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(72) Inventor: **Fukutani, Yoshiaki**
Akashi-shi, Hyogo 673-0881 (JP)

(74) Representative: **Hager, Thomas Johannes**
Hoefer & Partner
Patentanwälte
Pilgersheimer Strasse 20
81543 München (DE)

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(71) Applicant: **Arrest Co., Ltd.**
Akashi-shi
Hyogo
673-0881 (JP)

(54) **Guard baton with three detachable prongs**

(57) A more durable security tool is provided that can protect the user and take control of criminals simultaneously in crimes using a knife. A guard baton with three detachable prongs (4), comprises a guard stick and a three-pronged tip (1) fixed to a tip of the guard stick. The three-pronged tip (1) includes three aluminum poles (4) having rear ends to which stainless-steel screws (7) are fixed, and a stainless-steel pole attachment member (8) having a front surface on which three screw holes (10) are formed at 120° intervals seen from the front and extend forward at about 45° seen from the side. The stainless-steel screws (7) fixed to the three aluminum poles (4) are detachably screwed into the three screw holes (10). It is preferable to employ a metallic two-stage telescopic stick baton as a guard stick.

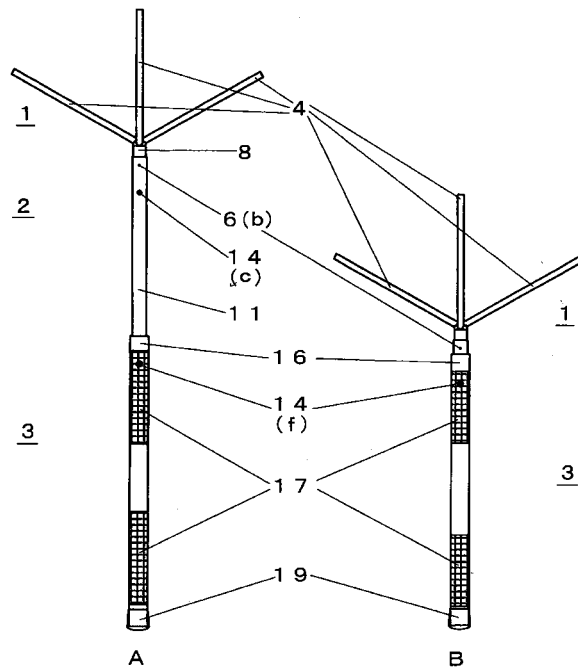


FIG. 1

Description

BACKGROUND OF THE INVENTION

Technical Field

[0001] The present invention relates to improvements in tridentate guard batons having a three-pronged tip piece fixedly attached to the tip of a guard stick, and involves a tridentate guard baton in which the three poles of the trident are rendered detachable/reattachable.

Description of the Related Art

[0002] Billy clubs well-known to date include not only rodlike nightsticks, but also compressible/extensible nightsticks made compressible/extensible by telescopically assembling a plurality of tubular pieces whose diameters differ. Since the telescopic components can be pushed into each other to shrink the overall length, the portability of telescopic nightsticks, which can be hung at the waist without getting in the way, is excellent.

[0003] Nevertheless, since the telescopic nightstick remains rodlike even once extended, when gripped with the hand for use, it cannot protect the hands or wrists from an opponent's weapon.

[0004] Therefore, special nightsticks that are provided with a hilt or various attachments that attach to the grip of the nightstick main unit have been proposed—for example, in Japanese Unexamined Pat. App. Pub. Nos. H08-042996, H05-079794, H05-099595, H05-280897 and H06-074692. However, attempting with these devices to subdue a vicious criminal who wields a knife would be extremely dangerous.

[0005] Meanwhile, a two-pronged pole has been used in Japan since the feudal era for arresting criminals by seizing them about the torso. This traditional seizing fork is a long-handled implement that, unless it is held by quite a few persons, cannot be expected to be effective in taking on a criminal.

[0006] And the greatest drawback of the seizing fork is that, because it is employed by pressing it against the trunk of the human body, the fork is ineffectual against either hand of a criminal wielding a lethal weapon—in the case of an elongate lethal weapon in particular, there is instead a risk of being attacked.

