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(54) **COMBUSTIBLE GAS DISTRIBUTION APPARATUS**

VORRICHTUNG ZUR VERSORGUNG VON BRENNBAREM GAS

APPAREIL DE DISTRIBUTION DE GAZ COMBUSTIBLE

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(73) Proprietor: **WALTER TOSTO SERBATOI S.p.A.**
65200 Pescara (IT)

(72) Inventor: **POILLUCCI, Giovanni**
I-60027 Osimo (IT)

(74) Representative: **Siniscalco, Fabio et al**
Jacobacci & Partners S.p.A.
Via Senato, 8
20121 Milano (IT)

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Description

[0001] The subject of the present invention is a combustible gas distribution apparatus.

[0002] Combustible gas distribution apparatuses are known from International Application PCT WO97/42446, each using a plurality of single-use cartridges filled with combustible gas. Such cartridges have restricted dimensions and a limited capacity, for example of the order of a litre.

[0003] The distribution apparatus has a suitable container in which the cartridges are received, and a plurality of couplings connected to a manifold unit which by way of valve devices conveys the gases in the cartridges towards an outlet of the apparatus; each cartridge is connected to a respective coupling, and the valve devices provide for enabling or not enabling the communication of one or more cartridges with the outlet of the apparatus. Once exhausted, the cartridges are removed from the respective couplings and substituted by new cartridges.

[0004] One type of container has a framework of plastics material forming a plurality of cylindrical housings rigidly connected to one another by way of ribs and arranged parallel to one another in ordered rows. In the upper part, each housing provides a neck to which is fixed a coupling for the cartridge. The lower part of each housing is open for inserting the cartridge, which is then blocked with a suitable base mounted with a screw or bayonet connection in said lower part of the housing.

[0005] Another type of container provides a box-like frame equipped with hemispherical caps, each carrying a coupling and serving as a housing and guide for the cartridge. The box-like frame is closed at the top and bottom by two respective covers.

[0006] These types of containers have a certain structural complexity. The result of this is a fairly high cost of construction. Moreover, the non-practical user may find some difficulty in installing and removing the cartridges.

[0007] US-A-3161322 shows another portable gas dispenser suitable for dispensing controlled amounts of gas from small metal cartridges.

[0008] Aim of the present invention is to propose a multiple cartridge combustible gas distribution apparatus which is structurally simple, economical in construction, and which permits easy installation and removal of the cartridges.

[0009] This aim is fulfilled by means of a combustible gas distribution apparatus as claimed in claim 1.

[0010] For greater understanding of the invention, a description is given hereinafter of one of its non-limiting exemplary embodiments, illustrated in the appended drawings, in which:

Figures 1 and 2 show in a perspective view from above, from different observation points, a combustible gas distribution apparatus according to the invention;

Figure 3 is a perspective view of the apparatus from below;

Figure 4 shows a section of the apparatus from below along the line IV-IV in Figure 5;

Figure 5 shows a vertical section of the apparatus along the line V-V in Figure 4;

Figure 6 shows another vertical, partial section of the apparatus along the line VI-VI in Figure 5;

Figure 7 is an exploded perspective view of a detail of the apparatus;

Figure 8 is an exploded perspective view of the aforesaid combustible gas distribution apparatus and of a burner apparatus to be coupled thereto;

Figures 9 and 10 show in a perspective view, from different observation points, the two coupled apparatuses, Figure 10 showing the burner apparatus in one operational configuration;

Figure 11 is a perspective view of the two coupled apparatuses from below, with the burner apparatus in the operational configuration in Figure 10;

Figure 12 is a side view of the two coupled apparatuses, with the burner apparatus in the operational configuration in Fig. 10;

Figure 13 is the same side view of the two coupled apparatuses of Figure 12, but with the burner apparatus in a further operational configuration;

Figures 14 and 15 are two sections through the burner apparatus, respectively along the lines XIV-XIV and XV-XV in Figure 10.

[0011] With reference to Figures 1, 2 and 3, the distribution apparatus according to the invention, indicated generally by 1, comprises a container formed by a hollow body 2 and by a base 3 which closes the hollow body 2. Both the hollow body 2 and the base 3 are moulded from plastics material.

[0012] The hollow body 2 is connected to the base 3 by way of a hinge 4. On the opposite side from the hinge 4, a hook 5 is provided which is hinged to the hollow body 2 and is inserted into a recess 6 in the base 3, thus hooking-on the base itself.

[0013] The hollow body 2 has a top handle 7 for the transport of the apparatus 1. The hollow body 2 further has two recesses 8 arranged on opposite sides, the function of which will be explained hereinafter. On another side of the hollow body 2 is mounted a knob 9 for controlling the distribution of the gas; on the opposite side an opening 10 is provided for the connection of the inside of the apparatus 1 to the outside.

[0014] With reference to Figures 4, 5 and 6, on the inside of the apparatus 1 there are nine identical bayonet couplings 11 for combustible gas cartridges.

[0015] The couplings 11 are connected to one another by way of a manifold unit consisting of two series of pipes 12 and 13 which define two separate sections of the manifold unit: the series of pipes 12 connects six couplings 11, while the other series of pipes 13 connects the other three couplings 11.

[0016] The two separate sections of the manifold unit are connected to an inlet of a multi-way valve 14 controlled by the external knob 9 rotating into four predetermined positions.

[0017] The valve 14 is connected at the outlet to a gas delivery pipe 15 at the outlet of which is mounted an adjustable pressure reducing means 16 arranged externally and equipped with a coupling 17 for the connection of a flexible external tube T.

[0018] The manifold unit formed by the pipes 12 and 13, the outer body of the valve 14, and the outlet pipe 15 are formed of two complementary parts made of plastics material which are joined by ultrasonic welding.

[0019] Figure 7 illustrates a part of the structure of these two complementary parts, indicated by the letter A in Fig. 4, the whole of the remaining part having a similar configuration. As can be observed, the structure of the manifold unit is formed by complementary profile sections 18,19 of plastics material. At each coupling 11, the profile sections 18, 19 have two respective flanges 20, 21. The flange 20 is rigidly connected to the coupling 11 and has a hole 22 communicating with the inside of the coupling. From the hole 22 of the profile section 18 extends a channel 23 having a semicircular cross-section which runs the whole length of the profile section 18, being connected to the other holes in the other flanges; around the hole 22 and the channel 23 of the profile section 18 extends a continuous raised portion 24. Correspondingly, the profile section 19 has a channel 25 identical to the channel 23 and further has a continuous groove 26 having a profile and evolution identical to those of the raised portion 24 in order to receive the latter. The flange 20 of the profile section 18 is provided with a pin 27 and with two holes 28, and the flange 21 of the profile section 19 is correspondingly provided with a hole 29 capable of receiving the pin 27 and with two holes 30 capable of being aligned with the holes 28.

[0020] By coupling the complementary profile sections so that the pins enter the respective holes and the raised portions enter the respective grooves, the pairs of semicircular channels will form gas passages of circular cross-section which connect the various couplings 11.

[0021] The manifold unit with the couplings 11 are fixed to a flat upper wall 31 of the hollow body 2 by way of screws, not shown, which are inserted into the aligned holes of the various flanges, such as the holes 28, 30 of the part illustrated in Figure 7, and which are screwed into bushes 32 provided integrally in said upper wall.

[0022] As illustrated in Figure 5, on the base 3 of the apparatus, at each coupling 11, three resiliently flexible fins 33 are provided, integral with the base, arranged at 120° with respect to one another and which extend convergently upwards.

[0023] Up to nine combustible gas cartridges can be loaded into the apparatus 1. With reference to Figures 4, 5 and 6, the cartridges are illustrated by dash/dotted lines and indicated by C.

[0024] To load the cartridges C into the apparatus, the hollow body 2 is first opened by removing the base 3 after unlocking it by undoing the hook 5. The cartridges C are then connected to the couplings 11 by means of a bayonet coupling which makes it possible to make the connection with a small and therefore rapid rotation. Finally, the base 3 is hooked onto the hollow body 2 again.

[0025] As shown in Figure 5, with reference to the central cartridge C and to the right-hand cartridge, once the base 3 is hooked to the hollow body 2, the base of each cartridge C will press against three corresponding fins 33 which bend towards one another and exert a resilient thrust on the base itself of the cartridge which tends to keep it attached to the respective coupling 11.

[0026] The fins 33 can perform a similar function when it is desired to hold the cartridges C in the apparatus 1 without connecting them to the couplings 11. In this case, as shown in Figure 5 with reference to the lefthand cartridge C, each set of three fins 33 resiliently pushes a respective cartridge C against a respective coupling 11 thus maintaining it in said disconnected position.

