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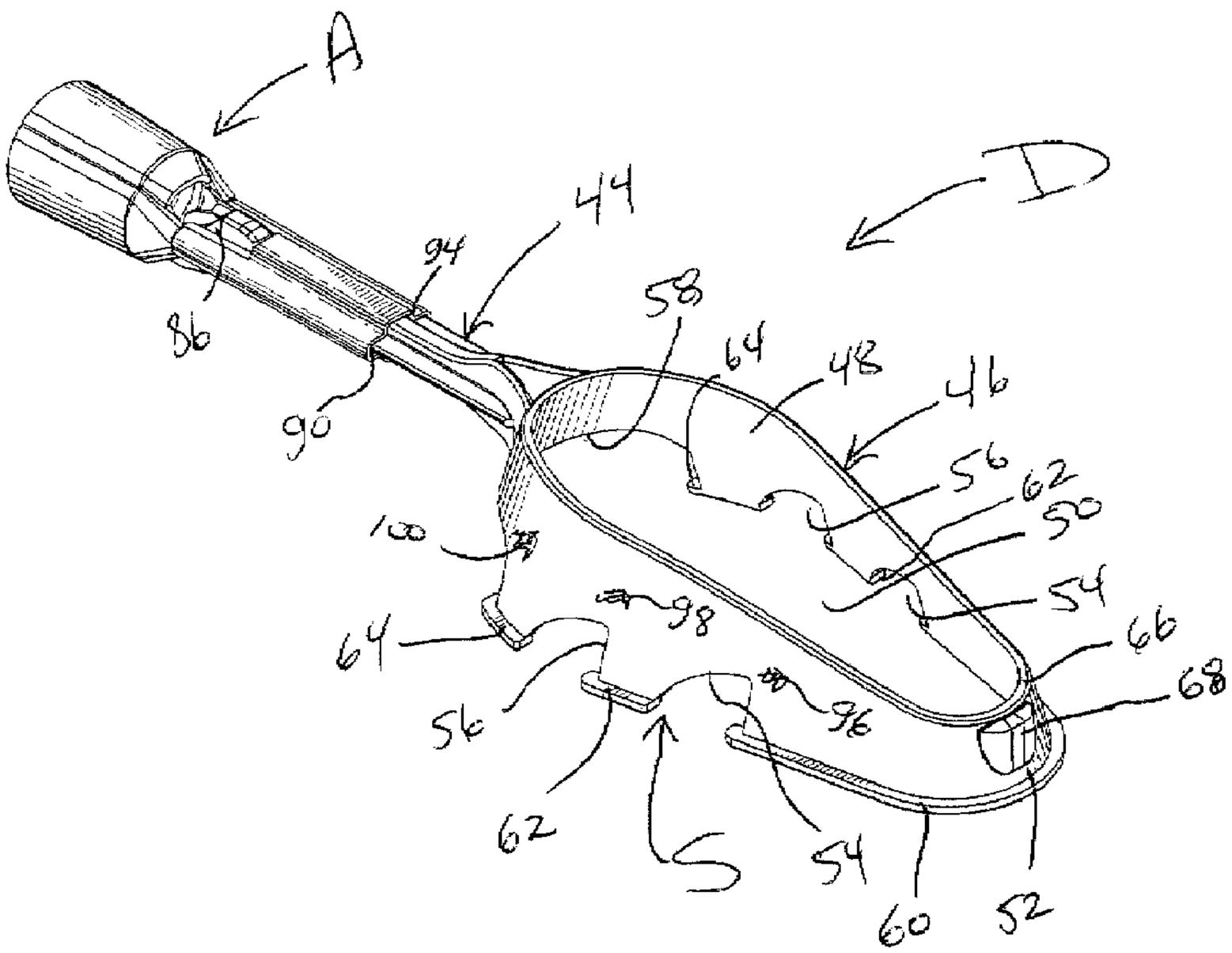
(54) **Titre : DISPOSITIF DE SUPPORT D'UN SAC D'ECHANTILLONNAGE**
(54) **Title: DEVICE FOR SUPPORTING A SAMPLING BAG**



(57) **Abrégé/Abstract:**
A device for supporting a flexible sampling bag having an upper end defining a mouth comprises a handle portion and a support portion. The support portion includes a peripheral wall defining an opening inwardly thereof. The support portion is adapted for

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(57) **Abrégé(suite)/Abstract(continued):**
attaching the sampling bag at least to the peripheral wall thereof such that the mouth of the bag communicates with the opening of the peripheral wall. Therefore, a collected substance can be deposited through the opening and the mouth and into the bag. The peripheral wall also includes a plurality of lower lips for attaching the open upper end of the bag therefrom, such that the bag is suspended from the support portion. The plurality of lips allow for bags having mouth openings of different sizes to be attached to the support portion. Indicia are provided on the peripheral wall adjacent at least some of the lips to provide identification as to which lips are to be used with different bag sizes. An adapted is also provided for distal attachment to the handle portion, for providing a longer handle to the device, with a further elongated member being attachable proximally to the adapter for even greater reach. Other apparatuses can also be connected to the adapter, such as a sampling sponge-holding device.

ABSTRACT

A device for supporting a flexible sampling bag having an upper end defining a mouth comprises a handle portion and a support portion. The support portion includes a peripheral wall defining an opening inwardly thereof. The support portion is adapted for attaching the sampling bag at least to the peripheral wall thereof such that the mouth of the bag communicates with the opening of the peripheral wall. Therefore, a collected substance can be deposited through the opening and the mouth and into the bag. The peripheral wall also includes a plurality of lower lips for attaching the open upper end of the bag therefrom, such that the bag is suspended from the support portion. The plurality of lips allow for bags having mouth openings of different sizes to be attached to the support portion. Indicia are provided on the peripheral wall adjacent at least some of the lips to provide identification as to which lips are to be used with different bag sizes. An adapted is also provided for distal attachment to the handle portion, for providing a longer handle to the device, with a further elongated member being attachable proximally to the adapter for even greater reach. Other apparatuses can also be connected to the adapter, such as a sampling sponge-holding device.

TITLE: DEVICE FOR SUPPORTING A SAMPLING BAG

FIELD

[0001] The present subject-matter relates to a device for supporting flexible bags, such as those used to contain samples, e.g. sterile plastics bags for use in handling clinical samples and the like.

CROSS-REFERENCE TO RELATED APPLICATIONS

[0002] N/A

INTRODUCTION

[0003] Various bags have been developed for the sterile transportation and/or storage of samples in the medical and food fields, such as human fluid samples, milk, water in environmental studies, etc. Such plastic bags may include near an open end thereof a wire or metal strip which is mounted transversely across the bag with ends extending past the side edges of the bag. Once the bag has been filled with the sample to be transported/stored, the open end is folded at least once over the bag about the wire or metal strip so as to close the open end and the ends of the wire or metal strip are then folded at the side edges of the bag and brought around so as to extend inwardly behind the bag. This safely and effectively encloses the sample in the plastic bag.

[0004] These bags are flexible and thus not always easy to handle when inserting samples therein.

[0005] Therefore, there is a need in the art for a way to facilitate the handling of sampling bags of this type.

SUMMARY

[0006] It is therefore an aim to provide a novel device for supporting a bag, such as a sampling bag.

DRAWINGS

[0007] For a better understanding of the embodiments described herein and to show more clearly how they may be carried into effect, reference will now be made,

by way of example only, to the accompanying drawings which show at least one exemplary embodiment, and in which:

[0008] Fig. 1 is a perspective view of a device, according to various exemplary embodiments, for supporting a bag, such as a sampling bag;

[0009] Fig. 2 is a side elevation view of the device of Fig. 1;

[0010] Fig. 3 is a top plan view of the device of Fig. 1;

[0011] Fig. 4 is a top plan view of the device of Fig. 1;

[0012] Fig. 5 is a perspective view of the device of Fig. 1, with an optional adapter thereof being shown in phantom lines;

[0013] Fig. 6 is a perspective view similar to Fig 5, showing a bag support of the device of Fig. 1, while not showing the adapter;

[0014] Figs. 7 and 8 are perspective views of a sampling bag for use with the device of Fig. 1, shown respectively in a mostly closed position and in a partly open position thereof;

[0015] Figs. 9 to 11 are perspective views showing an installation sequence of the sampling bag of Figs. 7 and 8 in the process of being mounted to the device of Fig 1;

[0016] Fig. 12 is a perspective view showing the sampling bag in the process of being removed from the device of Fig. 1;

[0017] Fig. 13 is a side elevation view of the assembly of Fig. 11, with the sampling bag being secured to the bag support and being shown in phantom lines;

[0018] Fig. 14 is a perspective view of the adapter of Fig. 1 with a sampling sponge holding device being mounted thereto;

[0019] Fig. 15 is an exploded perspective view of the adapter and of the sponge holding device of Fig. 14; and

[0020] Fig. 16 is a longitudinal vertical cross-sectional view of the device of Fig. 1.

DESCRIPTION OF VARIOUS EMBODIMENTS

[0021] With reference to the drawings, therein illustrated is a device D according to various exemplary embodiments for providing supporting a bag, such as a sampling bag B. The deice D includes mainly a bag support S and an adapter A. The sampling bag B will now be described in details.