[0007] Furthermore, combining a nightstick with a seizing fork is proposed in Japanese Unexamined Pat. App. Pub. No. 2005-140486. This conventional example is a device in which a nightstick is accommodated within a tubular shank that is the shortened hilt of a seizing fork. During use, the nightstick is drawn out of the tubular shank of the seizing fork, and the device is employed with the seizing fork being gripped in one and the nightstick being gripped in the other, which would be not be convenient to manage.

[0008] The present inventors filed a patent application (JP App. No. 2005-306858) for a three-pronged guard

baton, as an improvement over the above-described conventional examples, featuring a three-pronged iron tip section formed by welding three iron pipes, spaced apart 120° viewed head-on and extending at approximately 45° viewed laterally, into position on the tip of an iron rod, and tip-protecting caps covering the tips of the three iron pipes, with the three-pronged tip being fixed to the tip of the guard baton.

[0009] Although the drawbacks of the conventional examples are remedied, the guard baton has a length of over 100 cm even when telescoped down, such that it is inconvenient to carry owing to its rather large size.

[0010] What is more, the fact that the tip poles are made of iron runs the risk that the poles will rust through from the inside.

BRIEF SUMMARY OF THE INVENTION

[0011] It is an object of the present invention to provide a security tool that is more durable than the conventional three-pronged guard stick, and can be used easily and safely, in order to remedy the defects of the three-pronged guard baton related to the patent application.

[0012] According to a main feature of the present invention, a guard baton with three detachable prongs comprises a guard stick and a three-pronged tip fixed to a tip of the guard stick. The three-pronged tip includes three aluminum poles having rear ends to which stainless-steel screws are fixed, and a stainless-steel pole attachment member having a front surface on which three screw holes are formed. The stainless-steel screws fixed to the three aluminum poles are detachably screwed into the three screw holes.

[0013] The guard stick may be made of wood or metal, and it is preferable that it be a metallic telescopic guard stick.

[0014] Since the guard baton with three detachable prongs according to the present invention has a light three-pronged tip because of aluminum and a strong connection portion because of stainless steel, the baton is highly rust-resistant and is useful for dealing with crimes using a knife because of both features. As a result, with the guard baton according to the present invention, it is possible to realize both effects of protecting a user and taking control of the criminals simultaneously.

[0015] From the following detailed description in conjunction with the accompanying drawings, the foregoing and other objects, features, aspects and advantages of the present invention will become readily apparent to those skilled in the art.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0016] Fig. 1 includes an external side view A of a three-pronged guard stick in an extended state according to the present invention and an external side view B of the three-pronged guard stick in a contracted state;

[0017] Fig. 2 is a side view of the aluminum pipe 4;

[0018] Fig. 3 is a sectional view of the rear end of the aluminum pipe 4;

[0019] Fig. 4 is a front view of the front end of the head 8 of the stainless-steel pole attachment member 5;

[0020] Fig. 5 is a sectional view of stainless-steel pole attachment member 5;

[0021] Fig. 6 includes a front sectional view C and a longitudinal cross sectional view D showing the engagement between the intermediate pole 11 and the fixture 12;

[0022] Fig. 7 is a sectional view of the detachable three-pronged tip 1 and the intermediate pole 11 fixed to each other; and

[0023] Fig. 8 is a sectional view of the main pole 16 which is covered with the rear end protection cap 19.

DETAILED DESCRIPTION OF THE INVENTION

[0024] A three-pronged tip includes three aluminum poles having rear ends to which stainless-steel screws are fixed, and a stainless-steel pole attachment member having a front surface on which three screw holes are formed at 120° intervals seen from the front and extend forward at about 45° seen from the side. The stainless-steel screws fixed to the three aluminum poles are detachably screwed into the three screw holes. The three-pronged tip is fixed to a tip of a guard stick, thereby realizing a guard baton with three detachable prongs.

[0025] It is preferable to employ a metallic two-stage telescopic guard stick as a guard stick.

Embodiment Example

[0026] This embodiment is an example in which a metallic two-stage telescopic guard stick is used as a guard stick and a three-pronged tip is detachably fixed to a tip of the stick.

[0027] A guard baton with three detachable prongs according to the embodiment of the present invention is made up of a three-pronged tip 1, an intermediate pole portion 2, and a main pole portion 3.

