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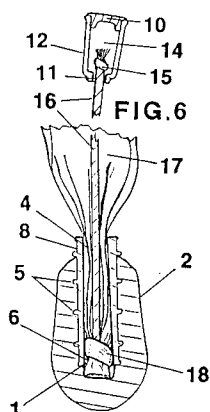
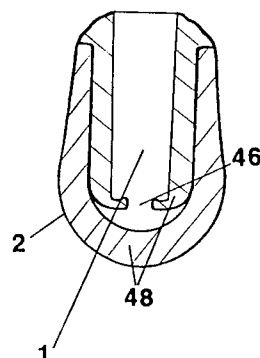
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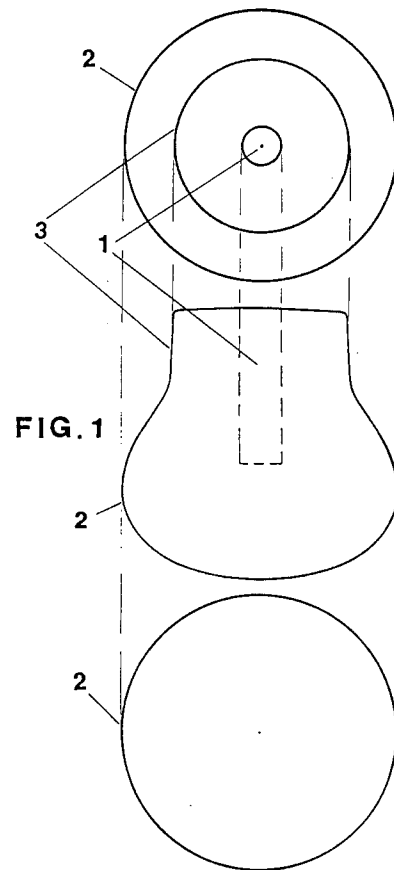
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E-30880 Aguilas(ES)(54) **SHUTTLECOCK OF VARIOUS USES.**

(57) Flying object comprised of a normally elastic body (2), with one body (2) or various bodies (48) integrated in one body (2) and which may bounce or not, with an aerodynamic design (figures (1, 6 and 53), of variable sizes), and which may adopt multiple shapes, with a cavity (1), (variable) enabling to couple the flying object to directional elements, such as (17, 23, 24) etc., (varying according to all the various possible uses, etc.; and with a hollow (9) support part (8), etc., which may support directional ele-

ments such as (17, 24), etc., and, according to the shape of its cavity (9) and the coupling position in the body (2), it is possible to vary the elements coupled thereto and the uses. With a tuft (17) and a string (16) (or only the string (16)) it may be launched as a sling, flying like a kite, with elements such as (7, 24), etc., may be hit, etc., with the hands, with rackets, etc. or it may go with the tuft (17) only, etc., and may be used as a game, a toy or a sport. The flying object may show advertising messages.

**FIG. 53****EP 0 604 658 A1**



INVENTION

The invention is a flying object comprised of an elastic body, as a rule, where it is possible to fit several directional elements together, and according to them, its use may vary.

HISTORY OF THE INVENTION

According to the actual technique it is known a sort of ball made of feathers, which imitates the original made of a small bag of leather, full of flour, etc and with feathers fastened with strings etc which has been in use for ages in southamerica.

There is a smaller object, used to play Badminton, made of feathers fastened to a piece of cork, which is a variant from an Indian game called poona; the present invention presents a body that is normally elastic in order to admit these possibilities among many others.

DESCRIPTION OF THE INVENTION

This invention is a flying object comprised of a normally elastic body, with the possibility to fit several different pieces or directional elements together to help and influence its flight and direction, during the flight these pieces are always at the rear, there is no danger of impact injuries (as it is elastic) its use can vary depending on these elements, such as a tuft of ribbons, threads etc. a string to launch like a sling or fly like a kite, with feathers, wings, etc. it may be punched and hand-launched with racquets, etc. it may be handlaunched and picked up with nothing but the feathers tuft and it may be used by one or several persons. It may have various possible uses either as a game, a toy or a sport.

It is a novelty as for its design characteristics, its shape and the various possible uses, with the advantage that some of the pieces may be used for making different products.

The elastic body may have multiple possibilities of shapes and sizes in order to reach functional and commercial purposes and advertising messages, all sorts of publicity, not only with the mark but also with the possibility to adopt the shape and similarity of the product itself or the advertised object, thanks to the adaptability of its material.

The Shuttlecock Launcher is made of an elastic body (with one body or various bodies integrated in one body) preferably with an aerodynamic design that may vary in height and width according to its use, density of materials, distribution of weights, etc. it may also change into different shapes, such as a sphere, etc. It is elastic and resistant like rubber, foam rubber or foam. Its cavity may have

variable sizes and goes through it totally or partially enabling to couple to directional elements (designed) with a support part, which may be a cylinder, (plastic or similar) encircled by projection/s (the shape of parallel rings) at suitable gaps. The support part is crossed over longitudinally (total or partially) by a cavity, preferably conic-trunk or cylinder shaped etc., its border fits into the support part. This support part couples and holds the elastic body as well as the various directional elements designed thanks to its projections or rings and to the pressure practiced by the elasticity and the strength of the material itself when enlarged by the piece, adjusting the sizes (of both the piece and the cavity). This support part is able to carry and hold several directional elements (which cooperate and influence its flight and direction), as the cavity may have multiple shapes and/ or diameters, it is possible to vary the elements coupled thereto and the uses, according to the shape of the cavity and to the position of the body.

So, whenever the hollow support part is introduced into the cavity of the elastic body, its shape becomes a conic-trunk, the largest opening faces the exterior, the conic shape decreasing towards the exterior shall act as a top in order to stop the flexible parts or elements from falling out, such as ribbons, threads, etc sticking to it with the help of a simple knot or a washer...a size bigger than the way-out hole, forming a tuft that acts like a tail. It can be launched as a sling, with the help of the correct ribbon, thread, etc in various ways: one end encircles and holds both the neck of the body and the support part introduced in it or the flying thread is joint to the tuft or ribbons into the hole, coming out either together from the same opening or separately from each of the opposite openings (the body is crossed by the cavity). It is possible to hold this thread by the opposite end and, with a rotation, launch it like a sling or fly it like a kite, with the tuft and the thread acting as a tail. At the end of this thread it is possible to fix and hold an hollow part, with or without a cover, to a central orifice (in order to launch it accurately); the opposite end, where the thread is introduced with a knot, bigger than this orifice and smaller than the hollow part, so that nothing prevents it from rotating, fastens and is able to rotate on itself. The tuft of ribbons or the launching thread, may be used on its own and may be launched or hold back with the hands.

When the bigger opening of the hollow support part (conic-trunk) introduced into the body faces the exterior, the cone decreasing towards the inside shall enable the insertion of: a) all sort of suitable directional elements such as wings, feathers, etc. which will fit and hold together according to a greater penetration into this cone; b) direc-

tional elements generally designed with projections (the last ring held by the smaller opening, or not). So, it may be launched or hit with the hands, racquets, etc.

In this position, the hollow part may be crossed from one end to the other enabling to use the external part of the smaller opening as a fastening top. As well as the tuft knot and the launching thread, that might also be used as described, with the smallest opening towards the exterior. The tuft and/or the thread knot/s, clip/s etc. can also be fixed into the hollow of the support part, (that could be crossed from one end to the other or partially and have different shapes such as cylinder or conic-trunk etc. and have a fastening piece): by its shape, with different diameters, etc. by the external side of the opening fixed inside the body ; by the pressure of the support part material when expanded by this fitting knot. And with a possible part, with orifice/s, or not, etc. wedge like and / or fitted etc. in the cavity and / or in the support part, and which may be fastened by : top/s; by an orifice/s ; pressing it between the wall/s of the cavity and / or the support part, etc. Also the pressure of the material of the support part may hold directional elements with or without projection/s, etc.

Also, the tuft and/or the thread knot/s may be placed directly into the body hollow part and firmly held: by its shape, with different diameters, etc.; by one or various of the possible bodies comprised in the body with an orifice etc.; or by the pressure of the body material in/ against this fastening knot and a support wedge part (with possible projections, hole, etc) or without it.

Likewise, several pieces or elements have been designed to couple to each other, and, once they are coupled, they may couple into the body like directional elements: either in the support part or directly into the body. The external part of these piece is comprised of a central axle, with one or several side wings; of fastening projections, male and female couplers (or without them) on the base; on their internal part (or their hypothetical extension) an angle obtained dividing 360 degrees by the number of coupled elements. according to the resulting degrees even fewer elements may be coupled (or elements of any number of degrees) proportionally reaching 360 degrees by inserting wedges between them, like 1,2,3,4,5, etc. coupled elements. For instance, 4 coupled elements (similar or not) with an angle of 90 degrees, or 3 with 90 degrees with wedges of 30 degrees inserted, or with an angle of 120 degrees, etc...

With some sort of ring/s or similar acting as brackets. These directional elements without their base and with no more than their external part and the fitting part or coupler, may couple in the

spaces left between some sort of intervening elements appearing on the surface of the body work as their base and fastening as they do not have one. These intervening elements may be coupled to themselves (as well as the male, female or brackets, projections ...) the same way the directional elements and fit together in the support piece that fits into the body; or directly into the body. For instance, 4 elements with a coupler of 90 degrees (similar or not) coupled into 4 intervening elements with an angle of 90 degrees or 3 intervening elements with 90 degrees and 3 wedges of 30 degrees inserted which become biped in the couple space or without the biped part and with another piece fastening the couplers or with or not an angle of 120 degrees and enabling the spaces to fasten the 3 elements with coupler with 90 degrees, or not with 120 degrees to appear from the body etc.

