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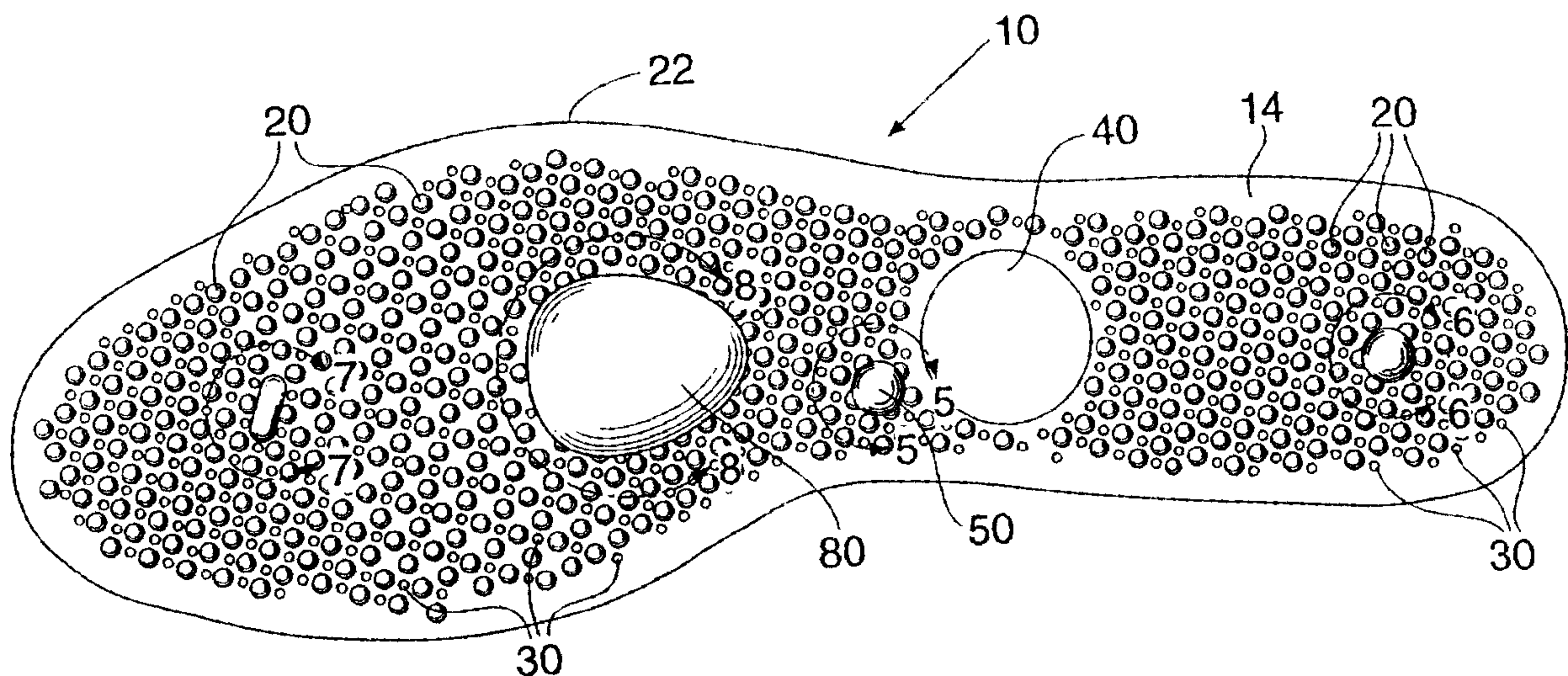
(72) Inventeur/Inventor:
BOESCHINGER, FRITZ (DECEASED), CA

(73) Propriétaire/Owner:
BOESCHINGER, THERESA, CA

(74) Agent: FINLAYSON & SINGLEHURST

(54) Titre : SEMELLE INTERIEURE THERAPEUTIQUE POUR SOULIERS ET AUTRES CHAUSSURES

(54) Title: THERAPY INSOLES FOR SHOES AND THE LIKE



(57) Abrégé/Abstract:

Disclosed is a shoe or the like insole of plastic material having a plurality of small protrusions extending from and forming an array of protrusions relative a surface of the insole. Within the array is a plurality, preferably for reflex protrusions of predetermined size, shape and location which provide areas of pressure massage and manipulation to the sole of a foot in order to secure benefits according to the science of reflexology. The protrusions are vertically unyielding and the insole is preferably of a relatively hard but flexible material such as polyethylene. The insoles are reversible in that the user may reverse the insoles between shoes thereby selecting the length of time the user's feet are subjected to the stimulation and the like otherwise provided.

Abstract of the Disclosure

Disclosed is a shoe or the like insole of plastic material having a plurality of small protrusions extending from and forming an array of protrusions relative a surface of the insole. Within the array is a plurality, preferably for reflex protrusions of predetermined size, shape and location which provide areas of pressure massage and manipulation to the sole of a foot in order to secure benefits according to the science of reflexology. The protrusions are vertically unyielding and the insole is preferably of a relatively hard but flexible material such as polyethylene. The insoles are reversible in that the user may reverse the insoles between shoes thereby selecting the length of time the user's feet are subjected to the stimulation and the like otherwise provided.

THERAPY INSOLES FOR SHOES AND THE LIKEField of the Invention

This invention relates to insoles for shoes and the like and more particularly to insoles having a certain construction and configuration which provide benefits to the user through the science of Reflexology.

Background of the Invention

Reflexology, also known as "zone therapy" is a 4,000 year old science which divides or charts the foot into different areas or zones each representing a part or organ of the body. The hands of the therapist or practitioner are worked on the different zones or areas to improve, relax or normalize through the reflexes, conditions of the body such as blood circulation, tension and organ function.

Pressure by the hands on the different zones or areas of the feet has heretofore been required to accomplish the benefits of Reflexology.

For further information on reflexology, books such as that by Doreen E. Bayly, Thorsons Publishers, Inc., Rochester, Vermont, U.S.A. entitled Reflexology Today - The Stimulation of the Body's Healing Forces Through Foot Massage, 1984, are available.

According to the science, massage given on the reflexes of the feet increases blood circulation, relaxes tension in the nervous system and releases the strains under which a body may be suffering thereby restoring the normal energy flow in the body.

There is a need for some means which will allow a person to gain some of the benefits according to the science of reflexology without the necessity of having someone else massage,

knead or rub the feet.

Accordingly my invention seeks to provide such means
and more particularly seeks to provide a simple, economic, yet
effective, means of massaging, kneading or rubbing areas or zones
5 of the foot through the use of a specifically constructed
insoles for shoes and the like.

Summary of the Invention

The invention provides insoles which have a set or group of small unyielding protrusions of generally uniform size and height distributed over a substantial portion of a surface of the insole, the protrusions being interspersed with small holes. Further, there are at least one and preferably a group of protrusions on the same side as the small unyielding protrusions which protrusions are of various shapes, sizes and configurations and located in preselected areas of the insole so as to achieve, when in use, benefits according to the science of reflexology through providing unyielding pressure points and areas of massage to selected portions of the soles of the feet.

