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(72) CARROLL, Francis C., US

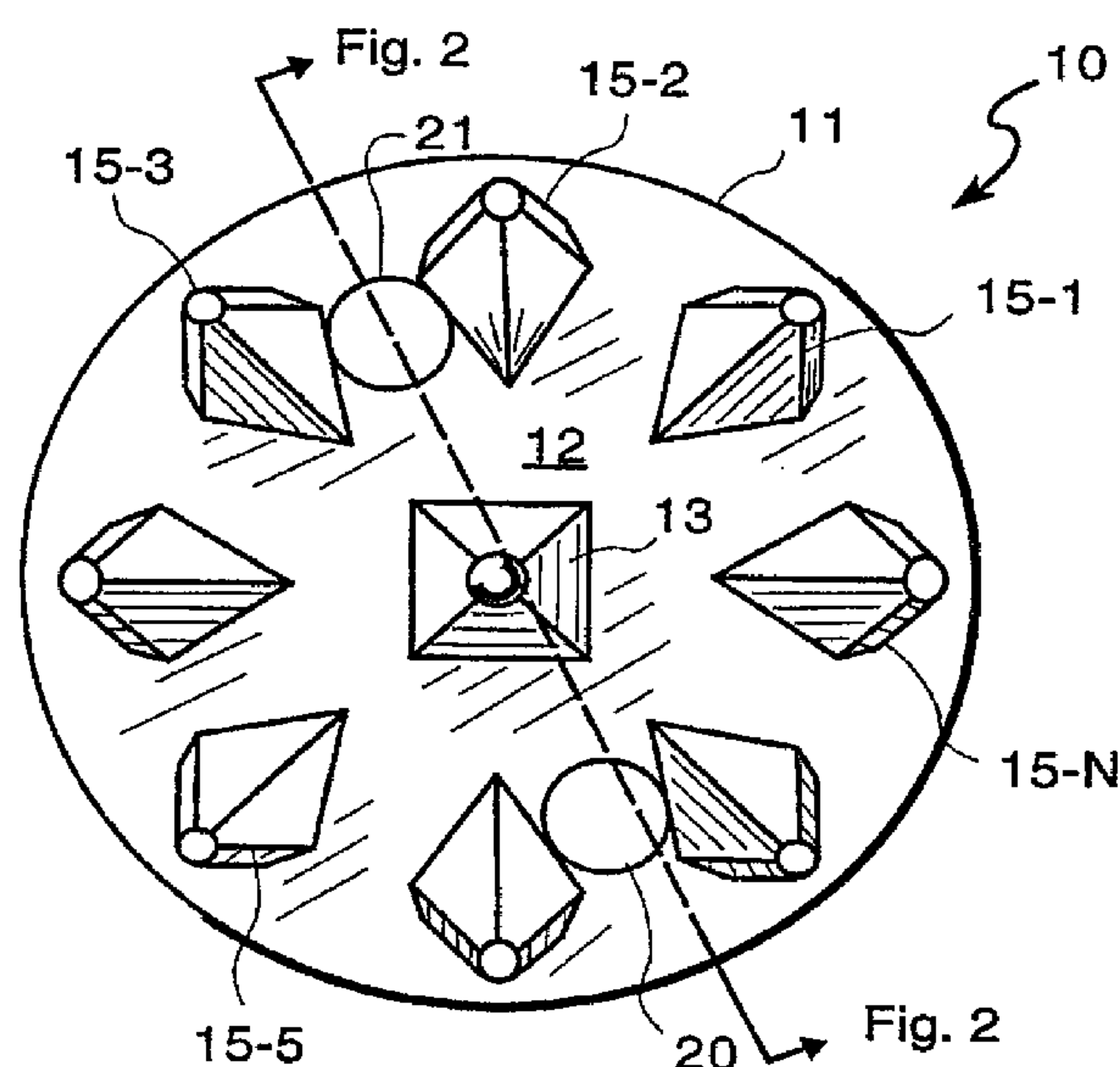
(73) GREEN KEEPERS, INC., US

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(54) **CRAMPONS POUR CHAUSSURES DE SPORT**

(54) **SPORTS SHOE CLEATS**



(57) L'invention concerne un crampon (10) pour chaussures de golf, comportant un corps principal (11) présentant une face extérieure (12) en forme de dôme et une face intérieure plane, et une tige filetée (17) moulée d'une seule pièce avec le corps principal (11). Une pluralité de dents (15) ayant une forme pseudopyramidale font saillie sur le périmètre du corps principal, chacune de ces dents étant inclinée vers l'extérieur.

(57) A golf shoe cleat (10) has a main body member (11) having a dome-shaped outer face (12) and a planar inner face, a threaded stud (17) molded integrally with the main body member (11). A plurality of pseudo pyramid-shaped teeth (15) projecting around the perimeter of the main body member, each having an outward angle.

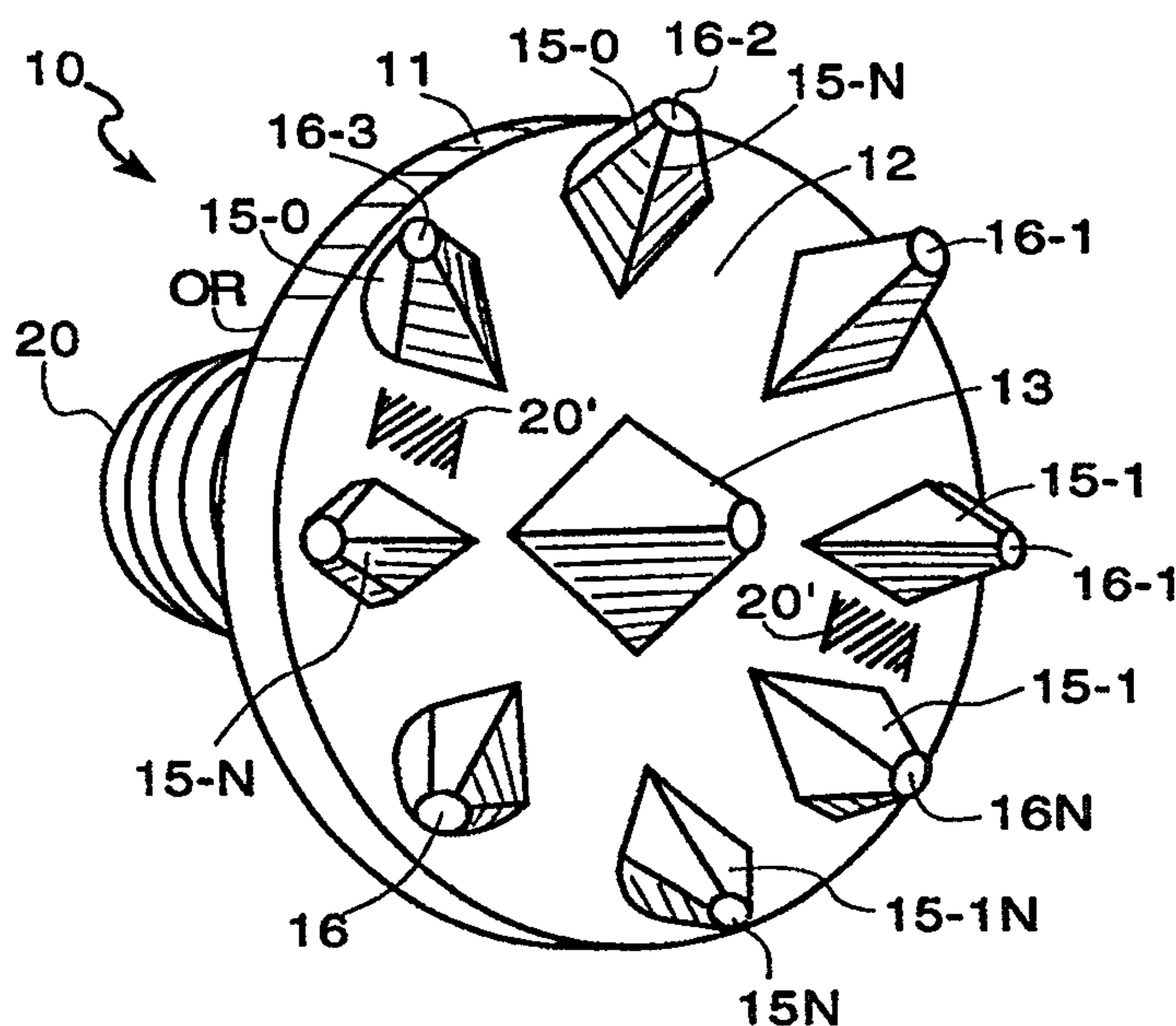
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(54) Title: SPORTS SHOE CLEATS**(57) Abstract**

A golf shoe cleat (10) has a main body member (11) having a dome-shaped outer face (12) and a planar inner face, a threaded stud (17) molded integrally with the main body member (11). A plurality of pseudo pyramid-shaped teeth (15) projecting around the perimeter of the main body member, each having an outward angle.



