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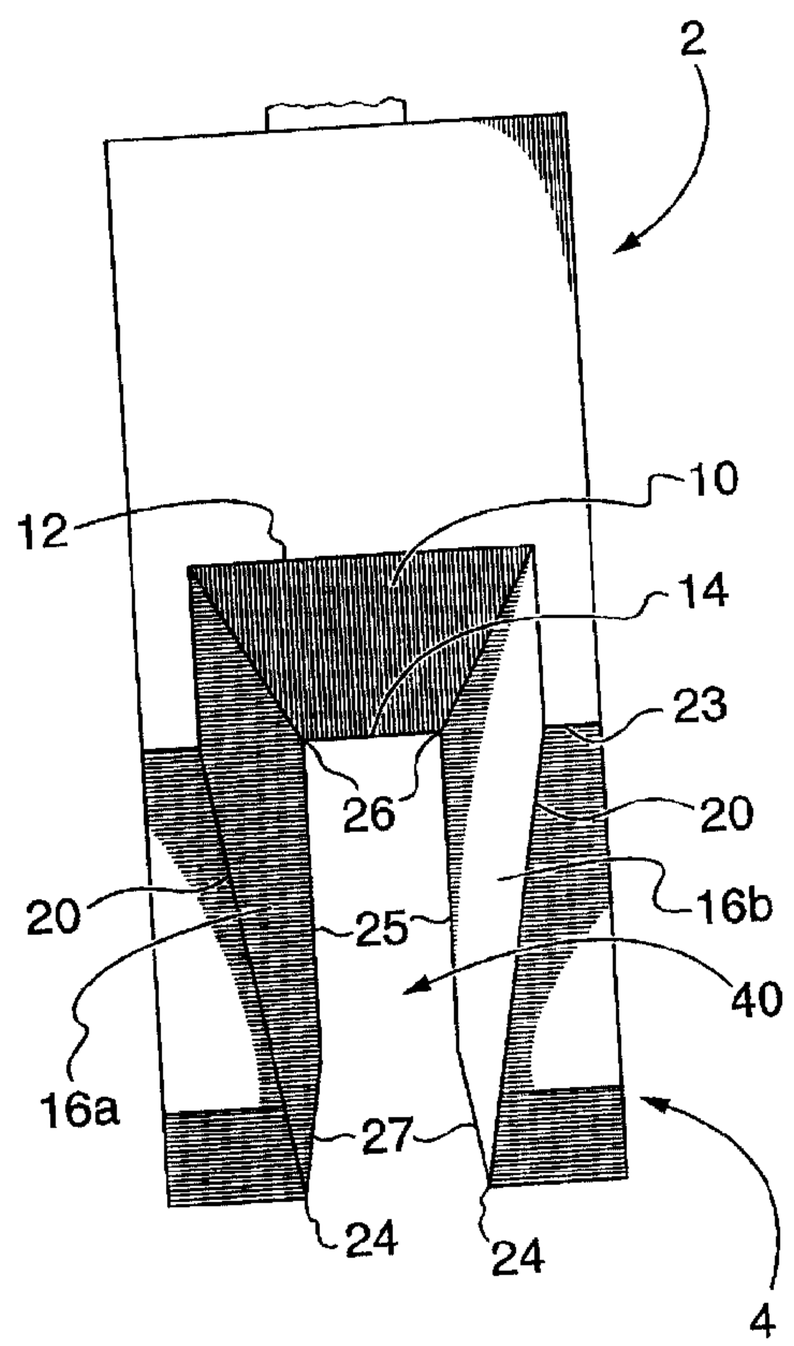
(54) Titre : MARTEAU PIQUEUR POUR LA GLACE
(54) Title: ICE CHIPPER



(57) Abrégé/Abstract:
There is provided an improved device for chipping ice for use in the sport of ice fishing or elsewhere. The device is comprised of a cutting member and a handle attached thereto. The cutting member comprises a body portion having a substantially rectangular configuration, and a cavity having a substantially semi-rectangular configuration. The cavity, which can be defined by two spikes, extends below the body portion and terminates in a generally "v-shaped" cutting edge. This configuration allows the user to create a hole for ice fishing quickly and easily while minimizing ice jamming within the device.

