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(54) **Cartridge type oil tank**

Kartuschenförmiger Ölbehälter

Réservoir d'huile du type cartouche

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Description

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] The present invention relates to a cartridge type oil tank utilized in oil combustion apparatus such as an oil stove and an oil fan heater.

PRIOR ART

[0002] In the conventional oil tanks, for example as disclosed in Japanese Laid-open Patent Publication No. 63-220013 and Japanese Utility Model Publication No. 5-12607, a mouth of the oil tank is opened and shut as touched once as an oil cap is raised at a supporting point, i.e., a shaft.

[0003] The conventional oil tank has the oil cap which is raised as touched once; however, a location of an oil gauge to know a quantity of oil supplied while oil is being supplied is never taken into consideration. Therefore, when the oil gauge A is located at the opposite side of a pull button C of a locking means B or at the side D as shown in Fig. 8 and Fig. 9, it is burdensome for users to rotate a tank body F or to move themselves to see the oil gauge A. If the user fills the tank with oil without looking at the oil gauge, the oil may overflow.

[0004] In accordance with the invention a cartridge type oil tank as set forth in claim 1 is provided.

[0005] The present invention is to solve the above-described disadvantages. An oil tank of the present invention is constructed such that an oil cap provided on a body unit which is raised at a supporting point, i.e., a shaft is in contact with a mouth of the body unit which is mounted on an oil pan upside down, and that an oil gauge is placed near locking means for releasing and locking the oil cap.

[0006] In the case that the tank body 1 is empty and needs to be filled, when the oil gauge 39 is faced front, the pull button 32 for releasing the lock is placed at the location where it is handled easily by a left hand or a right hand as shown in Fig. 5 and Fig. 6. When the pull button 32 is pulled, a locking rod 29 is shifted and a hook 33 is released. The lid unit 8 is raised at a supporting point which is the hinge pin 25 located at the opposite side of the locking means 38, and the mouth 3 is opened. Then, the oil is supplied from the mouth 3, e.g., with a hose pump (not shown). It is easily known with the oil gauge 39 that the tank is almost filled up, which prevents the oil from overflowing. Once the tank body 1 is placed, it does not have to be moved and the tank is filled up with oil smoothly. Moreover, since the mouth 3 is opened and shut as touched once, the user's hand never gets dirty with oil.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Fig. 1 is a perspective view of a main part of a tank body when opened according to one embodiment of the present invention.

[0008] Fig. 2 is a cross-sectional view of an oil cap according to the embodiment of the present invention.

[0009] Fig. 3 is a cross-sectional view of a main part of the cap covered with a cover according to the embodiment of the present invention.

[0010] Fig. 4 is a cross-sectional view of a main part of the tank set in an oil combustion apparatus according to the embodiment of the present invention.

[0011] Fig. 5 is a perspective view of a main part of the tank body according to the embodiment of the present invention.

[0012] Fig. 6 is a perspective view showing a main part of a tank body according to another embodiment of the present invention.

[0013] Fig. 7 is a front view and partially sectional view showing an oil combustion apparatus according to the present invention.

[0014] Fig. 8 is a perspective view showing a main part of the conventional tank body.

[0015] Fig. 9 is a perspective view showing a main part of another conventional tank body.

PREFERRED EMBODIMENTS OF THE PRESENT INVENTION

[0016] The preferred embodiments of the cartridge type oil tanks according to the present invention will be described with reference to the accompanying drawings.

[0017] Reference numeral 1 is a rectangular cartridge type tank body to be utilized in well-known oil combustion apparatus 2 such as an oil stove and an oil fan heater, and a projecting opened mouth 3 of the tank body 1 from which oil is supplied has threads formed at side surfaces as shown in Fig. 1.

