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(54) **Dart board having dart tip guiding device**

(57) A dart board (10) includes a plurality of target blocks (50) engaged with spaces defined by ridges (30). Each target block (50) has a plurality of posts (51) extending therefrom. Each post (51) has at least one recess (511) defined in a periphery thereof. A dart hole (52) is defined in the target block (50) and located beside

the posts (51). A receiving member (50A) is connected to an underside of the target block (50). The dart tip is guided by the posts (51) and successfully inserted into the dart hole (52). The dart tip is then firmly attached to the receiving member (50A).

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Description**FIELD OF THE INVENTION**

[0001] The present invention relates to a dart board having a plurality of posts for guiding dart tips into dart holes between the posts.

BACKGROUND OF THE INVENTION

[0002] United States Patent No. 5,518,250 discloses a dart board which includes a plurality of target plates and each target plate includes a plurality of upright pegs extending perpendicularly from a surface of a flat board of the target plate. The dart tip is expected to be inserted into a space between the upright pegs and to be clamped by the pegs. Therefore, the dart tip usually hits the flat board and bounces back and drops to the ground. Besides, if the dart tips are too narrow, the pegs cannot clamp the tips as expected. Therefore, the dart tips are damaged often because the darts are difficult to be attached on the dart board. Furthermore, if the dart tips hit the dart board at an angle, because the conventional dart board includes a flat surface so that the dart tips cannot be attached and could scrape the surface of the dart board, so that metal dart tips are not allowed to use. If the dart tips are made of metal and the dart board is made of soft material, many holes are left in the surface of the dart board and the less chance that the dart tips can be attached onto the dart board. The players have to periodically replace new dart boards. These are inherent problems of the conventional dart boards and are to be improved by the present invention.

[0003] The present invention intends to provide a dart board that includes a dart tip guiding device which effectively guides the dart tips into the dart holes in the dart board and the device comprises a plurality of posts which are flexible so as to clamp the dart tips of different sizes.

SUMMARY OF THE INVENTION

[0004] In accordance with one aspect of the present invention, there is provided a dart board which includes a plurality of target blocks engaged with spaces defined by ridges. Each target block has a plurality of posts extending therefrom. Each post has at least one recess defined in a periphery thereof. A dart hole is defined in the target block and located beside the posts. A receiving member is connected to an underside of the target block. The dart tip is guided by the posts and successfully inserted into the dart hole, and then firmly attached to the receiving member.

[0005] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS**[0006]**

Fig. 1 shows a perspective view of the dart board of the present invention;

Fig. 2 shows the posts and dart holes in the target block;

Fig. 3 shows the posts of the present invention;

Fig. 4 shows the posts of the present invention;

Fig. 5 shows the posts of the present invention;

Fig. 6 shows the posts of the present invention;

Fig. 7 shows a top view of the target block of the present invention;

Fig. 8 shows a top view of the target block of the present invention;

Fig. 9 shows a top view of the target block of the present invention;

Fig. 10 shows a side view of the posts and the dart holes in the target block;

Fig. 11 shows a perspective view of the target block having the posts and the dart holes;

Fig. 12 shows the target block having posts and dart holes, and the receiving member;

Fig. 13 shows a cross sectional view of the target block having posts and dart holes, and the receiving member;

Fig. 14 shows the target block having posts and dart holes, and the receiving member is inserted into the chamber of the target block;

Fig. 15 shows the target block having posts and dart holes, and the receiving member is inserted into the chamber of the target block;

Fig. 16 shows the target block having posts and dart holes, and the receiving member is inserted into the chamber of the target block;

Fig. 17 shows the target block having posts and dart holes, and the receiving member is inserted into the chamber of the target block;

Fig. 18 shows the target block having posts and dart holes, and the receiving member is inserted into the chamber of the target block;

Fig. 19 shows the target block having posts and dart holes, and the receiving member is inserted into the chamber of the target block;

Fig. 20 shows the target block having posts and dart holes, and the receiving member is inserted into the chamber of the target block, and

Fig. 21 shows that the ridges have posts extending therefrom.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0007] Referring to Fig. 1, the present invention can be used to electronic dart board 10 and a loop area of zero point area 20 is located at the periphery of the dart board 10. A plurality of target blocks 50 are located with-

in spaces defined by ridges 30 and enclosed by the zero point area 20.

[0008] Referring to Fig. 2, each of the target blocks 50 includes multiple posts 51 and a plurality of dart holes 52 are defined between the posts 51. The dart tip is guided by the space 521 to pass peripheries of the posts 51 and to insert into the dart hole 52 so that the dart will not bounce out from the dart board 10.

[0009] Referring to Fig. 3 the posts 51 may have at least one recess 511 which guide the dart tips into the dart holes 52.

[0010] Referring to Fig. 4, the posts 51 have at least one elongate groove 512 which guides the dart tips which will not scrape the posts 51. The grooves 512 can be replaced with protrusions.

[0011] Referring to Fig. 5, connection plates 53 are connected between the multiple posts 51 so as to reinforce the structural force of the posts 51 and guide the dart tips into the dart holes.

[0012] Referring to Figs. 6 and 7, each target block 50 has multiple posts 51 and the recesses 511 of the posts 51 define a circular space and the dart hole 52 is located in a center of the circular space.

[0013] Referring to Figs. 8 and 9, the posts 51 can be arranged as a row rather than individual ones. The recesses 511 of the posts 51 define flexible spaces 521 which guide the darts to slide into the dart holes 52 smoothly. The dart tips are also be clamped in the spaces 521.

[0014] The posts 51 are flexible and bendable, and include tapered outer profile so that safety dart tips and metal dart tips are able to be guided into dart holes 52 or to be attached in the dart holes 52. The specific structure of the target blocks 50 can be used in the dart board 10 or the zero point area 20. The shape, size and number can be varied according to needs so as to have an optimized function for clamping the dart tips.

[0015] Referring to Figs. 10 and 11, the dart 60 is inserted and attached to the dart hole 52 of the target block 50 within the space enclosed by ridges 30. The dart 60 is guided by the flexible posts 51 and flexible spaces 521 so as to insert in the dart hole 52. This pushes the target block 50 backward and the protrusions 55 on the back of the target block 50 contact the conductive films or switches 40 located on the backing board 70 so that scores are automatically calculated. The dart holes 52 can be through holes or non-through holes.

[0016] Referring to Fig. 12, a receiving member 50A is connected to an underside of the target block 50. The receiving member 50A may have receiving holes 50A1 in which the dart tip is inserted the dart hole 52 of the target block 50 via a penetration. The receiving member 50A can be made of soft material and has a function of clamping.

[0017] Referring to Fig. 13, at least one tongue 513 extending from the underside of the target block 50 so as to be inserted into the recess 50A2 of the receiving member 50A. The connection between the at least one

tongue 513 and the recess 50A2 may be by adherent. The receiving member 50A may have protrusions 55A on the underside thereof so as to activate the switches 40 to allow the CPU to display the result of scores by way of audio, phonic display, music, LED, LCD, negative light boards.

[0018] Referring to Fig. 14, the target block 50 may have a chamber 500 in which the receiving member 50A is inserted from a side opening.