ABSTRACT

There is provided an improved device for chipping ice for use in the sport of ice fishing or elsewhere. The device is comprised of a cutting member and a handle attached thereto. The cutting member comprises a body portion having a substantially rectangular configuration, and a cavity having a substantially semi-rectangular configuration. The cavity, which can be defined by two spikes, extends below the body portion and terminates in a generally "v-shaped" cutting edge. This configuration allows the user to create a hole for ice fishing quickly and easily while minimizing ice jamming within the device.

TITLE OF THE INVENTION

ICE CHIPPER

BACKGROUND OF THE INVENTION

The sport of ice fishing is popular in many countries, and particularly in Canada. In order to facilitate the enjoyment of the sport, a number of devices have been proposed to enable the participant to quickly and effectively dig a hole in the ice.

U.S. Patent No. 2,720,023, issued to Koscher et al. on October 11, 1955, discloses an ice spud composed of a head member equipped with a number of blades, at least one of which is substantially at right angles to the other blades. Canadian Patent 1,298,072 issued to Harrie et al. on March 31, 1992, discloses a tool for making holes through ice having seven (7) cutting edges in a particular configuration. Both of these devices are relatively complex in structure and, due to the different angles of the blades, difficult to sharpen and maintain.

U.S. Patent No. 4,862,591 issued to Barringer on September 5, 1989, discloses a much simpler device, having a single V-shaped cutting edge on a member at the end of a handle of appropriate length. The shape of the cutting edge, however, does not diminish the incidence of ice jamming within the device, and therefore, the device would require frequent clearing, thereby reducing its overall effectiveness and capacity to allow the user to quickly create the desired hole in the ice.

Other devices have been proposed to dig holes or break up ice. U.S. Patent No. 2,359,089 issued to Doran on September 26, 1944, describes a device for digging

which may be attached to an air hammer or the like, and which is equipped with points which are tapered in both front and side elevation to prevent these points from sticking in the ground while digging. U.S. patent No. 281,644 issued to Rex on July 17, 1883, describes a flat cutting device for cutting ice in a flat line without splitting it into fragments. U.S. patent No. 949,667 issued to Spalke on February 15, 1910, describes an ice pick in the form of a beveled wedge with a penetrating point. Finally, U.S. patent No. 1,094,569 of issued to Hughes on April 28, 1914 describes an ice pick mechanism which serves to translate the force exerted on one end of the device to the tines which enter the ice. The main aspect of the invention is the handle portion.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide for an ice pick which is simple in design and yet quickly and effectively creates the desired hole in the ice to allow for ice fishing or the like.

It is a further object of the invention to allow for the creation of the hole while minimizing the amount of ice jamming within the device, which jamming requires cleaning and a loss of momentum in the hole-digging process.

In accordance with a first aspect of the invention, there is provided a device for chipping ice comprising: a body portion having upper and lower edges and a plurality of downwardly extending spikes defining a semi-rectangular cavity, each of said spikes possessing an inner and an outer lateral edge and terminating in a generally "v-shaped" cutting edge. A preferred embodiment of this aspect provides a device for chipping ice

which comprises: a body portion having upper and lower edges, and being sloped at about 18° from said upper edge to said lower edge; a plurality of downwardly extending spikes defining a semi-rectangular cavity, each of said spikes possessing an inner and an outer lateral edge and terminating in a generally "v-shaped" cutting edge, said outer lateral edges of each of said spikes possessing a slope of about 30° from said body portion towards said cutting edges, said inner lateral edges forming an angle of about 90° at a point where said inner lateral edges meet said bottom edge of said body portion, said inner lateral edges being substantially straight, but possessing a slope of about 14° from a point proximate to said cutting edges and terminating at said cutting edges; a handle fixedly attached to said body portion; and a transverse bore at an end of the handle opposite the point of attachment to said body portion to facilitate attachment of a rope thereto.

In accordance with a second aspect of the invention, there is provided a device for chipping ice comprising: a body portion having a substantially rectangular configuration; and a cavity having a substantially semi-rectangular configuration, said cavity extending downwardly and terminating in a generally "v-shaped" cutting edge, and said cavity being positioned below the body portion. A preferred embodiment of this aspect provides a device for chipping ice comprising: a body portion having a substantially rectangular configuration; a cavity having a substantially semi-rectangular configuration, said cavity extending downwardly and terminating in a generally "v-shaped" cutting edge, and said cavity being positioned below the body portion; a handle fixedly attached to said body portion; and a transverse bore at an end of the handle opposite the point of attachment to the body position to facilitate attachment of a rope thereto.

