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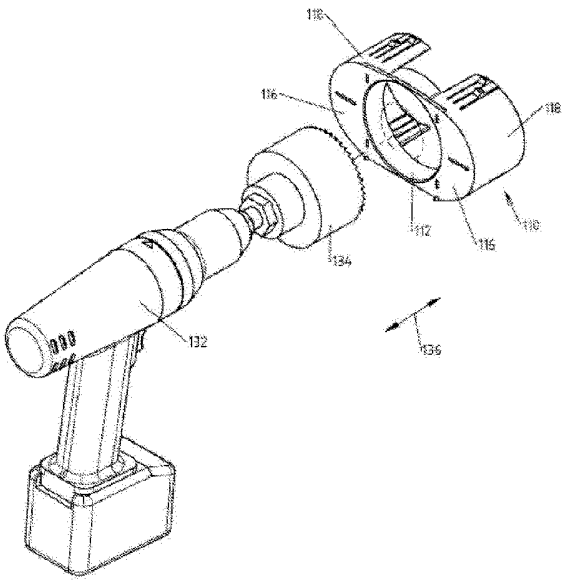
(54) **Method for providing a hole in a wall, and accessory therefor.**

(57) In a method for providing an elongated hole in a wall, a circular first hole and second hole are provided in the wall. The first and second hole overlap. An accessory comprises a first support face and a second support face, and a guide situated between the first and the second support face. The guide is adapted for guiding a drill or hole saw to provide a circular third hole in the wall. The first support face of the accessory is placed in the first hole, and the second support face of the accessory is placed in the second hole. The hole saw is guided along the guide of the accessory to provide the third hole in the wall.



NL C 2006103

P30610NL00

Method for providing a hole in a wall, and accessory therefor

FIELD OF THE INVENTION

The invention relates to a method for providing a hole in a wall, in particular for an installation box, using an accessory.

Herein, an installation box is deemed equivalent to an electrical installation box, a junction box, and an electrical junction box. The installation box may be used for housing installation material in general, (junctions between) electrical conductors, electrical signal wires, optical cables or fibers, and may further accommodate switching material, one or more electrical or optical sockets, signaling material, telecommunication material, building automation material, controller or computer material, and the like.

BACKGROUND OF THE INVENTION

Installation boxes for mounting in a hollow wall are known in the art, e.g. from NL1019822. This reference discloses an installation box having an elliptical or oval shape when seen in cross-section in a plane parallel to a bottom wall of the installation box. Thus, the installation box comprises two opposite substantially semi-circular side wall portions and two opposite substantially straight side wall portions connecting the semi-circular side wall portions. For mounting such an installation box in a hollow wall (having a relatively thin front wall board secured to a back support frame), two staggered circular holes having about the same radius as the radius of the semi-circular side wall portions are made. Any remaining material in the area where the hole diameters cross, is removed to complete the preparation the hole for reception of the installation box.

In preparing a wall opening in a wall, such as a hollow wall, where two circular holes are made being a part of an envisaged elongated, oval opening, a problem arises when, in preparing the wall opening, the two circular holes only slightly overlap, or do not overlap at all. In such circumstances, relatively large parts of the wall between the two circular holes remain, and need to be removed by a further working of the wall to provide a wall opening contour having two opposite semi-circular portions, and two opposite substantially straight portions connecting the semi-circular portions. Removing such large portions in a neat and reproducible manner is difficult to carry out by hand, using simple tools as such like a straight saw or a circular saw.

SUMMARY OF THE INVENTION

It would be desirable to finish the preparation of an oval opening in a wall in an easy manner, starting from two circular holes defining semi-circular parts at the ends of the oval opening, and using simple tooling.

To better address the above concern, in an aspect of the invention a method for providing an elongated opening in a wall is provided. The method comprises providing a circular first opening in the wall having a first center and a first radius, and providing a circular second opening in the wall having a second center and a second radius. The first and the second opening overlap with the distance between the first center and the second center being greater than the first or the second radius. An accessory comprises a first support face and a second support face, the outside distance between the first and second support face being the sum of the first radius, the second radius, and the distance between the first center and the second center. The accessory further comprises a guide situated between the first and the second support face. The guide is adapted for guiding a drill or hole saw to provide a circular third opening in the wall having a third center and a third radius. The first support face of the accessory is placed in the first opening, and the second support face of the accessory is placed in the second opening. The drill or hole saw is guided along the guide of the accessory to provide the third opening in the wall.

The drilling accessory provides a reference location for performing a drilling or sawing operation in a structure, such as a wall structure, in particular a hollow wall structure, between two circular openings each having a predetermined radius, the openings having a predetermined center-to-center distance, and being already present. The drilling accessory comprises two support faces which each can be placed in a different one of the openings in the wall abutting circumferential parts of the openings facing away from each other. With the support faces in place, the guide is located at a predetermined location relative to the two openings. In the guide, a drill or hole saw can be guided towards the structure to substantially remove relatively large parts of the structure between the two circular openings to provide an oval structure opening contour having two opposite semi-circular portions, and two opposite substantially straight portions connecting the semi-circular portions.

In an embodiment of the method of the present invention, the first, second and third radii are equal to provide a elongated opening have substantially the same width.

