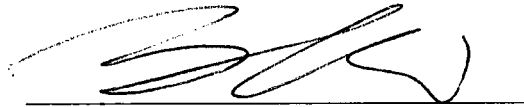


Certification of Translation

This is to certify that the foregoing translation of the Taiwanese Patent No. TW326643B entitled “Automatic Dye Supplying Tattooing Machine” was made from Chinese to English by a competent translator well acquainted with both languages, and that, to the best of our knowledge and belief, it is a true and complete rendering into English of the original document.

DATE: September 25, 2013

A handwritten signature in black ink, appearing to be 'Zhen Jessica Li', written over a horizontal line.

Zhen Jessica Li

Patent No. TW326643B 02/11/1998

Automatic Dye Supplying Tattooing Machine

Abstract:

A hygienic anti-siphon automatic dye supplying body or eyebrow tattooing machine, with a dye cartridge sealed at its bottom end, after filled with dye, a flexible sealing element is embedded with a fixed ring over the top opening of the dye cartridge; when tattooing a body or eyebrow, the dye cartridge is attached to the main body of the tattooing machine, consisting of a motor, a transmission mechanism, and a needle holder, blocking the sealed bottom of the dye cartridge, also allowing the tattooing needle inserted through the flexible sealing element and positioned in the clamping needle holder; finally engage a needle sleeve. Through the linear reciprocating motion driven by the motor, the dye is injected into subcutaneous tissue of the person being tattooed through the inner wall surface and the capillary guiding slot of the dye cartridge and the needle, and the flexible sealing element can prevent the pigment and the body fluid from flowing back into the tattooing machine and its internal mechanism.

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Application Number: TW085211025

Application/Filing Date: 02/02/1996

Priority Number and Date: TW085211025 02/02/1996

Classifications: IPC: A45D 44/00 A, IPC[8]: A45D44/00 (2006-01-01; C, F, TW)

Description of the Invention

The invention is an automatic dye supplying (eyebrow) tattooing machine. Specifically, the invention is a hygienic (eyebrow) tattooing machine with a dye cartridge that can automatically supply dye and also prevent the dye from flowing back to the main body of the machine.

The (eyebrow) tattoo machine pierces into human body with the tattooing needle in a high-speed reciprocating motion, allowing the dye to deposit onto the subcutaneous tissue through the tattooing needle, in order to produce the tattoo or artificial eyebrow effect. During the tattooing operation, the needle holder, which holds the tattooing needle in reciprocating motion, is like a siphon, it pushes the dye into pierced human body through the tattooing needle, can also push the dye to flow back to the shafts, transmission and motor, *etc.*, internal component, causing damage to the machine in short period of time. To prevent the dye backflow phenomenon, conventional (eyebrow) tattooing machine cannot pre-store enough dye inside the machine, instead, dye has to be dripped into the machine little by little only when the dye is almost exhausted during the tattooing operation, normally requiring dozens of refills before one tattooing operation can be completed, causing operation troubles and inconveniences.

Another major shortcoming of a conventional (eyebrow) tattooing machines is that the body fluids of the person being tattooed may attach to the tattooing needle which pierced the skin, and infiltrates back, through the needle and the flowing dye to the internal of tattoo machine, causing the tattoo machine to become a media for transmitting body fluid transmitted diseases such as AIDS and hepatitis, *etc.* Although the needle and some of the parts of the conventional (eyebrow) tattoo machine can be replace to prevent transmitting virus, because of the siphon effect of the needle holder, it is very easy for body fluid, with the flowing dye, to back flow into the internal components of the (eyebrow) tattooing machine, therefore replacing the needle and some of the parts is insufficient to eliminate the disease transmission problem; in addition, the more disposable parts are used, the more serious the problem of secondary environmental pollution.

Chinese Patent No. 81214065, "sanitary eyebrow machine structure", is mainly about adding a dye absorbing sponge that the needle goes, in order to absorb the

1 backflow of the dye and body fluid; however, the absorbed dye and body fluid may still
2 contaminate the needle in reciprocating motion, and enter the top of sponge and the
3 internal components of the eyebrow tattoo machine; particularly after the water content
4 in the sponge reaches a certain level, the sponge loses the ability to absorb dye or body
5 fluid, allowing the excessive dye and body fluid to flow into the eyebrow machine
6 internal through the sponge; in summary, the above-mentioned conventional Patent
7 articles cannot completely obstruct the backflow phenomenon of the dye or body fluid.

8 As shown, the above-mentioned conventional (eyebrow) tattoo machine still has
9 many shortcomings; the designs are not good enough, and urgent needs of
10 improvement.

11 The main purpose of this invention is to provide an automatic dye supplying
12 (eyebrow) tattooing machine, which can completely block the dye from backflow into the
13 internal mechanism of the main body of the tattooing machine, as well as allowing
14 pre-filled sufficient dye inside the (eyebrow) tattooing machine, eliminating the needs to
15 interrupt the tattooing operation for dye refills, not just enhancing the efficiency and
16 quality of the tattooing operation but also making the tattooing operation simpler and
17 more convenient.

18 The secondary purpose of the invention is to provide the above-mentioned
19 automatic dye supplying (eyebrow) tattooing machine, for which the dye can be
20 pre-filled into a pipe cartridge, which can be attached to the tattooing machine only
21 during operation, causing the operation to be simpler and more convenient.

22 Another purpose of the invention is to provide the above-mentioned automatic dye
23 supplying (eyebrow) tattooing machine, which can completely blocking the body fluid
24 from backflow into the internal mechanism of the main body of the tattooing machine; in
25 addition, after use, the dye cartridge can dispose of, or be disinfected under high
26 temperature and be reused as a dedicated individual aseptic dye cartridge, not only can
27 the virus transmission through tattooing machine be completely eliminated, but also can
28 reduce the major burden on the environment caused by excessive waste.

29 The here-described automatic dye supplying (eyebrow) tattooing machine, with
30 above-mentioned advantages, consists mainly of the a dye and tattooing machine main
31 body; the dye cartridge can be in any shapes or materials, its bottom is pre-sealed, the

1 dye can be pre-filled through the top opening, then a flexible sealing element is secured
2 with a fixing to the top opening; inside the tattooing machine main body, there is a
3 clamping needle holder and a driving mechanism that drives the needle holder in linear
4 reciprocating motion; during (eyebrow) tattooing operations, attach the dye cartridge to
5 the main body of the tattooing machine, cut off the bottom seal of the dye cartridge, then
6 insert the tattooing needle through the flexible sealing element and secure the needle
7 inside the needle holder and finally engage a needle sleeve, then by driving the
8 tattooing needle in linear reciprocating motion with the motor, the dye is injected into
9 subcutaneous tissue of the person being tattooed through the inner wall surface and the
10 capillary guiding channel of the dye cartridge and the needle, and the flexible sealing
11 element can prevent the pigment and the body fluid from flowing back into the tattooing
12 machine and its internal mechanism.