The present specification, including the description of the present invention and the claims describe the present invention in terms of a generally vertical orientation as shown in the accompanying drawings, in which the device is oriented with the points facing downwardly and the rear surface being substantially vertical. Accordingly, all directional references made in this specification are in reference to the device being in this orientation. Except where otherwise stated or readily apparent, all references to angles and slopes of various surfaces, are in reference to the departure of said surface from the vertical, when the device is in this vertical orientation. It will of course be understood that the device may be used in any orientation and the present directional references are purely for ease of description and understanding.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other advantages of the invention will become apparent upon reading the following detailed description and upon referring to the drawings in which:-

FIGURE 1 is a side view of the pick according to an embodiment;

FIGURE 2 is a side view of the cutting spike of the pick;

FIGURE 3 is a front view of the shaft of the handle;

FIGURE 4 is a partial view of the handle; and

FIGURE 5 is a side view of the pick according to an embodiment.

While the invention will be described in conjunction with illustrated embodiments, it will be understood that it is not intended to limit the invention to such embodiments. On the contrary, it is intended to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the following description, similar features in the drawings have been given similar reference numerals.

Turning to the drawings, Figure 1 illustrates an ice chipper **2** having a cutting member **4** and a handle **6**. Said cutting member is comprised of a body portion **10** which has a top **12** and a bottom **14** edge, and first and second cutting spikes **16a** and **16b**. The

body portion **10** is sloped at an angle of 15° to 20° from the wider top edge **12** to the narrower bottom edge **14**, and preferably is sloped at an angle of 18°. Each of the first and second spikes **16a**, **16b**, terminates in a cutting point **24**. As is seen in the drawings, this point is in fact chisel-like, having a transverse cutting edge extending substantially the full width of the spike 16. The cutting spikes **16a**, **16b**, which are substantially vertical, each have an outer edge **20** and an inner edge **25**. The outer edge **20** has first **21** and second **22** portions, as best seen in Figure 2. The first portion **21** is flat and is flush with the flat front face of the body **10**. The second portion **22** commences approximately at the point where the spikes **16a**, **16b**, pass the bottom edge **14** of the body portion **10.** The second portion **22** preferably possesses a slope from the vertical of between 20° and 40° and preferably of approximately 30° from the point **23** where it meets the first portion **21**, to the cutting point **24.** A semi-rectangular cavity **40** is defined between the two cutting spikes **16a** and **16b**, and the bottom edge of the body portion **10**. The inner edges **25** of the cutting spikes are substantially straight and form angles of substantially 90° at the points **26** where they meet with the bottom **14** of the body portion **10**. The rear face of the device including body and spikes forms a continuous flat surface.

In a preferred embodiment, the ends **27** of the inner edges **25** of the cutting spikes **16a**, **16b**, are sloped at an angle of about 14° towards the cutting points **24.**

In another preferred embodiment, illustrated in Figure 5, the body portion **10** of the cutting member has a substantially rectangular configuration. Indeed, the top edge **12** and the bottom edge **14** of the body portion **10** are of substantially equal dimension. This allows for the side edges **13** of the body portion to be substantially parallel. In this embodiment, as can be contemplated in Figure 5, the cutting spikes

16a and **16b** (of Figure 1) have a different shape. The inner edges **25a** of the semi-rectangular cavity **40** are each sloped at their end **27**, at an angle of about 14° towards the cutting points **24**.

The handle **6** of the ice chipper **2** is fixedly attached to the cutting member

4 at the top edge 12 of the body portion 10. The handle 6, as seen in Figures 3 and 4, is comprised of a shank portion 30 and a grip portion 32. The handle 6 may be further equipped with a hole 34 in said shank portion 30 or said grip portion 32 through which a rope (not shown) may be attached to ensure that the ice chipper does not fall into the water when in use.

In use, the ice chipper 2 is pushed into the ice at its cutting points 24 by exerting a force on the handle 6. Force may also be exerted on the top 10 of the body portion, by the user. The ice chipper 2 is then removed from the ice by exerting an opposite pulling force on the ice chipper 2. This operation may be repeated any number of times until the desired hole is formed in the ice. Due to the shape of the semi-rectangular cavity 40 between the spike portions, the incidence of ice jamming is minimized and therefore the ice chipping operation is quickly and efficiently accomplished.