[0019] Referring to Fig. 15, a support member 50B has protrusions 55 on underside thereof and receiving holes 50A1 in the receiving member 50A are located in alignment with the dart holes 52 of the target block 50. The receiving holes 50A1 can be made as a sharp hole, a through hole or a slot so as to receive or clamp the dart tips. Safety dart tips and metal dart tips are guided to pass through the dart holes 52 in the target block 50 and then are firmly inserted in the receiving member 50A. If the safety dart tips are large in size, they can also be firmly attached to the dart holes 52 instead of being inserted in the receiving member 50A. By this arrangement, a precise score calculation is expected. At least one insertion 513 extends from the underside of the target block 50 which passes through the receiving member 50A and the support member 50B so as to connect the target block 50, receiving member 50A and the support member 50B as a one piece. The insertion 513 can be protruded out from the support member 50B and is made to be a plate 513A by way of heat-fusion or protrusion so as to hook or engage with the underside of the support member 50B. Adhesion is another option.

[0020] Referring to Fig. 16, at least one insertion 513 extends from the underside of the target block 50 and is inserted and connected to the receiving member 50A. The insertion 513 extends through the underside of the receiving member 50A and is made to be a plate 513A by way heat-fusion or protrusion. The connection between the insertion 513 and the receiving member 50A can also be made by adhesion. Protrusions 55 are connected to the underside of the receiving member 50A so as to activate the film switches 40.

[0021] Referring to Fig. 17, a box is directly connected to the underside of the target block 50 and the receiving member 50A is received in the box. Recesses 502 are defined in the underside of the target block 50 so that the protrusions 50B2 on the support member 50B are engaged with the recesses 502. The support member 50B has protrusions 55 so as to activate the film switches.

[0022] Referring to Fig. 18, hooks 503 are connected to sides of the target block 50 so as to hook the ridges 30 so that the target block 50 and the ridges 30 are connected together. The target block 50 is fixed so as to guide safety darts 60B and metal darts 60A which pass through the dart holes 52 in the target block 50 and then are inserted in the receiving member 50A. The connection between the target block 50 and the ridges 30 may also be made by way of hooking, adhering, heat-fusion,

and clamping.

[0023] Referring to Fig. 19, side walls 505 extend from sides of the target block 50 and contact against the conductive films 40. The target block 50 is fixed and not movable so as to receive the impact of the safety darts 60B and the metal darts 60A which pass through the dart holes 52 of the target block 50 and are inserted in the receiving member 50A. The target block 50 and the receiving member 50A are separated.

[0024] Referring to Fig. 20, side walls 505 extend from sides of the target block 50 and protrusions 55B extend from the underside of the side walls 505. The protrusions 55B contact against the conductive films or switches 40. The target block 50 and the receiving member 50A are fixed together.

[0025] The receiving member 50A can be soft member and has at least one receiving hole 50A1 which can be a tip-shaped hole, slot or through hole so as to dampen the impact from the dart tips 60A, 60B and reduce noise. The receiving member can also be made by squeezed chemical fibers, plant fibers, hays, paper material, chemical polymers, rubber, plastic, PU, or PVC. The connection between the target block 50 and the receiving member 50A can also be made by way of hooking, adhering, heat-fusion, or clamping.

[0026] Referring to Fig. 21, the ridges 30 may have posts 31 extending therefrom which are similar to the posts 51 regarding to the shape, structure and function, and the shape and number of the posts 31 can be designed according to needs.

[0027] The posts 51 of the present invention may flexibly expand or narrow according to the size of the dart tips so as to guide and clamp the dart tips. The posts increase accuracy of calculation of scores and reduce times of impact that the darts hit the ridges and the target blocks. The dart board is used both for the safety darts and metal darts. A fixed dart hole is defined beside the at least one post so that the dart tip is guided and inserted into the dart hole successfully. The dart board of the present invention is suitable for various types of darts having different sizes. The recesses of the posts increase the contact area between the darts and the posts, and successfully clamp the darts. A smaller tip can also be clamped by the posts. A receiving member is located beneath the target block so as to allow the metal dart tips or stiff dart tips to be inserted via the guidance of the posts. When the metal or stiff dart tip hits the posts, it is pushed and guided so as to successfully insert into the dart hole and the receiving member. This reduces the damages of the ridges and the surface of the dart board and reduces noise. The tapered profile of the posts and the rounded tip of the posts guide the dart tip into the dart hole rather than scrape the surface of the ridges even if the angle of the enter of the dart tip is large.

[0028] While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further em-

bodiments may be made without departing from the scope of the present invention.

5 Claims

1. A dart board comprising:

a target block having at least one post and a dart hole defined in the target block and located beside the at least one post so as to be adapted to guide a dart tip into the dart hole by the at least one post.

2. The dart board as claimed in claim 1, wherein the at least one post has at least one recess defined in a periphery thereof and a space is defined by the at least one recess.

3. The dart board as claimed in claim 1, wherein a connection plate is connected between posts.

4. The dart board as claimed in claim 1 further comprising at least one protrusion extending from an underside of the target block so as to be adapted to activate film switches.

5. A dart board comprising:

a target block having at least one post and a dart hole defined in the target block and located beside the at least one post so as to be adapted to guide a dart tip into the dart hole by the at least one post, a receiving member connected to an underside of the target block so as to be adapted to receive dart tips.

6. The dart board as claimed in claim 5, wherein the receiving member has at least one receiving hole.

7. The dart board as claimed in claim 5, wherein the target block has at least one insertion extending from an underside thereof and the insertion is engaged with the receiving member so as to connect the target block and the receiving member.

8. The dart board as claimed in claim 5, wherein the target block has at least one insertion extending from an underside thereof and the insertion is engaged with the receiving member and a support member so as to connect the target block, the receiving member and the support member as a one piece.

9. The dart board as claimed in claim 5, wherein the receiving member is received in a box connected to the target block.

10. The dart board as claimed in claim 1 or 5, wherein the receiving member has at least one protrusion extending from an underside thereof so as to be adapted to activate film switches.

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11. The dart board as claimed in claim 1 or 5, wherein the support member has at least one protrusion extending from an underside thereof so as to be adapted to activate film switches.

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12. The dart board as claimed in claim 1 or 5, wherein the target block and ridges are fixed to each other, the target block is fixed and being adapted to guide dart tips to the receiving member.

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13. A dart board comprising:

at least one post extending from the ridges and the at least one post being the same in shape and structure as the posts on the target block.