The external part of these directional elements may adopt different shapes with one or more integrated elements. These coupled directional elements or some of them may be cast by injecting one single piece. Their external part has the following possibilities : a) To place 1,2,3,4, etc. directional elements. b) to adopt different shapes. c) to join by wings or by their axles, etc. (sharing them or not); they may also be coupled into the support part, with the help of a fastening piece, to the elastic body or directly into it, with the help of this support part or not.

According to its use the body may be fastened to the end of an elastic ribbon, the other end is fixed, drawing back when it is launched.

The body may be comprised of one or several bodies or parts fitting into each other, becoming one single body with different shapes (or several shapes at once) such as concentric layers or spherical sectors with possible fissure/s, hole/s, male/s and female/s with the following possibilities : a) increase or decrease the volume by changing them. b) change their external shape by changing the external piece/s. c) one or several of these bodies (or parts) becomes a support part, fastening the tuft knot perhaps with an orifice/s etc. etc..

The following examples state and explain the execution, they do not restrict it, as shown on the drawings attached :

SHORT DESCRIPTION OF THE DRAWINGS

IMAGE 1 - Shows an inferior, superior and raised plant view of the body in one of the possible shapes of aerodynamic drawing, in one single piece and its cavity.

IMAGE 2 - Shows an example of the inferior, superior and raised part of the support part to couple to the body.

IMAGE 3 - Shows an inferior, superior and section part view of the special piece fastened to the extreme of the launching thread, as well as the cover to be coupled.

IMAGE 4 - Shows a complete view of the longitudinal section, Image 3, with the fitted cover.

IMAGE 5 - As a practical example, it shows a side raised view of images 1 and 2, coupled, with the tuft of feathers, the ribbon and the launching thread, appearing from the smaller opening and fastened by the neck of the elastic body and, on the opposite end, by image 4.

IMAGE 6 - Shows a section view of Image 5, only now the launching thread is joint to the tuft and the design of the body changes into a more aerodynamic shape.

IMAGE 7 - Shows a section view of Image 5 without the launching thread.

IMAGE 8 - Shows a section view of Images 2 and 9 coupled, with the thread and the tuft joint, coming out separately.

IMAGE 9 - Shows a view of the upper and lower sections and raised of the body, Image 8, in one single spherical part, completely crossed by its cavity, with different diameters.

IMAGE 10 - Shows a view of Images 1 and 2 coupled, with directional elements coupled on Image 2.

IMAGE 11 - Shows a section view of Image 2 coupled with the body, now spherical, where the smallest opening fastens the launching thread and the tuft with a knot.

IMAGE 12 - Shows a section view of Image 11, with the tuft of ribbons only.

IMAGE 13 - Shows a raised view of one of the designed parts with directional elements in the body.

IMAGE 14 - Shows a raised view of Image 13, males and females of the base and the axle with its wings.

IMAGE 15 - Shows another side raised view of Image 13, males, females of the base and the axle with its wings.

IMAGE 16 - Shows a raised view of Image 13 but now with reversed curvature of the central axle, with the two side wings (on its external part).

IMAGE 17 - Shows a cross section view of Images 13.14.15. 16 according to cutting line A-B with the angle of 90 degree, the male, their females and their ring parts.

IMAGE 18 - Shows a longitudinal section view of the piece, image 16, properly self coupled.

IMAGE 19 - Shows a longitudinal section view of the piece Image 13, properly coupled.

IMAGE 20 - Shows a cross section view of Image 18, 19 and 26 according to cutting line A-B, with 4 elements coupled with an angle of 90 degrees, males and females forming a circle with

ring.

IMAGE 21 - Similar to the previous image, now with 3 elements of 90 degrees and with 3 wedges of 30 degrees intervened between them.

IMAGE 22 - Similar to the two previous Images, now with 3 coupled elements but with an angle of 120 degrees.

IMAGE 23 - Shows a section view of Image 18, coupled to the piece of Image 2 with the body Image 1.

IMAGE 24 - Shows a longitudinal section view of Image 18 directly coupled to the body, Image 1.

IMAGE 25 - Shows a cross section view of cutting line C-D of Image 13, 14, 15. 16, 32, 33, 34, 35 as well as other views of shapes it might possibly adopt.

IMAGE 26 - Shows a longitudinal section view of Images 18, 19 now with its external wing like part.

IMAGE 27 - Shows a side view of an intervening element, coupled to work as the base of Images 32, 35.

IMAGE 28 - Shows a side view of the previous image, now with the possibility of a smaller length.

IMAGE 29 - Shows a cross section view according to cutting line E-L of Images 27, 28 with an angle of 90 degrees coupling males and females and its ring part.

IMAGE 30 - Shows a longitudinal section view of the part of Image 27, self coupled.

IMAGE 31 - Similar to the previous but Image 28.

IMAGE 32 - Shows a side view of another possibility of part Image 13, now without its base, but with a coupler.

IMAGE 33 - Shows a raised view of Image 32, with the coupler and the central axle with its wings.

IMAGE 34 - Shows a raised view with the opposite face of Image 33.

IMAGE 35 - Shows a side raised view of Image 32, but now with its central axle curvature and the one formed with its side wings reversed.

IMAGE 36 - Shows a longitudinal section view of the part on Image 35, coupled on Image 30.

IMAGE 37 - Shows a longitudinal section view of the part on Image 32, coupled on Image 30.

IMAGE 38 - Shows a longitudinal section view of the part on Image 35, coupled now on Image 31.

IMAGE 39 - Shows a cross section view of the base of Images 30, 31, 36, 37, 38 according to the cutting plan E-L, with 4 coupled elements forming a circle with ring and its internal faces with angles of 90 degrees with males and females.

IMAGE 40 - Similar to the previous but now with 3 elements of 90 degrees and with 3 wedges of 30 degrees between them.

IMAGE 41 - Similar to the previous but now with 3 coupled elements, but with angles of 120

degrees.

IMAGE 42 - Shows a cross section view according to cutting plan O-P of Images 36,37,38 as the example of Image 39 and the coupler of 90 degrees.

IMAGE 43 - Similar to the previous but according to the cutting plan M-N.

IMAGE 44 - Similar to the previous but now as the example of Image 40.

IMAGE 45 - Similar to the two previous but now as the example of Image 41.

IMAGE 46 - Shows a longitudinal section view of Image 36 coupled in the part shown on Image 2 and in the body on Image 1.

IMAGE 47 - Shows a longitudinal section view of Image 37 directly coupled in the body on Image 1.

IMAGE 48 - Shows a longitudinal section view of Image 38 coupled in the body on Image 1.

IMAGE 49 - Shows a longitudinal section view of these coupled directional elements (or some of them) injected into a whole single part by its external side.

IMAGE 50 - Shows a longitudinal section view of the support part, acting as a base on Image 49.

IMAGE 51 - Shows a longitudinal section view of Image 49 coupled in Image 50, in part shown on Image 2 and in body , Image 1.

IMAGE 52 - Shows a longitudinal section view of Images 49 and 50 coupled in the body, Image 1.

IMAGE 53 - As a last example, it shows a longitudinal section view of the body, Image 1, now in one of its possibilities, with its most aerodynamic design, and comprised of various parts, inserted and integrated and with an orifice for possible fastenings (the tuft , the knot, etc.)

DESCRIPTION OF PREFERABLE ACHIEVEMENTS

The body (2) normally elastic (which may bounce) may be formed by one (2) or several bodies or elements (48) inserted and integrated in one body (2), with an aerodynamic design (Images 1,6, and 53) which may vary in width and height depending on the various possible uses, it may be more or less aerodynamic as well as the materials density and weight distribution and the fact that it may adopt various shapes , spherical, (see Images 8, 9, 11 and 12). It may adopt multiple shapes and sizes thanks to the material adaptability, its neck sector (3) (Image 1) shall also vary in size, the same happens to its cavity (1) which may cross it partially or completely as shown on Images 1 and 9; its measures fit together to couple tightly (as fastening means in several directional elements, normally designed), coupled between them or not and which cooperate and influence the flight and

direction, they are always placed at the rear as parts (23), (24), (33), (35), (34), (17), (16),etc. depending on the various possible uses and with the support part (8), cylinder shaped etc., comprised of (5) a projection (spiral, ring, etc.) or fastening projections (these examples are ring shape) it is completely or partially crossed by the cavity (9) (its axle may fit into the part or not) its preferable shape is conic-trunk (could be cylinder, with different diameters, etc. and have a support part) it may fasten and be composed of several directional elements, such as (7), (16), (17), (20), (23), (24), (33), (34) some of its possibilities are : change of its cavity shape (9) , the coupling position in the body (2), the possibility to change the elements to be coupled and the uses.

So, whenever the cavity (9) is conic-trunk and the smaller opening (4) faces the exterior (Images 5, 6, 7 and 8) this cone shape (9) decreasing towards the exterior, (or the external face of the opening (6)) may be used as a top, preventing the flexible elements from loosening, ribbon, threads, etc. (17) with the help of a knot, a clip, etc. (18) a size bigger than the way-out opening (4),forming a tuft (17) which acts as a tail (Image 7) with the help of one or several ribbons or threads (16) , made of any sort of material or type, it may be launched as a sling, in different ways or possibilities such as : with the help of a rivet or clip (13) , one end tightly fasten by the neck (3) to the body (2) to the part introduced into it (see Image 5); in another possibility this launching thread (16) is joint to the tuft (17) inside the cavity (9) by the knot (18) they may come out together , by the smallest opening(4) (Image 16) or separately, the thread (16) through the smallest (4); the tuft (17) through the biggest opening (6) (Image 8) . So, the body (2) (spheric) is completely crossed by the cavity (1) (Image 9) to let them out. It is possible to fasten this launching thread (16) by the opposite end and, with rotating movements, make the body turn as a sling, it will fly, with a tail formed by the tuft of ribbons (17) and the thread (16).

