(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 363 550 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
07.09.2011 Bulletin 2011/36

(51) Int Cl.:
E04F 13/06 *(2006.01)*

(21) Application number: **11157108.9**

(22) Date of filing: **05.03.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **06.03.2010 NL 2004353**

(71) Applicant: **Ceves-Vergeer BV**
7418 AM Deventer (NL)

(72) Inventor: **Van 't Land, Johan**
7418AM, Deventer (NL)

(74) Representative: **Assendelft, Jacobus H.W.**
Keukenhofdreef 20
2161 AZ Lisse (NL)

(54) **Finishing angle**

(57) A from initially thin, flat metal sheet by cold deforming shaped finishing angle of which a panel (2) of singular sheet thickness contains cut perforations (4) through which plaster is pressed during temporary fixing the angle to an indoor wall in preparation of final plastering. The panel (2) has an into it by metal deforming of the metal sheet provided surface relief of pits which can be felt by the finger tips. Per 10 millimetre at least 4 pits are present. The pits have a depth or height at least 0,05 or 0,1 or 0,15 millimetre and a diameter not larger then 1, 1,5, 2, 2,5 or 3 mm and a spacing such that there are between 3 and 7, such as 4 or 5 pits per 10 mm. The angle has a nose (3) at least 0,1 or 0,15 or 0,2 millimetre lifted above the surface of both panels.

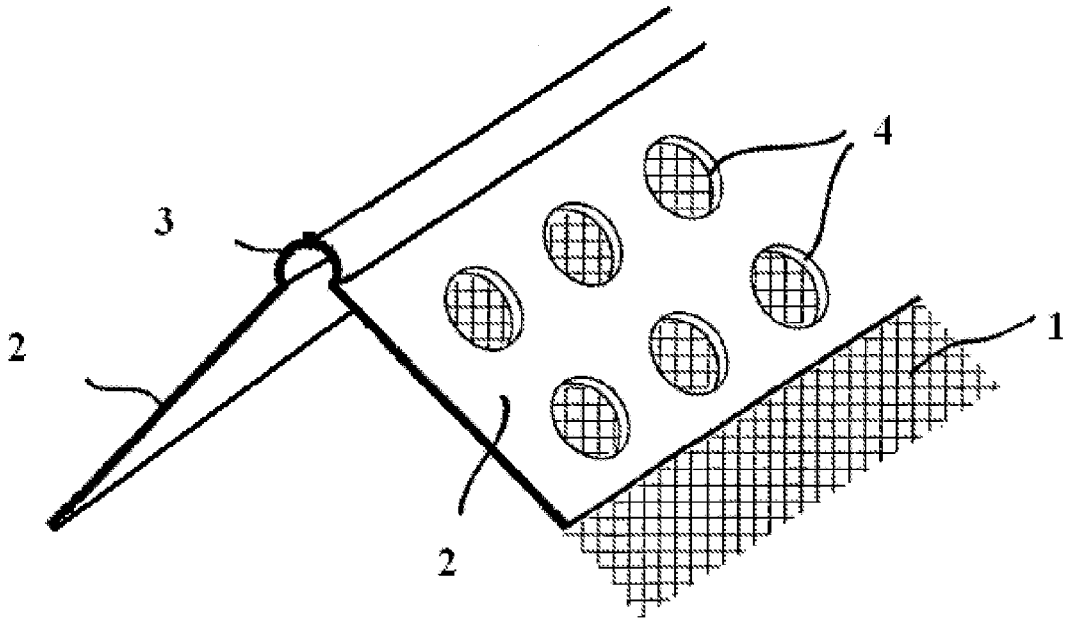

Fig. 1

EP 2 363 550 A1

Description

[0001] This invention relates to an angle to be used when plastering/finishing a wall.

[0002] It is generally known that often use is made of metal or plastic angles when plastering a wall.

[0003] A first known example is an angle which, prior to plastering, by means of some plaster spots is fixed to an outer corner of a wall. The angle is typically provided with perforations which allow that the angle can be perfectly registered while pushing it into the plaster spots. After the angle is fixed to the wall due to curing of the plaster, the wall can be finished. An advantage of such an angle is its guide feature for the squeegee while it also offers a perfect finish of the corner. The angle also offers protection of the corner.

[0004] Similar guiding profiles are also known for large straight surfaces, which profiles are vertically located with mutual distance (typically 75 or 100 cm) after which the face is finished and the squeegee is moved across these profiles.