The invention in one aspect provides a reversible solid, non-yielding one-piece molded plastic insole for a shoe or the like, comprising a thin base of flexible non-yielding plastic material having a peripheral shape of an insole and having first and second sides with a plurality of small apertures extending through the base from the first side to the second side, the apertures being in an array over substantially the whole of the base. The first side is flat and the second side has a plurality of small, non-yielding protrusions integral with the base and extending generally perpendicular thereto, the small protrusions being substantially identical, dome-shaped, cylindrical protrusions arranged substantially evenly over substantially the whole of the second side of the base, the number and spacial arrangement of the small protrusions being such that air channels are provided between the protrusions when the protrusions are in contact with the user's foot, the apertures being arranged and interspaced substantially evenly between adjacent small

protrusions. The base has a forward toe portion, a mid-arch portion and a rear, heel portion, the mid-arch portion being of a length substantially equal to the length of the heel and toe portions combined. The second side also has a plurality of at
5 least four non-yieldable reflex protrusions integral with the base and extending upwardly therefrom and within the array of small protrusions. One of the reflex protrusions is circular and located centrally in the heel portion on the longitudinal axis thereof; a second of the reflex protrusions is circular and
10 located in the arch portion and to the inside of the longitudinal axis thereof and substantially intermediate the ends of the axis; a third of the reflex protrusions is tear-drop shaped and located in the arch portion closely adjacent the toe portion intermediate the sides of the arch portion, the pointed end of the tear-drop
15 shaped protrusions directed toward the heel portion and a fourth of the reflex protrusions is an elongate bar and located centrally of the toe portion on the longitudinal axis thereof and at an angle thereto.

Various other aspects of the invention will become more
20 apparent from a review of the detailed description of a preferred embodiment herein.

Brief Description of the Drawings

FIGURE 1 is a plan view of a first surface or side of the insole.

5 FIGURE 2 is a plan view of the other or second surface or side of the insole and showing more particularly the location of various reflex protrusions.

FIGURE 3 is an edge view of the insole.

FIGURE 4a is an enlarged view of small protrusions and openings of the insole.

10 FIGURE 4b is a sectional view along lines 4b - 4b of FIGURE 4a.

FIGURE 5 is an enlarged view of part of the insole within circular arrow 5 - 5 of FIGURE 1.

15 FIGURES 5a and 5b are cross-sectional views taken along lines 5a - 5a and 5b - 5b of FIGURE 5.

FIGURE 6 is an enlarged view of part of the insole within circular arrow 6 - 6 of FIGURE 1.

FIGURES 6a and 6b are sectional views taken along lines 6a - 6a and 6b - 6b of FIGURE 6.

20 FIGURE 7 is an enlarged view of part of the insole taken within circular arrows 7 - 7 of FIGURE 1.

FIGURES 7a and 7b are sectional views taken along lines 7a - 7a and 7b - 7b of FIGURE 7.

25 FIGURE 8 is an enlarged view of part of the insole taken within circular arrows 8 - 8 of FIGURE 1.

FIGURES 8a and 8b are sectional views taken along lines 8a - 8a and 8b - 8b of FIGURE 8.

FIGURE 9 is a diagram of a left and right pair of insoles superimposed on and showing areas or zones of feet to

which, according to the science of reflexology, massage, manipulation or pressure may be applied in order to secure the benefits according to such treatment for desired areas of the body.

Description of the Preferred Embodiment

FIGURES 1 and 2 show an insole 10 in upper and lower plan views respectively and FIGURE 3 shows a side, elevational view. Insole 10 is made of plastic material, preferably polyethylene and it is longitudinally and laterally flexible so that it will flex when in use to follow the contours of the inside of the shoe with which the insole is used. It will be appreciated that insoles would be sold in pairs and the other insole is the mirror image of the one depicted in FIGURES 1 - 3. It is not believed necessary to illustrate or refer to such other insole herein. For the purposes of setting forth the description of a preferred embodiment, reference is made to an insole suitable for a shoe size 11 - 12, metric size 43.

Insole 10 has a base surface (obverse side) 12 which is flat whereas the other base surface (reverse side) 14 has a plurality of various protrusions extending generally perpendicularly therefrom. The insole base is about 1.5 mm thick. The protrusions are of two types. There is an array of a first group of small protrusions 20 which are generally of uniform shape and regularly located. Protrusions 20 are of generally domed configuration, enlarged top and sectional side views of a few being shown in FIGURES 4a/4b. Protrusions 20 extend upwardly from surface 14 and are located such as to define a margin or border 24 peripherally about surface 14. There is a second array or group of protrusions, reflex protrusions, preferably being a plurality of particularly shaped and configured protrusions, four of which are shown, namely, 50, 60, 70 and 80 which are selectively located on side 14 and interspersed among small protrusions 20. Further, interspersed

between adjacent protrusions 20 are small circular holes 30 extending through insole 10 from surface 12 to surface 14 for purposes of air circulation. Holes 30 are preferably about 1.5 mm in diameter. As shown in FIGURE 1, all of the small dome shaped protrusions 20 are substantially the same and are preferably about 3 mm in diameter and have a height preferably of about 2.4 mm above surface 14. The exact size and shape of protrusions 20 and holes 30 is not critical, provided that even though vertically unyielding, the number of protrusions 20 and the spacing, is such as to provide support for the foot without discomfort. The spacing of each protrusion 20 from the other is generally the same and preferably about 6.2 mm center to center. The gap of protrusions in area 40 of insole 10 is in the area of the arch of the foot and provides space for advertising or insole size markings or like information to the consumer and user.

Reflex protrusions 50, 60, 70 and 80 are all specifically located relative to the periphery 22 of insole 10 and each is shown of specific shape, configuration and height relative to surface 14, to first protrusions 20 and relative to each other.

FIGURES 5, 6, 7 and 8 each illustrate an enlarged planar view respectively of protrusions 50, 60, 70 and 80 taken from FIGURE 1. These protrusions are further detailed in the respective sectional "a" and "b" views in relation to each of these enlarged views.

More particularly, FIGURES 5, 5a and 5b illustrate in detail protrusion 50 which is generally circular in shape having a diameter preferably of about 7.2 mm. The upper surface 52 of protrusion 50 is dome-shaped and extends preferably about 2.8 mm

above surface 14.

Figures 6, 6a and 6b illustrate in detail protrusion 60 which is also generally circular having a diameter preferably of about 7.8 mm. The upper surface 52 of protrusion 60 is dome-shaped and extends preferably about 2.8 mm above surface 14.

Figures 7, 7a and 7b illustrate in detail protrusion 70 which has generally an elongate configuration having curved ends 72. Protrusion 70 has a rounded upper edge 74 and upper surface 76 peaks slightly higher than the surrounding upper top surfaces of cylindrical protrusions 20. Protrusion 70 preferably has a height preferably of about 2.8 mm above surface 14 and is preferably of about 12 mm long and 3.8 mm wide.

