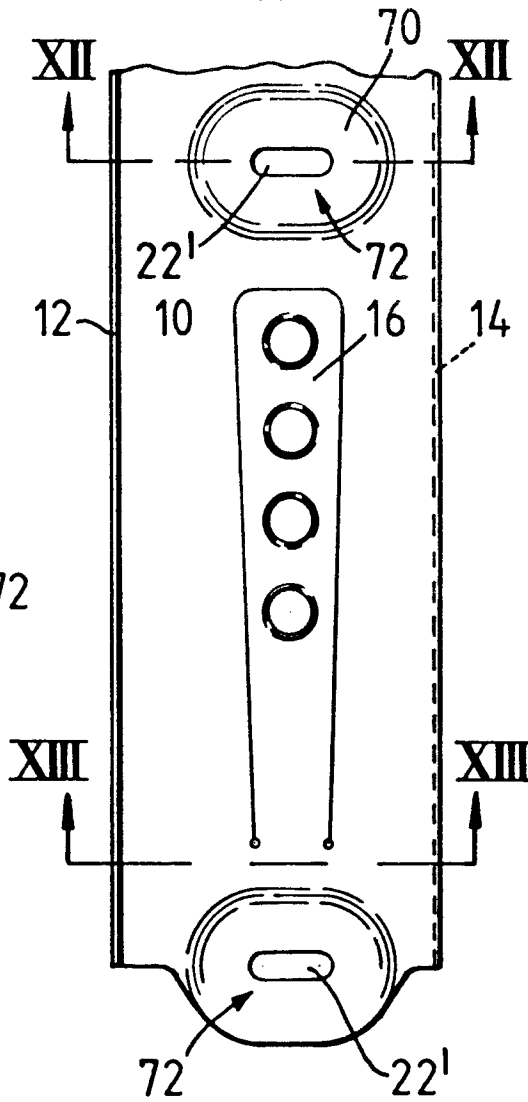


FIG.14.

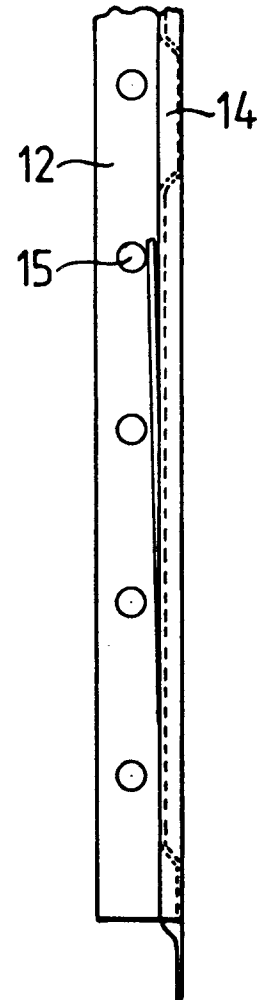


FIG.12.

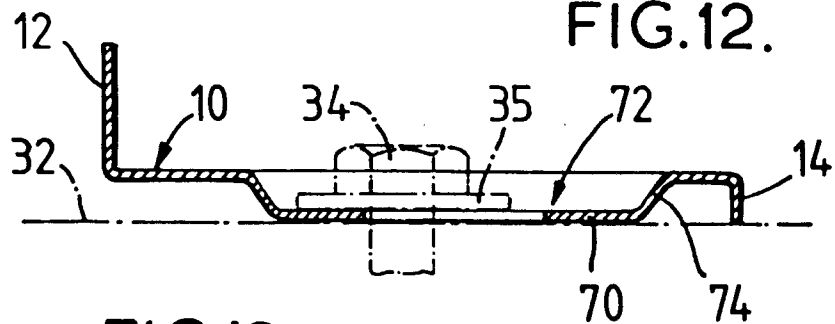


FIG.13.