[0005] BE 1 017 574 A3 relates to an angle for finishing an inner corner, comprising a central part shaped as an inner corner and at both sides sideways wings designed to be embedded in the plaster while the central part is designed to provide the inner corner of the finished wall.

[0006] Apart from finishing angles for internal walls finishing angles for external walls are known, e.g. wherein plaster is provided onto an isolating layer. Refer to e.g. EP0789115A1 and EP2009194A2. Presently such finishing angles are combined with a reinforcement net for embedment into the plaster to improve the fixation of the angle. This invention is not directed to application to an external wall.

[0007] Plastic finishing angles are also known, e.g. DE3621235A1. This invention is however exclusively directed to metal finishing angles produced from flat sheet by bending.

[0008] US 4 876 837 A discloses a from a straight, flat strip produced metal angle for finishing a corner in a wall of plasterboard. The panels of this angle have, apart from a perforation of large and small fixation holes, a pressure relief of squares or different unnamed shapes in straight lines and columns providing at the one side recesses and at the opposite side projections. This pressure relief is designed to improve the straightness of the angle and provides surface roughness to improve the adhesion of the plaster. There is no disclosure where the recesses and projections are present and the dimensions of it. The pressure relief is not used to increase the grip of the machine to produce the finishing angle.

[0009] US 3 255 561 A discloses a from a straight, flat strip produced metal angle to finish a corner of a wall of plasterboard. The panels of this angle have, apart from a perforation with nail holes, elongated holes and fixation holes, a knurling of projections at both faces which are thus slightly uneven. This knurling operates like a spacer such that plaster material can come between the panel and the wall. A shape, dimension and density of this knurling is not disclosed. The knurling is not used to improve the grip for the machine to produce the finishing angle.

[0010] US 6 684 586 B1 discloses a to a roll wound, pretreated, extruded strip of polymer material that is completely designed to with a single hand and a single operation be bent into and used as a (indeed not rigid) plastic angle to finish the corner of a wall of plasterboard. The panels of this angle have, apart from a perforation of fixation holes, detents at the one, the outer side providing, face and in location and shape corresponding knurls at the opposite, the inner side providing face. These detents and knurls provide an improved fixation. The depth and height of the detents and knurls measure according to an example 0,005 inch (0,127 mm) at a strip width of 0,025 inch (0,635 mm). A different dimension is not disclosed. Also information lacks about the density and shape of the detents and knurls. For optimal fixation it is proposed to produce the strip from a mineral filled polyolefin, such as polypropylene, with corona treatment. The detents and knurls are not used to improve the grip for the extruder.

[0011] A plastic finishing angle is less attractive then a metal one. The from the above cited US 6 684 586 B1 known plastic finishing angle is less attractive since it does not provide at all an angle which in itself is rigid and thereby it is a clumsy product for finishing the corner of a wall. The production technique of a plastic finishing angle (extruding of plastic form free by heating) strongly differs from the production of a metal one (cold reforming of a flat metal strip).

[0012] The object of the invention is to further improve the metal finishing angle for indoor application, directed to production, use and durability. The finishing angle is designed for application to a wall with a rough surface, such as a wall of piled bricks. The finishing angle is not designed for application to a wall of plasterboard since for plasterboard it is not required to plaster the complete surface to make it sufficient smooth since the plasterboard from which the wall is constructed is sufficient smooth for immediate papering. With plasterboard a finishing angle is merely applied to protect an outer corner and it is possibly covered by a thin plaster layer, which layer is merely applied in the immediate vicinity and possibly onto the finishing angle. Such finishing angle also lacks the characteristic profiled nose which is lifted at least 0,1 or 0,15 or 0,2 millimetre above the surface of both panels such that it is easier to cover the panels with form free plaster material by using the nose as squeegee guide.

[0013] Thus the invention proposes, according to the attached claims, to provide the part of the finishing angle designed for embedment into the plaster, e.g. angle profile, with a surface profile or relief which in the initially flat or smooth metal material (steel or aluminum with sheet thickness less then 1 or 0, 5 or 0,25 millimetre, preferably more then 0, 1 or 0,2 millimetre) is pressed or coined/rolled, thus is obtained by reforming the material. The

surface profile can comprise dimples, bulges or detents and can have a regular pattern, preferably in two dimensions. In case of dimples the material can be punctured locally wherein the hole edge bulges outwardly, thus different from a cut or punched hole projects from the face of the sheet. The relief is preferably present in the area with the large perforations through which the plaster is pressed during application of the angle. A relief is preferred which keeps the material closed, thus does not perforate it, to avoid sharp edges.