[0018] A stationary plate 4 is adhered to the surface on which the mouth 3 is formed and which is located at the proximal end of the mouth 3. Thereafter, a support ring 5 having threads is fitted to the mouth 3 and the stationary plate 4 is pressed with a holding part 6 which is an end of the support ring 5. At this condition, the opposite end of the support ring 5 is located lower than the distal end of the mouth 3.

[0019] Reference numeral 7 is an oil cap which is for the mouth 3 and which projects substantially from the middle of a lid unit 8 which is to be supported on the stationary plate 4. The outer diameter of the oil cap 7 is larger than that of the mouth 3 and the support ring 5, and the height of the oil cap 7 is lower than that of the mouth 3.

[0020] Reference numeral 9 is an oil supply device for supplying oil, which is fixed inside the oil cap 7 at the end. The oil supply device comprises a valve 10, a man-

drel 11 and a spring 12 for elastically holding the valve 10, which are all located inside, and a valve case 14 having a communicating window 13 located at the side surface.

[0021] Reference numeral 15 is an oil resistant cylindrical packing fixed at the inner surface of the oil cap 7. The packing 15 is provided with tapered parts 16 and 17 at the upper and lower ends. There are a metal guide tube 18 for guiding the expansion and contraction of the packing 15 and a packing support tube 20 of synthetic resin for preventing the packing 15 from coming off with a plurality of protrusions 19, between the tapered parts 16 and 17, and there is a spiral 21 between the guide tube 18 and the packing support tube 20.

[0022] There are an upper flapping tongue portion 22 which is to be tightly in contact with the inner surface of the oil cap 7, and a lower flapping tongue portion 23 which is to be tightly in contact with the upper end of the mouth 3 when the mouth 3 is covered with the oil cap 7, at the inner ends of both tapered parts 16 and 17 of the packing 15, respectively. The proximal portion of the upper flapping tongue portion 22 is cut into a V-shape in order to prevent the end of the upper flapping tongue portion 22 from curling and to widen the receiving area of the upper flapping tongue portion 22 without making the upper flapping tongue portion 22 much projecting.

[0023] Formed substantially at the middle of the packing 15 is an absorbing part 24 projecting inward for absorbing the expansion and contraction of the packing 15, and the depth of the projection of the absorbing part 24 is smaller than twice the thickness of the packing 15. Accordingly, the sealing properties of the upper and lower flapping tongue portions 22 and 23 are excellent because the expansion and contraction of the packing 15 are suppressed.

[0024] The edges of the lid unit 8 are bent downwards, and curled support units 26 for supporting a hinge pin 25 are placed at one of the bent edges of the lid unit 8. Also, a curled support unit 27 for supporting the hinge pin 25 is placed at the corresponding edge of the stationary plate 4. Either the support unit 26 or the support unit 27 has a larger inner diameter than the other one so that the hinge pin 25 is loose at some part.

[0025] The hinge pin 25 is provided with an elastic member 28 for lifting up the lid unit 8 against the tank body 1, so that as the whole lid unit 8 is rotated around the hinge pin 25, the oil cap 7 is raised from the mouth 3 or covers the mouth 3 which is tightly brought into contact with the packing 15.

[0026] Reference numeral 29 is a slidable locking rod supported by a support piece 30 rising from the stationary plate 4, and the locking rod 29 is always elastically held inwards by a spring 31. There is a pull button 32 for sliding the locking rod 29 against the spring 31, at the end of the locking rod 29.

[0027] Reference numeral 33 is a hook provided at the lid unit 8, opposing to the locking rod 29. The hook 33 is pivotally placed at an arbor 35 which is inserted

into a rising arbor support piece 34.

[0028] The hook 33 is rotated against a spring 36 as pressed by the locking rod 29, and then a hooked portion of the hook 33 is locked to the locking rod 29. The hook 33 has a butt portion 37 which butts against the body unit 8 in order to prevent the hook 33 from rotating after locked and to notice the completion of the lock with a snap.

[0029] The locking rod 29 and the hook 33 constitute the locking means 38 for holding and releasing the contact relationship between the mouth 3 and the oil cap 7.