Figures 8, 8a and 8b illustrate, in detail, protrusion 80 which is generally the tear-drop shape having a length preferably of about 39.9 mm long and a width at its widest area preferably of about 32.1 mm. The height of protrusion 80 is preferably of about 6.2 mm above the height of surface 14 and the top 82 is generally upwardly convex, peaking at point 84.

It will be appreciated that the measurements noted above will vary depending on the size of the insole, the measurements given being those of a metric size 43 (about 11 - 12 shoe).

Figure 9 shows a right and a left insole with an indication of the parts or organs of the body to be treated or affected by the protrusions 50, 60, 70 and 80 according to the science of reflexology.

In Figure 2, line A generally bisects the rearward portion of the insole 10 whereas line B generally bisects the forward end of the insole. Line B represents the mid points (y)

of the forward end of the insole along lines perpendicular to line A e.g. line C (wherein $x y$ equals $y z$).

The angle between lines A and B is about 10° .

Protrusion 50 is to the arch side of line A, slightly
 5 less than $\frac{1}{2}$ the distance between the line B and the inner edge of
 border 14. Protrusion 60 lies generally on line A and protrusions
 70 and 80 are centrally located on line B, with the elongate
 protrusion 70 at an angle of about 20° to line C. Protrusion 80
 is tear drop in shape and has its major axis substantially
 10 parallel with line A.

From the edge of the forward (toe) portion of the
 insole (exemplary metric size 43) distances along line B - B of
 the center of protrusions 70 and 80 are about 4.8 cm and 11.4 cm
 respectively.

15 From the heel edge portion of the insole, distances
 along line A - A of the center of protrusions 60 and 50 are about
 3.5 cm and 12.8 cm respectively, the latter being off the line
 A - A by about 1.0 cm. Looking at Figure 2 and dividing the
 insole by lines t - t and h - h into a forward or toe portion T,
 20 a mid or arch portion M and a rear or heel portion H, reflex
 protrusion 60 generally centrally located in the heel portion H,
 and reflex protrusion 70 is generally centrally located in the
 toe portion T. Reflex protrusion 80 is centrally located in the
 arch portion M adjacent the toe portion and reflex 50 is
 25 centrally located in the arch portion M but to the inside of the
 longitudinal center (A - A) thereof.

Although the specific shapes of the major protrusions
 50, 60, 70 and 80 are shown in the drawing, it will be apparent
 that some variation in size and shape is possible within the

spirit of the invention giving that various sizes of insoles are demanded by the public.

5 The user of the insoles places them in the shoes or the like with the protrusions 20 facing upwardly. Insertion of the feet into the shoes will then cause the areas of the feet in contact with the small protrusions 20 to be stimulated and gently massaged when the user stands or walks. Further, the larger reflex protrusions 50, 60, 70 and 80 gently provide additional points of pressure and massage to certain or selected areas of the feet which will tend to improve, relax or normalize conditions of the body in areas of the body affected, according to the science of reflexology. The areas depicted in Figure 9 include the lungs, liver, heart, kidneys and the pelvic area (hips and lower back).

15 If a person is on his/her feet for extended periods of time, the insoles may be removed after about 3 - 4 hours and if desired, reversed in the shoes so that the protrusion side or surface 14 is down and flat side or surface 12 is up. The insoles then act similar to an ordinary insole. The holes 30 provide for air circulation between the shoe insole and the foot.

20 It will also be noted that the projection of the reflex protrusions 50, 60 and 70 above the protrusions 20 is not as significant as that of reflex protrusion 80. The height of the reflex protrusion is only one aspect that enhances pressure and or massage to the particular area. Another aspect is the lateral configuration and extent of the reflex protrusions relative to the surrounding small protrusions 20 which enhance or tend to cause variations in the area of pressure and contact in massaging areas of the foot. The reflex protrusions should not be of a

height relative to the surrounding small protrusions that provides discomfort to the user, particularly in any area such as a heel where there is underlying bone structure.

5 It will be appreciated that variations in size and shape of the protrusions will be appropriate depending on the size of the insoles. Further, it will be apparent that other reflex protrusions may be included in addition to or in place of the exemplary reflex protrusions described and illustrated herein.

10 Although I have set forth a preferred embodiment of the invention, it will be appreciated that variations and modifications of the invention are possible and within the spirit of the inventive concept.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A reversible solid, non-yielding one-piece molded plastic insole for a shoe or the like, comprising:

5 a thin base of flexible non-yielding plastic material having a peripheral shape of an insole and having first and second sides;

a plurality of small apertures extending through the base from the first side to the second side, the apertures being in an array over substantially the whole of the base;

10 said first side being flat;

said second side having a plurality of small, non-yielding protrusions integral with the base and extending generally perpendicular thereto, said small protrusions being substantially identical, dome-shaped, cylindrical protrusions arranged substantially evenly over substantially the whole of the
15 second side of the base, the number and spacial arrangement of the small protrusions being such that air channels are provided between the protrusions when the protrusions are in contact with the user's foot, the apertures being arranged and interspaced
20 substantially evenly between adjacent small protrusions;

said base having a forward toe portion, a mid-arch portion and a rear, heel portion, the mid-arch portion being of a length substantially equal to the length of the heel and toe portions combined;

25 said second side also having a plurality of at least four non-yieldable reflex protrusions integral with the base and extending upwardly therefrom and within the array of small protrusions;

(a) one of said reflex protrusions being circular and
30 located centrally in the heel portion on the longitudinal axis
thereof;

(b) a second of said reflex protrusions being circular
and located in the arch portion and to the inside of the
longitudinal axis thereof and substantially intermediate the ends
35 of said axis;

(c) a third of said reflex protrusions being tear-drop
shaped and located in the arch portion closely adjacent said toe
portion intermediate the sides of said arch portion, the pointed
end of the tear-drop shaped protrusion directed toward said heel
40 portion and

(d) a fourth of said reflex protrusions being an
elongate bar and located centrally of said toe portion on the
longitudinal axis thereof and at an angle thereto.

2. The insole of claim 1 wherein said first (a) and second
(b) reflex protrusions have a dome-shaped configuration extending
upwardly from said base second side, said fourth protrusion (d)
has a semi-cylindrical shaped configuration extending upwardly
5 from said base second side, said first, second and fourth
protrusions extending slightly above the height of said small
protrusions and said third tear-drop shaped protrusion has a
dome-shaped configuration extending upwardly of said base second
side and having a height slightly greater than the height of said
10 first, second and fourth protrusions;

the height of all said protrusions being such that the
insole can be reversed and worn with the flat first side of the
insole in contact with the other foot of the user, whereby the
comfort, feel and the fit of the shoes will be substantially

(claim 2 cont'd)

- 15 constant and effective air circulation is provided when the insole is used in either position.