The end/s of this thread (16) may be formed by a part/s (12), to hold (one), with or without a cover (10), hollow (14) with an orifice (11) situated at one end (in order to launch accurately) enabling the insertion of the thread (16) which self rotates as it is fastened by a simple knot (15) with a diameter bigger than the orifice (11) and smaller than the hollow (14) completely free to rotate. The same applies to any other suitable part , with an orifice (11) smaller than the knot (15) completely free to rotate (14) with a ring or similar with an orifice in the edge (11). And place (12) in (9) and / or (6) or (4), etc.

Also, as shown on Image 7, the tuft can be on its own (17) can be launched, picked up and hit

with the hands or use the thread only (16).

Additional weight may be added to the cavity (9) of the support part (8) or underneath it, in the hollow part (1).

Whenever the bigger opening (6) of this hollow (9) conic-trunk part (8) faces the exterior, and once it is coupled in the body (2) (Images 10, 11, 12, 23, 46, 51) as shown on Image 10, decreasing towards the interior, it shall enable and easy the insertion of (20) directional elements of any sort, shape or suitable material, such as feathers, wings etc. that will couple and fasten more and more depending on a bigger penetration through this cone (9). If necessary, it may be fastened with some drops of a suitable sticking product. It may be hit, launched etc. with the hands, racquets, etc. In this situation, the external face of the smaller opening (4) may be used as a top, now inside the body (2) (Images 11 and 12), fastening the knot (18) joining the tuft (17) with the launching thread (16) (with the part (12) of its opposite end) enabling them to come out together through the bigger opening (6) (Image 11); or separately, now with the body (2) completely crossed by the cavity (1) (Image 9). It may be launched as a sling or with the tuft (17) only (Image 12) picked up and hit with the hands (Image 12); the thread (16) may also be used fastening the body (2) by the neck (3) as shown on Image 5 but with the bigger opening (6) facing the exterior, the thread may be used on its own as well (16).

The knot/s (18), clip/s, etc. of (16) and/or (17), etc. may be fastened to the cavity (9) (depending on its uses it may cross completely or partially the support part (8) it may have various shapes: cylinder, conic-trunk, etc. and place a fastening part etc.): according to its shape, with different diameters, etc.; by the external face of the opening, inside the body (2); by the pressure of the material of part (8) when expanded by it (18) as it tightly fits. And with a possible part with possible projection/s, orifice/s, etc. wedge like and / or fitted, etc. in (9) and / or in (8) fastening (18): by top/s; by an orifice/s; pressing between it and the wall/s of (9) and/or of (8), (16) and /or (17), etc. as part (12), in the cavity (9) and / or in (6) or (4), etc. This pressure may fasten directional elements with or without projections (23), (24), (33), (20), etc.

The knot/s (18), may be situated and fastened in the cavity (1) by: its shape (1) with different diameters (Image 9) etc.; one or several (48) of the various bodies or elements (48) inserted into the body (2) with an orifice (46) (Image 53); or by the pressure of the body (2) material on this fastening knot (18) and on/against the support part (with possible projections, orifice) wedge like, or not.

With the biggest opening (6) facing the exterior, the parts designed to couple between them

may be coupled in the support part (8) just like (23), (24), (33), once they are coupled, they may be coupled to the body (2) as directional elements, with the possibility of coupling either in the part (8) to the body (2) cavity (1) shown on Image 23; or directly in this cavity (1), Image 24.

The directional elements (23),(24),...on their external side appearing from the body(2) Image 24, comprise a central axle (21) with a possible longitudinal flexible fissure (fissures, projections, etc.) with aerodynamic wings (22) etc. with possible fissure/s and/or aerodynamic projection/s(41), Image 25, suitable curvatures, if necessary and for a better adaptation, variable size, and depending on the sizes, shapes, design and weight of the body (2). This axle is normally thicker than the base (28) or the coupling section, to introduce into the body (2), Image 24, comprised of projection/s (26) or fastening rings and of male and female (25) couplers (or not) on their internal faces (27) (or their hypothetical extension) which form an angle obtained dividing 360 degrees by the number of coupled elements, and according to the resulting degrees even fewer elements may be coupled (or elements of any number of degrees) proportionally reaching 360 degrees by inserting wedges between them, like 1,2,3,4,5, etc coupled elements: so, with an angle of 90 degrees (31) Image 17, it is possible: to couple 4 identical or different elements (23), (24), (33) Image 20; or 3 with 3 wedges inserted of 30 degrees (30), Image 21; or 2 with 2 wedges of 90 degrees, with an angle of 120 degrees (32) it is possible to couple 3 elements (Image 22); or 2 with 2 wedges of 60 degrees, etc. with rings or similar circling the base(28), as brackets.

These directional elements, as (23), (24), (33), now without its base (28), with its external face and coupler (40) with an variable angle (27) depending on its use, males and females, or without them as (38/39) may be coupled in the spaces (36) Images 30 and 31 left between some intervening elements (34) (35), Images 27 and 28, which appear from the body (2) working as a support base (28) with projection/s (26), males and females (25) or without them and/or rings and with the possibility of self coupling them, (Images 30 and 31) as shown; for the elements (23), (24), (33) into: the part (8) both into the body (2), Image 46, or directly into the body (2), Image 47 and 48; for instance: 4 elements (38), (39) with coupler (40) with 90 degrees (31) similar or not, coupled in 4 intervening elements (34), (35) with the angle of 90 degrees (31) of its internal faces (27), Images 39, 42 and 43; or 3 (38), (39) with 90 degrees coupler (31) in 3 intervening elements, with an angle (27) of 90 degrees (31) and 3 wedges with an angle of 30 degrees (30), Image 40, inserted between them, up

to (37) becoming biped in the space (36) left, or without the biped part and with another support part (43) of couplers (40), in the space (36), Image 44, or with an angle (27) of 120 degrees (32) Image 41, the 3 intervening elements (34) (35), appearing from the body (2) leave the suitable spaces to couple 3 elements (38) (39) with or without a coupler (40) with 90 degrees (31), or 120 degrees (32) Image 45, or 2 elements with the coupler (40) with an angle of (27) 180 degrees coupled in 2 intervening element with an angle (27) of 180 degree, etc. The coupling space (36) may be closed : either by themselves (37) or by a cover , coupled (37) by means of fastening tops (Images 27,28,30,31,36,37, and 38).

The external part of these directional elements (23), (24),(38), (39),etc. may have one or several directional elements inserted, as shown on Image 25, a cross section view of cutting line (41) of the aerodynamic design used as an example as well as other different views of examples of other possible aerodynamic shapes adopted by these directional elements, on their external part; with one or several axes (21) or nothing but a sort of curved membrane (42), with one or several wings (22).

This coupling and fastening system of the base in the body (2) is perfectly valid for different shapes of directional elements of any sort, type.

These directional elements coupled, or part of them, may be cast by injecting one single piece as (7), Images 49, 51, 52 ; their external part has the following possibilities: a) to place 1,2,3,4,...directional elements, etc. ; b) adopt different shapes as shown on Image 25, with one or several wings (22) one or several axes (21) or none (42); c) these may be joint by their wing (42) or wings (22) or by their axles (21) ; d) none of these parts may be used or shared (42), (22), (21) by one or several elements at once, they may also be coupled : by the exterior side of part (8) (with a fastening piece in the cavity (9), an exterior bracket, etc.) ; or in its cavity (9) as (7) with the possible fastening piece (44), Image 50, or without it, with the base (28) now integrated, and part (8) in the body (2), Image 51; or couple directly in the body (2) , if it is without the base (28) with the help of these parts such as (44), with projection/s (26) , Image 52, etc.

Depending on the use , the body may be fastened to the end of an elastic ribbon, the opposite end is fix to make it draw back when launched.

The body (2) may be composed of a body (2) or several bodies (48) or parts, superposed and fitted between them, integrating into a single body (2) Image 53, with multiple shapes (or various shapes at once) in concentric layers as an onion, in spheric sectors as orange segments, with possible fissure/s, projection/s, orifice/s (46), males and

females, with different possibilities for a) increase or decrease the volume only by changing them (48) (2); b) change the exterior shape only by changing the shape of the exterior part/s (2)(48) ; c) one or several of these bodies or parts work as support part, fastening the knot (18) with a possible orifice (46), Image 53, in it etc.

All details may be changed to execute it, providing they do not change the main conception, such as shape, material, size, proportions. dispositions, etc. all those very accessories and complements.

Claims

1. The Shuttlecock Launcher of various uses is a flying object comprised of a normally elastic body (which may bounce or not and which may adopt multiple shapes) enabling to couple various directional elements (normally designed, which influence its flight and are always placed at the rear) varying according to all the various possible uses with the characteristics of a body (2) (or various (48) bodies integrated in one body (2)), with an aerodynamic design - Images 1 and 6 of variable sizes according to its use, it may also adopt multiple shapes, as spheric, etc. with a cavity (1) which may cross through it partly or completely and which may couple in different directional elements (23), (24), (33), (34), (17), etc. with a support part (8) which may support the various directional elements (7), (16), (17), (20), (23), (24), (33) which may be cylindric and circled by projection/s (5) at convenient lengths, supporting the body (2) (as directional elements with projection/s) by the pressure performed by the material of the body (2) when expanded (by its adjusted measures). It is partly or completely crossed by a cavity (9) (the axles normally fit), its preferable shape is conic-trunk (it may also be cylindric or with different diameters,etc. and have a support part, etc.) among its possibilities : according to the cavity shape (9) to the coupling position in the body (2) it is possible to vary : the elements to couple and its possible uses .

