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(54) **METHOD FOR ELEVATION OF BUILDING ELEMENTS FROM A BUILDINGPLANE AND TOOL ADAPTED TO ELEVATE A NUMBER OF EQUALLY SIZED BUILDING ELEMENTS**

(57) A method for elevation of equally sized building elements (2) from an even buildingplane (8) is provided, where an array of individual prongs (4), arranged spaced equidistantly apart, side by side and each comprising a front edge (6), are pressured simultaneouslyin a direction along the buildingplane (8), between the buildingplane (8) and the building elements (2). Preferably, studs (10) projecting upwards from the buildingplane (8) or studs projecting from the building elements (2) and into the buildingplane (8) enter spaces (12) between the prongs (4) during the progression thereof along the buildingplane (8). A tool (28) which is adapted to be used in the method is also provided.

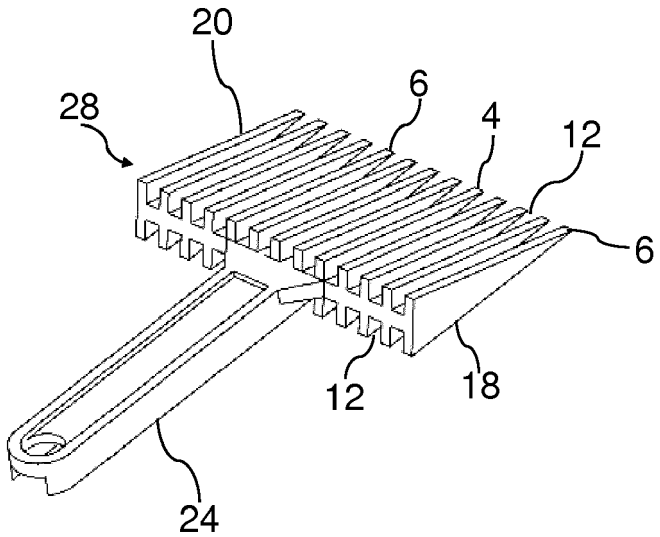

Fig. 2

EP 3 824 983 A1

Description

Field of invention

[0001] The present invention relates to a method for releasing and elevating fused or unfused building elements from a buildingplane, and also relates to a tool adapted to perform this operation.

Prior art

[0002] From prior art document US 10 086 311 B2 a scraper is known, which may be used to elevate fused building elements from a buildingplane. The known scraper has small prongs extending forwardly of a spatula portion. Elements, such as studs extending out of the building plane or extending downward from the fused together building elements cannot enter the space between individual prongs, and the prongs are not sufficiently long to offer any substantial support to the known tool.

[0003] Thus, there is a need for a method and a tool which enables the user to elevate the building elements from the buildingplane in a safer and easy manner. Further, an alternative to the prior art tool is desired.

Summary of the invention

[0004] The object of the present invention is achieved by a method as defined in claim 1 and by a tool which has the features defined in claim 5. Preferred embodiments are defined in the dependent claims, explained in the following description and illustrated in the accompanying drawings.

[0005] The method is adapted for elevation of equally sized building elements from an even buildingplane where an array of individual prongs, arranged spaced equidistantly apart, side by side and each comprising a front edge, are pressured simultaneously in a direction along the buildingplane, between the buildingplane and the building elements. According to the invention studs projecting upwards from the buildingplane or studs projecting from the building elements and into the buildingplane enter spaces between the prongs during the progression thereof along the buildingplane. In this way, the method allows the tool to progress along a buildingplane between studs projecting upwards therefrom and also studs or other downwardly projecting elements being part of the building elements may enter into the space between prongs during forward motion thereof. This allows an angle between an assembly of building elements still adhering to a buildingplane and building elements in the process of being lifted, to remain as small as possible, and thus it may be assured that building elements, which are less than desirably fused, shall stay together during a lifting motion wherein they are gradually lifted away from the buildingplane.

[0006] In an embodiment of the invention, each prong is urged forward in the direction of the front edges from a rearmost part arranged oppositely to the front edge whereby the forwardly directed pressure is supplied to a common bridge which interconnects the prongs, and which bridge is arranged distanced from an upper common surface plane of the prongs and also distanced from a lower common surface plane of the prongs such that studs may travel unhindered between the prongs above and/or below the common bridge when the prongs are urged forward on the buildingplane between the buildingplane and the building elements.

[0007] In an embodiment, the lower common surface of each prong is caused to slide along the surfaceplane in contact therewith while studs travel between the prongs from a front edge thereof to a rearmost end of each prong. In this way prongs may contact the surface of the building plane along their entire length, where this length may be counted from a foremost edge portion to a rearmost part residing rearward of a bridge part which interconnects the prongs.

[0008] In an embodiment each prong is urged forward in the direction of the front edges from a rearmost part arranged oppositely to the front edge whereby the forwardly directed pressure is supplied to a common bridge which interconnects the prongs, and which bridge is arranged to fill at least the entire space between the prongs at their rear ends and whereby the prongs are arranged to flex elastically away from a flat buildingplane at the bridge when the bridge is urged forward while imparted with a momentum whereby the studs projecting upwards from the buildingplane pass underneath a lower common surfaceplane of the prongs at the common bridge during forward motion of the prongs. This embodiment allows for use of the flexibility of some polymers or metals, in order to make a lighter tool with use of less material, where also the user may control how intensely the prongs are being elastically deformed in accordance with the work at hand. In case building elements with downward extending studs are used, the bridge part may comprise a sloped portion, such that the building elements are gently lifted away from the bridge part during the forward motion of the tool between buildingplane and building elements.

[0009] According to a further aspect of the invention, a tool adapted to elevate a number of equally sized building elements from a buildingplane is provided, where the tool comprises a number of prongs equidistantly distanced apart, where the prongs extend in parallel in a direction of extension and has a lower common surfaceplane adapted to abut the buildingplane and an upper common surfaceplane, and whereby each prong has a front edge and the prongs are interconnect at a common bridge arranged opposite to the front edge. In accordance with this aspect of the invention the space between the prongs has a lengthwise extend between a foremost part of the common bridge and the front edge, whereby said extend correspond to at least two times a diameter of a building element. This allows for a gentle lift off of the building elements from the buildingplane, as the angle

between building elements still residing on the buildingplane and building elements having been lifted by the tool shall not exceed a critical value, whereby fused building elements brake apart from each other during lift off from the buildingplane. Possibly an improvement may be obtained if the lengthwise extend of the prongs exceeds a measure of 3 times the diameter of building elements, and an even greater improvement is obtainable if the extend exceeds a measure of 5 times the diameter of building elements.

