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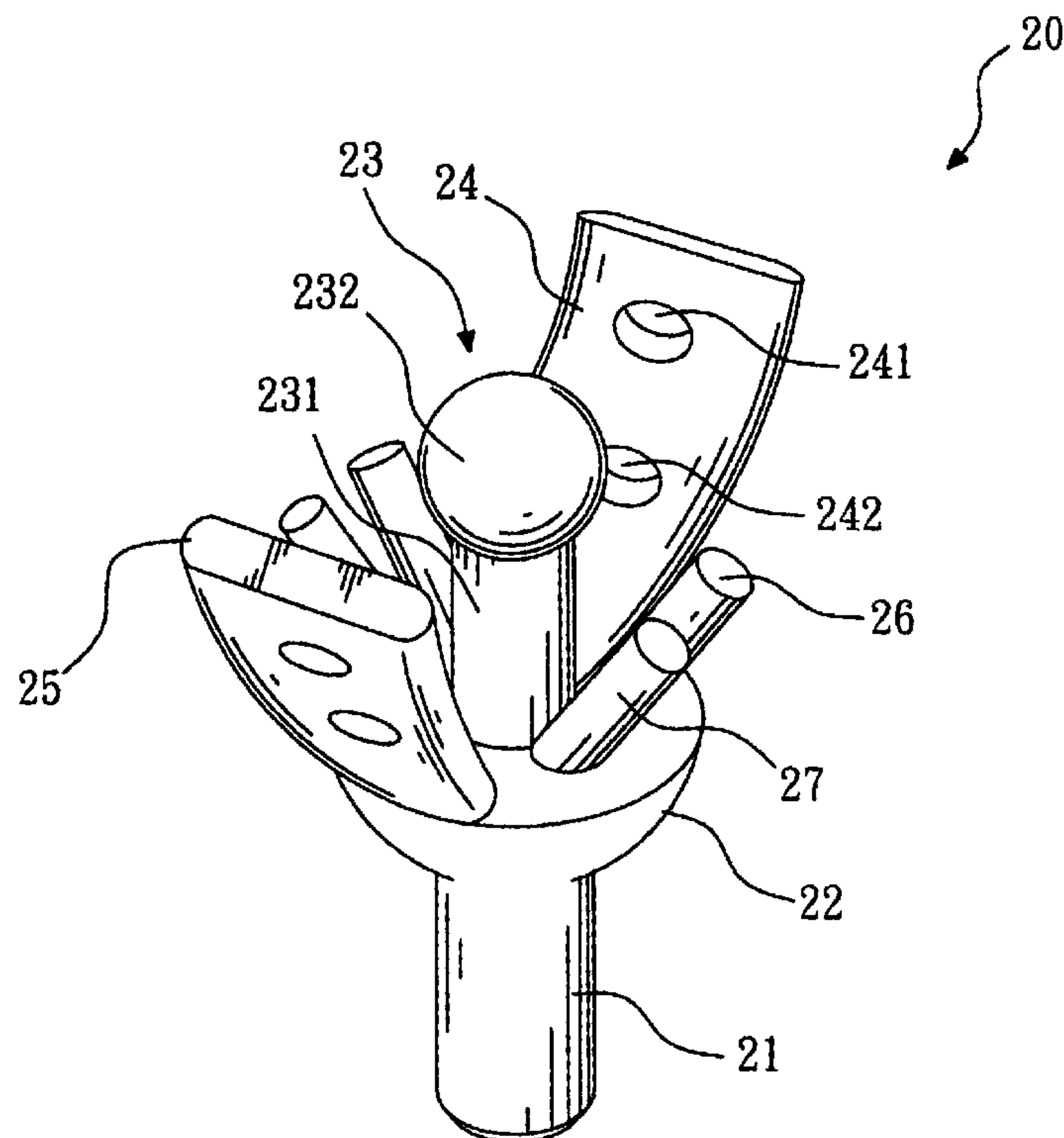
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(54) Title: ABUTMENT FOR DENTAL IMPLANT



(57) **Abrégé/Abstract:**

The invention relates to an abutment for dental implant. The abutment of the invention comprises: a post portion, a central portion, a head portion and at least one first portion. The post portion extends along a longitudinal axis. The central portion is formed on the post portion, and has a middle section and a peripheral section. The head portion is formed on the middle section of the central portion, and extends along the longitudinal axis. The first portion is formed on the peripheral section of the central portion, and extends along at least one first direction with a first angle corresponding to the longitudinal axis. According to the invention, the abutment can provide greater metal support and interlocking engagement for a posterior crown.

ABSTRACT

The invention relates to an abutment for dental implant. The abutment of the invention comprises: a post portion, a central portion, a head portion and at least one first portion. The post portion extends along a longitudinal axis. The central portion is formed on the post portion, and has a middle section and a peripheral section. The head portion is formed on the middle section of the central portion, and extends along the longitudinal axis. The first portion is formed on the peripheral section of the central portion, and extends along at least one first direction with a first angle corresponding to the longitudinal axis. According to the invention, the abutment can provide greater metal support and interlocking engagement for a posterior crown.

