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(54) **Arch formers.**

(57) A four part arch former each part having a vertical wall having a curved lower edge, a curved horizontal wall at said lower edge, and an edge beading having a flange (24) lying between a flange (16) on the vertical wall and the margin (19) of the horizontal wall, the flange and margin being stapled together.

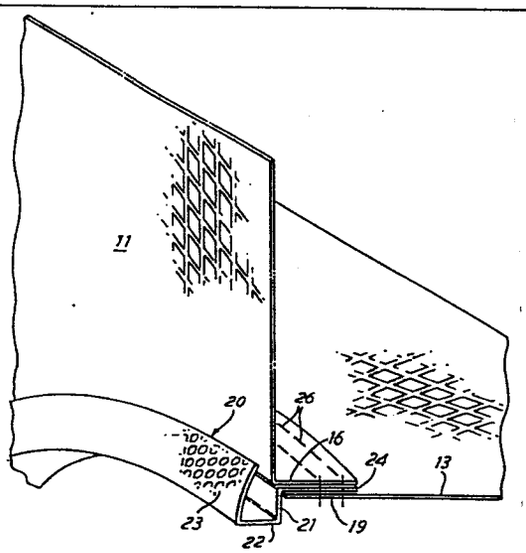

FIG.2

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Arch Formers

This invention relates to an arch former for use in building arches.

An arch former which has been very successful is described in our British patent application 1590298 and its modification described in European patent application No. 81305476-4. Many of these arch formers have been sold made from flattened expanded metal with small mesh size and these have been suitable for use with fine mesh plaster. However, there is a demand for arch formers suitable for coarse mesh plaster and it is found that coarse plaster will not adhere satisfactorily to the small mesh expanded metal.

Accordingly we have experimented with large mesh expanded metal i.e. with apertures having the largest lengthwise dimension of 6 to 9 mm and a cross dimension of 3-5 - e.g. 7.87 and 3.81 mm with 1.52 mm strand and 0.6 mm thickness. This was found satisfactory for the plaster.

It was however impossible to make arch formers by our usual method i.e. on a Pittsburgh machine because the cut ends catch in the machine.

Therefore a complete re-thinking was involved and many unsuccessful experiments were made over a period of eighteen months costing several thousands of pounds in an endeavour to make arch formers with large mesh expanded metal. Much of the trouble was due to buckling of the metal as it is difficult to form flanges on

curved edges. We even tried using solid metal sheet but had no success.

We have now developed a method which is successful for large scale production.

According to the present invention we provide an arch former having four identical parts each having

(a) an upright wall with a curved lower edge provided with a horizontal flange around it,

(b) a curved horizontal wall at right angles to the vertical wall,

(c) an edge beading having an upstanding part around the lower edge of the vertical wall;characterized in that the horizontal wall has its margin lying under the flange of the vertical wall and the edge beading has a plain flat flange lying between the flange on the vertical wall and the margin of the horizontal wall; and

a series of staples extend through the said flanges and margin to secure them all together.

The invention will be further described by way of example with reference to the accompanying diagrammatic drawings wherein:-

FIGURE 1 is a perspective view of an arch former made in accordance with the invention but omitting the edge beading;

FIGURE 2 is a perspective view of one of the four parts; and

FIGURE 3 is a view illustrating a method of forming a flange.

The former is made of four identical parts 10 each having a vertical flat wall 11 having a curved lower edge 12 and is joined to a curved horizontal wall 13 at right angles to the vertical wall. These walls are made of flattened expanded metal having openings in a particular example 7.87 mm by 3.81 mm. The wall 13 no longer requires a marginal deformation but has its margin 19 in the same plane as the remainder of the wall, so as to lie parallel with and below the flange.

The lower edge of the vertical wall has a horizontal flange 16.

An edge bead 20 has a short curved wall 23 which surrounds the lower edge of the wall 11 and has a horizontal bottom part 22, a shorter vertical part 21 and a horizontal flange 24 which is much shorter than previously and is a plain flat flange (i.e. not doubled back on itself as previously).The flange 24 is between the flange 16 and the margin 19.

The flanges 16 and 24 and margin 19 are stapled together by two rows of staples 26 by means of a so-called stitching machine. This has proved to be simpler than the previous spot welding and obviates the corrosion which occurs with spot welding and obviates the necessity to paint over spot welds. The staples in one row may be staggered in relation to those in the other row.

The flange 16 is made on a curved edge 12 which

presents some problems but we accomplish this by placing the two plates 10,11 between two clamping plates 28,29 (Figure 3) which have correspondingly curved surfaces 30,31. The margins of the plates 10,11 project above the surfaces 30,31 and are opened out and flattened on to the surfaces 30,31 by a roller 35.

The bead 20 is made of small mesh flattened expanded metal and this is made as previously on a Pittsburgh seam machine which has flange bending wheels different from those used on a Pittsburgh lock forming machine. The openings in the bead may be 3-4mm by 1.5 to 2.5 mm e.g. 3.18 x 2.03 mm x 0.79 strand x 0.6 mm thickness.

The parts may be made from tight coat galvanised material.