[0030] Reference numeral 39 is an oil gauge to know the oil filling condition when the oil is supplied into the tank body 1, and the oil gauge 39 is provided in the vicinity of the locking rod 29 of the locking means 38. That is, as shown in Figs. 5 and 6, when the oil gauge 39 is faced front, the pull button 32 of the locking rod 29 is placed at the location where it is handled easily by a left hand or a right hand, or placed at the opposite side of the hinge pin 25 so that the raised lid unit 8 does not interrupt the oil filling.

[0031] Reference numeral 40 is a tank room provided at one side of the oil combustion apparatus 2. An oil pan 41 is arranged at the lower part of the tank room and a rising pin 42 is placed upright at the middle of the oil pan 41. The tank body 1 is mounted on the oil pan 41 upside down. Then, the oil is supplied from the tank body 1 and burns out in a combustion tube 43.

[0032] Next, in the case that the oil is supplied into the tank body 1, when the tank body 1 is put on the floor with the oil cap 7 up and the oil gauge 39 front, the pull button 32 of the locking rod 29 is always handled easily by a right hand or a left hand. The problem that the raised lid unit 8 interrupts the user looking at the oil gauge 3 never arises.

[0033] With this condition, as the pull button is pulled, the locking rod 29 is moved outward and the hook 33 is released. Then, the lid unit 8 is raised by the resilience of the elastic member 28, and the oil cap 7 is removed from the mouth 3. The oil is supplied from the mouth 3, e.g., by a hose pump until the tank is filled up while the user is looking at the oil gauge 39.

[0034] After the tank is filled up, the lid unit 8 is pressed softly by a hand so that the oil cap 7 is in contact with the mouth 3. Therefore, the hand never gets dirty with oil.

[0035] Further, as described above, with the relationship between the locations of the locking means 38 and the oil gauge 39, to see the oil gauge 39, the user does not have to rotate the tank body 1, and also the user does not have to move himself. Accordingly, the tank is readily filled up with oil.

[0036] Thus, according to the present invention, the oil cap 7 provided on the lid unit 8 which is raised at a supporting point, i.e., the hinge pin 25 is brought into contact with the mouth 3 of the tank body 1 for supplying oil when mounted on the oil pan 41 upside down, and the oil gauge 39 is provided near the locking means 38

for holding and releasing the contact relationship between the mouth 3 and the oil cap 7. Accordingly, it goes without saying that the mouth 3 is opened and shut as touched once without making a user's hand dirty with oil. Moreover, in the case of filling up the tank body with oil, rotating the tank body 1 to see the oil gauge 39 is not required, and also the user does not have to move himself to see the oil gauge 39. Therefore, the tank body is readily filled up with oil while the user is looking at the oil gauge.

Claims

1. A cartridge type oil tank comprising:

a tank body (1) having a mouth (3) for supplying oil when mounted on an oil pan (41) upside down;

an oil cap (7) provided on a lid unit (8) which lid can be raised at a hinge pin (25), said oil cap (7) being tightly in contact with said mouth (3)

characterized by

locking means (38) for holding and releasing the contact relationship between said mouth (3) and said oil cap (7),

wherein said locking means (38) comprises a hook (33) provided at the opposite side of said body unit to said hinge pin (25) on said body unit (8), and a locking rod (29) provided on a stationary plate (4), for locking said hook (33); and wherein

said hook (33) is released from said locking rod (29) when a pull button (32) provided at one end of said locking rod (29) is pulled,

an oil gauge (39) being provided by the side of said locking means (38),

said oil gauge (39) being provided on the side of the tank body (1) on the same plane as said pull button (32) or on a side of the tank body (1) perpendicular to said side on which said pull button (32) is located and clearly visible near said locking rod (29) when said lid unit (8) is opened.