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TITLE**ABUTMENT FOR DENTAL IMPLANT****BACKGROUND OF THE INVENTION****1. Field of the Invention**

5 The present invention relates to an abutment, more particularly, an abutment for dental implant that adopts the locking taper or other non-screw connection.

2. Description of the Related Art

10 The locking taper or non-screwed connection has the character of non-limited direction for connection. Therefore the crown mold on the abutment before connection to the implant is practicable for the clinical practice. One example is the integrated abutment crown (IAC) of Bicon. Bicon owns a dental implant system that adopts the locking taper connection, which is highly respected by many dentists. The IAC is
15 actually an achievement of Bicon. By directly fusing the polyceramic material to the abutment, the IAC is simple and convenient for the dentists to use, and the patients recognize the superiority of polyceramic material. The polyceramic material has elasticity. By offering more space for the polyceramic material, the IAC could exhibit the elasticity to extreme extent.
20 And the elasticity is the most wanted in dental implantology. But Bicon's abutment for the IAC is not without drawbacks. It doesn't provide enough metal support and interlocking engagement for the polyceramic material, which may lead to fracture of IAC.

25 Referring to FIG. 1, the conventional integrated abutment crown 10 comprises an abutment 11 and a crown 12. The abutment 11 comprises a post portion 111, a central portion 112 and a head portion 113. The post portion 111 is in part used for being connected to the implant. The central

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portion 112 is formed on the post portion 111. The head portion 113 is formed on the central portion 112. The abutment 11 shown in FIG. 1 is basically a type of conventional abutment that is to be connected to the implant, and later an impression will be taken and finally the crown (or
5 prosthesis) will be cemented onto it. However, as mentioned above, because the head portion 113 is formed as a tapered shape with a tapered angle more than six degrees, the conventional integrated abutment crown 10 can't provide enough metal support and interlocking for the polyceramic material, which may lead to fracture of the conventional integrated
10 abutment crown 10.

Therefore, it is necessary to provide an abutment so as to solve the above problem.

SUMMARY OF THE INVENTION

One objective of the present invention is to provide an abutment for dental implant. The abutment of the invention comprises: a post portion, a
15 central portion, a head portion and at least one first portion. The post portion extends along a longitudinal axis. The central portion is formed on the post portion, and has a middle section and a peripheral section. The head portion is formed on the middle section of the central portion, and
20 extends along the longitudinal axis. The first portion is formed on the peripheral section of the central portion, and extends along at least one first direction with a first angle corresponding to the longitudinal axis.

According to the invention, because the first portion extends along the first direction with the first angle corresponding to the longitudinal axis,
25 the abutment can provide greater metal support for a posterior crown. The first angle can be adjusted according to the shape of the posterior crown. Furthermore, the first portion comprises at least one hole penetrating the first portion so as to provide greater interlocking engagement with the posterior crown.

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Another objective of the present invention is to provide an abutment for dental implant. The abutment of the invention comprises: a post portion, a central portion and a head portion. The post portion extends along a longitudinal axis. The central portion is formed on the post portion. The head portion is formed on the central portion, and has at least one hole penetrating the head portion.

According to the invention, the head portion comprises at least one hole penetrating the head portion so as to provide greater interlocking engagement with the anterior crown. Furthermore, the head portion is formed as a non-tapered shape or formed as a tapered shape with a tapered angle less than six degrees, thus the abutment can provide greater metal support for an anterior crown.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a front view of the conventional integrated abutment crown having a posterior crown indicated in dashed lines.

FIG. 2A shows a perspective view of the abutment, according to a first embodiment of the invention.

FIG. 2B shows a front view of the abutment with a posterior crown indicated in dashed lines, according to the first embodiment of the invention.

FIG. 3A shows a perspective view of the abutment, according to a second embodiment of the invention.

FIG. 3B shows a front view of the abutment with an anterior crown indicated in dashed lines, according to the second embodiment of the invention.

FIG. 4 shows a front view of the abutment with a posterior crown indicated in dashed lines, according to a third embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGs. 2A and 2B, according to a first embodiment of the invention, an abutment 20 comprises: a post portion 21, a central portion 22, a head portion 23 and at least one first portion 24, 25. The post portion 21 extends along a longitudinal axis. The central portion 22 is formed on the post portion 21, and has a middle section and a peripheral section. The head portion 23 is formed on the middle section of the central portion 22, and extends along the same longitudinal axis. The head portion 23 comprises a post section 231 and a round head 232; the round head 232 is formed on the post section 231.

The first portions 24 and 25 are formed on the peripheral section of the central portion 22, and extend along at least one first direction with a first angle θ corresponding to the longitudinal axis, as shown in FIG. 2B. In other words, the first portion 24 extends from the peripheral section of the central portion 22 outward. The first angle θ can be adjusted according to the shape of the posterior crown 28. Therefore, the abutment 20 can provide greater metal support and interlocking engagement for the posterior crown 28. The material of the posterior crown 28 may be polyceramic, resin, glassionomer or other materials.

The first portion 24 is taken as an example for illustration. The first portion 24 is a plate-like structure with a first length, and comprises two holes 241 and 242 penetrating mesio-distally the first portion 24. When the posterior crown 28 is molded on the abutment 20, there is greater metal support and interlocking engagement between the abutment 20 and the posterior crown 28.