13 The tattooing machine main body can also be divided into two sections, a second
14 band of flexible sealing element can be secured on the top of clamping needle holder
15 with the two-segment tattooing machine main body; together with the first flexible
16 sealing element to form a double blocking component to prevent the dye and body fluid
17 from flowing back. Furthermore, the original first flexible sealing element can be
18 replaced by the second flexible sealing element on the top of clamping needle holder,
19 making the dye cartridge and the clamping needle holder one integrated component.

20 Please refer to the following detailed descriptions of a preferred embodiment
21 attached figures, and be able to further understand the technical content, its functions
22 and purpose:
23

24 **Description of Drawings**

25 Figure 1 is an axial cross-section view of the automatic dye supplying (eyebrow)
26 tattooing machine for the 1st embodiment of the invention;

27 Figure 2 is enlarged segmentation schematic view of the automatic dye supplying
28 (eyebrow) tattooing machine shown in Figure 1;

29 Figure 3 is a cross-sectional view of the dye cartridge;

30 Figure 4 is an axial cross-section view of the automatic dye supplying (eyebrow)
31 tattooing machine for the 2nd embodiment of the invention;

1 Figure 5 is an enlarged view of part of Figure 4;

2 Figure 6 is an axial cross-section view of the automatic dye supplying (eyebrow)
3 tattooing machine for the 3rd embodiment of the invention;

4 Figure 7 is an enlarged view of part of Figure 6;

5 Figure 8 is the enlarged section view along the 8-8 line in Figure 7; and

6 Figure 9 is the enlarged section view along the 9-9 line in Figure 7.

7 Please also refer to Figure 1 to Figure 3, the first embodiment of the invention,
8 automatic dye supplying (eyebrow) tattooing machine, mainly comprises: a dye
9 cartridge 10 and a tattooing machine main body 30. Inside the tattooing machine's main
10 body 30 there are a power supply device 32, a motor 34, an eccentric transmission 36,
11 a shaft 38 and a clamping needle holder 40, when the motor 34 is rotating, the eccentric
12 transmission 36 drives the shaft 38 and clamping needle holder 40 in a linear
13 reciprocating motion. The dye cartridge 10, regardless of its shape and material, has an
14 intruding tube 11 at its bottom end and an opening 12 on its top end; the bottom end of
15 the intruding tube 11 is pre-sealed with an enclosure 15 with a pre-cut line, and dye can
16 be pre-filled through the top end opening 12 of the dye cartridge 10, and then a flexible
17 sealing element 16 is embedded to the top opening 12 with a fixing ring 14; the flexible
18 sealing element 16 is made of a non-toxic and elastic material such as silica gel, latex
19 or rubber, the circumference of which is a vertical wall 18 extends upward, and the
20 center of which is a downward protrusion, the protrusion 20 has conical needle channel
21 22 used to guide the insertion direction of the needle; the fixing ring 14 is also made of
22 an elastic material, with a hole 24 to allow needle holder 40 to go through, the fixing ring
23 14 itself can be embedded or screwed on the top of opening 12 of the dye cartridge 10,
24 and together with the internal wall of the dye cartridge 10, tightly clamps the vertical wall
25 18 of the flexible sealing element, and ensuring that the flexible sealing element 16 is
26 positioned at the top opening 12 of the dye cartridge. If the flexible sealing element 16
27 gets too deep into the dye cartridge 10, a venting hole can be opened on the flexible
28 sealing element 16 (not shown in the Figure), allowing it to be inserted into the dye
29 cartridge more easily, then the venting hole can be covered with an intrusion on the
30 fixing ring 14, in order to accomplish the assembly of the dye cartridge. The inner
31 surface of the wall of the dye cartridge 10 has a plurality of axially extending guiding

1 grooves 26 to the bottom end of the cartridge. Furthermore, a refill hole can be opened
2 on the side wall of the cartridge to let users to refill dye through the hole.

3 Before a tattoo or eyebrow operation, attach the dye cartridge 10 to the main body of
4 the tattooing machine 30, by clicking, screwing or other attachment means; then
5 break-off cartridge the enclosure member 15 at the bottom end of the dye cartridge 10,
6 then run tattoo needle 42 through the conical guide channel 22 on the flexible sealing
7 element 16, ensuring the needle 42 is positioned in the clamping needle holder 40,
8 finally tightly fit a needle sleeve 44 onto the outside of the intruding tube 11 at the
9 bottom end of the dye cartridge, the needle sleeve 44 has guiding grooves 46 on its wall
10 surface, those grooves 46 connect with the guiding grooves 26 inside the dye cartridge.
11 After completion of the above-mentioned assembly, the motor 34, via the eccentric
12 transmission 36, the shaft 38 and the clamping needle holder 40, can drive a tattoo
13 needle 42 to make linear reciprocating motion, due to the movement of the tattoo
14 needle 42 and gravity of the dye itself, the dye flows along the guiding groove 26, 46 to
15 the outlet of needle sleeve 44, flows into, as the tattoo needle 42 piercing into the
16 subcutaneous tissue of the tattoo person. The flexible sealing element 16, because of
17 its good elasticity, fully wraps the needle 42 which goes through it, in combination with
18 the needle holder 40, not only stabilizing the needle 42, but also only allow the needle
19 42 to move up and down reciprocally but not shaking sideways, because the needle 42
20 is secured to the upper and the lower two fixing points, the flexible sealing element 16
21 oscillates with the needle 42, producing a squeezing effect that allows a proper amount
22 of outflow of the dye. At the same time, the flexible sealing element 16 segments the
23 dye cartridge 10 and the main body 30 of tattooing machine into two independent
24 spaces, and can totally block backflow of dye and body fluid into the main body 30 and
25 its internal components, really prevents damages to the components and prevent the
26 transmission of virus.