[0010] According to an aspect of the invention, the upper common plane and the lower common plane are arranged at an angle with respect to each other and such that the front edges of the prongs are arranged at the line of intersection between the two planes. This allows for an orderly and simultaneous lift away from the building plane of groups of building elements.

[0011] In an aspect of the invention, the common bridge is arranged spaced apart from the lower common plane and/or from the upper common plane such that studs extending upwardly from the buildingplane and/or extending downwardly from the building elements and into the building plane may pass un-hindered in the space between the prongs at the common bridge. This allows for an even more gentle release of the building elements, as any studs may now pass along the entire length of the tool, without meeting obstacles.

[0012] In an aspect of the invention the space between the prongs extend between the lower common plane and the upper common plane, whereby said planes are arranged parallel to each other at least at the common bridge, and that prongs are adapted to be elastically bent upwardly and away from a building plane at the common bridge when the front edges contact said buildingplane and a momentum is applied to the common bridge. This adaptation of the tool allows for an easy to use and less heavy tool.

[0013] In an embodiment of the invention a handle is provided to extend backward from the common bridge relative to the extending direction of the prongs and further, the handle is limited in a downward direction by a lower plane which is coplanar with the lower common plane of the prongs or is limited in an upward direction by an upper plane which is coplanar with the upper common plane of the prongs or the handle is limited in both a downward direction and an upward direction by planes which are coplanar with lower common planes and upper common planes of the prongs.

[0014] In an embodiment a handle is provided to extend in a sideways direction from the common bridge relative to the extension direction of the prongs, whereby said handle is one-sided and extend towards one side only or whereby the handle is two sided and extend in two opposite directions away from the common bridge. This alternative arrangement of the handle part may be beneficial in some instances.

Description of the Drawings

[0015] The invention will become more fully understood from the detailed description given herein below. The accompanying drawings are given by way of illustration only, and thus, they are not limitative of the present invention. In the accompanying drawings:

- Fig. 1 shows a schematic 3D view of progression during performance of the method according to the invention;
- Fig. 2 shows a schematic 3D view of a tool according to the invention;
- Fig. 3 is a sideview of the tool shown in Fig. 2;
- Fig. 4 shows a perspective 3D view of a part of the tool shown in Fig. 2;
- Fig. 5 is 3D view of a section perpendicular to the prongs, through the tool shown in Fig. 2;
- Fig. 6 is a sectional view in 3D presentation through a tool as shown in Fig. 2;
- Fig. 7 is a 3D view of a tool placed upside down on a buildingplane 8;
- Fig. 8 shows a tool used for removing un-fused building elements from a buildingplane;
- Fig. 9 shows a further embodiment of a tool according to the invention displayed in 3D presentation from 2 different angles;
- Fig. 10 shows a further embodiment of a tool according to the invention displayed in 3D presentation from 2 different angles;
- Fig. 11 shows a further embodiment of a tool according to the invention displayed in 3D presentation from 2 different angles;
- Fig. 12 shows a further embodiment of a tool according to the invention displayed in 3D presentation from 2 different angles;
- Fig. 13 shows a further embodiment of a tool according to the invention displayed in 3D presentation from 2 different angles;
- Fig. 14 shows a further embodiment of a tool according to the invention displayed in 3D presentation from 2 different angles;
- Fig. 15 shows a further embodiment of a tool according to the invention displayed in 3D presentation from 2 different angles,
- Fig. 16 is a sectional view through the tool according to the invention in use for elevating building elements away from a buildingplane
- Fig. 17 shows an embodiment of the invention with a curved front edge,
- Fig. 18 shows an embodiment similar to the embodiment in Fig. 17, but with a common bridge abutting the upper surface plane of the prongs and
- Fig. 19 showing an embodiment of the tool with a prongs forming an upper and a lover common plane and a curved rear edge.

Detailed description of the invention

[0016] Referring now in detail to the drawings for the purpose of illustrating preferred embodiments of the present invention, a method according to the invention is illustrated in Fig. 1. A progress of gradually releasing fused together building elements 2 is displayed in 5 pictures: top left, top right, mid left, mid right and bottom centre of the page displays each it's part of the progress, which will be the result of the use of the method for elevation of equally sized building elements 2 from an even buildingplane 8. In each picture, an array of individual prongs 4, arranged spaced equidistantly apart, side by side and each comprising a front edge, are pressured simultaneously in a direction along the buildingplane 8. The prongs are urged in between the buildingplane 8 and the building elements 2 gradually from an edge part of an assembly of building elements 2. As seen in the 5 pictures of the example, the building elements 2 have been fused to each other to form a mat or plate like structure, in this case shaped as a square. In use, a user shall initially arrange the building elements 2 on the buildingplane 8 to form a figure, or a picture representing an object such as an emoji, an animal, a house, a pattern, a pell-mell arrangement or any other element. Usually the arranged building elements shall contact each other, so that no building element is left without contact with at least another building element.

[0017] As seen in Fig. 1 studs are projecting upwards from the buildingplane 8 and in Fig. 8 or 16, it can be seen how the building elements are configured with a hole or blind-hole 26, such that each building element may be positioned to embrace a stud, and thus be prevented from sideway motion with respect to the buildingplane 8. Alternatively, studs projecting from the building elements may be adapted to enter holes in a buildingplane (this is not shown) and thus be similarly prevented from sideway motion. The building elements may be released from a buildingplane after being assembled thereon, possibly after being fused to each other. Fusion may take place by hot ironing the assembly of building elements 2 on the building plane, whereby a top part of the building elements shall obtain temperatures above the melting point of the used building elements 2, and by adding a little pressure between a hot iron and the assembly of building elements 2, they shall have their uppermost portion melted and pressurized to the state shown in Fig. 1 wherein each element is fused to any neighbouring elements at least in an uppermost layer thereof.

[0018] Another way of fusing building elements involve the use of a solvent, which is added to the assembled building elements on the building plane, whereby the solvent dissolves at least an outer layer of the building elements, such that a layer of solvent and dissolved building element parts shall accumulate between the building elements, and left to dry, the solvent shall evaporate and leave the dissolved parts of the building elements between the individual building elements and there act as a cement which fuses the building elements to each other.