2. The Shuttlecock Launcher of various uses, according to Claim n° 1 has the characteristics that when part (8) is coupled in the body (2) the cavity (9) is conic-trunk, its smaller opening (4) faces the exterior, this cone shape (or the external face of the bigger opening(6)) shall work as a top, in order to prevent the flexible elements (17) from falling out and be supported by a knot (18) etc., forming a tuft (17) be launched as a sling, by means of a thread

(16) in various possibilities : in one of them, an end supports the body (2) by the neck (3); in another one this thread (16) is joint to the tuft (17) in the cavity (9) they appear from it : either together by [lie opening (4) or separately by (4) and (6). The end/s of the thread (16) may have a part/s (12) to hold (one), hollow (14) with a cover (10) or without it and, on the opposite end a central orifice (11) to introduce the thread (16) etc. which is fix by a knot (15) and self rotates (or a similar part, or ring with an orifice in the edge), only the tuft (17) or the thread (16).

When the bigger opening (6) of the conic-trunk faces the exterior, the cone may be inserted by : a) directional elements (20) which fasten tightly according to a bigger penetration and b) directional elements with projection/s (23), (24), (33), etc.

In this position the cavity (9) may be completely crossed and the external face of the smaller opening (4) may be used as fastening : of the last ring (29) of the directional elements with projections; of the knot/s (18), of (17) and/or of (16) which may be used as described, with the opening (4) facing the exterior.

3. The Shuttlecock Launcher of various uses , according to Claims n° 1, has the characteristics that the knot/s (18) etc. (of (16) and / or (17), etc.) may also be fastened to the cavity (9) (depending on its use, it may cross the part (8) completely or partially, have various shapes, as cylinder or conic-trunk, etc. and have a support part) : by its shape (with different diameters, conic-trunk, etc.); by the external face of the opening situated inside the body (2); or by the pressure performed by the material of the part (8) when expanded by this knot (18). With a possible part with possible orifice/s, etc. wedge like and/or fitted etc. in (9) and /or (8) fastening (18) : by top/s ; by an orifice/s; pressing it and the walls of (9) and / or in (8), (16) and / or (17) etc. as (12) in (9) and / or in (6) or (4), etc. and also this pressure of the material (9) may support directional elements with or without projection/s.
This knot/s (18) may also be situated in the cavity (1) and be fastened by : the cavity shape (1) with different diameters, etc.; by one or several (48) of the possible bodies (48) integrated in one body (2) with an orifice/s (46); or by the pressure of the material of the body (2) against this knot (18) and/or against a support part (with projection/s , orifice) as a wedge or without it.

4. The Shuttlecock Launcher of various uses, according to the 1st Claim, has the characteristics that the various elements were designed (23), (24), (33) in order to be coupled between them, and once they are coupled they may couple as directional elements in the body (2), with the possibility of coupling : either in the part (8) and in the body (2), or directly in the body (2).

Formed by : a central axle (21) on its external part with side wing/s (22), in an aerodynamic position (41) with possible fissure/s, projection/s , etc.; projections (26) fastening rings with coupling males and females (25) or without them, on its base (28) on its internal faces (27) (or their hypothetical extension) forming an angle obtained by dividing 360 degrees by the number of coupled elements, with the possibility of coupling fewer elements (or elements with any number of degrees). proportionally completing 360 degrees with intervening wedges as 1, 2, 3, 4, 5, etc. coupled elements, with an angle of 90 degree (31) it is possible to couple: 4 elements (23), (24), (33) (similar or not); or 3 with 3 wedges of 30 degree (30) interposed; or 2 with 2 wedges of 90 degree and with an angle of 120 degrees (32) it is possible to couple: 3 elements; or 2 with 2 wedges of 60 degree, etc.

With possible rings or similar circling the base (28) as brackets.

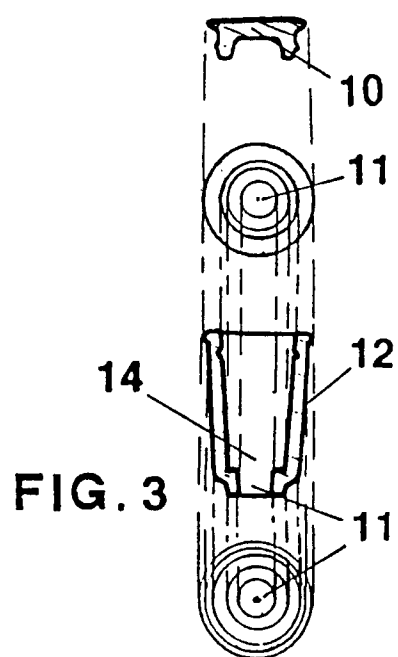
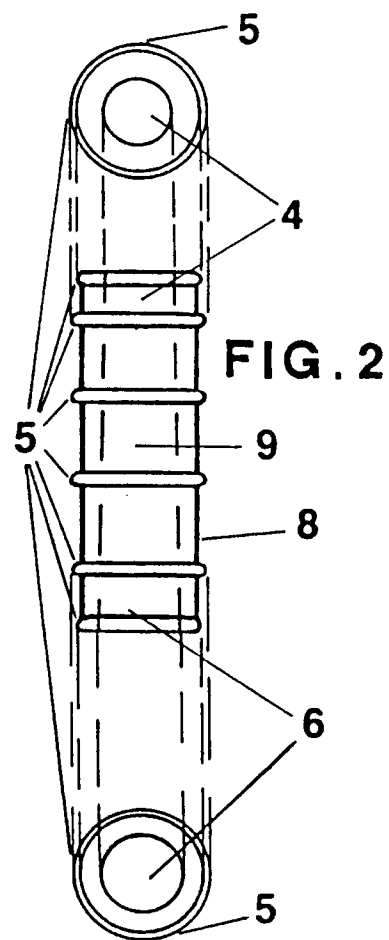
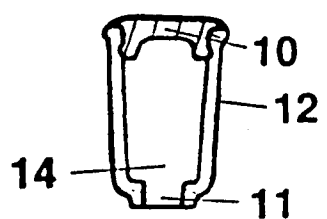
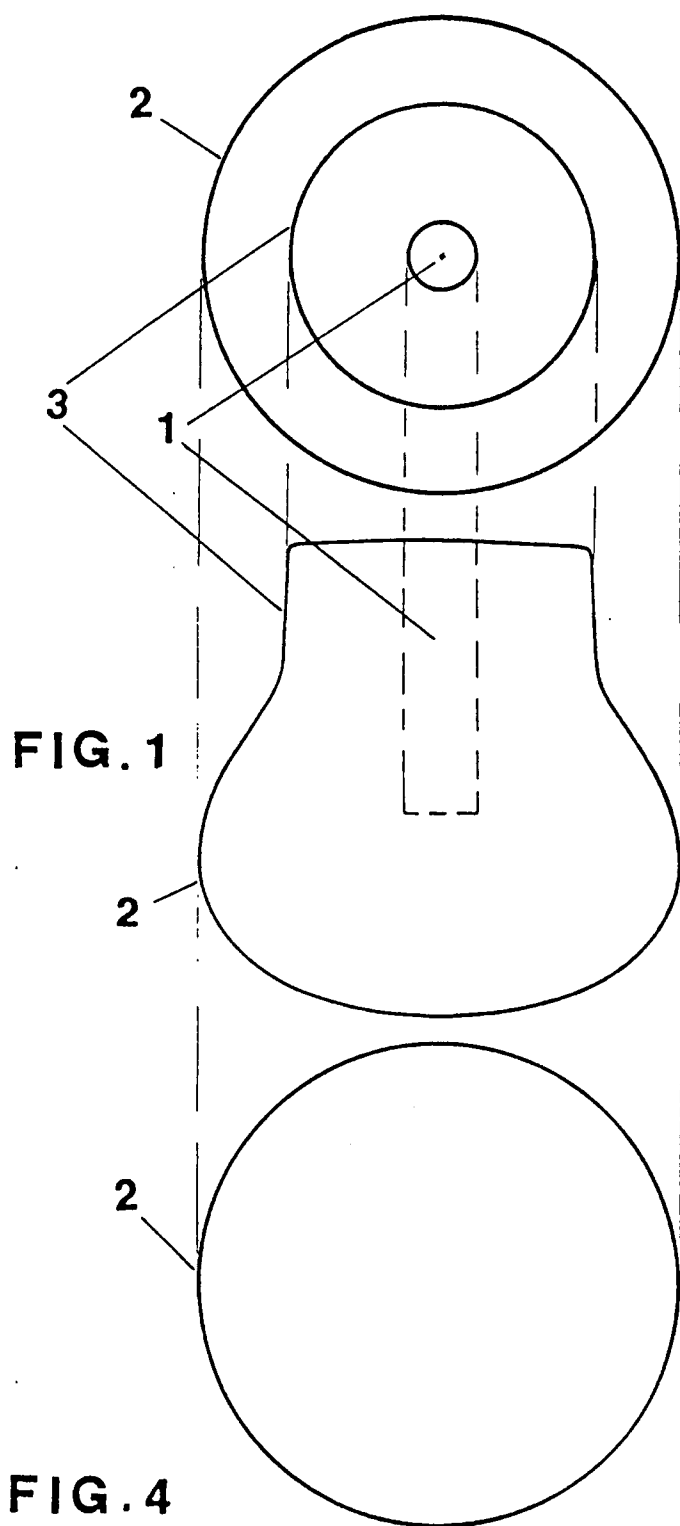
These directional elements (23), (24), (33) without the base (28) with the external part only with a coupler (40) (with changeable angle- (27), males and females or not, etc.) as (38) (39), it is possible to couple the spaces (36) left between some intervening elements (34) (35) which appear from the body (2) work as a base (28), with projection/s (26), males and females (25) or without them, and/or rings, etc. and they may self couple, the same way (23), (24), (33) and to couple : in the part (8) and in the body (2), directly in the body (2). So, it is possible : 4 elements (38) (39) with the coupler (40) with 90 degree (31) similar or not, coupled in 4 intervening elements (34) (35) with an angle of 90 degree (31) ; or 3 with 90 degree (31) in 3 intervening elements, of 90 degree (31) and with three intervened wedges of 30 degrees (30), which become biped in the space (36), or without this biped part with another support part (43), or without these wedges with an angle of 120 degrees (32) leaving in (36) the spaces to couple the 3 (38) (39) with coupler (40) of 90 degree, or not with the coupler (40) with 120 degrees ; or place 2 with coupler (40) with 180 degrees in 2 intervening elements with 180 degrees, etc...