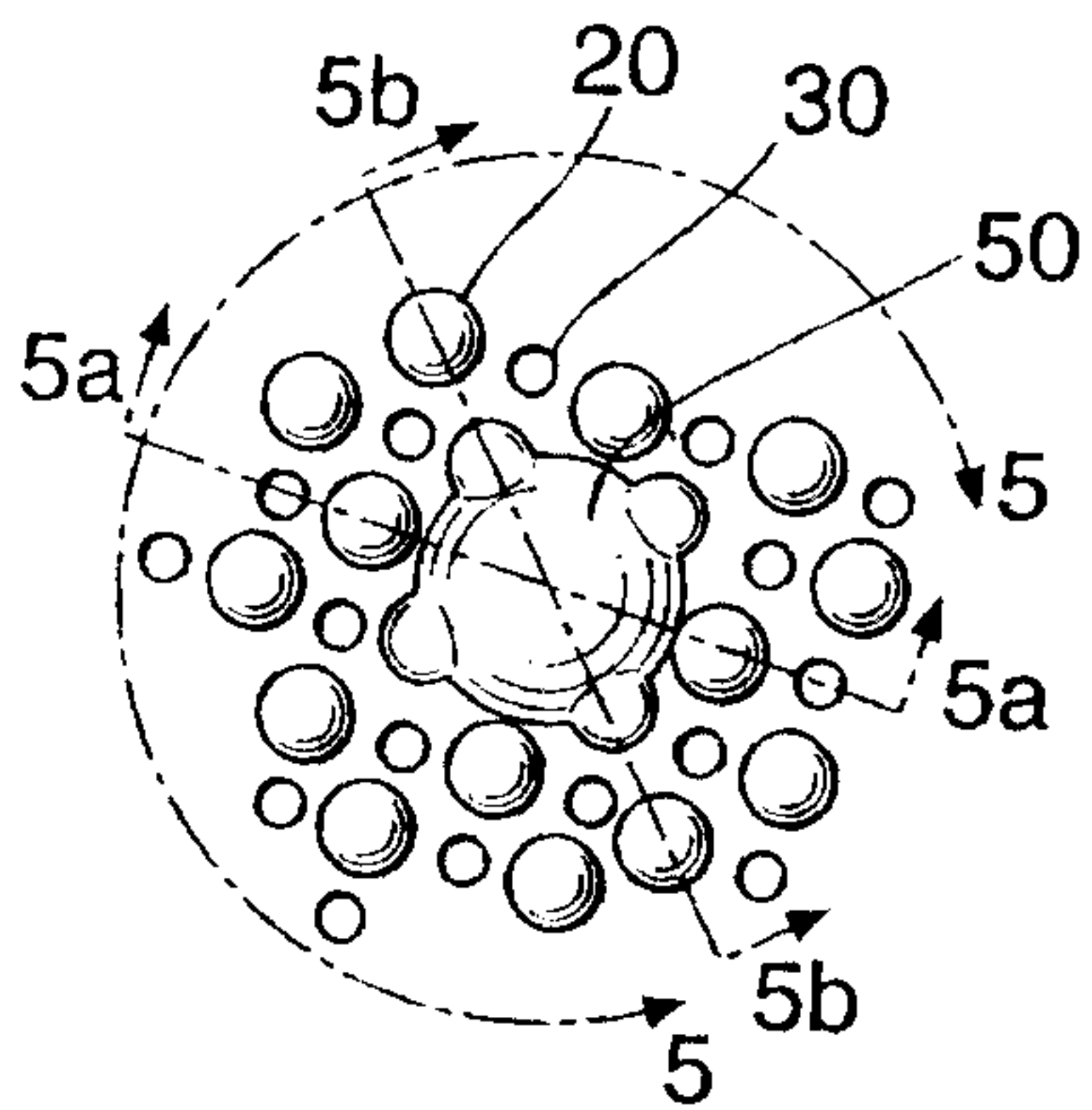


FIG. 5

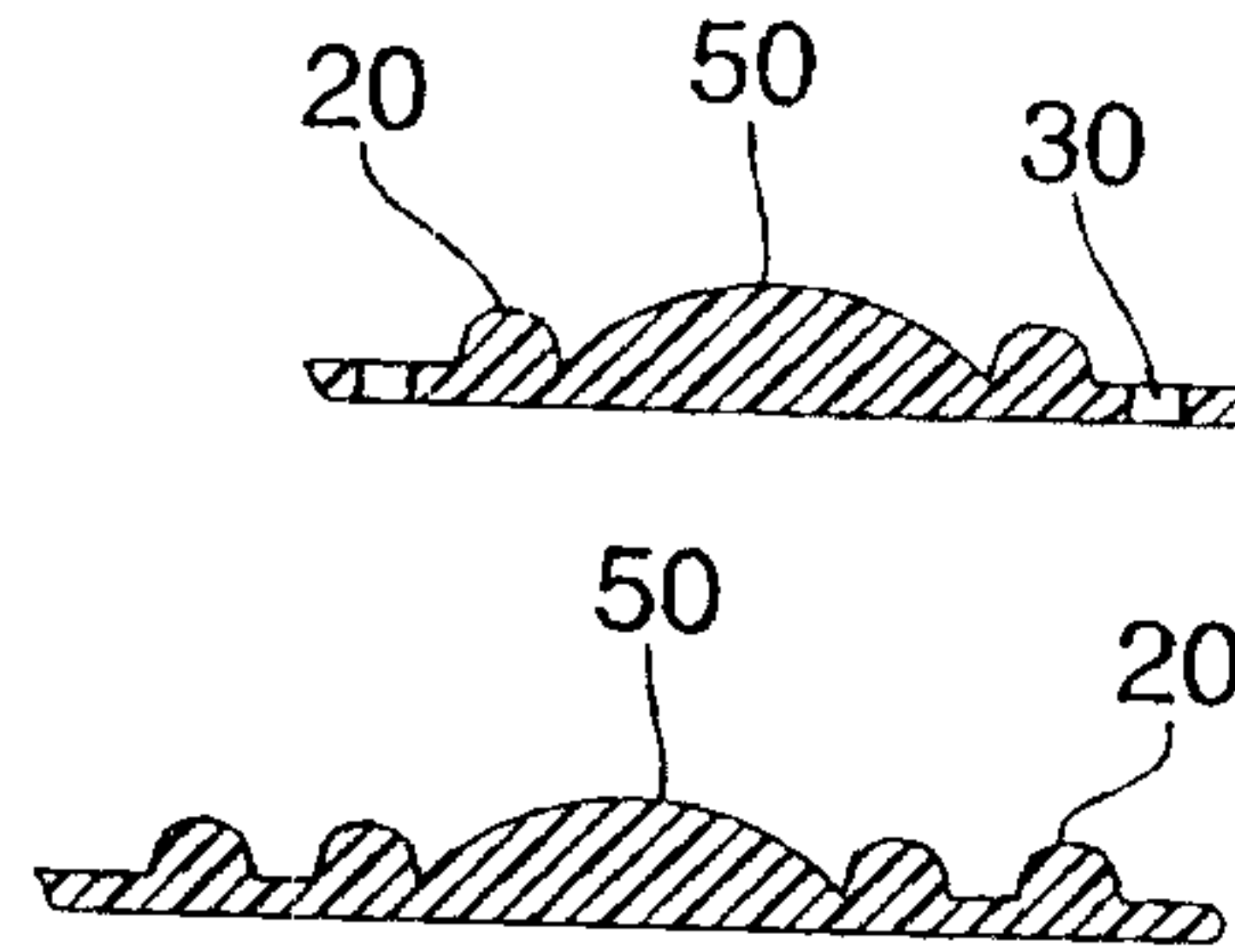


FIG. 5a

FIG. 5b

