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(54) Needle for use as part of a plastic fastener dispensing tool

Nadel für ein Ausgabegerät von Kunststoff-Befestigungselementen

Aiguille pour dispositif de distribution d'éléments d'attache en plastique

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Description

BACKGROUND OF THE INVENTION

The present invention relates generally to tools for use in dispensing plastic fasteners and more particularly to needles which are used in such tools.

Plastic fasteners are widely used in commerce to attach tags or other items to articles in a manner which minimizes the risk of inadvertent detachment therefrom. One type of plastic fastener is manufactured in the form of fastener stock comprising a pair of continuously connected, elongated side members which are interconnected by a plurality of thin transverse cross links. Typically, one side member comprises a plurality of end-bars or T-bars joined together by severable connectors. The fastener stock is usually produced by molding or stamping from flexible plastic materials, such as nylon, polyethylene, and polypropylene. Additional information pertaining to fastener stock may be obtained from the following commonly assigned U.S. patents, all of which are incorporated herein by reference: U.S. Pat. No. 4,955,475, issued September 11, 1990; U.S. Pat. No. 4,456,161, issued June 26, 1984; U.S. Pat. No. 4,121,487, issued October 24, 1978; and U.S. Pat. No. 3,103,666, issued September 17, 1963.

The above-described fastener stock is typically loaded into a dispensing tool, often referred to as a "tagger gun." A tagger gun normally includes a hollow needle having a longitudinal slot extending over its length. The fastener stock is inserted into the tagger gun behind the needle. Upon actuation of a trigger mechanism in the gun, an individual fastener is separated from the fastener stock and is inserted into the desired article of commerce through the needle.

In U.S. Pat. No. 4,273,279, which is incorporated herein by reference, a typical needle having a single part construction is described. The needle includes a shank or "stem" portion which has a relatively sharp tip to permit penetration into the article to be attached and an integrally formed substantially cylindrical base portion. The shank portion is hollow to permit the T-bar end of the fastener to pass therethrough and has a longitudinal slot to permit the filament of the fastener to extend therefrom as the T-bar end moves through the needle. The base portion includes a central bore with an inner diameter equal to the inner diameter of the hollow shank. The base portion also has a longitudinal slot aligned with the slot in the shank. The needle is made by machining the shank portion and the base portion from a single piece of metal. As can readily be appreciated, however, machining metal into a desired shape can be a rather arduous and time-consuming task which allows little margin for error.

Also disclosed in U.S. Pat. No. 4,273,279 is a needle assembly having a conventional two part structure. The needle assembly includes a shank portion stamped from a piece of a steel and a base portion which is formed of plastic and is molded around the shank por-

tion. One disadvantage with this type of needle, however, is that the molding process is rather expensive, accounting for an overwhelming percentage of the total cost of manufacturing the needles.

Because needles used in tagger guns tend to break frequently and require replacement, they are typically removably mounted in an opening formed in the front end or "nose" of the tagger gun and are releasably secured therein by means of a locking mechanism in the tagger gun.

For example, as shown in Figs. 21 and 22 of U.S. Pat. No. 4,456,161, the needle locking mechanism includes a locking pin, which engages a corresponding recessed area formed in the needle. The locking pin is also provided with a cut-out slot which provides a passageway for insertion and removal of the needle. The locking pin is biased in its locking position by means of a spring mounted in the tagger gun. When the locking pin is pushed towards the spring to compress it, the slot on the locking pin aligns with the needle to free it for removal. Preferably, that portion of the locking pin engaging the recessed area of the needle in locking position is rectangular or square in cross-section.

Unfortunately, the above-described needle locking mechanism suffers from certain disadvantages. For example, the needle may be inserted into the opening in the tagger gun in any one of an infinite number of angular orientations. An inherent problem with this mounting procedure is that it is not intuitively obvious or readily apparent as to what angular orientation is correct. If the angular orientation of the needle is incorrect, the locking pin will not properly engage the recessed area in the needle, frequently resulting in needle breakage or in the jamming of the needle in the tagger gun, or in an ineffective locking of the needle. Moreover, one or more components of the locking mechanism may break or require replacement after repeated or prolonged use.

Another patent of interest to the present invention is the commonly assigned U.S. Pat. No. 4,998,661, issued March 12, 1991 and incorporated herein by reference. In this patent, a needle assembly adapted for removable mounting on the front end of a tagger gun is disclosed. The needle assembly comprises a needle encased in a holder which may be easily secured to and removed from the front end of the tool, the holder defining in conjunction with the remainder of the tool at least a major portion of the feed track. In a preferred construction of the needle assembly, the needle is a hollow slotted metal structure and the holder is comprised of plastic which is injection molded around the needle.

In U.S. Patent No. 4,877,172 there is described and illustrated in Fig. 4 the use of a tapered needle locking screw for locking an inserted needle in place. Although the needle locking screw provides a secure, snug engagement of an inserted needle, it still requires precise alignment of the needle before locking.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a new and improved needle for use as part of a tool for dispensing plastic fasteners.

It is another object of the present invention to provide a needle as described above which can be removably mounted in the nose of a fastener dispensing tool and releasably secured in place.

It is yet another object of the present invention to provide a needle as described above which does not require an extraneous needle locking mechanism for releasably securing the needle in the nose of the fastener dispensing tool and, therefore, can be more easily inserted into and removed from the nose of the fastener dispensing tool.

It is still another object of the present invention to provide a needle as described above which can be made by a more economical manufacturing process than is typically available for existing needles.

In accordance with the objects of the present invention as broadly recited above, a needle for use as part of a fastener dispensing tool comprises an elongated hollow member having a stem portion and a base portion, the stem portion being generally cylindrically shaped and terminating in a sharp tip at its front end, the base portion being sized and shaped for insertion into the nose of the fastener dispensing tool, the base portion having a spring tab for releasably securing the base portion within the nose of the fastener dispensing tool and a generally cylindrically shaped bottom section, the needle having a longitudinally extending slot extending through said stem portion and said bottom section of said base portion.

The invention also provides a method of making a needle as well as a method for removably mounting a needle in a fastener dispensing tool.

The base portion and the stem portion of the needle are made from a single sheet of metal by a stamping and/or rolling technique. Preferably the base portion of the needle is shaped to include a second spring tab. A first portion of one of the spring tabs is sized and shaped to releasably engage a recessed area formed in the nose so as both to prevent unintended removal of the base portion therefrom and to limit rearward insertion of the base portion into the nose. A second portion of the same tab is sized and shaped to engage another portion of the nose so as to prevent vertical movement of the base portion therewithin. The other spring tab serves as a registration member to align the base portion in its desired longitudinal, vertical and angular orientations.

Additional objects, as well as additional features and advantages, of the present invention will be set forth in part in the description which follows, and in part will be obvious from the description or may be learned by practice of the invention. In the description, reference is made to the accompanying drawings which forms a part thereof and in which is shown by way of illustration

specific embodiments for practicing the invention. These embodiments will be described in sufficient detail to enable those skilled in the art to practice the invention, and it is to be understood that other embodiments may be utilized and that structural changes may be made without departing from the scope of the invention. The following detailed description is therefore, not to be taken in a limiting sense, and the scope of the present invention is best defined by the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are hereby incorporated into and constitute a part of this specification, illustrate preferred embodiments of the invention and, together with the description, serve to explain the principles of the invention. In these drawings wherein like reference numerals represent like parts:

Fig. 1 is a perspective view of one embodiment of a needle adapted for use as part of a tool for dispensing plastic fasteners, the needle being constructed according to the teachings of the present invention; Fig. 2 is a rear view of the needle shown in Fig. 1; Fig. 3 is a side view of the needle shown in Fig. 1; Fig. 4 is a top view of the needle shown in Fig. 1; Fig. 5 is a top, fragmentary view of the front end of a fastener dispensing tool illustrating the opening into which the needle of Fig. 1 may be removably mounted; Fig. 6 is a front, fragmentary view of the front end of the fastener dispensing tool shown in Fig. 5; Fig. 7 is a top, fragmentary view showing the needle of Fig. 1 mounted in the opening in the tool of Fig. 5; Fig. 8 is a front, fragmentary view showing the needle of Fig. 1 mounted in the opening of Fig. 5, the components of the tool located behind the slot not being shown for purposes of clarity; Fig. 9 is a side, fragmentary view showing the needle of Fig. 1 mounted in the opening of Fig. 5; Fig. 10 is a fragmentary section view taken along line A-A of Fig. 9; Fig. 11 is a perspective view of a second embodiment of a needle adapted for use as part of a fastener dispensing tool, the needle being constructed according to the teachings of the present invention; Fig. 12 is a front, fragmentary view of the front end of a fastener dispensing tool illustrating the opening into which the needle of Fig. 11 may be removably mounted; Fig. 13 is a perspective view of a third embodiment of a needle adapted for use as part of a fastener dispensing tool, the needle being constructed according to the teachings of the present invention; Fig. 14 is a top view of a fourth embodiment of a needle adapted for use as part of a fastener dispensing tool, the needle being constructed according to the teachings of the present invention; Fig. 15 is a front view of the needle shown in Fig.