In an embodiment of the method of the present invention, the first, second and third centers are located on a straight line to provide an oval opening.

In another aspect of the present invention, an accessory for providing an elongated opening in a wall is provided. The accessory comprises a first support face adapted to be

placed in a circular first opening in the wall, the first opening having a first center and a first radius, and a second support face adapted to be placed in a second circular opening in the wall, the second opening having a second center and a second radius. The distance between the first center and the second center is greater than the first or the second radius, and the outside distance between the first and second support face is the sum of the first radius, the second radius, and the distance between the first center and the second center. A guide is situated between the first and the second support face, for guiding a drill or hole saw to provide a circular third opening in the wall having a third center and a third radius.

These and other aspects of the invention will be more readily appreciated as the same becomes better understood by reference to the following detailed description and considered in connection with the accompanying drawings in which like reference symbols designate like parts.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 depicts a perspective view of an embodiment of a drilling accessory suitable for providing an opening in a wall for mounting an installation box, such as an installation box according to the present invention.

Figure 2 illustrates a perspective view illustrating a coupling of a hole saw with the drilling accessory of Figure 1.

Figure 3 depicts a perspective view illustrating a use of the drilling accessory of Figure 1 for drilling an opening in a wall.

Figure 4 depicts a perspective view of an embodiment of an installation box according to the present invention, showing an upper part thereof.

DETAILED DESCRIPTION OF EMBODIMENTS

Figure 1 depicts an accessory 110 for drilling an elongated hole in a wall formed by a series of circular holes having different centers located on a straight line. The accessory 110 comprises a guide ring 112 having a first ring end 114 and a second ring end 116. At its first ring end 114, the guide ring 112 is provided with two opposite ears 116 which extend in a same plane. This plane coincides with the first ring end 114 of the guide ring 112. Each ear 116 carries a ring segment 118 having a first ring segment end 120 and a second ring segment end 122. Part of the first ring segment end 120 is connected to part of the circumference of the ear 116. At the second ring segment end 122, the ring segment 118 is provided with two series of three parallel slots extending at right angles to the second ring

segment end 122, and defining flexible lips 124, 126 having teeth 128, 130, respectively, at a convex or outer side of the ring segment 118.

Figure 2 illustrates a use of the accessory 110 in combination with a drilling tool 132 carrying a hole saw 134. In use, the hole saw 134 can be moved in the directions of double arrow 136 in the guide ring 112 of the accessory 110, while rotating the hole saw 134 by the drilling tool 132. The inner diameter of the guide ring 112 has a slightly greater diameter than the outer diameter of the hole saw 134, such that a location of a hole provided with the hole saw 134, relative to the accessory 110 is well-defined.

Figure 3 illustrates a use of the accessory and hole saw 134 to provide an elongated hole in a wall 140. In a preliminary stage, a first hole 141 and a second hole 142 have been made in the wall 140, e.g. by using the hole saw 134 or any other suitable tool. The first hole 141 and the second hole 142 are staggered, with a distance between the centers of the first hole 141 and the second hole 142, and the diameters of the first hole 141 and the second hole 142 being predetermined, and in particular such that the ring segments 118 of the accessory 110 can be placed in the respective first and second holes 141, 142. The outer diameter of the ring segments 118 is substantially equal to the diameter of the first and second holes 141, 142.

After the preparation of the first hole 141 and the second hole 142, the accessory 110 is placed in the holes until the second ring end 116 of the guide ring 112 abuts the wall 140. The teeth 128, 130 grip an inner wall of the first and second holes 141, 142 to prevent the accessory 110 to fall out of the wall 140, or to move relative to the wall 140. Figure 3 illustrates this position of the accessory 110. Next, the hole saw 134 is move into the guide ring 112 to provide a third hole having a center in between the centers of the first hole 141 and the second hole 142, having a diameter equal to the diameters of the first and second hole 141, 142, and having a required depth. Accordingly, a substantially oval opening in the wall 140 is made as a row of overlapping circular holes.

The accessory 110 allows for an easy and reproducible removal of any wall material remaining in the oval hole after the first and second holes 141, 142 have been made, by making the third hole.

The oval hole made as illustrated with reference to Figures 1-3 is suitable to mount an installation box, in particular a double installation box, more in particular a double installation box as illustrated with reference to Figure 4.

Figure 4 depicts an installation box 2 having a bottom wall 4 and a side wall 6. The side wall 6 has two opposite short side wall sections 8 and two opposite long side wall sections 10 connected by rounded corner side wall sections 12. The side wall 6 has an edge 13 facing away from the bottom wall 4, the edge defining an installation box opening. The

installation box 2 defines a space in which electrical installation material, such as a socket structure, a switching structure, or other installation material, can be mounted, and in which connections between conductors can be made. The installation box 2 is configured to be mounted in an elongated hole in a hollow wall, such as a wall made of a frame of wooden beams or metal profiled sections, covered by front wall boards containing wood or gypsum (plasterboard, gypsumboard). When mounted in a hollow wall, the edge of the side wall 6 of the installation box 2 in substantially aligned with the front side of the wall, whereas the remaining structure of the installation box 2 is situated in the wall, partly in a board, and partly behind the board of the wall. The installation box 2 has ribs 14 extending along the long side wall sections 10 in a direction from the bottom wall 4 to the edge 13, and provided with threaded holes 16 for inserting screws (not shown) for mounting installation material, a cover, etc.. Further, the installation box 2 is provided with support structures 18a, 18b for supporting a shaft (not shown) carrying a radially extending arm (not shown) which can be rotated from a rest position in a recess 20 to an active position out of the recess 20 by rotating the shaft, such that the arm will form a hook member to abut a back side of a wall board, to prevent the installation box 2 to be pulled out of the (hole in the) wall in which it is mounted.