[0019] In any event, the array of prongs 4 in Fig. 1 shall be gently pressured in between fused or on-fused building elements to thereby lift the elements gradually upwards and away from the buildingplane 8. During this process, studs 10 are allowed to enter spaces 12 between the prongs 4. In Fig. 1, the studs 10 project upwardly from the buildingplane 8, however the spaces between the prongs 4 of the displayed example of the tool shall also allow studs sticking out, in this case downwardly from the building elements, to enter between the prongs 4 during the progression thereof along the buildingplane 8.

[0020] Seen from the viewpoint of a stud 10, the stud 10 moves or travels between two prongs 4 from a foremost part thereof to a rear part thereof. The foremost part of each stud comprises a front edge 6, which is of some sharpness, in order that it may enter between a building element 2 and the buildingplane 8, even if the building element 2 for whatever reason stick with or adheres to the buildingplane 8.

[0021] Each of the prongs 4 which belongs to a tool 28 are urged forward in the direction along the prongs, and with front edges 6 in front, whereby the motion force is added at a rearmost part arranged oppositely to the front edge 6. The forwardly directed pressure is preferably supplied to a common bridge 16 which interconnects the prongs 4, and which bridge 16 is arranged distanced from an upper common surface plane 18 of the prongs 4 and also distanced from lower common surface plane 20 of the prongs such that studs 10 may travel unhindered between the prongs 4 above and/or below the common bridge 16 when the prongs 4 are urged forward on the buildingplane 8 between the buildingplane 8 and the building elements.

[0022] As seen in Figs. 1 - 8 and Fig. 16, the lower common surface plane 20 of the prongs 4 is caused to slide along the buildingplane 8 while in contact therewith as studs 10 travel between the prongs 4 from a front edge 6 thereof to a rearmost part 14 of each prong. The tool 28 may be turned with any of its two faces towards the buildingplane 8, and as seen in Fig. 7 and 8, a handle 24 is shaped integrally with the common bridge 16, and two prongs 4 are arranged to continue along the handle 24 limited by the same plane, as forms the upper common surface plane 18 of the prongs 4. "Upper plane" is in this connection the common plane, which limits the handle as well as the prongs irrespective of the orientation of the tool. And in Fig. 7, the upper common surface plane 18 is caused to slide along the buildingplane 8, and this is possible due to the special shape of the handle 24 shown in Figs. 1 - 8, Fig. 12 and Fig. 16. where a centre of the handle 24 comprises a section 25 (marked on Fig. 5) which leaves space for studs 10. The section 25 is provided by extending two prongs in a rearward direction, and here be integrally shaped with the handle 24.

[0023] In a variation of the method according to the invention, each prong 4 is urged forward in the direction of the front edges 6 from a rearmost part of a prong, where the rearmost part is arranged oppositely to the front edge 6 whereby the forwardly directed pressure is supplied to a common bridge 160 which interconnects the prongs 4 and which bridge 160 is arranged to fill at least the entire space between the prongs 4 at their rear end. A tool corresponding to this method is disclosed in Figs. 9 - 11. Here the prongs 4 are arranged to flex elastically away from the flat buildingplane 8 at the bridge 160 when the bridge 160 is urged forward while imparted with a momentum. This allows the studs 10 projecting upwards from the buildingplane 8 to pass underneath a lower common surfaceplane 20 of the prongs 4 at the common bridge 160 during forward motion of the prongs 4. In this method, it is not possible to arrange the entire tool flat onto the buildingplane 8, as the space between the prongs 12 does not continue backward towards the handle 24 and along the common bridge 16.

[0024] When using kind of tool shown in Fig. 9 - 11, the user shall pressure the foremost part of the handle, where it intersects with the bridge 160 downward towards the building plane 8, using thumb and/or index fingers, while compensating for the downward pressure by lifting upwards at the rearmost and distal part of the handle 24 possibly with remaining fingers. In doing so, the handle shall impart a momentum to the bridge 160, and this may cause the outer ends of the prongs to flex and thus at least at their edges have a surface tangent, which is aligned with the flat surface of the buildingplane 8 between the studs 10.

[0025] In Fig. 9 the tool 24 is shown with prongs 4, which are thickest at their connection with the common bridge 160 and become increasingly thin towards the front edge 6. In Fig. 10 the tool 28 is shown with a uniform thickness, but for the foremost part of the prongs 4 at their edge parts 6 where the prongs become thinner. And in Fig. 11 a tool 28 is disclosed, in which a slope 23 is provided at the common bridge 160 to better allow the studs 10 to pass either underneath the bridge 16 when this tool is used with studs 10 standing up from a buildingplane, or in the event building elements which has downwardly extending studs 10 (not shown) are used, allow such studs to be gently lifted away from the common bridge in which case also the tools is used while turned upside down.

[0026] The tool in Fig. 12 is special in that the prongs 4 are short, such as no longer than between 2 and 3 times a diameter of a building element 2. In Fig. 8 the building elements 2 are shown, and they comprise cylindrical beady objects and it is the outer diameter of the shown cylindrical shape which is referred to as the "diameter". Building elements may be shaped differently and comprise ball or sphere-shaped elements, inserted in shallow holes or indentations in the surface of the buildingplane, and here the diameter in question would be the outer diameter of the balls or spheres. Irregular or pentagon- hexagon- or octagon shaped element could be used, and here the diameter in question wold be the diameter of circumscribed circle of the building element, once it is placed and fixed at a buildingplane.

[0027] The tool 28 in all the figures is adapted to elevate a number of equally sized building elements 2 from a buildingplane 8, and therefore comprises a number of prongs 4, which are equidistantly distanced apart. The space 12 between the prongs shall be dimensioned to accommodate studs, which either are part of the buildingplane 8 or which forms part of the fused or un-fused assembly of building elements 2 to be lifted away from the buildingplane 8. Thus, the prongs 4 extend in parallel in a direction of extension and has a lower common surfaceplane 20 adapt to abut the buildingplane and an upper common surfaceplane 18. The upper common surfaceplane 18 shall allow the building elements 2 to slide thereon without being hindered. Each prong 4 has a front edge 6 and the prongs 4 are interconnect at a common bridge 16,160 arranged opposite to the front edge 6. As seen in the Figs., the space 12 between the prongs 4 has a lengthwise extend between a foremost part, where the front edge 6 is located, and the common bridge 16,160 and this extend shall correspond to at least two times a diameter of a building element 2. By having an extend of the prong 6 of this dimension, it is ensured, that the fused together building elements do not come apart during use of the tool due to excessive bending of a fused together assembly of building elements. As seen in Fig. 16, and 1 there is a bending line 27 along the front edges 6 of the prongs 4, and in case very short prongs are used, the bending angle α between building elements 2 seated still at the buildingplane 8 and those elevated by the tool 28 may become too big, and in this case fused together building elements 2 may tend to come apart. The length of the prongs 4 helps the user to maintain a small angle, whether the prongs are to be bent as according to tools shown in Figs. 9, 10 and 11, or whether un-bendable prongs are used as in the remaining examples. With un-bendable prongs, the user will find it easy to maintain the correct angle, as the longer surface of contact between the common plane of the prongs and the flat surface of the buildingplane 8 allows a stable support of the tool during its use.