[0014] The relief can be provided such that bulb, cone or pyramid shaped dimples are obtained, e.g. by pushing a pin with bulb, cone or pyramid shaped end into the sheet.

[0015] Preferably the relief is at least 1 or 2 orders of magnitude larger then the typical surface roughness, e.g. can be felt by the finger tips as a Braille pattern, however as a rule the individual parts of the relief have a dimension much smaller then the already known perforations through which plaster is pressed and also there are many more of them per surface unit. E.g. the recess or projection is at least 0,05 or 0,1 or 0,15 millimetre deep or high.

[0016] According to a preferred embodiment the relief is visible at both sides of the sheet, at the one side positive and the other negative, thus at the one side a recess and at the opposite side at the same location a projection.

[0017] The recesses are preferably provided at the outer side of the finishing edge.

[0018] The relief is preferably made from dimples with a diameter equal to or below 1, 1,5, 2, 2,5 or 3 mm and possibly with such a spacing between the dimples or different profile that there are between 3 and 7, such as 4 or 5 dimples per longitudinal 10 millimetre.

[0019] The relief improves the shape stability of the angle and the plaster (typically gypsum) adheres better to the angle. The angle can be better gripped by hand. The machine to produce the finishing angle from a flat metal strip has more grip to pull the sheet through the machine.

[0020] Besides, metal construction profiles are already known, e.g. for metal building, with a surface relief as disclosed above, designed to simplify the hammering of a nail. A finishing angle is not a construction profile but a protective profile and besides it has no need for nailing.

[0021] Preferably the panels of the finishing angle are provided with the already known perforations through which plaster can penetrate during plastering. These perforations have a diameter substantially larger then the present relief, e.g. 5 mm or more. Such perforations do not require a round shape, but could be square, right angles or star shaped or can have any shape fit for their purpose.

[0022] In some cases still smaller perforations can be present such that the finishing angle can be pleaded easily, e.g. when used with a corner different from a right corner. These large and small perforations have smooth hole edges and thus do not contribute to the present relief.

[0023] The enclosed drawing shows in fig. 1 a known finishing angle in perspective, viewed from the outside, and fig. 2, 3 and 4 show photographs of the same embodiment of the finishing angle according to the invention.

[0024] Such as typical with the known finishing angles to plaster outer corners of walls, a finishing angle according to the invention, prior to plastering, fixed to a corner of a wall 1 with the aid of the panels 2 which are thus embedded into the plaster.

[0025] This can be done by applying some plaster spots to the wall 1, after which the finishing angle is pushed onto these plaster spots until the desired position is obtained, typically a position determined with the aid of a level. During pushing the perforations 4 will make sure that plaster can be pushed through the angle. In this manner the perforations 4 simplify applying of the angle.

[0026] After the plaster spots are cured, the angle is fixed to the wall 1, where after one can plaster the wall 1. During plastering of the faces of the wall near the angle, the squeegee is run across the lifted central part 3, such that plaster is smoothly spread across the wall 1 and the panels 2 are smoothly spread with plaster.

[0027] Fig. 2, 3 and 4 show the angle of the invention, fig. 2 shown in a way similar to fig. 1, fig. 3 as viewed straight onto the outer side of one of the panels 2 and fig. 4 under an angle from above against an end. The relief is shown as an right angled pattern of pits, similar to Braille. Per 10 mm there are five pits. The pits are provided in the part with the perforations 4. The pits provide at the outer side recesses and at the inner side projections.

[0028] The angle can be produced by cold reforming of a flat metal strip which is by the machine for producing the angle from the flat metal strip pulled along the forming tools. Then the tool to pull the strip along the forming tools engages the pressure relief and thus has improved grip to pull the sheet through the machine.

[0029] Many different embodiments are possible within the spirit and scope of the invention, e.g. different from an angle. The invention is not limited to the described and in the drawing illustrated embodiment, however such can be embodied differently without leaving the invention as claimed.

Claims

1. Of a building a plastered indoor wall into which is embedded a from initially thin, flat metal sheet by cold deforming shaped finishing angle of which an across a large area to the inner wall adhered panel (2) of singular sheet thickness contains cut perforations (4) through which plaster is pressed during with the panel into the fresh gypsum at an indoor wall pushing of the angle to temporary fix the angle to the indoor wall in preparation of final plastering the indoor wall such that the panel (2) and also the indoor wall are smoothly covered with plaster, **character-**

ised in that the panel (2) has an into it by metal deforming of the metal sheet provided surface relief which can be felt by the finger tips.