[0028] Fig. 1 is a side view representing an overview of the guard baton with three detachable prongs according to the present invention, wherein Fig. 1 (A) represents an extended state and Fig. 1 (B) represents a contracted state.

[0029] The three-pronged tip 1 is made up of three aluminum pipes 4, a stainless-steel pole attachment member 5, and a pin 6 for fixing the three-pronged tip 1 to the intermediate pole portion 2.

[0030] The aluminum pipe 4 has an overall length of 46.0 cm, a diameter of 1.5 cm, an inner diameter of 1.2 cm, and a thickness of 0.3 cm. The pipe 4 has a closed tip and a rear end to which a stainless-steel screw 7 is fixed with metal adhesive. Fig. 2 shows a side view of the aluminum pipe 4, and Fig. 3 shows a sectional view of the rear end of the aluminum pipe 4.

[0031] The pole attachment member 5 is made up of

a head 8 and a leg 9. The head 8 is a solid cylindrical member having a length of 3.0 cm and a diameter of 3.4 cm. The leg 9 is a pipe member having a length of 4.0 cm, an outer diameter of 2.8 cm, an inner diameter of 2.3 cm, and a thickness of 0.5 cm. The leg 9 is a stainless-steel integral member having an overall length of 7.0 cm.

[0032] The head 8 has a front end whose front side is formed with three screw holes 10 at 120° intervals as seen from the front, the holes 10 extending frontward at about 45°.

[0033] The leg 9 is also formed with through holes "a" having a diameter of 0.1 cm through the center at 0.5 cm distance from the rear end for penetrating the pin 6 there-through.

[0034] Fig. 4 shows a front view of the front end of the head 8 of the stainless-steel pole attachment member 5, and Fig. 5 shows a sectional view of the stainless-steel pole attachment member 5.

[0035] The intermediate pole portion 2 is made up of an intermediate pole 11, and fixtures 12 for engaging the intermediate pole 11 with the main pole portion 3. The intermediate pole 11 is an aluminum pipe having an overall length of 73.0 cm, an outer diameter of 3.1 cm, an inner diameter of 2.8 cm, and a thickness 0.3 cm.

[0036] The fixture 12 is made up of an aluminum housing 13, a locking member 14, and a spring 15. It should be noted that two kinds of the fixtures 12 are used for extension and contraction.

[0037] The intermediate pole 11 is formed with holes "b" through the center opposing to each other at 3.5 cm distance from the tip. The hole "b" has a diameter of 0.1 cm and through which the pin 6 is penetrated. The hole "b" is used to fix the three-pronged tip 1.

[0038] The intermediate pole 11 is also formed with a hole "c" through the center at 9.5 cm distance from the tip. The hole "c" has a diameter of 0.8 cm. The hole "c" is used for penetrating the locking member 14 of the fixture 12 therethrough. The hole "c" is used for the contraction state.

[0039] The intermediate pole 11 is formed with a hole "d" through the center at 1.0 cm distance from the rear end. The hole "d" has a diameter of 0.8 cm. The hole "d" is used for penetrating the locking member 14 of the second fixture 12 therethrough. The hole "d" is used for the extension state.

[0040] The rear end of the intermediate pole 11 is processed to be a large-diameter portion having a diameter of about a little less than 3.2 cm.

[0041] The aluminum housing 13 is formed with a through hole "e" through the center in a direction perpendicular to the longitudinal direction for accommodating the locking member 14 and the spring 15. The through hole "e" has a diameter of 0.9 cm.

[0042] The locking member 14 is an aluminum rod having an overall length of 2.0 cm, and a diameter of 0.8 cm. The locking member 14 is provided with a flange for supporting the spring 15. The flange extends upward at 0.8 cm distance from the lower portion, and has a thickness

of 0.1 cm and a diameter of 0.9 cm.

[0043] The spring 15 has a width of 0.9 cm, and a diameter of 0.1 cm. The spring 15 has a length of about 2 cm when extended, and a length of about 1 cm when contracted.

[0044] First, the locking member 14 and the spring 15 are set into the through hole "e" of the aluminum housing 13, and then the two fixtures 12 are engaged with the hole "c" and the hole "d" of the intermediate pole 11, respectively.