14;

Fig. 16 is a front, fragmentary view of the nose of a fastener dispensing tool into which the needle of Fig. 14 may be removably mounted;

Fig. 17 is a fragmentary, right side view of the nose of the fastener dispensing tool shown in Fig. 16;

Fig. 18 is a front, fragmentary view showing the needle of Fig. 14 mounted in the nose of Fig. 16; and

Fig. 19 is a fragmentary, right side view showing the needle of Fig. 14 mounted in the nose of Fig. 16.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to the drawings and more particularly to Figs. 1 through 4, there is shown one embodiment of a needle for use as part of a tool for dispensing plastic fasteners, the needle being constructed according to the teachings of the present invention and represented generally by reference numeral 11.

Needle 11, which is preferably made by stamping and/or rolling a single sheet of metal, comprises an elongated, hollow, cylindrically shaped stem portion 13. Stem portion 13 terminates at its forward end with a relatively sharp tip 15 and is provided with a longitudinally extending slot 17. The inner diameter of stem portion 13 is somewhat larger than the outer diameter of the T-bar end of a plastic fastener (not shown) to be dispensed through needle 11. The width of slot 17 is sufficiently large to accommodate the cross-link portion of the fastener to be dispensed through the needle.

Needle 11 also includes a base portion 19. Base portion 19 includes a cylindrically shaped bottom section 21 which has an inner diameter substantially equal to the inner diameter of stem portion 13 and is aligned therewith. A longitudinally extending slot 23 is formed in bottom section 21 and is aligned with slot 17 of stem portion 13 so as to permit the cross-link of the fastener being dispensed by the tool to extend from the T-bar end as the latter is pushed through the needle. Base portion 19 also includes a pair of spring tabs 24 and 27 which extend generally upwardly and outwardly on opposite sides of slot 23.

As will hereinafter be discussed in greater detail, base portion 19 of needle 11 is sized and shaped for insertion into an opening 31 formed at the front end or nose 33 of a tagger gun, see Figs. 5 and 6. When being assembled, base portion 19 of needle 11 is inserted into opening 31 from front 34 of front end 33. When base portion 19 is inserted into opening 31, spring tabs 24 and 27 press against the inner walls 37 and 39 of opening 31. Tab 24 includes a first portion 25 and a second portion 26. First portion 25 is shaped to fit into a recessed area of opening 31 in such a way as to prevent the unintended removal of base portion 19 from opening 31. In addition, when mounted in place, the top of first portion 25 of tab 24 extends up above opening 31 in such a way as to permit a user to grasp it and to push it

inwardly out of engagement with the recessed area so that base portion 19 may be removed from opening 31. Second portion 26 of tab 24 is shaped and located relative to first portion 25 so as to abut another portion of opening 31 in such a way as to minimize vertical movement of base portion 19 within opening 31. Tab 27 serves as a registration member which helps to keep the needle in its desired longitudinal, vertical and axial orientation when mounted on the tagger gun.

Preferably, needle 11 is made of a metal of the type typically used in tagger gun needles. Examples of suitable metals for needle 11 are a beryllium/copper alloy, stainless steel, and plated or coated steel. As can readily be appreciated, one advantage to the construction of the needle of the present invention is that the needle can be manufactured in its entirety by a stamping and/or roll forming process. Such a process is considerably less expensive and time-intensive than the machining process or the combination stamping/molding process described above in connection with the manufacture of conventional needles.

As can be seen in Figs. 5 and 6, opening 31 in front end 33 is of a general slot type configuration extending in from front 34 of nose 33 and down from the top 34-2 of nose 33. Opening 31 is defined by a curved bottom wall 35 and a pair of upwardly extending side walls 37 and 39. Bottom wall 35 is shaped to receive bottom section 21 of base 19. Side walls 37 and 39 are shaped to receive tabs 24 and 27, respectively.

Side wall 37 includes an inwardly tapering front portion 40 and a rearwardly disposed, generally rectangularly shaped, recessed area 41. Front portion 40 includes a notch 42, which is sized and shaped to receive second portion 26 of tab 24. Notch 42 is defined in part by a top surface 42-1, which serves to limit vertical movement of second portion 26 of tab 24 when base portion 19 is inserted into opening 31 (see Fig. 8). Area 41 is defined by a rear surface 41r, a side surface 41s, and a front surface 41f. Area 41 is appropriately dimensioned so that, when first portion 25 of tab 24 is inserted therinto (i.e., when base portion 19 is fully inserted into opening 31), longitudinal movement of base portion 19 within opening 31 is prevented.

Side wall 39 includes a notch 43, which is sized and shaped to receive tab 27. Notch 43 is defined in part by a top surface 43-1, which serves to limit upward movement of tab 27, and a rear surface 43-2, which serves to limit insertion of base portion 19 into opening 31.

Walls 37 and 39 also limit rotational movement of base portion 19 by engaging tabs 24 and 27.

The front end of opening 31 (which spans from the front surface 40f of portion 40 across notch 43) is approximately the same width as the rear end of needle 11 in its relaxed position. Consequently, a user may mount needle 11 in opening 31 simply by aligning the rear end of needle 11 with the front end of opening 31 and then sliding needle 11 into opening 31 until first portion 25 of spring tab 24 locks into place in area 41. There is no need to push tab 24 inwardly before pushing

base portion 19 through opening 31. Thus, installation of needle 11 in tool 31 can be achieved in one motion and, assuming that nose 33 is kept stationary, can be accomplished using only one hand.

Referring now to Figs. 7 through 9, there are shown top, front and side fragmentary views, respectively, of needle 11 fully inserted into opening 31. As can be seen in Fig. 9, the top of first portion 25 of tab 24 extends a short distance out of the top of opening 31 to permit it to be manipulated by a user, for instance, in removing needle 11 from the tool. This may be done, as seen in Fig. 7, by pushing first portion 25 towards surface 43 (in the direction of arrow A) until it has cleared surface 41f and then pushing (or pulling) base portion through the front of opening 31.

Referring now to Fig. 10, there is shown a section view of needle 11 mounted in opening 31. As can be seen, that portion of needle 11 that is mounted within opening 31, i.e., base portion 19, has an outer diameter d and a length l . It is believed that the ratio of diameter to length (d/l) is indicative of the relative strength of needle retention as well as the strength and durability of the tool, with smaller ratios indicating greater strength and greater ratios indicating lesser strength. Comparing the d/l ratio of needle 11 to that for conventional needles of the type described in U.S. Pat. No. 4,273,279, one finds needle 11 to have a smaller d/l ratio since the lengths of the respective base portions are substantially equal whereas the diameter of the base portion of needle 11 is considerably smaller than the diameter of the base portion of conventional needles. Consequently, it is believed that needle 11 is more fully retained and, therefore, more likely to remain in proper alignment than conventional needles of the type described above.

Referring now to Fig. 11, there is shown a second embodiment of a needle for use as part of a fastener dispensing tool, the needle being constructed according to the teachings of the present invention and being represented generally by reference numeral 71.

Needle 71, which, like needle 11, is preferably made by stamping and/or rolling a sheet of metal, such as a beryllium/copper alloy, comprises a slotted, hollow, cylindrically-shaped stem portion 73 substantially identical to stem portion 13 of needle 11. Needle 71 also includes a base portion 75, which includes a slotted cylindrically shaped bottom section 77, which has an inner diameter substantially equal to the inner diameter of stem portion 73 and which is aligned therewith. In addition, base portion 75 includes a generally upwardly extending removal tab 79 and a generally laterally extending wing 81. As can be seen, wing 81 is split to include a spring tab 83 as well as a part 84, which functions to releasably secure base portion 75 within a suitably shaped slot formed in the nose of a fastener dispensing tool. (See, for example, Fig. 12 which illustrates a generally T-shaped slot 85 formed in the nose of a fastener dispensing tool 87. Depression of spring tab 83 within slot 85 for purposes of removing needle 71 from tool 87 may be achieved by pushing downwardly

on a release button 89 integrally formed on tagger gun 87.)

Referring now to Fig. 13, there is shown a third embodiment of a needle for use as part of a fastener dispensing tool, the needle being constructed according to the teachings of the present invention and being represented generally by reference numeral 101.

Needle 101 is substantially identical in construction and composition to needle 71, the only difference between needle 71 and needle 101 being that needle 101 does not include a removal tab 79. Like needle 71, needle 101 may be releasably secured within slot 85 of tool 87 (see Fig. 12).

Referring now to Figs. 14 and 15, there is shown a fourth embodiment of a needle for use as part of a fastener dispensing tool, the needle being represented generally by reference numeral 151.

