(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 006 246 B9**

(12) **CORRECTED EUROPEAN PATENT SPECIFICATION**

(15) Correction information:
Corrected version no 1 (W1 B1)
Corrections, see
Claims EN 1

(48) Corrigendum issued on:
25.04.2012 Bulletin 2012/17

(45) Date of publication and mention of the grant of the patent:
19.10.2011 Bulletin 2011/42

(21) Application number: **07110682.7**

(22) Date of filing: **20.06.2007**

(51) Int Cl.:
B67D 7/86 *(2010.01)*

(54) **A housing for a fuel dispensing unit**

Gehäuse für eine Kraftstoffabgabeeinheit

Boîtier pour unité de distribution de carburant

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

(43) Date of publication of application:
24.12.2008 Bulletin 2008/52

(73) Proprietor: **Dresser Wayne Aktiebolag**
202 15 Malmö (SE)

(72) Inventors:
- **Larsson, Bengt I.**
  274 53, Skivarp (SE)
- **Birkler, Annika**
  211 28, Malmö (SE)
- **Wemmert, Marlene**
  217 61, Malmö (SE)

(74) Representative: **Milanov, Nina Vendela Maria**
Awapatent AB
P.O. Box 5117
200 71 Malmö (SE)

(56) References cited:
GB-A- 359 237 **GB-A- 441 185**
JP-A- 4 242 596 **US-A- 4 576 312**

EP 2 006 246 B9

Printed by Jouve, 75001 PARIS (FR)

Description

Technical Field of the Invention

[0001] The present invention relates to a housing for a fuel dispensing unit according to the preamble of claim 1.

Background Art

[0002] A fuel dispensing unit typically comprises a pump part standing on the ground, a display part positioned above the pump part and showing the chosen type of petrol, cash readout, volume readout etc., and a column to which one or more petrol hoses are connected.

[0003] Typically, a fuel dispensing unit is also equipped with other electronics, i.e. means for choosing the desired fuel and a payment terminal. In general, these features are electrical. Since the physical height of the fuel dispensing unit is rather large, some of the above mentioned electrical features and the display part are positioned in the mid or lower part of the fuel dispensing unit, such as adjacent to and on top of the pump part. Such electronic equipment, arranged in the vicinity of the fuel handling parts of the fuel dispensing unit, must be securely encapsulated in order to prevent ignition of flammable gases.

[0004] It is often desirable in the art to light up a fuel dispensing unit as well as the area surrounding the unit. This is particularly preferred during the hours of darkness, so that a person using the fuel dispensing unit can recognize unit handling means such as hose, pump nozzle, octane selector, unit display etc. A fuel dispensing unit may be fitted with a payment terminal which must be lightened up in order to facilitate user interaction. It is also desirable to light up a vehicle that is to be refuelled including the ground surrounding the vehicle. Other equipment common at a filling stations, such as trash cans, paper holders and buckets with windscreen scrapers etc, must be clearly visible. The light itself is also used as a means to attract customers, expose trademarks, provide safety and give a welcoming feeling in the hours of gloom or darkness.

[0005] Several techniques for lighting up fuel dispensing units are known in the art. For example EP 1 775 186 discloses a fuel dispensing unit comprising an upper lighting part, a lower fuel handling part and side parts connecting the upper part and the lower part. The upper lighting part has an internal fluorescent lamp. The upper lighting part is further equipped with translucent top, bottom, front, rear and side members in the form of flat panels. When the light source is activated, light will be emitted through the translucent members, and will hence provide illumination of the fuel dispensing unit and its surroundings.

[0006] GB 441 185 discloses a petrol or like filling pump with a head consisting of a metal box closed at the back by a door and containing the electrical apparatus for operating gaseous discharge tubes extending around advertising surfaces at the front and sides.

[0007] For many pumps on the market today, the hoses are connected to the fuel dispensing unit where the top member is connected to the side parts. Thus, there are joints present at the upper part which may lead to leakage of flammable fuel gases. Flammable gases might e.g. also be transported from hydraulic pump components in the lower fuel handling part through the side parts to upper lighting part.