[0045] Fig. 6 shows a front sectional view C and a longitudinal cross sectional view D for showing the engagement of the intermediate pole 11 and the fixture 12.

[0046] The main pole portion 3 is made up of a main pole 16, grips 17, a stop 18 for preventing the intermediate pole 11 from falling off, and a rear end protection cap 19. The main pole 16 is made of aluminum, and has an overall length of 73.0 cm, a diameter of 3.5 cm, an inner diameter of 3.2 cm, and a thickness of 0.3 cm.

[0047] The main pole 16 is formed with a hole "f" through the center at 9 cm from the tip. The hole "f" has a diameter of 0.9 cm. The hole "f" is used to penetrate the locking member 14 of the fixture 12 attached to the intermediate pole 11 therethrough. The hole "f" is used when the intermediate pole 11 is extended and contracted.

[0048] The main pole 16 is formed with two holes "g" through the center opposing to each other at 1.0 cm distance from the rear end. The holes "g" are used to penetrate the stop 18 therethrough. The purpose of the holes "g" is to fix the stop 18 in order to prevent the intermediate pole 11 from falling out of the rear end of the main pole 16.

[0049] One grip 17 is provided around the periphery of the main pole 16 through a length of 5.8 cm from a point 2.5 cm distance from the tip rearward. The other grip 17 is also provided around the periphery of the main pole 16 through a length of 5.8 cm from a point at 2.5 cm distance forward. The two grips 17 are formed by machining.

[0050] The main pole 16 is formed with a small-diameter portion having an inner diameter of about a little less than 3.1 cm by drawing at 3.0 cm distance from the tip.

[0051] The stop 18 is an aluminum pin having an overall length of 3.5 cm, and a diameter of 0.2 cm.

[0052] The rear end protection cap 19 is a rubber member attached to the rearward-most portion of the main pole 16.

[0053] A description will be made on an assembly of the guard baton with three detachable prongs according to the present embodiment.

[0054] (1) The two fixtures 12 are attached to the hole "c" and the hole "d" of the intermediate pole portion 2. (2) The locking members 14 of the two fixtures 12 fixed to the intermediate pole portion 2 are pushed into the rear end of the main pole 16. (3) Then, the leg 9 of the stainless-steel pole attachment member 5 of the three-pronged tip 1 is inserted into the tip of the intermediate pole 11 by 4 cm, the through holes "a" of the stainless-

steel pole attachment member 5 and the two opposing holes "b" of intermediate pole 11 are aligned with each other, and the pins 6 is penetrated through the two positions and are caulked for fixation.

[0055] Reference is made to Fig. 7, a sectional view of the three-pronged tip 1 and the intermediate pole 11, which are fixed to each other. (4) The stop 18 is penetrated into the two opposing holes "g" of the main pole 16 and are caulked for fixation. (5) Then, the rear end of the main pole 16 is covered with the rear end protection cap 19.

[0056] Reference is made to Fig. 8, a sectional view of the rear end portion of the main pole 16. (6) Finally, the stainless-steel screws 7 of the three aluminum pipes 4 are engaged with the three screw holes 10 of the head 8 of the stainless-steel pole attachment member 5, thereby realizing the guard baton with three detachable prongs.

[0057] The guard baton with three detachable prongs which is assembled as described above is in a contracted state when the locking member 14 of the fixture 12 in the hole "c" of the intermediate pole 11 is engaged with the hole "f" of the main pole 16.

[0058] The guard baton with three detachable prongs is in an extended state when the locking member 14 of the fixture 12 in the hole "d" of the intermediate pole 11 is engaged with the hole "f" of the main pole 16.

[0059] Although the detachable three-pronged tip 1 is attached to the tip of the two-stage telescopic guard stick in the embodiment, it is apparent that any guard stick can be used if the detachable three-pronged tip 1 can be attached thereto.

[0060] In addition, the attachment method is not limited to one in the embodiment, and it is apparent that attachment methods known in the art can be used.

[0061] The guard baton with three detachable prongs according to the present invention can be applied to use of protecting precious lives in the current state in which increasingly atrocious crimes have been increased but there are substantially no security tool that can protect the user and take control of criminals simultaneously.