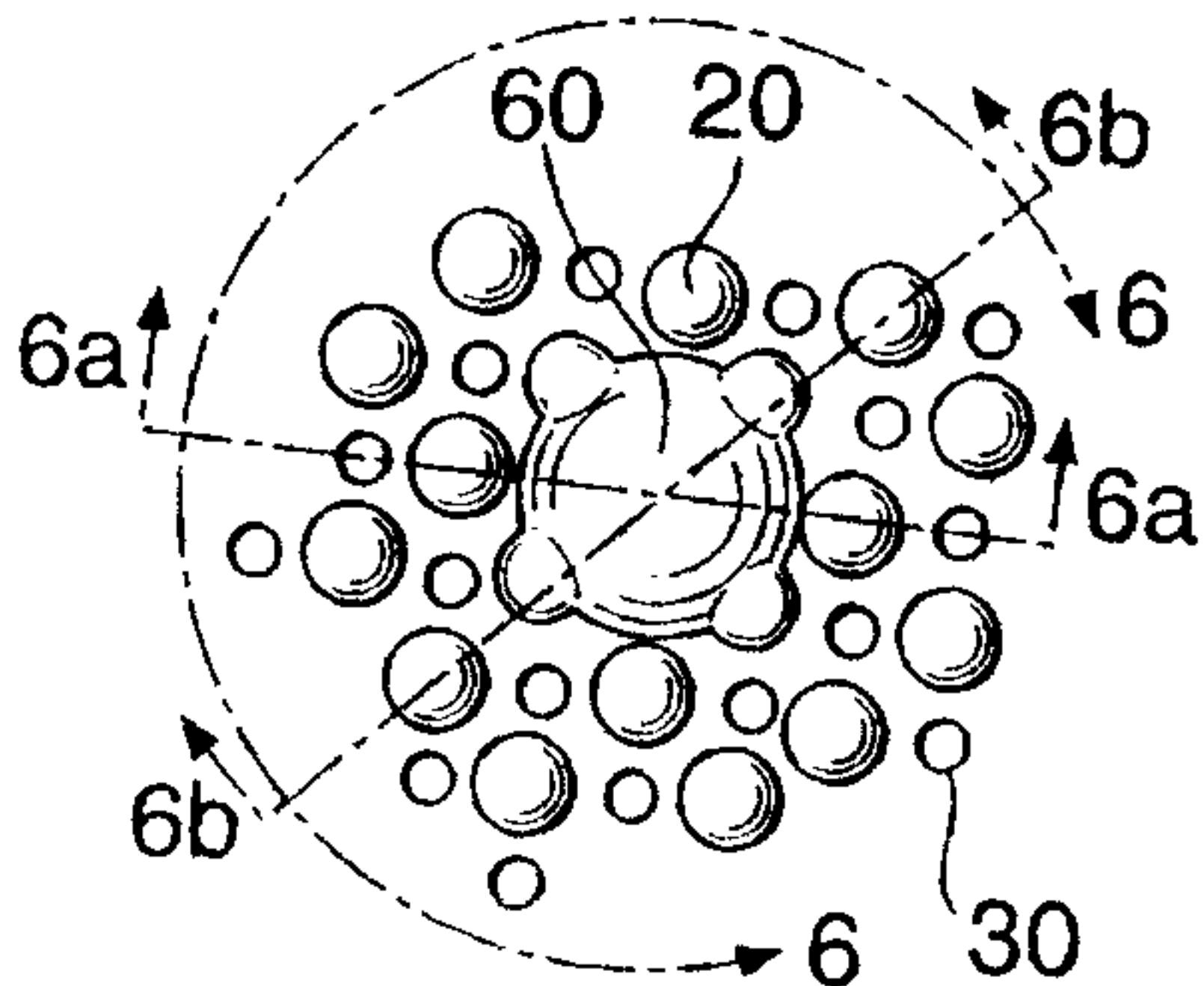


FIG. 6

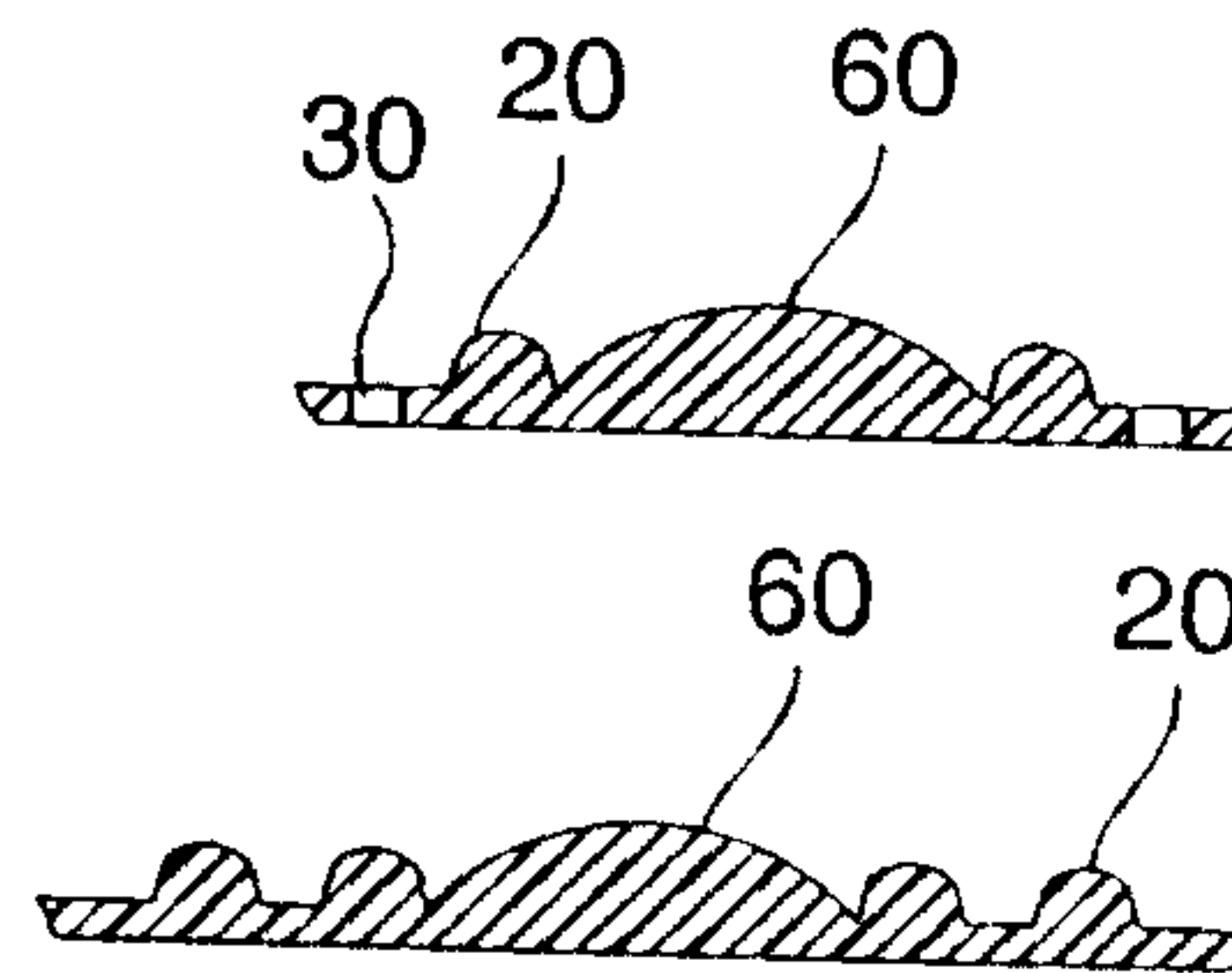


FIG. 6a

FIG. 6b