[0022] With reference mainly to Figs. 7 and 8, the sampling bag B is typically made of plastic and can be any one of disposable, sterile, etc. In an exemplary construction, the bag B comprises identical front and rear sheets 14, joined at side edges 16 thereof (generally as a result of the bag B being made from a tube), and having opposite upper and lower ends 18 and 20, respectively. The two sheets 14 can be joined in a tight sealed manner at the upper end 18 of the bag B by a heat seal (not shown). Similarly, the two sheets 14 can sealingly be joined at the lower end 20 of the bag B by a lower heat seal (not shown). In such cases, the heat seal of each of the upper and lower ends of the bag B can include a pair of spaced heat seals to ensure sterility and leakproofness of the bag B, when such is required.

[0023] When a heat seal is provided at the upper end of the bag B, a tear off line punctured through both sheets 14 across the upper end 18 of the bag B and lower than the upper heat seal(s) such that any upper heat seal extends substantially parallelly between the tear off line and an upper edge 28 of the bag B. Therefore, a tear off strip is defined at the upper end 18 of the bag B which when detached from the remainder of the bag B reveals an open mouth at the tear off line of the bag B through which a sample or other can be deposited in the bag B so as to be, for instance, stored in the bag B. The tear off strip preserves the sterility of the bag B until its manipulation. For example, a bag with such heat seals and a tear off strip is illustrated in U.S. Patent Publication No. US 2013/0118275 A1 published on May 16, 2013, naming Lafond et al. as inventors, and which is herein incorporated by reference.

[0024] The bag B further includes near the mouth thereof, that is just below the upper edge 28, a closure member 32 which is mounted transversely across the bag B with ends 34 (acting as pull-tabs) of the closure member 32 extending past the side edges 16 of the bag B. The closure member 32, in a known manner, typically includes a pair of metal strips or wires (not herein shown, but shown in aforementioned U.S. Patent Publication No. US 2013/0118275 A1), with one disposed outwardly on each of the front and rear sheets 14 and extending along the closure member 32. The closure member 32 also typically includes a pair of adhesive tapes 38 disposed outwardly over the metal wires to attach the metal wires to the front and rear sheets 14 of the bag B with the tapes 38 adhering to the bag B inwardly of the side edges 16 thereof while adhering together outwardly of the side edges 16. The closure member 32 allows for the bag B to be repeatedly opened and closed without risk of loss of contents or contamination.

[0025] Therefore, once the tear off strip (if provided) has been removed from the bag B, the bag B may be opened by spreading side pull-tabs 40 (one such pull-tab extending outwardly from the middle of each adhesive tape 38) thereby avoiding contamination of the inside of the bag B Once the sample or other has been inserted in the bag B (as it will be described in details hereinafter), the bag B is then closed using the closure member 32. More particularly, the longitudinal ends 34 of the closure member 32 (i.e. its portions extending outwardly beyond the side edges 16 of the bag B) are then pulled away so as to draw the front and rear sheets 14 together opposite the closure member 32 thereby substantially closing the upper mouth of the bag B.

[0026] After, pressure can be applied on the outside of the bag B to remove trapped air, if wanted. The closure member 32 is then rolled down along the bag, for instance four (4) times over, and the longitudinal ends 34 of the closure member 32 are folded inwardly, at the side edges 16 of the bag B, over either the front and rear sheets 14 to prevent the "unrolling" of the closed upper end of the bag B. This safely and effectively encloses the sample in the bag B.

[0027] Now turning to the device D, and referring to Figs. 1 to 6, the bag support S includes an elongated handle portion **44** and a support portion 46 provided at a distal end of the handle portion **44**. The support portion 46 includes a peripheral wall 48 defining an opening 50. The opening 50 has a flaring configuration from a distal end 52 thereof towards the handle portion 44.

[0028] The peripheral wall 48 defines first and second pairs of lower notches or cutouts 54 and 56, respectively, and further defines a proximal cutout 58. The distal end 52 defines a lower, exteriorly extending, distal peripheral lip 60. The peripheral wall 48 defines a pair of lower, exteriorly extending, intermediate lips 62, which are provided between the cutouts 54 and 56 on each side of the support portion 46. The peripheral wall 48 further defines a pair of lower, exteriorly extending, proximal lips 64, which are provided between the cutouts 56 and the proximal cutout 58 on each side of the support portion 46.

[0029] The support portion 46 also includes an upper peripheral rib 66 for the reinforcement thereof, and a distal, forwardly extending, anti-slip protrusion 68.

[0030] As seen for instance in Figs. 6 and 16, the handle portion **44** includes a longitudinally extending horizontal base 70, which defines a proximal elongated opening 72 and an elongated rib **74**. The elongated rib 74 has a distal portion 76 that is secured to the base 70 and a proximal portion 78 that overhangs the elongated opening 72, with a detent 80 extending upwardly from a proximal end of the proximal portion 78. The proximal portion 78 is biased upwardly, i.e. away from the elongated opening 72, and can be depressed downwardly within the elongated opening 72, in a cantilever fashion with respect to the fixed distal portion 76.

[0031] With reference to Figs. 1 and 16, the adapter A includes a proximal socket 82 and distal socket 84. The distal socket 84 defines an inner cavity 90 that has a cross-section configured so that the base 70 and the elongated rib 74 of the handle portion **44** of the bag support S can be slidably engaged therein. The distal socket 84 defines a proximal upper opening 86. During the sliding insertion of the handle portion 44 in the distal socket 84, the proximal portion 78 is depressed within

the elongated opening 72 so that the detent 80 can engage the distal socket 84. Once the handle portion 44 has been sufficiently inserted in the distal socket 84, the detent 80 reaches the upper opening 86 and biasedly springs upward thereat, thereby securing the adapter A to the bag support S. The handle portion 44 defines a shoulder 92 (see Fig. 16) that limits the insertion of the bag support S in the adapter A by abutting a distal end 94 thereof. Once the adapter and the bag support S have been mounted together, the adapter A provides a longer handle for the bag support S.

[0032] The proximal socket 82 defines an inner thread 88 adapted to be engaged, for instance, by the outer thread of a broom-type handle, for allowing the device D to have further reach, when required.

[0033] The adapter A can be detached from the bag support S by first pressing downwardly on the detent 80 until it extends opposite the cavity 90 defined within the distal socket 84, and then longitudinally separating the adapter A and the bag support S relatively from one another.

[0034] The bag support can accommodate three different general sizes (transverse sizes) of bags B, in view of the various lips 60, 62 and 64 thereof. The bag B will be suspended from the bag support B with the closure member 32 thereof being located above the relevant lips 60, 62 and 64. For instance, a smaller bag B will be engaged around the distal end 52 and will be suspended from the distal peripheral lip 60. An intermediate sized bag B will be engaged around the distal end 52 and the wall portions located between the cutouts 54 and 56 on each side of the support portion 46, and will be suspended from the distal peripheral lip 60 and the intermediate lips 62. A larger bag B will be engaged around the distal end 52, the wall portions located between the cutouts 54 and 56 on each side of the support portion 46 and the wall portions located between the cutouts 56 on each side of the support portion 46 and the proximal cutout 58, and will be suspended from the distal peripheral lip 60, the intermediate lips 62 and the proximal lips 64.

[0035] Indicia can be provided on the peripheral wall 48 to identify where each size of bags is to be engaged on various lips of the bag support S. The indicia can include the bags' sizes in metric and/or imperial measurements. For instance, indicia can be provided at locations 96, 98 and 100 (see Fig. 1) to respectively indicate where the proximal upper edges of small (e.g. 3 by 7), medium (e.g. 4.5 by 9) and large bags (e.g. 5.5 by 9) B are to be secured

[0036] Figs. 9 to 11 illustrate an installation sequence of the bag B to the bag support S. As seen in Fig. 9, the bag B is partly opened and the distal end 52 of the bag support S inserted at an angle (see arrows 102a and 102b) in the open mouth of the bag B. Depending on the size of the bag B, the appropriate lips 60, 62, 64 will be introduced in the bag B, as seen in Fig. 10. In Figs. 9 to 11, the bag B is of medium size, whereby the distal peripheral lip 60 and the intermediate lips 62 will be inserted in the bag B. In Fig. 11, the bag support S has been pivoted downwardly (see arrow 104), thereby engaging it tautly within the bag B, with the bag B being suspended from the peripheral lip 60 and intermediate lips 62, below the closure member 32 of the bag B, as best seen in Fig. 13, with Fig. 13 showing however a large bag B mounted to the bag support S. The bag B, when being mounted to the bag support S, is engaged to the anti-slip protrusion 68, which assists in keeping the bag B onto the bag support B during the installation process.

[0037] Fig. 12 illustrates how to detach the bag B from the bag support S, for instance by displacing the bag support S relative to the bag B as per, in order, arrows 106, 108 and 110.

[0038] The peripheral wall 48 can be flexible so that it can be collapsed somewhat inwardly when installing the bag B thereto, such that when released it biasedly springs outwardly to increase pressure on the bag B and secure the same solidly to the bag support B.

[0039] Figs. 14 and 15 show the adapter A being used with a sampling sponge holding device H, of the type described and shown in aforementioned U.S. Patent Publication No. US 2013/0118275 A1, which is herein incorporated by reference. A

handle 112 of the sponge holding device H is slidable in the inner cavity 90 of the distal socket 84 of the adapter A. The handle 112 has a cross-section that is complementary to the inner cavity 90 of the distal socket 84. Reference 114 generally illustrates a clamping mechanism of the holding device H, which is adapted to releasably hold a sampling sponge to the holding device H.