27 After the completion of a tattoo or eyebrow operation, the dye cartridge 10 (together
28 with the flexible sealing element 16, the fixing ring 14), the needle 42, and the needle
29 sleeve 44 can be detached from the main body 30 of the tattooing machine to be
30 discarded, in order to prevent transmission of virus through the body fluid mixed with the
31 dye; or the dye cartridge 10 can be retained, and be resealed with a cap at its bottom,

1 then be disinfected under high temperature and be re-used as a dedicated individual
2 aseptic dye cartridge, not only can completely stop (eyebrow) virus by the tattoo
3 machine and propagation, more protection to the tattoo grain safety, not only can the
4 virus transmission through tattooing machine be completely eliminated, protecting the
5 safety of the person getting tattooed, but also can reduce the major burden on the
6 environment caused by excessive waste.

7 Referring to Figures 4 and 5, the 2nd embodiments of the invention further divides
8 the tattooing machine main body exemplified in the first embodiment into two sections,
9 wherein section 1 of a main body 30a consists of a power supply device 32, a motor 34,
10 an eccentric transmission 36 and a shaft lever 38, *etc.* components, section 2 of a main
11 body 30b is between section 1 of the main body 30a and the dye cartridge 10, consists
12 of a clamping needle holder 40; secured in between the two-segment tattooing machine
13 main body 30a, 30b is the peripheral portion of a second flexible sealing element 16a,
14 located on the top of the clamping needle holder 40; and the shaft lever 38 and the
15 clamping needle holder 40 together lock into position the inner peripheral portion of the
16 second flexible sealing element 16a, the first and second flexible sealing element 16
17 and 16a segment the tattooing machine further into three independent spaces, and the
18 second flexible sealing element 16a and the original a flexible sealing element 16 inside
19 the dye cartridge 10 together form a double isolation system that prevents the backflow
20 of dye and body fluid.

21 Please refer to Figure 6 and Figure 7, the 3rd embodiment provided by the invention,
22 roughly position the clamping needle holder, described in the first embodiment, inside
23 the dye, in other words, making the dye cartridge and the handle part of the (eyebrow)
24 tattoo machine for the operator into one integrated whole; in the 3rd embodiment, the
25 clamping needle holder 40b is positioned inside the dye cartridge 10b, and the flexible
26 seal element 16b is on the top of the clamping needle holder and the two is made into
27 one single component, its outer peripheral part 48 is clamped between the fixing ring
28 14b and the inter-wall surface of the dye cartridge 10b, and the flexible seal element
29 16b is stretchable, allowing it to oscillates up and down along with the reciprocating
30 movement of the clamping needle holder 40b. As is shown in Figure 8, the inner wall
31 surface of the dye cartridge 10b not only has a plurality of guiding grooves 26, but also

1 a plurality of reinforcing ribs 50, to reinforce the structural strength of the dye cartridge
2 10b. Furthermore, as shown in Figure 9, in the 3rd embodiment, the needle sleeve 44b
3 is made in a polygon shape, and the guiding grooves on the inner wall face were
4 removed, to form a plurality of venting holes 52 in between the polygonal needle sleeve
5 44b and the double-layered intruding tube 11b at the bottom end of the dye cartridge,
6 and because of the siphon effect of the clamping needle holder 40b, sucking outside air
7 from the vent hole 52, the sucked in outside air, flowing through the circular air duct 56
8 form by the clamping needle holder 44b and the outer wall surface 54 of the inner layer
9 of the double-layered intruding tube 11b, turning downward, and squeeze out the dye in
10 the needle sleeve 44b, into the human skin along the piercing needle.

11 Although the present invention has been described with regard to preferred
12 embodiments thereof, various other embodiments and variants may occur to those
13 skilled in the art, which are within the scope and spirit of the invention, and such other
14 embodiments and variants are intended to be covered by the claims. For example: the
15 means of attaching the dye cartridge to the tattooing machine main body; the shape,
16 positioning, attachment method and number of the flexible sealing element; there is a
17 pre-opened pinhole in the flexible sealing element, and the pinhole is blocked by
18 another closure member when not in use; or removing the guiding grooves, but only rely
19 on the capillary effect between the dye, the dye cartridge and the inwall of the needle
20 sleeve, to guide the dye; to build the dye cartridge and the needle sleeve and one
21 component; inserting the needle through the center or an eccentric position of the dye
22 cartridge and the flexible sealing element; and eliminating the flexible sealing element
23 and only adopt the dye cartridge in the (eyebrow) tattooing machine, etc. and such other
24 embodiments and variants are intended to be covered by the scope the claims.

CLAIMS:

1. An automatic dye supplying (eyebrow) tattooing machine, comprising:
 - a main body having a clamping needle holder and a driving device for driving a linear reciprocating movement the clamping needle holder;
 - a dye cartridge removably attached under the main body having a protruding bottom tube, a top opening, and a sealing element for sealing the protruding bottom tube when in use;
 - a flexible sealing element embedded with a fixed ring over the top opening for sealing the top opening of the dye cartridge;
 - a needle sleeve associated with the protruding bottom tube; and
 - a tattooing needle capable to be inserted into the needle sleeve, and the dye cartridge through the flexible sealing element and positioned in the clamping needle holder, wherein a dye is injected into a subcutaneous tissue of a person through the linear reciprocating motion.
2. An automatic dye supplying (eyebrow) tattooing machine according to claim 1, wherein the main body is further divided into a first housing holding the driving device and a second housing holding the clamping needle holder, wherein the first housing and the second housing is completely separated by a second flexible sealing element fixed, wherein the clamping needle holder is attached with the driving device by penetrating through the second flexible sealing element.
3. An automatic dye supplying (eyebrow) tattooing machine according to claim 1 or 2, wherein the flexible sealing element further comprises a guiding groove for guiding the direction of the tattooing needle.
4. An automatic dye supplying (eyebrow) tattooing machine, comprising:
 - a main body internally having a driving device;
 - a dye cartridge removably attached under the main body having a protruding bottom tube, a top opening, and a sealing element for sealing the protruding bottom tube when in use;
 - a flexible sealing element embedded with a fixed ring over the top opening for sealing the top opening of the dye cartridge;

1 a clamping needle holder located inside the dye cartridge and attached to the driving
2 device by penetrated through the flexible sealing element, wherein the clamping needle
3 holder is driven to a linear reciprocating movement by the driving device;

4 a needle sleeve associated with the protruding bottom tube; and

5 a tattooing needle capable to be inserted into the needle sleeve, the dye cartridge
6 and positioned above the clamping needle holder, wherein a dye is injected into a
7 subcutaneous tissue of a person through the linear reciprocating motion.