[0028] As seen in Figs. 1 - Figs. 8, Fig. 12 and Fig. 16 the upper common plane 18 and the lower common plane 20 are arranged at an angle with respect to each other, and the front edges 6 of the prongs 4 are arranged at the line of intersection between the two planes 18, 20. This ensures that all building elements belonging to a fused together piece are relived from the buildingplane 8 along a straight line.

[0029] As explained, in the embodiments shown in Fig. 1 - Figs 8 and Fig. 12 and Fig. 16, the common bridge 16 is arranged spaced apart from the lower common surface plane 20 and/or from the upper common surface plane 18 such that studs 10 extending upwardly from the buildingplane and/or extending downwardly from the

building elements and into the building plane may pass un-hindered in the space 12 between the prongs 4 at the common bridge 16. The depth of the space between prongs 4 at the common bridge 16 shall thus be at least corresponding to the height of the studs 10 as measured from the flat surface of a buildingplane 8 and to the tip of each stud 10. As seen in the figures all studs 10 are of the same height. Equally, in case studs project downwardly from the building elements, the depth of the space between the prongs at the common bridge, from the upper common plane and to the common bridge shall be no less than the measure of such downwardly extending studs (not shown in the figures).

[0030] In contrary to the Fig. 1- Fig. 8 and Fig. 12 and Fig. 16 embodiment, the planes limiting the prongs in up- and downward direction may be arranged in parallel at least at a common bridge 160 without spaces between prongs 4, and further prongs 4 may be adapted to be elastically bent upwardly and away from a building plane at the common bridge 160 when the front edges contact said buildingplane and a momentum is applied to the common bridge.

[0031] As seen in the Figures, a handle 24 is provided and in Fig. 1 - Fig. 8, and Fig. 12 and 16, the handle 24 extends backward from the common bridge 16,160 relative to the extending direction of the prongs 4 and at the same time the handle 24 is limited in a downward direction by a lower plane which extends coplanar with the lower common plane of the prongs 4. Alternatively, the handle 24 is limited in an upward direction by an upper plane which extends coplanar with the upper common plane 18 of the prongs 4. In a further alternative, the handle 24 is limited in both a downward direction and an upward direction by planes which extends parallel to and coplanar with lower common planes and upper common planes of the prongs. As explained, either rather stiff and unbendable prongs are arrived at, or elastically bendable prongs shall be part of the tool, and in both instances, advantages are provided.

[0032] In Figs. 14 and 15 handles 240 are disclosed which extend in a sideways direction from the common bridge 16 relative to the extension direction of the prongs 4. Such a handle may be one-sided as shown in Fig. 14 or the handle is two sided and extend in two opposite directions away from the common bridge 16 as shown in Fig. 15. In Fig. 13 an example of a tool is provided, wherein no actual handle is provided. This tool may still be used and wedged in between a buildingplane 8 and fused or not fused assembly of building elements 2.

[0033] In Fig. 17 a tool 28 is disclosed wherein the prongs 4 are mis-aligned in that a centermost prong is placed forwardly with respect to the other prongs. The other prongs 4 are placed progressively more retracted from the centerprong, whereby the front edges 6 of the prongs 4 together makes a curved formation. As all prongs have the same length, also at their back edges a similar curved formation will be provided. When the prongs are not aligned, and similarly shaped, their upper surfaces shall reside in a common plane, and thus this tool may not be positioned with the upper side of the prongs in common connection with the buildingplane. In Fig. 18 a similarly shaped tool is disclosed, only here the common bridge extends between the prongs to their upper surfaces at the backend of the prongs 4.

[0034] In Fig. 19 the prongs form a curved formation at their backend with the common bridge, and at the same time have a straight-line common frontal edge. The prongs 4 in this embodiment have different length from their frontal edges to their intersection with the common bridge.

List of reference numerals

[0035]

2	- Building element
4	- Prong
6	- Front edge
8	- Buildingplane
10	- Studs
12	- Space between the prongs
14	- Rearmost part of prongs
16	- Common bridge
18	- Upper common surface plane of prongs
20	- Lower common surface plane of prongs
23	- Slope
24	- Handle
25	- Midsection of handle
26	- Hole or blind-hole of building element
27	- Bending line
28	- Tool
160	- Common bridge without spaces
240	- Sideway handle
α	- Angle alfa

Claims

1. A method for elevation of equally sized building elements (2) from an even buildingplane (8) where an array of individual prongs (4), arranged spaced equidistantly apart, side by side and each comprising a front edge (6), are pressured simultaneously in a direction along the buildingplane (8), between the buildingplane (8) and the building elements (2), **characterised in that** studs (10) projecting upwards from the buildingplane (8) or studs projecting from the building elements (2) and into the buildingplane (8) enter spaces (12) between the prongs (4) during the progression thereof along the buildingplane (8).

2. A method according to claim 1, **characterised in that** each prong (4) is urged forward in the direction of the front edges (6) from a rearmost part (14), which rearmost part (14) is arranged oppositely to the front edges (6) whereby the forwardly directed pressure is supplied to a common bridge (16) which interconnects the prongs (4), and which bridge (16) is arranged distanced from an upper common surface plane (18) of the prongs (4) and also distanced from a lower common surface plane (20) of the prongs (4) such that studs (10) may travel unhindered between the prongs (4) above and/or below the common bridge (16) when the prongs (4) are urged forward on the buildingplane (8) between the buildingplane (8) and the building elements (2).