[0040] While the above description provides examples of the embodiments, it will be appreciated that some features and/or functions of the described embodiments are susceptible to modification without departing from the spirit and principles of operation of the described embodiments. Accordingly, what has been described above has been intended to be illustrative and non-limiting and it will be understood by persons skilled in the art that other variants and modifications may be made without departing from the scope of the disclosure as defined in the claims appended hereto.

CLAIMS:

1- A device for supporting a bag defining a mouth, comprising a handle portion and a support portion, the support portion including a peripheral wall inwardly defining an opening, the support portion being adapted for attaching the bag at least to the peripheral wall thereof such that the mouth of the bag is in communication with the opening of the peripheral wall, whereby a substance to be collected can be deposited through the opening and the mouth and into the bag.

2- The device of Claim 1, wherein bag attachment elements are provided on the peripheral wall for securing an open end of the bag to the support portion.

3- The device of Claim 2, wherein there are provided a plurality of bag attachment elements for allowing bags having mouth openings of different sizes to be attached to the support portion.

4- The device of Claim 3, wherein indicia are provided on the support portion adjacent at least some of the bag attachment elements for providing identification on which attachment elements are to be used for different bag sizes.

5- The device of Claim 4, wherein the indicia are provided on the peripheral wall.

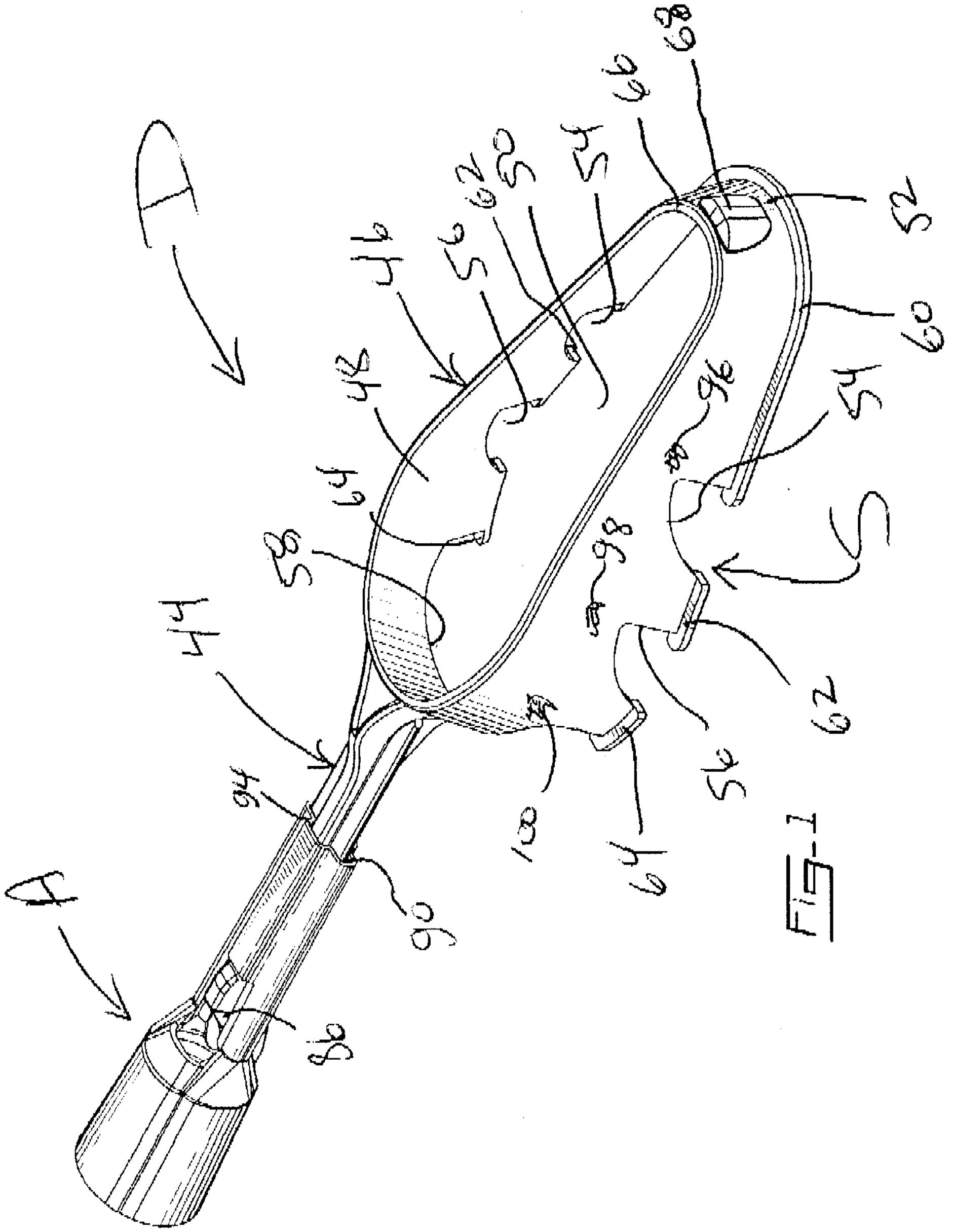


Fig. 1

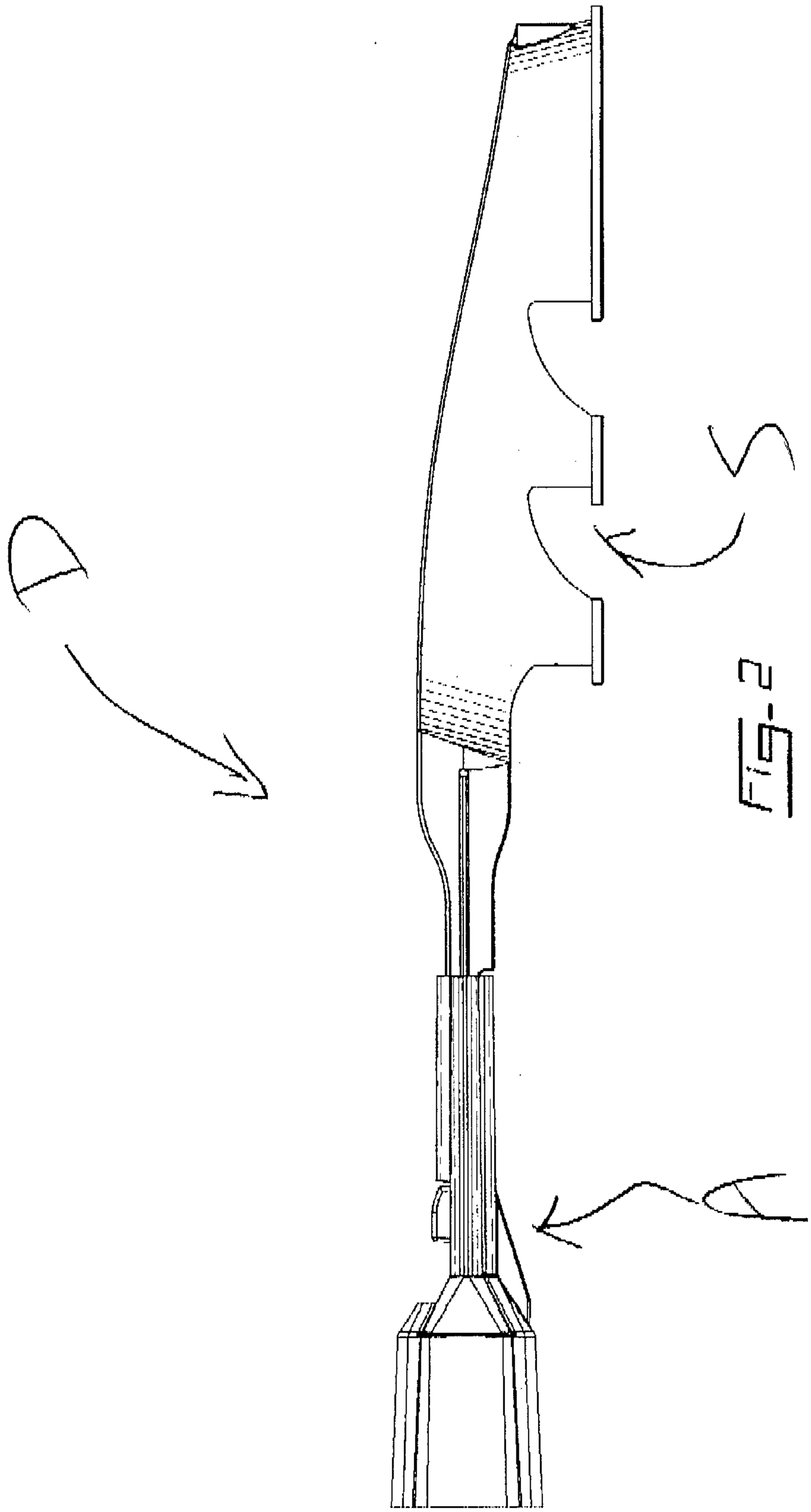


Fig. 2

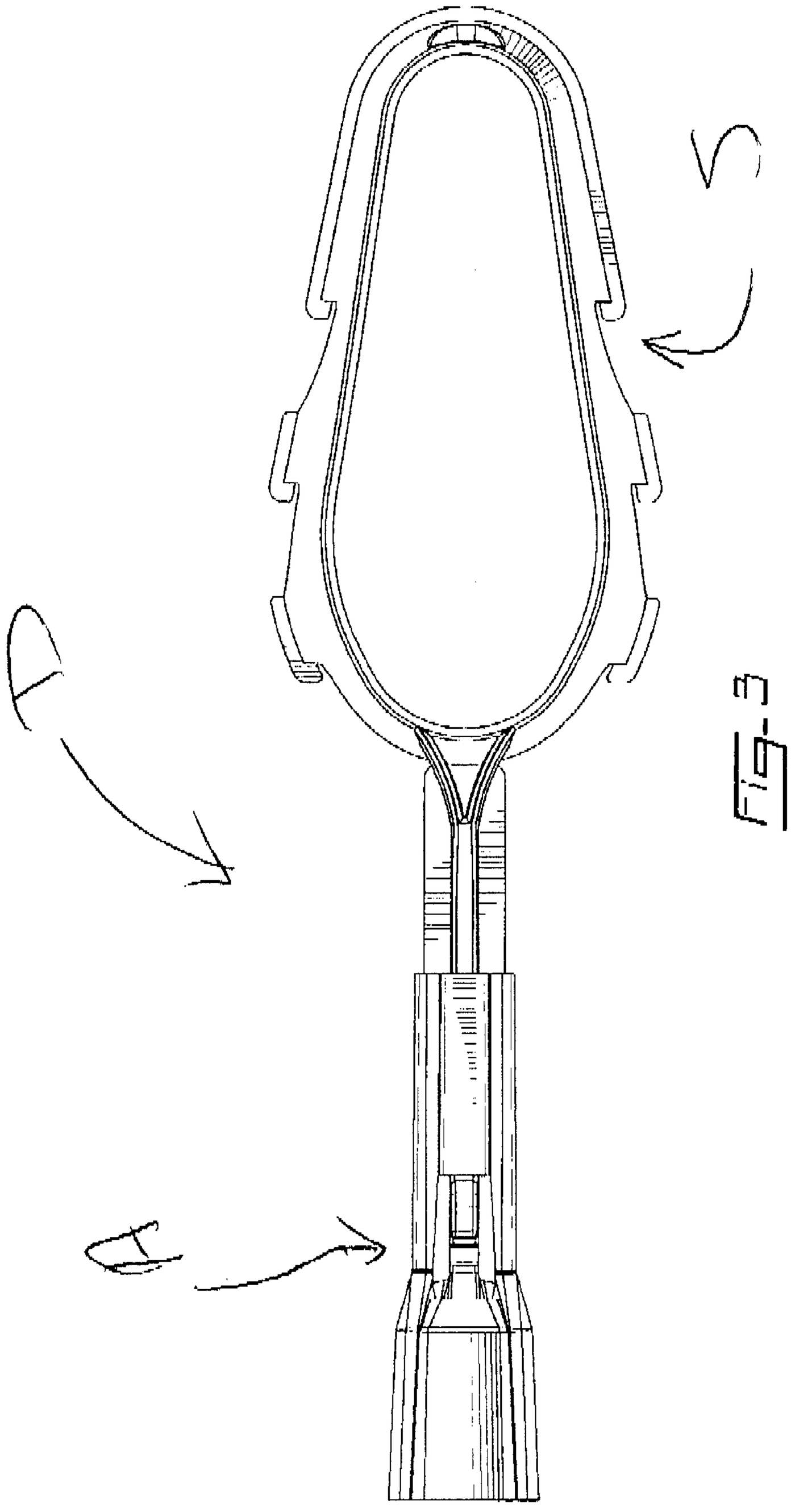


Fig. 5

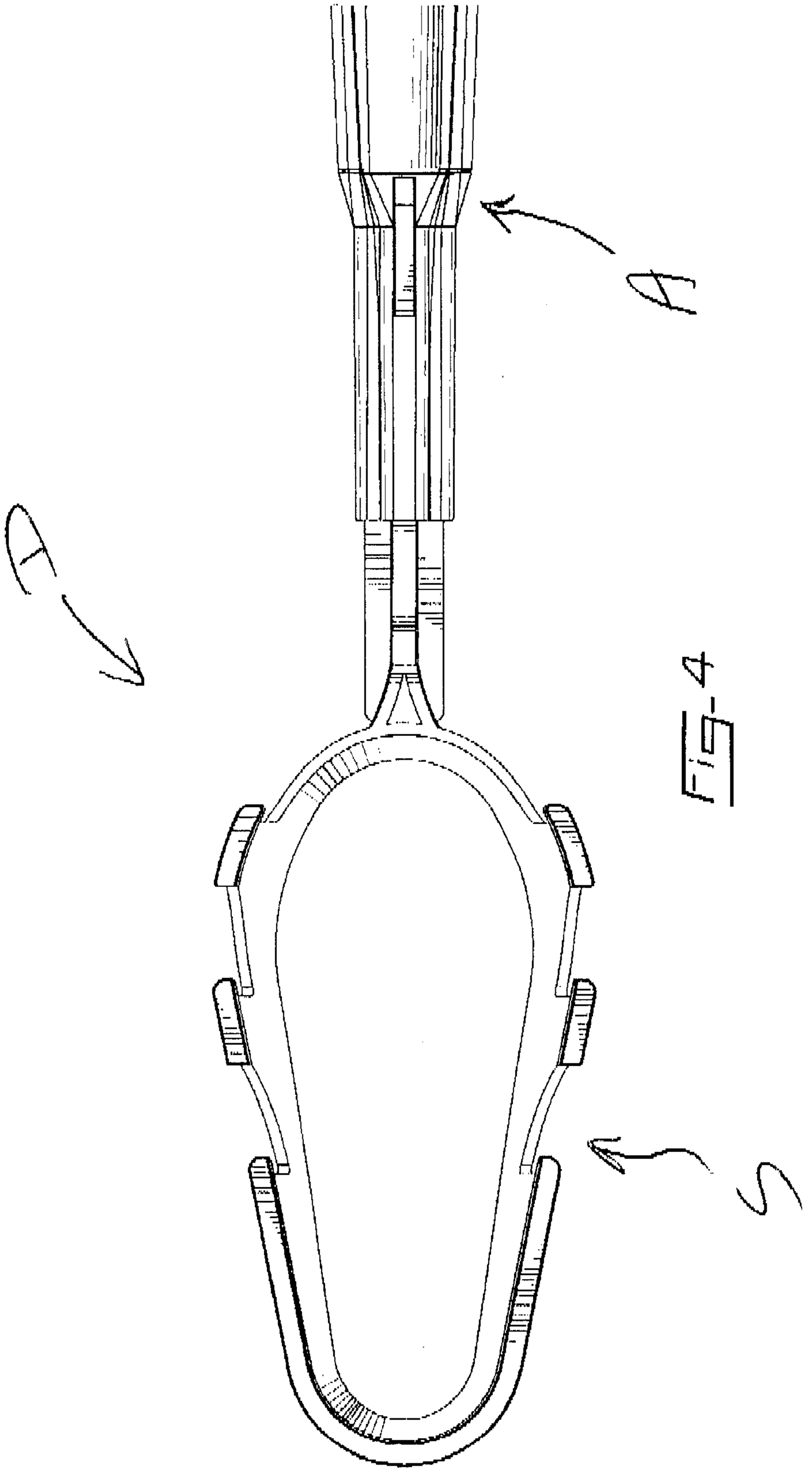


Fig-4

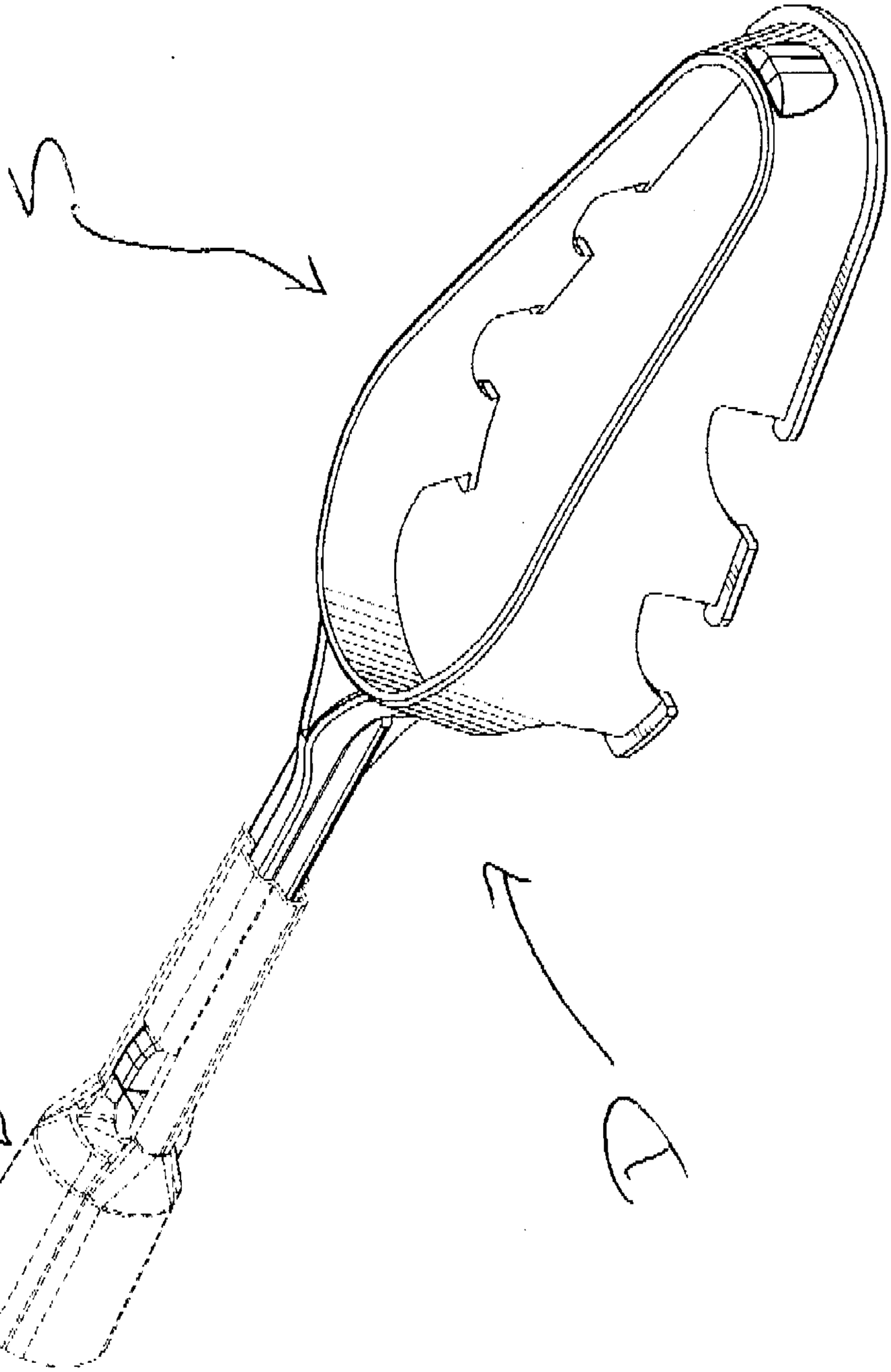


Fig-5

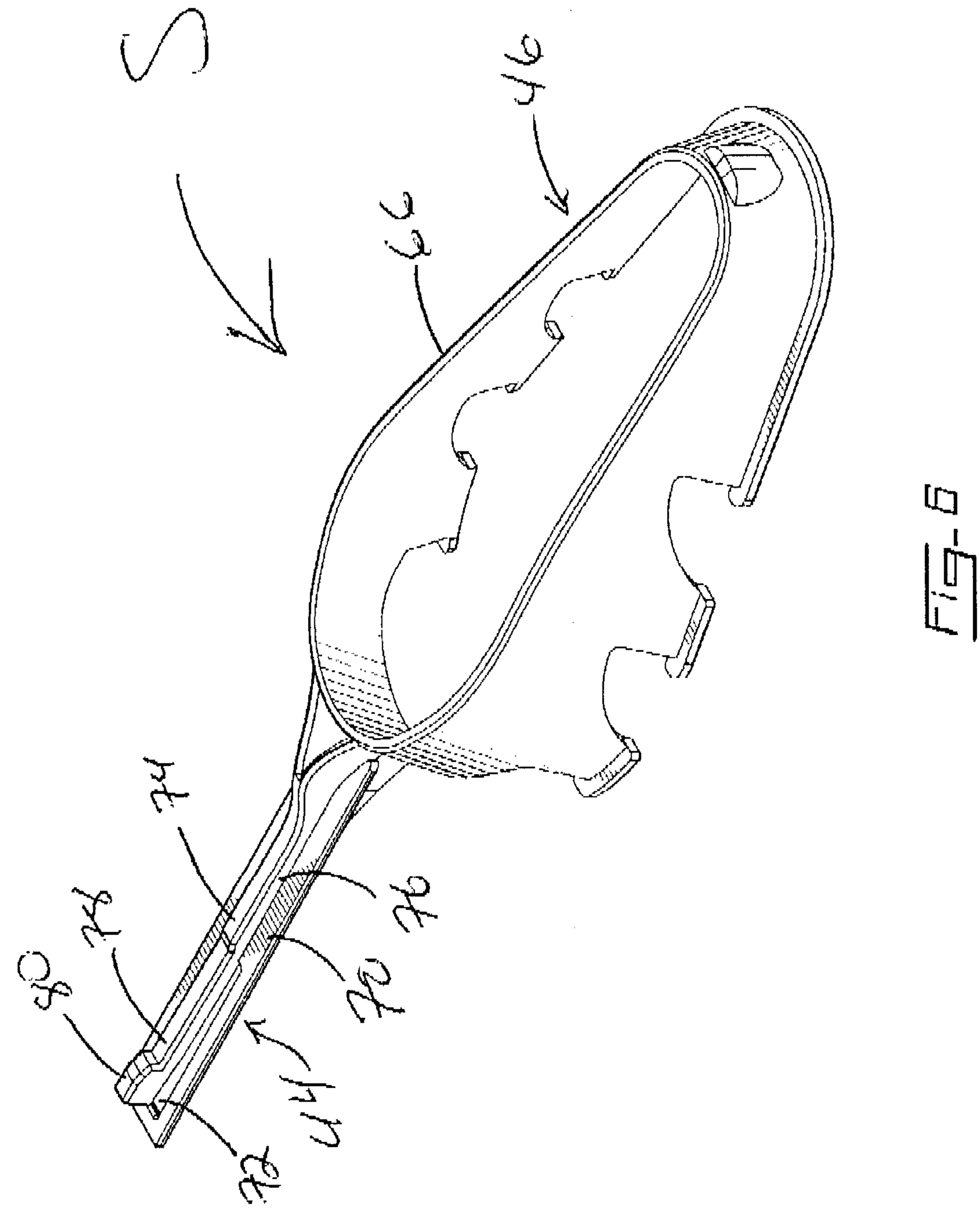


Fig-5

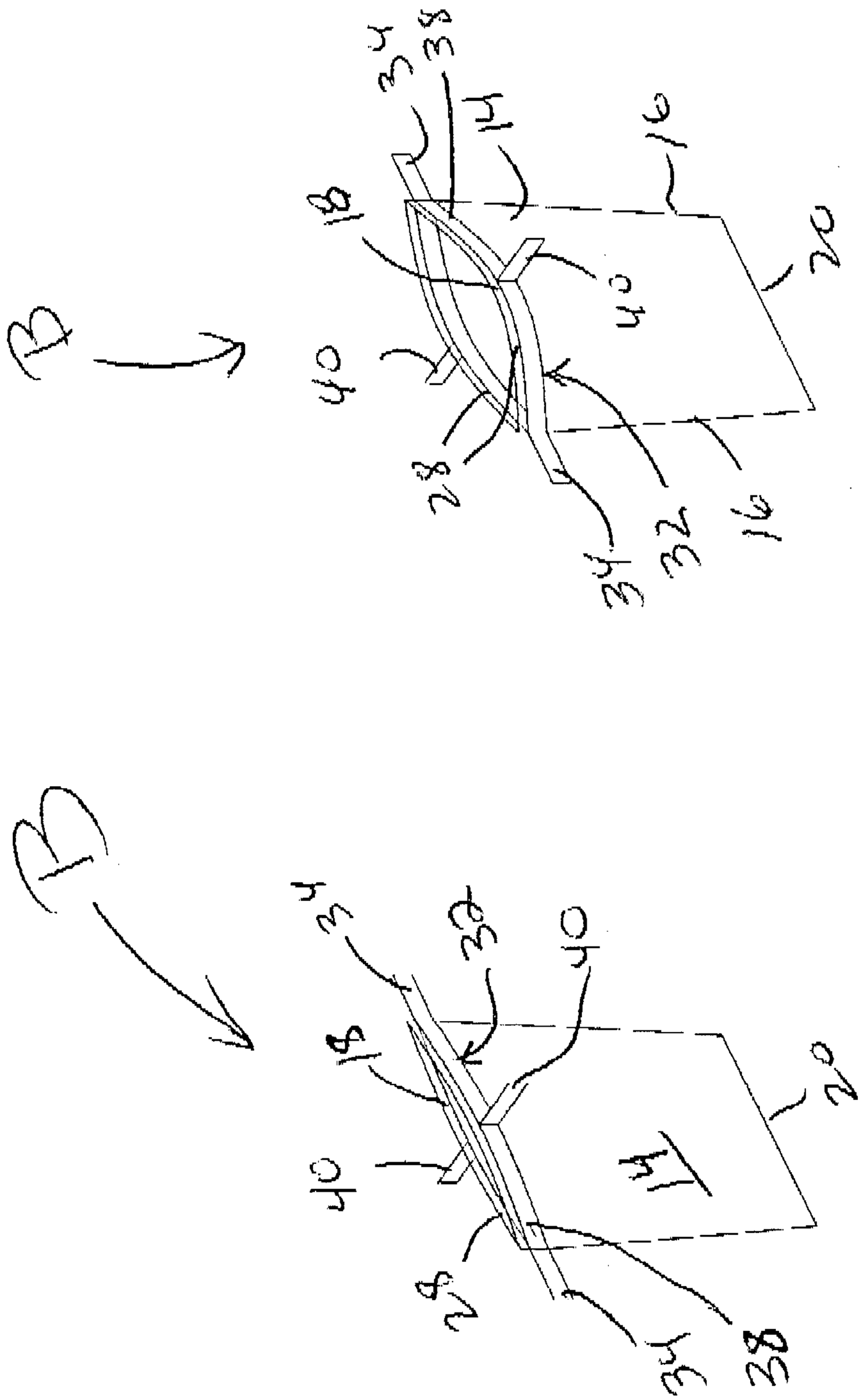


Fig-8

Fig-7

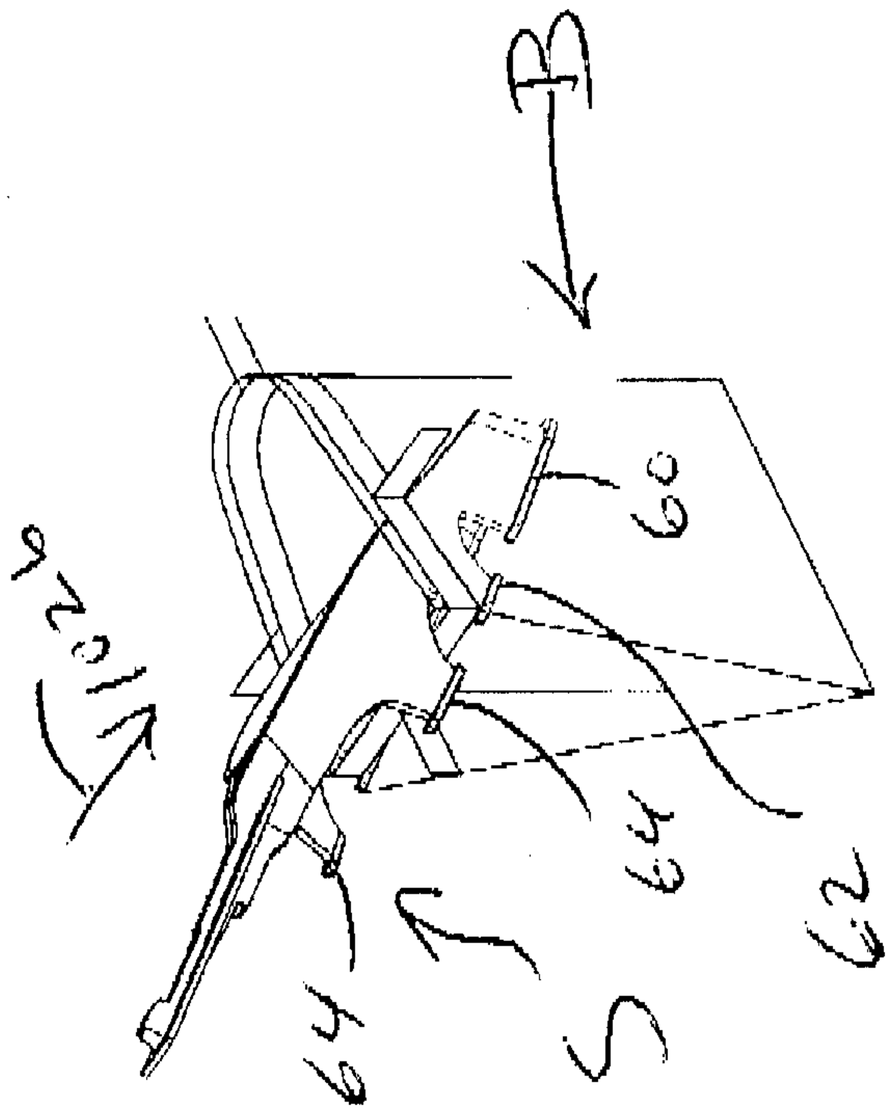