8 5. An automatic dye supplying (eyebrow) tattooing machine according to claim 1 or 2
9 or 4, further comprising plurality of capillary guiding grooves located on the inwall of the
10 dye cartridge and the inwall of the needle sleeve, wherein the plurality of capillary
11 guiding grooves are communicating with each other to guide the dye to flow to the outlet
12 of the needle sleeve.

13 6. An automatic dye supplying (eyebrow) tattooing machine according to claim 1 or 2
14 or 4, further comprising a plurality of air guiding channels defined between needle
15 sleeve and the protruding bottom tube, wherein the plurality of air channels are used to
16 guide the external air into an air guiding channel of the needle sleeve.

17 7. An automatic dye supplying (eyebrow) tattooing machine according to claim 1 or 2
18 or 4, wherein the flexible sealing element comprises an appropriate length of the
19 extension to allow the flexible sealing element to move with the reciprocating movement
20 of a component that penetrated through the flexible sealing element.

21 8. An automatic dye supplying (eyebrow) tattooing machine according to claim 2 or 4,
22 wherein the flexible sealing element is integrated with the clamping needle holder.

23 9. An automatic dye supplying (eyebrow) tattooing machine according to claim 1 or 2
24 or 4, further comprising a dye filling hole located on the side wall of the dye cartridge,
25 wherein the dye filling hole is closed when not in use.

申請日期	85. 2. 21
案 號	852/1025 (由 8510130 改清)
類 別	A45D44/00

A4 326643
C4

(以上各欄由本局填註)

6214-6B.TWU - 1/17

發明專利說明書

一、發明 新型名稱	中 文	自來式供應色料之紋身(眉)機
	英 文	
二、發明人 創作人	姓 名	詹捷文
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	代 表 人 姓 名	

四、中文創作摘要（創作之名稱： 自來式供應色料之紋身(眉)機)

一種可防止回滲之自來色料衛生紋身(眉)機，係在一底端封閉之卡式色料管內預置色料後，利用一固定環將一撓性密封元件嵌固於卡式色料管之頂端開口處；進行紋身或紋眉時，再將卡式色料管與置有馬達、傳動機構、軸桿及夾針座之紋身機本體相互結合，並截斷卡式色料管之封閉底端，再使一紋針穿過撓性密封元件並插合定位於夾針座，最後接合一針套，即可藉由馬達驅動紋針行線性往復運動，使色料經由卡式色料管內壁面之毛細導引槽及紋針注入受紋身者之皮下組織，而撓性密封元件則可防止色料及受紋身者之體液回滲至紋身機本體及其內部機構中。

英文創作摘要（創作之名稱：

（請先閱讀背面之注意事項再填寫本頁各欄）

裝

訂

錄

五、創作說明 (/)

本創作係關於一種自來式供應色料之紋身(眉)機，特別是關於一種具有卡式色料管而可自動供應色料並防止色料回滲至紋身(眉)機本體內部之衛生紋身(眉)機者。

紋身(眉)機係利用高速往復運動之紋針刺入人體皮膚，使紋針上之色料固著於皮下組織內，以產生紋身或人工眉形效果。進行紋身作業時，用以固定紋針並行往復運動之夾針座如同一唧筒般，其可向下推動色料使其隨紋針刺入人體，惟其亦將向上推動色料使之回流至夾針座、軸桿、傳動機構、馬達等內部機件中，造成紋身機在短時間內即行損壞。習用紋身(眉)機為防止上述之色料回流現象，無法在機體內部預先儲放足量之色料，而必須在進行紋身時以沾染或滴注等批次添加方式，每次添加微量之色料，並在色料即將用罄時再行添加，往往須添加數十次色料始能完成一次紋身作業，造成作業上之困擾與不便。

習用紋身(眉)機之另一項重大缺點為受紋身者之體液會附著於刺入其皮膚之紋針上，並隨紋針及流動之色液回滲至紋身(眉)機內部，使紋身(眉)機成為傳播例如愛滋病(AIDS)、肝炎等體液性傳染疾病之媒介。習用紋身(眉)機雖然採用更換紋針及部份零件之方式以期防止傳播病毒，惟因上述夾針座之唧筒作用，使體液極可能隨流動之色料而回滲至紋身(眉)機內部之各機構，因此僅更換紋針及部份零件，並不足以完全消除傳播病毒之問題；且用後即棄之零件愈多，對於環境衛生所形成之二次污染亦愈加嚴重。

五、創作說明(2)

我國第81214065號「衛生紋眉機構造」專利案，主要係在針套內增設一可供紋針穿過之色料吸收海棉，藉以吸回收流之色料及體液；惟被吸附於海棉上之色料及體液亦可能沾附於該往復運動之紋針上，隨針進入海棉上方之紋眉機內部機構中；尤其是在海棉之含水率到達一定程度後，其即喪失吸收色料及體液之功能，使過量之色料及體液自由通過海棉而滲入紋眉機內部；綜之，上述習用專利物品並無法完全阻絕色料及體液之回流現象。

由此可見，上述習用紋身(眉)機仍有諸多缺失，均非良善之設計者，而亟待加以改良。

本創作之主要目的即在於提供一種自來式供應色料之紋身(眉)機，其可完全阻絕色料回滲至紋身機本體內部之各機構，而可預先在紋身(眉)機內部儲存足量之色料，無須因添加色料而經常中斷紋身作業，不但可提高紋身作業之效率及品質，更可使紋身作業更為簡易方便者。

本創作之次一目的係在於提供上述型式之自來式供應色料之紋身(眉)機，其可將色料預先儲存於一卡式色料管內，使用時再將該卡式色料管與紋身機本體結合，使操作上更為簡便者。

本創作之另一目的係在於提供上述型式之自來式供應色料之紋身(眉)機，其可完全阻隔體液回滲至紋身機本體內部之各機構中；同時卡式色料管使用後，可選擇丟棄或經高溫消毒後保存作為個人專用之無菌色料裝置，不但可完全杜絕病毒藉由紋身(眉)機而傳播，更可減少過多廢棄

五、創作說明(3)