[0027] Once the cartridges C are loaded and connected to the couplings 11, depending on the position of the knob 9 actuating the multi-way valve 14, there are various operational states. Referring to Figure 4, in one position of the knob 9 the valve 14 closes the communication between the pipes 12, 13 and the outlet pipe 15; in a second position of the knob 9 the valve 14 opens the communication exclusively between the pipes 12 and the outlet pipe 15, permitting the delivery of the gas contained in the six cartridges to the left of the pipe 15; in a third position of the knob 9 the valve 14 opens the communication exclusively between the pipes 13 and the outlet pipe 15, permitting the delivery of the gas contained in the three cartridges to the right of the pipe 15; in a fourth position of the knob 9 the valve 14 opens conjointly the communication between the pipes 12 and the outlet pipe 15 and between the pipes 13 and said outlet pipe, thus allowing the delivery of the gas contained in all the cartridges.

[0028] As will be easily understood from what has been described and illustrated, the apparatus 1 is structurally simple and therefore economical in construction, its case in particular being composed of only two parts. Moreover, the installation and removal of the cartridges, as can be seen, is easy and rapid.

[0029] The production of the manifold unit by means of two moulded parts is economical in construction and reliable in operation.

[0030] Figures 8 to 13 show the coupling of the combustible gas distribution apparatus 1 to an infrared burner apparatus 100.

[0031] The burner apparatus 100 has an external configuration like a small case, such as to be able to bear on the flat upper wall of the distribution apparatus 1, and comprises a shell 101 in which all the devices of the burner are received, and a removable cover 102 forcibly coupled to the shell 101.

[0032] The shell 101 is provided with a handle 103 for transport. Hinged onto opposite sides of the shell 101 are two hooks 104, each of which is received in a respective seat 105 of the shell and is capable of being inserted into a respective one of the two recesses 8 of the distribution apparatus 1 in order to couple the burner apparatus 100 firmly to the distribution apparatus, as shown in Figures 9 to 13. Mounted on one of the aforesaid opposed sides of the shell 101 is a knob 106 for the control of the burner. On the opposite side of the shell 101 from the handle 103 a series of slots 116 is provided.

[0033] Figures 14 and 15 show the internal devices of the infrared burner. Essentially, two porous matrices 107, 108 of ceramic material of plane symmetry are provided, to which the gas is caused to flow through two respective tubes 109, 110 connected to a valve 111 controlled by the knob 106. From the valve 111 there also extends a further tube 112 which opens out at the upper part of the porous matrices 107, 108. The valve 111 is connected by way of the tube T to the coupling 17 (Figures 4 and 6) at the outlet of the distribution apparatus 1. External air flows through the slots 116 to the porous matrices 107, 108. Mounted above the porous matrices 107, 108 is a grille 113.

[0034] As shown in Figure 13, all the aforesaid devices, including the knob 106, are mounted on a base 114 hinged along one side to the shell 101 so as to be able to be rotated into an inclined position. A rod 115 is removably blocked in a suitable seat in the shell 101. Said rod 115 has the function of locking the base 114 in an inclined position: to this end, once removed from the seat, the rod 115 is inserted at one end into a recess of the shell 101 and at the other end into a recess of the base 114 so as to lock the base itself in an inclined position.

[0035] Pressing the knob 106 enables gas to flow from the distribution apparatus 1 to the tube 112 by way of the valve 111 and actuates a piezoelectric ignition device which generates a pilot flame at the outlet of the tube 112 above the matrices 107, 108. At this point, by rotating the knob 106 into a first position gas flows into the tube 109 and there is flame-free combustion in the matrix 107; by rotating the knob 106 into a second position gas flows into the tube 110 and there is flame-free combustion in the matrix 108; by rotating the knob 106 into a third position gas flows into both the tubes 109, 110 and there is combustion in both the matrices 107, 108.

[0036] The burner apparatus 100 combined with the combustible gas distribution apparatus 1 can therefore be used for cooking food by placing the cooking vessel on the grille 113. Preferably, a suitable plate 117 bearing on the grille 113 is interposed between the grille 113 and the cooking vessel.

[0037] The burner apparatus 100 combined with the combustible gas distribution apparatus 1 may also be advantageously used for space heating by bringing the base 114 into an inclined position, as shown in Figure 13.

[0038] The burner apparatus 100 is simple, handy and effective.

[0039] It is clear that variants and/or additions to what has been described and illustrated may be provided.

[0040] The shape of the hollow body and of the base of the distribution apparatus may vary according to requirements. The configuration of the members with which said hollow body and base are equipped may also vary.

[0041] The hollow body and the base may be coupled in any manner which permits the opening of the distribution apparatus, although the hinge and hook system seen in the example proves simple and practical.

[0042] The number of couplings for the cartridges, and therefore the number of cartridges which the distribution apparatus can receive, may vary. Screw couplings may be used; however, the bayonet couplings proposed in the example prove rapid and sufficiently reliable.

[0043] The fins may be substituted by equivalent means which exert a resilient thrust on the base of the cartridges. Although they are sufficiently advantageous for the stability of the locking of the cartridges in the distribution apparatus, said resilient thrust means could also not be provided in the apparatus.

[0044] The pressure reducing means may be received inside the distribution apparatus. The flexible tube may also be accommodated inside the distribution apparatus when the latter is not being used.

[0045] The burner apparatus may also have a different shape, depending on requirements.

[0046] The infrared burner used in they apparatus seen in the example is efficient and reliable. Other types of burners may however be provided.

[0047] The cover may be connected to the shell by means of a hinge.

[0048] Any equivalent means may be used for supporting the base in an inclined position instead of the rod.

[0049] In a simplified version, the base of the burner is fixed and therefore the burner apparatus is used only for cooking.

[0050] The flexible tube and the pressure reducing means may also be associated with the burner apparatus instead. of with the distribution apparatus, being housed inside said burner apparatus when the latter is not being used.

Claims

1. A combustible gas distribution apparatus (1) suitable for using a plurality of cartridges (C) filled with combustible gas, comprising a container suitable for receiving the cartridges (C), a plurality of couplings (11) to each of which a respective cartridge (C) is adapted to be connected, a manifold unit (12,

13) connected to the couplings (11) and which by way of valve means (14) conveys the gases in the cartridges (C) towards an outlet (15) of the apparatus, said container comprising a hollow body (2) and a base (3) which closes the hollow body (2), there being fixed in the hollow body (2) the couplings (11), the manifold unit (12, 13), and the valve means (14), the base being able to be opened for the insertion of the cartridges (C) into the container, **characterized in that** the manifold unit is formed of an assembly of pipes (12, 13) connected to one another, and said valve means comprise a valve (14) connected to an outlet pipe (15), and wherein the pipes of the manifold unit (12, 13), the valve (14) and the outlet pipe (15) are formed of two coupled, complementary profiled parts of plastics material.

2. A distribution apparatus according to claim 1, wherein each pipe (12, 13) of the manifold unit is formed of two coupled channels (23, 25) of semicircular cross-section, provided respectively in one and the other of the two profiled parts.

3. A distribution apparatus according to claim 2, wherein the channels (23) of one of the two profiled parts are surrounded by raised portions (24) while the channels (25) of the other of the two profiled parts are surrounded by grooves (26) which are coupled to the raised portions (24).

4. A distribution apparatus according to any one of the preceding claims, wherein the two profiled parts comprise complementary alignment members (27, 29).

5. A distribution apparatus according to any one of the preceding claims, wherein the couplings (11), the manifold unit (12, 13) and the valve means (14) are fixed to the upper wall of the hollow body (2).

6. A distribution apparatus according to claim 1, wherein the hollow body (2) is connected to the base (3) by means of a hinge (4) and means (5, 6) are provided for locking the hollow body (2) detachably to the base (3).

7. A distribution apparatus according to claim 6, wherein said locking means comprise at least one hook (5) hinged to the hollow body (2) which is inserted into a recess (6) in the base (3).

8. A distribution apparatus according to any one of the claims 1,6,7, wherein the hollow body (2) is provided with a handle (7) for the transport of the apparatus.

9. A distribution apparatus according to any one of the claims 1,6,7,8, wherein on the hollow body (2) there is mounted a knob (9) connected to said valve means (14) for controlling the distribution of the gas.

10. A distribution apparatus according to any one of the claims 1,6,7,8,9, wherein an opening (10) is provided in the hollow body (2) for the connection of the inside of the apparatus to the outside.

11. A distribution apparatus according to any one of the claims 1,6,7,8,9,10, wherein the hollow body (2) and the base (3) are moulded from plastics material.