SPORTS SHOE CLEATS

The present invention is directed to golf shoe cleats, and more particularly to golf shoe cleats or spikes in which the cleat is molded from a durable plastic material and includes outwardly angled traction teeth and in a preferred embodiment has an anti-debris ring.

BACKGROUND AND BRIEF DESCRIPTION OF THE INVENTION

The three biggest complaints made about existing golf shoe spikes or cleats are lack of traction, and durability and that they need to be cleaned off during the course of a game. There have been attempts to solve these problems in the past. In Deacon et al Patent Nos. 5,536,793 and 5,259,129, the golf cleat or spike is comprised of a plastic molding in which the traction action is provided by ridges curved in planes parallel to the shoe sole emanating out in radial fashion from the center of the disk-like flange and being integrally formed with and extending down from the bottom of the surface. In Patent No. 4,723,366, a traction cleat is provided which has a metal stud infrastructure at the core of the cleat and a plastic skirt molded directly on the flange of the metal infrastructure. The curved rib structure of the above Deacon et al patents

is also disclosed in Design Patent Nos. Des. 375,192; Des. 372,355; Des. 371,453 and Des. 366,755.

Summary of the Invention

5 An object of the present invention is to provide an improved golf shoe cleat which has better traction and lateral stability. An object of one specific form of the invention is to provide a golf shoe cleat with improved anti-debris properties.

 The present invention resides in a golf shoe cleat comprising a main body
10 member having an outer perimeter, an outer face and an inner face with a mounting member projecting vertically outwardly from the inner face.

 According to one aspect of the invention there is present a plurality of perimeter traction teeth circumferentially spaced around the outer perimeter of the body member, each perimeter traction tooth having an outward angled outer
15 tooth surface to provide lateral stability and traction through the plane of a golf swing.

 In one form of the invention there is provided a plurality of pseudo pyramid-shaped teeth projecting around the perimeter of the main body member, each of the pseudo pyramid-shaped teeth having an outward angle to provide
20 lateral stability and traction through the plane of a golf swing, the teeth being in a low profile to reduce damage to putting green surfaces.

 According to another aspect of the present invention, there is provided a sport shoe cleat which has a body member defining an outer face and an inner face, a threaded stud being molded integrally with the main body member and
25 projecting outwardly from the inner face about an axis perpendicular to the inner face. A plurality of perimeter traction teeth project around the perimeter of the outer face, each traction tooth having an axial line ALT. A central wear tooth

has an axis AL aligned with the axis of the threaded stud member, and the axial line ALT of each traction tooth is angled outward relative to the axis AL to
5 provide lateral stability and enhanced traction.

Preferably, the body member has a dome-shaped outer face, and the inner face is planar.

In a specific embodiment of the invention, the body member has an anti-debris ring in the peripheral edge of the planar inner face.

10 Preferably the body member has a central wear pad at the centre of the dome-shaped outer face of the body member, the central wear pad being a weight-bearing surface, such as to support the majority of the body weight placed on the cleat and tending to keep weight off the traction teeth to prolong the life of the traction teeth and the golf shoe cleat.

15 More specifically, the dome-shaped outer face and wear pad are adapted so that the body weight is directed toward the centre of the cleat whereby the cleat wears from the inside out and that as the cleat wears from the inside out, the traction teeth also wear in an outward manner to allow the traction teeth to maintain the outward angle and thereby continue to provide lateral traction
20 throughout the life of the cleat.

A material is preferably utilized which not only provides resilience and flexibility for traction but also possesses a durability characteristic needed to achieve an acceptable product life.

The anti-debris ring may be in the form of a rib which is on the
25 peripheral edge of the underside of the cleat. In this position the anti-debris ring tends to prevent the edge of the cleat from separating from the sole of the golf shoe, thereby precluding the entry of debris. At the same time, when the cleat is snugged down, the pressure causes the

ring to more closely hug the shoe sole and preclude the entry of debris.

The preferred material for the construction is a polyurethane material with about a 55D durometer hardness.

5 However, it can be manufactured out of any suitable material with a preferred hardness range from 45D to 95D durometer hardness.

10 Some cleats currently in the market have an annular ring of latching teeth surrounding the threaded stud and a coacting ring of complementary formations in a receptacle in the shoe sole. Other cleats on the market are provided with so-called "quick release" locking or mounting structures. Such features may be incorporated in the golf cleat of this invention.

15 **DESCRIPTION OF THE DRAWINGS**

The above and other objects, advantages and features of the invention will become more apparent when considered with the following specification and accompanying drawings wherein:

20 Figure 1 is a front view of a golf shoe cleat incorporating the invention,

Figure 2 is a side elevational view of the golf shoe cleat incorporating the invention,

25 Figure 3 is a back view of the golf shoe incorporating the invention,

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Figure 4 is a 3/4 angle isometric view of the golf shoe spike or cleat incorporating the invention,

Figure 5 is an isometric perspective view of a golf or sports shoe with a cleat incorporating the present invention installed,

Figure 6 is an isometric perspective view of a golf cleat incorporating an annular anti-debris rib ring of traction teeth,

Figures 7a and 7b are side elevation and bottom views of an embodiment showing a first alternative known cleat-to-shoe attachment technique,

Figures 8a and 8b are side elevation and bottom views of a further embodiment incorporating alternative known cleat-to-shoe attachment technique, and

Figure 9 is a front view of a further embodiment in which the wear pad has been eliminated.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to Figures 1 - 4 of the drawings, a cleat 10 is preferably of molded plastic polyurethane with about a 55D durometer hardness but which can be manufactured out of any suitable material with a preferred hardness range from about 44D to about 95D durometer hardness. The body 11 has a domed outer face 12 with a center-pyramid shaped wear pad 13 surrounded by a circular array of pseudo pyramid-shaped traction teeth 15-1, 15-2...15-N, and in the present embodiment N is 8, so that in

the cleat illustrated, there are nine teeth with the center tooth 13 serving as a wear pad. The pseudo pyramid-shaped teeth have a curved outer face 15-O and an angulated or faceted face 15-IN. Each of the outward angled traction teeth in the array 15-1, 15-2, 15-3...15-N are traction teeth and are angled outwardly around the perimeter. This circular array of outwardly angled traction teeth 15-1, 15-2, 15-3...15-N provides lateral stability and traction through the plane of a golf swing. In one preferred embodiment this outward angulation is at an angle of about $37\frac{1}{2}^{\circ}$, e.g. measured from axial line AL passing through threaded shoe mounting stud 17 to the axial line ALT of each tooth. In a preferred embodiment each traction tooth has a low profile. Moreover, these angled teeth are low in profile to reduce damage to putting green surfaces, and the peak or tip 16-1, 16-N2...16-N of each tooth 15-1, 15-2...15-N is flat or rounded.

An anti-debris ring OR is formed on the peripheral edge of the planar surface face or flat base FB and coaxial with threaded mounting stud 17. This anti-debris ring strengthens the edge of the cleat and prevents it from separating from the sole of the golf shoe and precludes or forecloses the entry of grass or other debris between the cleat and golf shoe sole when the cleat has been snugged down by the application tool (not shown).