[0008] Therefore, an inconvenience of the fuel dispensing unit as disclosed in EP 1 775 186 is that it requires certain certified electronic equipment to be installed together with the fluorescent lamp. Such certified equipment is more expensive and more difficult to get hold of as compared to standard electronic components.

[0009] It is thus desirable in the art to have a fuel dispensing unit that is visible in the dark with reduced risk of fire or explosion. It is also desirable to have a housing which may use standard electronic components and without the need of advanced security arrangements.

Summary of the Invention

[0010] In view of the foregoing, it is an object of the present invention to provide a housing for a fuel dispensing unit that better illuminates itself and its surroundings and that uses standard electronic equipment without the need for advanced security arrangements. It is also an object of the present invention to provide a fuel dispensing unit that comprises such a housing and that is visible in the dark with reduced risk of fire or explosion.

[0011] This and other objects and advantages that will be apparent from the following description of the present invention are achieved according to a first aspect of the invention by a housing for a fuel dispensing unit, comprising a top part, a bottom part and at least one column extending between the bottom part and the top part. The housing is characterised in that said bottom part encloses fuel handling means and comprises light emitting means arranged to emit light, and said top part comprises light directing means for directing the emitted light towards the bottom part. This is advantageous in that standard light emitting means can be used. Fuel dispensing units comprising a bottom part are generally equipped with electronics in said bottom part. Such electronics are already securely mounted using safe encapsulations, whereby further addition of light emitting means is provided without extra security arrangements. Further, advanced cable run is avoided and the changing of light emitting means is made more simple.

[0012] The light directing means may be a reflective means, which is advantageous in that light is directed in a simple way.

[0013] The light directing means may be a fibre optical cable, which is advantageous in that light is directed in a efficient way.

[0014] The light emitting means may be a light bulb, a

spotlight, a fluorescent tube or a light emitting diode. Thus, conventional light sources are used.

[0015] The light emitting means may also be covered by a light diffusive panel, whereby the directed light is made more uniform.

[0016] According to a second aspect of the invention, a fuel dispensing unit comprising a housing according to the first aspect of the invention is provided. The advantages of the first aspect are also applicable for this second aspect of the invention.

Brief Description of the Drawings

[0017] The invention will now be described in more detail with reference to the accompanying schematic drawings, which shows examples of presently preferred embodiments of the invention.

Fig.1 is a perspective view of a housing according to the invention.

Fig. 2 is a front view of parts of the housing according to a first embodiment of the present invention.

Fig. 3 is a top view of the bottom part of a housing according to a second embodiment of the present invention.

Fig. 4 is a top view of the bottom part of a housing according to a third embodiment of the present invention.

Fig. 5 is a top view of the bottom part of a housing according to a fourth embodiment of the present invention.

Fig. 6 is a front view of parts of the housing according to a fifth embodiment of the present invention.

Detailed Description of Preferred Embodiments of the Invention

[0018] The housing of the present invention is designated 1 in fig. 1. The housing 1 is adapted to form the exterior of a fuel dispensing unit. The housing 1 has a top part 3, a bottom part 5 and two columns 7 which are extending vertically between the bottom part 5 and the top part 3. The bottom part 5 encloses fuel handling means such as a pump, flow meter etc (not shown). The two columns 7 are arranged to provide hose handling and storage means (not shown) and pump nozzle handling and storage means 17. The bottom part 5 has a pump display 19 which may also include a payment terminal (not shown).

[0019] The upper portion of the bottom part 5 comprises a light emitting means 9 which emit light. The light emitting means is at least one light source, e.g. a light bulb, a spot light, a fluorescent tube or a light emitting diode (LED). In case of LEDs, the light emitting means can comprise several LEDs of different colours (e.g. red, green and blue) and a control unit for adjusting the relative amount of light intensity emitted from each LED. Thus, the colour of the emitted light may be controlled.