12. A distribution apparatus according to claim 1, wherein the couplings (11) are bayonet couplings.

13. A distribution apparatus according to any one of the preceding claims, wherein means (33) are provided on the base (3) of the apparatus which exert a resilient thrust on the cartridges (C) in the direction of the couplings (11).

14. A distribution apparatus according to claim 13, wherein said resilient thrust means consist of resiliently flexible fins (33), which extend from the base (3) of the apparatus so that they converge towards one another.

15. A distribution apparatus according to any one of the preceding claims, wherein the valve means comprise a multi-way valve (14) connected to the manifold unit so as to permit selective connection of the cartridges (C) to the outlet of the apparatus.

16. An item of equipment comprising the distribution apparatus (1) according to any one of the preceding claims and a burner apparatus (100) comprising means (104) for attachment to the distribution apparatus.

17. An item of equipment according to claim 16, wherein the attachment means of the burner apparatus (100) comprise hooks (104) which are coupled to respective recesses (8) in the hollow body (2) of the distribution apparatus (1).

18. An item of equipment according to claim 16 or 17, wherein the burner apparatus (100) has a configuration like a small case.

19. An item of equipment according to claim 18, wherein the burner apparatus (100) comprises a shell (101) in which the devices (107-112) of the burner are received, and an openable cover (102).

20. An item of equipment according to claim 19, wherein a knob (106) for the control of the burner is mounted on the shell (101).

21. An item of equipment according to any one of claims 16 to 20, wherein the burner is movable from a horizontal stable position to an inclined stable position, serving in the horizontal position as an apparatus for cooking food, and serving in the inclined position as a space heating apparatus.

22. An item of equipment according to claim 21, wherein the burner is mounted on a base (114) hinged to the body of the burner apparatus.

23. An item of equipment according to claim 22, wherein means (115) are provided for maintaining the base (114) in an inclined position.

24. An item of equipment according to claim 23, wherein said means for maintaining the base (114) in an inclined position comprise at least one rod (115) movable between a rest position in which the rod (115) is received in a seat of the body of the burning apparatus and an operational position in which the rod (115) is raised and the base (114) bears on the latter in the inclined position.

25. An item of equipment according to any one of claims 16 to 24, wherein the burner is an infrared burner.

26. A distribution apparatus according to any one of claims 1 to 16, wherein the hollow body (2) has a flat upper wall (31) for the support of the burner apparatus as claimed in any one of claims 16 to 25 or of another apparatus which uses the combustible gas.

Patentansprüche

1. Brenngas-Verteilungsvorrichtung (1), die für die Nutzung einer Vielzahl von Kartuschen (C) geeignet ist, die mit Brenngas gefüllt sind, und die einen Behälter, der zum Aufnehmen der Kartuschen (C) geeignet ist, eine Vielzahl von Kupplungen (11), mit denen jeweils eine entsprechende Kartusche (C) verbunden werden kann, eine Verteilereinheit (12, 13), die mit den Kupplungen (11) verbunden ist und die über eine Ventileinrichtung (14) die Gase in den Kartuschen (C) in Richtung eines Auslasses (15) der Vorrichtung befördert, umfasst, wobei der Behälter einen Hohlkörper (2) und ein Unterteil (3) umfasst, das den Hohlkörper (2) verschließt, und in dem Hohlkörper (2) die Kupplungen (11), die Verteilereinheit (12, 13) sowie die Ventileinrichtung (14) befestigt sind und das Unterteil zum Einführen der Kartuschen (11) in den Behälter geöffnet werden kann, **dadurch gekennzeichnet, dass** die Verteilereinheit durch eine Anordnung von Rohren (12, 13) gebildet wird, die miteinander verbunden sind, und die Ventileinrichtung ein Ventil (14) umfasst, das mit einem Auslassrohr (15) verbunden ist, und wobei die Rohre der Verteilereinheit (12, 13), das Ventil (14) und das Auslassrohr (15) durch zwei gekoppelte, mit komplementärem Profil versehene Teile aus Kunststoffmaterial gebildet werden.

2. Verteilungsvorrichtung nach Anspruch 1, wobei jedes Rohr (12, 13) der Verteilereinheit durch zwei gekoppelte Rinnen (23, 25) mit halbkreisförmigem Querschnitt, die in dem einen bzw. dem anderen der zwei mit Profil versehenen Teile vorhanden sind, gebildet wird.

3. Verteilungsvorrichtung nach Anspruch 2, wobei die Kanäle (23) eines der zwei mit Profil versehenen Teile von erhabenen Abschnitten (24) umgeben sind, während die Kanäle (25) des anderen der zwei mit Profil versehenen Teile von Nuten (26) umgeben sind, die mit den erhabenen Abschnitten (24) gekoppelt sind.

4. Verteilungsvorrichtung nach einem der vorangehenden Ansprüche, wobei die zwei mit Profil versehenen Teile komplementäre Ausrichtelemente (27, 29) umfassen.

5. Verteilungsvorrichtung nach einem der vorangehenden Ansprüche, wobei die Kupplungen (11), die Verteilereinheit (12, 13) und die Ventileinrichtung (14) an der oberen Wand des Hohlkörpers (2) befestigt sind.

6. Verteilungsvorrichtung nach Anspruch 1, wobei der Hohlkörper (2) mit dem Unterteil (3) mittels eines Gelenks (4) verbunden ist und eine Einrichtung (5, 6) zum abnehmbaren Arretieren des Hohlkörpers (2) an dem Unterteil (3) vorhanden ist.

7. Verteilungsvorrichtung nach Anspruch 6, wobei die Arretiereinrichtung wenigstens einen Haken (5) umfasst, der an dem Hohlkörper (2) angelenkt ist und in eine Aussparung (6) in dem Unterteil (3) eingeführt wird.

8. Verteilungsvorrichtung nach einem der Ansprüche 1, 6, 7, wobei der Hohlkörper (2) mit einem Griff (7) für den Transport der Vorrichtung versehen ist.

9. Verteilungsvorrichtung nach einem der Ansprüche 1, 6, 7, 8, wobei an dem Hohlkörper (2) ein Knopf (9) angebracht ist, der mit der Ventileinrichtung (14) verbunden ist, um die Verteilung des Gases zu steuern.

10. Verteilungsvorrichtung nach einem der Ansprüche 1, 6, 7, 8, 9, wobei eine Öffnung (10) in dem Hohlkörper (2) zur Verbindung des Inneren der Vorrichtung mit der Außenseite vorhanden ist.

11. Verteilungsvorrichtung nach einem der Ansprüche 1, 6, 7, 8, 9, 10, wobei der Hohlkörper (2) und das Unterteil (3) aus Kunststoffmaterial geformt sind.

12. Verteilungsvorrichtung nach Anspruch 1, wobei die Kupplungen (11) Bajonettkupplungen sind.

13. Verteilungsvorrichtung nach einem der vorangehenden Ansprüche, wobei Einrichtungen (33) an dem Unterteil (3) der Vorrichtung vorhanden sind, die einen federnden Druck auf die Kartuschen (C) in der Richtung der Kupplungen (11) ausüben.

14. Verteilungsvorrichtung nach Anspruch 13, wobei die federnden Druckeinrichtungen aus federnd flexiblen Rippen (33) bestehen, die sich so von dem Unterteil (3) der Vorrichtung erstrecken, dass sie aufeinanderzulaufen.

15. Verteilungsvorrichtung nach einem der vorangehenden Ansprüche, wobei die Ventileinrichtung ein Mehrwegventil (14) umfasst, das mit der Verteilereinheit so verbunden ist, dass selektive Verbindung der Kartuschen (C) mit dem Auslass der Vorrichtung möglich ist.

16. Ausrüstungsgegenstand, der die Verteilungsvorrichtung (1) nach einem der vorangehenden Ansprüche sowie eine Brennervorrichtung (100) umfasst, die Einrichtungen (104) zum Anbringen an der Verteilungsvorrichtung umfasst.

17. Ausrüstungsgegenstand nach Anspruch 16, wobei die Anbringungseinrichtungen der Brennervorrichtung (100) Haken (104) umfassen, die mit entsprechenden Vertiefungen (8) in dem Hohlkörper (2) der Verteilungsvorrichtung (1) gekoppelt werden.

18. Ausrüstungsgegenstand nach Anspruch 16 oder 17, wobei die Brennervorrichtung (100) wie ein kleiner Kasten aufgebaut ist.

19. Ausrüstungsgegenstand nach Anspruch 18, wobei die Brennervorrichtung (100) eine Verkleidung (101), in der die Vorrichtungen (107-112) des Brenners aufgenommen sind, sowie eine zu öffnende Abdeckung (102) umfasst.