This configuration of the teeth of the cleat whereby the pseudo pyramid-shaped traction teeth 15-1, 15-2...15-N

are angled outward around the perimeter of body 11 provides both lateral stability and traction through the plane of a golf swing. These teeth, as noted above, are low in profile to reduce damage to the putting greens and preferably do not have sharp points. In addition, the wear pad 13 in the center of the dome-shaped body member 11 provides a weight-bearing surface. Although this may offer some traction, its main purpose is to support the majority of the body weight placed on the cleat, keeping weight off the traction teeth to prolong the life of the teeth and the cleat. Since most of the body weight is directed toward the center of the cleat, it wears away from the inside out. As the cleats or teeth 15-1, 15-2...15-N wear from the inside out, the traction teeth also wear in an outward manner. This allows the teeth to maintain the desired outward angle needed to provide lateral traction throughout the life of the cleat.

A pair of circular (or rectangular) depressions 20, 21 are adapted to accept the conventional two-prong installation tool which fits into engagement in recesses 20, 21 to provide torque and rotation of the golf cleat so as to cause the threads 17 which are engaged with are engaged with the conventional threaded cleat holes or receptacles fixed in the bottom of a conventional golf shoe as shown in Figure 5 in which a plurality of cleats 10-1, 10-2...10-N have been installed.

The threads 17 of threaded stud 20 adjacent the flat base FB of the main body member 11 are provided with a plastic fillet 22 which serves the function of locking the cleat in the threaded bore of the cleat receptacle on the shoe.

In addition, some current golf cleats are provided with a series of latching teeth 17LT surrounding threaded stud 17' which coact with a complementary locking formation in surrounding the female threaded aperture in the sole of the shoe. See Figures 7a and 7b. Another cleat attachment technique shown in Figures 8a and 8b uses two interlocking triangles: a female receptacle in the sole of the shoe (not shown) and a male fastener structure 17MF on the cleat. One would not depart from the principles of this invention by incorporating such a mounting or attachment features in the golf shoe cleat disclosed herein. Moreover, while the embodiment incorporating the wear pad is preferred, the angled traction teeth can provide advantageous traction in the absence of the wear pad and such an embodiment is indicated in Figure 9.

As noted earlier, the preferred material for construction of the shoe is a polyurethane with a 55d durometer hardness but which can be manufactured out of any suitable material with a preferred hardness ranging from about 45d to 95d durometer hardness.

While the invention has been shown and described in the reference to a preferred embodiment of the invention,

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it will be understood that the invention is not limited thereto but may be modified, adapted and changed by those skilled in the art and still be within the scope of the invention as defined by the following claims:

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CLAIMS

1. A golf shoe cleat comprising a body member having an outer face and an inner face, shoe mounting member having an axis AL which is perpendicular to said inner face and projecting outwardly from said inner face and adapted to secure said cleat in a receptacle in said golf shoe upon rotation of said shoe mounting member in said receptacle,

5 a plurality of shaped traction teeth projecting outwardly around the perimeter of said outer face, each traction tooth having an outer traction surface, each outer traction tooth surface having an outward angulation relative to said axis AL to provide lateral stability and enhanced traction through the plane of a golf swing.

2. The cleat defined in Claim 1 wherein said inner face has a peripheral edge
10 spaced from said shoe mounting member and an anti-debris ring formed integrally with said body member and projecting from said inner face.

3. A golf shoe cleat comprising a body member having a dome-shaped outer face and a planar inner face, a shoe attaching member projecting outwardly from said inner face having an axis AL perpendicular to said planar inner face, an annular anti-debris ring formed
15 on the edge of said planar inner face,

a plurality of shaped traction teeth projecting around the perimeter of said main body member, each traction tooth having an outer traction tooth surface, each said outer traction tooth surface having an outward angulation relative to said axis AL to provide lateral stability and traction through the plane of a golf swing.

20 4. The cleat defined in claim 3 wherein said traction teeth are pseudo pyramid-shaped.

5. The golf cleat defined in Claim 3 or 4 wherein said shoe attaching member has a helical thread extending from the base of said main body member outwardly and an at least

one plastic member filling a portion of said thread so as to prevent loosening of said cleat during use.

6. A golf shoe cleat comprising a main body member having a dome-shaped outer
5 face and a planar inner face, shoe attachment means projecting outwardly from said inner face,

a plurality of pseudo pyramid-shaped teeth projecting around the perimeter of said main body member, each said pseudo pyramid-shaped teeth having an outward angle to provide lateral stability and traction through the plane of a golf swing, said teeth being in a
10 low profile to reduce damage to putting green surfaces,

said body member having an anti-debris ring on the peripheral edge of said planar inner face.

7. A golf shoe cleat comprising a main body member having a dome-shaped outer face and a planar inner face,

15 a mounting member projecting vertically outwardly from said inner face, said main body member having a circular perimeter,

a plurality of perimeter traction teeth circumferentially spaced around said circular perimeter of said body member, each perimeter traction tooth having an outward angled outer traction tooth surface to provide lateral stability and traction through the plane of a golf
20 swing.

8. A golf shoe cleat comprising a body member having an inner face and an outer face, a shoe-attaching member projecting perpendicularly outwardly from said inner face and said shoe-attaching member having an axis AL,

a plurality of traction teeth projecting around the perimeter of the outer face of said
25 main body member, each traction tooth having an outer traction tooth surface, said outer tooth surface having an outward angulation relative to said axis AL to enhance lateral stability and traction through the plane of a golf swing.

9. A sports shoe cleat comprising
a body member having an outer face and an inner face,
a threaded stud molded integrally with said main body member and projecting
5 outwardly from said inner face and having an axis perpendicular to said inner face,
a plurality of perimeter traction teeth projecting around the perimeter of said outer
face, and
a central wear tooth having an axis AL aligned with the axis of said threaded stud
member and wherein each perimeter traction tooth has an axial line ALT which is angled
10 outward relative to said axis AL to provide lateral stability and enhanced traction.

10. The sports shoe cleat defined in Claim 9 wherein said perimeter traction teeth
have an inside surface facing said central wear tooth and an outside surface facing away from
said central wear tooth, and said inside surface is pyramid-shaped and said outside surface is
cone-shaped.

15 11. The sports shoe cleat defined in Claim 9 wherein said sports shoe cleat is
molded from a polyurethane having a hardness range from 45D to 95D durometer hardness.

12. The sports shoe cleat defined in Claim 9, 10 or 11 wherein said central wear
tooth is encircled by said traction teeth and wherein each traction tooth is angled about $37\frac{1}{2}^\circ$
measured from said axis AL passing axially through the center of wear tooth and said axial
20 line ALT passing axially through each traction tooth, respectively.

13. A golf shoe cleat comprising a main body member having a dome-shaped outer
face and a planar inner face,
a threaded stud molded integrally with said main body member and projecting
vertically outwardly from said inner face, said main body member having a circular perimeter,
25 a plurality of perimeter traction teeth circumferentially spaced around said circular
perimeter of said main body member, each tooth having an outward angle to provide lateral

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stability and traction through the plane of a golf swing,

said body member having a central wear pad at the center of said dome-shaped outer face, said central wear pad being a weight-bearing surface such as to support the majority of the body weight placed on the cleat and tending to keep weight off said traction teeth to
5 prolong the life of said traction teeth and the golf shoe cleat.

14. The golf shoe cleat defined in Claim 13 wherein said traction teeth are pseudo pyramid-shaped.

15. The golf shoe cleat defined in Claim 13 wherein said cleat is molded from a
10 polyurethane having a hardness range from 45D to 95D durometer hardness.

16. The golf shoe cleat defined in Claim 15 wherein said plastic material is polyurethane having a hardness of about 55D durometer hardness.

17. The golf cleat defined in Claim 13, 14, 15 or 16 wherein said threaded stud has a helical groove extending from the base of said main body member outwardly and an at least
15 one plastic fillet member bridging a portion of said helical groove so as to prevent loosening of said cleat during use.