Thus, it is apparent that there has been provided in accordance with the invention an ice chipper that fully satisfies the objects, aims and advantages set forth above. While the invention has been described in conjunction with illustrated embodiments thereof, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, it is intended to embrace all such alternatives, modifications and variations as fall within the spirit and broad scope of the invention.

I CLAIM:

1. A device for chipping ice comprising a hand-grippable body and spaced apart substantially vertical spikes extending downwardly from said body defining a substantially rectangular cavity between said spikes, said body having spaced apart flat front and rear faces for gripping by a user and a tapered bottom terminating in a transverse lower edge extending between said spikes, each of said spikes comprising an elongate wedge shape comprising a plurality of flat facets including at the upper end of said spikes flat front and rear faces flush with the front and rear faces of said body, said front face having a region tapering inwardly and downwardly and a lower region having a more pronounced inward taper, and substantially flat lateral facets including inner facets facing towards said cavity and defining the sides thereof, said spikes each terminating at their lower edge in a transverse generally chisel-like cutting edge.

2. The device of claim 1, wherein the inside facets of each of said spikes tapers outwardly and laterally such that the lateral sides of said semi-rectangular cavity taper outwardly.

3. A device as defined in claim 1, wherein said rear surfaces of said spikes are substantially flat and vertical for the full length of said spike.

4. The device of claim 3, wherein the inside facets of each of said spikes angles outwardly towards said front surface of said spike, such that semi-rectangular cavity opens outwardly towards said front surface.

5. The device of claim 1, wherein said front face possesses an angle of taper of between 20° and 40° from the vertical.

6. The device of claim 5, wherein said outer face possesses a slope of about 30° from the vertical.

7. The device of claim 1, wherein said tapered bottom of said body is flat and possesses a slope of between 15° and 20° from the vertical.

8. The device of claim 7, wherein said bottom possesses a slope of about 18°.

9. The device of claim 1, wherein said lower region of each spike tapers laterally inwardly and downwardly when seen in front or rear elevation.

10. The device of claim 9, wherein said taper of said lower region is about 14° from the vertical.

11. The device of any of claims 1 to 10 and further comprising a handle fixedly attached to said body portion.

12. The device of claim 11 and further comprising a transverse bore at an end of the handle opposite the point of attachment to said body portion to facilitate attachment of a rope thereto.

13. The device of claim 1, wherein said body portion has a substantially rectangular configuration in side and front views.