This coupling and fastening system of the base (28) to the body (2), may be used for other possible shapes or number of directional elements.

The external part of these directional elements (23), (24), (38), (39) may have one or several integrated elements and it may adopt various aerodynamic shapes, with one or several axles (21) or none, with only a sort of aerodynamic membrane (42), with one or several wings (22). etc.

5. The Shuttlecock Launcher of various uses, according to the 1st Claim, has the characteristics that, these directional elements coupled (24), (23), (38), (39) etc. or some of them, may be cast by injecting one single piece, as (7), now with the possibilities of its external face of : a) to place 1,2,3,4, etc. directional elements; b) adopt various shapes; c) to be joint by its wing (42) or wings (22) or by its axles (21) etc.; d) to be used or shared one of these parts (42), (22), (21) by one or several elements at once, and they may couple : either on the exterior of the part (8), or in the cavity (9), with the help of a fastening piece, as (44), or not with the base (28) integrated, and this way in the body (2); or directly in the body (2), with these fastening pieces, as (44), with projection/s (26) etc., if the base (28) is not integrated.
6. The Shuttlecock Launcher of various uses, according to the 1st Claim, has the characteristics that, the body (2) may bounce and may be comprised of one body (2) or various bodies (48) integrated in one body (2) Image 53, which may fit into each other in various shapes (or various shapes at once), as concentric layers, or spherical sectors etc., with possible fissure/s, projection/s, male/s and female/s orifice/s (46), with the possibility of ; a) change the volume only by changing them (48) (2); b) change the external shape only by changing the shape of the body or bodies (48) (2) or external part/s ; c) one or several of them (48) working as support part, etc. and it may (2) (48) adopt multiple shapes and sizes in order to reach functional purposes, commercial, or any sort of advertising messages, but also with the possibility to adopt the shape and similarity of the product itself or the advertised object, etc....

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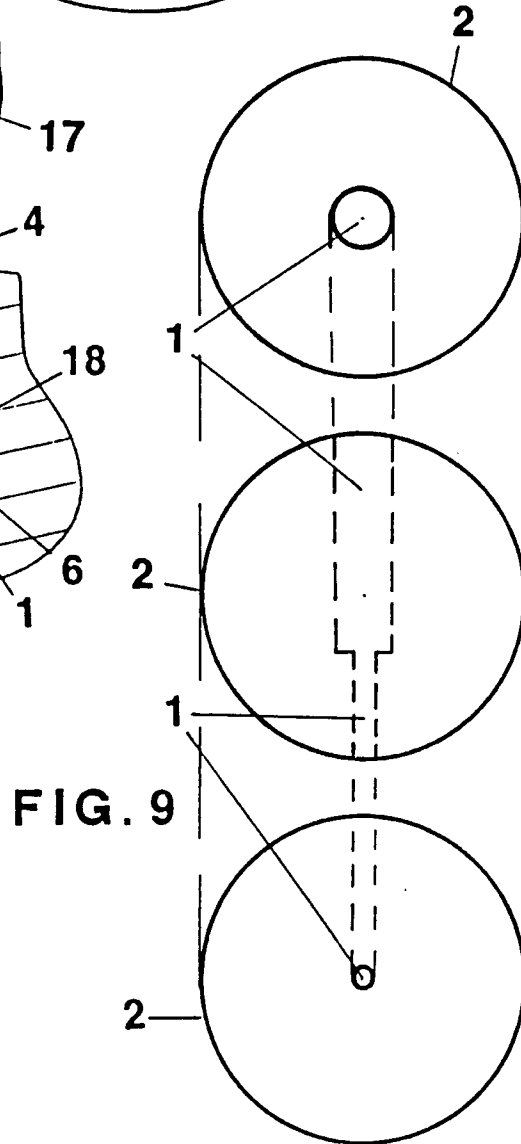
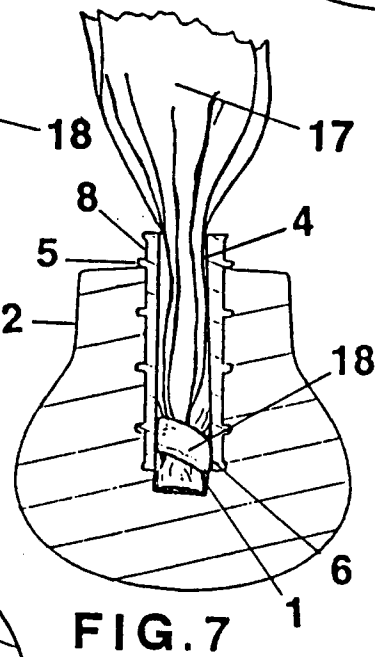
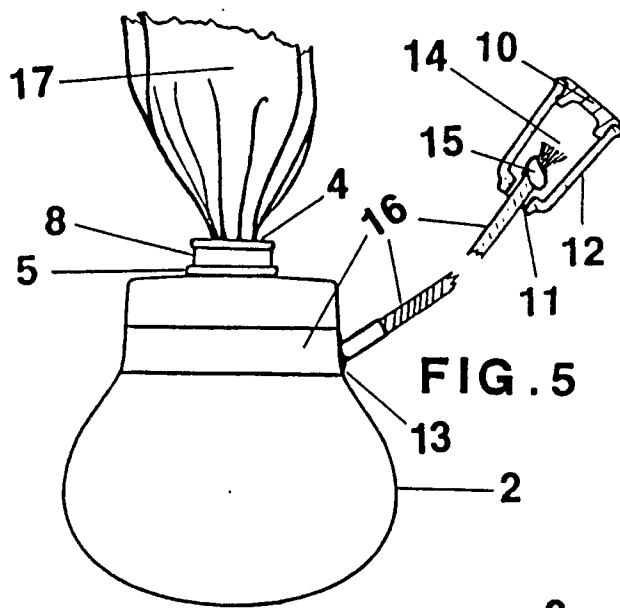
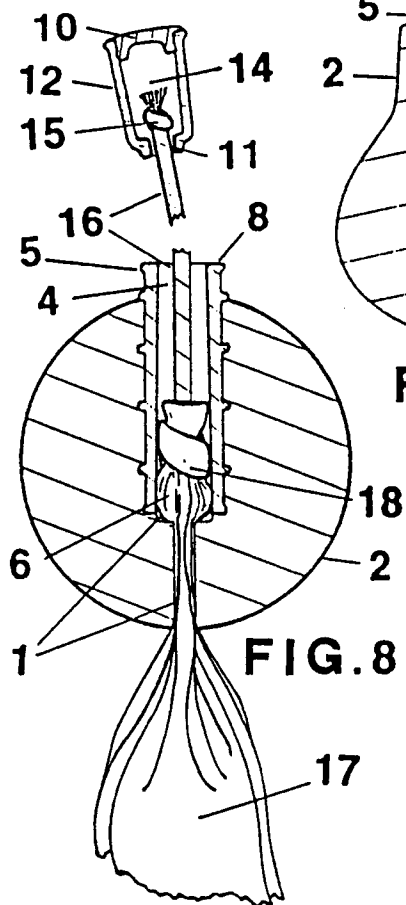
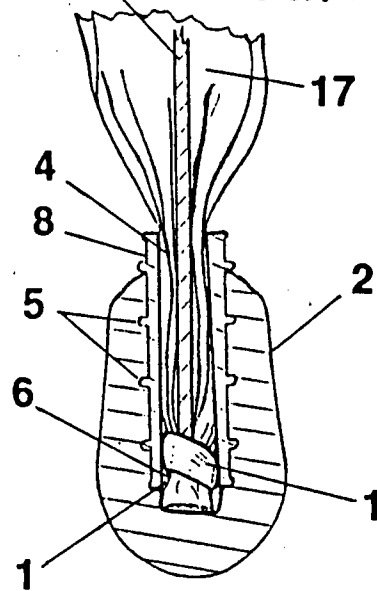
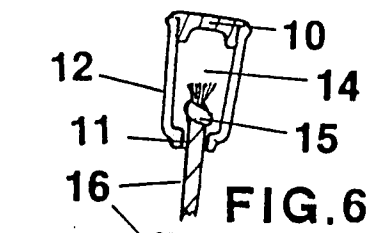


FIG. 10

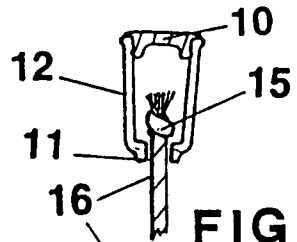
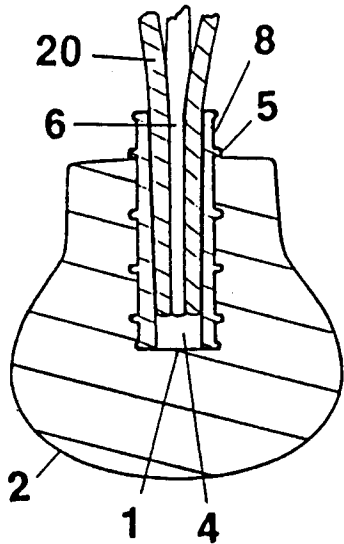