In contrast with needle 11, which is primarily intended for use with tagger guns of the type wherein a T-bar of a fastener is loaded into the rear end of the needle through the longitudinal slot thereof, needle 151 is intended primarily for use with, but is not limited to use with, tagger guns of the type wherein the T-bar of a fastener is loaded into the rear end of the needle from a direction generally perpendicular to the longitudinal slot of the needle. An example of a tagger gun having such a loading mechanism is sold by Dennison Manufacturing Co. under the trademark MARK II PISTOL-GRIP SWIFTACHER TOOL.

Needle 151, which may be made from the same materials used to make needle 11, is preferably made by stamping and/or rolling a single sheet of metal. As can be seen, needle 151 comprises an elongated, hollow, cylindrically shaped stem portion 153. Stem portion 153 terminates at its forward end with a relatively sharp tip 155 and is provided with a longitudinally extending slot 157. The inner diameter of stem portion 153 is somewhat larger than the outer diameter of the T-bar end of a plastic fastener (not shown) to be dispensed through needle 151. The width of slot 157 is sufficiently large to accommodate the cross-link portion of the fastener to be dispensed through the needle.

Needle 11 also includes a base portion 159. Base portion 159 includes a bottom section 161 which is shaped to define a longitudinally extending slot 163. Slot 163 is aligned with slot 157 of stem portion 153 so as to permit the cross-link of the fastener being dispensed by the tool to extend from the T-bar as the latter is pushed through the needle. The front portion of bottom section 161 is generally cylindrical in shape and has an inner diameter substantially equal to the inner diameter of stem portion 153. The rear portion of bottom section 161 is shaped to define a V-shaped cutting element 162, which may be used to sever an individual fastener from fastener stock.

Base portion 159 also includes a pair of spring tabs 165 and 167 which extend upwardly from opposite sides of slot 163 and are bent outwardly away from each other. Tab 165 includes a first portion 166 and a second

portion 168. First portion 166 and second portion 168 perform substantially the same functions as first portion 25 and second portion 26 of tab 24, respectively. Tab 167, in addition to performing substantially the same functions as tab 27 of needle 11, is rounded to form a shelf 170, upon which a T-bar rests as it is loaded into needle 151 in the direction indicated by arrow B.

Referring now to Figs. 16 and 17, there are shown front and right side views, respectively, of a tagger gun nose 171 into which needle 151 may be removably mounted. Needle 151 is shown mounted in nose 171 in Figs. 18 and 19.

The embodiments of the present invention described above are intended to be merely exemplary and those skilled in the art shall be able to make numerous variations and modifications to it without departing from the scope of the present invention. All such variations and modifications are intended to be within the scope of the present invention as defined by the appended claims.

Claims

1. A needle (11) for use as a part of a fastener dispensing tool, the fastener dispensing tool having an opening therein to receive the needle, said needle (11) comprising an elongated hollow member having a stem portion (13) and a base portion (19) being sized and shaped for insertion into an opening (31) in the fastener dispensing tool, said base portion (19) having a cylindrically shaped bottom section (21) having a longitudinal slot (23) and said stem portion (13) being cylindrically shaped and having a longitudinal slot (17) aligned with said longitudinal slot (23) in said base portion (19) characterized in that a first spring tab (24) extending from said base portion (19) on the side of said slot (23), is provided for releasably securing said base portion (19) within said opening (31) in said fastener dispensing tool.
2. The needle (11) as claimed in claim 1 wherein said first spring tab (24) is sized so that when said needle (11) is inserted into said opening (31) of said fastener dispensing tool at least a portion of said spring tab (24) extends partially out of said opening (31) so that said first spring tab (24) can be manipulated by a finger of a person.
3. The needle (11) as claimed in claim 1 wherein said first spring tab (24) includes a portion for keeping said base portion (19) from moving upwardly when said needle (11) is seated within said opening (31).
4. The needle (11) as claimed in claim 1 wherein said elongated, hollow member also includes means for aligning the needle (11) in a desired orientation when seated in said opening in said fastener dispensing tool.
5. The needle (11) as claimed in claim 4 wherein said aligning means comprises a second spring tab (27) formed on said base portion (19).
6. The needle (11) as claimed in claim 5 wherein said first spring tab (24) and said second spring tab (27) extend outwardly in substantially different directions.
7. The needle (11) as claimed in claim 5 wherein said first spring tab (24) and said second spring tab (27) extend outwardly in substantially the same direction.
8. The needle (11) as claimed in claim 1 wherein said stem portion (13) and said base portion (19) are formed from a single piece of material.
9. The needle (11) as claimed in claim 4 wherein the two spring tabs (24, 27) extend out in opposite directions.
10. The needle (11) as claimed in claim 9 wherein said base portion (19) includes a V shaped cutting element.
11. The needle (11) as claimed in claim 5 wherein said stem portion (13) and said base portion (19) can be stamped and/or rolled from a single sheet of metal.
12. The needle (11) as claimed in claim 11 wherein said single sheet of metal is selected from the group consisting of a beryllium/copper alloy, stainless steel, and plated or coated steel.
13. A method of making a needle adapted to be removably mounted within an opening formed in a fastener dispensing tool, the method comprising the steps of:
 - a. providing a sheet of metal; and
 - b. stamping and/or rolling the sheet of metal to form an elongated, hollow member having a longitudinal slot, said elongated, hollow member including a base portion sized and shaped for insertion into the opening in the fastener dispensing tool, said base portion having a spring tab extending outwardly from the side of said slot, for releasably securing said base portion within the opening in the fastener dispensing tool.
14. A method for removably mounting a needle in a fastener dispensing tool comprising the steps of:
 - a. providing an opening in the fastener dispensing tool sized and shaped to receive said needle;
 - b. providing a needle comprising an elongated

hollow member including a stem portion and a base portion, each having a longitudinal slot, said base portion being sized and shaped for insertion into the opening in the fastener dispensing tool and having a spring tab extending outwardly from the side of said slot, for releasably securing said base portion within the opening in the fastener dispensing tool; and
 c. inserting said base portion into said opening whereby said spring tab releasably secures said base portion within said opening in said fastener dispensing tool.

15. The method as claimed in claim 13 wherein at least a portion of said spring tab is sized and shaped to extend partially out of said opening.
16. As method as claimed in claim 14 wherein said opening includes a recessed area adapted to receive said spring tab when said base portion is fully inserted into said opening so as to prevent said base portion from being accidentally removed from said opening or from being further rearwardly inserted into said opening.
17. The method as claimed in claim 14 wherein said base portion and said stem portion are formed from a single sheet of material.

Patentansprüche

1. Nadel (11) zur Verwendung als ein Teil eines Ausgabegerätes für Befestigungsvorrichtungen, wobei das Ausgabegerät für Befestigungsvorrichtungen eine Öffnung zur Aufnahme der Nadel darin aufweist, die Nadel (11) ein längliches hohles Element mit einem Stababschnitt (13) und einem Basisabschnitt (19) aufweist, welche zum Einfügen in eine Öffnung (31) in dem Ausgabegerät für Befestigungsvorrichtungen bemessen und geformt sind, der Basisabschnitt (19) einen zylindrisch geformten unteren Teil (21) mit einem Längsschlitz (23) aufweist und der Stababschnitt (13) zylindrisch geformt ist und einen Längsschlitz (17) hat, welcher mit dem Längsschlitz (23) in dem Basisabschnitt (19) ausgerichtet ist,
dadurch gekennzeichnet, daß
 ein erster Federflügel (24), welcher sich von dem Basisabschnitt (19) an der Seite des Schlitzes (23) erstreckt, zum lösbaren Befestigen des Basisabschnittes (19) innerhalb der Öffnung (31) in dem Ausgabegerät für Befestigungsvorrichtungen vorgesehen ist.
2. Nadel (11) nach Anspruch 1, bei welcher der erste Federflügel (24) so bemessen ist, daß, wenn die Nadel (11) in die Öffnung (31) des Ausgabegerätes für Befestigungsvorrichtungen eingefügt ist, zumindest ein Abschnitt des Federflügels (24) sich teil-

weise heraus aus der Öffnung (31) derart erstreckt, daß der erste Federflügel (24) mittels eines Fingers einer Person manipuliert werden kann.