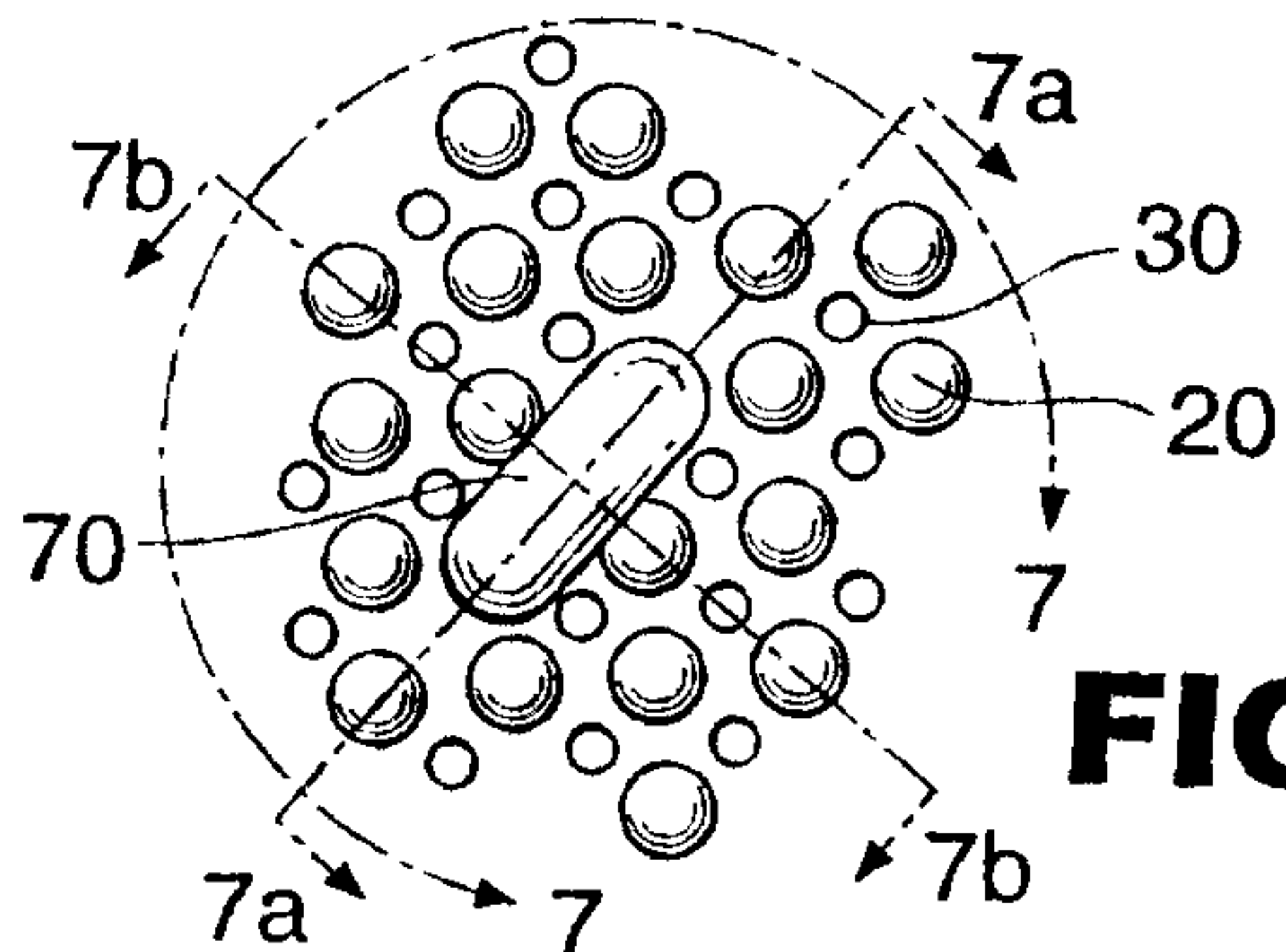


FIG. 7

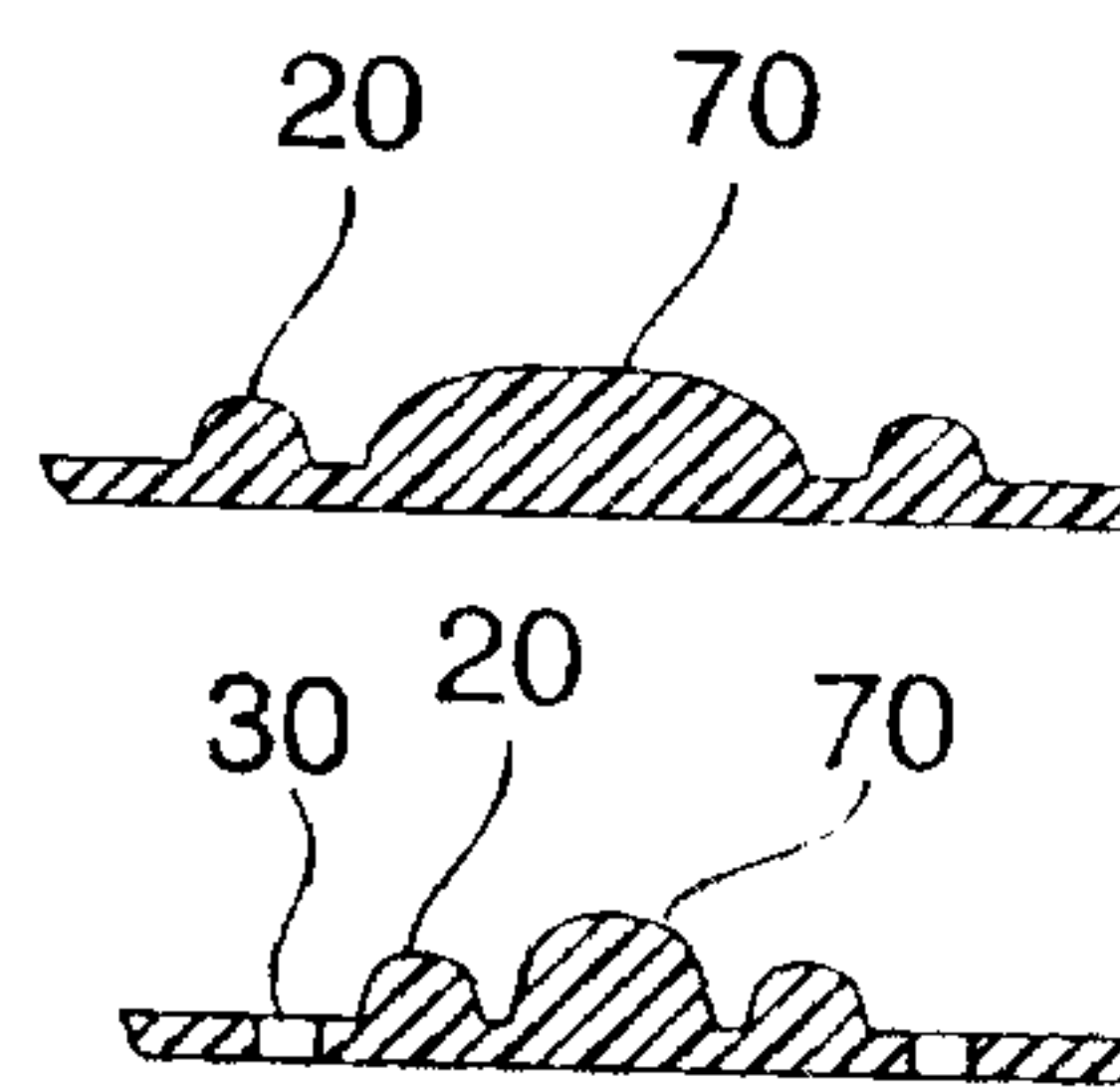


FIG. 7a

FIG. 7b