14. The device of claim 1, further comprising a hand-grippable member extending upwardly from said body portion.

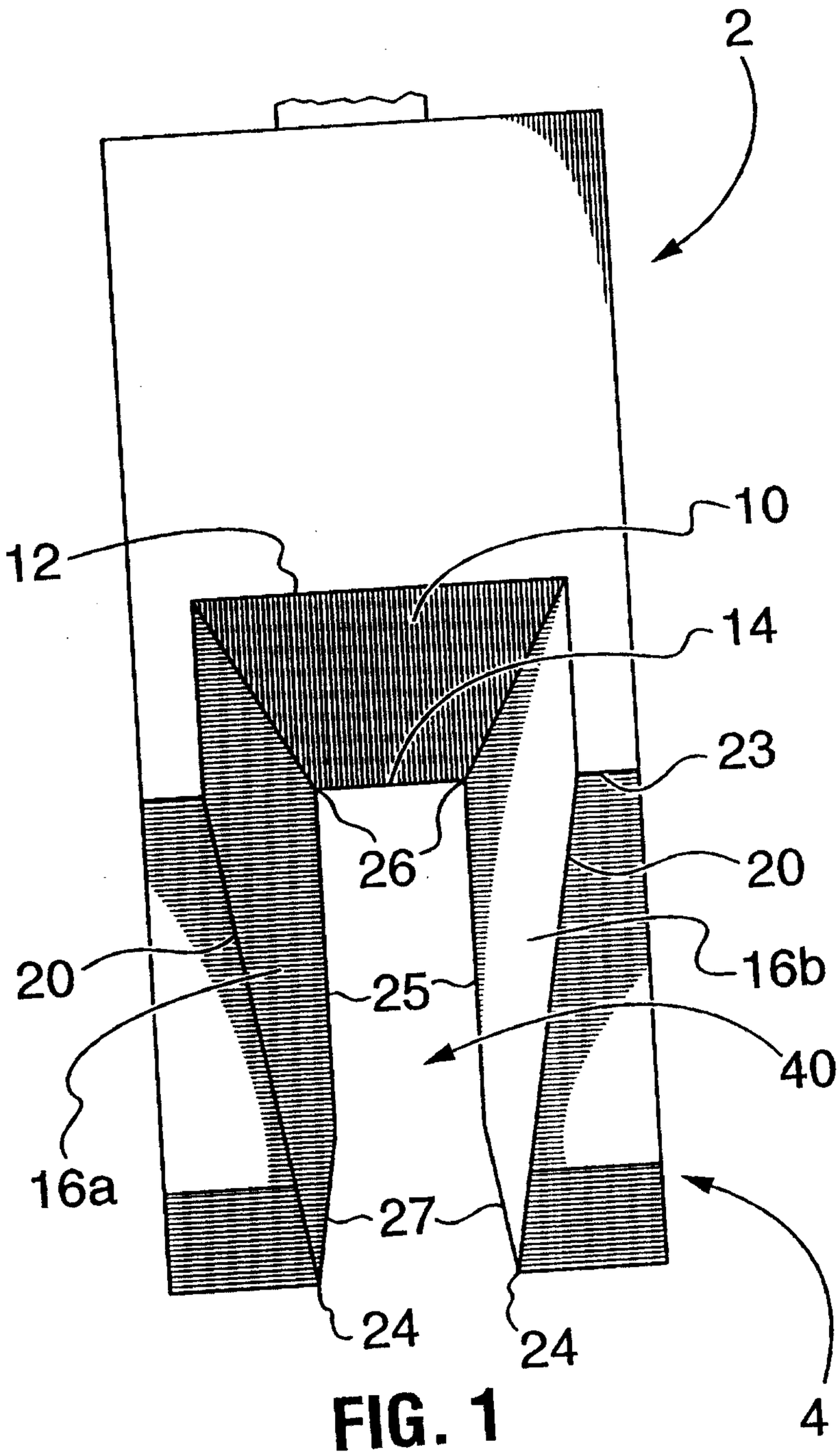