The abutment 20 further comprises at least one second portion 26, 27 formed on the peripheral section of the central portion 22 and extending along at least one second direction with a second angle corresponding to

the longitudinal axis. The second portion 26 is a rod-like structure with a second length. The first length of the first portion is usually longer than the second length of the second portion. The second portion can provide the other side metal support for the posterior crown 28.

5 Referring to FIGs. 3A and 3B, according to a second embodiment of the invention, an abutment 30 of the invention comprises: a post portion 31, a central portion 32 and a head portion 33. The post portion 31 extends along a longitudinal axis. The central portion 32 is formed on the post portion 31. The head portion 33 is formed on the central portion 32, and
10 formed as a non-tapered shape. That is, the width of an upper section of the head portion 33 is equal to or larger than that of a bottom section of the head portion 33. Therefore, the abutment 30 can provide greater metal support for the anterior crown 38 so as to prevent the broken anterior crown. Besides, the head portion 33 may be formed as a tapered shape with a
15 tapered angle less than six degrees.

The head portion 33 extends along a first direction with a first angle corresponding to the longitudinal axis. The first angle can be adjusted according to the shape of an anterior crown 38. The head portion 33 is a plate-like structure which comprises two holes 331 and 332 penetrating
20 buccal-lingually. When the anterior crown 38 is molded on the abutment 30, there is greater interlocking engagement between the abutment 30 and the anterior crown 38.

Referring to FIG. 4, according to a third embodiment of the invention, an abutment 40 comprises: a post portion 41, a central portion 42,
25 a shaft 43, an extending portion 44 and a head portion 45. The post portion 41 extends along a longitudinal axis. The central portion 42 is formed on the post portion 41, and has a middle section and a peripheral section.

The shaft 43 is formed on the middle section of the central portion 42 and extends along the longitudinal axis. The shaft 43 comprises a first

section 431 and a second section 432, and the second section 432 is formed on the first section 431. The first section 431 may be a hexagonal shape, for example a hexagonal nut. The second section 432 is cylindrical shape, and there are threads on the outer wall of the second section 432.

5 The extending portion 44 is mounted on the shaft 43. The extending portion 44 comprises a base 441, at least one first portion 443, 444 and at least one second portion 445, 446. The base 441 has an opening 442 for mounting on the first section 431 of the shaft 43. The shape of the opening 442 is corresponding to that of the first section 431 so that the extending
10 portion 44 can be fixed on the shaft 43. The first portions 443, 444 are formed on the base 441, and each first portion is a plate-like structure. The first portion comprises at least one hole penetrating the plate-like structure. The first portions 443, 444 are disposed on the peripheral section of the central portion 42 and extend along at least one first direction with a first
15 angle corresponding to the longitudinal axis.

 The second portions 445, 446 are formed on the base 441, and extend along at least one second direction with a second angle corresponding to the longitudinal axis. The second portion is a rod-like structure. The structures of the first portion and the second portion in the
20 third embodiment are similar to those of the first portion and the second portion in the first embodiment as shown in FIG. 2A.

 After the extending portion 44 is mounted on the shaft 43, the extending portion 44 can be fixed at the horizontal direction. For further fixing the extending portion 44 at the vertical direction, the head portion 45
25 is utilized for mounting on the extending portion 44 and the shaft 43. The head portion 45 comprises a post section 451, a driving head 452 and a containing slot 453. The containing slot 453 is cylindrical shape, and there are threads on the inner wall of the containing slot 453 so that the containing slot 453 can be used for mounting on the second section 432 of
30 the shaft 43. The driving head 452 is formed on the post section 451, and

may be a hexagonal shape, for example a hexagonal head, to let a tool drive the driving head 452. The post section 451 has an outer diameter being bigger than the opening 442, and the post section 451 is mounted on the base 441. Therefore, the head portion 45 can fix the extending portion 44 at the vertical direction.

Because the whole structure of the abutment 40 in the third embodiment is similar to that of the abutment 20 in the first embodiment, the abutment 40 can also provide greater metal support and interlocking engagement for the posterior crown 48. Furthermore, according to the third embodiment of the invention, the extending portion 44 and the head portion 45 can be manufactured independently, then are easily assembled to form the abutment 40.

While several embodiments of the present invention have been illustrated and described, various modifications and improvements can be made by those skilled in the art. The embodiment of the present invention is therefore described in an illustrative, but not restrictive, sense. It is intended that the present invention may not be limited to the particular forms as illustrated, and that all modifications which maintain the spirit and scope of the present invention are within the scope as defined in the appended claims.

WHAT IS CLAIMED IS:

1. An abutment for dental implant, comprising:

a post portion, extending along a longitudinal axis;

a central portion, formed on the post portion and having a
5 middle section and a peripheral section;

a head portion, formed on the middle section of the central
portion and extending along the longitudinal axis; and

at least one first portion, formed on the peripheral section of
the central portion and extending along at least one first direction with a
10 first angle corresponding to the longitudinal axis.
2. The abutment according to Claim 1, wherein the head portion
comprises a post section and a round head, and the round head is formed on
the post section.
3. The abutment according to Claim 1, wherein the first portion
15 is a plate-like structure.
4. The abutment according to Claim 3, wherein the first portion
comprises at least one hole penetrating the plate-like structure.
5. The abutment according to Claim 1, further comprising at
least one second portion, formed on the peripheral section of the central
20 portion and extending along at least one second direction with a second
angle corresponding to the longitudinal axis.
6. The abutment according to Claim 5, wherein the second
portion is a rod-like structure.
7. An abutment for dental implant, comprising:

25 a post portion, extending along a longitudinal axis;

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a central portion, formed on the post portion; and

a head portion, formed on the central portion and having at least one hole penetrating the head portion.