物對於環保所形成之重大負擔。

具有上述優點之本件自來式供應色料之紋身(眉)機，主要包括有一卡式色料管及一紋身機本體；該卡式色料管之形狀及材料不拘，其底端被預先封閉，色料可由其頂端開口預置其內，再藉由一固定環將一撓性密封元件嵌固於該頂端開口處；紋身機本體內部設置有一夾針座及用以驅動該夾針座行線性往復運動之驅動裝置；進行紋身或紋眉時，將卡式色料管與紋身機本體相互結合，並截斷卡式色料管之封閉底端，再使一紋針穿過撓性密封元件並插合定位於夾針座，最後接合一針套，即可藉由馬達驅動紋針行線性往復運動，使色料經由卡式色料管內壁面之毛細導引槽及紋針注入受紋身者之皮下組織，而該撓性密封元件則可防止色料及體液回滲至紋身機本體及其內部機構中。

該紋身機本體亦可再被分割成兩段，並藉由該兩段式紋身機本體鎖固一位於夾針座頂端之第二撓性密封元件，而與卡式色料管內之第一撓性密封元件共同組成爲可防止色料及體液回滲之雙重隔離元件。另外，亦可由該夾針座頂端之第二撓性密封元件取代原第一撓性密封元件，而使卡式色料管與夾針座共體構成者。

請參閱以下有關本創作較佳實施例之詳細說明及其附圖，將可進一步瞭解本創作之技術內容及其目的功效：

第1圖爲本創作自來式供應色料之紋身(眉)機第一實施例之軸向剖面視圖；

第2圖爲第1圖所示紋身(眉)機中卡式色料管之放大分

五、創作說明(4)

解視圖；

第3圖為該卡式色料管之組合剖面視圖；

第4圖為本創作自來式供應色料之紋身(眉)機第二實施例之軸向剖面視圖；

5 第5圖為第4圖之部份放大視圖；

第6圖為本創作自來式供應色料之紋身(眉)機第三實施例之軸向剖面視圖；

第7圖為第6圖之部份放大視圖；

10 第8圖係沿著第7圖中之8~8線所繪製成之放大剖面視圖；以及

第9圖係沿著第7圖中之9~9線所繪製成之放大剖面視圖。

請同時參閱第1至第3圖，本創作所提供之自來式供應色料之紋身(眉)機第一實施例，主要包括有：一卡式色料管10及一紋身機本體30。該紋身機本體30內設有供電裝置32、馬達34、偏心傳動機構36、軸桿38及一夾針座40，當馬達34旋轉時，可藉由偏心傳動機構36帶動軸桿38及夾針座40行線性之往復運動。該卡式色料管10之形狀及材料不拘，其具有一底端突出管11及一頂端開口12；突出管11之底端以一刻有預斷線之封閉件15而被預先封閉，而色料可由卡式色料管10之頂端開口12預置其內，再藉由一固定環14將一撓性密封元件16嵌固於該頂端開口12處；該撓性密封元件16係以無毒且彈性良好之例如矽膠、乳膠或橡膠材料所製成，其周緣為一向上延伸之垂直壁18，而其中央則

五、創作說明(5)

向下延伸一凸出部20，該凸出部20上具有一用以導引插針方向之錐形插針導槽22；固定環14亦係以彈性材料製成，其中央具有一容許夾針座40通過之導孔24，固定環14本身可被嵌固或螺合於卡式色料管10之頂端開口12處，並與卡式色料管10之內壁面共同夾緊撓性密封元件16之垂直壁18，而使撓性密封元件16被定位於封閉卡式色料管頂端開口12之位置。如該撓性密封元件16較深入卡式色料管10內部時，可在撓性密封元件16上開設一氣孔(圖未示出)，使之較易被擠入卡式色料管10內，然後藉由固定環14上之一凸柱封閉該氣孔，以完成卡式色料管之組合。該卡式色料管10之內壁面開設有數個軸向延伸至其底端之毛細導引槽26。另外，亦可在卡式色料管之側壁上開設一色料填充孔，以供使用者自行由該孔填裝或補充色料。

欲進行紋身或紋眉作業前，先將該卡式色料管10與紋身機本體30相互結合，其結合方式得為嵌合、螺合或其他連接手段；然後截斷卡式色料管10之底端封閉件15，再使一紋針42由下向上穿過撓性密封元件16之錐形插針導槽22，並使紋針42被插合定位於夾針座40上，最後將一針套44以緊配合方式接合於該卡式色料管之底端突出管11外緣，該針套44之內壁面上設有與該卡式色料管之毛細導引槽26相互連通之數個毛細導引槽46。完成上述組合後，即可藉由馬達34經由偏心傳動機構36、軸桿38及夾針座40等構件驅動紋針42行線性往復運動，藉由紋針42之運動及色料本身之重力使色料沿著毛細導引槽26、46而被導流至針

五、創作說明(6)

套44之出口處，而隨紋針42刺入受紋身者之皮下組織。該撓性密封元件16藉其良好之彈性完全包裹住穿過其間之紋針42，其不但得與夾針座40配合而具有穩針效果，亦即將紋針42穩固於上、下兩個固定點上，使之僅能上、下往復移動，而無左右幌動之虞；該撓性密封元件16可隨紋針42而上、下擺動，並產生一可促使色料適量流出之推擠作用力。同時該撓性密封元件16更可將卡式色料管10與紋身機本體30分隔成兩個獨立空間，而可完全阻絕色料及體液回滲至紋身機本體30及其內部機構中，確實防止各機構受損並杜絕病毒之傳播。

完成紋身或紋眉作業後，將卡式色料管10(連同撓性密封元件16、固定環14)以及紋針42、針套44等構件自紋身機本體30上拆下予以丟棄，藉以防止混雜於色料中之人體體液傳播病毒；或者選擇保留卡式色料管10，並以一帽蓋重新封閉其底端開口，然後經高溫消毒後保存作為個人專用之無菌色料裝置，不但可完全杜絕病毒藉由紋身(眉)機而傳播，對受紋者更具保障之紋身安全性，同時更可減少過多廢棄物對於環保所形成之重大負擔。

請參閱第4及第5圖，本創作所提供之第二實施例係將第一實施例中之紋身機本體進一步分隔成兩段，其中第一段本體30a內設置有供電裝置32、馬達34、偏心傳動機構36及軸桿38等構件，而夾置於第一段本體30a與卡式色料管10間之第二段本體30b內則設置有夾針座40；藉由該兩段式紋身機本體30a、30b鎖固一位於夾針座40頂端之環形第二

五、創作說明(7)