The installation box 2 is intended to be connected to one or more flexible, semi-rigid or rigid tubes mounted in the wall. For this purpose, at the short side wall sections 8, holes 22 are provided, where a sprout part (not shown) having a side wall section comprising a tubular section adjoining the hole 22 can be mounted by a sliding action.

In a part of one of the long side wall sections 10 of the side wall 6, and in an adjacent part of the bottom wall 4, a wall part 24 is provided which is connected to the remainder of the walls 4, 6 by a weakened edge connection such that the wall part 24 can be removed easily and in a predefined way, to provide an opening 30 for placing a sprout part.

A part of the opposite long side wall section 10 of the side wall 6, and an adjacent part of the bottom wall 4 define an opening 32 for placing a sprout part.

It is seen that the bottom wall 4 of the installation box 2 comprises an opening 32 partly in a long side wall section 10 opposite the long wall section 10 containing the wall part 24, and partly in the bottom wall 4. After manufacture of the installation box 2, and before use thereof, the edges of the opening 32 are defined by edge 34 of an elongated cut-out in the long side wall section 10, edges 35, 36 of two opposite bottom wall side flap sections 37, and an edge 38 of a bottom wall back flap section 39.

As is seen in Figure 4, the installation box 2 in fact comprises two basically partly circular shaped spaces integrated to form a substantially oval-shaped interior space. For this reason, the installation box 2 may also be referred to as a double box.

As explained above, in a method for providing an elongated hole in a wall, a circular first hole and second hole are provided in the wall. The first and second hole overlap. An accessory comprises a first support face and a second support face, and a guide situated between the first and the second support face. The guide is adapted for guiding a drill or hole saw to provide a circular third hole in the wall. The first support face of the accessory is placed in the first hole, and the second support face of the accessory is placed in the second hole. The hole saw is guided along the guide of the accessory to provide the third hole in the wall.

As required, detailed embodiments of the present invention are disclosed herein; however, it is to be understood that the disclosed embodiments are merely exemplary of the invention, which can be embodied in various forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention in virtually any appropriately detailed structure. Further, the terms and phrases used herein are not intended to be limiting, but rather, to provide an understandable description of the invention.

The terms "a" or "an", as used herein, are defined as one or more than one. The term plurality, as used herein, is defined as two or more than two. The term another, as used herein, is defined as at least a second or more. The terms including and/or having, as used herein, are defined as comprising (i.e., open language, not excluding other elements or steps). Any reference signs in the claims should not be construed as limiting the scope of the claims or the invention.

The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures cannot be used to advantage.

The term coupled, as used herein, is defined as connected, although not necessarily directly.

C O N C L U S I E S

1. Werkwijze voor het verschaffen van een langwerpig gat in een wand (140), welke werkwijze omvat:

het verschaffen van een cirkelvormig eerste gat (141) in de wand met een eerste centrum en een eerste straal;

het verschaffen van een cirkelvormig tweede gat (142) in de wand met een tweede centrum en een tweede straal, waarbij het eerste en het tweede gat elkaar overlappen, waarbij de afstand tussen het eerste centrum en het tweede centrum groter is dan de eerste of de tweede straal;

het verschaffen van een hulpstuk (110) omvattende een eerste steunvlak en een tweede steunvlak, waarbij de uitwendige afstand tussen het eerste en tweede steunvlak gelijk is aan de som van de eerste straal, de tweede straal, en de afstand tussen het eerste centrum en het tweede centrum, waarbij het hulpstuk verder een geleiding (112) omvat die zich bevindt tussen het eerste en het tweede steunvlak, welke geleiding is bestemd voor het geleiden van een boor of gatenzaag (134) voor het verschaffen van een cirkelvormig derde gat in de wand met een derde centrum en een derde straal;

het plaatsen van het eerste steunvlak van het hulpstuk in het eerste gat, en het plaatsen van de tweede steunvlak van het hulpstuk in het tweede gat;

het geleiden van de boor of gatenzaag langs de geleiding van het hulpstuk voor het verschaffen van het derde gat in de wand.