Fig-10

Fig-9

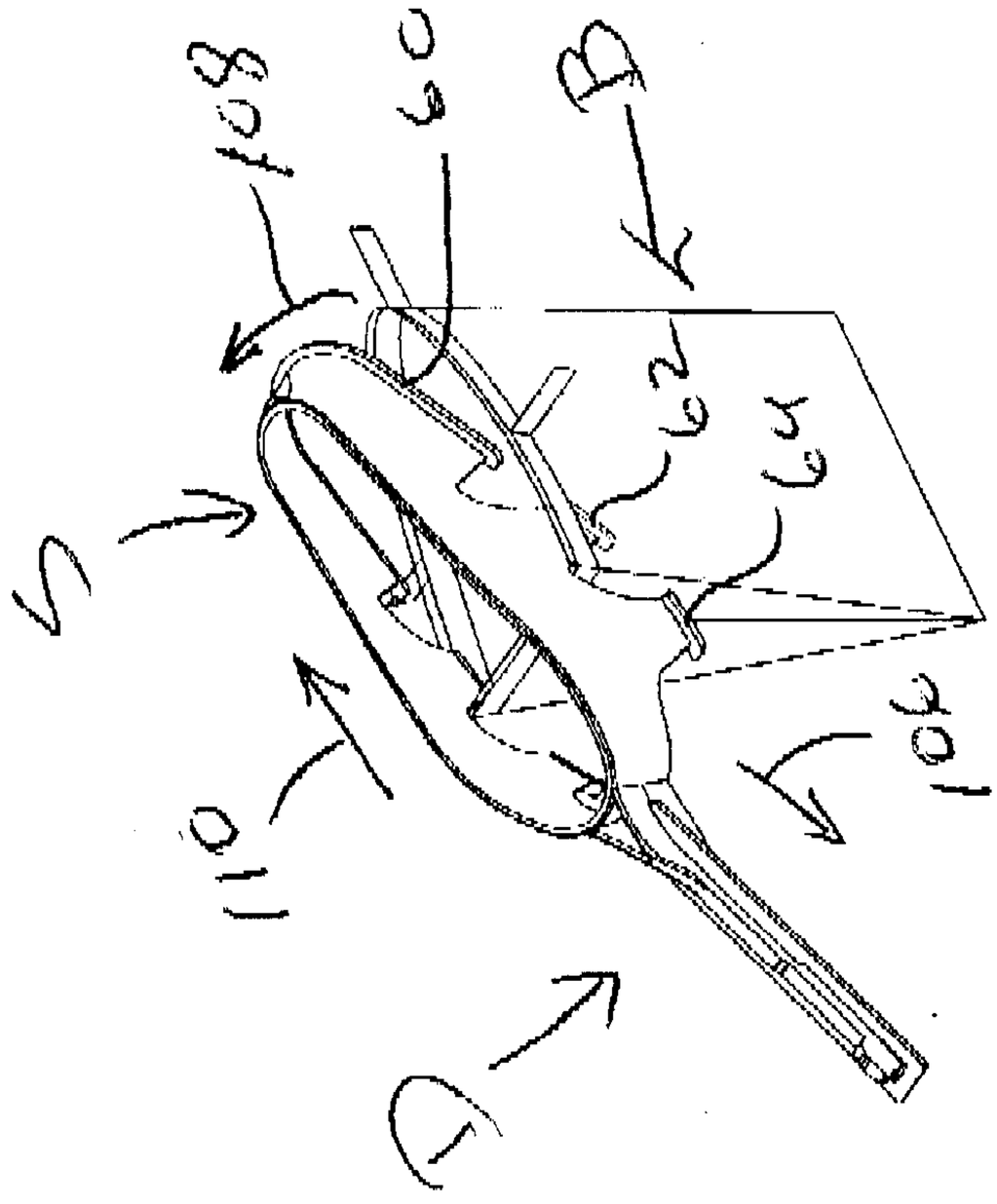


Fig-12

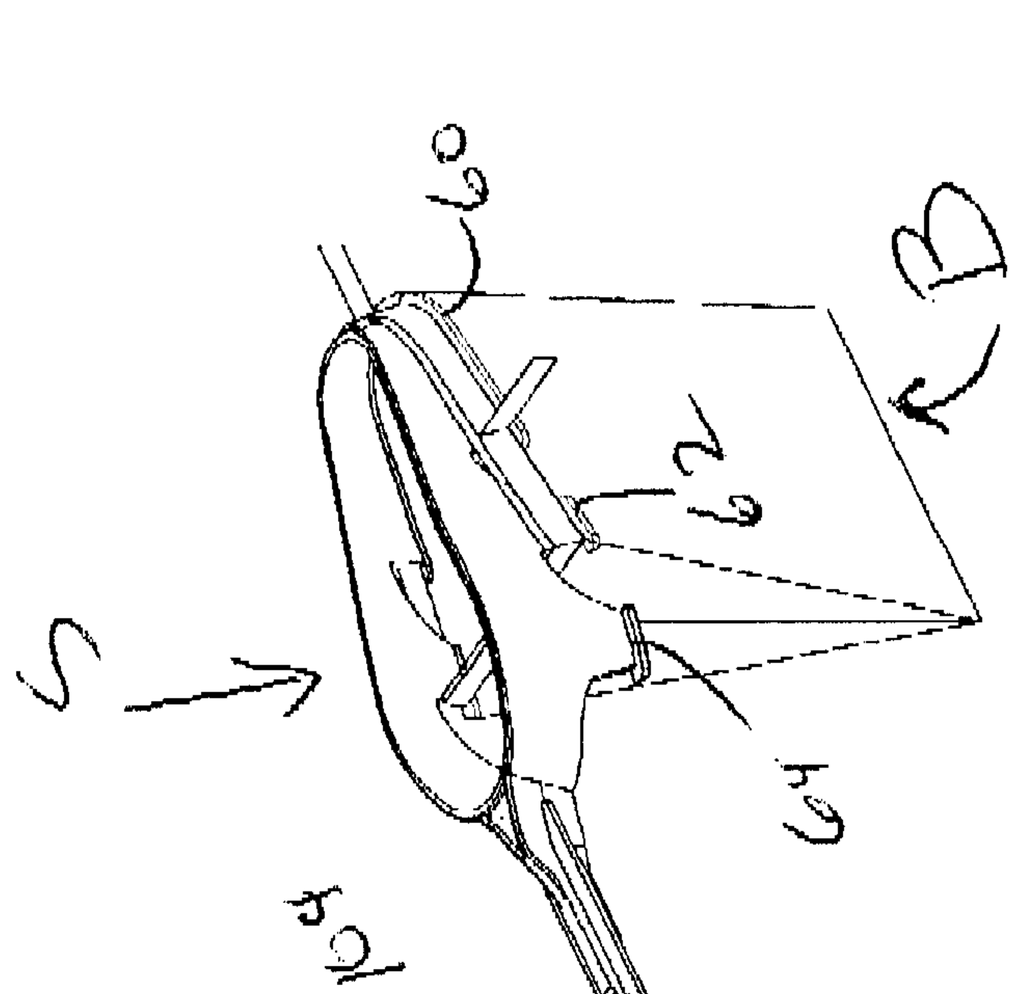


Fig-11

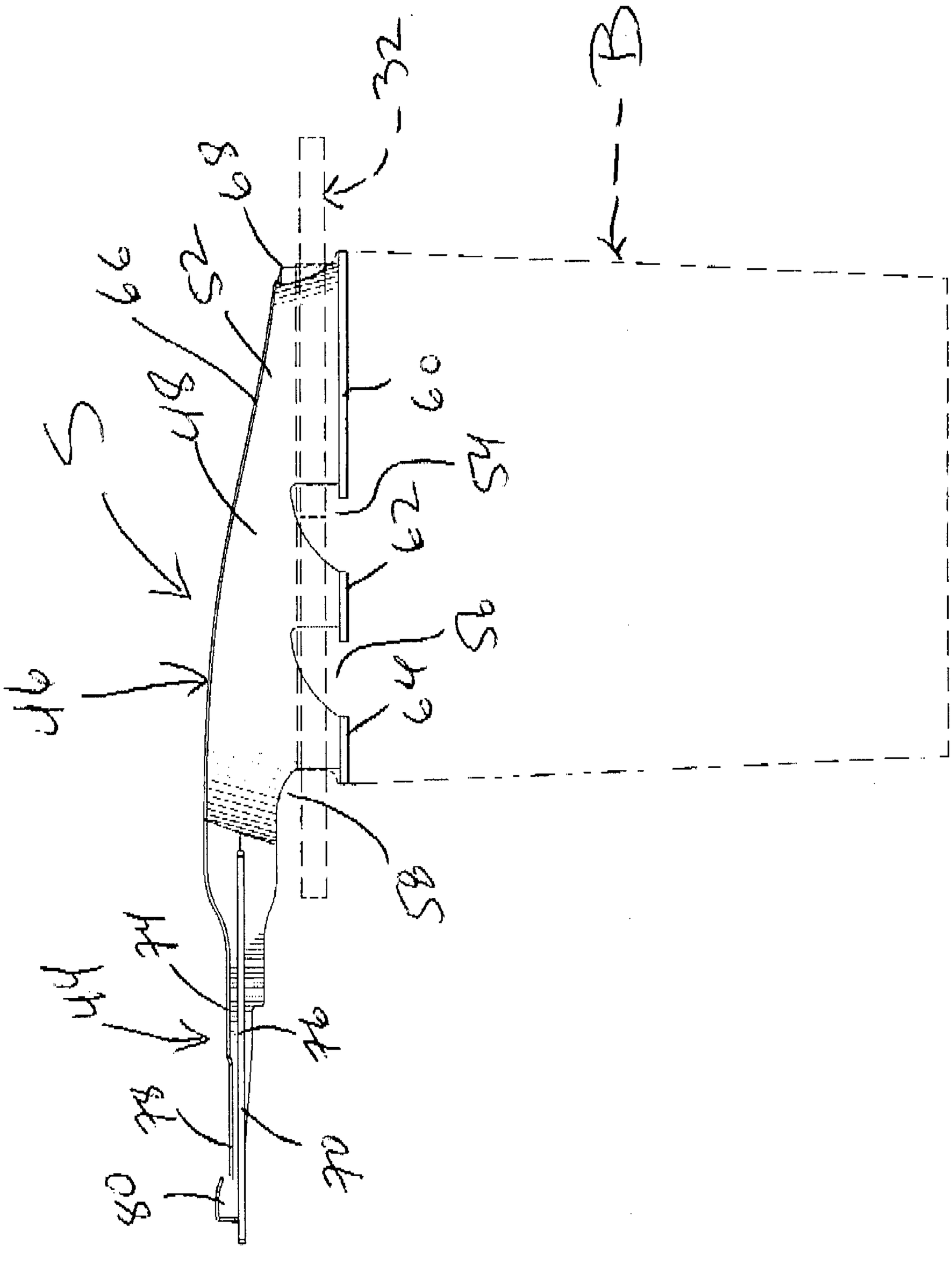


Fig-13

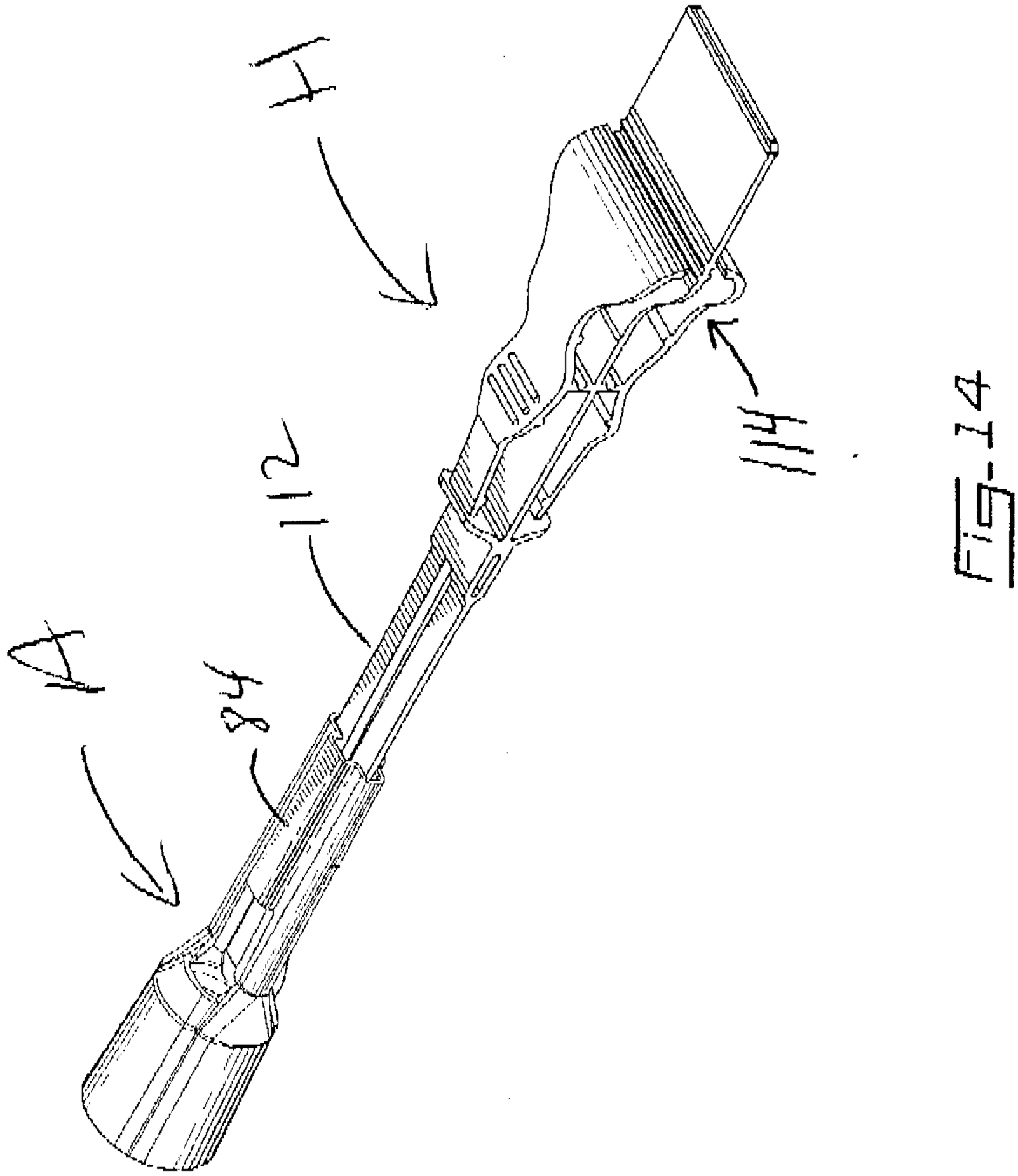


Fig-14

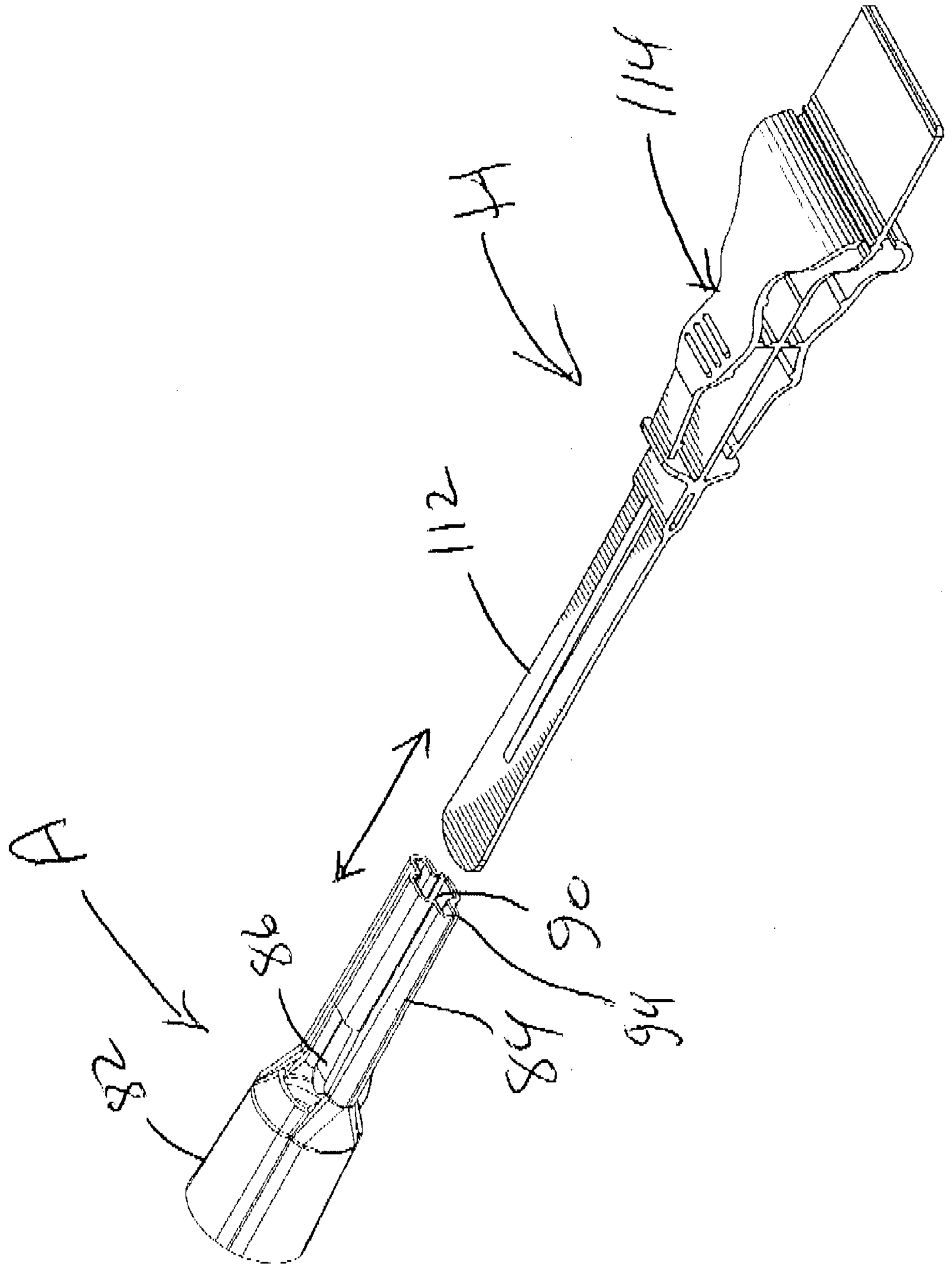


Fig. 15

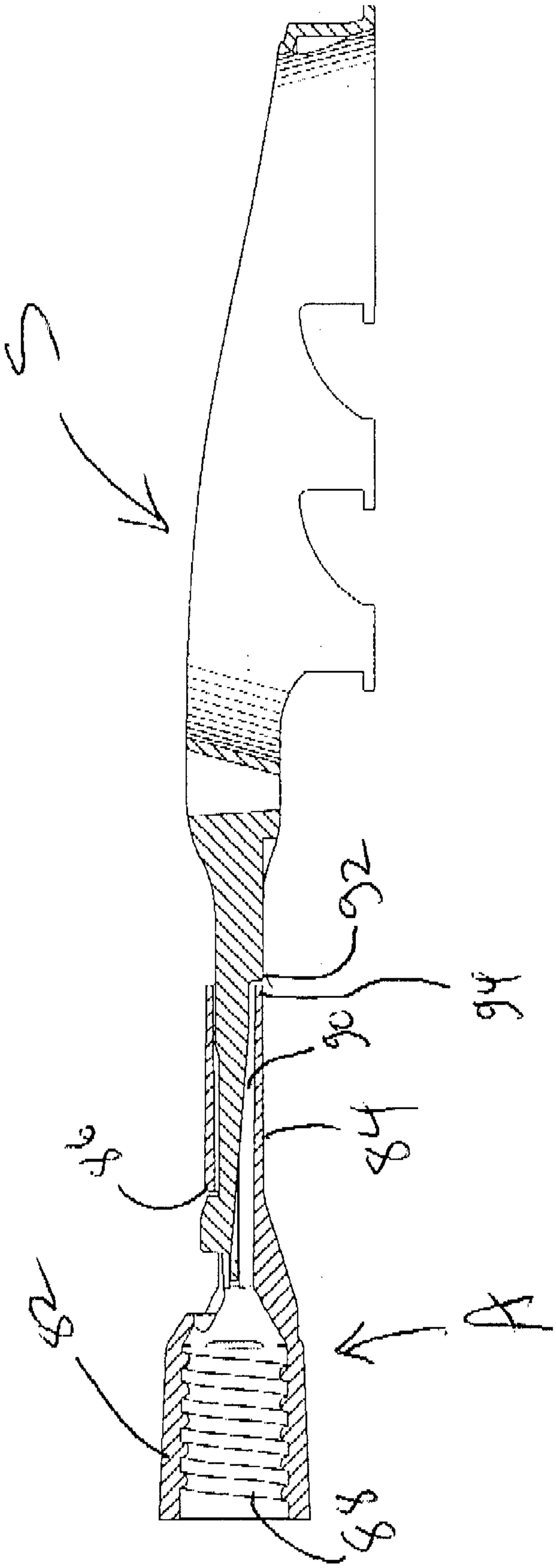
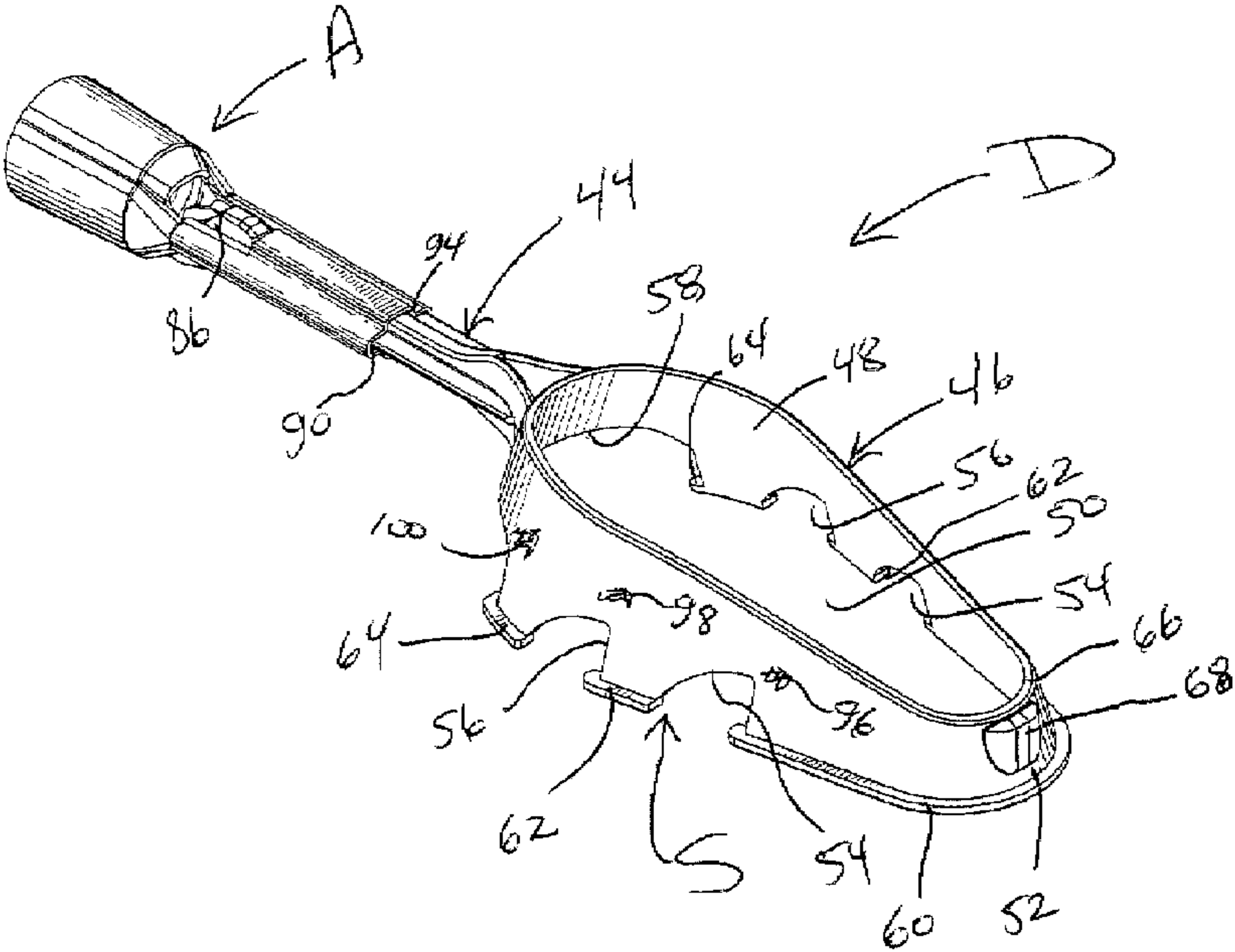


Fig-1B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