3. Nadel (11) nach Anspruch 1, bei welcher der Federflügel (24) einen Abschnitt zum Verhindern aufweist, daß sich der Basisabschnitt (19) nach oben bewegt, wenn die Nadel (11) innerhalb der Öffnung (31) sitzt.
4. Nadel (11) nach Anspruch 1, bei welcher das längliche hohle Element ebenfalls eine Einrichtung zum Ausrichten der Nadel (11) in einer gewünschten Orientierung aufweist, wenn sie in der Öffnung in dem Ausgabegerät für Befestigungsvorrichtungen sitzt.
5. Nadel (11) nach Anspruch 4, bei welcher die Ausrichtungsvorrichtung einen zweiten Federflügel (27) aufweist, welcher an dem Basisabschnitt (19) ausgebildet ist.
6. Nadel (11) nach Anspruch 5, bei welcher der erste Federflügel (24) und der zweite Federflügel (27) sich auswärts in im wesentlichen unterschiedlichen Richtungen erstrecken.
7. Nadel (11) nach Anspruch 5, bei welcher der erste Federflügel (24) und der zweite Federflügel (27) sich auswärts in im wesentlichen dieselbe Richtung erstrecken.
8. Nadel (11) nach Anspruch 1, bei welcher der Stababschnitt (13) und der Basisabschnitt (19) aus einem einzigen Stück Material geformt sind.
9. Nadel (11) nach Anspruch 4, bei welcher die beiden Federflügel (24, 27) sich auswärts in entgegengesetzten Richtungen erstrecken.
10. Nadel (11) nach Anspruch 9, bei welcher der Basisabschnitt (19) ein V-förmiges Schneidelement aufweist.
11. Nadel (11) nach Anspruch 5, bei welcher der Stababschnitt (13) und der Basisabschnitt (19) aus einem einzigen Metallblech gestanzt und/oder gerollt werden können.
12. Nadel (11) nach Anspruch 11, bei welcher das einzige Metallblech aus der Gruppe ausgewählt ist, welche aus einer Beryllium/Kupfer-Legierung, nicht-rostendem Stahl und plattiertem oder beschichtetem Stahl besteht.
13. Verfahren zum Herstellen einer Nadel, welche so angepaßt ist, daß sie entferntbar innerhalb einer Öffnung montiert ist, welche in einem Ausgabegerät für Befestigungsvorrichtungen gebildet ist,

wobei das Verfahren die Schritte aufweist:

a. Bereitstellen eines Metallbleches; und

b. Stanzen und/oder Rollen des Metallbleches, um ein längliches hohles Element mit einem Längsschlitz zu formen, wobei das längliche hohle Element einen Basisabschnitt aufweist, welcher so bemessen und geformt ist, daß er in die Öffnung in dem Ausgabegerät für Befestigungsvorrichtungen eingeführt werden kann, wobei der Basisabschnitt einen Federflügel aufweist, welcher sich nach außen von der Seite des Schlitzes erstreckt zum lösbaren Befestigen des Basisabschnittes innerhalb der Öffnung in dem Ausgabegerät für Befestigungsvorrichtungen.

14. Verfahren zum lösbaren Montieren einer Nadel in einem Ausgabegerät für Befestigungsvorrichtungen, welches die Schritte aufweist:

a. Vorsehen einer Öffnung in dem Ausgabegerät für Befestigungsvorrichtungen, welche so bemessen und geformt ist, daß sie die Nadel aufnimmt;

b. Vorsehen einer Nadel, welche ein längliches hohles Element mit einem Stababschnitt und einem Basisabschnitt aufweist, wobei jeder einen Längsschlitz aufweist, wobei der Basisabschnitt so bemessen und geformt ist, daß er in die Öffnung in dem Ausgabegerät für Befestigungsvorrichtungen eingefügt werden kann, und einen Federflügel aufweist, welcher sich nach außen von der Seite des Schlitzes erstreckt, zum lösbaren Befestigen des Basisabschnittes innerhalb der Öffnung in dem Ausgabegerät für Befestigungsvorrichtungen; und

c. Einführen des Basisabschnittes in die Öffnung, wodurch der Federflügel den Basisabschnitt innerhalb der Öffnung in dem Ausgabegerät für Befestigungsvorrichtungen lösbar befestigt.

15. Verfahren nach Anspruch 13, bei welchem zumindest ein Abschnitt des Federflügels so bemessen und geformt ist, daß er sich teilweise aus der Öffnung erstreckt.

16. Verfahren nach Anspruch 14, bei welchem die Öffnung einen ausgenommenen Bereich aufweist, welcher so angepaßt ist, daß er den Federflügel aufnimmt, wenn der Basisabschnitt vollständig in die Öffnung eingeführt wird, um so zu verhindern, daß der Basisabschnitt zufällig aus der Öffnung entfernt wird oder weiter nach hinten in die Öffnung eingeführt wird.

17. Verfahren nach Anspruch 14, bei welchem der Basisabschnitt und der Stababschnitt aus einem einzigen Metallblech geformt sind.

Revendications

1. Aiguille (11) destinée à être utilisée comme partie d'un outil distributeur d'attache, l'outil distributeur d'attache ayant une ouverture afin de recevoir l'aiguille, l'aiguille (11) comprenant un élément allongé creux ayant une partie (13) servant de tige et une partie (19) servant de base ayant une forme et une dimension leur permettant d'être insérées dans une ouverture (31) dans l'outil distributeur d'attache, la partie servant de base (19) ayant une partie de fond avec une forme cylindrique comprenant une fente (23) longitudinale, et la partie servant de tige (13) ayant une forme cylindrique et comprenant une fente longitudinale (17) alignée avec la fente longitudinale (23) dans la partie servant de base (19), caractérisée en ce qu'une première languette élastique à ressort (24) s'étendant de la partie servant de base (19) sur le côté de ladite fente (23) est prévue pour fixer de manière libérable ladite partie servant de base (19) dans l'ouverture (31) dans l'outil distributeur d'attache.
2. Aiguille (11) selon la revendication 1, caractérisée en ce que la première languette élastique (24) a une dimension telle que, si l'aiguille (11) est insérée dans l'ouverture (31) de l'outil distributeur d'attache, au moins une partie de ladite languette élastique (24) s'étend partiellement à l'extérieur de l'ouverture (31) afin que la première languette élastique (24) puisse être manipulée par le doigt d'une personne.
3. Aiguille (11) selon la revendication 1, caractérisée en ce que la première languette élastique (24) inclut une partie pour empêcher la partie servant de base (19) de bouger vers le haut quand l'aiguille (11) se trouve à l'intérieur de l'ouverture (31).
4. Aiguille (11) selon la revendication 1, caractérisée en ce que l'élément creux allongé inclut aussi des moyens pour aligner l'aiguille (11) dans une orientation souhaitée quand elle se trouve dans l'ouverture dudit outil distributeur d'attache.
5. Aiguille (11) selon la revendication 4, caractérisée en ce que le moyen d'alignement comprend une deuxième languette élastique (27) formée sur la partie servant de base (19).
6. Aiguille (11) selon la revendication 5, caractérisée en ce que la première languette élastique (24) et la deuxième languette élastique (27) s'étendent vers

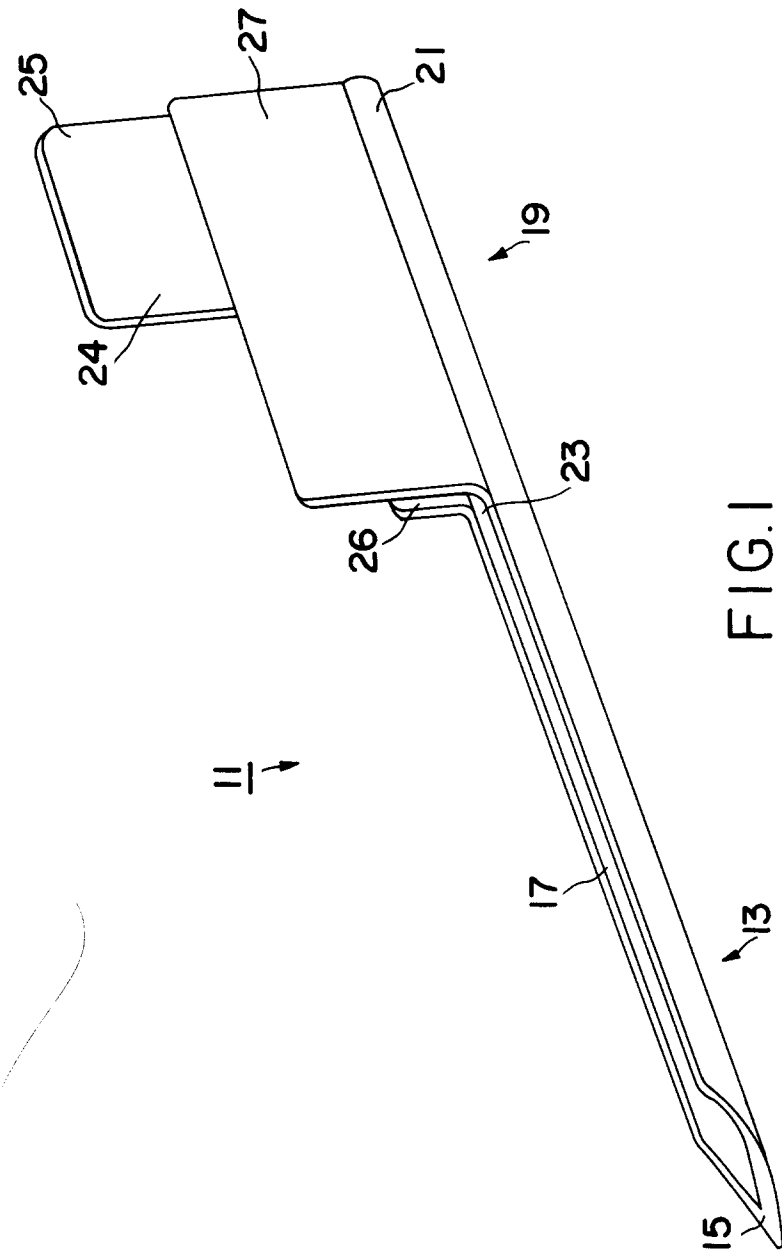
l'extérieur dans des sens essentiellement différents.