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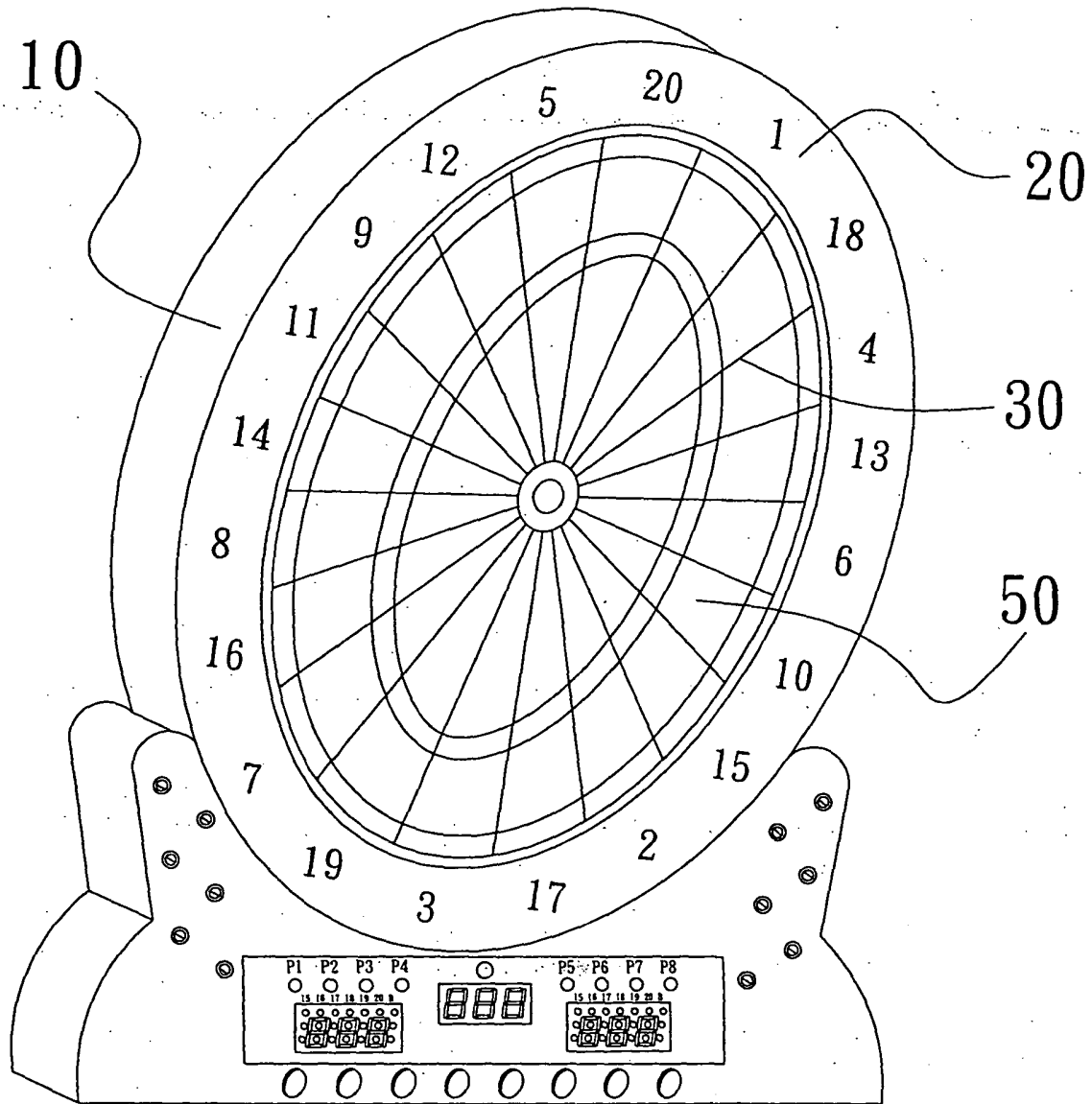