CLAIMS:

1. An arch former having:

(a) an upright wall with a curved lower edge provided with a horizontal flange around it,

(b) a curved horizontal wall at right angles to the vertical wall,

(c) an edge beading having an upstanding part around the lower edge of the vertical wall; characterized in that the horizontal wall has its margin lying under the flange of the vertical wall and the edge beading has a plain flat flange lying between the flange on the vertical wall and the margin of the horizontal wall; and

a series of staples extend through the said flanges and margin to secure them all together.

2. An arch former according to Claim 1 wherein said upright wall and horizontal wall are made from flattened expanded metal having apertures from 6 to 9 mm by 3 to 5 mm and the edge beading is made of smaller mesh flattened expanded metal.

3. A method of making an arch former according to Claim 1 or 2 wherein the flange on the vertical walls is formed by clamping them between two clamping plates having corresponding curved surfaces with their edges protruding, separating the protruding margins and flattening them on the curved surfaces of the clamping plates.

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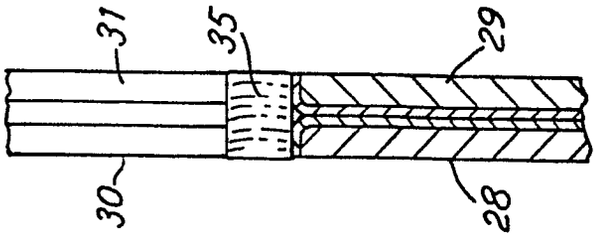