20. Ausrüstungsgegenstand nach Anspruch 19, wobei ein Knopf (106) zum Steuern des Brenners an der Verkleidung (101) angebracht ist.

21. Ausrüstungsgegenstand nach einem der Ansprüche 16 bis 20, wobei der Brenner aus einer horizontalen stabilen Position in eine geneigte stabile Position bewegt werden kann und in der horizontalen Position als eine Vorrichtung zum Zubereiten von Essen und in der geneigten Position als eine Raumheizvorrichtung dient.

22. Ausrüstungsgegenstand nach Anspruch 21, wobei der Brenner an einem Unterteil (114) angebracht ist, das an dem Körper der Brennervorrichtung angelenkt ist.

23. Ausrüstungsgegenstand nach Anspruch 22, wobei eine Einrichtung (115) zum Halten des Unterteils (114) in einer geneigten Position vorhanden ist.

24. Ausrüstungsgegenstand nach Anspruch 23, wobei die Einrichtung zum Halten des Untersatzes (114) in einer geneigten Position wenigstens einen Stab (115) umfasst, die zwischen einer Ruheposition, in der der Stab (115) in einer Aufnahme des Körpers der Brennvorrichtung aufgenommen ist, und einer Funktionsposition bewegt werden kann, in der der Stab (115) angehoben ist und das Unterteil (114) in der geneigten Position auf letzterem aufliegt.

25. Ausrüstungsgegenstand nach einem der Ansprüche 16 bis 24, wobei der Brenner ein Infrarotbrenner ist.

26. Verteilungsvorrichtung nach einem der Ansprüche 1 bis 16, wobei der Hohlkörper (2) eine flache obere Wand (31) zum Tragen der Brennervorrichtung nach einem der Ansprüche 16 bis 25 oder einer anderen Vorrichtung hat, die das Brenngas nutzt.

Revendications

1. Dispositif de distribution de gaz combustible (1) adapté pour utiliser une pluralité de cartouches (C) remplies de gaz combustible, comprenant un conteneur adapté pour recevoir les cartouches (C), une pluralité de couplages (11) à chacun desquels une cartouche respective (C) est adaptée pour être raccordée, une unité formant collecteur (12, 13) raccordée aux couplages (11) et qui, à l'aide de moyens formant soupape (14) transporte les gaz dans les cartouches (C) vers une sortie (15) du dispositif, ledit conteneur comprenant un corps creux (2) et une base (3) qui ferme le corps creux (2), étant fixés dans le corps creux (2) les couplages (11), l'unité formant collecteur (12, 13), et les moyens formant soupape (14), la base étant capable d'être ouverte pour l'insertion des cartouches (C) dans le conteneur, **caractérisé en ce que** l'unité formant collecteur est formée d'un ensemble de conduites (12, 13) raccordées l'une à l'autre, et lesdits moyens formant soupape comprennent une soupape (14) raccordée à une conduite de sortie (15), et dans lequel les conduites de l'unité formant collecteur (12, 13), la soupape (14) et la conduite de sortie (15) sont formées de deux parties profilées couplées

complémentaires en matériau plastique.

2. Dispositif de distribution selon la revendication 1, dans lequel chaque conduite (12, 13) de l'unité formant collecteur est formée de deux canaux couplés (23, 25) de coupe semi-circulaire, prévus respectivement dans l'une et l'autre des deux parties profilées.

3. Dispositif de distribution selon la revendication 2, dans lequel les canaux (23) de l'une des deux parties profilées sont entourés par des parties relevées (24) alors que les canaux (25) de l'autre des deux parties profilées sont entourés par des rainures (26) qui sont couplées aux parties relevées (24).

4. Dispositif de distribution selon l'une quelconque des revendications précédentes, dans lequel les deux parties profilées comprennent des éléments d'alignement complémentaires (27, 29).

5. Dispositif de distribution selon l'une quelconque des revendications précédentes, dans lequel les couplages (11), l'unité formant collecteur (12, 13) et les moyens formant soupape (14) sont fixés à la paroi supérieure du corps creux (2).

6. Dispositif de distribution selon la revendication 1, dans lequel le corps creux (2) est raccordé à la base (3) au moyen d'une charnière (4) et des moyens (5, 6) sont prévus pour verrouiller le corps creux (2) de manière détachable à la base (3).

7. Dispositif de distribution selon la revendication 6, dans lequel lesdits moyens de verrouillage comprennent au moins un crochet (5) en charnière avec le corps creux (2) qui est inséré dans un creux (6) dans la base (3).

8. Dispositif de distribution selon l'une quelconque des revendications 1, 6, 7, dans lequel le corps creux (2) est pourvu d'une poignée (7) pour le transport du dispositif.

9. Dispositif de distribution selon l'une quelconque des revendications 1, 6, 7, 8, dans lequel sur le corps creux (2) il est fixé un bouton (9) raccordé auxdits moyens formant soupape (14) pour commander la distribution du gaz.

10. Dispositif de distribution selon l'une quelconque des revendications 1, 6, 7, 8, 9, dans lequel une ouverture (10) est prévue dans le corps creux (2) pour le raccordement de l'intérieur du dispositif à l'extérieur.

11. Dispositif de distribution selon l'une quelconque des revendications 1, 6, 7, 8, 9, 10, dans lequel le corps creux (2) et la base (3) sont moulés à partir d'un matériau plastique.

12. Dispositif de distribution selon la revendication 1, dans lequel les couplages (11) sont des couplages à baïonnette.

13. Dispositif de distribution selon l'une quelconque des revendications précédentes, dans lequel des moyens (33) sont prévus sur la base (3) du dispositif qui exercent une poussée élastique sur les cartouches (C) dans le sens des couplages (11).

14. Dispositif de distribution selon la revendication 13, dans lequel lesdits moyens de poussée élastique sont constitués d'ailettes flexibles de manière élastique (33), qui s'étendent depuis la base (3) du dispositif de sorte qu'elles convergent l'une vers l'autre.

15. Dispositif de distribution selon l'une quelconque des revendications précédentes, dans lequel les moyens formant soupape comprennent une soupape à voies multiples (14) raccordée à l'unité formant collecteur de manière à permettre un raccordement sélectif des cartouches (C) à la sortie du dispositif.

16. Elément d'équipement comprenant le dispositif de distribution (1) selon l'une quelconque des revendications précédentes et un dispositif formant brûleur (100) comprenant des moyens (104) pour une fixation au dispositif de distribution.

17. Elément d'équipement selon la revendication 16, dans lequel les moyens de fixation du dispositif formant brûleur (100) comprennent des crochets (104) qui sont couplés à des creux respectifs (8) dans le corps creux (2) du dispositif de distribution (1).

18. Elément d'équipement selon les revendications 16 ou 17, dans lequel le dispositif formant brûleur (100) présente une configuration comme un petit boîtier.

19. Elément d'équipement selon la revendication 18, dans lequel le dispositif formant brûleur (100) comprend une enveloppe (101) dans laquelle les dispositifs (107-112) du brûleur sont reçus, et un capot ouvrable (102).

20. Elément d'équipement selon la revendication 19, dans lequel un bouton (106) destiné à commander le brûleur est fixé sur l'enveloppe (101).

21. Elément d'équipement selon l'une quelconque des revendications 16 à 20, dans lequel le brûleur est amovible depuis une position stable horizontale vers une position stable inclinée, servant dans la position horizontale de dispositif pour cuire des pro-

duits alimentaires, et servant dans la position inclinée de dispositif de chauffage d'un espace.

22. Elément d'équipement selon la revendication 21, dans lequel le brûleur est fixé sur une base (114) en charnière avec le corps du dispositif formant brûleur.

23. Elément d'équipement selon la revendication 22, dans lequel des moyens (115) sont prévus pour maintenir la base (114) dans une position inclinée.

24. Elément d'équipement selon la revendication 23, dans lequel lesdits moyens destinés à maintenir la base (114) dans une position inclinée comprennent au moins une tige (115) mobile entre une position de repos dans laquelle la tige (115) est reçue dans un logement du corps du dispositif de brûlage et une position opérationnelle dans laquelle la tige (115) est relevée et la base (114) repose sur cette dernière dans la position inclinée.

25. Elément d'équipement selon l'une quelconque des revendications 16 à 24, dans lequel le brûleur est un brûleur à infrarouges.

26. Dispositif de distribution selon l'une quelconque des revendications 1 à 16, dans lequel le corps creux (2) comprend une paroi supérieure (31) pour le support du dispositif formant brûleur selon l'une quelconque des revendications 16 à 25 ou d'un autre dispositif qui utilise le gaz combustible.