Fig 1

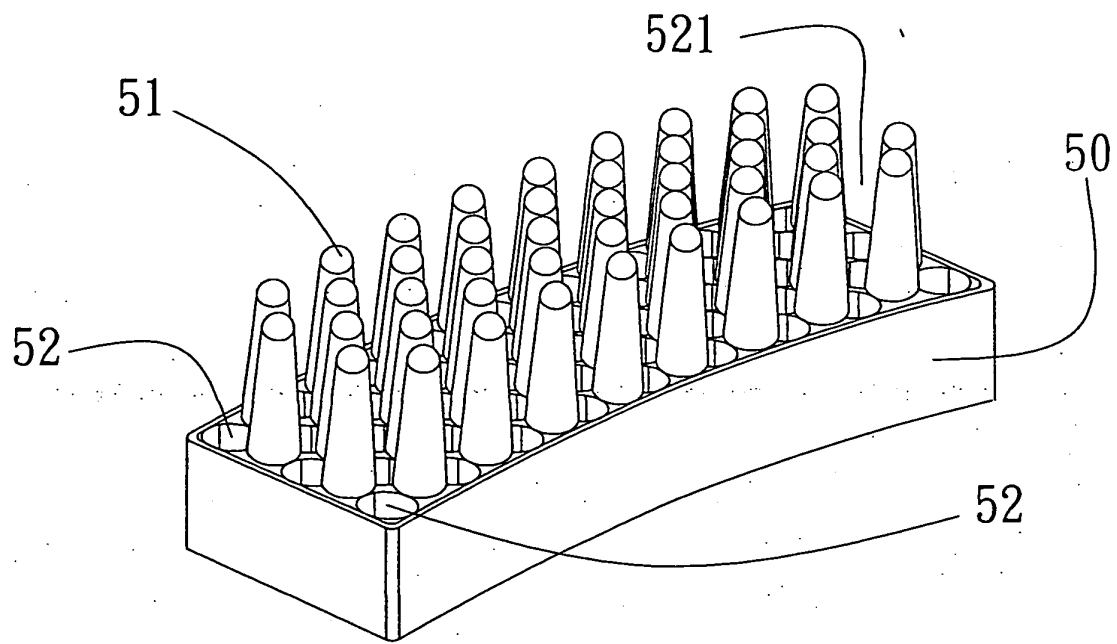


Fig 2

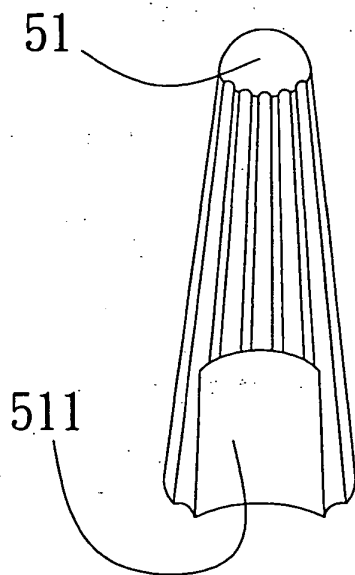


Fig 3

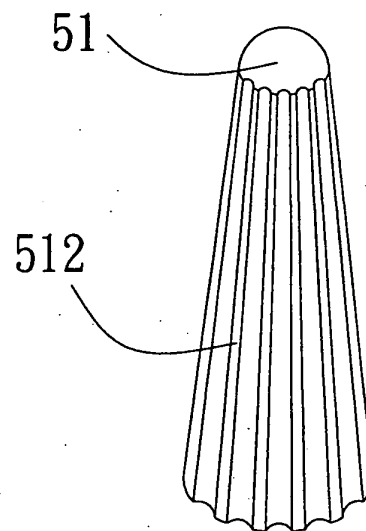


Fig 4

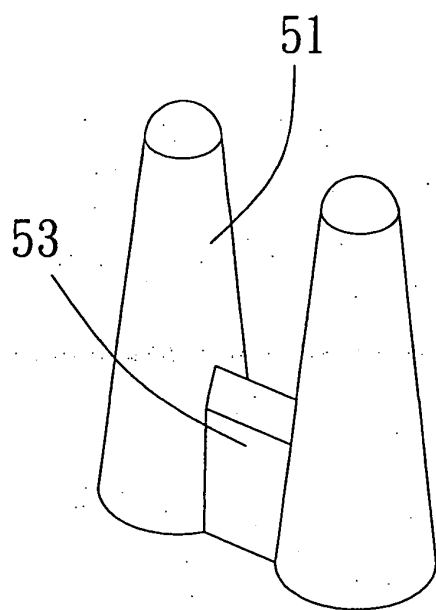


Fig 5