2. Werkwijze volgens conclusie 1, waarbij de eerste, tweede en derde stralen gelijk zijn.

3. Werkwijze volgens conclusie 1 of 2, waarbij de eerste, tweede en derde centra zich op een rechte lijn bevinden.

4. Hulpstuk (110) voor het verschaffen van een langwerpig gat in een wand, welk hulpstuk omvat:

een eerste steunvlak dat is ingericht om te worden geplaatst in een cirkelvormig eerste gat (141) in de wand, waarbij het eerste gat een eerste centrum en een eerste straal heeft;

een tweede steunvlak dat is ingericht om te worden geplaatst in een cirkelvormig tweede gat (142) in de wand, waarbij het tweede gat een tweede centrum en een tweede straal heeft, waarbij de afstand tussen het eerste centrum en het tweede centrum groter is dan de eerste of de tweede straal, en waarbij de uitwendige afstand tussen het eerste en

tweede steunvlak gelijk is aan de som van de eerste straal, de tweede straal en de afstand tussen het eerste centrum en het tweede centrum;

een geleiding (112) die zich bevindt tussen het eerste en het tweede steunvlak, waarbij de geleiding is bestemd om een boor of gatenzaag te geleiden voor het verschaffen van een cirkelvormig derde gat in de wand met een derde centrum en een derde straal.

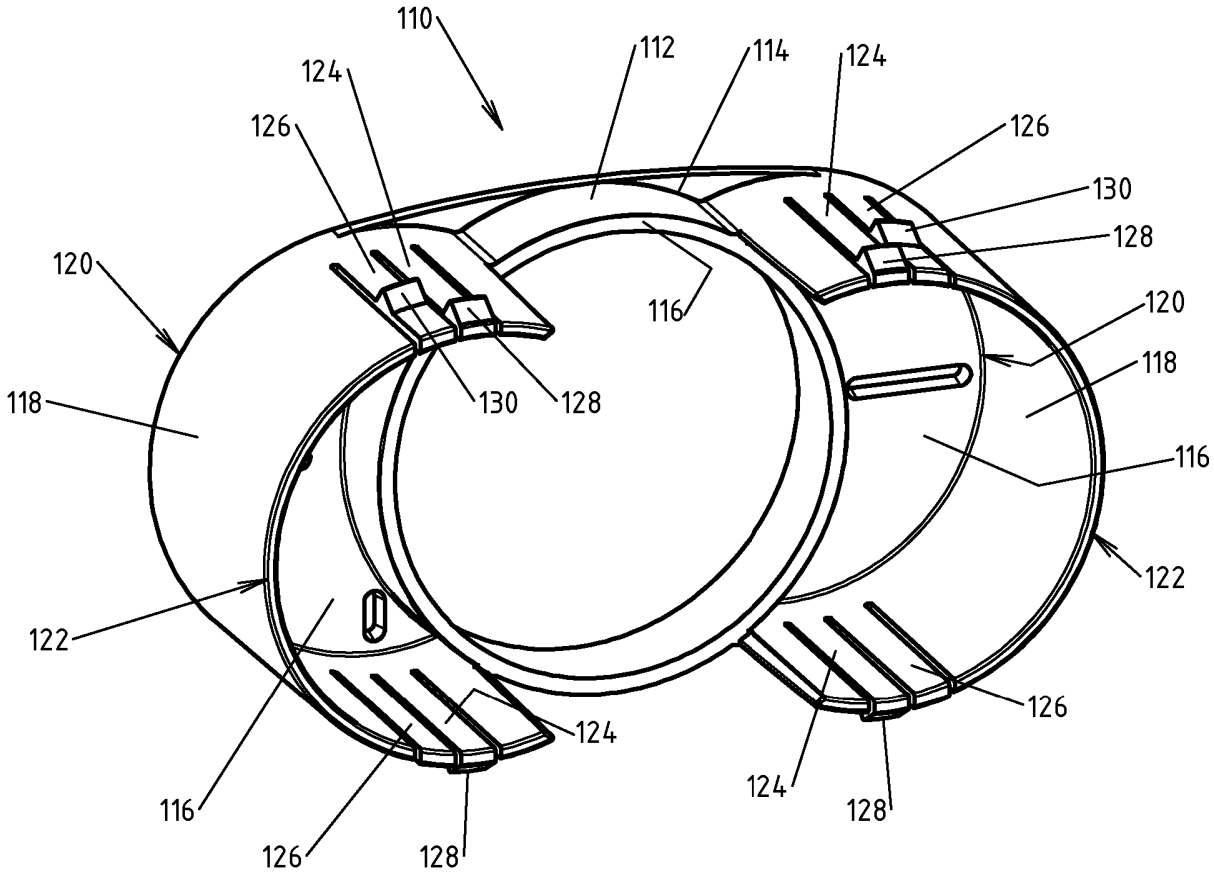
5. Hulpstuk volgens conclusie 4, waarbij de geleiding een geleidingsring (112) is.

6. Hulpstuk volgens conclusie 4 of 5, waarbij het eerste steunvlak en het tweede steunvlak elk zijn gevormd door een ringsegment (118).

7. Hulpstuk volgens conclusie 6, waarbij het ringsegment (118) dat het eerste steunvlak vormt, een uitwendige straal heeft die in hoofdzaak gelijk is aan de eerste straal van het eerste gat (141).

8. Hulpstuk volgens conclusie 6 of 7, waarbij het ringsegment (118) dat het tweede steunvlak vormt, een uitwendige straal heeft die in hoofdzaak gelijk is aan de tweede straal van het tweede gat (142).

9. Hulpstuk volgens een van de conclusies 6-8, waarbij de ringsegmenten (118) zijn voorzien van flexibele lippen (124, 126) met tanden (128, 130) die zich uitstrekken aan een bolle zijde van de ringsegmenten.