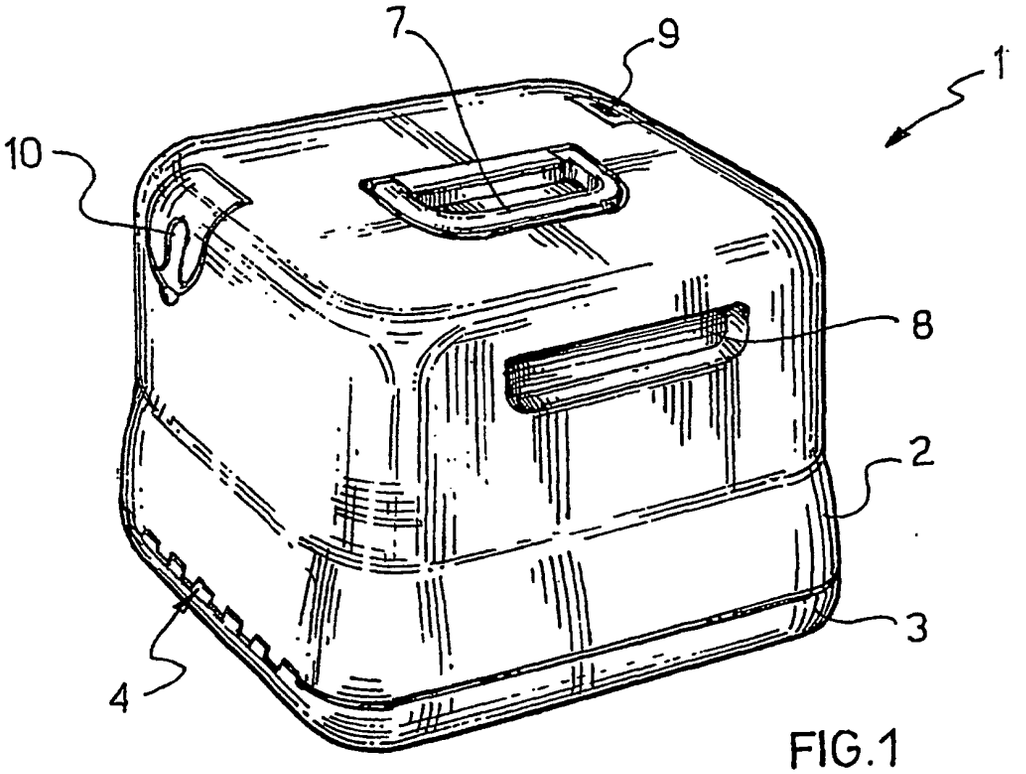


FIG.1

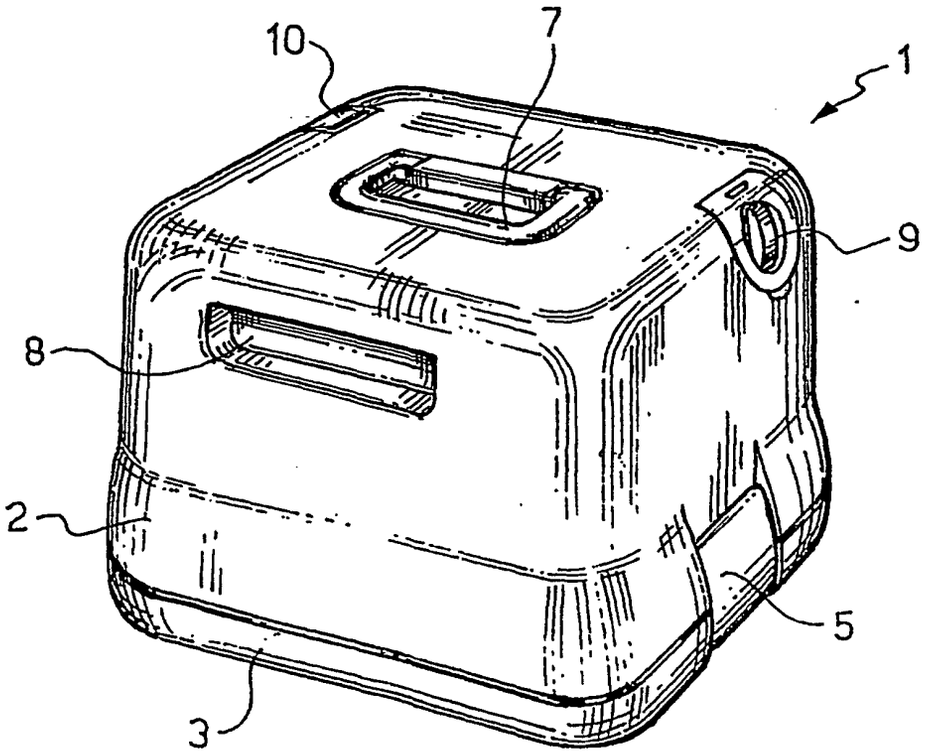


FIG.2

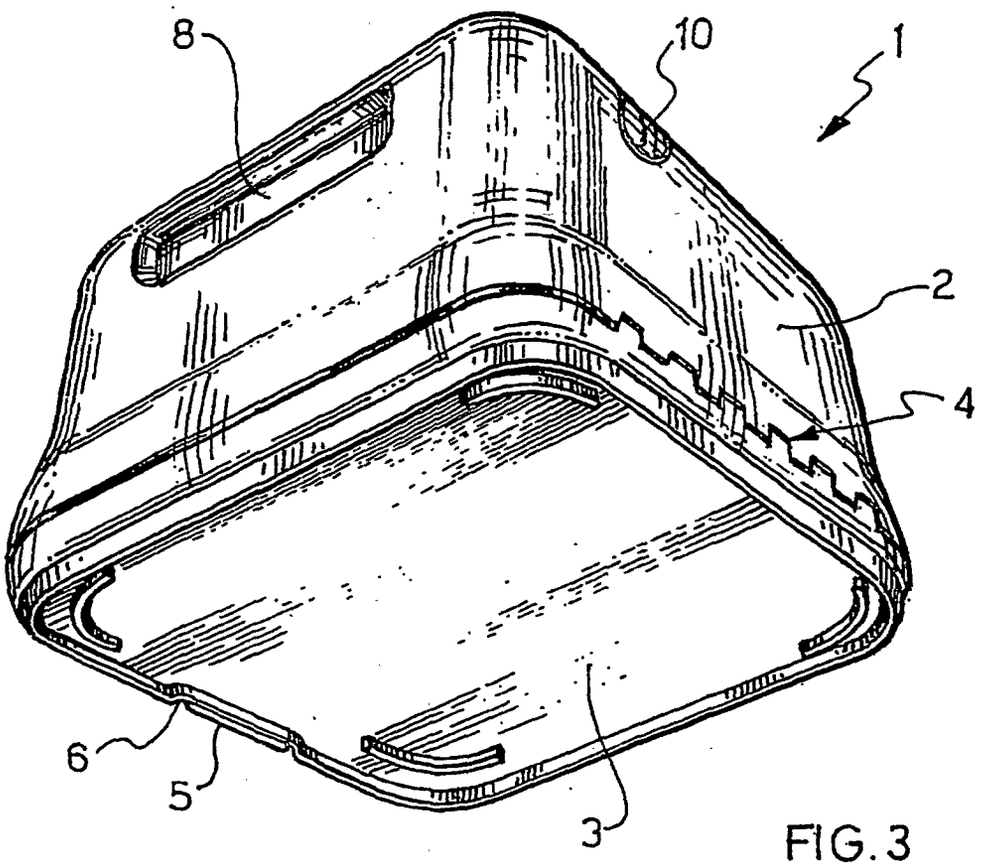


FIG. 3

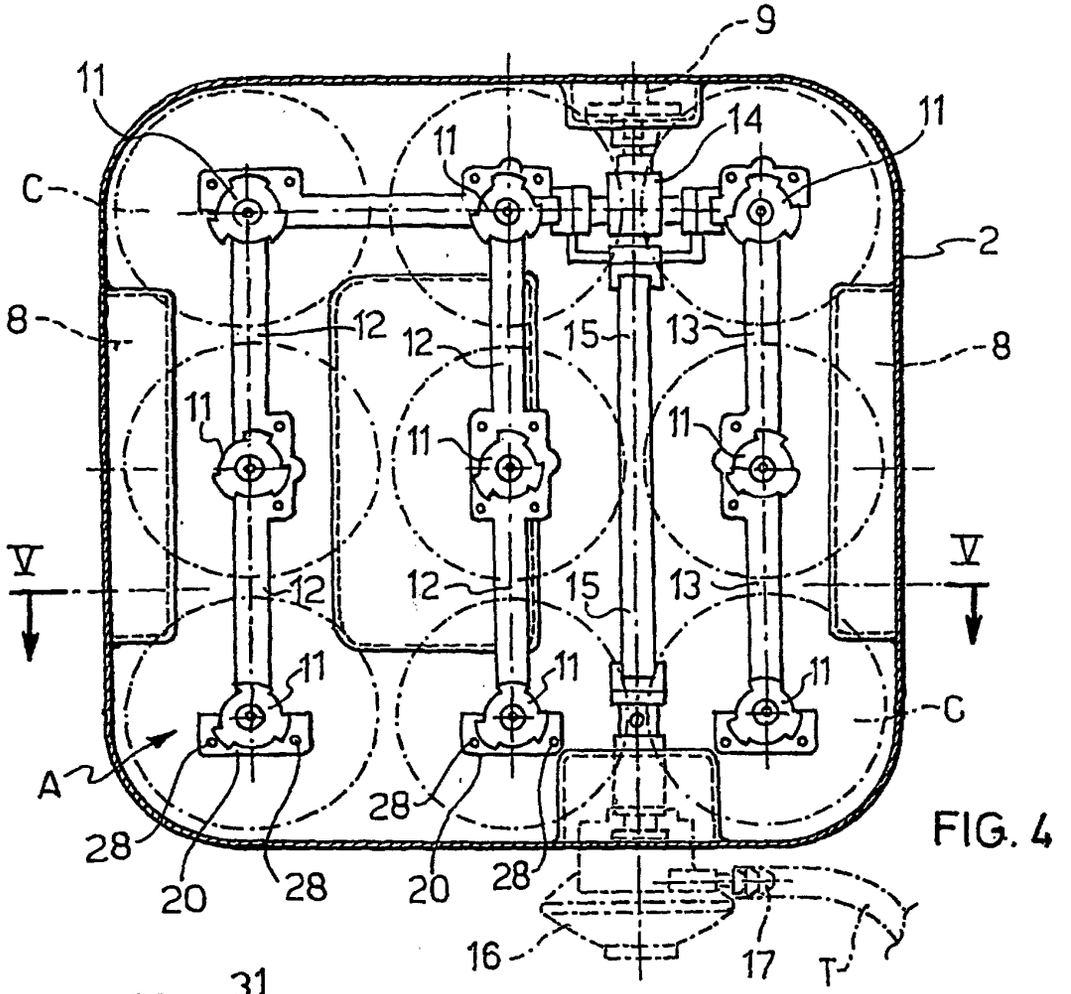


FIG. 4