FIG.3

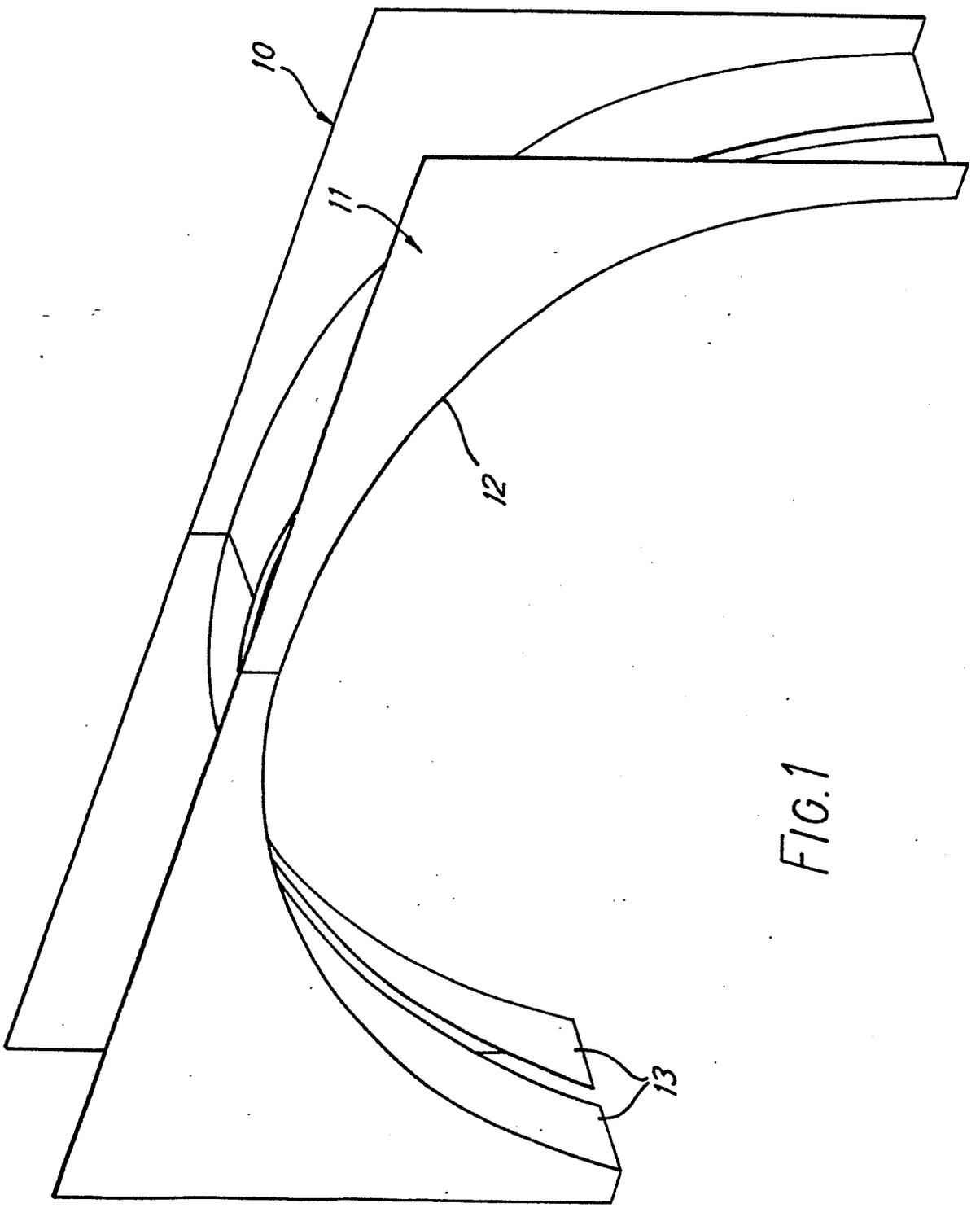

FIG.1

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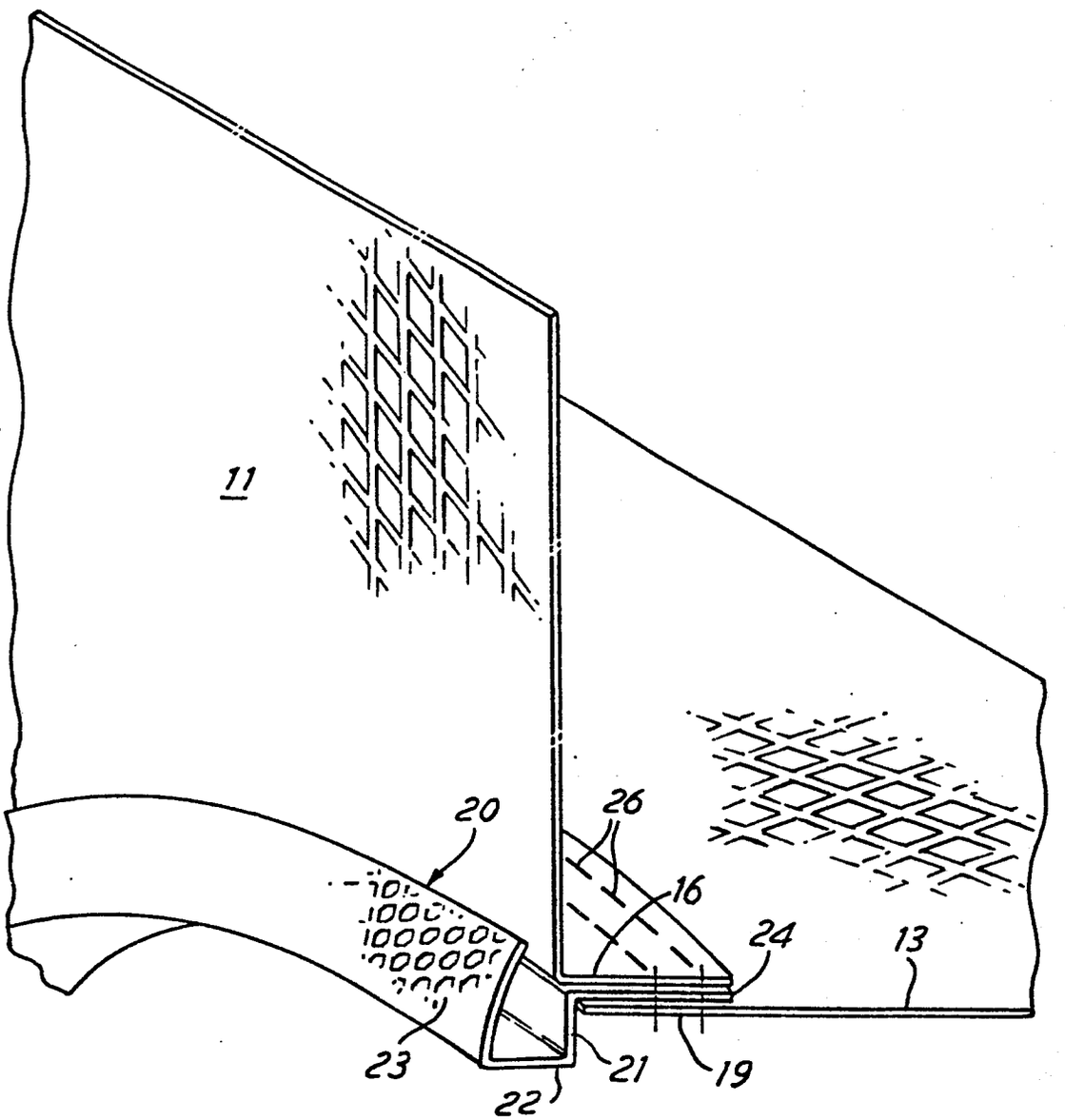

FIG.2

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EUROPEAN SEARCH REPORT

0111603

Application number

EP 82 30 6723

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. ³)
A	US-A-1 676 582 (D.R. STUART) * Figure 2 *	1	E 04 F 13/04 E 04 C 3/02
A	US-A-1 999 426 (E.F. THAYER) * Figures 1-4 *	1	
A	GB-A-2 015 633 (E.A. SHACKLETON) * Figures 1-3; claims 1, 3 *	1	
A	US-A-1 782 147 (T. MERRYWEATHER) * Figures 1, 2, 5; page 1, column 2, lines 61-99 *	1	
A	US-A-1 988 739 (E.H. JONES) * Figures 1, 2 *	1	

TECHNICAL FIELDS SEARCHED (Int. Cl. ³)

E 04 C 3/00
E 04 F 13/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	20-07-1983	VON WITTKEN-JUNGNIK

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
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L : document cited for other reasons

& : member of the same patent family, corresponding document

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