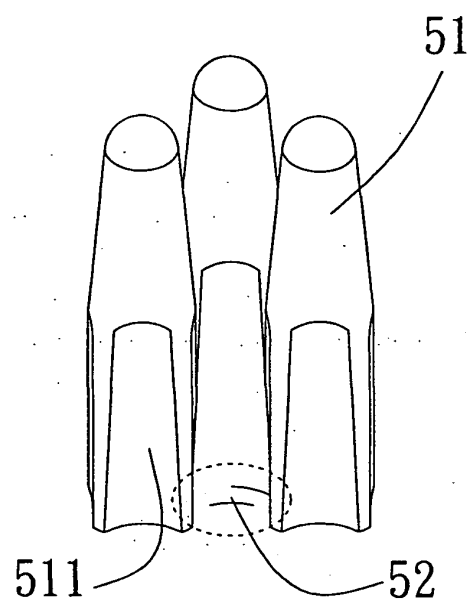


Fig 6

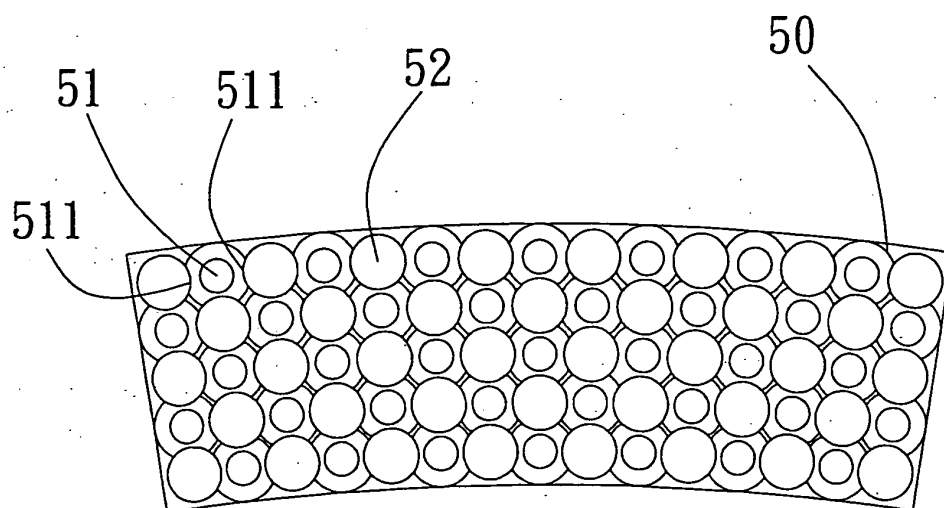


Fig 7

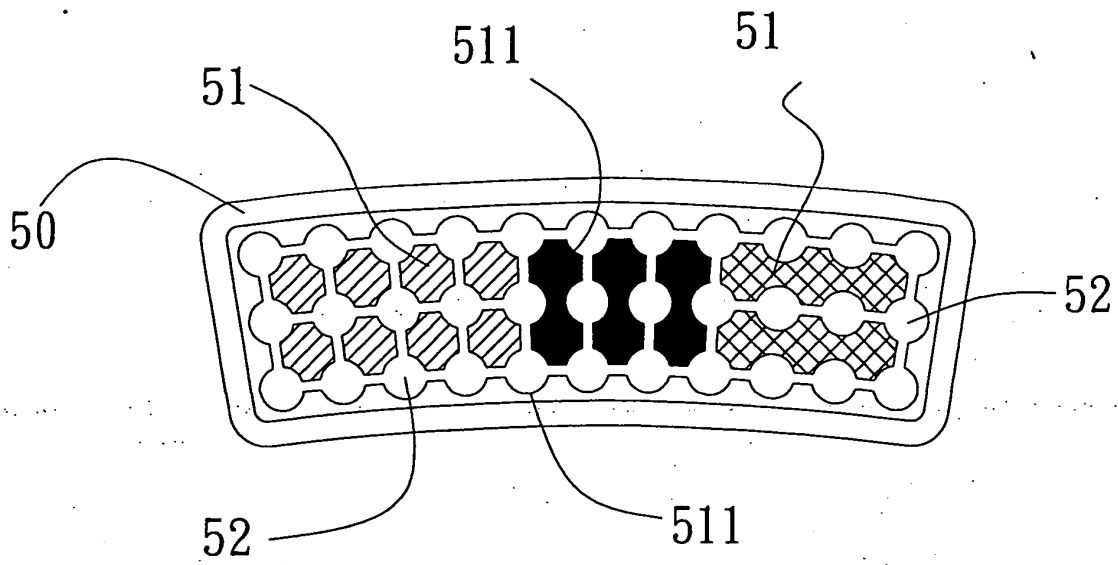


Fig 8

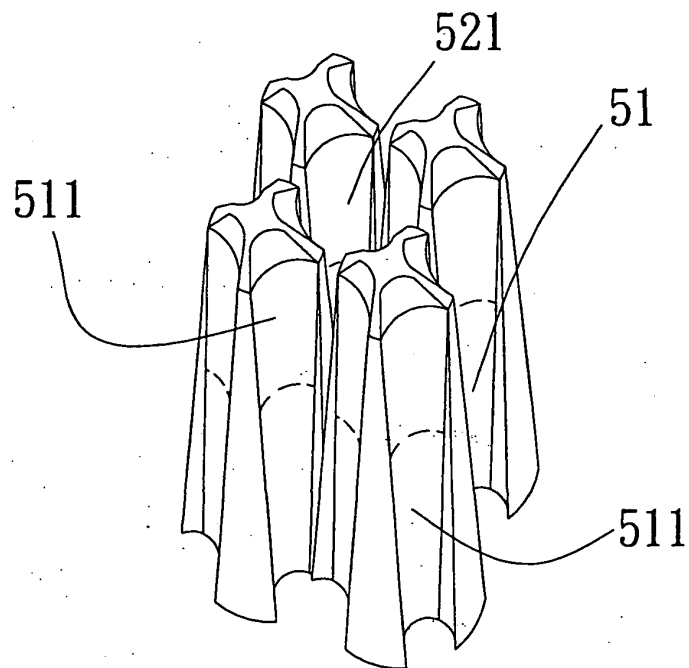


Fig 9