18. A golf shoe cleat comprising:

a main body member having a dome-shaped outer face and a generally planar inner face,

20 a threaded stud molded integrally with said main body member and projecting outwardly from said inner face and having an axis AL which is perpendicular to said generally planar inner face,

a plurality of pseudo pyramid-shaped teeth projecting around the perimeter of said main body member, each said pseudo pyramid-shaped teeth having an axial line ALT exiting
25 at an outward angle relative to said axis AL to provide lateral stability and traction through

the plane of a golf swing, said teeth being in a low profile to reduce damage to putting green surfaces,

said body member having a wear pad at the center of said dome-shaped outer face,
5 said wear pad being a weight-bearing surface such as to support the majority of the body weight placed on the cleat and keeping weight off said traction teeth to prolong the life of said traction teeth and the cleat,

said dome shaped outer face and wear pad being adapted so that the body weight is directed toward the center of the cleat so that it wears from the inside out and that as the
10 cleat wears from the inside out, said traction teeth also wear in an outward manner to allow said traction teeth to maintain said outward angle needed to provide lateral traction throughout the life of the cleat.

19. A golf shoe cleat comprising a main body member having a dome-shaped outer face and an inner face,

15 a threaded stud extending integrally from said main body member and projecting vertically outwardly from said inner face and having an axis AL,

a wear pad at the center of said dome-shaped outer face, said wear pad having an axis which is co-linear with said axis AL and constituting a weight bearing surface such as to support the majority of the body weight placed on said golf shoe cleat,

20 a plurality of perimeter traction teeth in a circular array around said wear pad, each perimeter traction tooth having an axis ALT which is at an outward angulation relative to said axis AL to provide lateral stability and enhanced traction through the plane of a golf swing,

said dome-shaped outer face and wear pad being adapted so that the body weight is
25 directed toward the center of the cleat so that said cleat wears from the inside out and that as the cleat wears from the inside out, said traction teeth also wear in an outward manner to allow said traction teeth to maintain said outward angle to continue to provide lateral traction throughout the life of the cleat.

20. The golf shoe cleat defined in Claim 19 wherein said golf shoe cleat is molded from a polyurethane having a hardness range from about 45D to about 95D durometer hardness.

5 21. The golf shoe cleat defined in claim 19 wherein said threaded stud has a helical thread extending from the base of said main body member outwardly and at least one plastic fillet member bridging a portion of said thread so as to prevent loosening of said golf cleat during use.

10 22. The golf shoe cleat defined in Claim 19 wherein said outward angulation is about $37\frac{1}{2}^{\circ}$.

23. The golf shoe cleat defined in Claim 19, 20 or 22 wherein each said perimeter traction tooth has a tip which is flat.

24. The golf shoe cleat defined in Claim 19, 20, or 22 wherein each said perimeter traction tooth has a peak which is rounded.