3. A method according to claim 2, **characterised in that** the lower common surface plane (20) of each prong is caused to slide along the buildingplane (8) in contact therewith while studs (10) travel between the prongs (4) from a front edge (6) thereof to a rearmost part (14) of each prong (4).

4. A method according to claim 1, **characterised in that** each prong (4) is urged forward in the direction of the front edges (6) from a rearmost part (14) arranged oppositely to the front edge (6) whereby the forwardly directed pressure is supplied to a common bridge (160) which interconnects the prongs (4), and which bridge (160) is arranged to fill at least the entire space between the prongs (4) at their rear ends (14) and whereby the prongs (4) are arranged to flex elastically away from a flat buildingplane (8) at the bridge (160) when the bridge (160) is urged forward while imparted with a momentum whereby the studs (10) projecting upwards from the buildingplane (8) pass underneath a lower common surfaceplane (20) of the prongs (4) at the common bridge (160) during forward motion of the prongs (4).

5. A tool (28) adapted to elevate a number of equally sized building elements (2) from a buildingplane (8), where the tool (28) comprises a number of prongs (4) equidistantly distanced apart where the prongs (4) extend in parallel in a direction of extension and has a lower common surfaceplane (20) adapt to abut the buildingplane (8) and an upper common surfaceplane (18), and each prong (4) has a front edge (6) and whereby the prongs (4) are interconnect at a common bridge (16, 160) arranged opposite to the front edge (6), **characterised in that** the space (12) between the prongs (4) has a lengthwise extend between a foremost part of the common bridge (16, 160) and the front edge (6), whereby said extend correspond to at least two times a diameter of a building element (2) to be lifted from the buildingplane (8).

6. A tool (28) according to claim 5, **characterised in that** the upper common surfaceplane (18) and the lower common surfaceplane (20) are arranged at an angle with respect to each other and that the front edges (6) of the prongs (4) are arranged at the line of intersection between the two surface planes (18,20) .

7. A tool (28) according to claim 5, **characterised in that** the common bridge (16) is arranged spaced apart from the lower common surface plane (20) and/or from the upper common surface plane (18) such that studs (10) extending upwardly from the buildingplane (8) and/or extending downwardly from the building elements (2) and into the building plane (8) may pass un-hindered in the space between the prongs at the common bridge (16).

8. A tool (28) according to claim 5, **characterised in that** the space (12) between the prongs (4) extend between the lower common surface plane (20) and the upper common surface plane (18), whereby said planes (18,20) are arranged in parallel at least at the common bridge (160), and that the prongs (4) are adapted to be elastically bent upwardly and away from a building plane (8) at the common bridge (160) when the front edges (6) contact the buildingplane (8) and a momentum is applied to the common bridge (160).

9. A tool (28) according to claim 5 or claim 8, **characterised in that** a handle (24) is provided to extend backward from the common bridge (16,160) and that the handle (24) is limited in a downward direction by a lower common plane which is coplanar with the lower common surface plane (20) of the prongs (4) or is limited in an upward direction by an upper common plane which is coplanar with the upper common surface plane (18) of the prongs (4) or, the handle (24) is limited in both a downward direction and an upward direction by planes which are coplanar with lower common surface plane (20) and upper common surface plane (18) of the prongs (4).

10. A tool according to claim 5 or claim 8, **characterised in that** a sideway handle (240) is provided to extend in a sideways direction from the common bridge (16) relative to the extension direction of the prongs (4), whereby said handle (240) is one-sided and extend towards one side only or whereby the handle (240) is two sided and comprise handle elements which extend in each their opposite directions away from the common bridge (16).

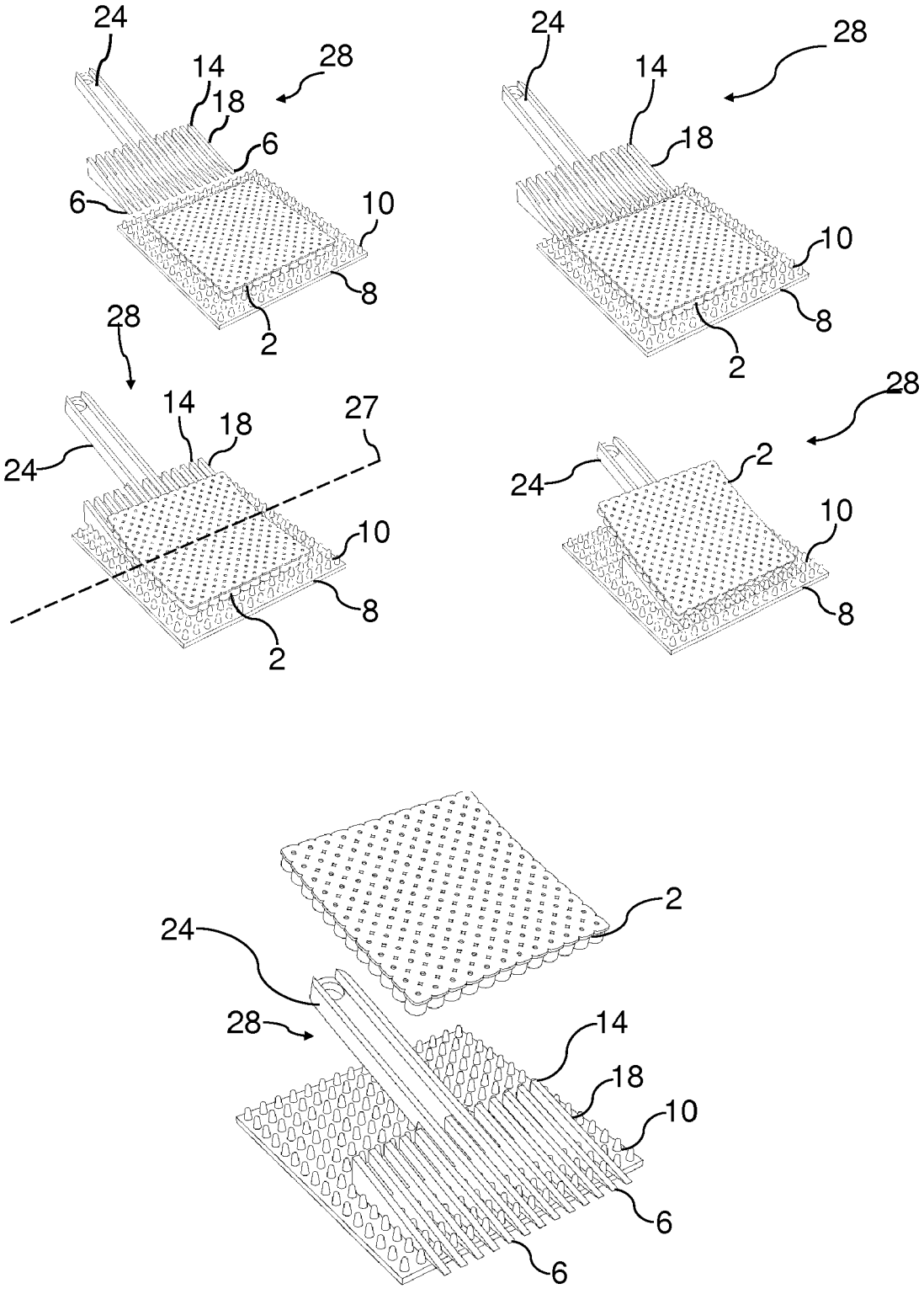
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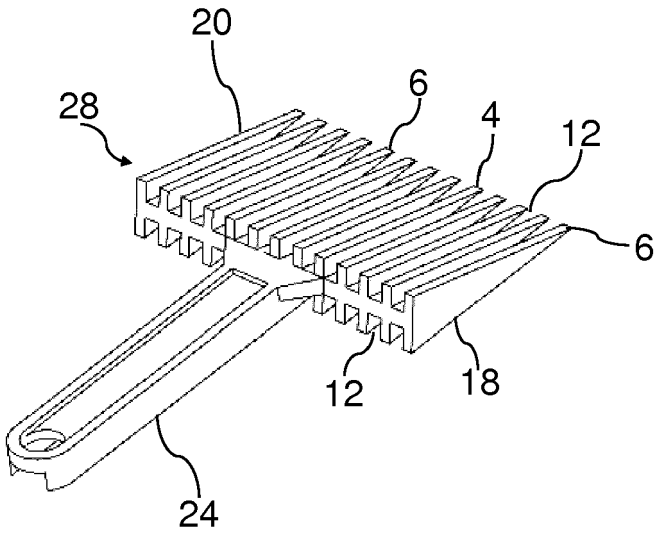
Fig. 1