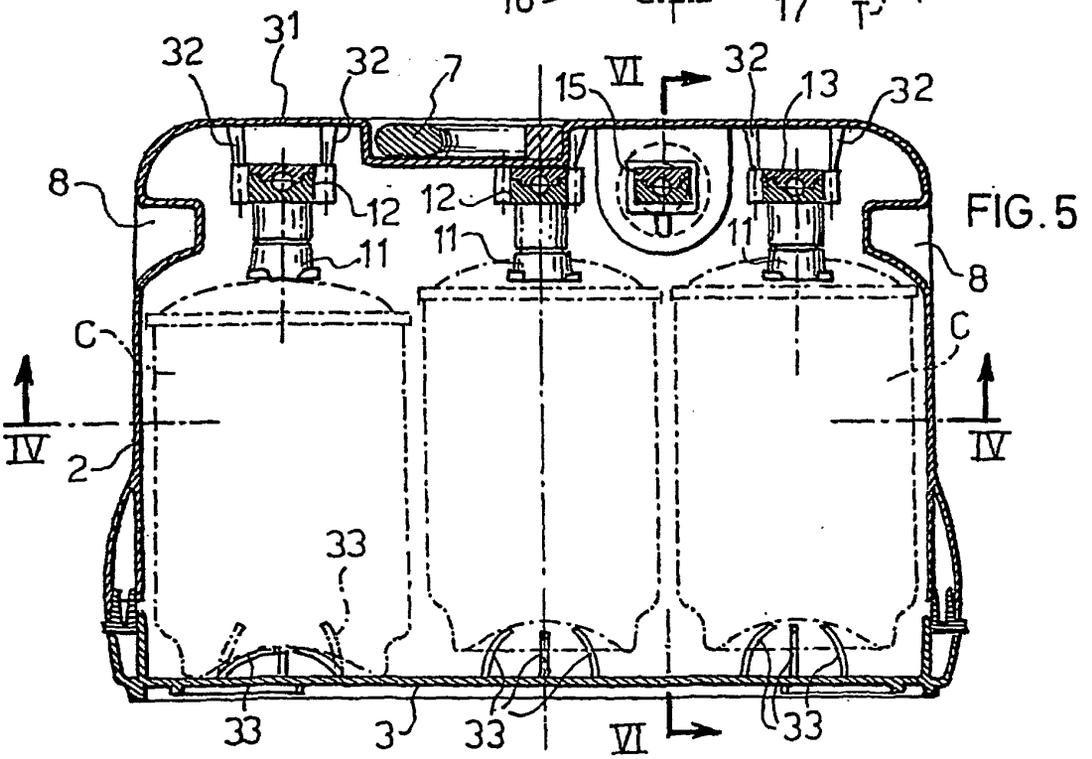


FIG. 5

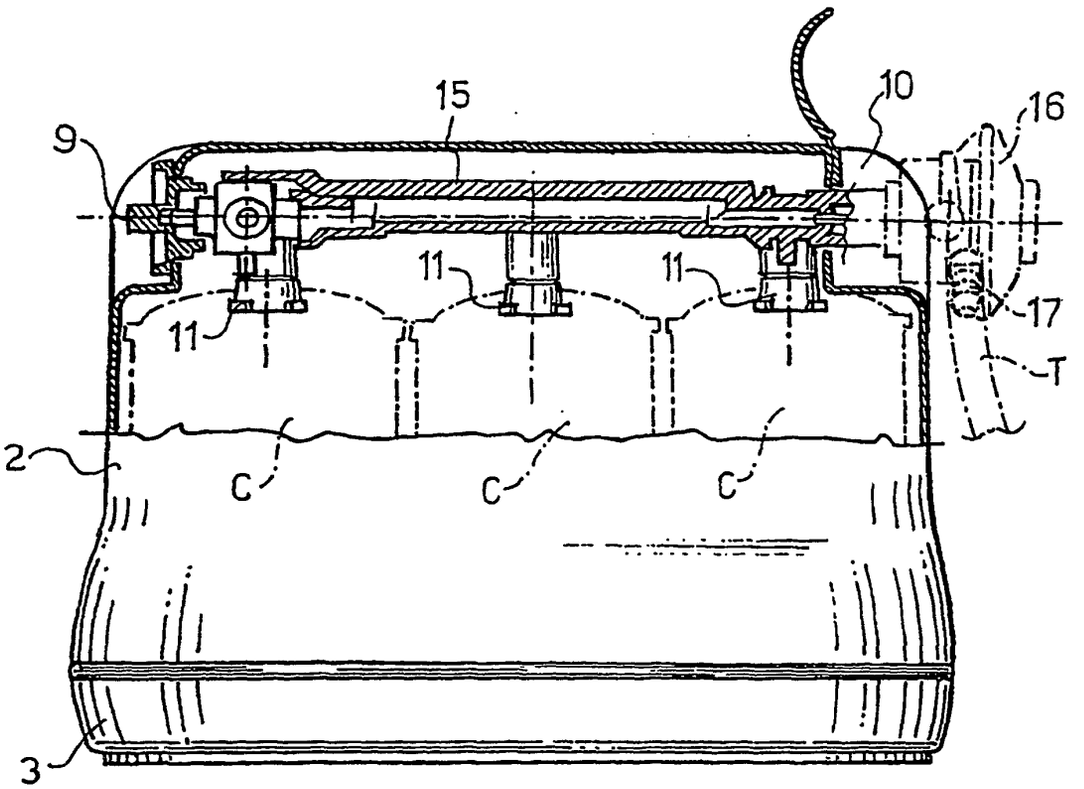

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FIG. 6

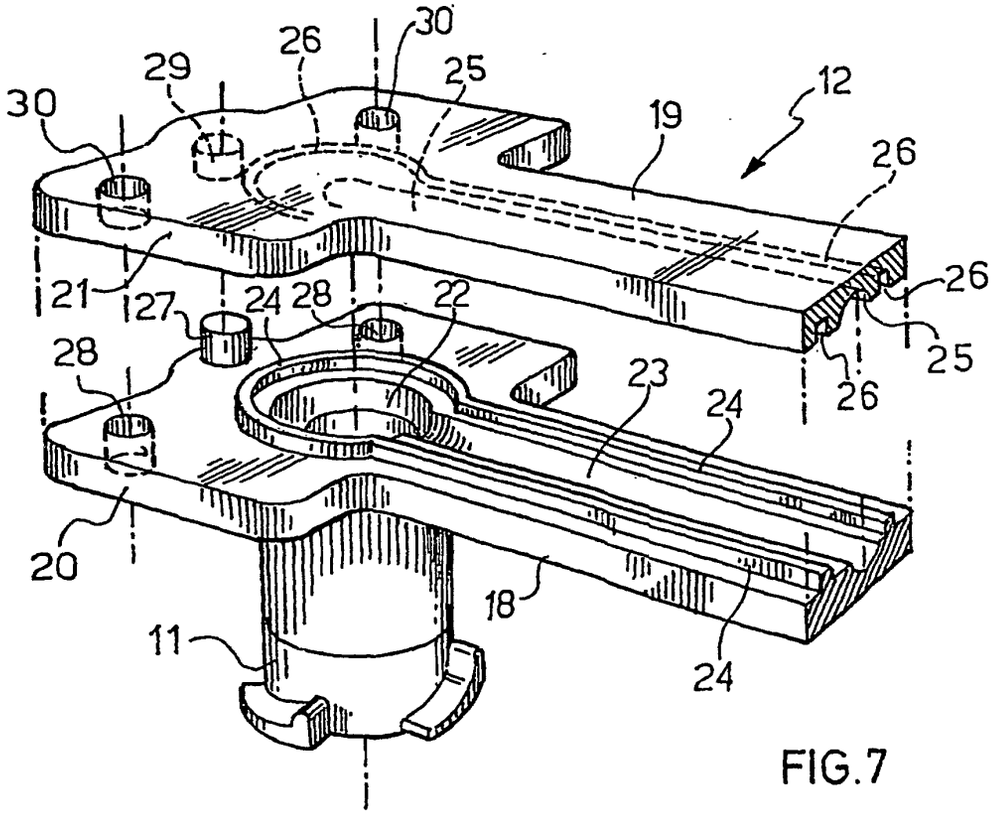

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FIG. 7