Patentansprüche

1. Ein Öltank des Behälter- bzw. Patronentyps, der Folgendes aufweist:

einen Tankkörper (1) mit einem Mund (3) zum Liefern von Öl, wenn er in einer umgekehrten Art und Weise an einer Ölwanne (41) angebracht ist;

eine Ölkappe (7), die an einer Druckeinheit (8)

vorgesehen ist, wobei der Deckel an einen Angelstift (25) angehoben werden kann, wobei die Ölkappe (7) in engem Kontakt mit dem Mund (3) steht; gekennzeichnet durch

Verriegelungsmittel (38) zum Halten und Lösen der Kontaktbeziehung zwischen dem Mund (3) und der Ölkappe (7), wobei die Verriegelungsmittel (38) einen Haken (33) aufweisen, der an der entgegengesetzten Seite der Körpereinheit (8) zum Angelstift (25) an der Körpereinheit (25) vorgesehen ist und eine Verriegelungsstange (29), die an einer stationären Platte (4) vorgesehen ist, zum Verriegeln des Hakens (33); und

wobei der Haken (33) von der Verriegelungsstange (29) gelöst ist, wenn ein Zugknopf (32), der an einem Ende der Verriegelungsstange (29) vorgesehen ist, gezogen wird, wobei ein Ölmesser (39) an der Seite des Verriegelungsmittels (38) angeordnet ist, wobei der Ölmesser (39) auf der Seite des Tankkörpers (1) in derselben Ebene wie der Zugknopf (32) vorgesehen ist oder auf einer Seite senkrecht zu der Seite, auf der der Zugknopf (32) angeordnet ist, und zwar deutlich sichtbar und in der Nähe der Verriegelungsstange (29), wenn die Deckeleinheit (8) geöffnet ist.

Revendications

1. Réservoir à pétrole de type cartouche comprenant :

un corps de réservoir (1) ayant une embouchure (3) pour fournir du pétrole quand il est monté sur une cuvette à pétrole (41), haut en bas ;

un capuchon (7) prévu sur un élément de rebord (8) qui peut être soulevé autour d'une tige de charnière (25), le capuchon (7) étant en contact étroit avec l'embouchure (3),

caractérisé par un moyen de verrouillage (38) pour maintenir et libérer la relation de contact entre l'embouchure (3) et le capuchon (7),

dans lequel le moyen de verrouillage (38) comprend un crochet (33) prévu du côté opposé de l'élément de corps par rapport à la tige de charnière (25) sur l'élément de corps (8) et une tige de verrouillage (29) prévue sur une plaque fixe (4) pour verrouiller le crochet (33), et dans lequel le verrou (33) est libéré de la tige de verrouillage (29) quand une tirette (32) prévue d'un côté de la tige de verrouillage (29) est tirée, une jauge à pétrole (39) étant prévue du côté du moyen de verrouillage (38), cette jauge à pétrole (39) étant prévue du côté du corps du réservoir (1) sur le même plan que la tirette (32)

ou sur un côté du corps de réservoir (1) perpendiculaire au côté sur lequel la tirette (32) est disposée et clairement visible près de la charnière (29) quand l'élément de couvercle (8) est ouvert.