2. Indoor wall according to claim 1, wherein the angle has two panels (2) and with both panels is fixed to a corner of the wall to protect the corner of the plaster and the relief is made from an equal distribution of pits providing at the outer side of the angle recesses and at the inner side projections, such that at the inner side the panels (2) provide some kind of Braille pattern, visible and felt with the finger tips, and which pits are provided between the perforations (4).

3. Wall according to claim 1 or 2, with one or more of:

- the pits have compared to the perforations (4) a much smaller diameter and a much larger density;
- per 10 millimetre at least 4 pits are present;
- a pit is closed, namely it does not perforate the panel;
- the relief is produced by a pin with a bulb, cone of pyramid shaped end;
- the surface relief is pressed or coined, thus by material deformation;
- the angle is made of steel or aluminum with thickness less then 1 or 0,5 or 0,25 millimetre;
- the pits provide a regular pattern, preferably in two dimensions;
- the pits keep the sheet closed, so do not perforate it;
- the pits are bulb, cone or pyramid shaped;
- a pits has a depth or height at least 0,05 or 0,1 or 0,15 millimetre;
- the relief is made from pits with a diameter not larger then 1, 1,5, 2, 2,5 or 3 mm;
- a spacing between the pits such that there are between 3 and 7, such as 4 or 5 pits per 10;
- the perforations (4) have a diameter substantially larger then a pit, e.g. 5 mm. or more;

4. Wall according to claim 1, 2 or 3, wherein the angle has a nose (3) at least 0,1 or 0,15 or 0,2 millimetre lifted above the surface of both panels.

5. Method to produce a finishing angle, e.g. of the wall according to any of claim 1-4, by cold deforming a thin, flat metal strip which is by the machine pulled along the deforming tools of the machine, wherein by metal deforming of the sheet a treatment, such as pressure relief, is applied to provide both sides of each panel (2) with a permanent surface relief which can be felt by the finger tips and the tool for pulling the sheet along the deforming tools of the machine engages the surface relief to thus pull the strip through the machine.