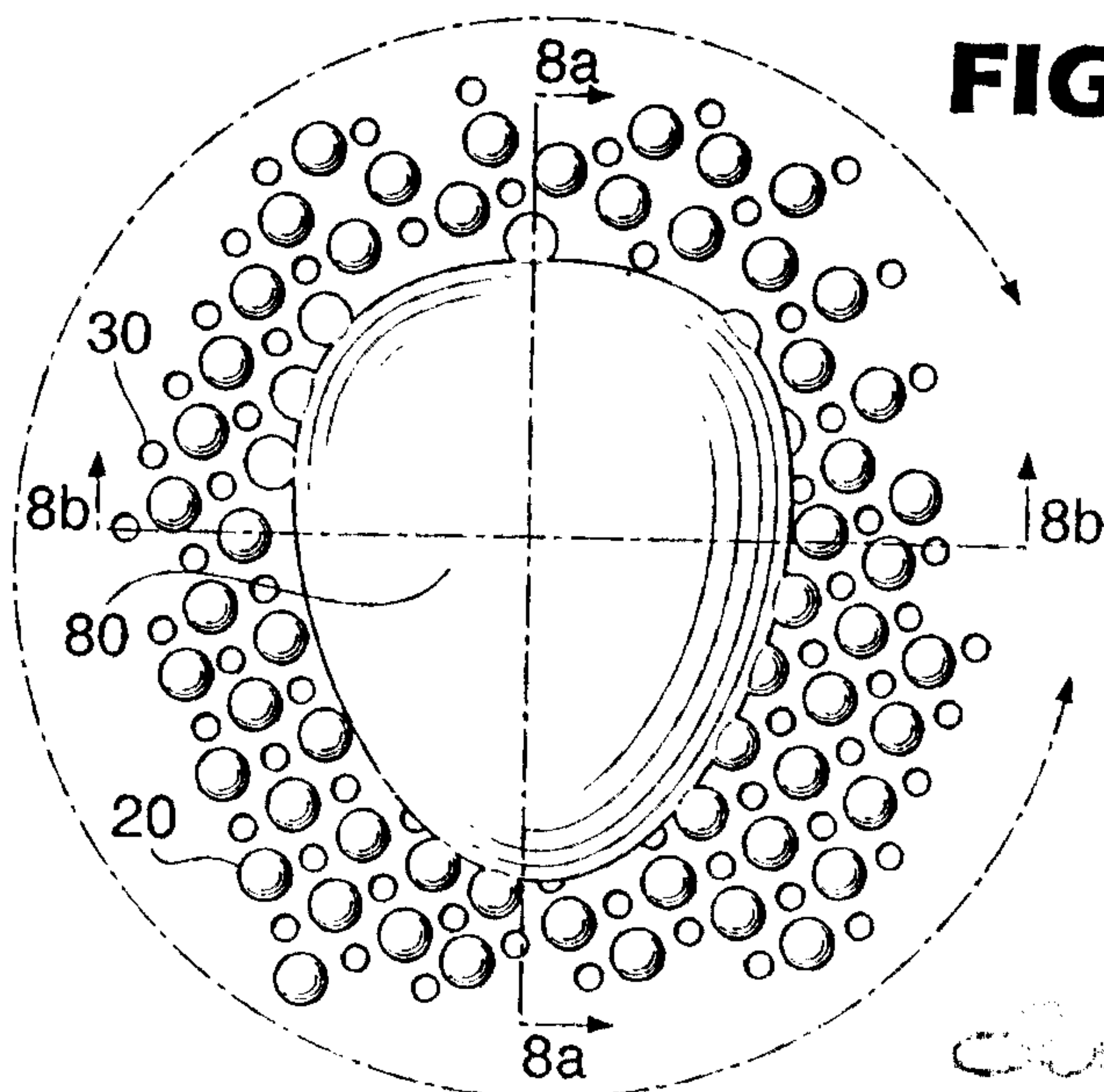


FIG. 8

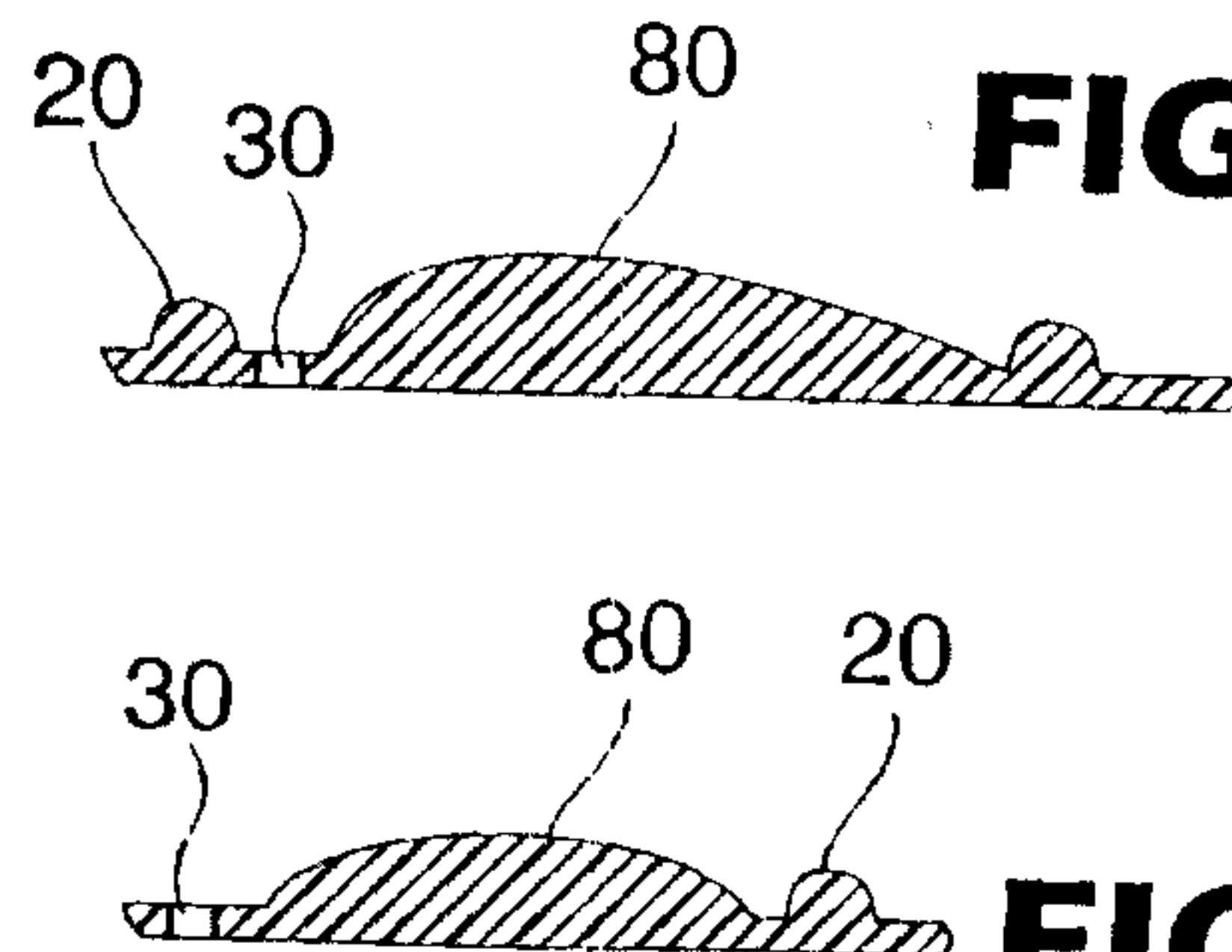


FIG. 8a

FIG. 8b

Shirley J. Smith, Esq.