[0062] Moreover, the guard baton can be applied to use of protecting human bodies from harm of bears, wild boars, and monkeys, incidents with which have been on the rise recently.

[0063] Only selected embodiments have been chosen to illustrate the present invention. To those skilled in the art, however, it will be apparent from the foregoing disclosure that various changes and modifications can be made herein without departing from the scope of the invention as defined in the appended claims. Furthermore, the foregoing description of the embodiments according to the present invention is provided for illustration only, and not for limiting the invention as defined by the appended claims and their equivalents.

Claims**1.** A tridentate guard baton comprising:

a baton body having a fore end; and 5
a tridentate tip section including

three aluminum poles to butt-ends of which
stainless-steel screws are fixed, and 10
a stainless-steel pole attachment member
having a front surface in which three screw-
sockets are formed spaced apart 120°
viewed head-on and extending at approxi-
mately 45° viewed laterally, said stainless-
steel screws on said three aluminum poles 15
being detachably/reattachably engaged in-
to said three screw holes;

whereby said tridentate tip section may be fixedly
attached at will to the fore end of said baton. 20

2. A tridentate guard baton comprising:

a main pole having a hind end;
an intermediate pole installed in said main pole 25
so as to enable engagement therewith into ex-
tended and contracted states;
a tridentate tip section including

three aluminum poles to butt-ends of which 30
stainless-steel screws are fixed, and
a stainless-steel pole attachment member
having a front surface in which three screw-
sockets are formed spaced apart 120°
viewed head-on and extending at approxi- 35
mately 45° viewed laterally, said stainless-
steel screws on said three aluminum poles
being detachably/reattachably engaged in-
to said three screw holes, said three-
pronged tip being fixed to said intermediate 40
pole; and

a hind-end end protecting cap covering the hind
end of said main pole. 45

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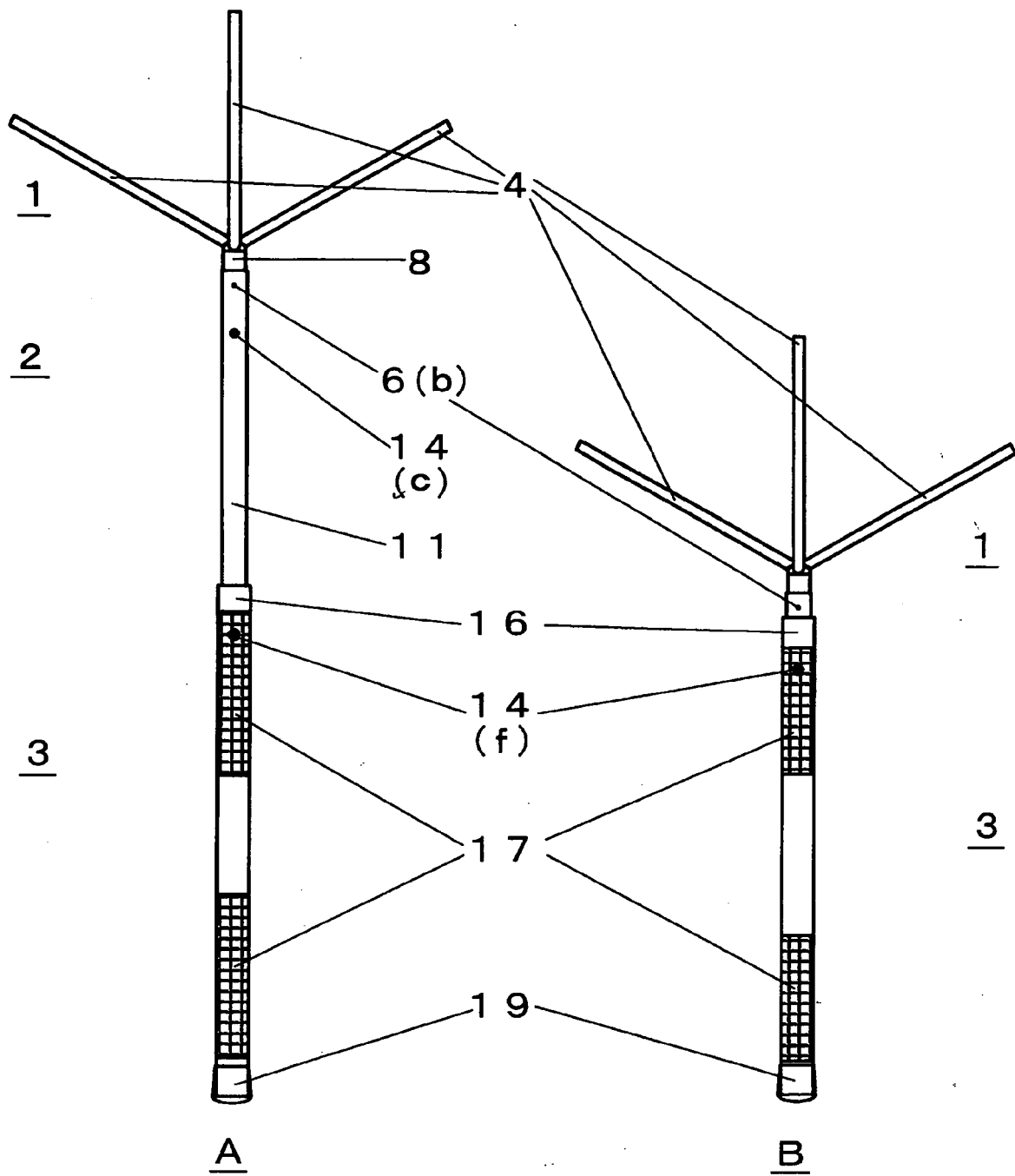