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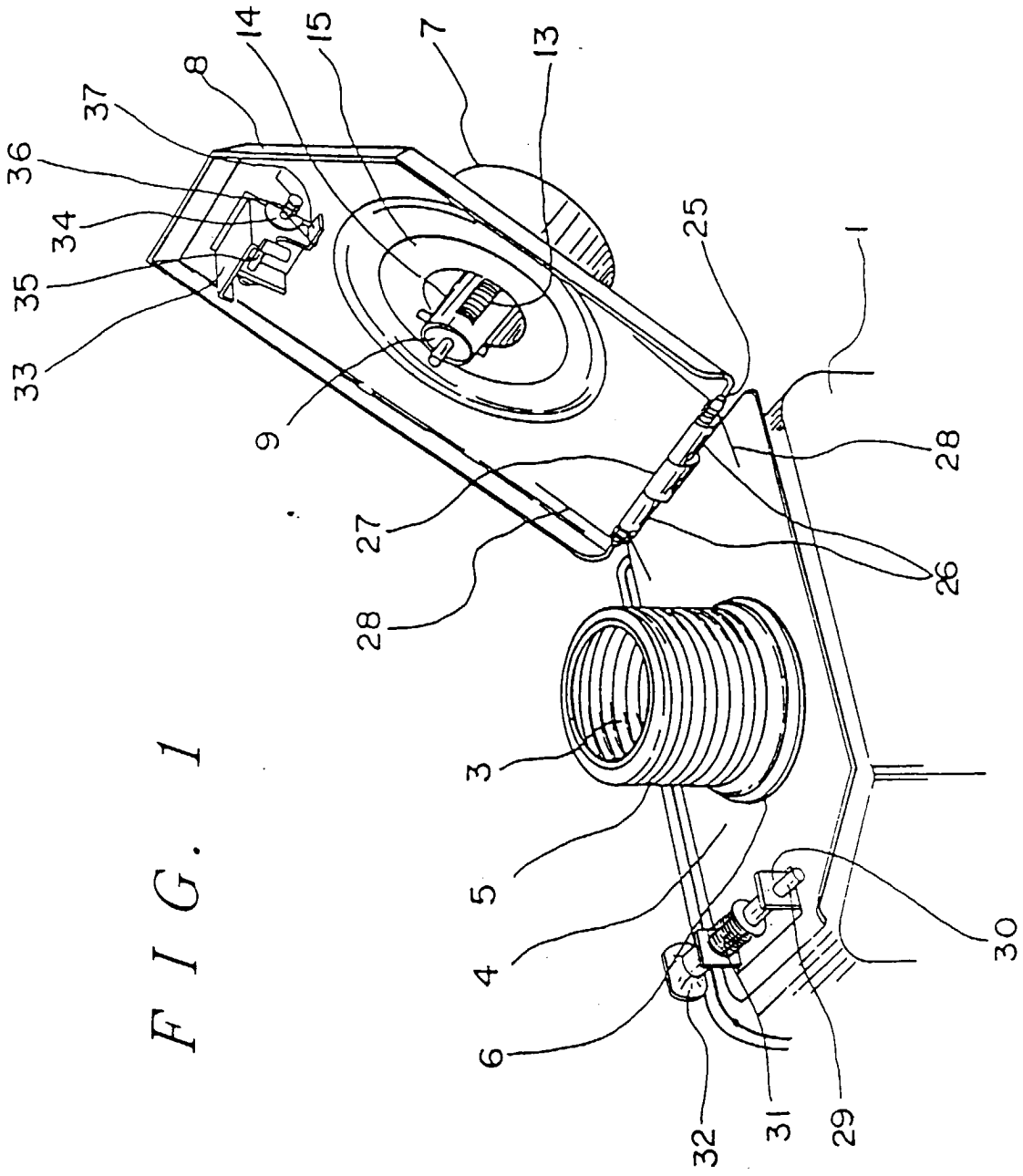