5 8. The abutment according to Claim 7, wherein the head portion is a plate-like structure.

9. The abutment according to Claim 7, wherein the head portion extends along a first direction with a first angle corresponding to the longitudinal axis.

10 10. The abutment according to Claim 7, wherein the head portion is formed as a tapered shape with a tapered angle less than six degrees.

11. The abutment according to Claim 7, wherein the head portion is formed as a non-tapered shape.

12. An abutment for dental implant, comprising:

a post portion, extending along a longitudinal axis;

15 a central portion, formed on the post portion and having a middle section and a peripheral section;

a shaft, formed on the middle section of the central portion and extending along the longitudinal axis;

20 an extending portion, mounted on the shaft, the extending portion having at least one first portion, disposed on the peripheral section of the central portion and extending along at least one first direction with a first angle corresponding to the longitudinal axis; and

a head portion, mounted on the shaft.

25 13. The abutment according to Claim 12, wherein the shaft comprises a first section and a second section, and the second section is

formed on the first section.

14. The abutment according to Claim 13, wherein the extending portion further comprises a base, the base has an opening for mounting on the first section of the shaft.

5 15. The abutment according to Claim 14, wherein the first portion is formed on the base, and is a plate-like structure.

16. The abutment according to Claim 15, wherein the first portion comprises at least one hole penetrating the plate-like structure.

10 17. The abutment according to Claim 14, wherein the extending portion further comprises at least one second portion, formed on the base and extending along at least one second direction with a second angle corresponding to the longitudinal axis.

18. The abutment according to Claim 17, wherein the second portion is a rod-like structure.

15 19. The abutment according to Claim 14, wherein the head portion comprises a post section, a driving head and a containing slot, the containing slot is used for mounting on the second section of the shaft, the driving head is formed on the post section, and the post section is mounted on the base.

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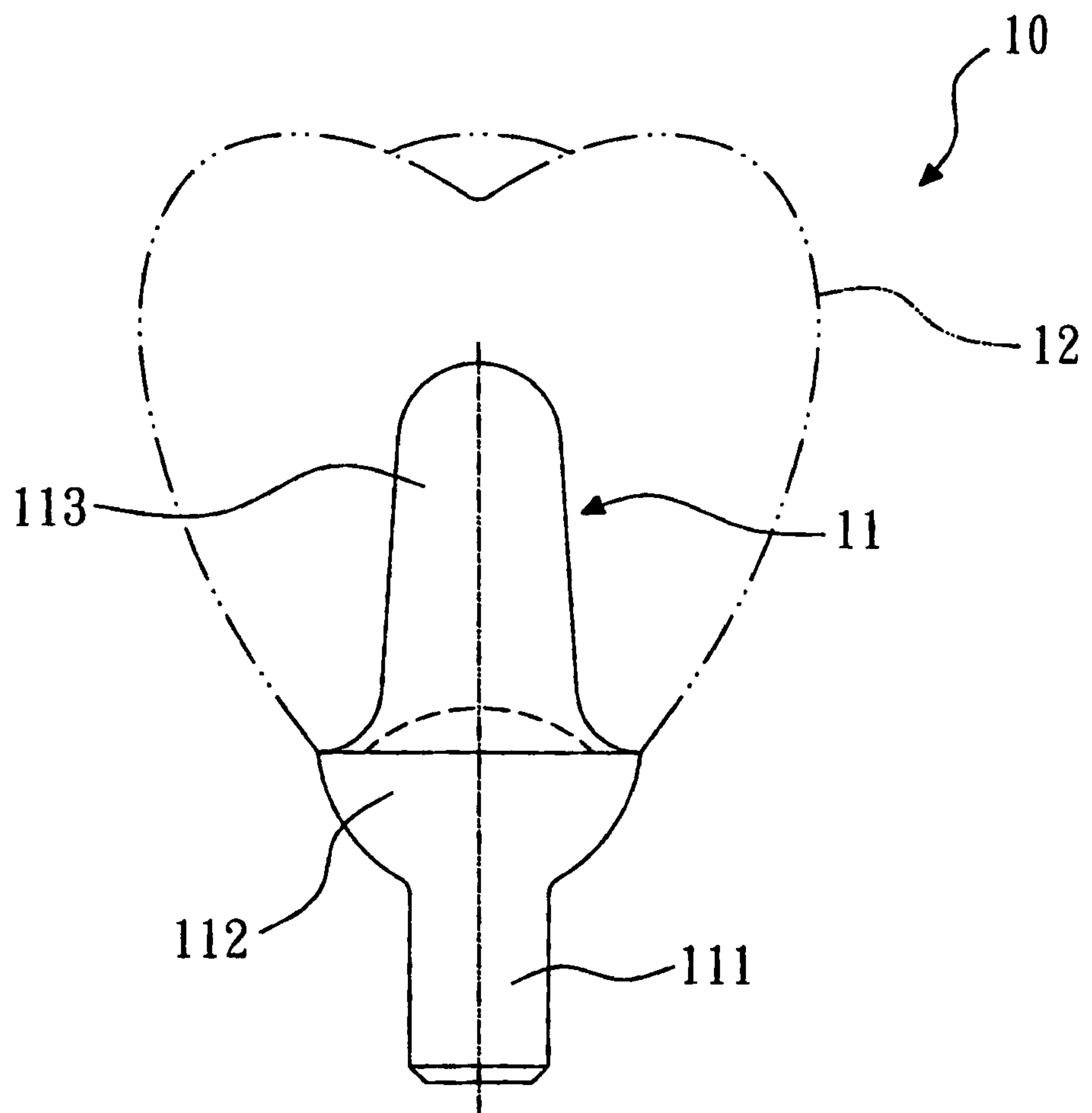