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FIGURE 1

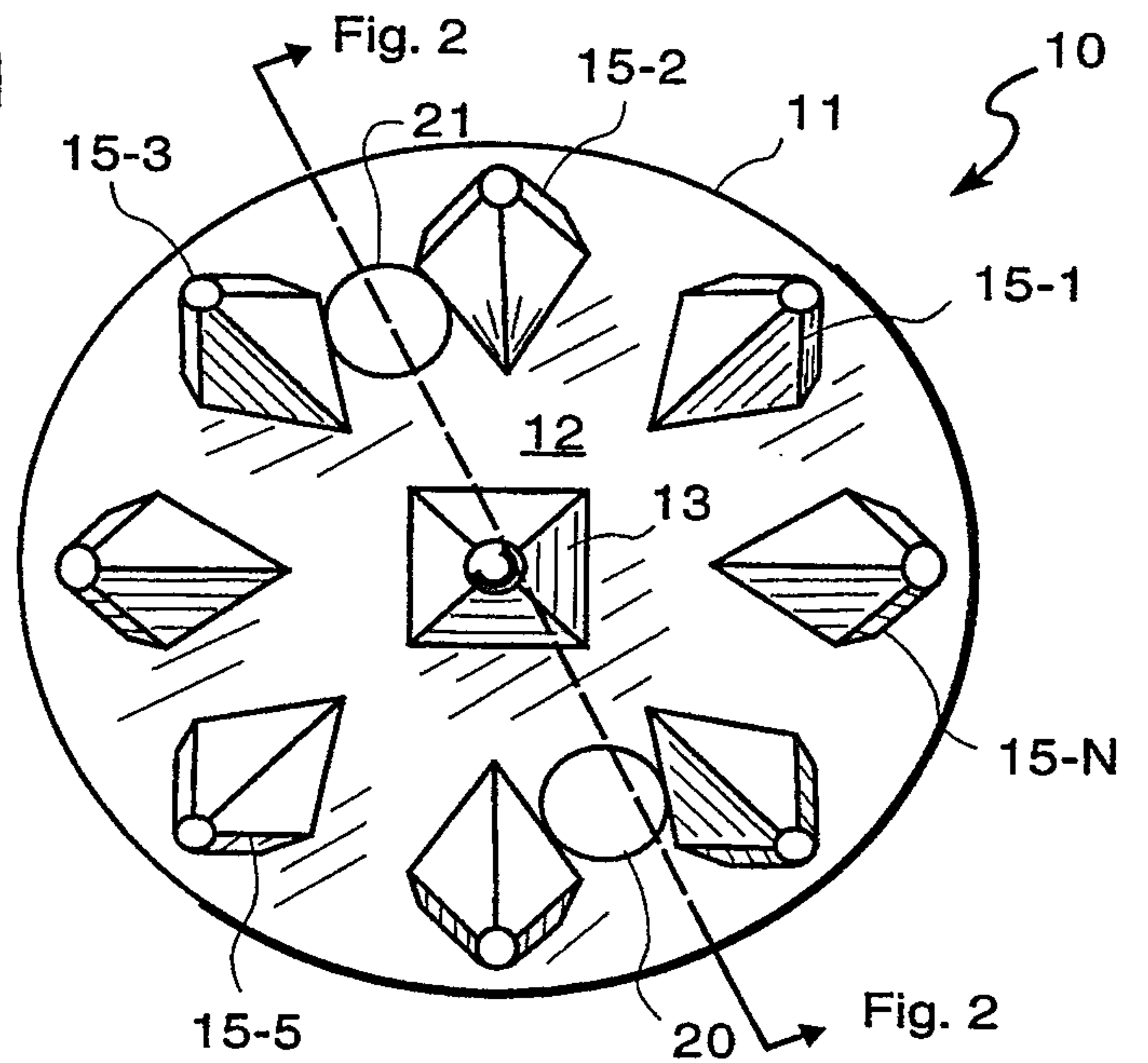


FIGURE 2

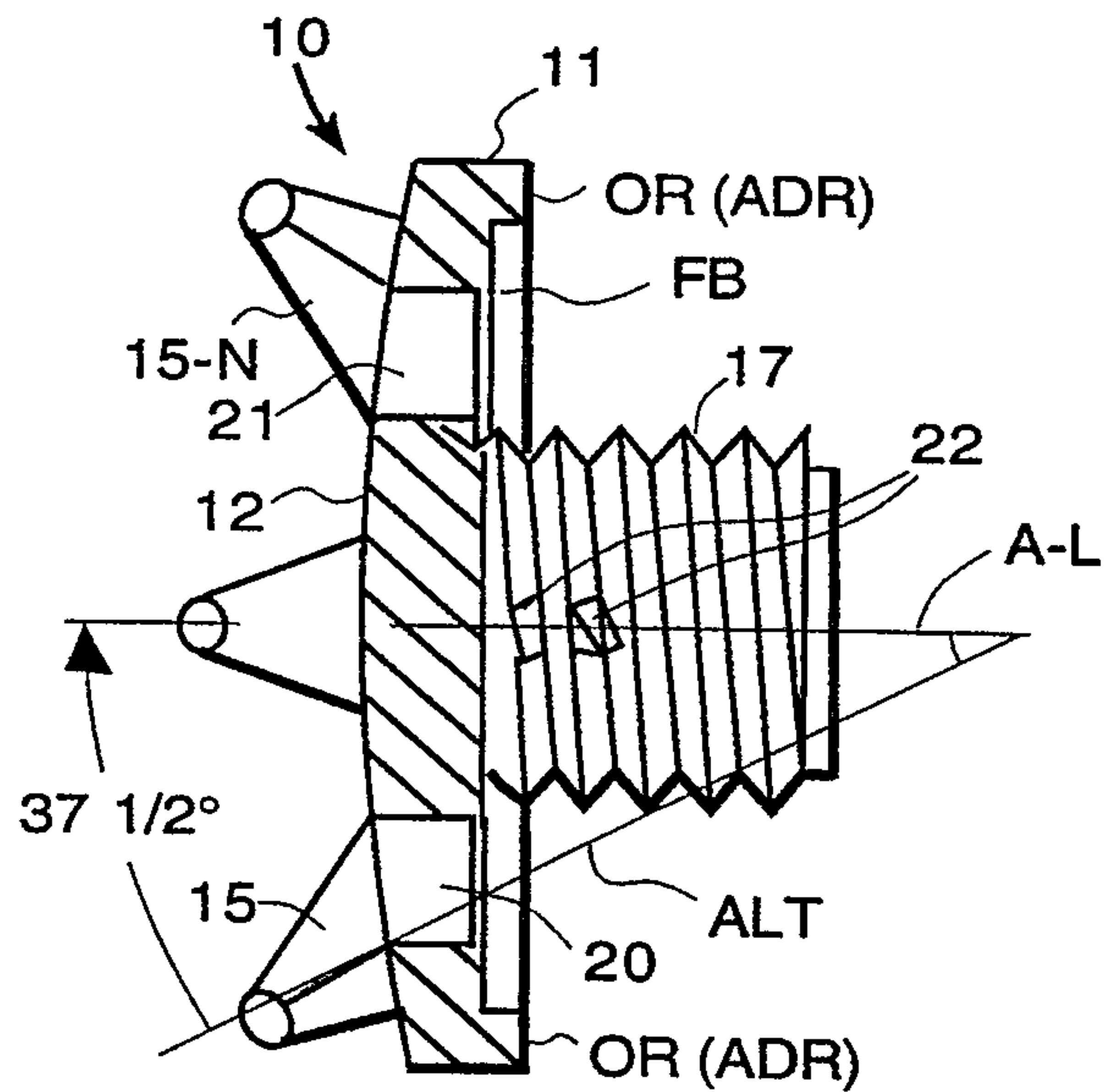
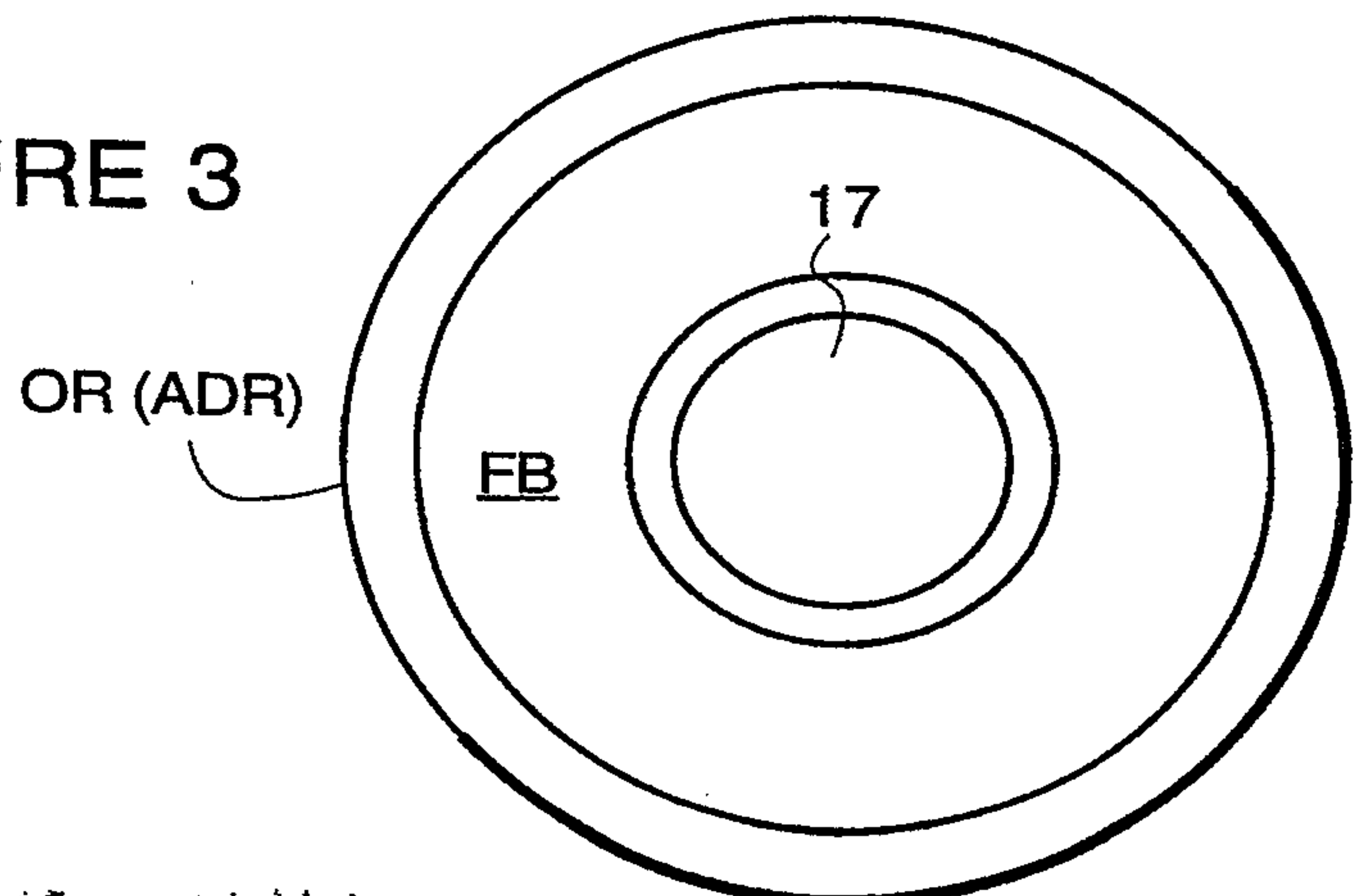