FIG. 1

FIG. 2

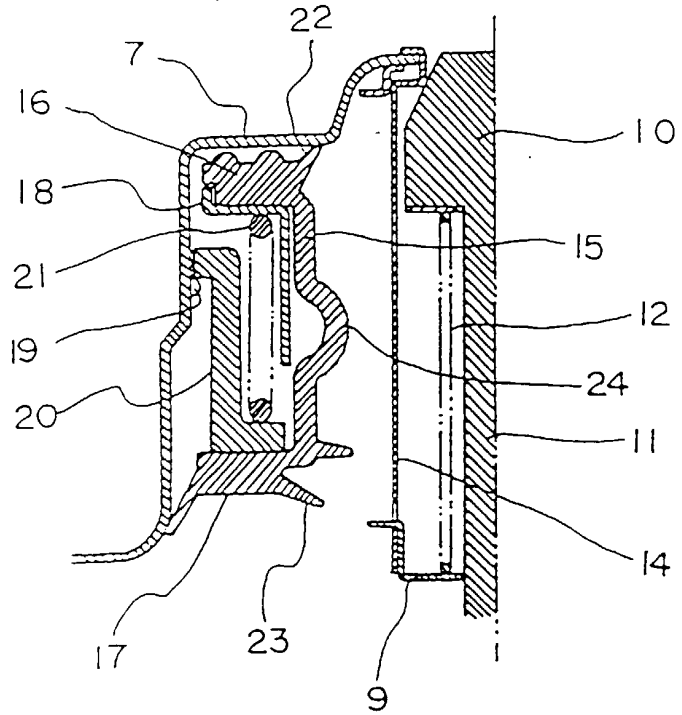


FIG. 3

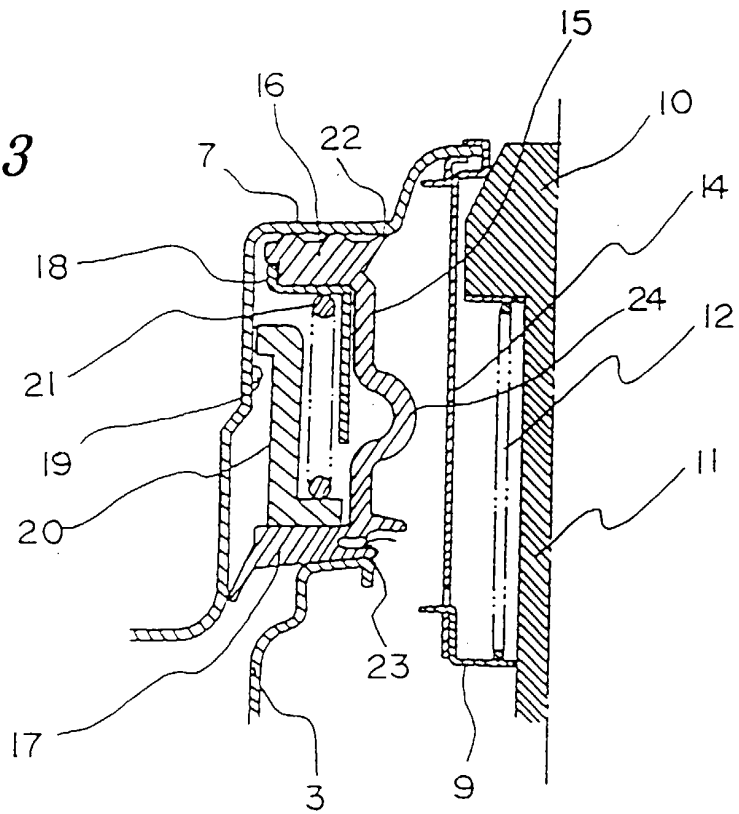


FIG. 4