撓性密封元件16a之外周緣部，而軸桿38及夾針座40則共同鎖固夾緊該環形第二撓性密封元件16a之內圓周緣部，藉由該第一及第二撓性密封元件16及16a將紋身機內部進一步分隔成三個獨立空間，並使該第二撓性密封元件16a與卡式色料管10內原有之撓性密封元件16共同組成爲可防止色料及體液回滲之雙重隔離元件者。

請參閱第6及第7圖，本創作所提供之第三實施例大致上係將第一實施例中之夾針座安裝於卡式色料管內部，亦即使卡式色料管與紋身(眉)機中供操作者手持之握桿部份結合成一體；在第三實施例中之夾針座40b被設置於卡式色料管10b內，而撓性密封元件16b係位於夾針座40b之頂端並與夾針座40b一體製成，其外周緣部48被夾固於固定環14b與卡式色料管10b之內壁面間，且該撓性密封元件16b具有一適當之延伸長度，使之可隨往復運動之夾針座40b而上下擺動。如第8圖所示者，該卡式色料管10b之內壁面除設置有數個毛細導引槽26外，更設置有數個加強肋50，藉以補強卡式色料管10b之結構強度。另外，如第9圖所示，第三實施例中之針套44b之外形被製成多邊形，並取消其內壁面之毛細導引槽，使多邊形針套44b與卡式色料管之圓形雙層底端突出管11b之外層內壁面50間形成數個通氣孔52，並藉由夾針座40b所形成之唧筒作用，自該等通氣孔52吸入外界空氣，被吸入之外界空氣經由針套44b與雙層突出管11b之內層外壁面54間所共同界定之環形導氣通道56而轉折向下，藉以將針套44b內之色液壓出，使之隨

五、創作說明(8)

紋針42刺入人體皮膚。

- 上列詳細說明係針對本創作之數個可行實施例之具體說明，惟該等實施例並非用以限制本創作之專利範圍，凡未脫離本創作技藝精神所為之等效實施或變更，例如：
- 5 卡式色料管與紋身機本體之結合方式；撓性密封元件之形狀、設置位置、嵌固方式、個數；撓性密封元件上預先開設一針孔，未使用時以另一封閉件堵塞該針孔；或者取消毛細導引槽，而僅藉由色料與卡式色料管、針套之內壁面間之毛細作用而導出色料；使卡式色料管與針套一體構成；
- 10 紋針係通過卡式色料管、撓性密封元件之中心或偏心位置；以及取消撓性密封元件，而僅將本案中之卡式色料管應用於紋身(眉)機中等等變化之等效性實施例，均應包含於本案之專利範圍中。

(請先閱讀背面之注意事項再填寫本頁)

裝

訂

錄

六、申請專利範圍

1.一種自來式供應色料之紋身(眉)機，包括：

一紋身機本體，其內部設置有一夾針座以及一用以驅動該夾針座行線性往復運動之驅動裝置；

5 一以可拆離方式結合於該紋身機本體下方且內部預置色液之卡式色料管，其具有一底端突出管、一頂端開口以及一用以封閉該底端突出管惟在使用時被截斷之封閉件；

藉由一固定環而被嵌固並密封該卡式色料管頂端開口處之撓性密封元件；

一可結合於該底端突出管上之針套；以及

10 一可伸入該針套、卡式色料管內部並穿過撓性密封元件而被插合定位於該夾針座上之紋針，藉由該紋針之往復運動，使色料隨著紋針刺入人體皮膚內者。

2.如申請專利範圍第1項所述之自來式供應色料紋身(眉)機，其中該紋身機本體進一步被分隔成一用以容納該
15 驅動裝置之第一段本體以及一用以容納該夾針座之第二段本體，該第一及第二段本體間夾固有一用以將該兩段本體完全隔離之第二撓性密封元件，該第二撓性密封元件容許該夾針座穿過而與驅動裝置聯結者。

3.如申請專利範圍第1或第2項所述之自來式供應色料
20 紋身(眉)機，其中該撓性密封元件具有一用以導引插針方向之插針導槽。

4.一種自來式供應色料之紋身(眉)機，包括：

一內部設置有一驅動裝置之紋身機本體；

一以可拆離方式結合於該紋身機本體下方且內部預置

六、申請專利範圍

色液之卡式色料管，其具有一底端突出管、一頂端開口以及一用以封閉該底端突出管惟在使用時被截斷之封閉件；

藉由一固定環而被嵌固並密封該卡式色料管頂端開口處之撓性密封元件；

- 5 一被置於該卡式色料管內部並可穿過該撓性密封元件而與該驅動裝置相互聯結之夾針座，該夾針座可被該驅動裝置所驅動而作一線性往復運動；

一可結合於該底端突出管上之針套；以及

- 10 一可伸入該針套、卡式色料管內部而被插合定位於該夾針座上之紋針，藉由該紋針之往復運動，使色料隨著紋針刺入人體皮膚內者。

- 5.如申請專利範圍第1或2或4項所述之自來式供應色料紋身(眉)機，其中該卡式色料管與針套之內壁面間設有數個相互連通之毛細導引槽，使色料沿著該等毛細導引槽
15 而被導流至該針套之出口處。

6.如申請專利範圍第1或2或4項所述之自來式供應色料紋身(眉)機，其中該針套與該底端突出管間共同界定出數個可導引外界空氣進入針套內部之導氣通道。

- 20 7.如申請專利範圍第1或2或4項所述之自來式供應色料紋身(眉)機，其中該等撓性密封元件具有一適當之延伸長度，使之可隨穿過其間之往復運動構件而上下擺動者。

8.如申請專利範圍第2或第4項所述之自來式供應色料紋身(眉)機，其中該容許夾針座穿過之撓性密封元件係與該夾針座一體製成者。

六、申請專利範圍

9.如申請專利範圍第1或2或4項所述之自來式供應色料紋身(眉)機，其中該卡式色料管之側壁上開設有一平時被封閉之色料填充孔者。

(請先閱讀背面之注意事項再填寫本頁)