FIG. 11

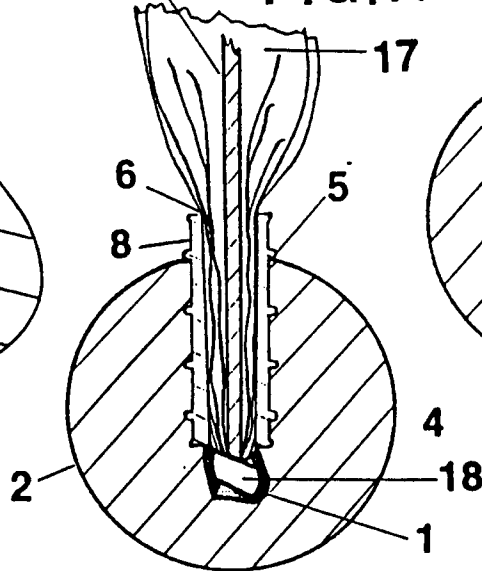


FIG. 12

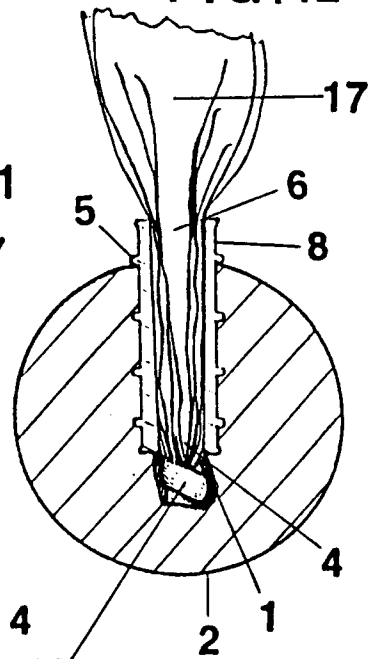


FIG. 14

FIG. 15

FIG. 16

FIG. 13

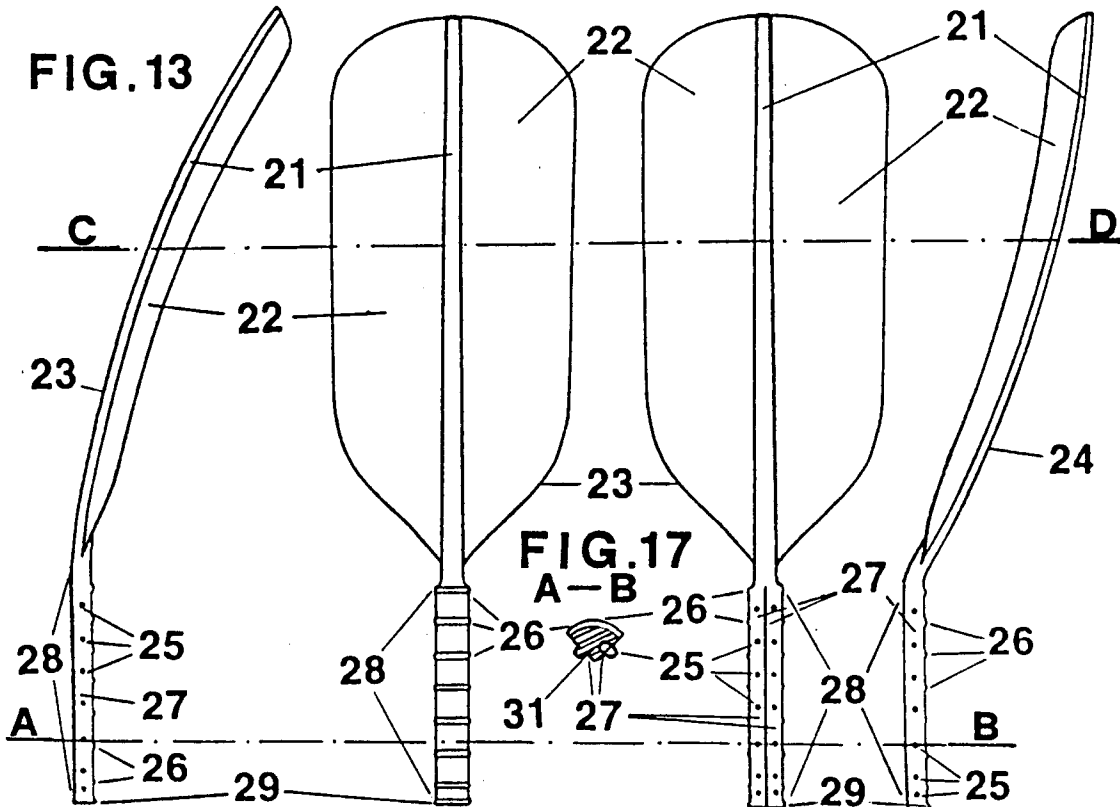


FIG. 17

A-B

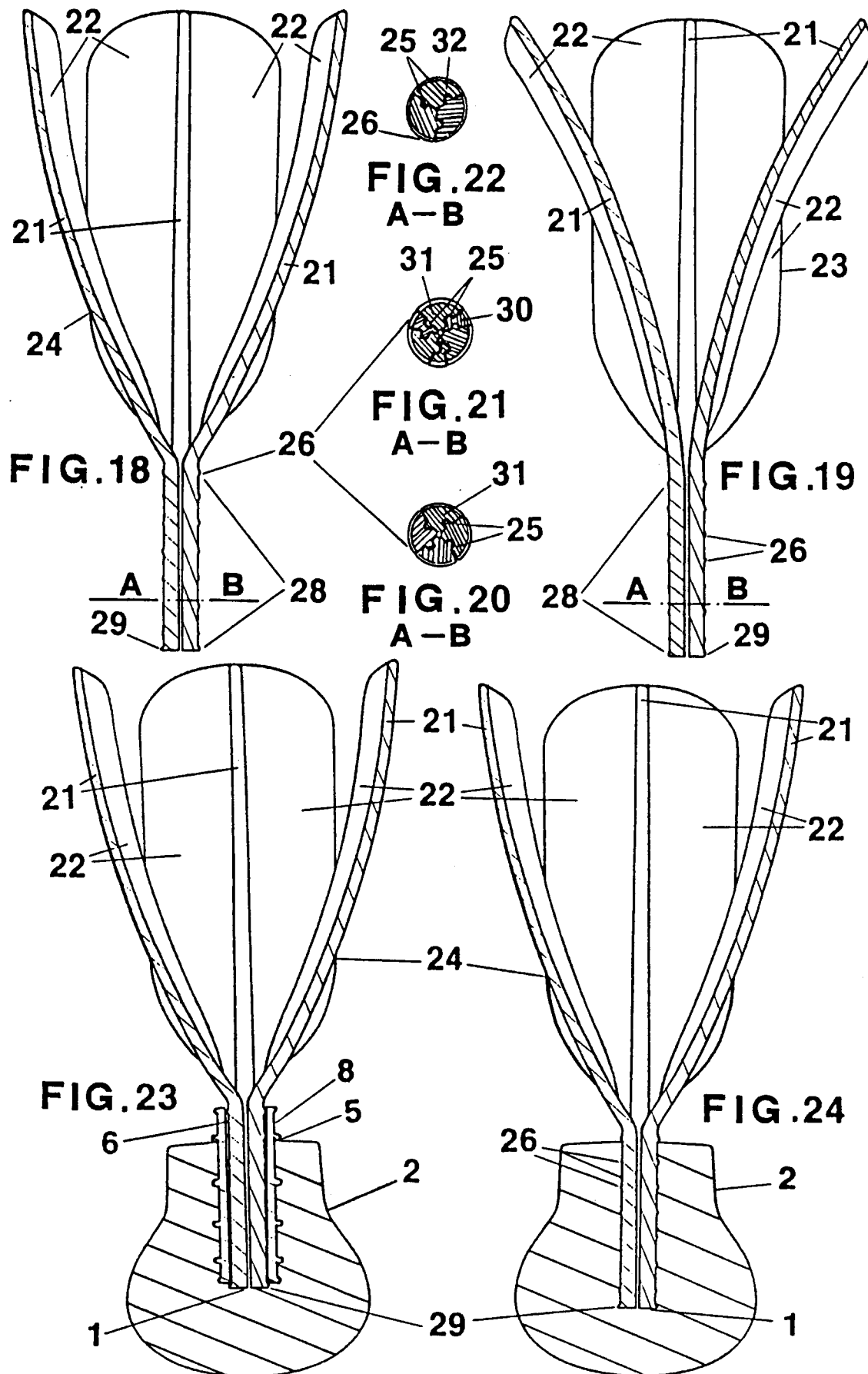