7. Aiguille (11) selon la revendication 5, caractérisée en ce que la première languette élastique (24) et la deuxième languette élastique (27) s'étendent vers l'extérieur essentiellement dans le même sens. 5
8. Aiguille (11) selon la revendication 1, caractérisée en ce que la partie servant de tige (13) et la partie servant de base (19) sont formées d'une seule pièce de matériau. 10
9. Aiguille (11) selon la revendication 4, caractérisée en ce que les deux languettes élastiques (24, 27) s'étendent à l'extérieur dans des sens opposés. 15
10. Aiguille (11) selon la revendication 9, caractérisée en ce que la partie servant de base (19) inclut un élément coupant en forme de V. 20
11. Aiguille (11) selon la revendication 5, caractérisée en ce que la partie servant de tige (13) et la partie servant de base (19) peuvent être estampées et/ou laminées à partir d'une seule feuille de métal. 25
12. Aiguille (11) selon la revendication 11, caractérisée en ce que la seule feuille de métal est choisie dans le groupe formé par un alliage de béryllium/cuivre, l'acier inoxydable et l'acier plaqué ou recouvert. 30
13. Procédé de fabrication d'une aiguille adaptée pour être montée d'une façon démontable dans une ouverture formée dans un outil distributeur d'attache, le procédé comprenant les étapes suivantes : 35
 - a. on prépare une feuille de métal ; et
 - b. on estampe et/ou on lamine la feuille de métal afin de former un élément creux allongé ayant une fente longitudinale, l'élément creux allongé incluant une partie servant de base ayant une forme et dimension lui permettant d'être inséré dans l'ouverture dans l'outil distributeur d'attache, la partie servant de base ayant une languette élastique s'étendant vers l'extérieur du côté de la fente afin de fixer de manière libérable la partie servant de base dans l'ouverture dans l'outil distributeur d'attache. 40 45 50
14. Procédé de montage d'une façon démontable d'une aiguille dans un outil distributeur d'attache comprenant les étapes suivantes : 55
 - a. on prépare une ouverture dans l'outil distributeur d'attache ayant une forme et une dimension lui permettant de recevoir l'aiguille ;

b. on prépare une aiguille comprenant un élément creux allongé incluant une partie servant de tige et une partie servant de base ayant une fente longitudinale, respectivement, la partie servant de base ayant une forme et une dimension pour permettre l'insertion dans l'ouverture dans l'outil dispensateur d'attache et ayant une languette élastique s'étendant vers l'extérieur du côté de la fente pour fixer de manière libérable la partie servant de base dans l'ouverture dans l'outil distributeur d'attache ; et

c. on insère la partie servant de base dans l'ouverture, la languette élastique fixant de manière libérable la partie servant de base dans l'ouverture dans l'outil distributeur d'attache.

15. Procédé selon la revendication 13, caractérisé en ce qu'au moins une partie de la languette élastique a une dimension et une forme lui permettant de s'étendre partiellement à l'extérieur de l'ouverture.
16. Procédé selon la revendication 14, caractérisé en ce que ladite ouverture inclut une région évidée et adaptée pour recevoir la languette élastique quand la partie servant de base est complètement insérée dans ladite ouverture afin d'empêcher ladite partie servant de base d'être enlevée accidentellement de ladite ouverture ou d'être insérée plus vers l'arrière dans l'ouverture.
17. Procédé selon la revendication 14, caractérisé en ce que la partie servant de base et la partie servant de tige sont formées d'une seule feuille de matériau.