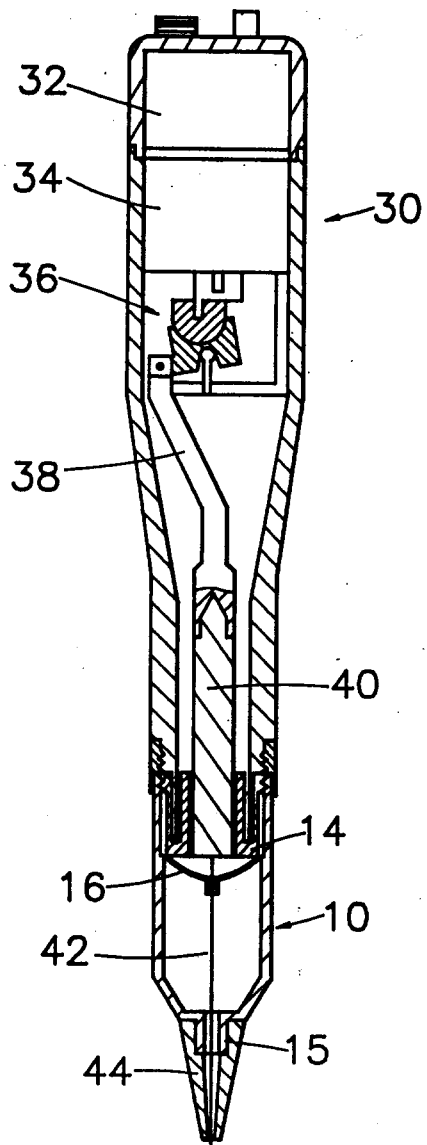
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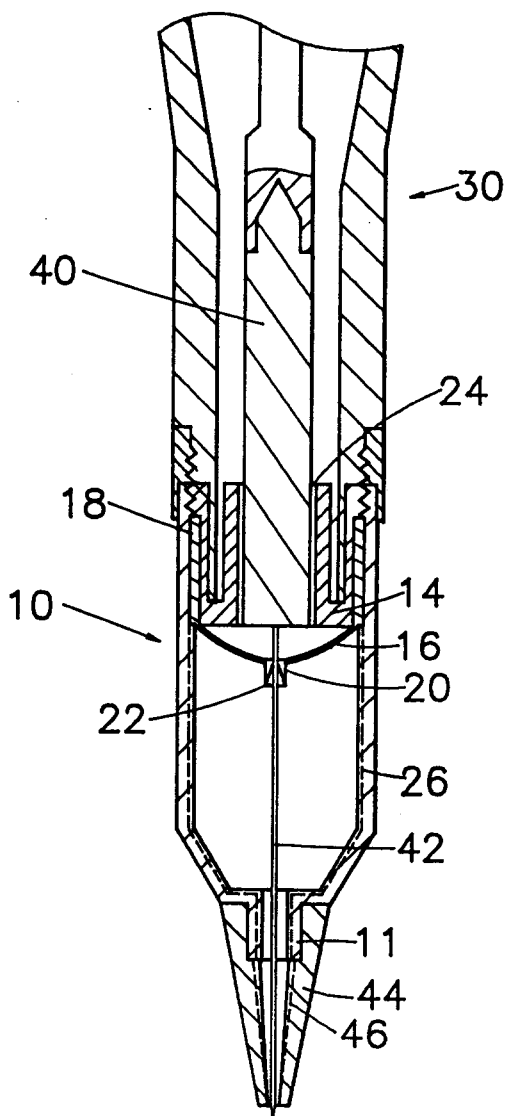
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圖式



第 1 圖



第 3 圖

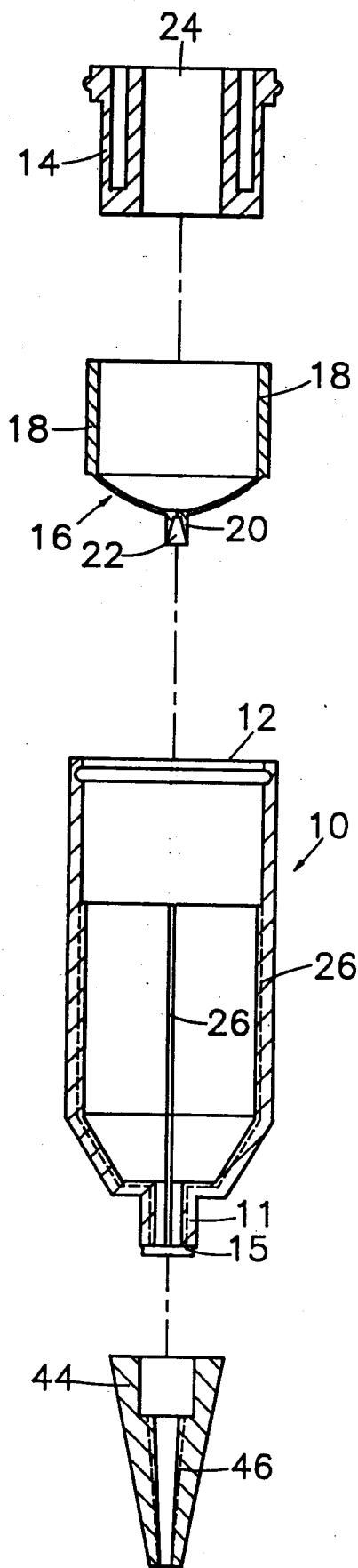
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裝