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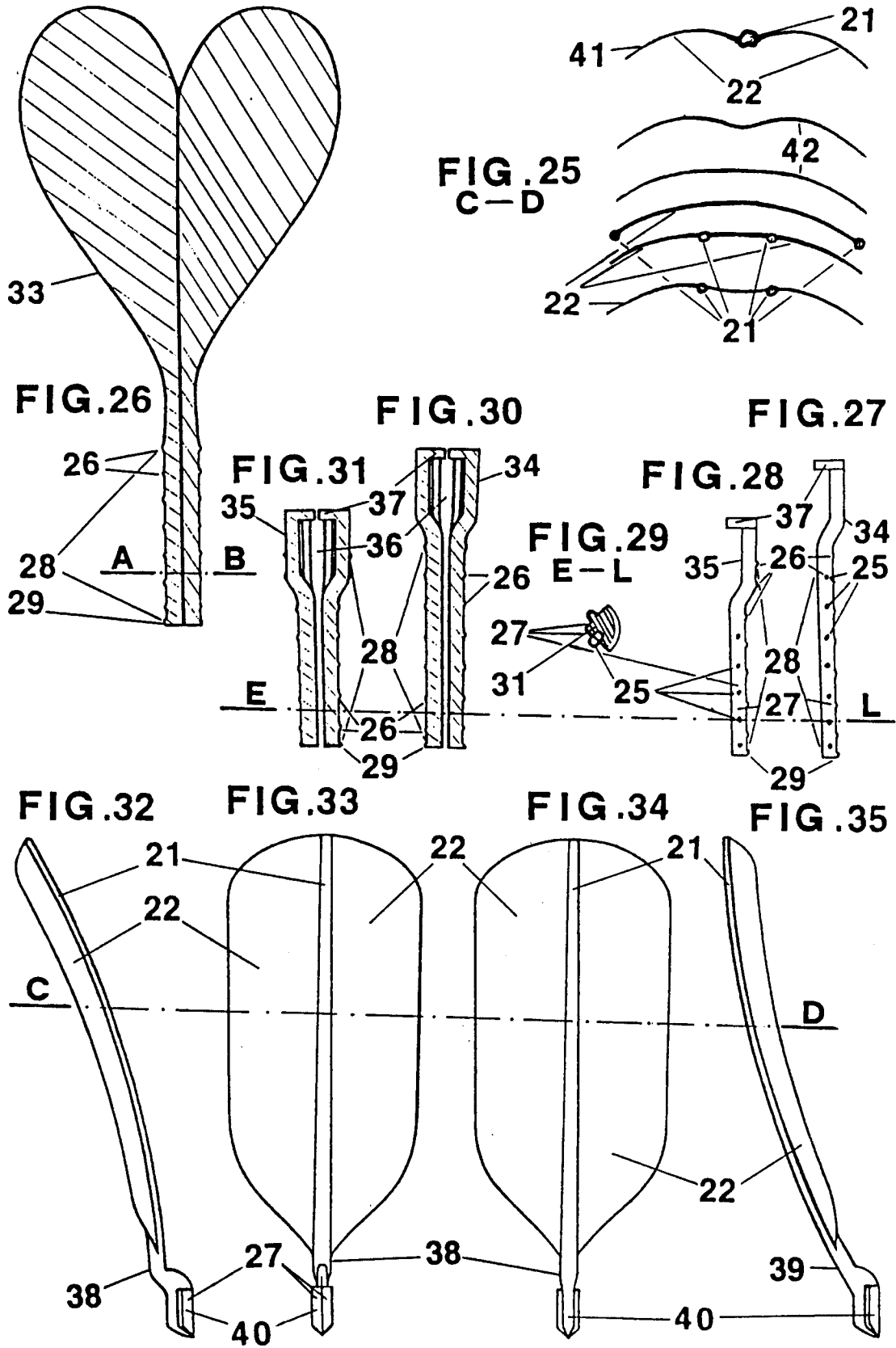
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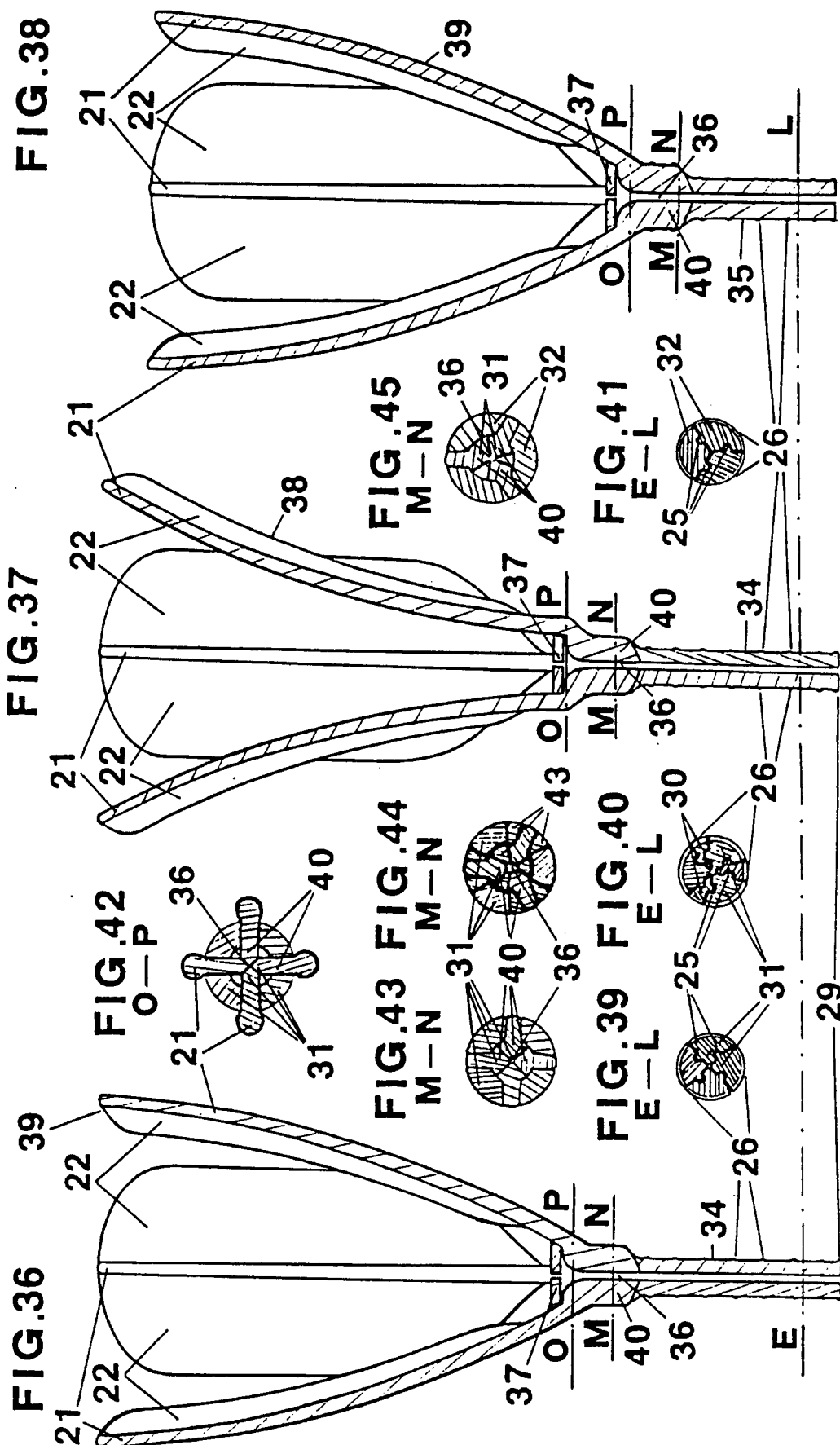
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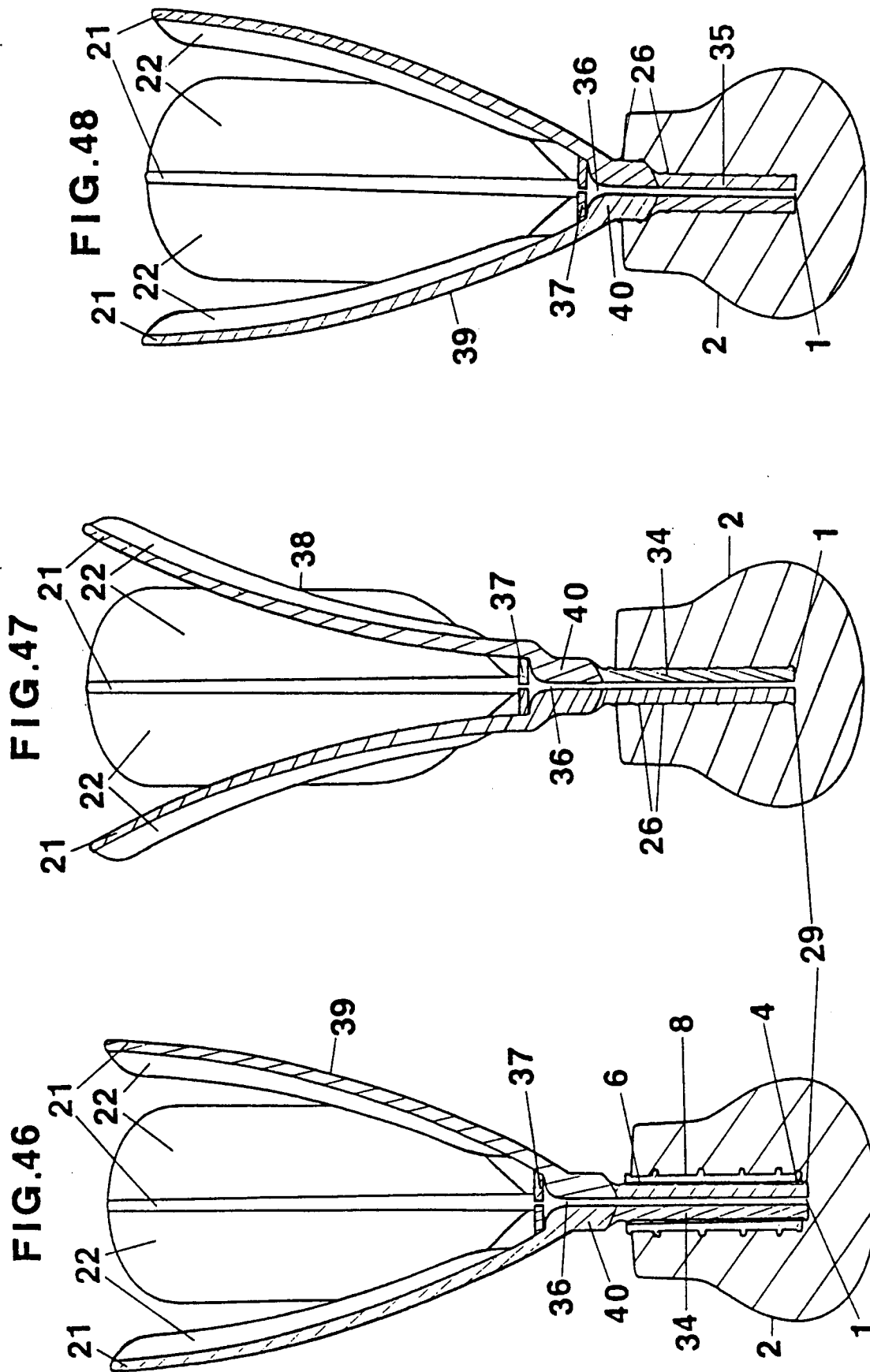