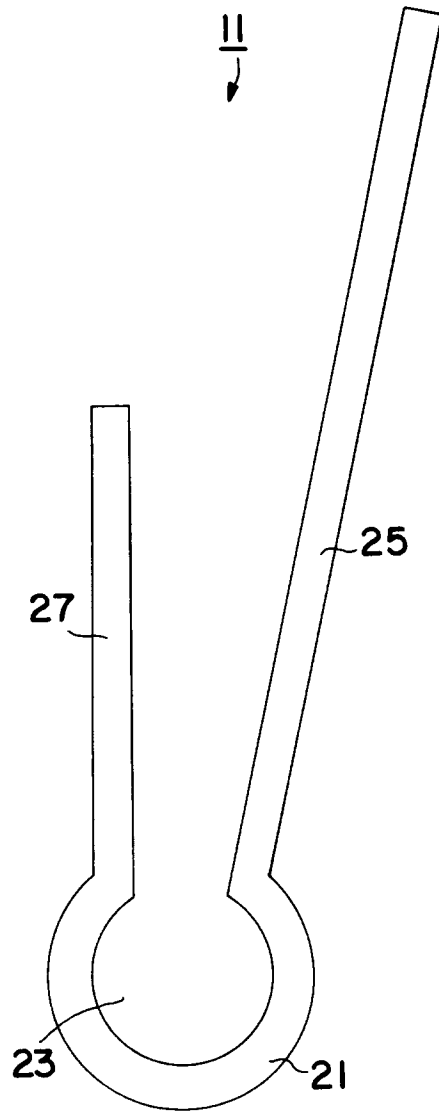


FIG.2

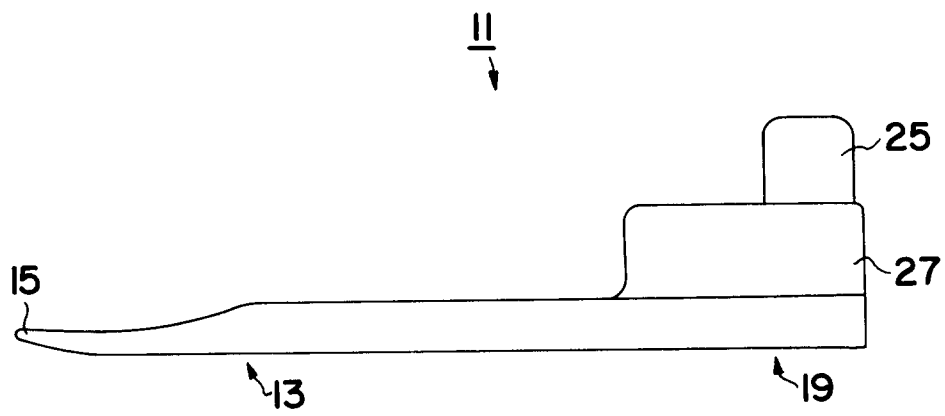


FIG.3

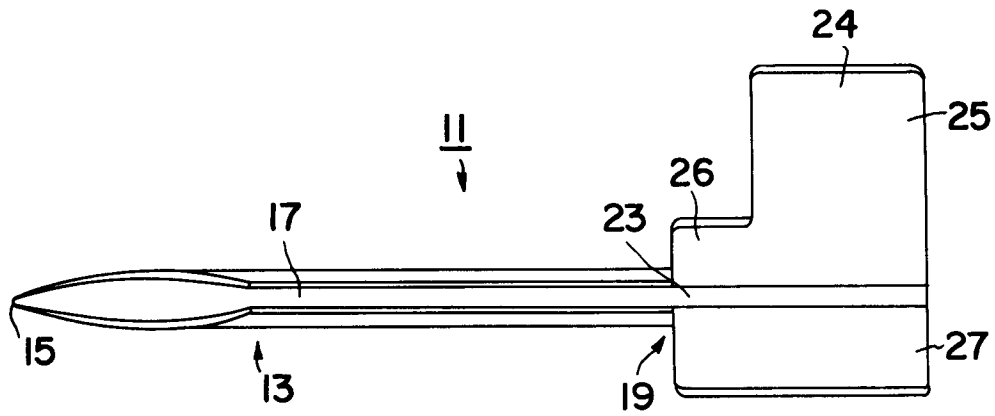


FIG. 4

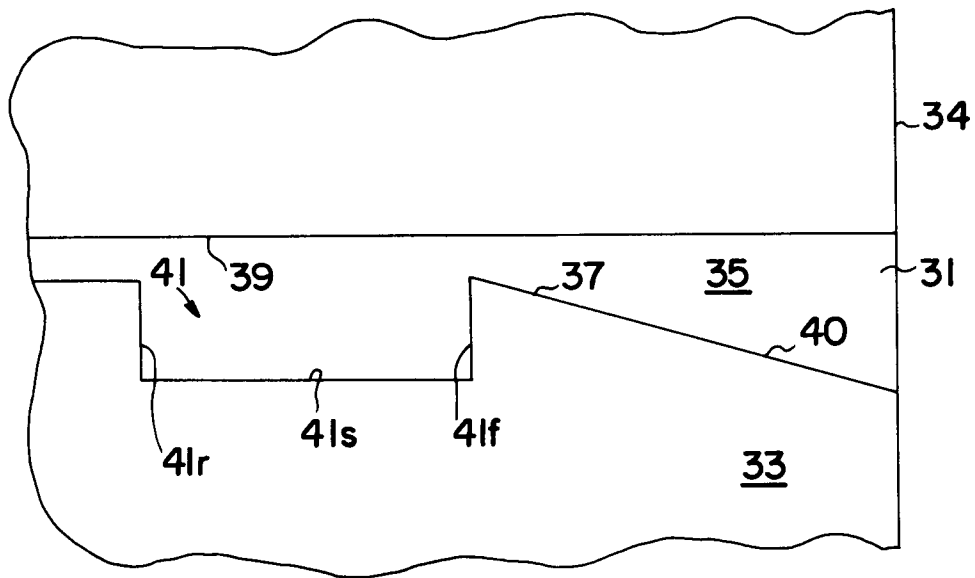


FIG. 5

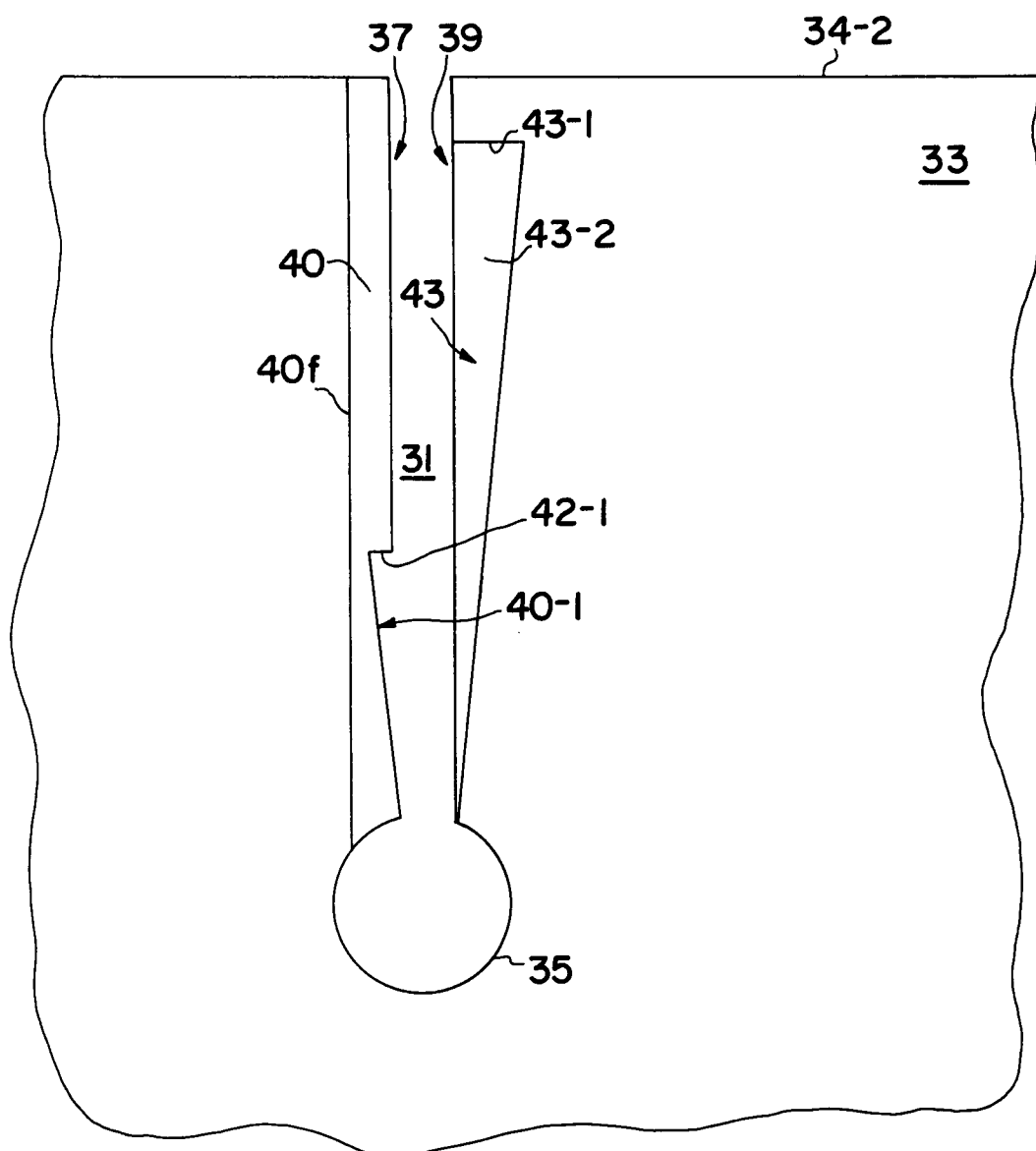


FIG.6

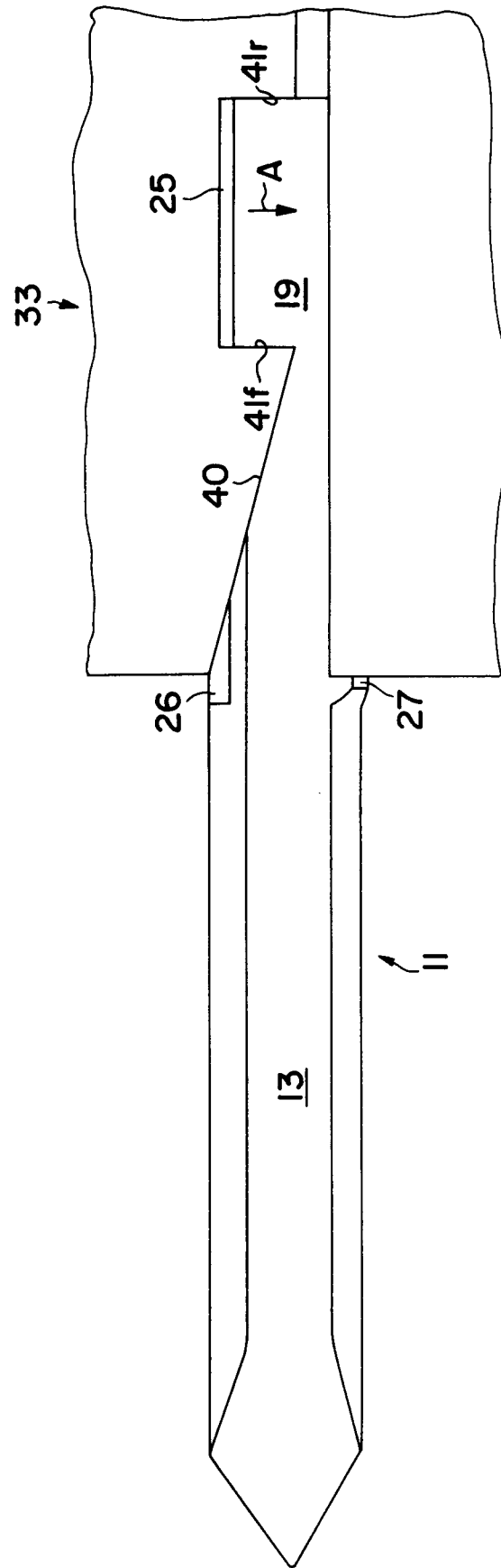


FIG. 7