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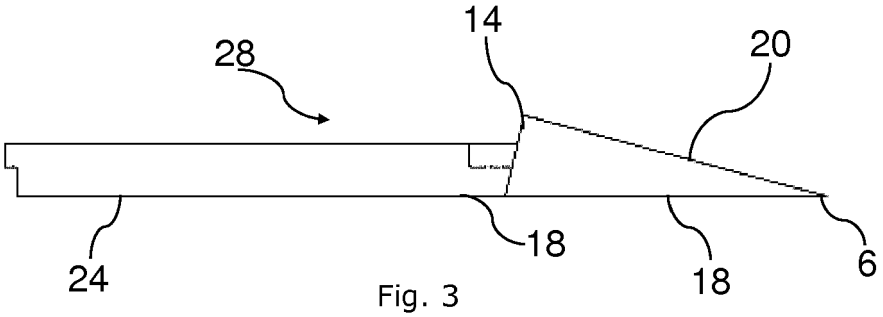

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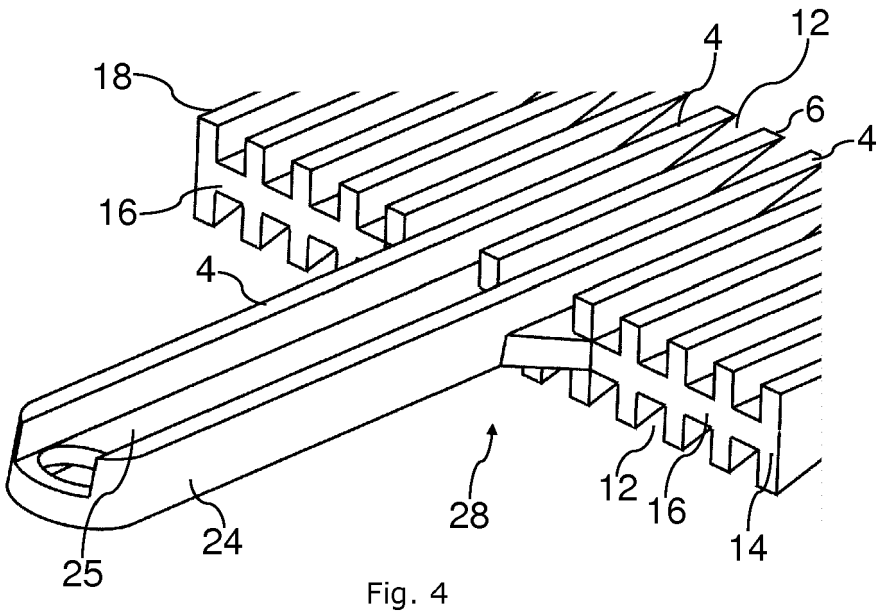


Fig. 4

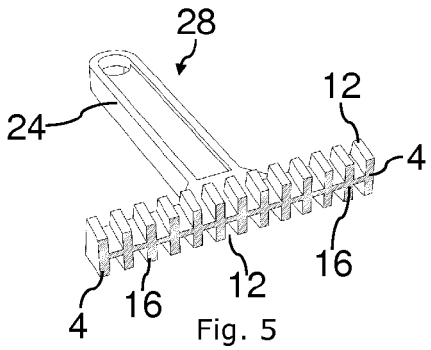
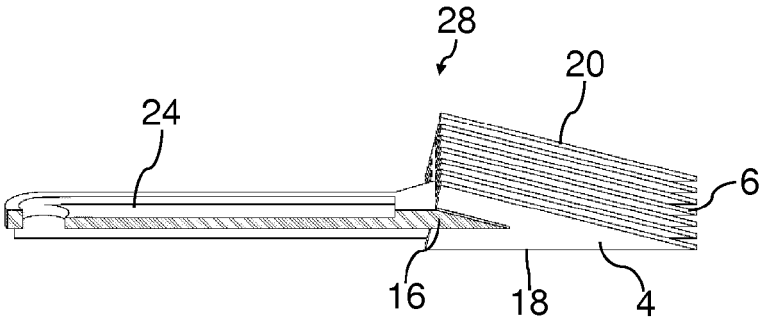