FIGURE 3



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FIGURE 4

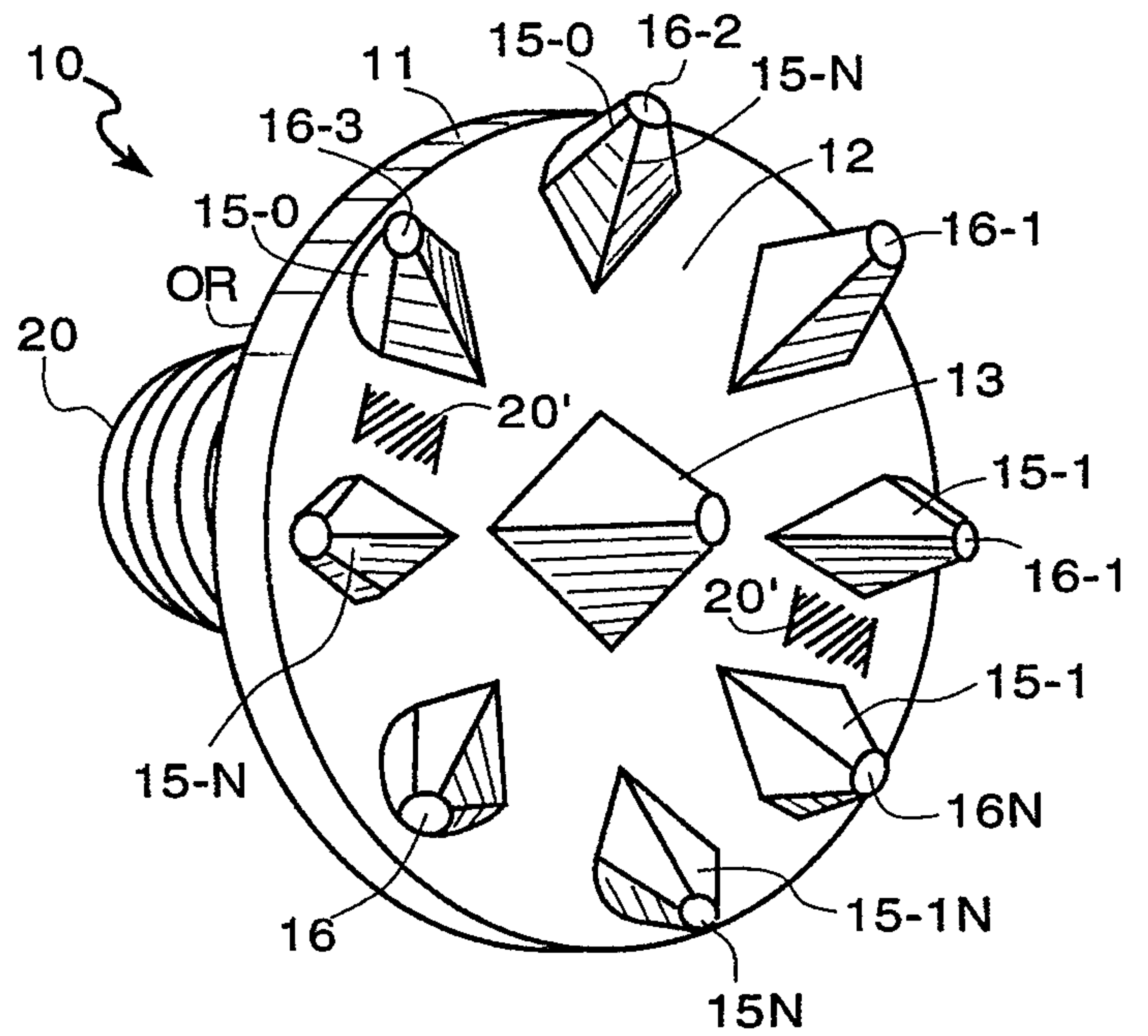
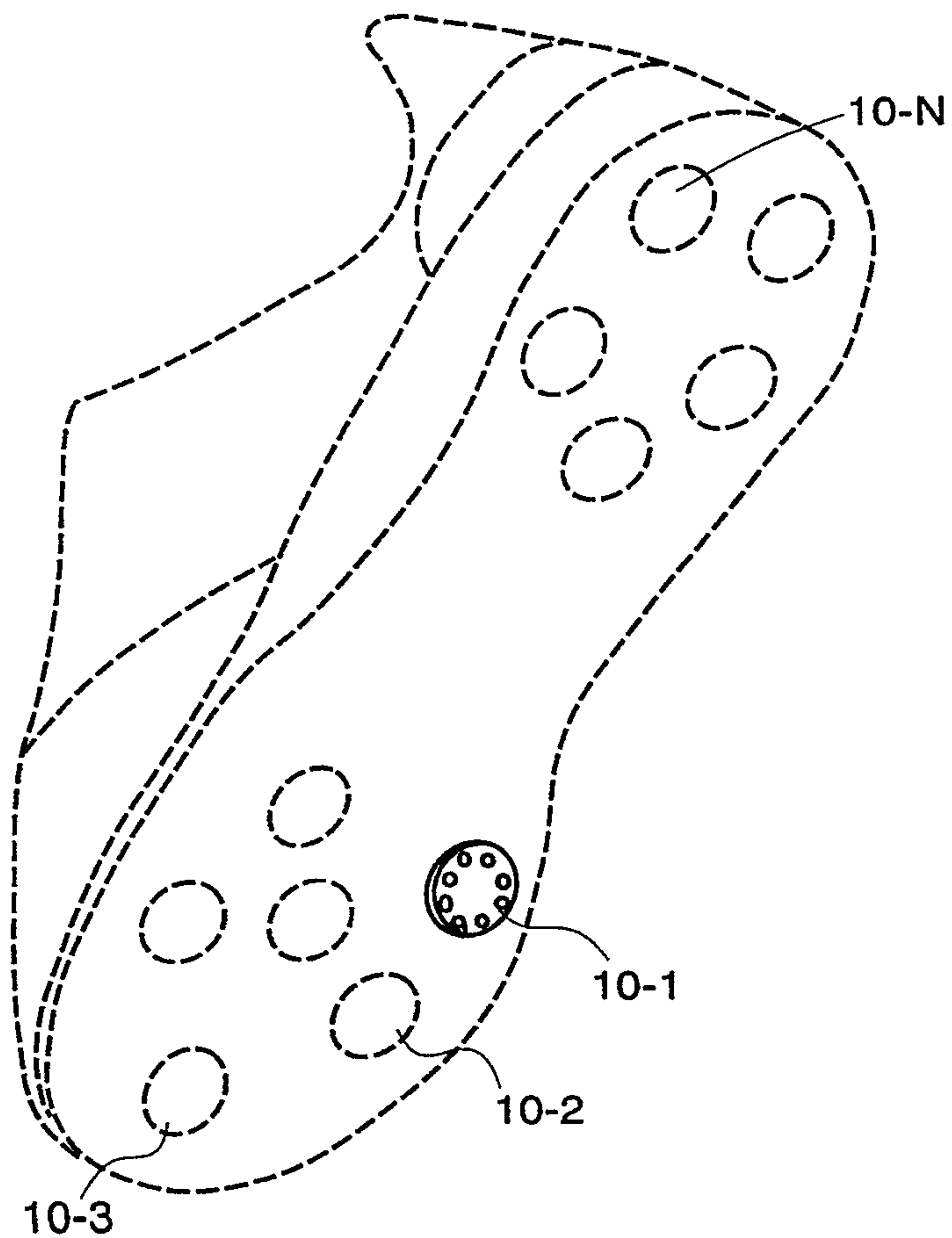