FIG. 1 (Prior Art)

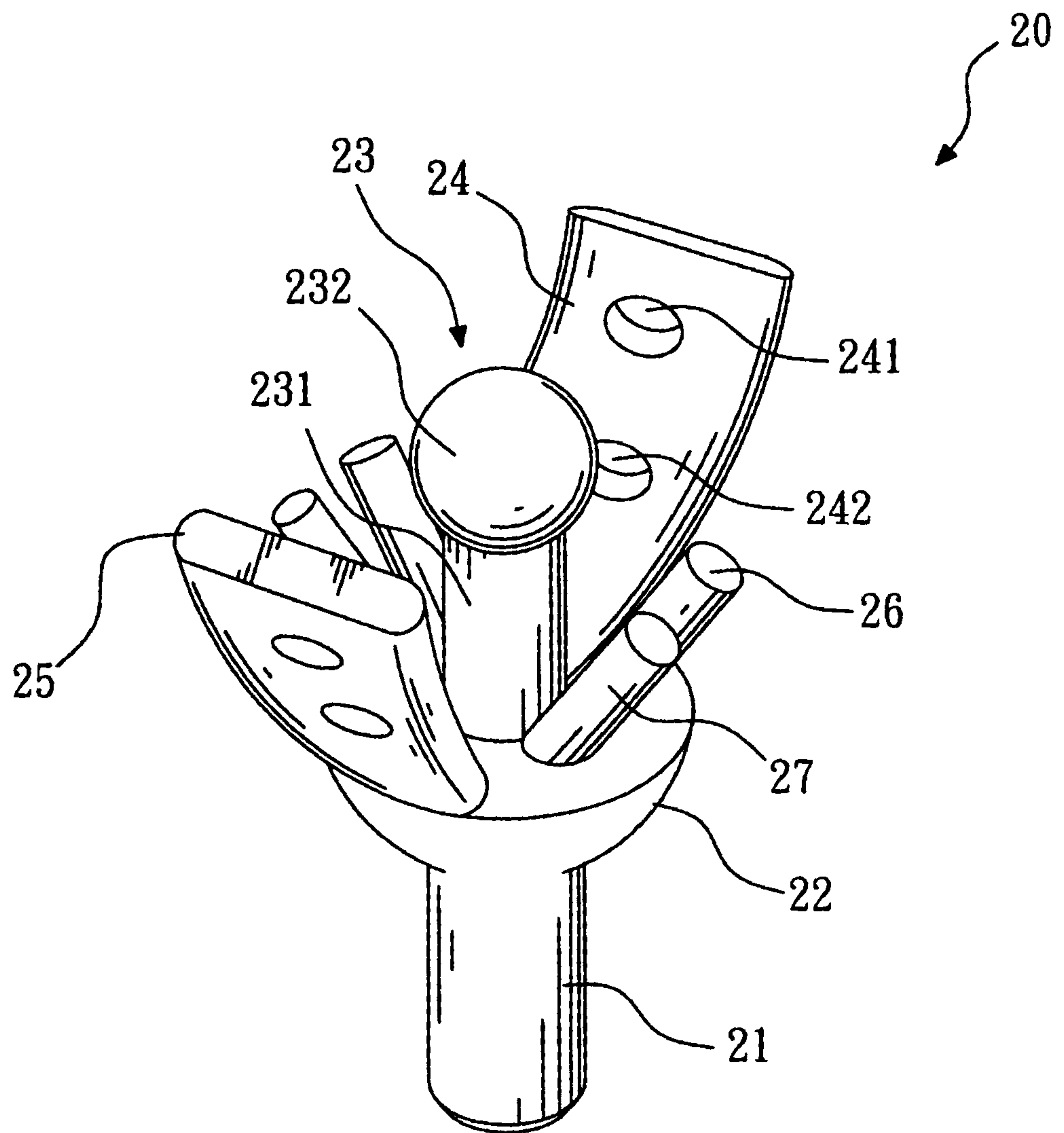


FIG. 2A