FIG. 1

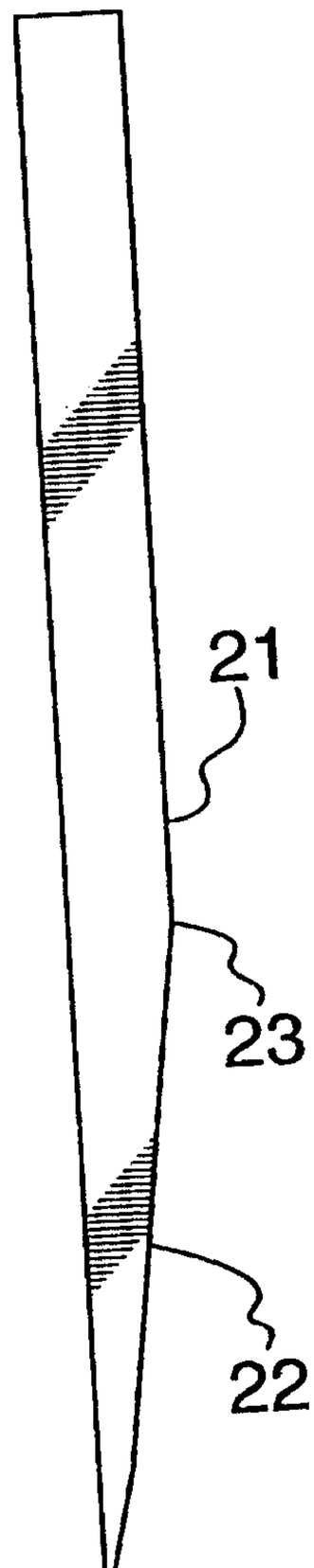


FIG. 2

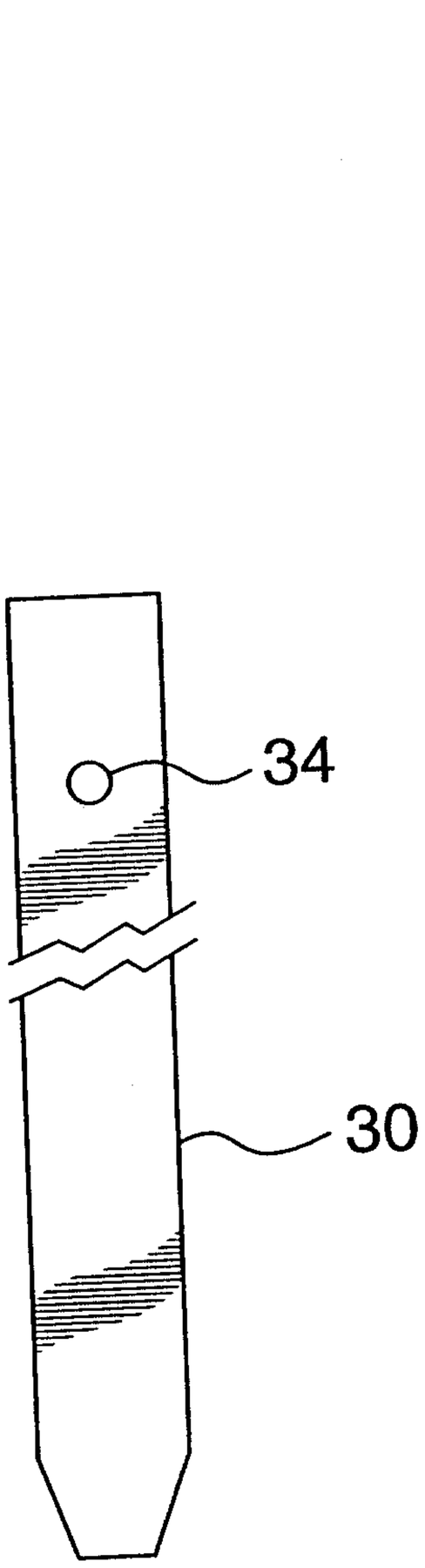


FIG. 3