110
112
114
124
124
126
126
130
128
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116
120
118
118
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122
122
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124
116
124
128
126
128

FIG. 1

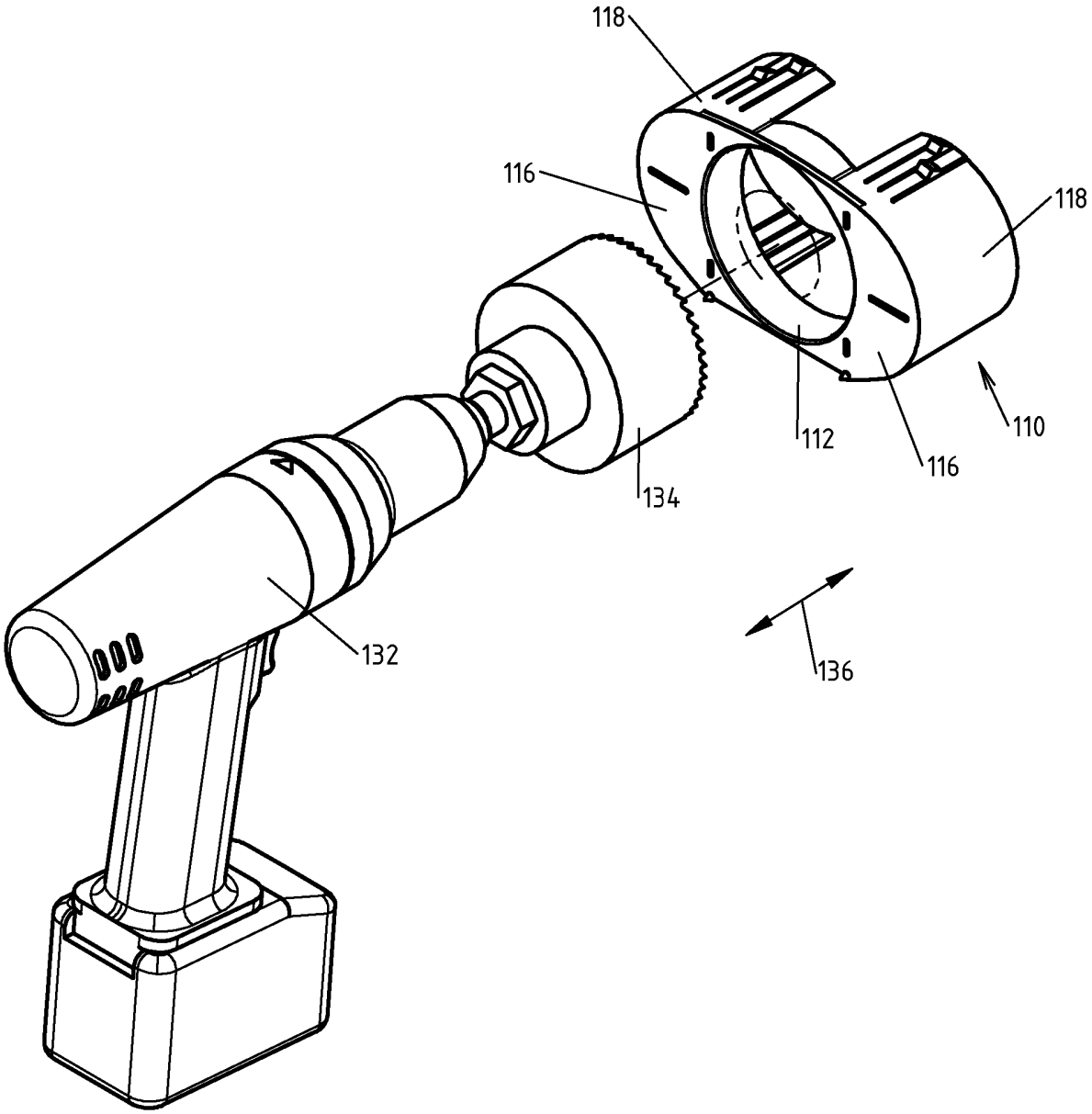

FIG. 2

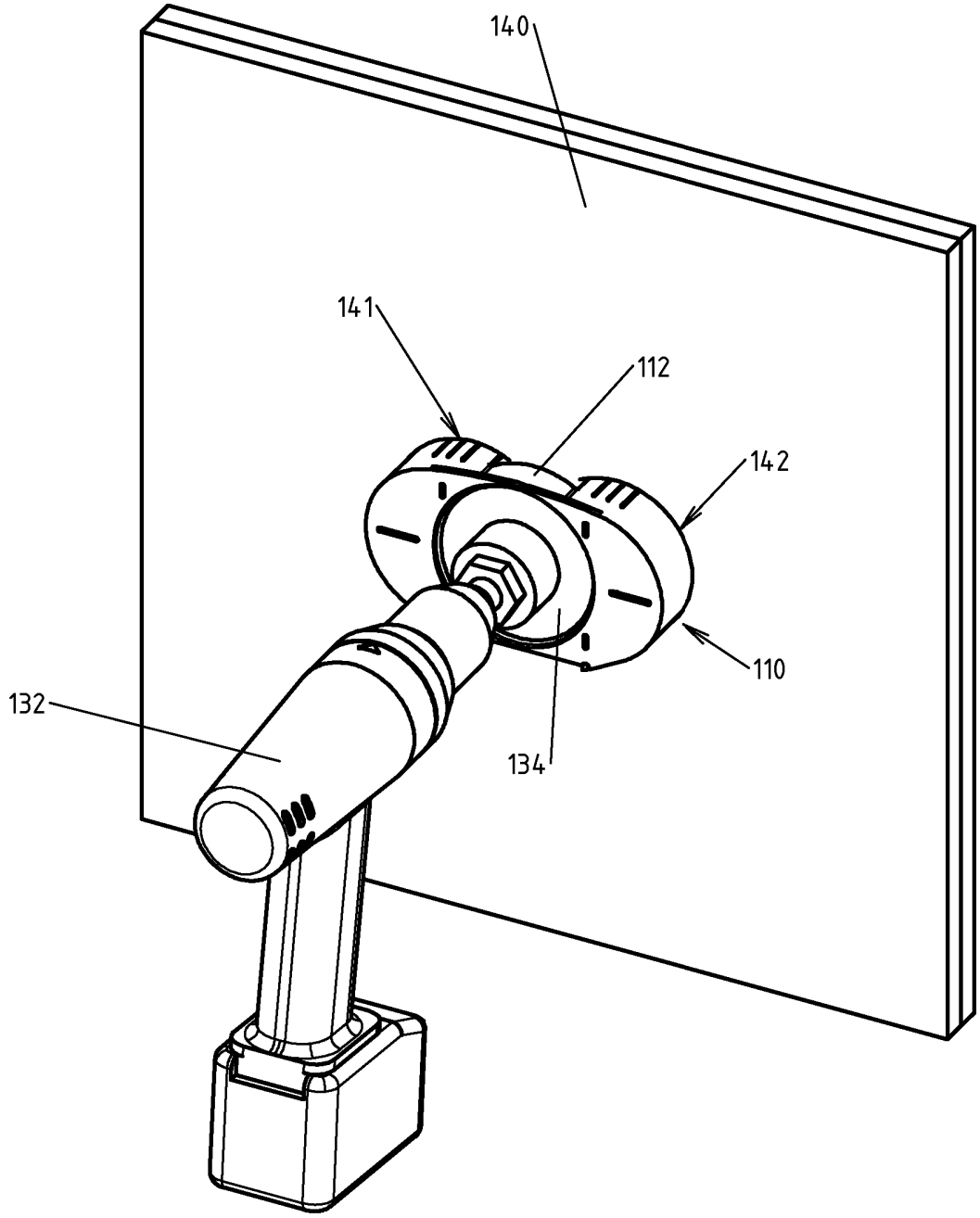

FIG. 3

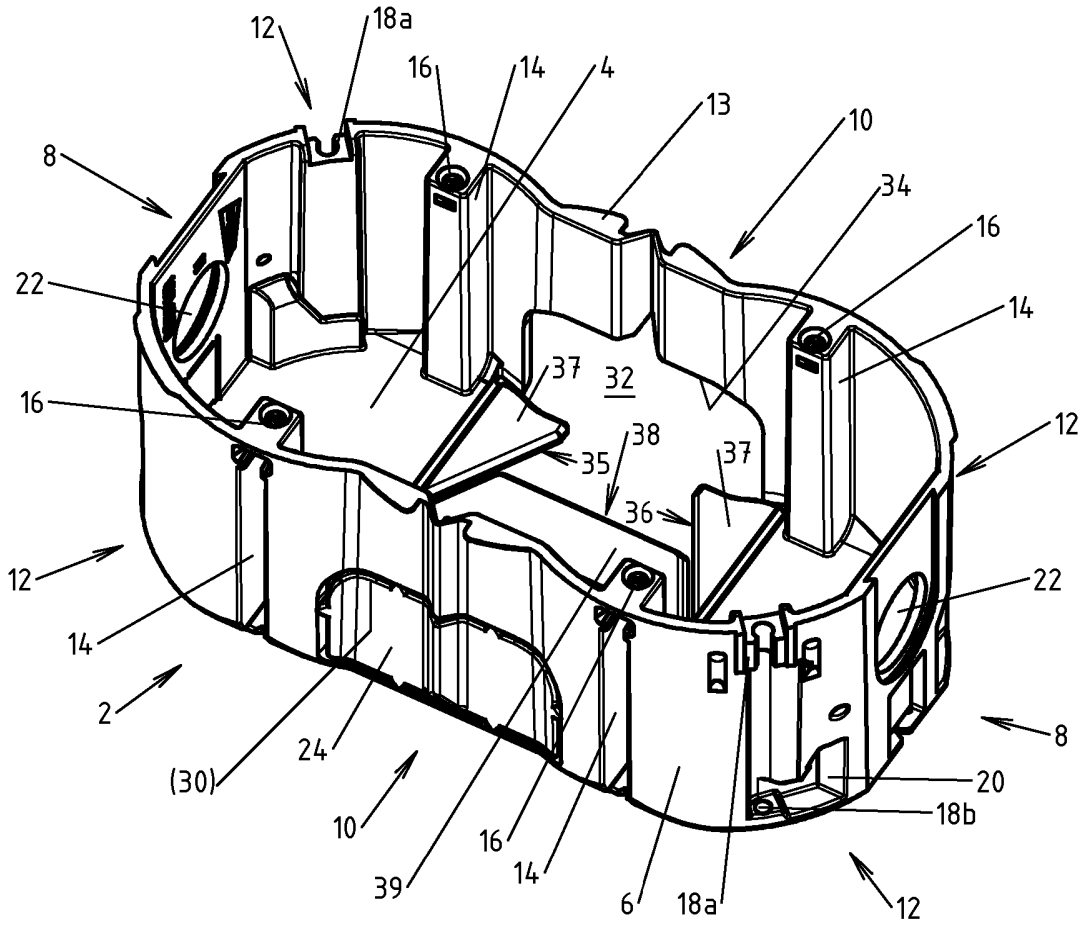
12
18a
16
14
4
13
10
8
34
16
22
14
37
32
16
38
35
37
12
36
12
22
14
2
8
24
(30)
20
10
18b
16
14
39
6
18a
12