FIG. 49

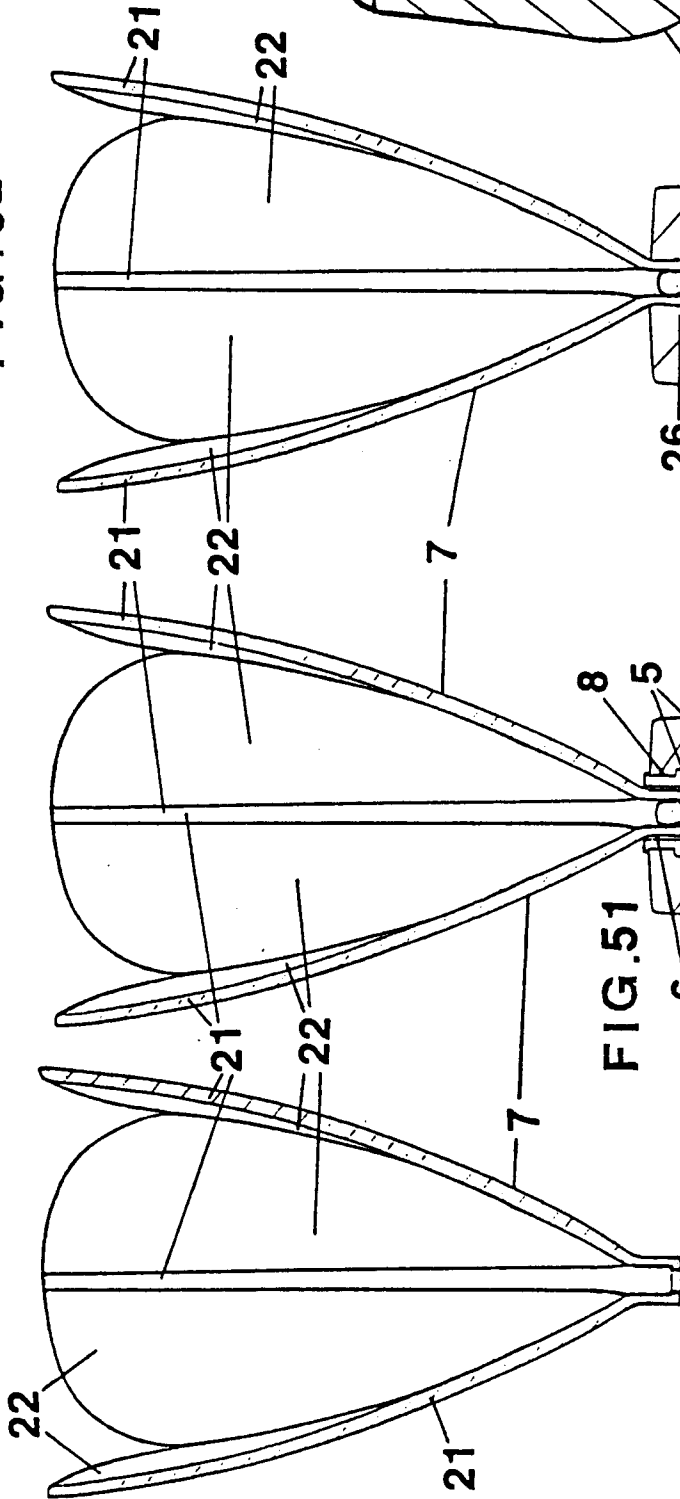


FIG. 52

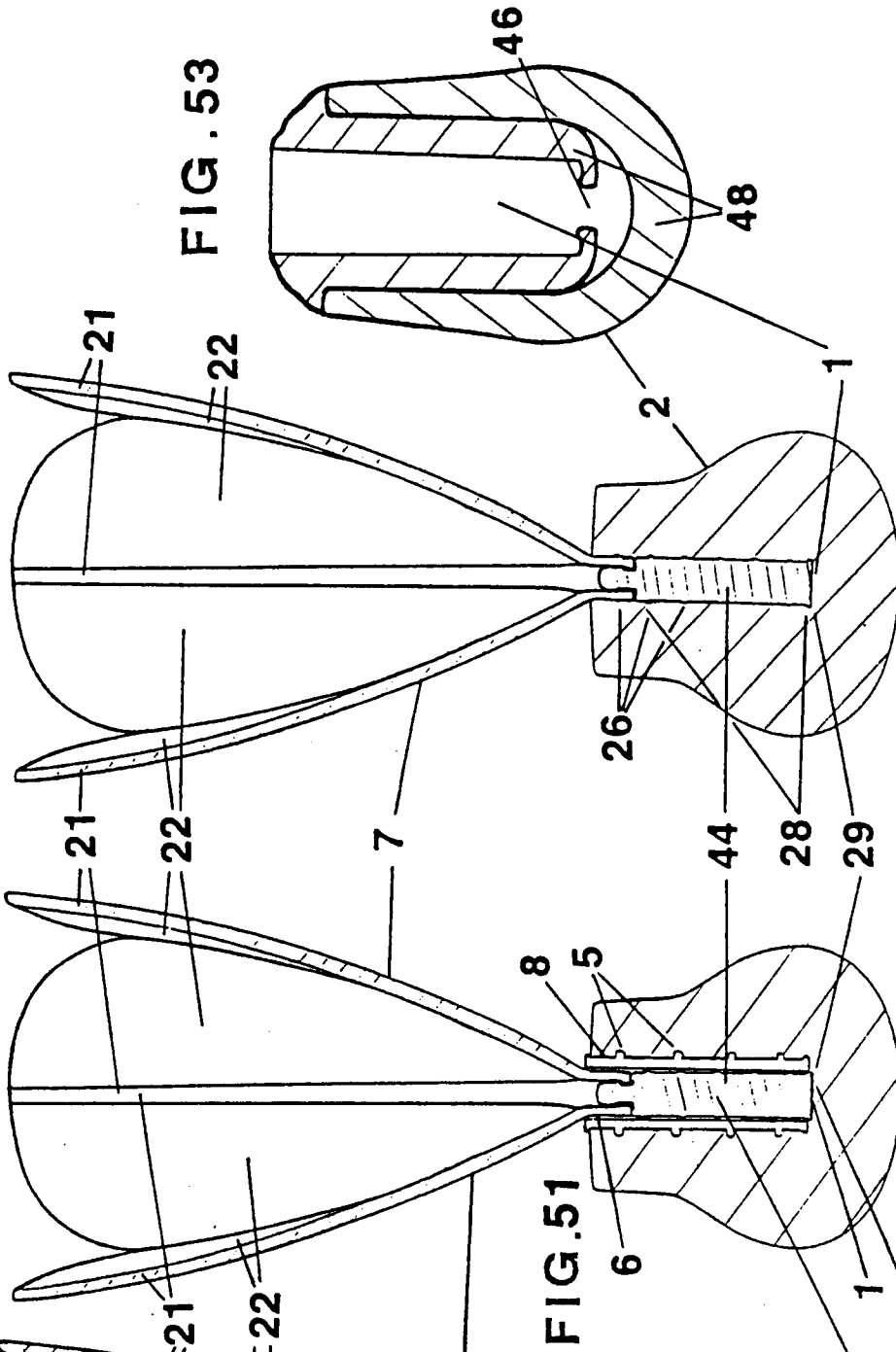


FIG. 53

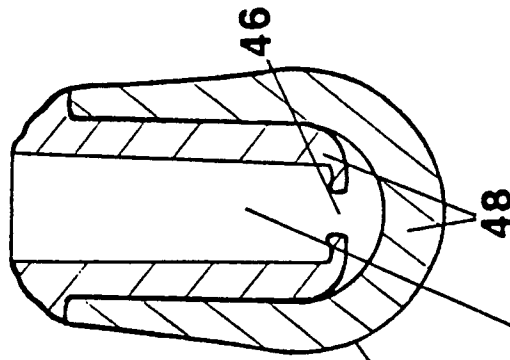


FIG. 51

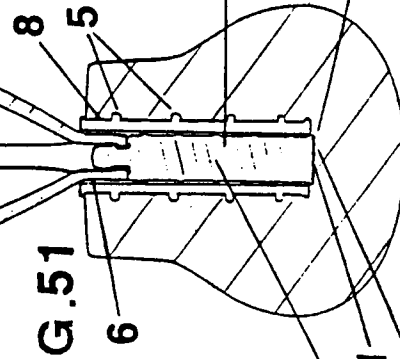
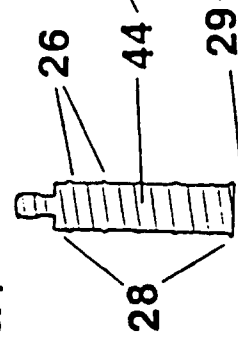


FIG. 50



INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 93/00029

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl. 5 A63B43/00 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) Int. Cl. 5 A63B ; A63H Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP, A, 0 132 100 (GALAN RODRIGUEZ) 23 January 1985 see page 6, line 1 - page 8, line 12; figures	1-3
Y	US, A, 3 934 873 (GRIFFIN) 27 January 1976 see abstract; figures	1-3
Y	FR, A, 2 646 356 (RIZIO) 2 November 1990 see claims ; figures	3-4
A		4,5
Y	FR, A, 2 650 959 (ASTRI) 22 February 1991 see claims 1-4; figures 1,2	2
	-/-	
☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 14 July 1993 (14.07.93)		Date of mailing of the international search report 03 August 1993 (03.08.93)
Name and mailing address of the ISA/ European Patent Office Facsimile No.		Authorized officer Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES 93/00029

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE, B, 1 035 547 (KARLHANS KROHN) 31 July 1958	1
Y	see column 3, line 22 - column 4, line 2; figures	2-6
Y	US, A, 4 813 686 (MIRANDA) 21 March 1989 see column 3, line 13 - line 65; figures 2,6	5,6
A	EP, A, 0 157 547 (BUCKLAND) 9 October 1985	