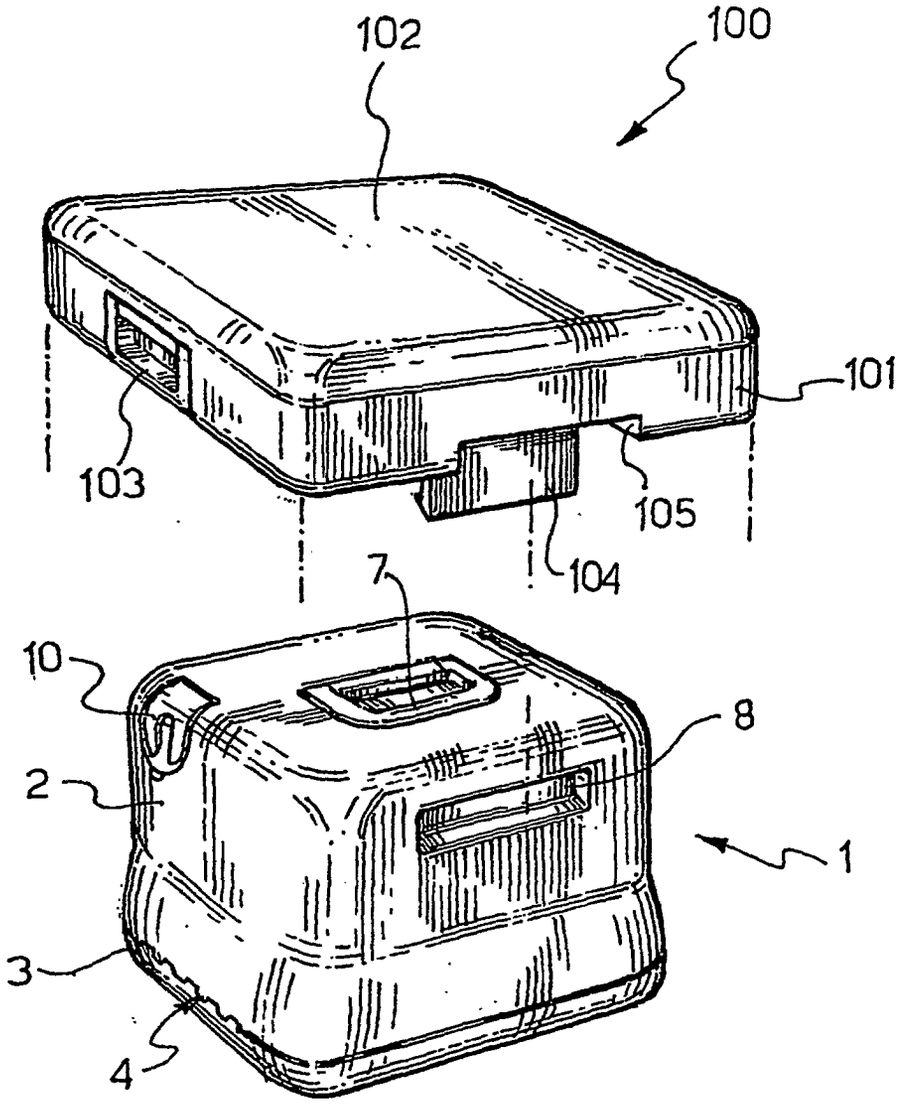


FIG. 8

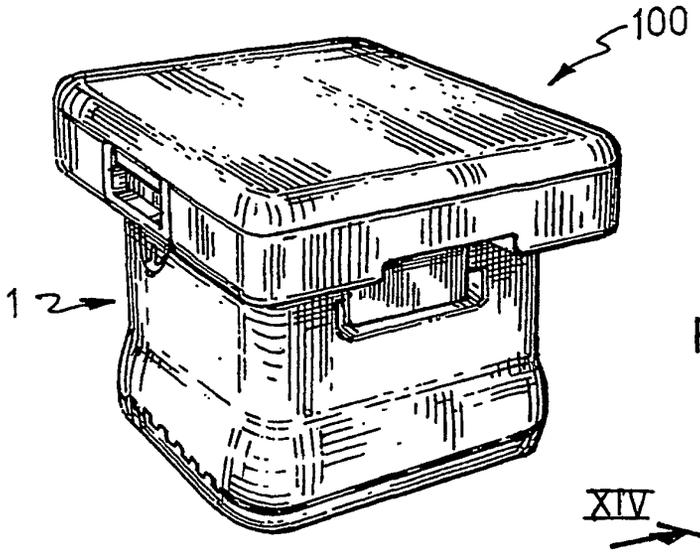


FIG.9

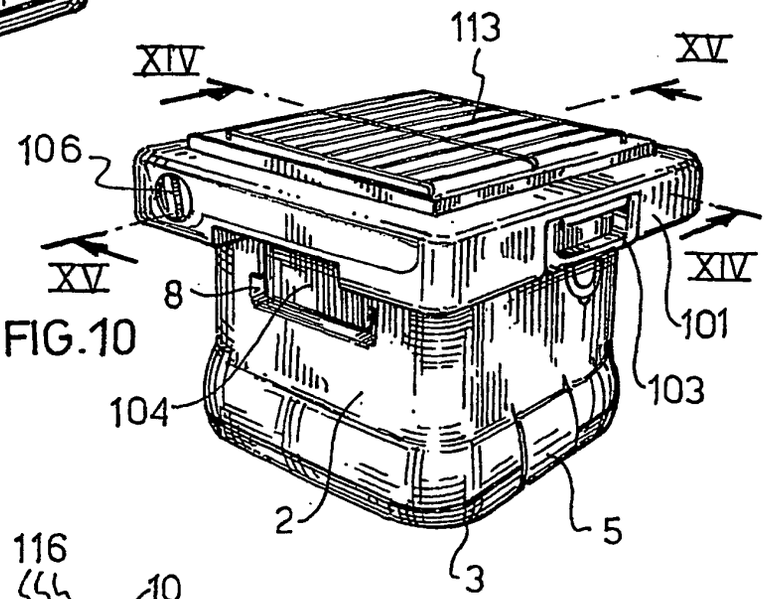


FIG.10

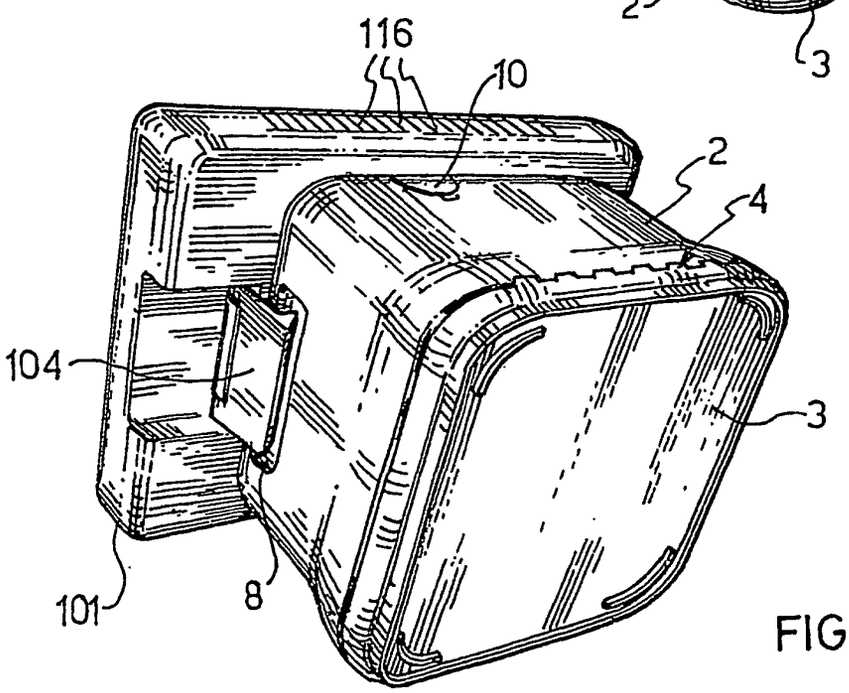