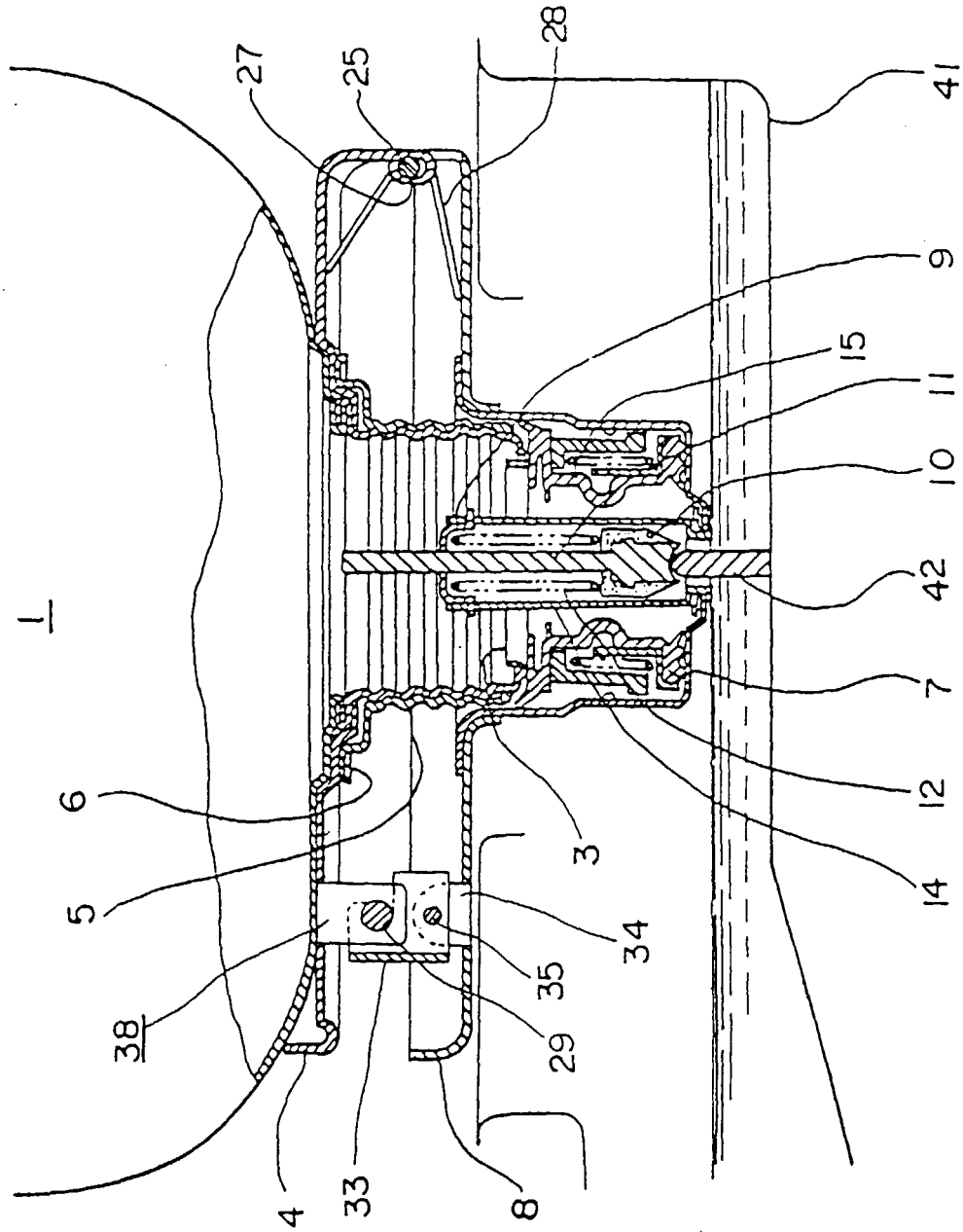


FIG. 5

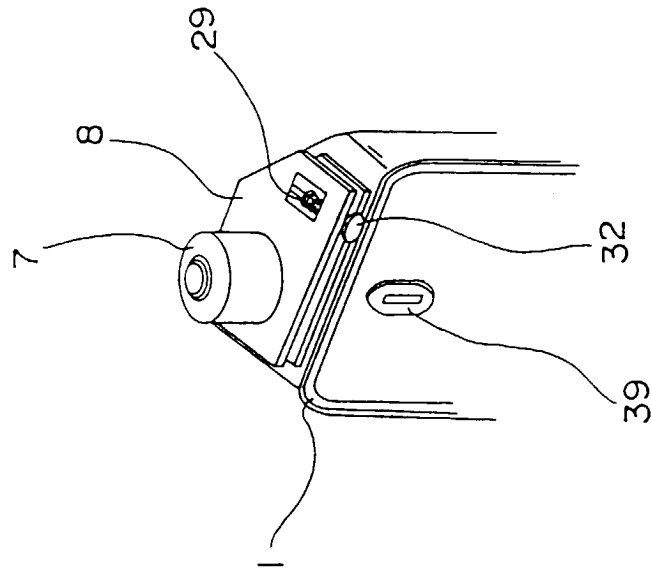


FIG. 6

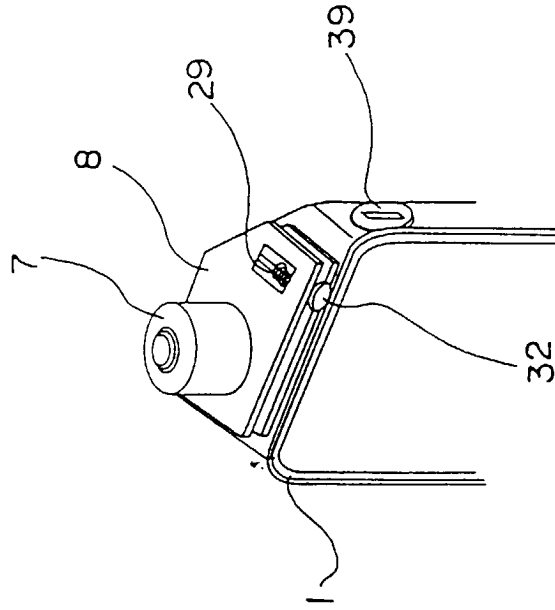