FIG. 4

SAMENWERKINGSVERDRAG (PCT)

RAPPORT BETREFFENDE NIEUWHEIDSONDERZOEK VAN INTERNATIONAAL TYPE

IDENTIFICATIE VAN DE NATIONALE AANVRAGE	KENMERK VAN DE AANVRAGER OF VAN DE GEMACHTIGDE
	P30610NL00/ME
Nederlands aanvraag nr. **2006103**	Indieningsdatum **31-01-2011**
	Ingeroepen voorrangsdatum
Aanvrager (Naam) **Attema B.V.**	
Datum van het verzoek voor een onderzoek van internationaal type **30-04-2011**	Door de Instantie voor Internationaal Onderzoek aan het verzoek voor een onderzoek van internationaal type toegekend nr. **SN 56094**

I. CLASSIFICATIE VAN HET ONDERWERP (bij toepassing van verschillende classificaties, alle classificatiesymbolen opgeven)

Volgens de internationale classificatie (IPC)

H02G1/00 **B23B51/04**

II. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK

Onderzochte minimumdocumentatie

Classificatiesysteem	Classificatiesymbolen		
IPC8	**H02G**	**B23B**	**B28D**

Onderzochte andere documentatie dan de minimum documentatie, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

III. ☐ **GEEN ONDERZOEK MOGELIJK VOOR BEPAALDE CONCLUSIES** (opmerkingen op aanvullingsblad)

IV. ☐ **GEBREK AAN EENHEID VAN UITVINDING** (opmerkingen op aanvullingsblad)

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Nummer van het verzoek om een onderzoek naar de stand van de techniek
NL 2006103

A. CLASSIFICATIE VAN HET ONDERWERP
INV. H02G1/00 B23B51/04
ADD.

Volgens de Internationale Classificatie van octrooien (IPC) of zowel volgens de nationale classificatie als volgens de IPC.

B. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK

Onderzochte miminum documentatie (classificatie gevolgd door classificatiesymbolen)
H02G B23B B28D

Onderzochte andere documentatie dan de mimimum documentatie, voor dergelijke documenten, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

Tijdens het onderzoek geraadpleegde elektronische gegevensbestanden (naam van de gegevensbestanden en, waar uitvoerbaar, gebruikte trefwoorden)
EPO-Internal

C. VAN BELANG GEACHTE DOCUMENTEN

Categorie °	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
A	EP 0 255 120 A1 (KAISER GMBH & CO KG [DE]) 3 februari 1988 (1988-02-03) * het gehele document *	1,2,4,5
A	EP 1 764 175 A2 (JIJ PLAST AB [SE]) 21 maart 2007 (2007-03-21) * kolom 8, regel 50 - kolom 9, regel 8; figuren 12,13 *	1-5
A	DE 94 07 714 U1 (SCHAACK EDGAR [DE]; LUTZ MANFRED [DE]) 22 december 1994 (1994-12-22) * figuren *	1,4
A,D	NL 1 019 822 C2 (ABB B V [NL]) 8 januari 2004 (2004-01-08) in de aanvraag genoemd * figuren *	1

☐ Verdere documenten worden vermeld in het vervolg van vak C.

[X] Leden van dezelfde octrooifamilie zijn vermeld in een bijlage

° Speciale categorieën van aangehaalde documenten

"A" niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft

"D" in de octrooiaanvrage vermeld

"E" eerdere octrooi(aanvrage), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven

"L" om andere redenen vermelde literatuur

"O" niet-schriftelijke stand van de techniek

"P" tussen de voorrangsdatum en de indieningsdatum gepubliceerde literatuur

"T" na de indieningsdatum of de voorrangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvrage, maar wordt vermeld ter verheldering van de theorie of het principe dat ten grondslag ligt aan de uitvinding

"X" de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur

"Y" de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht

"&" lid van dezelfde octrooifamilie of overeenkomstige octrooipublicatie

Datum waarop het onderzoek naar de stand van de techniek van internationaal type werd voltooid	Verzenddatum van het rapport van het onderzoek naar de stand van de techniek van internationaal type
1 september 2011	

Naam en adres van de instantie	De bevoegde ambtenaar
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Rieutort, Alain