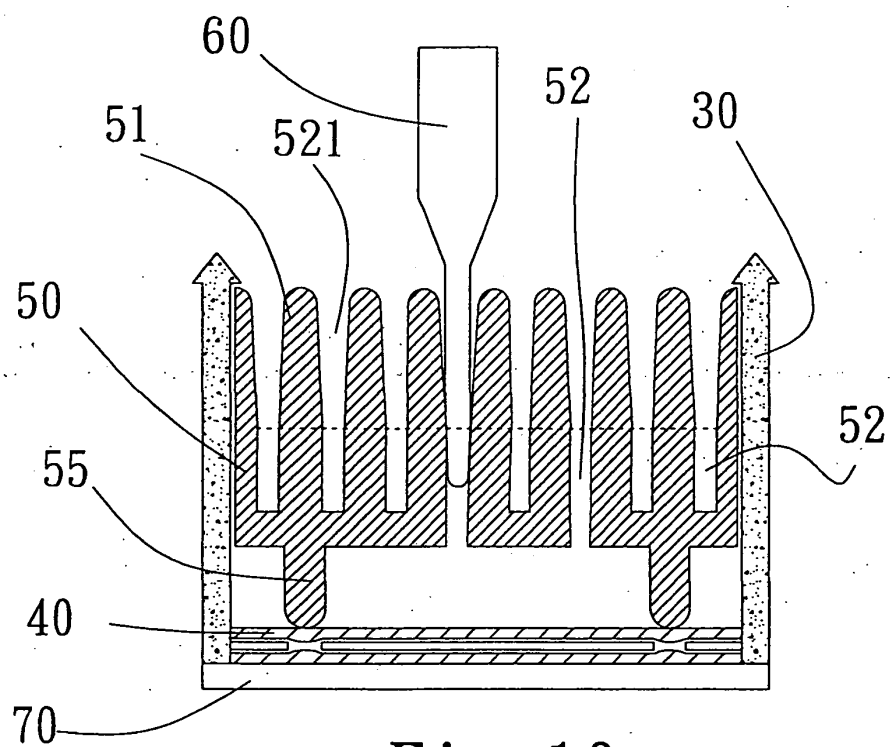


Fig 10

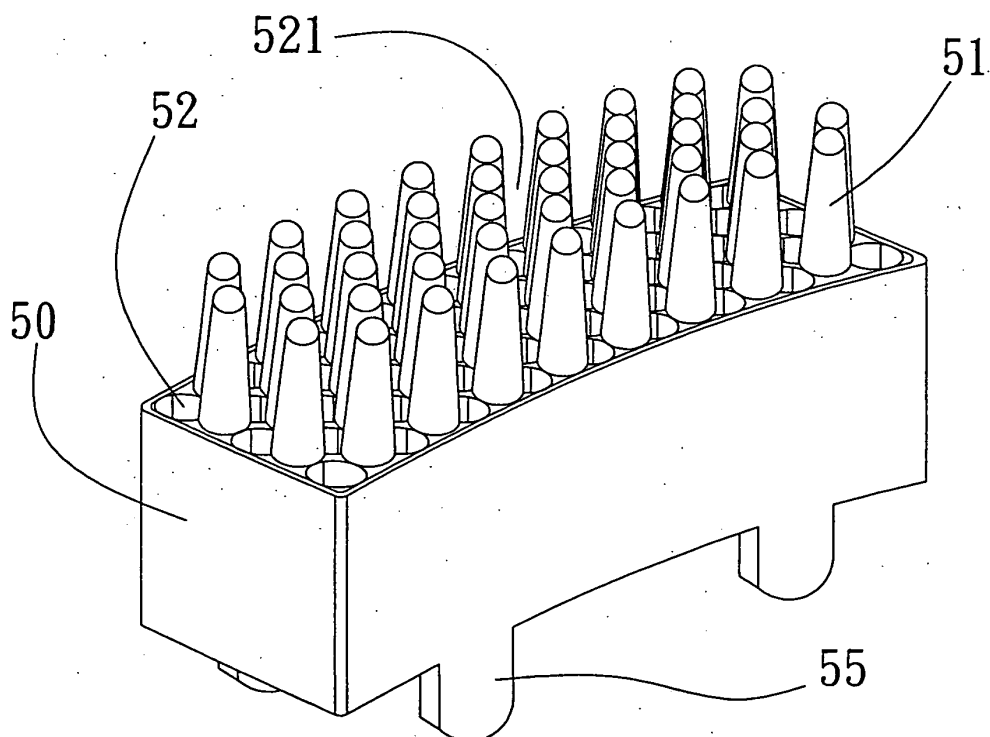


Fig 11

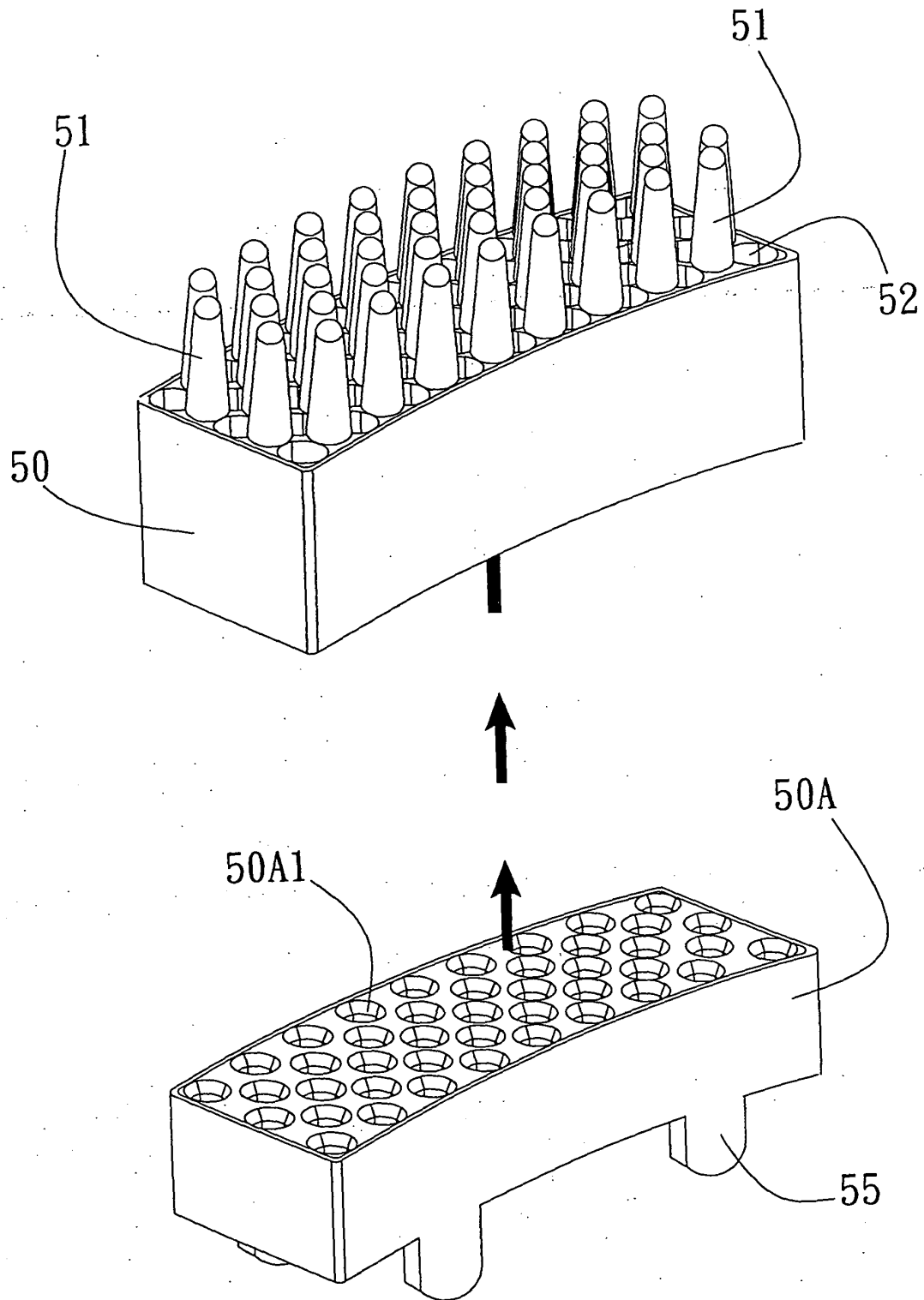
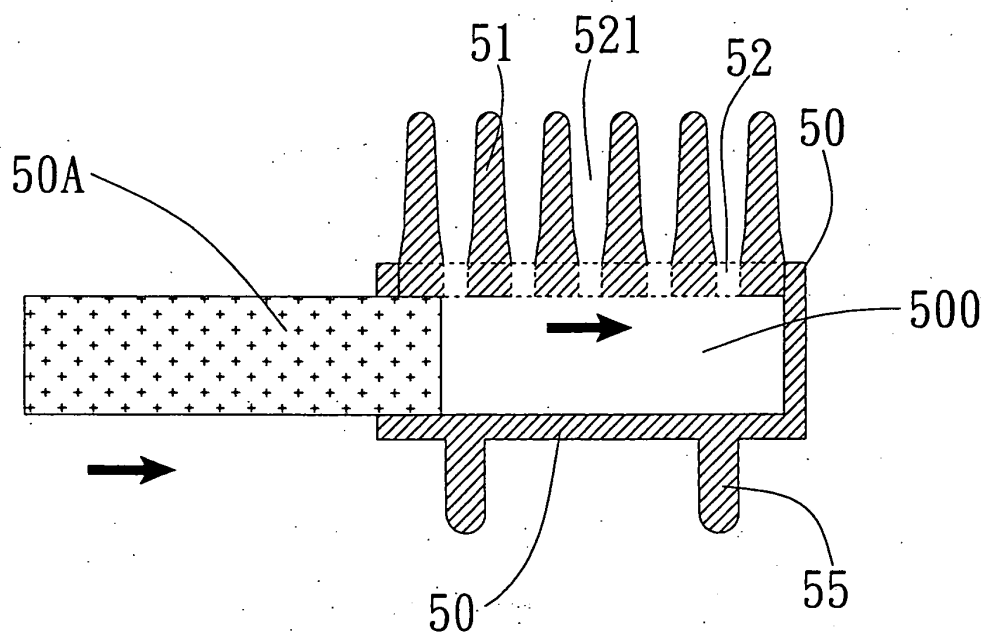
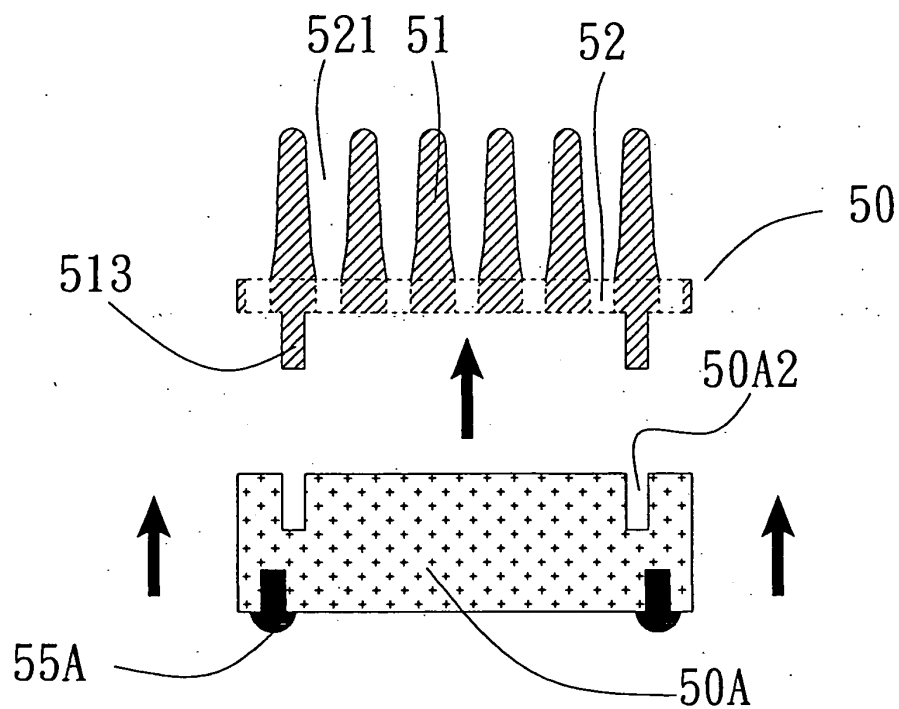