FIGURE 5



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FIGURE 6

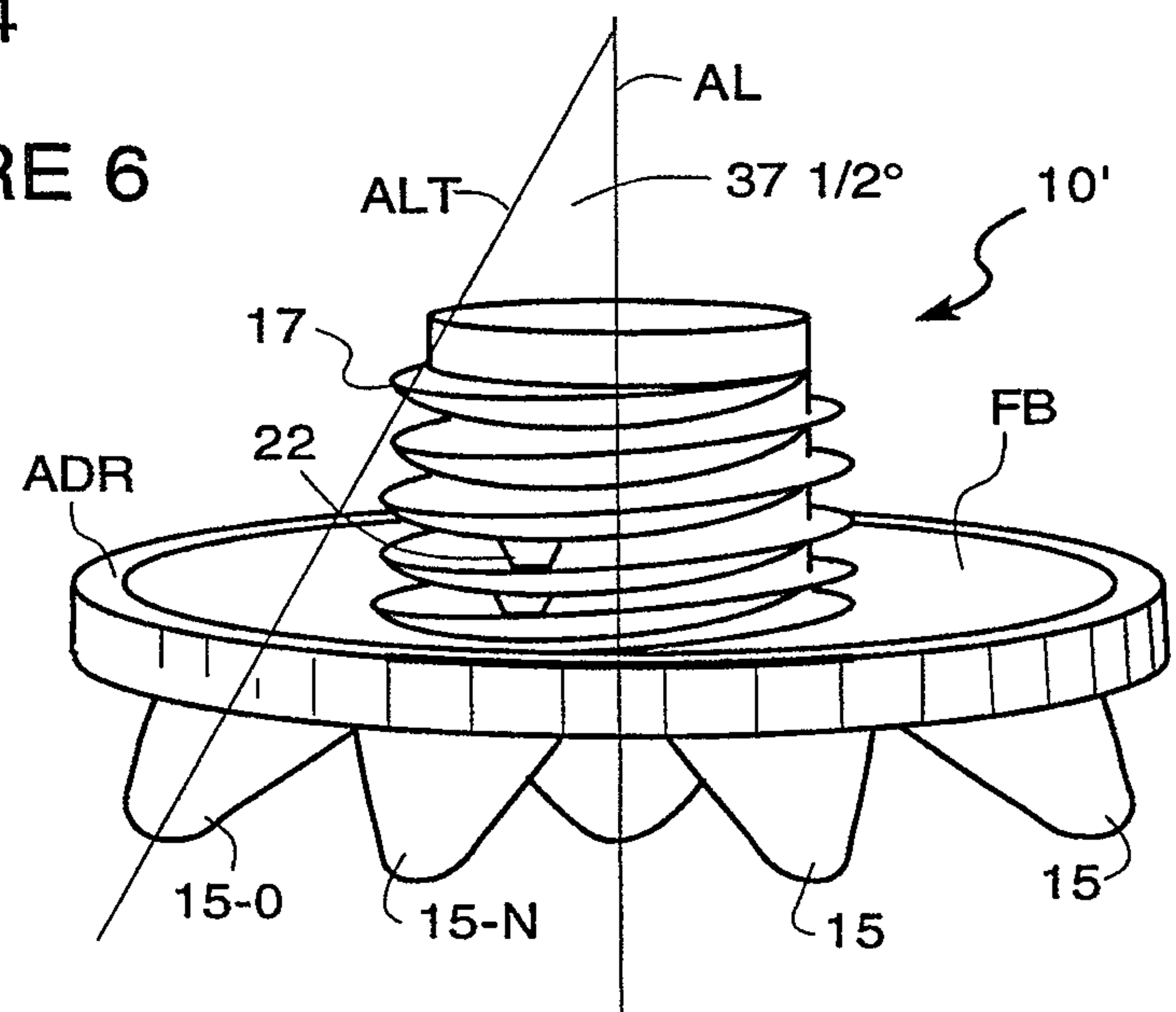


FIGURE 7A

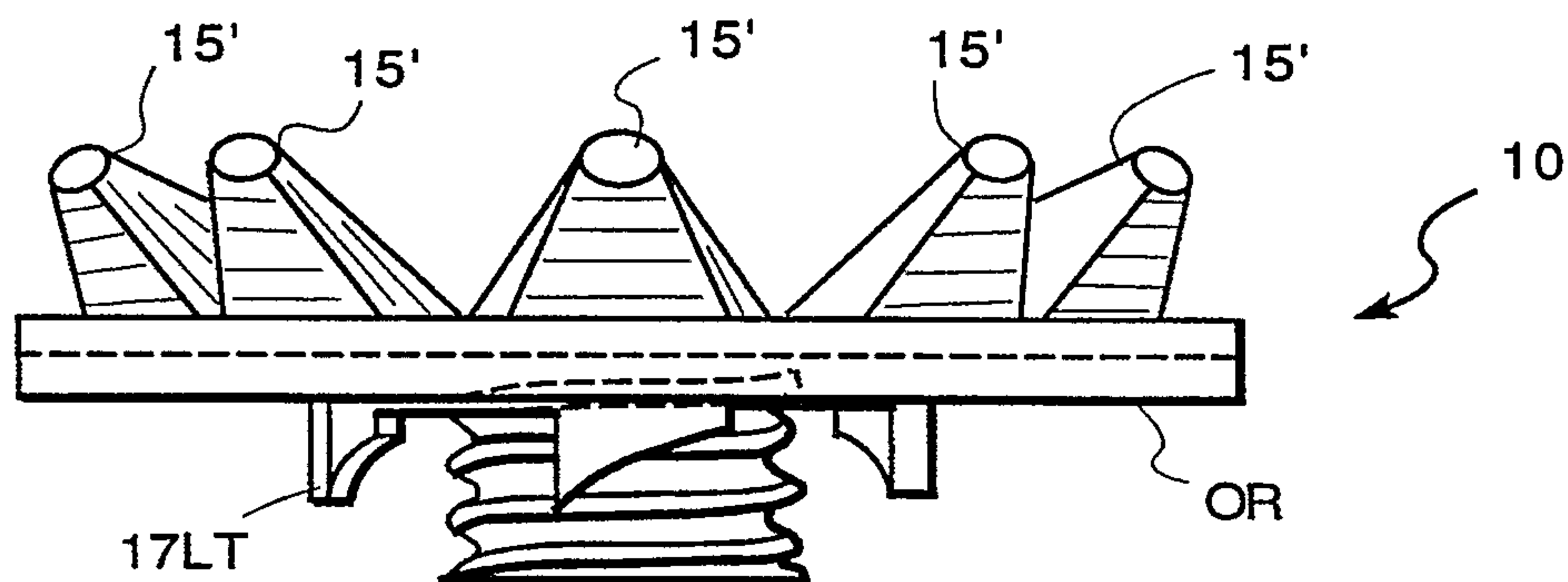
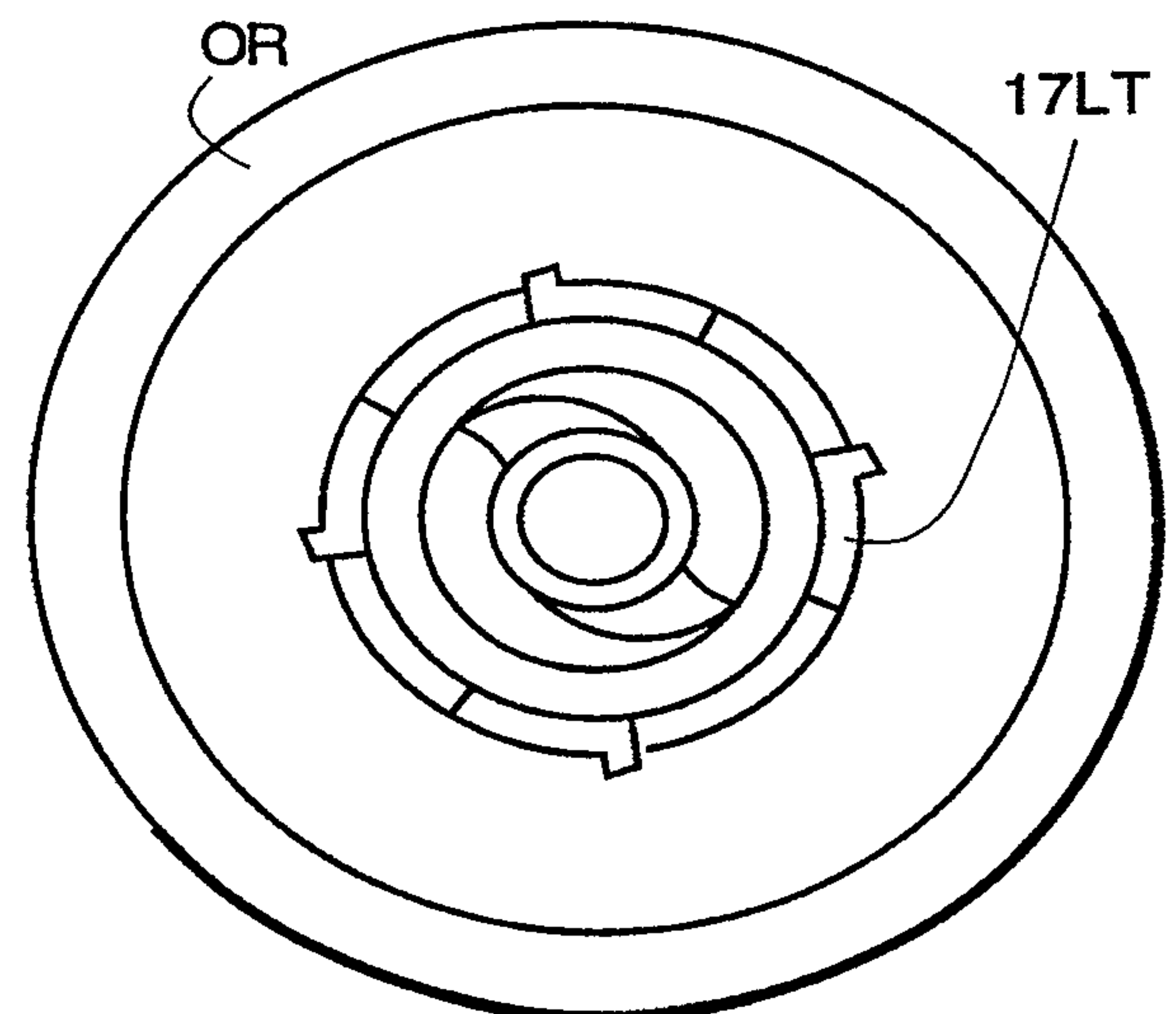