PATENT AGENTS

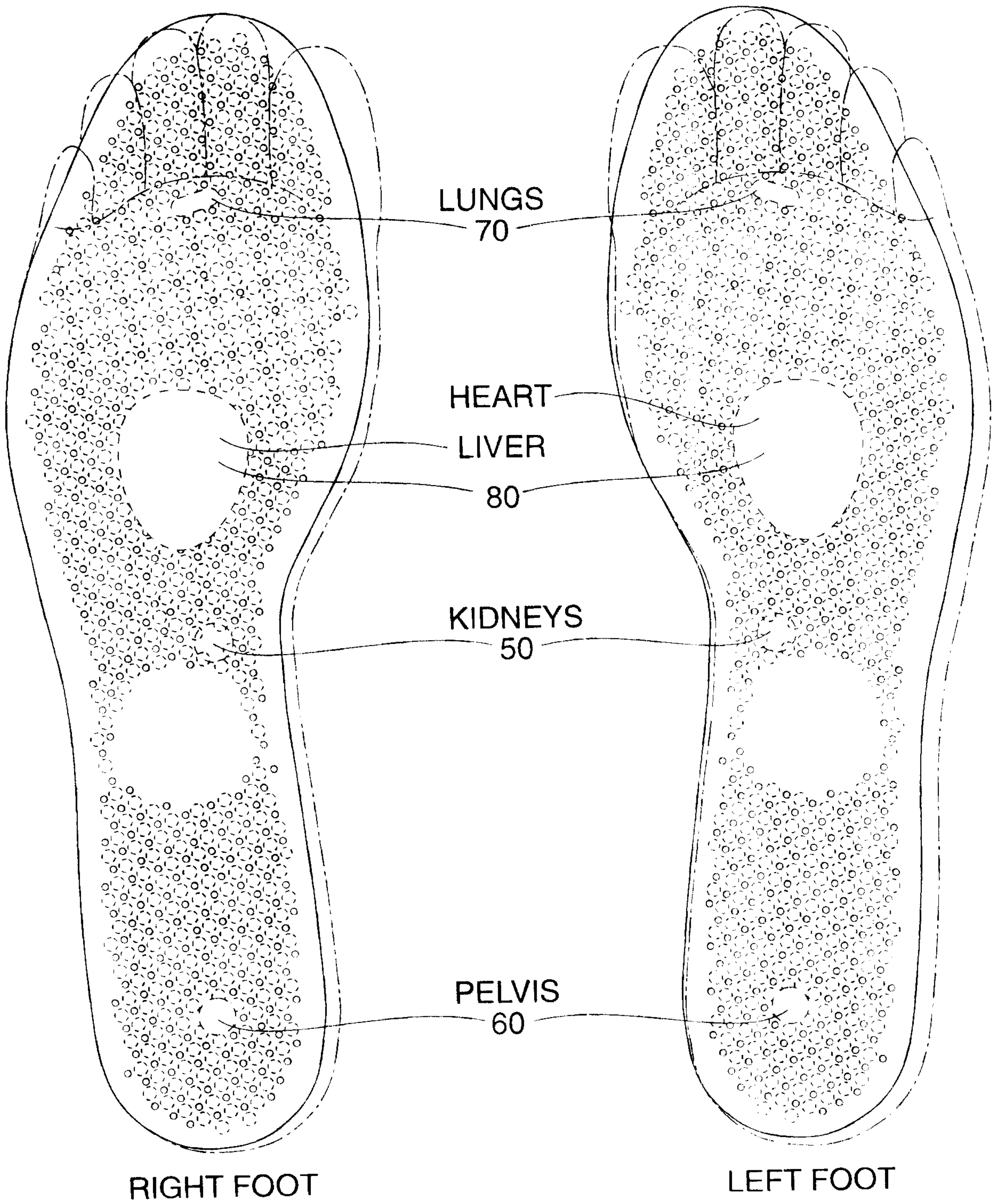


FIG. 9

Diagram of a human body plan showing internal organs.