訂

稿

圖式



第2圖

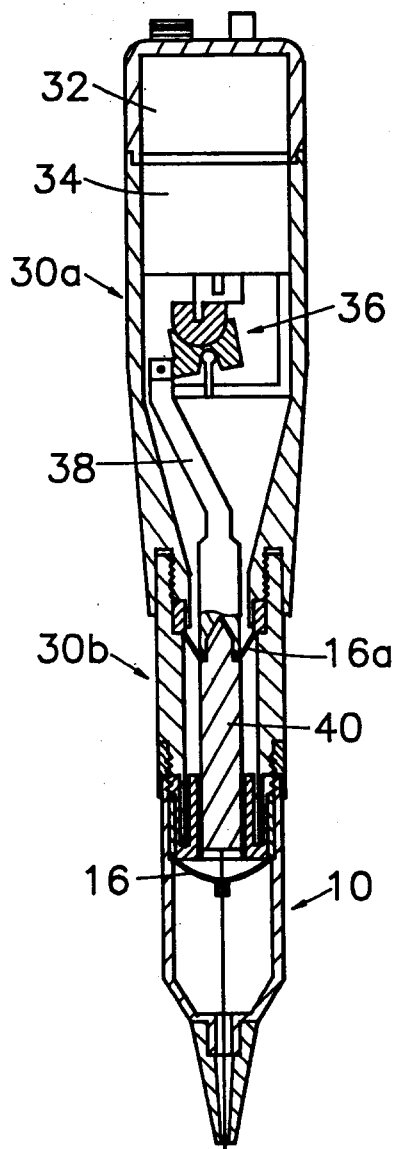
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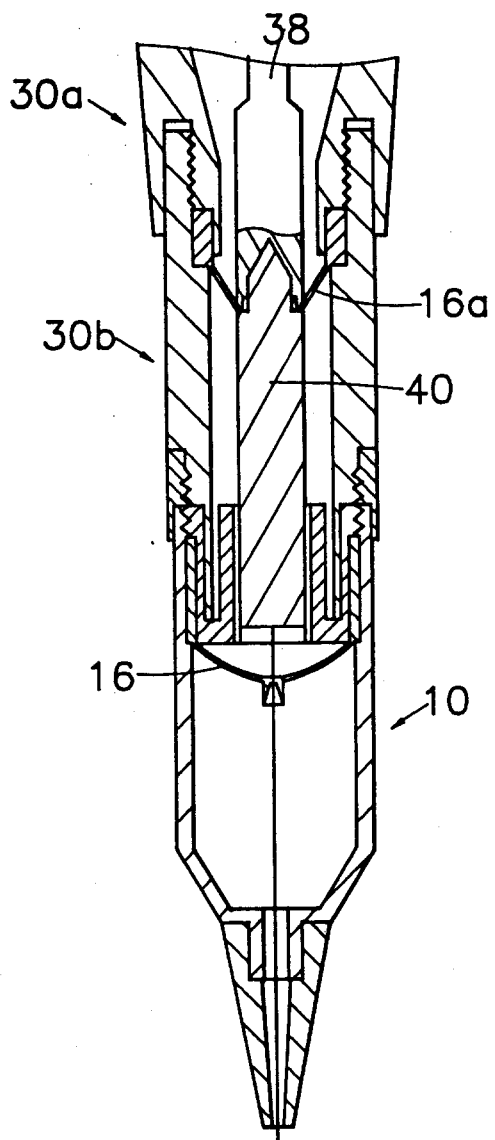
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泉

圖式



第 4 圖



第 5 圖

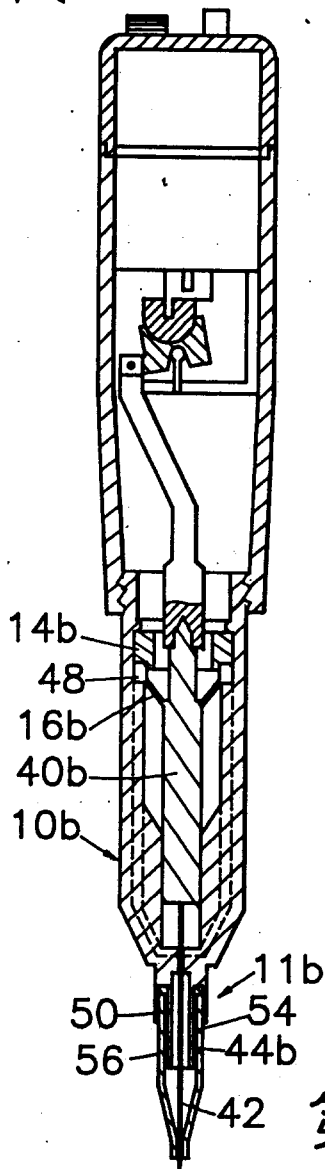
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裝

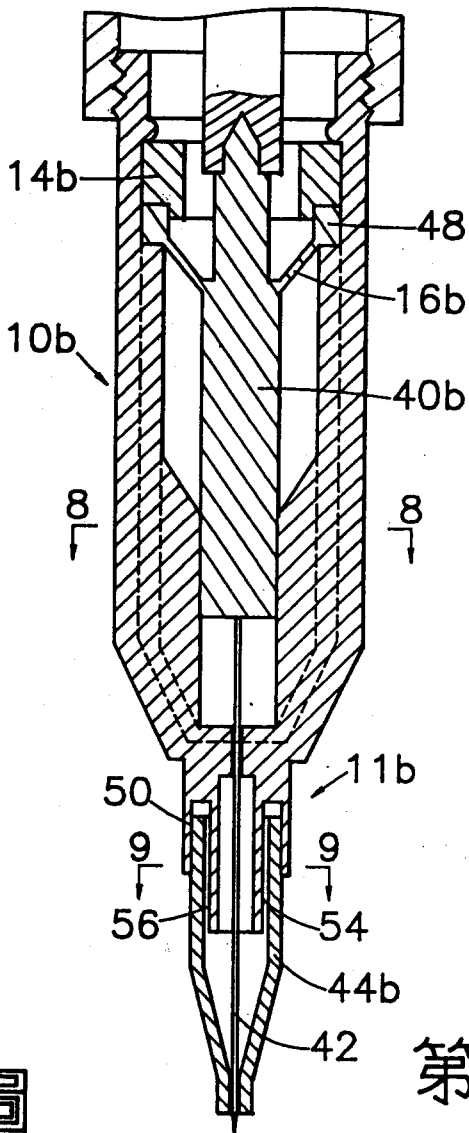
訂

泉

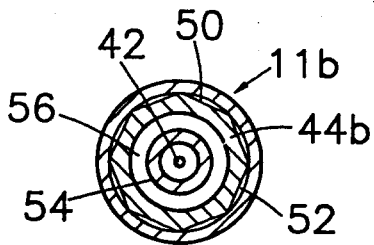
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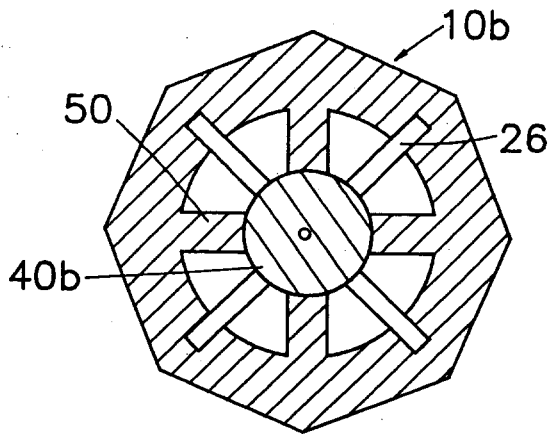
第 6 圖



第 7 圖



第 9 圖



第 8 圖