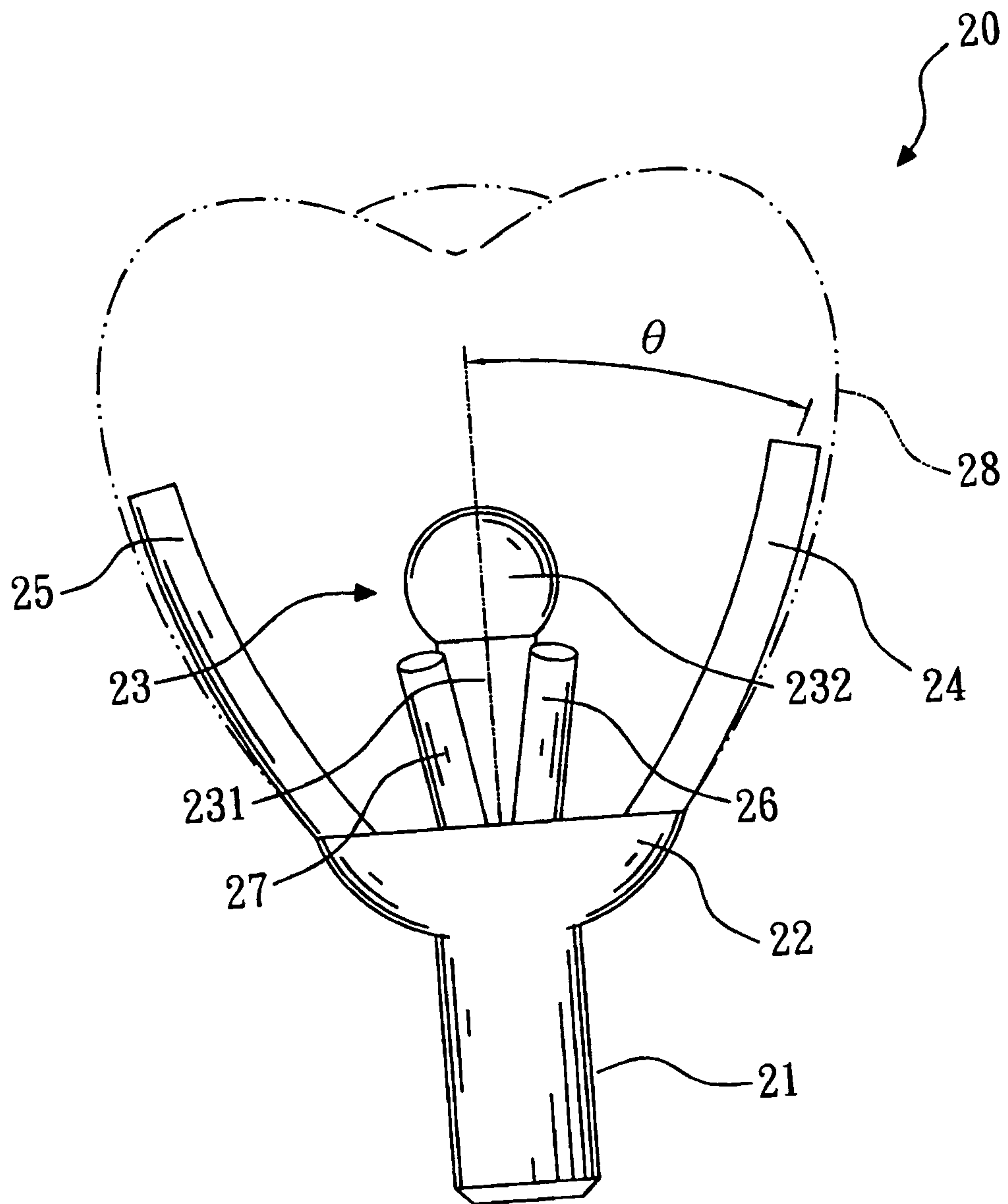


FIG. 2B