Fig. 5



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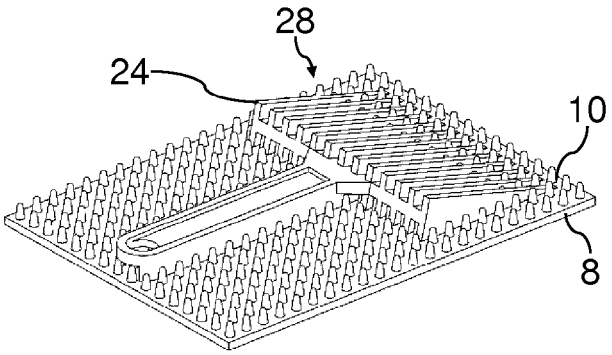

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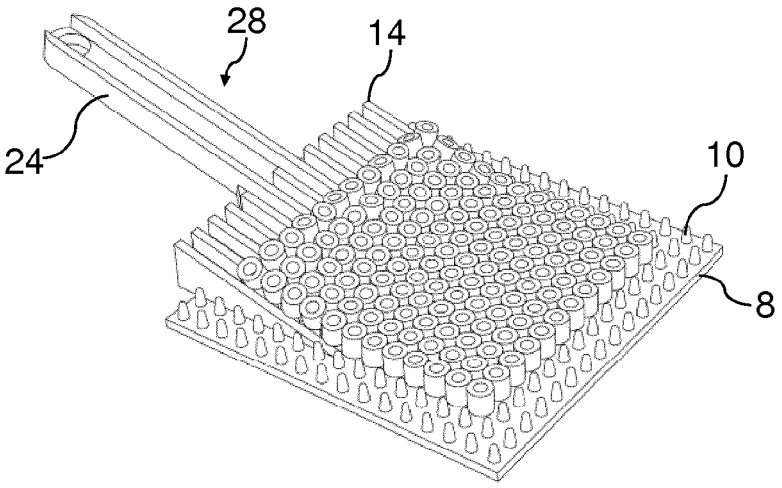

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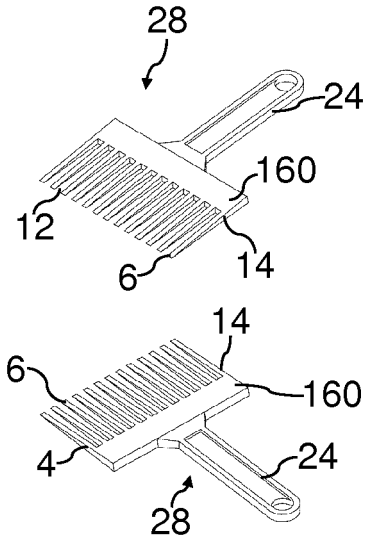


Fig. 9

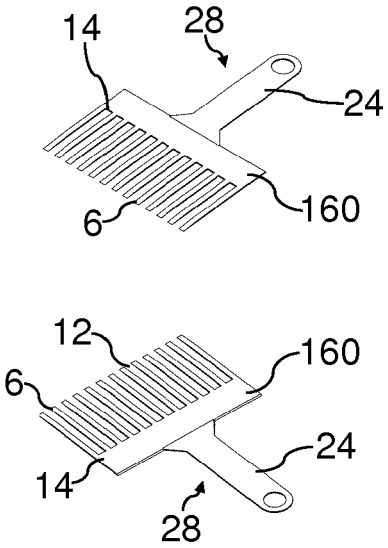
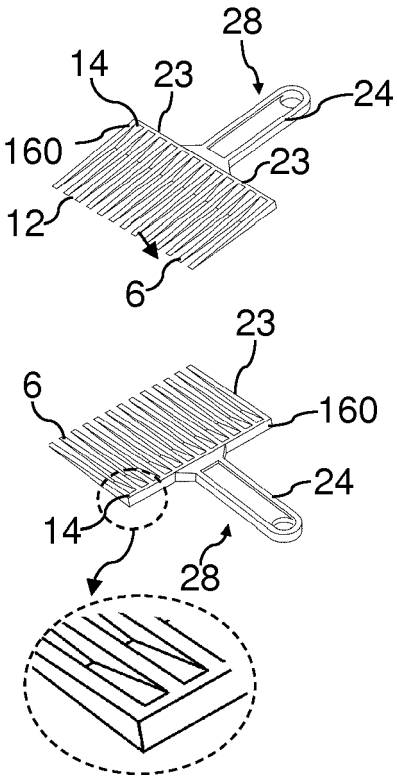


Fig. 10



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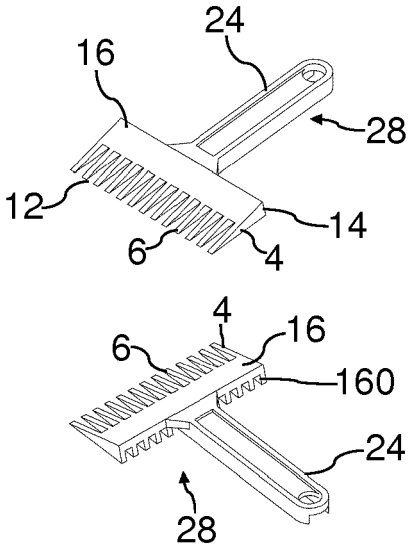

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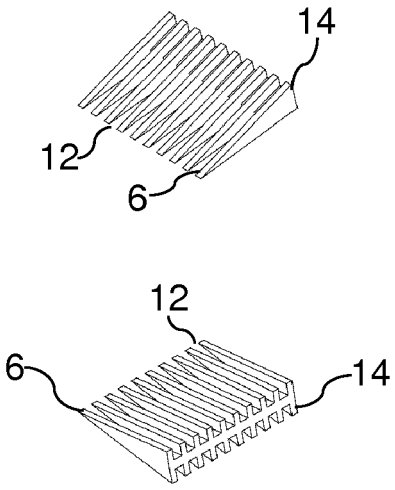

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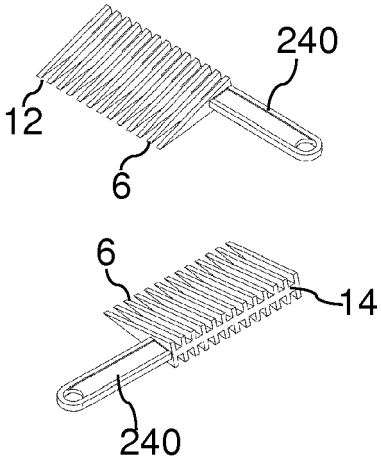