FIG. 1

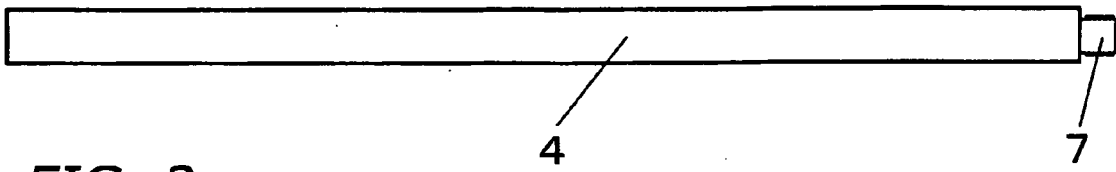


FIG. 2

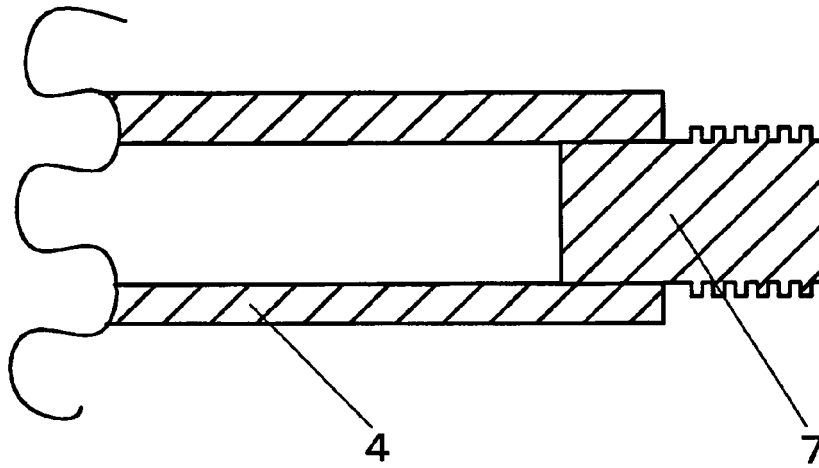


FIG. 3

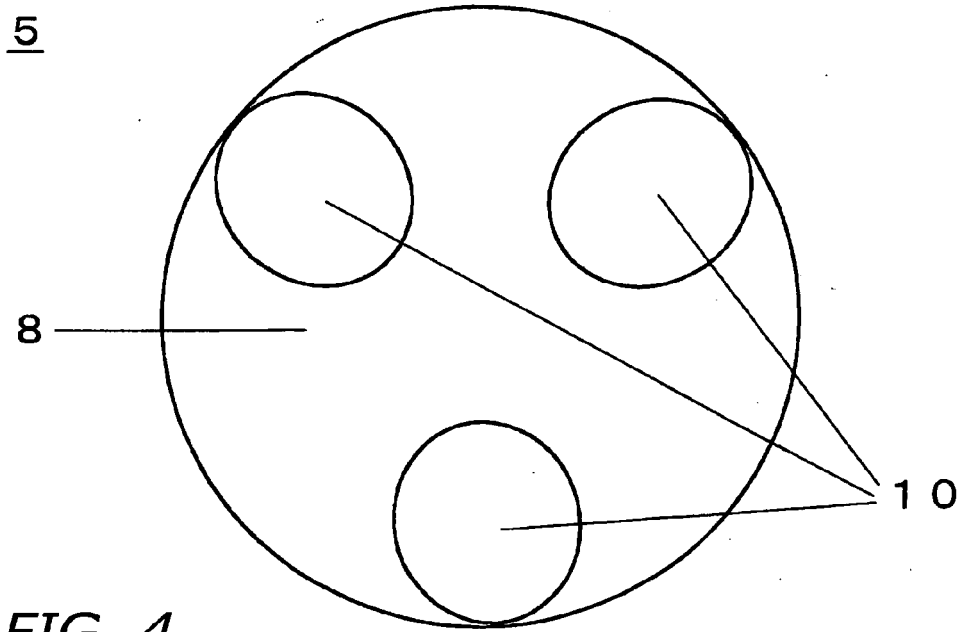


FIG. 4

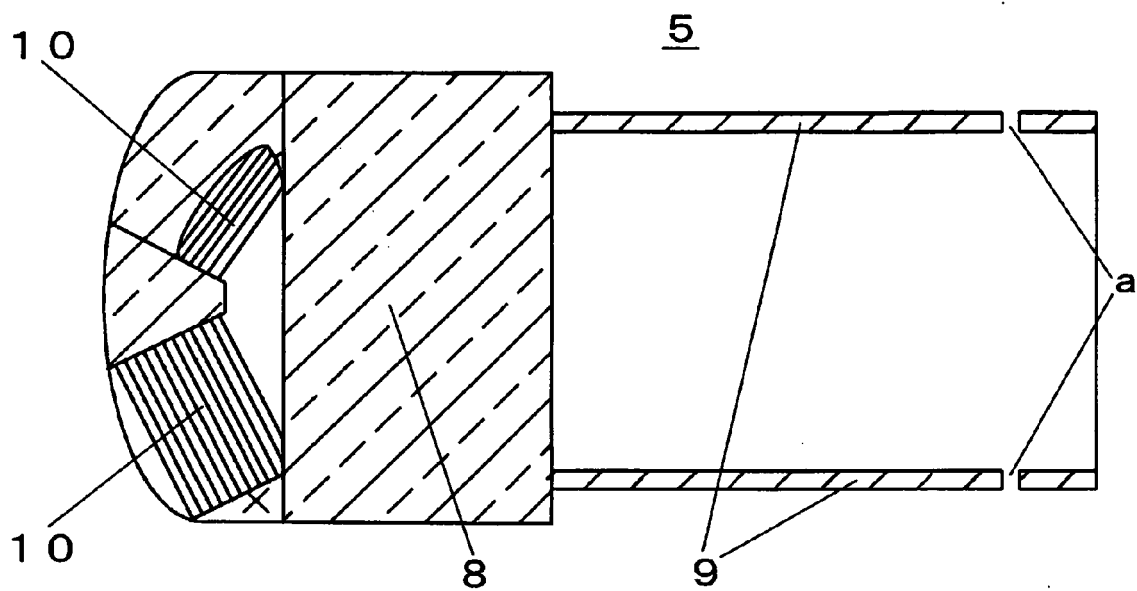


FIG. 5

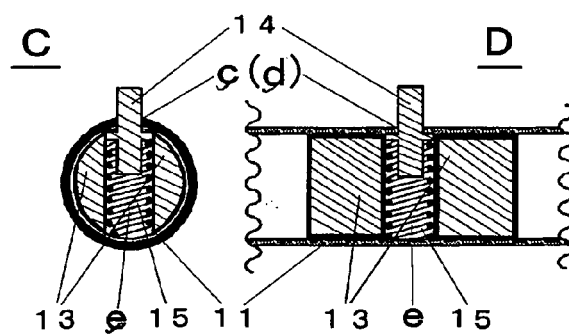


FIG. 6

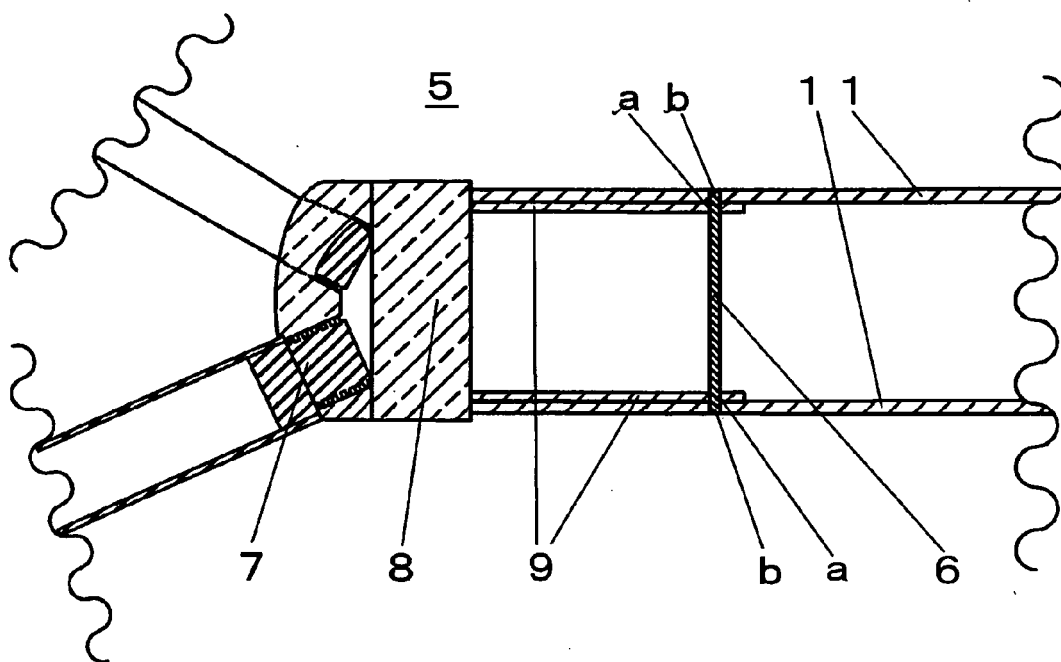


FIG. 7

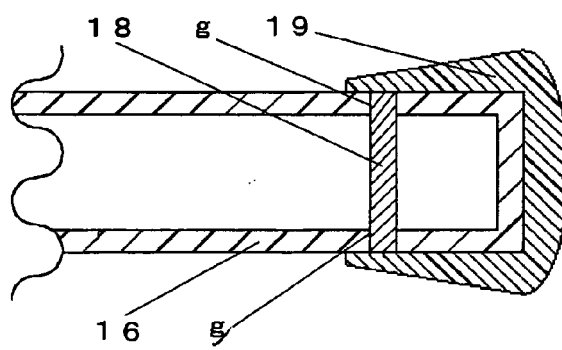


FIG. 8



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 02 1260

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 457 597 A (ROTHSCHILD ZANE [US]) 10 October 1995 (1995-10-10)	1	INV. F41B15/02
Y	* column 2, line 13 - column 3, line 17; claims 1,7,8,12; figures 1,2a,2b *	2	
Y	----- GB 2 282 435 A (HIATT AND COMPANY LTD [GB]) 5 April 1995 (1995-04-05) * pages 1,2,5-7; claims 1,6,7; figures 5-7 * * pages 9,12 *	2	
A	----- US 4 052 063 A (WONG MICHAEL) 4 October 1977 (1977-10-04) * column 2, line 62 - line 65; figures 1-5 * -----	1,2	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			F41B
Place of search		Date of completion of the search	Examiner
The Hague		23 May 2007	Beaufumé, Cédric
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 02 1260

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23-05-2007

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REFERENCES CITED IN THE DESCRIPTION

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