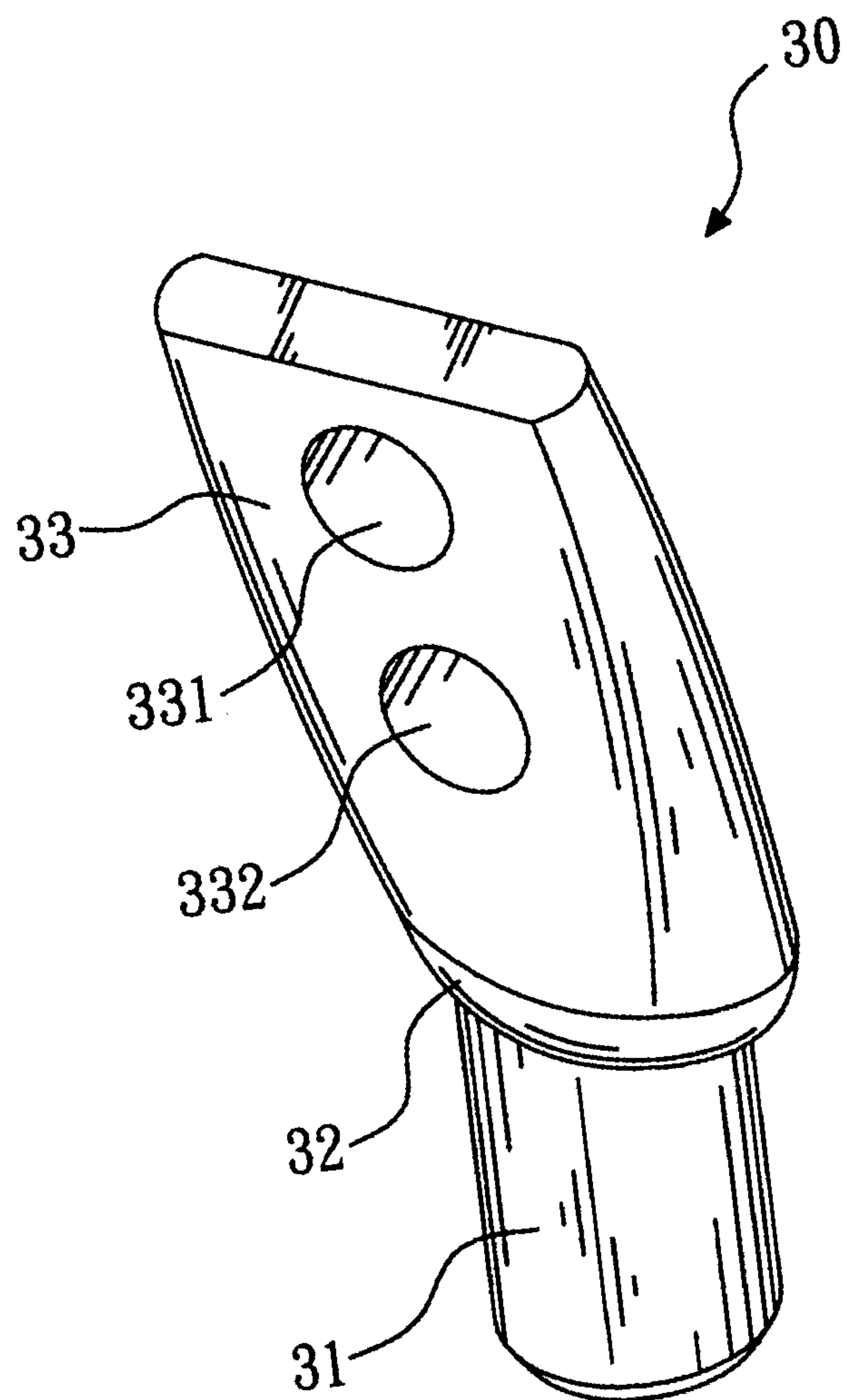


FIG. 3A

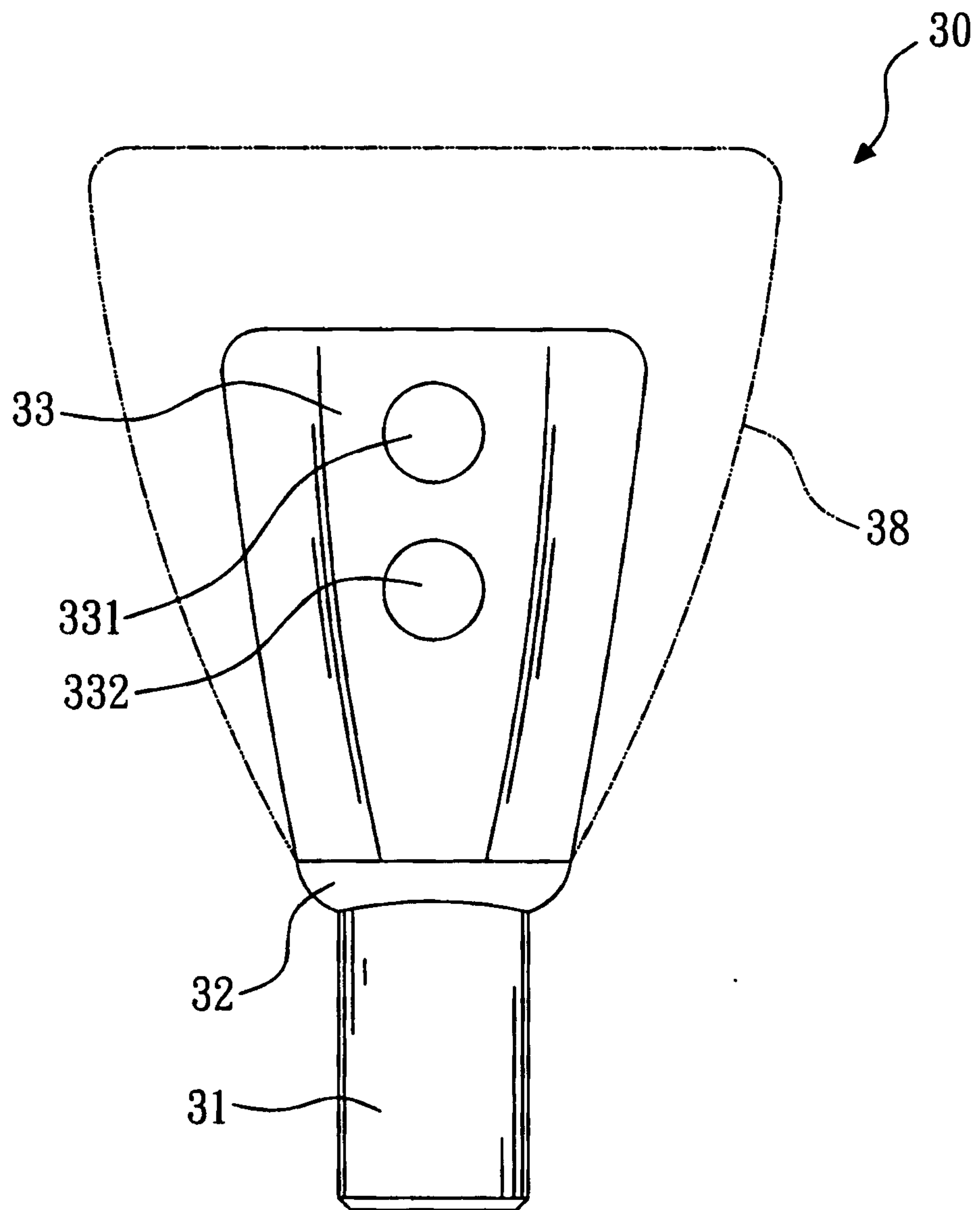