FIGURE 7B



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FIGURE 8A

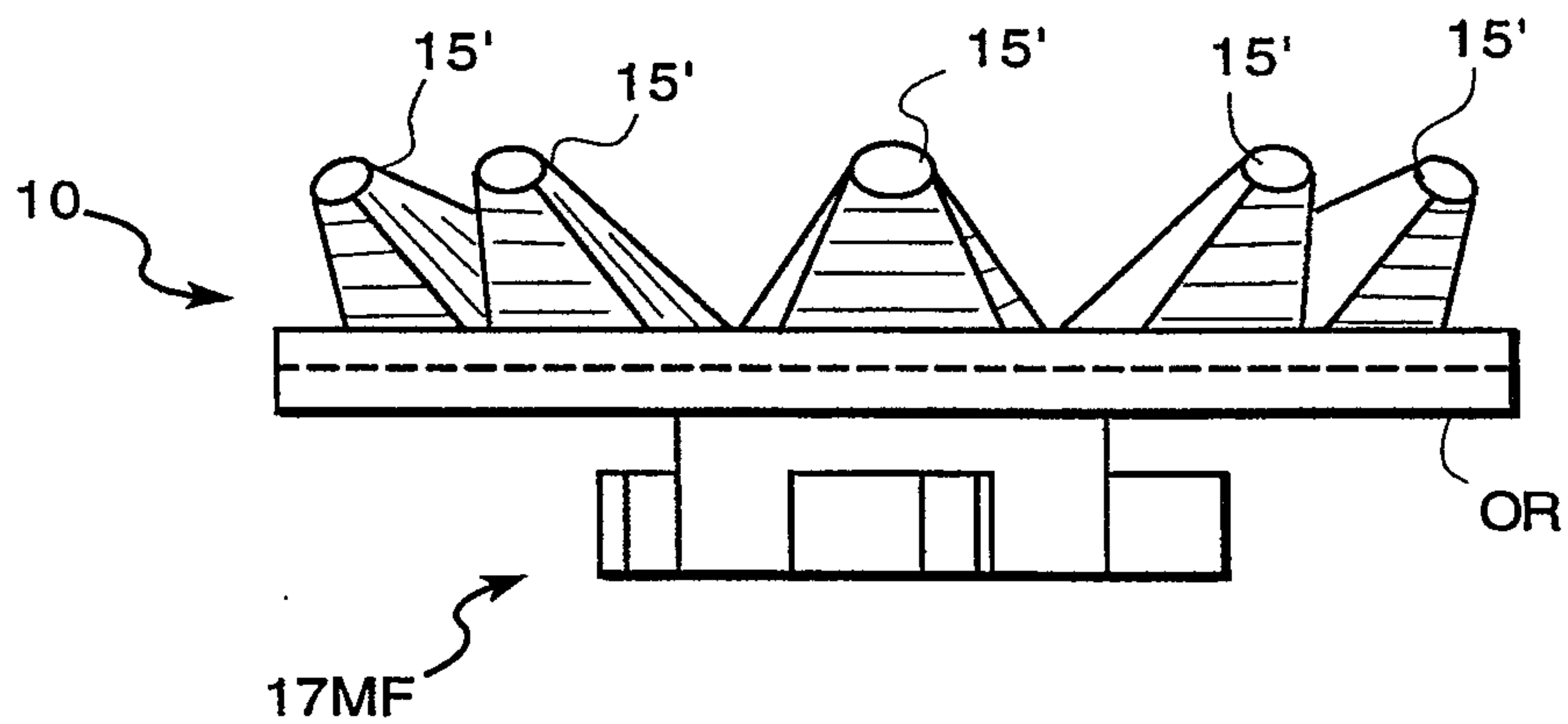


FIGURE 8B

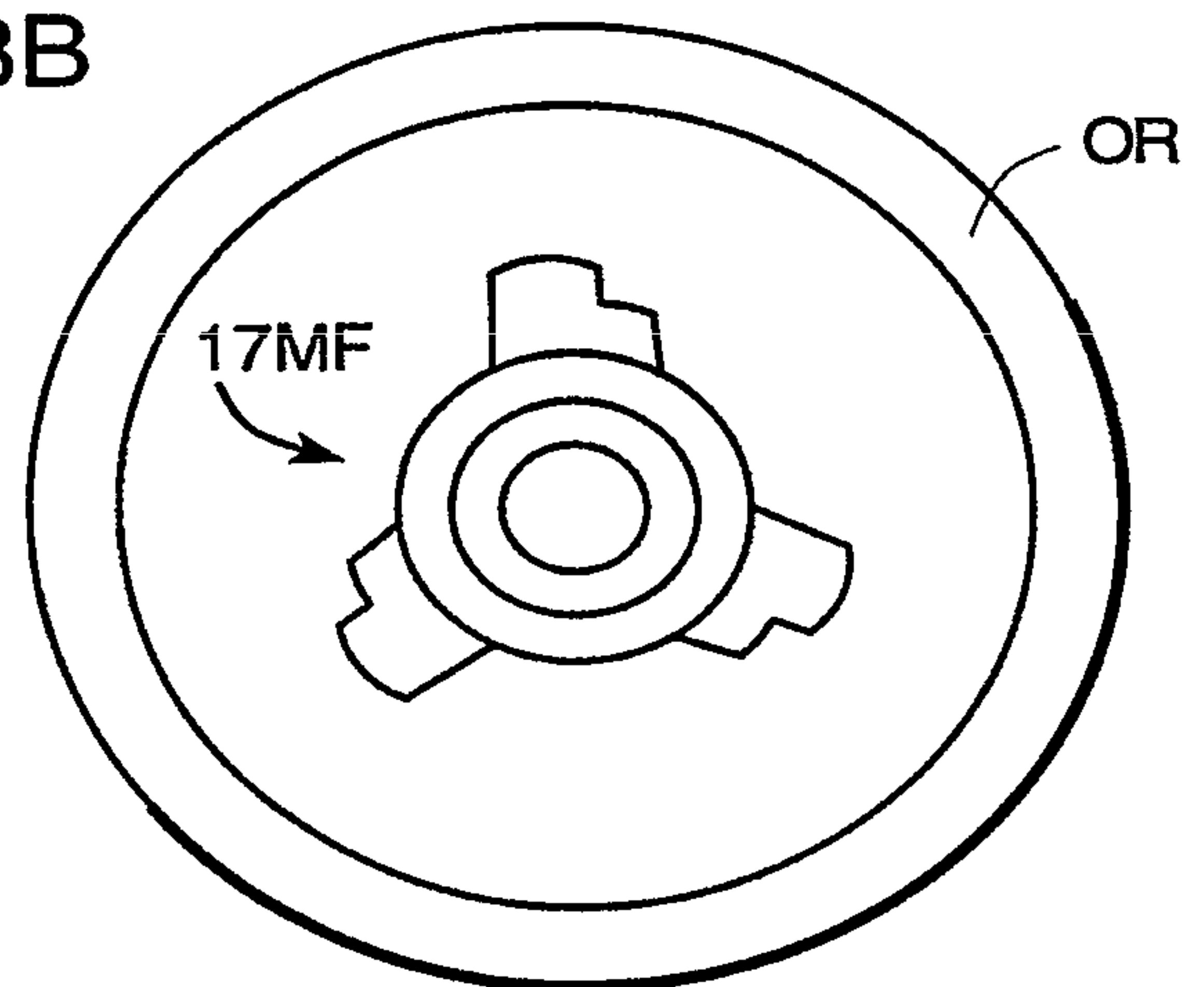


FIGURE 9