6. Finishing angle for the wall according to any of claims 1-4, or obtained with the method according to claim 5.

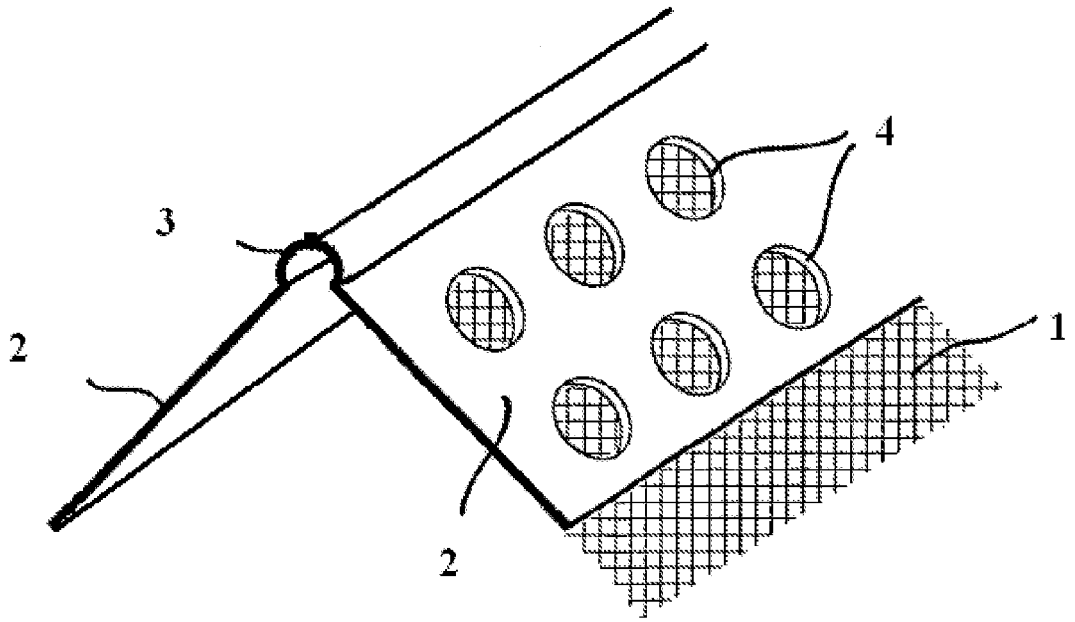

Fig. 1

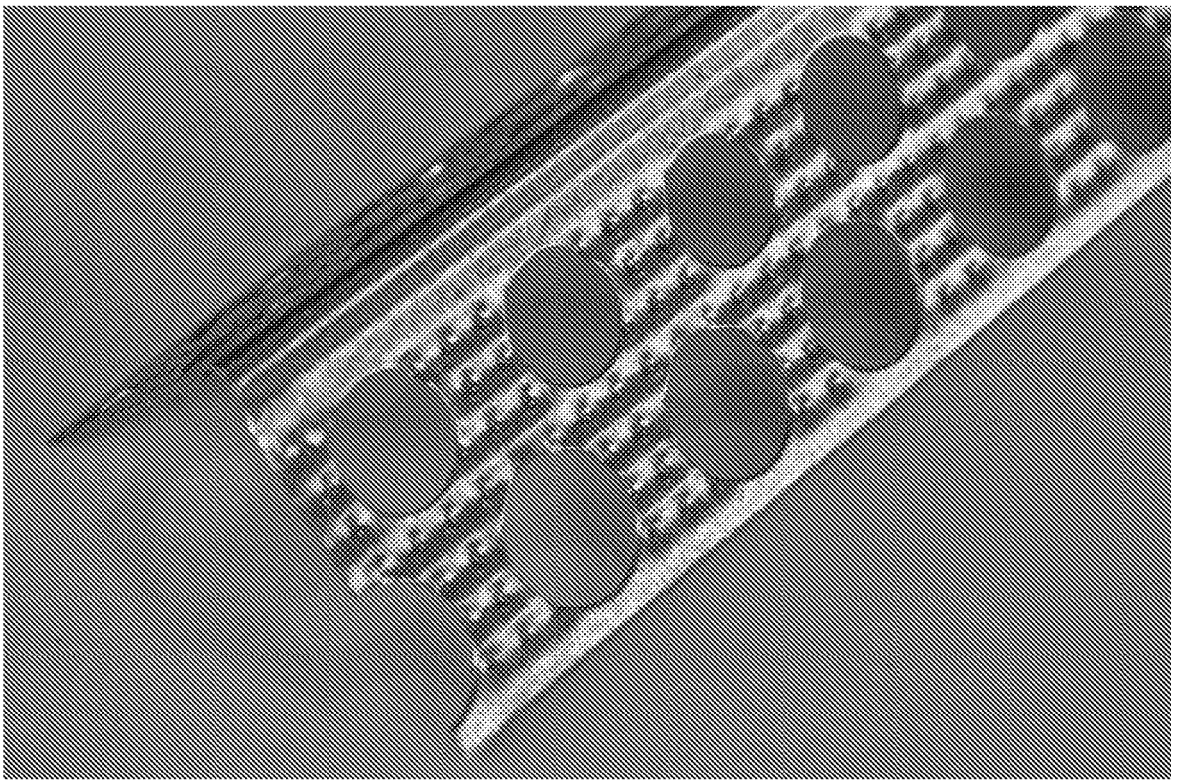

Fig. 2

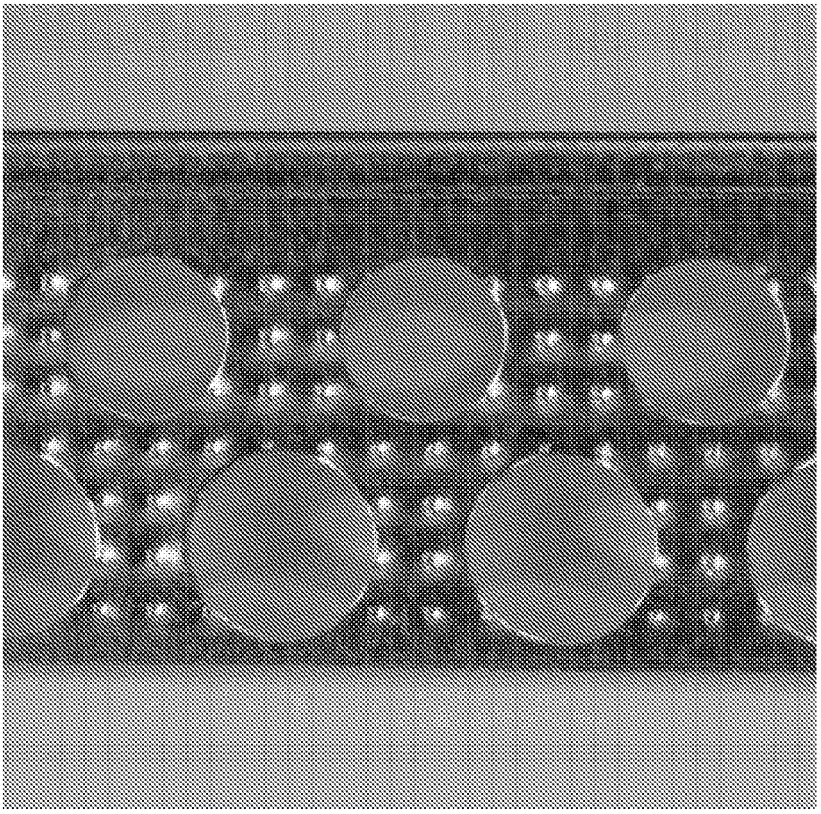

Fig. 3

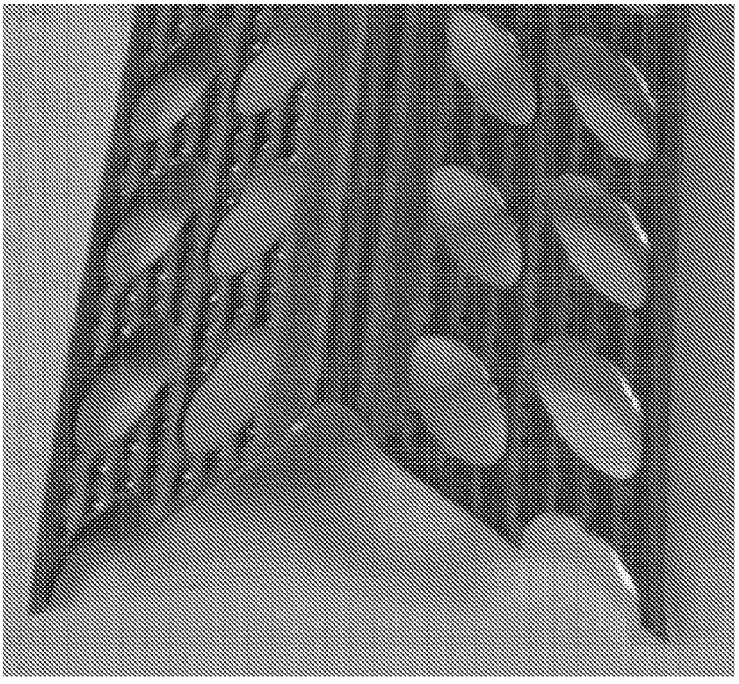

Fig. 4

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 11 15 7108

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	US 4 876 837 A (KELLY PATRICK M [US] ET AL) 31 October 1989 (1989-10-31) * column 4, paragraph 4 - column 8, paragraph 5 * * figures 1-16 * * *	1-4,6	INV. E04F13/06
X,D	US 3 255 561 A (CABLE GROVER C) 14 June 1966 (1966-06-14) * column 2, line 13 - column 4, line 52 * * figures 1-4 *	1-4,6	
X	EP 0 324 918 A1 (OLDENDORF GUNTER) 26 July 1989 (1989-07-26) * figures 1,2,3 *	1,4,6	
X	WO 2008/119795 A1 (GALLOGLY VIVIAN [IE]) 9 October 2008 (2008-10-09) * figures 2,3 *	1,4,6	
X	US 5 778 617 A (FREE GERALD R [US]) 14 July 1998 (1998-07-14) * figures 1-4 *	1,2,4,6	TECHNICAL FIELDS SEARCHED (IPC) E04F B21C B21D B44C
X	CA 2 197 912 A1 (PICHETTE CARL [CA]) 7 September 1998 (1998-09-07) * figure 6 *	6	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	27 July 2011	Severens, Gert

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 15 7108

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-07-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4876837 A	31-10-1989	NONE	
US 3255561 A	14-06-1966	NONE	
EP 0324918 A1	26-07-1989	DE 3743306 A1	29-06-1989
WO 2008119795 A1	09-10-2008	GB 2470242 A	17-11-2010
		IE 20070228 A2	01-10-2008
		IE 20080242 A1	29-10-2008
US 5778617 A	14-07-1998	CA 2188820 A1	28-04-1997
CA 2197912 A1	07-09-1998	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- BE 1017574 A3 **[0005]**
- EP 0789115 A1 **[0006]**
- EP 2009194 A2 **[0006]**
- DE 3621235 A1 **[0007]**
- US 4876837 A **[0008]**
- US 3255561 A **[0009]**
- US 6684586 B1 **[0010] [0011]**