FIG. 3B

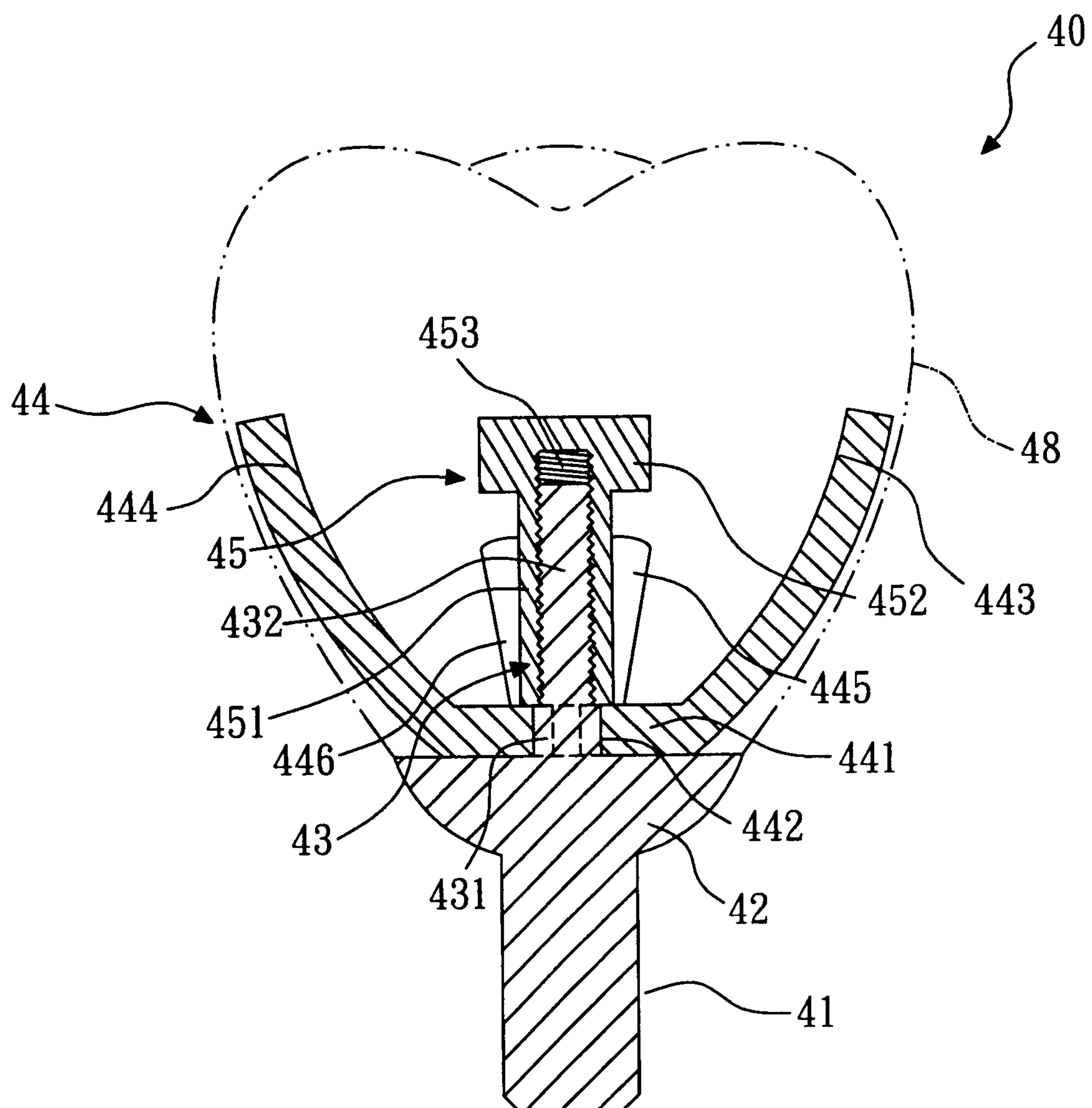


FIG. 4