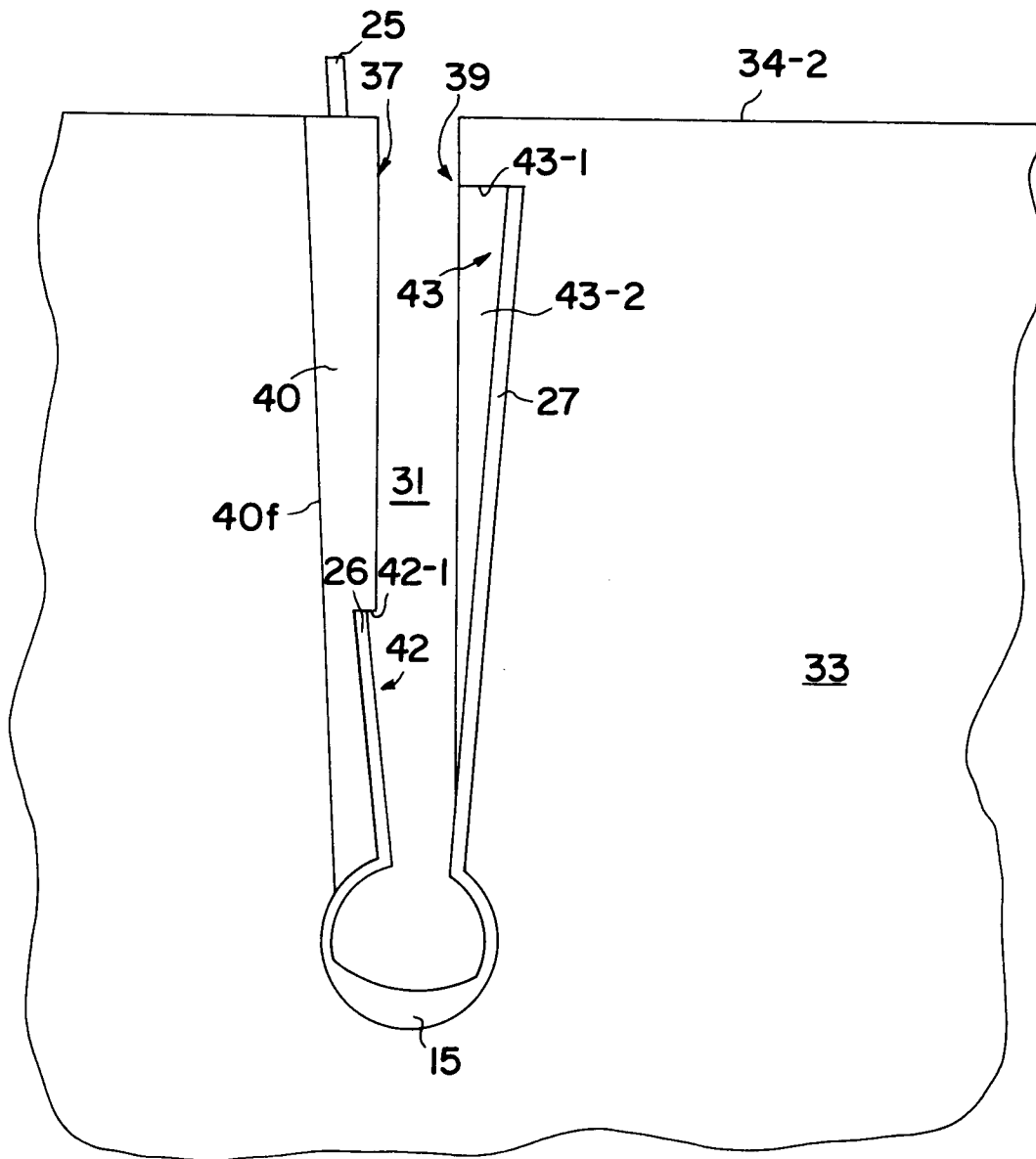


FIG.8

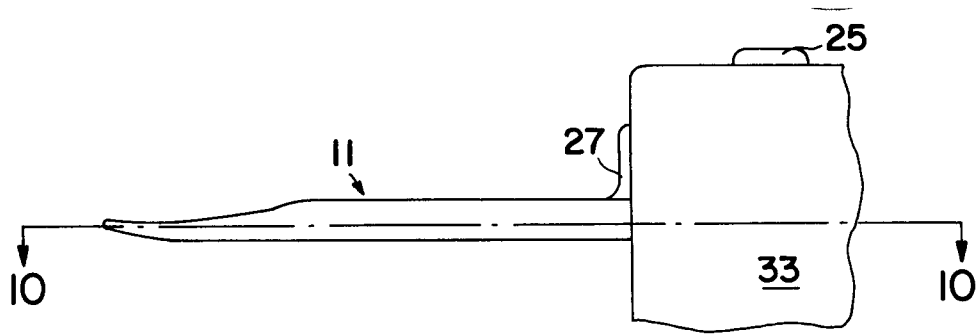


FIG. 9

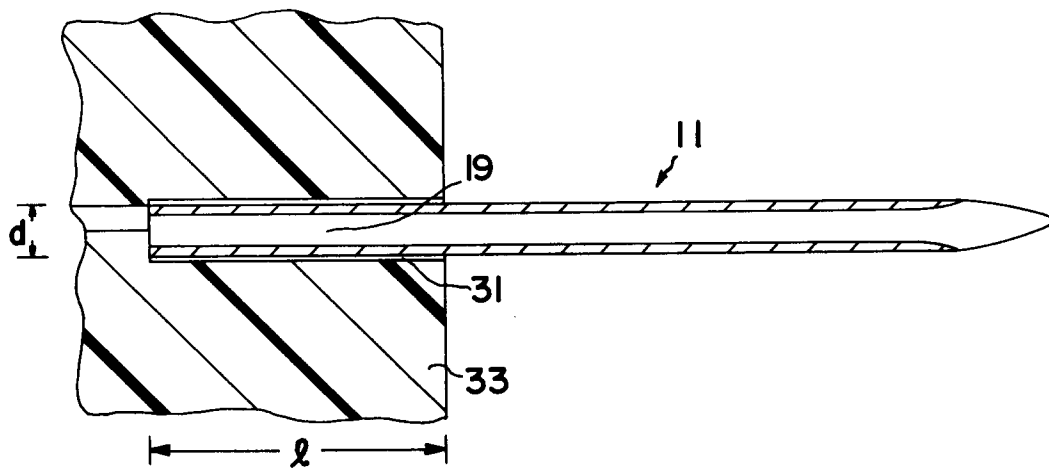


FIG. 10

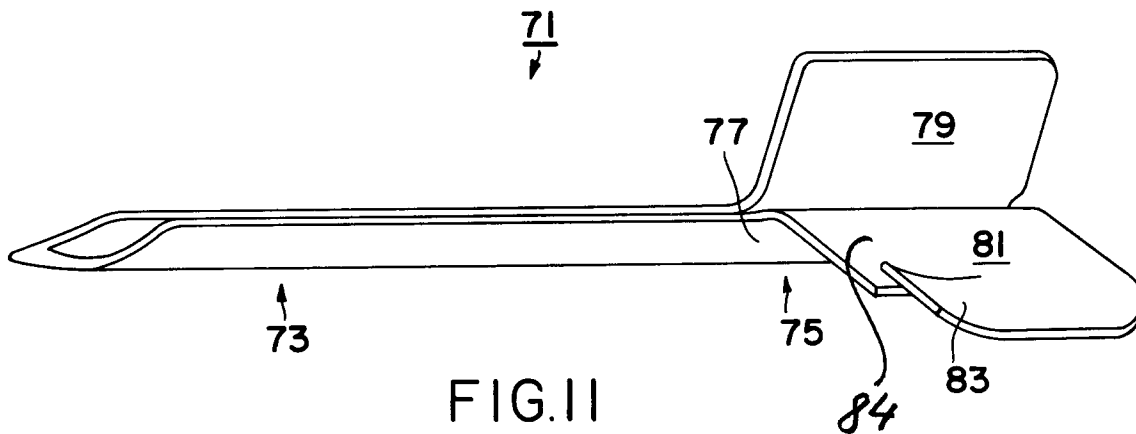


FIG. 11

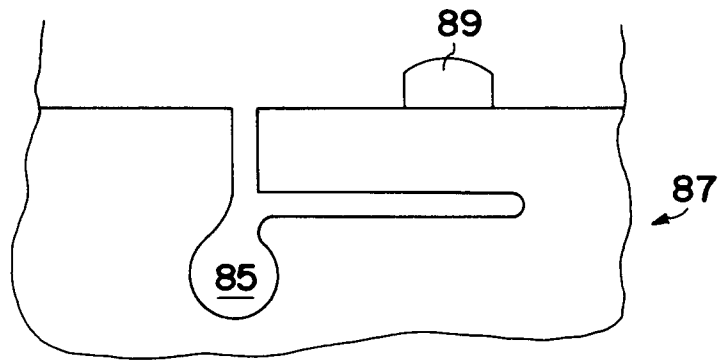


FIG. 12

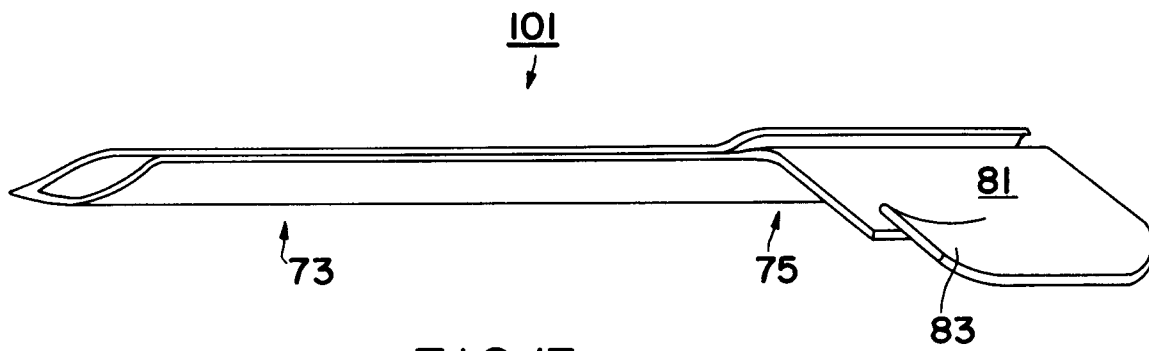


FIG. 13