FIG.11

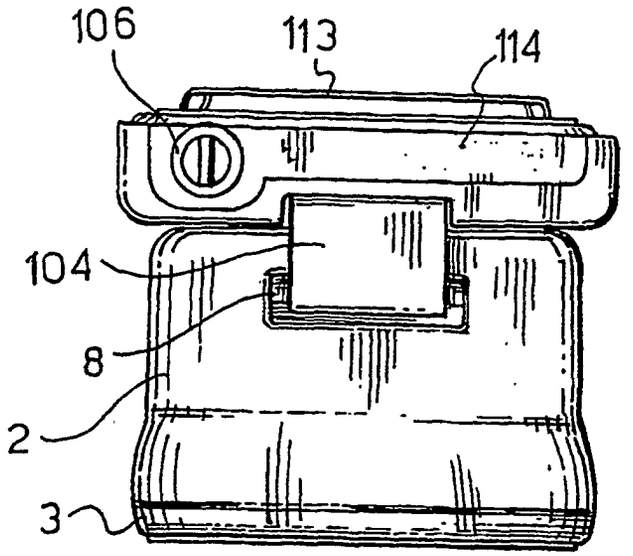


FIG.12

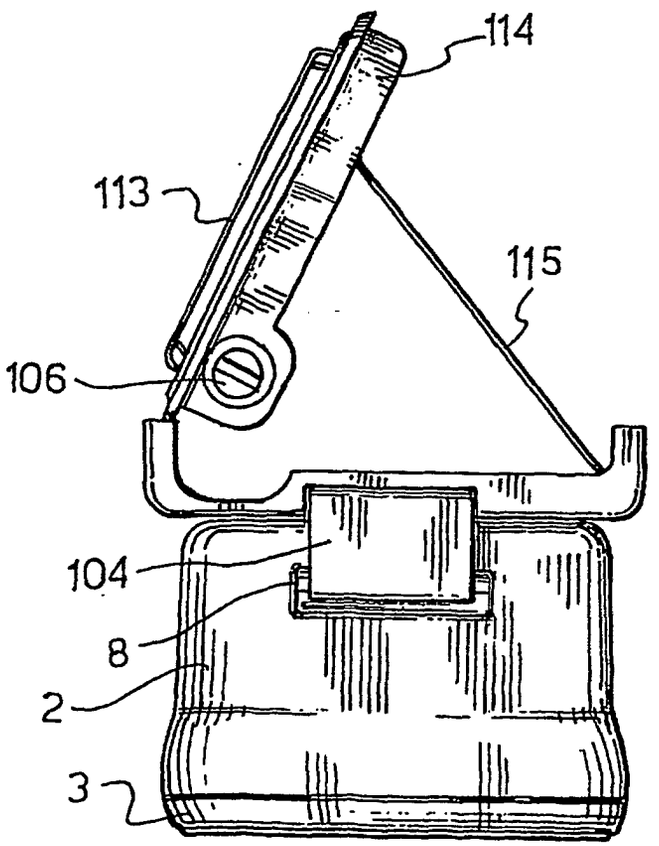


FIG.13

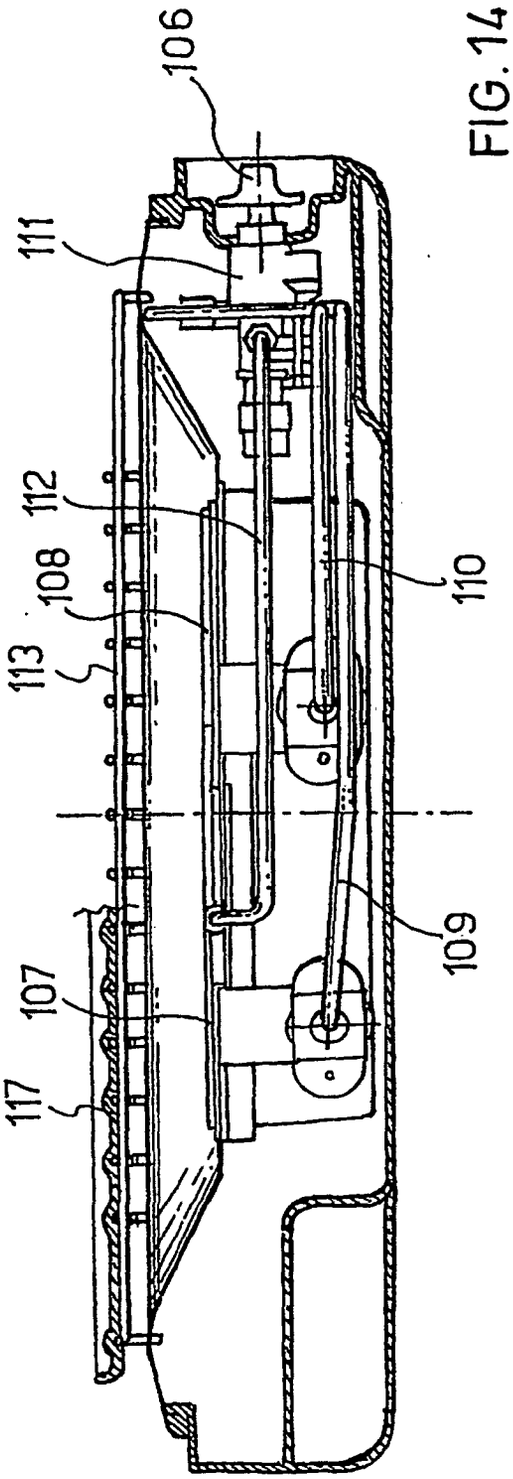


FIG. 14

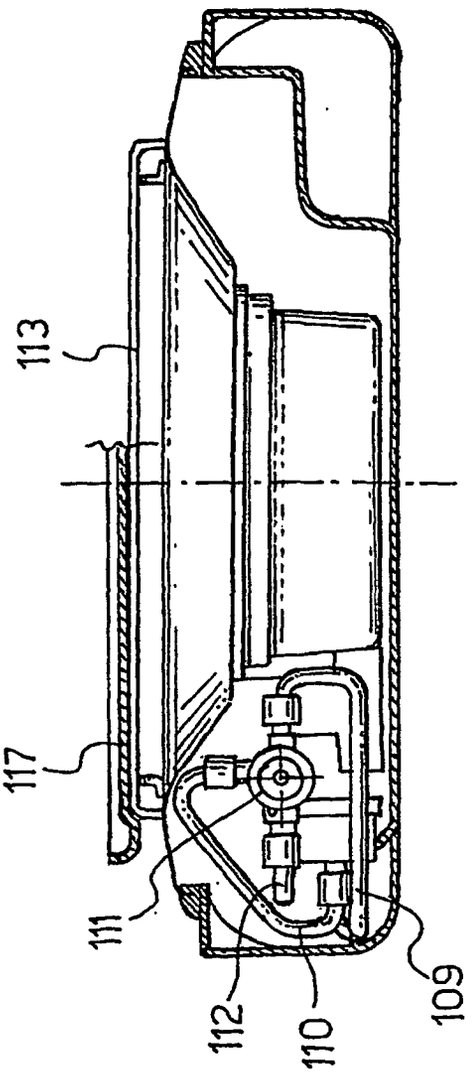


FIG. 15