Formulier PCT/ISA/201 (tweede blad) (Januari 2004)

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Informatie over leden van dezelfde octrooifamilie

Nummer van het verzoek om een onderzoek naar de stand van de techniek
NL 2006103

In het rapport genoemd octrooigeschrift	Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
EP 0255120 A1	03-02-1988	GEEN	
EP 1764175 A2	21-03-2007	SE 528071 C2	29-08-2006
		SE 0502032 A	29-08-2006
DE 9407714 U1	22-12-1994	GEEN	
NL 1019822 C2	08-01-2004	NL 1019822 A1	25-07-2003

OCTROOICENTRUM NEDERLAND

WRITTEN OPINION

File No.	Filing date *(day/month/year)*	Priority date *(day/month/year)*	Application No.
SN56094	31.01.2011		NL2006103

International Patent Classification (IPC)
INV. H02G1/00 B23B51/04

Applicant
Attema B.V.

This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the application
- ☐ Box No. VIII Certain observations on the application

	Examiner

Application number

WRITTEN OPINION

NL2006103

Box No. I Basis of this opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☐ on paper

   ☐ in electronic form

   c. time of filing/furnishing:

   ☐ contained in the application as filed.

   ☐ filed together with the application in electronic form.

   ☐ furnished subsequently for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty	Yes:	Claims	1-9
	No:	Claims	
Inventive step	Yes:	Claims	1-9
	No:	Claims	
Industrial applicability	Yes:	Claims	1-9
	No:	Claims	

2. Citations and explanations

see separate sheet

1 Reference is made to the following documents:

D1 EP 0 255 120 A1 (KAISER GMBH & CO KG [DE]) 3 februari 1988 (1988-02-03)

D2 EP 1 764 175 A2 (JIJ PLAST AB [SE]) 21 maart 2007 (2007-03-21)

D3 DE 94 07 714 U1 (SCHAACK EDGAR [DE]; LUTZ MANFRED [DE]) 22 december 1994 (1994-12-22)

2 Claim 1

Document D1, which is considered to represent the most relevant state of the art, discloses (the references in parentheses applying to this document):

a method for providing an elongated hole in a wall (57), the method comprising: providing a circular first hole (58) in the wall having a first center and a first radius; providing a circular second hole (58) in the wall having a second center and a second radius, the first and the second hole overlapping with the distance between the first center and the second center being greater than the first or the second radius; providing an accessory (40, 60) comprising a first support face (50), placing the first support face (50) of the accessory in the first hole, guiding the drill or hole saw to provide the *second* hole in the wall.

From this, the subject-matter of independent claim 1 differs in that the accessory comprises a second support face, the outside distance between the first and second support face being the sum of the first radius, the second radius, and the distance between the first center and the second center and a guide (112) situated between the first and the second support face, the guide for guiding a drill or hole saw (134) to provide a circular third hole in the wall having a third center and a third radius; the method including placing the second support face of the accessory in the second hole; guiding the drill or hole saw along the guide of the accessory to provide the third hole in the wall.

2.1 The subject-matter of claim 1 is therefore novel.
The problem to be solved by the present invention may be regarded as providing a method for cutting an oval opening in a wall.

2.2 The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step for the following reasons:
D1 describes a cutting of two overlapping holes, the tool could be used to

make a third hole, but then the 3 holes might not be correctly aligned. In the present application, the method makes the third holes between the 2 existing holes, on the axis of the two centers of the holes.

D2 describes another solution for cutting three aligned holes, with no centering device. D3 cuts the 2 remaining holes after centering on only the first hole.

2.3 Claims 2, 3 are dependent on claim 1 and as such also meet the requirements with respect to novelty and inventive step.

3 Claim 4

Document D1, which is considered to represent the most relevant state of the art, discloses (the references in parentheses applying to this document):

an accessory (40, 60) for providing an elongated hole in a wall, the accessory comprising: a first support face (50) adapted to be placed in a circular first hole (58) in the wall, the first hole having a first center and a first radius;

From this, the subject-matter of independent claim 4 differs in that the accessory further comprises a second support face adapted to be placed in a second circular hole (142) in the wall, the second hole having a second center and a second radius, wherein the distance between the first center and the second center is greater than the first or the second radius, and wherein the outside distance between the first and second support face is the sum of the first radius, the second radius, and the distance between the first center and the second center; a guide (112) situated between the first and the second support face, the guide for guiding a drill or hole saw to provide a circular third hole in the wall having a third center and a third radius.

3.1 The subject-matter of claim 4 is therefore novel.
The problem to be solved by the present invention may be regarded as providing an accessory for cutting an oval opening in a wall.

3.2 The solution to this problem proposed in claim 4 of the present application is considered as involving an inventive step for the following reasons:
D1 describes a cutting accessory for two overlapping holes, the accessory could be used to make a third hole, but then the 3 holes might not be correctly aligned. In the present application, the method makes the third holes between the 2 existing holes, on the axis of the two centers of the holes.

D2 describes another accessory for cutting three aligned holes, with no centering device. The accessory of D3 cuts the 2 remaining holes after centering on only the first hole.

3.3 Claim 5 is dependent on claim 4 and as such also meets the requirements with respect to novelty and inventive step.