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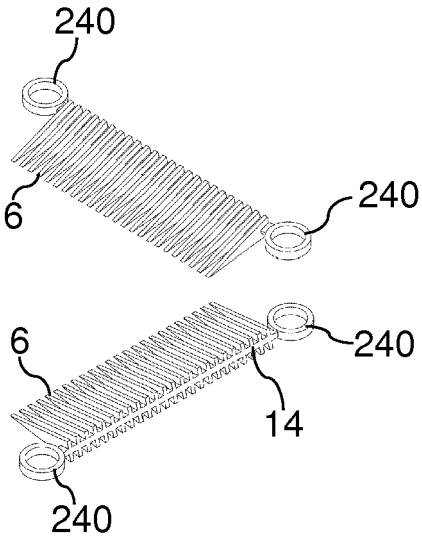

Fig. 15

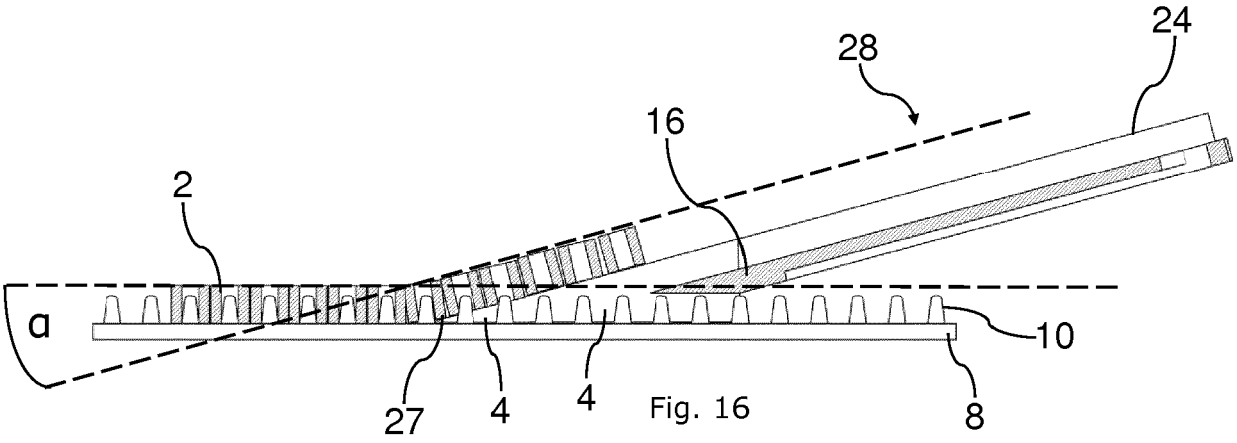

Fig. 16

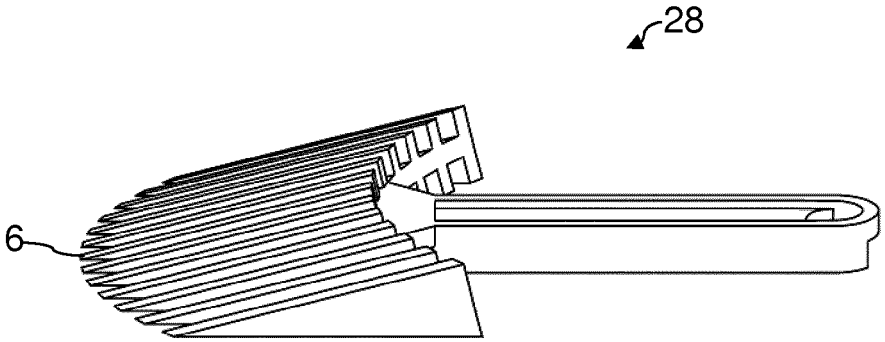

Fig. 17

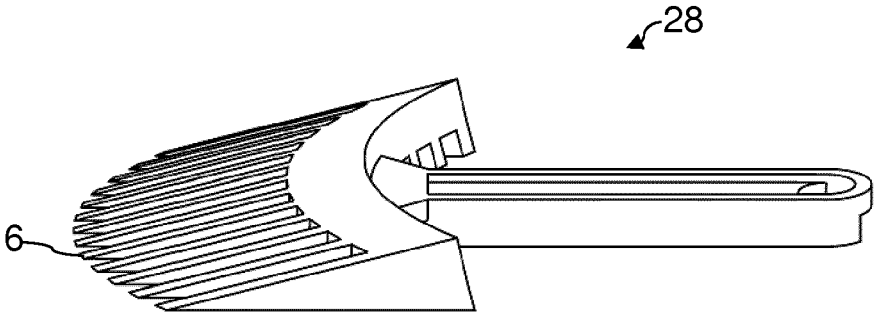

Fig. 18

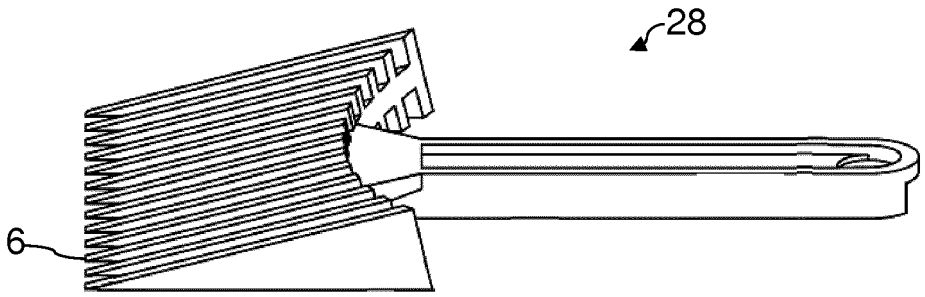

Fig. 19

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EUROPEAN SEARCH REPORT

Application Number
EP 19 21 0336

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X	WO 2010/009181 A2 (GILLETTE CO [US]; NICOLL ROY [GB] ET AL.) 21 January 2010 (2010-01-21) * figures 6,10-13,16,20,21,28-29 * * page 8, line 28 - page 9, line 32 * * * * *	1-10	INV. A63H33/00 A63H33/06 A63H33/08 A63H33/30
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A	* figures 5,6, * * paragraph [0071]; figure 7 * * paragraph [0072] *	2-4,7,10	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	28 April 2020	Brumme, Ion

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