Fig 12



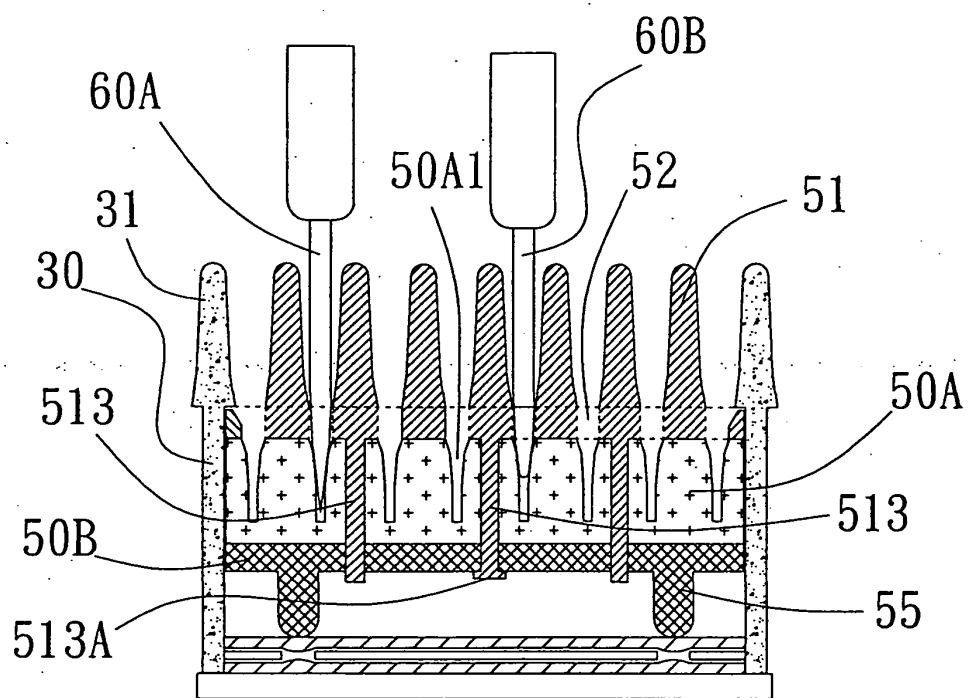


Fig 15

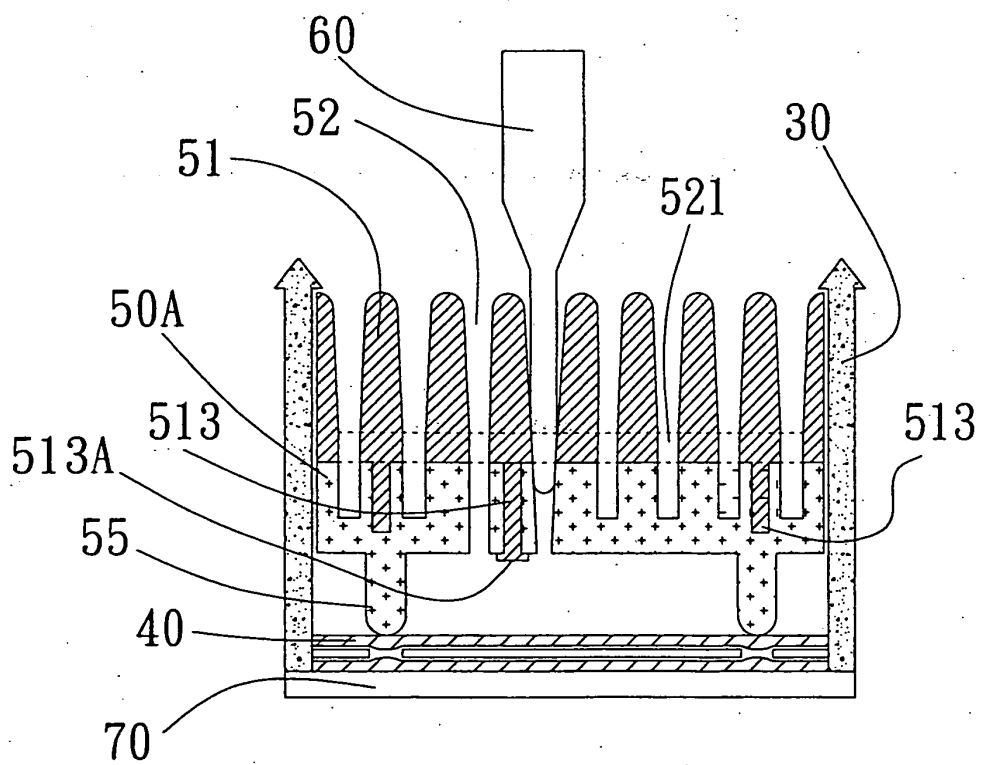
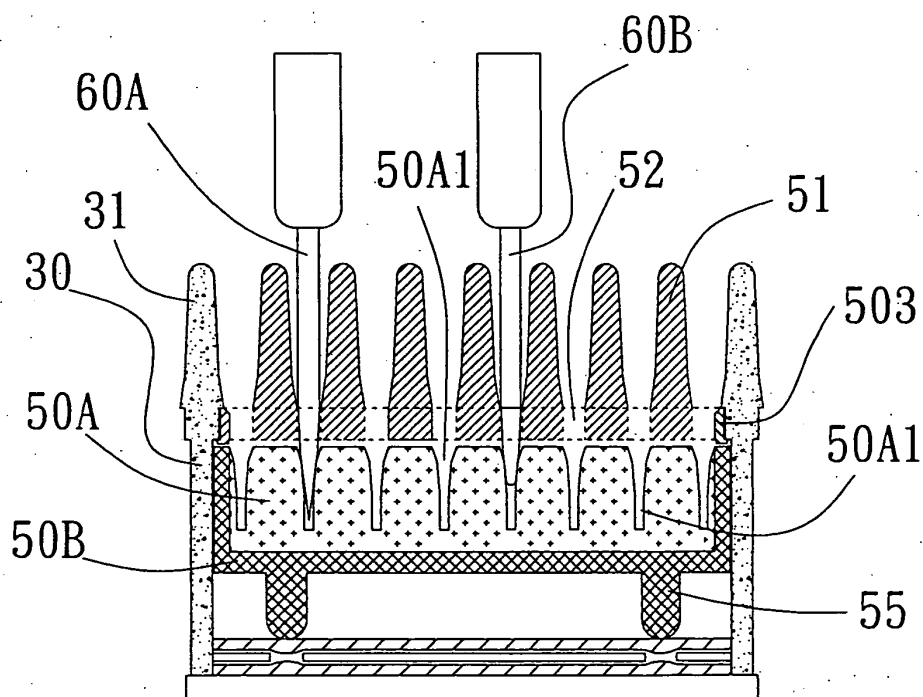
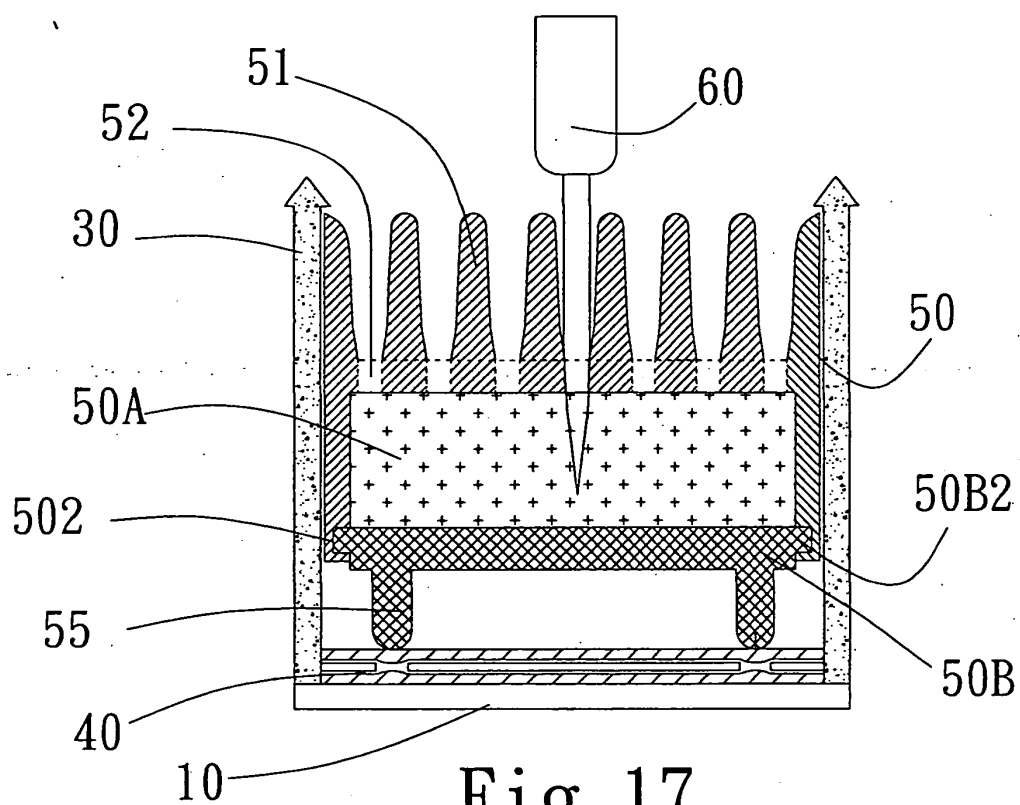