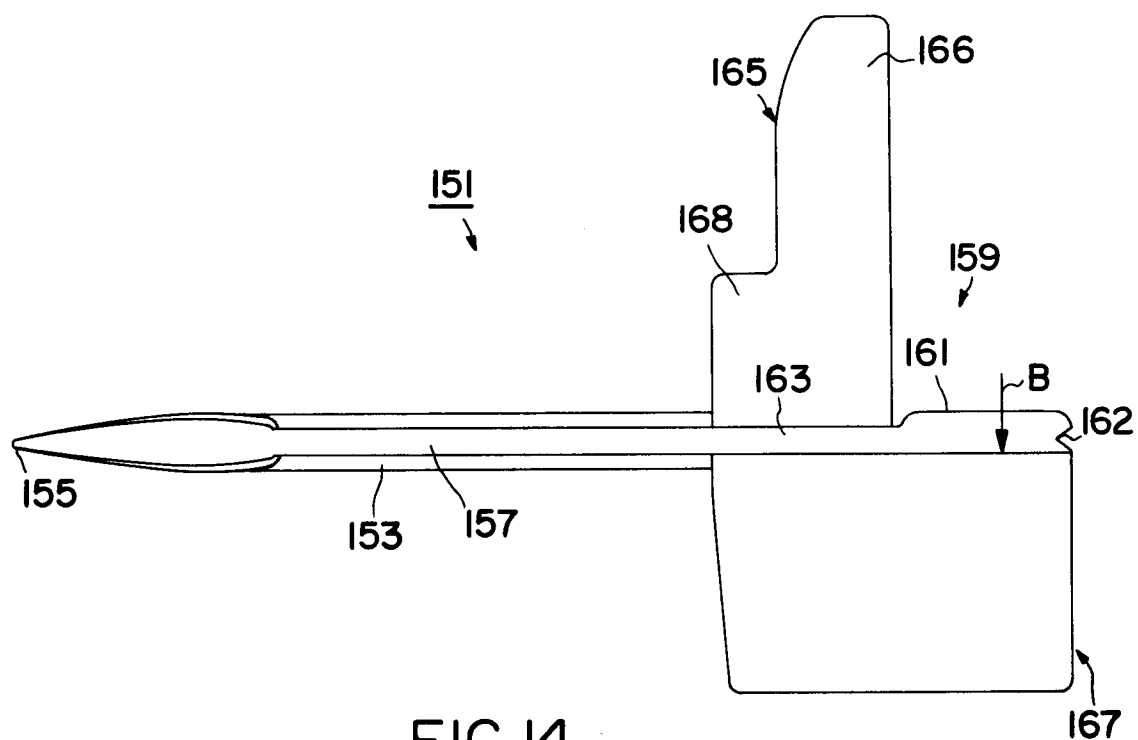


FIG.14

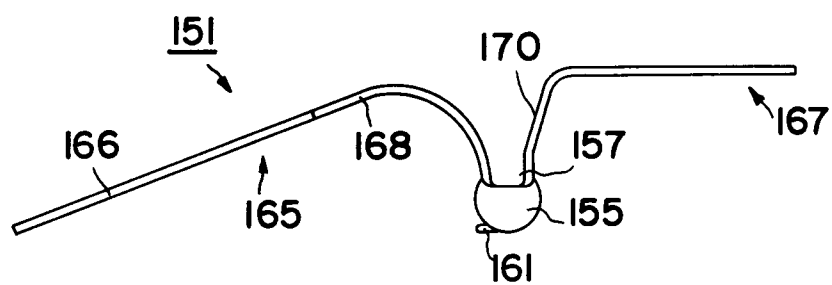


FIG.15

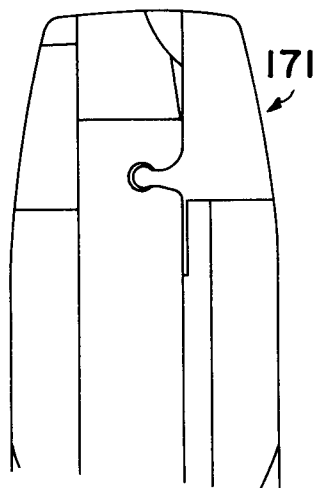


FIG.16

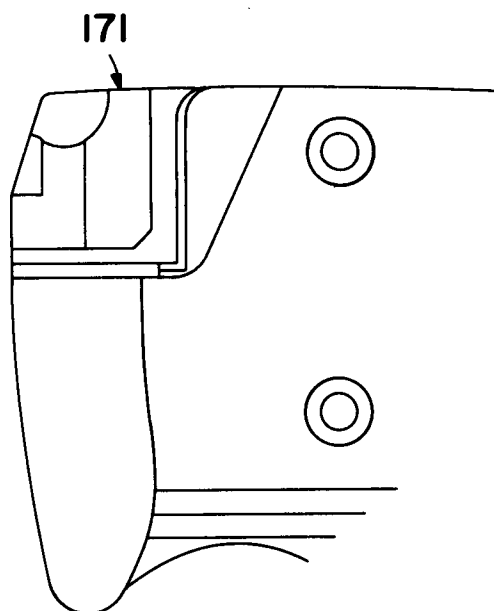


FIG.17

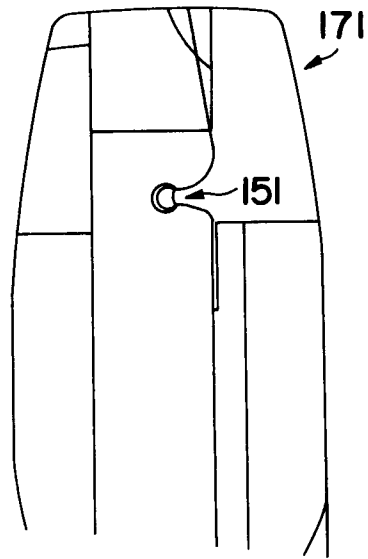


FIG. 18

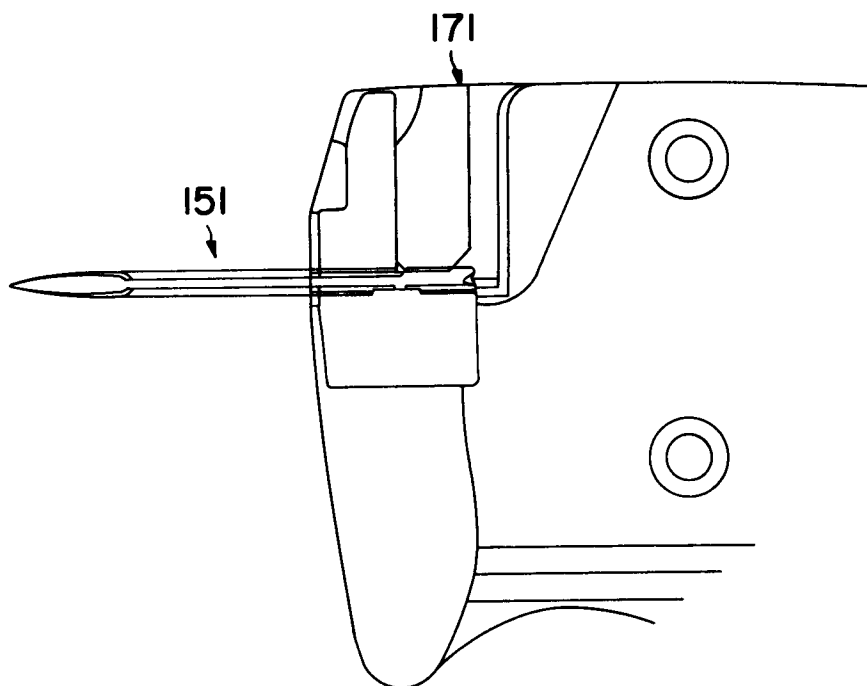


FIG. 19