FIG. 7

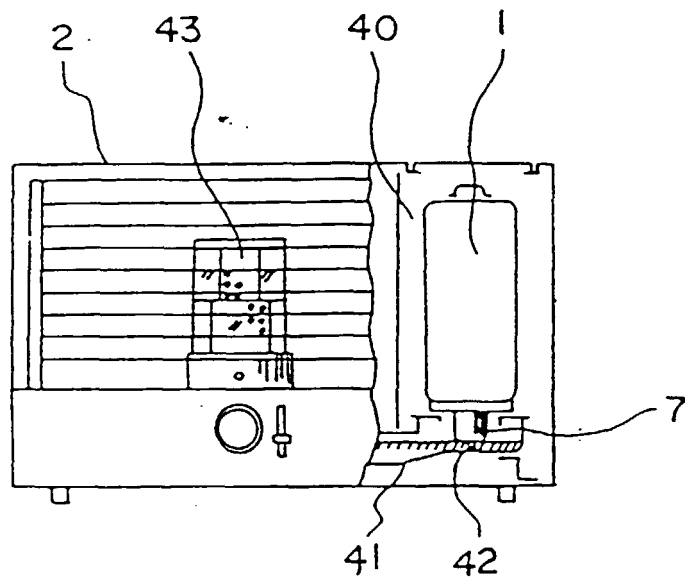


FIG. 9

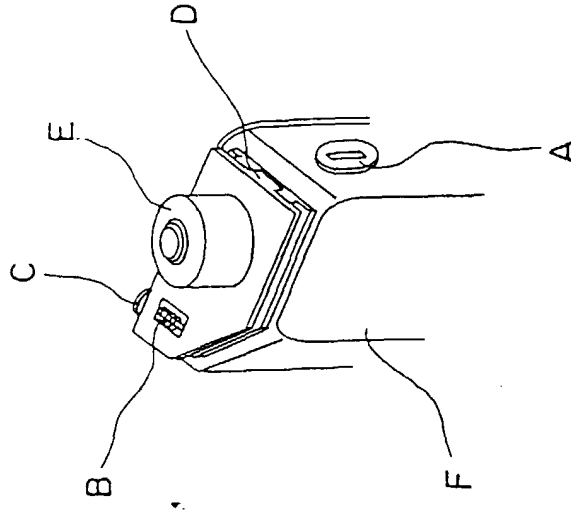


FIG. 8