Fig 16



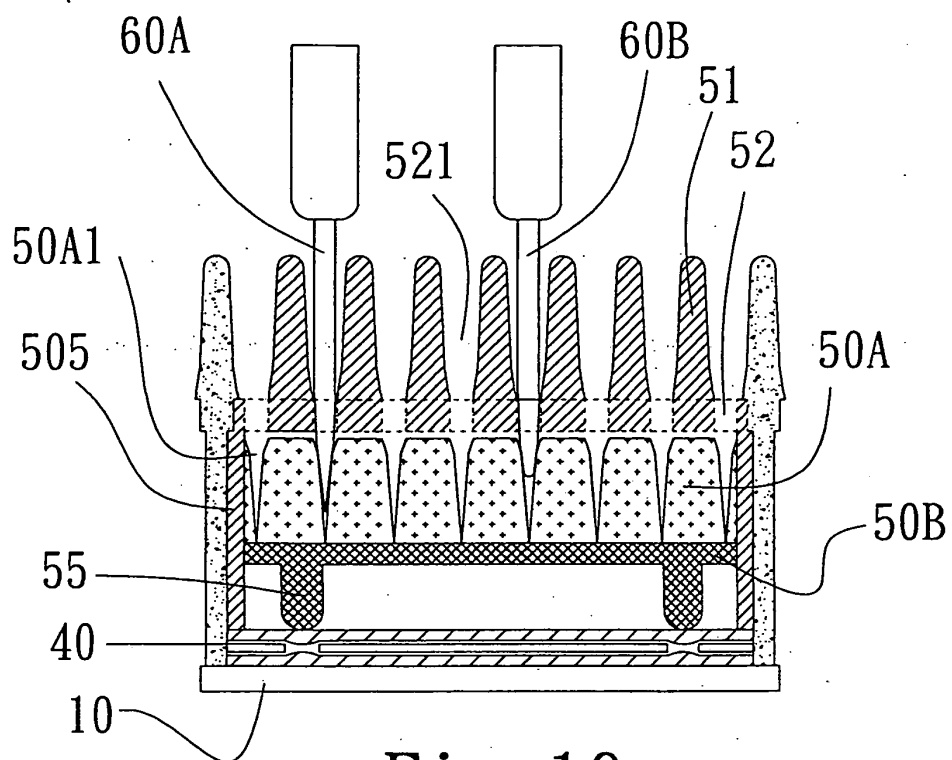


Fig 19

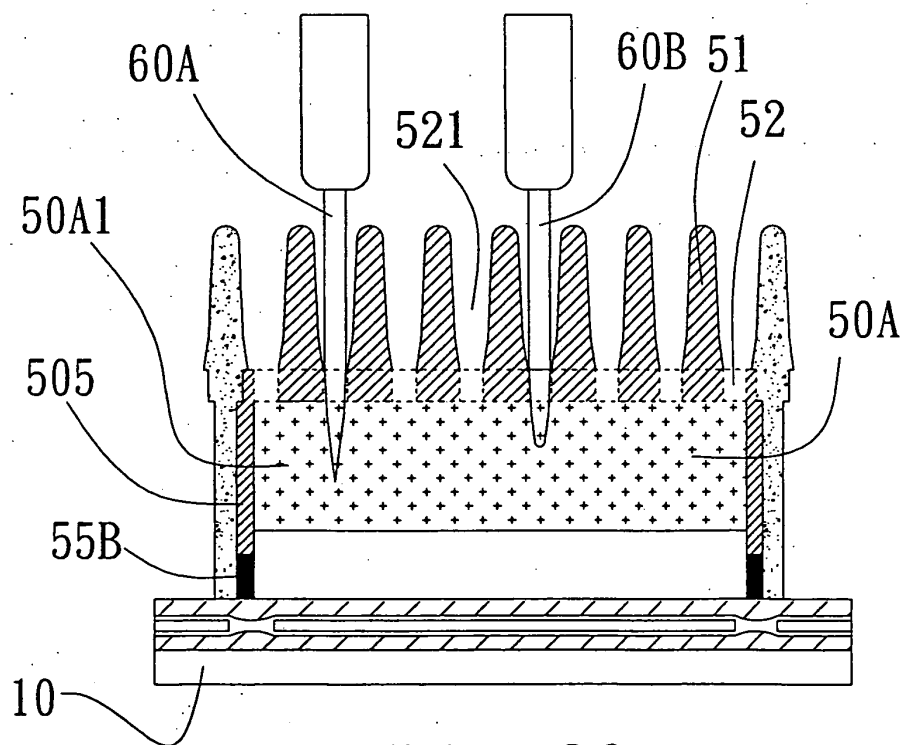


Fig 20

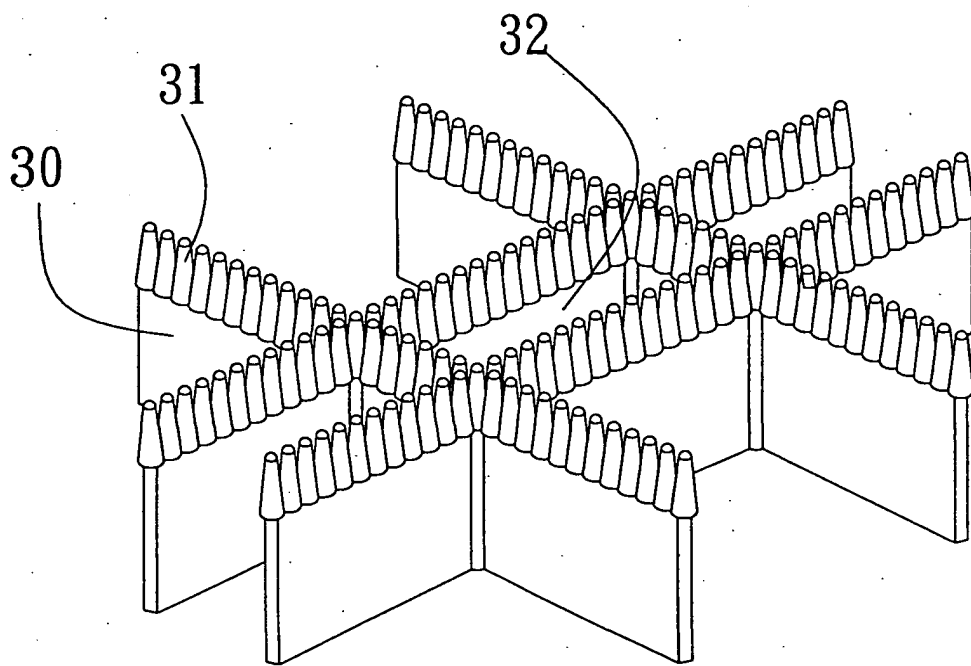


Fig 21



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 00 8480

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 2002/195777 A1 (CH0) 26 December 2002 (2002-12-26)	1,4-13	F41J3/00
Y	* abstract * * paragraphs [0028],[0030] * * figures 5-11,13-15 *	2,3	
X	US 2002/171203 A1 (CH0) 21 November 2002 (2002-11-21)	1,4,9-13	
Y	* abstract * * paragraphs [0002],[0024]-[0027],[0030] * * figures 2-4,12,13 *		
Y	DE 296 02 880 U (YIU) 28 March 1996 (1996-03-28)	2	
Y	* column 2, line 9,10 * * figure 3 *		
Y	US 5 613 686 A (YIU) 25 March 1997 (1997-03-25)	3	
	* abstract * * column 2, line 4-32 * * figures 1-3 *		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F41J
Place of search		Date of completion of the search	Examiner
THE HAGUE		1 June 2004	Menier, R
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			

EPO FORM 1503 03/92 (P04/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 00 8480

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
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01-06-2004

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