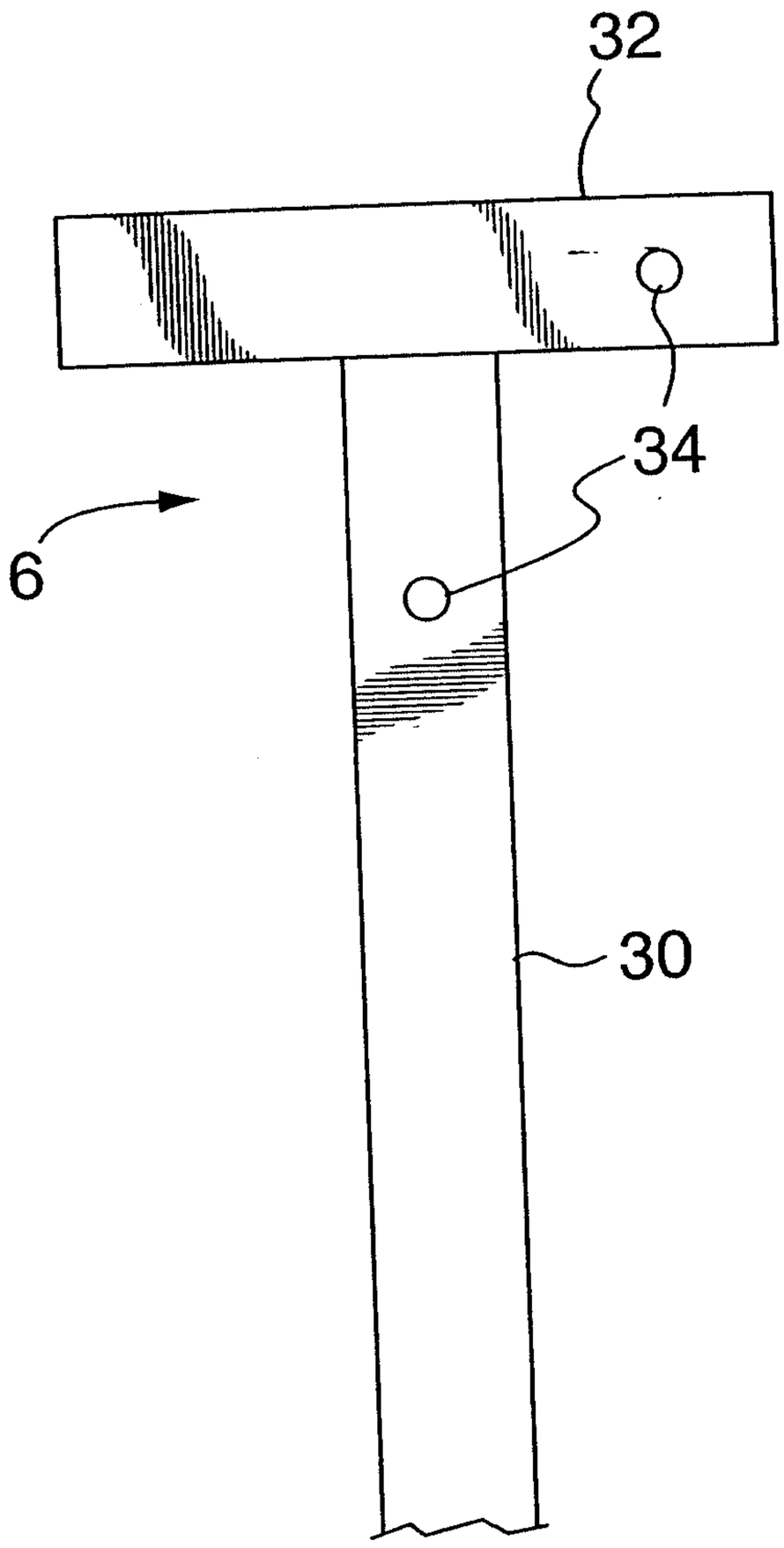


FIG. 4

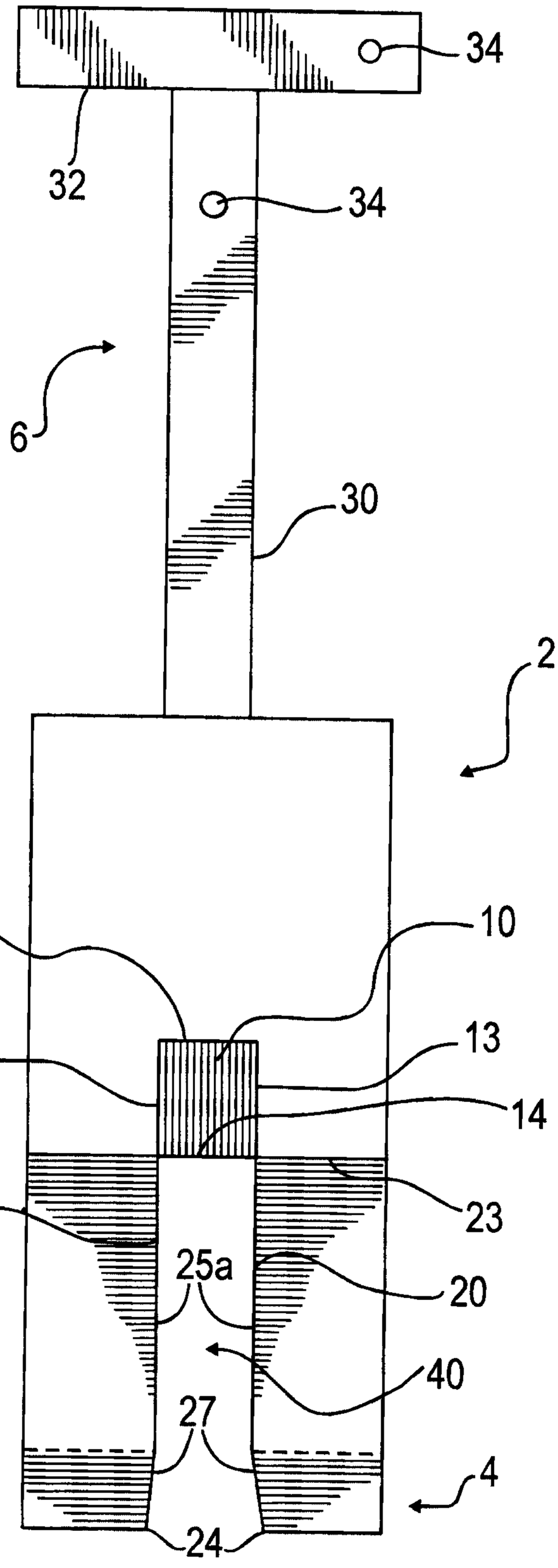
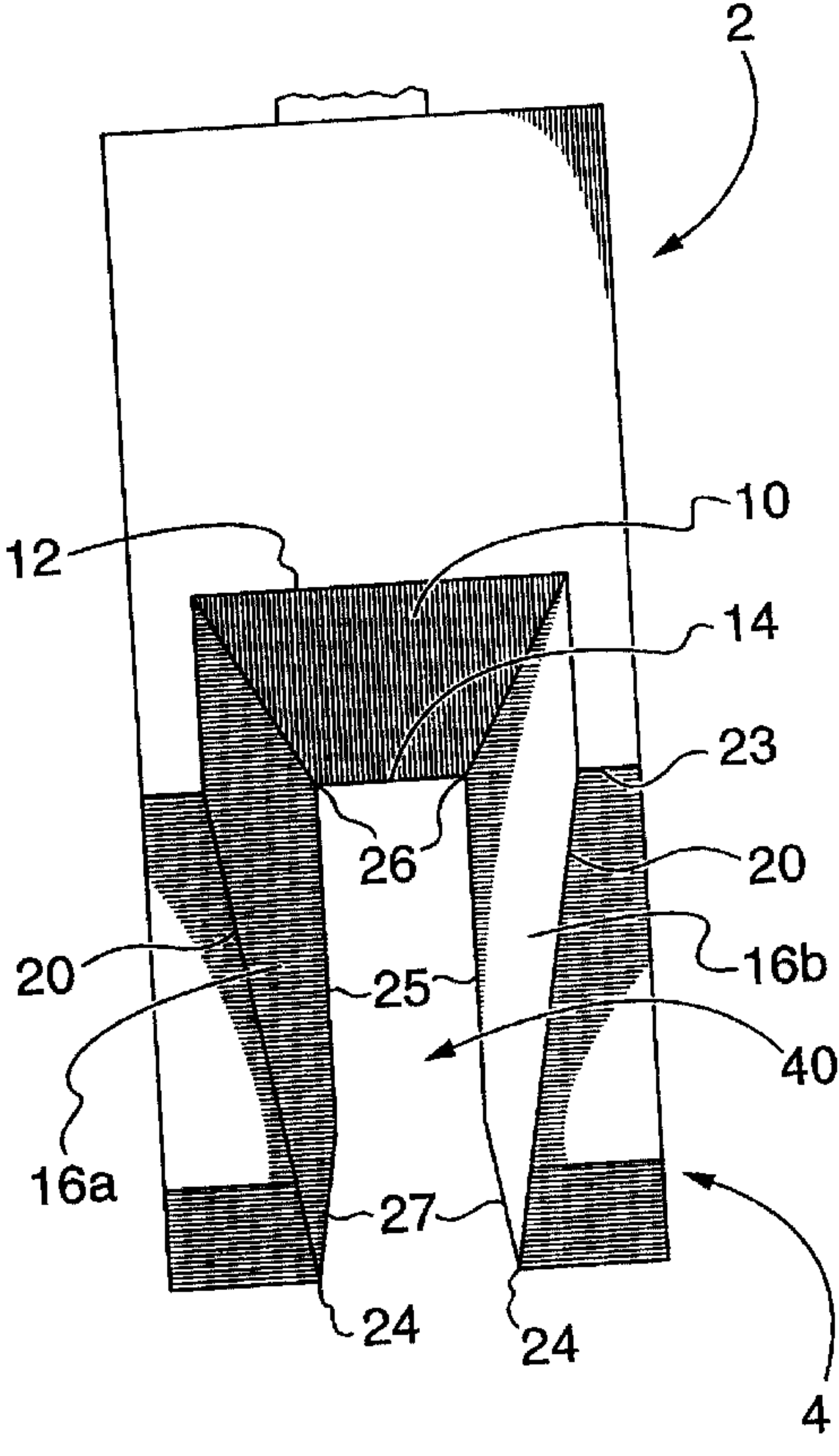


Fig. 5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16b
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16a
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