[0020] The light emitted from the light emitting means 9 is directed by a light directing means 11, positioned in the top part 3 of the housing 1.

[0021] In fig. 2, a first embodiment of the housing 1 is shown. In the upper portion of the bottom part 5, a plurality of light sources 9 are arranged. The light sources 9, which may be of any per se known type, are emitting light in a direction towards the top part 3 (indicated by arrows). The light emitted from said light sources 9 is incident on a upper panel 15 of the bottom part 5. The upper panel 15 has a translucent portion 13, from which portion 13 the emitted light is extracted. The extracted light propagates towards the top part 3 and is directed by the directing means 11.

[0022] The directing means is a light reflector, such as a mirror. The mirror may be concave, convex, or of any other shape suitable for directing light towards the fuel dispensing unit and its surroundings. The light reflector can also be arranged as a plurality of small mirrors.

[0023] In fig. 3, 4 and 5 different embodiments of the upper panel 15 of the bottom part 5 are shown. As shown in fig. 3, the upper panel 15 has two translucent portions 13, from which portions 13 emitted light is extracted. In fig. 4, the translucent portion 13 is covering a major part of the upper panel 15. In fig. 5 several translucent portions 13 are distributed in the upper panel 15.

[0024] The translucent portion/portions 13 are made by optically clear or optically diffusive material. The portions 13 can also be coloured, so that light of one or more desired colours are transmitted.

[0025] Fig. 6 shows another embodiment of the housing 1. Here, the light sources 9 are directed to emit light into light guides 11' which are optically connected to the light sources 9. The light guides 11' are directing the emitted light along the columns 7 and to the top part 3. The top part 3 has a upper panel 15 including a translucent portion 13. The light directed by said light guides 11' is extracted from the light guides 11' in a direction towards the upper panel 15 and the extracted light is transmitted through the translucent portions 13. Thus, the transmitted light is illuminating the fuel dispensing unit and its surroundings.

[0026] The light guides 11' can be optical fibres or similar. In a further embodiment of the housing 1, the light guides 11' are arranged to also emit light out from the columns 7. Thus, one or several translucent portions are positioned at the inner side of the columns 7 and a corresponding amount of light guides 11' are arranged to end adjacent to said translucent portions so that light is extracted out from the translucent portions.

Claims

1. A housing for a fuel dispensing unit, comprising a top part (3), a bottom part (5) and at least one column (7) extending between the bottom part (5) and the top part (3),

characterised in that
said bottom part (5) encloses fuel handling means and comprises light emitting means (9) arranged to emit light, and
said top part (3) comprises light directing means (11) for directing the emitted light towards the bottom part (5).

2. A housing according to claim 1, wherein the light directing means (11) is a reflective means.

3. A housing according to claim 1, wherein the light directing means (11) is a fibre optical cable.

4. A housing according to any one of claims 1-3, wherein the light emitting means (9) is a light bulb, a spotlight, a fluorescent tube or a light emitting diode.

5. A housing according to any one of claims 1-4, wherein the light emitting means (9) is covered by a light diffusive panel (13).

6. A fuel dispensing unit, such as a petrol pump, **characterised in that** it comprises a housing as claimed in any one of claims 1-5.

Patentansprüche

1. Gehäuse für eine Kraftstoffabgabeeinheit, umfassend ein Oberteil (3), ein Unterteil (5) und zumindest eine Säule (7), die zwischen dem Unterteil (5) und dem Oberteil (3) verläuft,
dadurch gekennzeichnet, dass
das Unterteil (5) Kraftstoffhandhabungsmittel einschließt und Lichtaussendemittel (9) umfasst, die zum Aussenden von Licht angeordnet sind, und
das Oberteil (3) Lichtrichtmittel (11) zum Richten des ausgesendeten Lichts zum Unterteil (5) umfasst.

2. Gehäuse nach Anspruch 1, wobei das Lichtrichtmittel (11) ein reflektierendes Mittel ist.

3. Gehäuse nach Anspruch 1, wobei das Lichtrichtmittel (11) ein Glasfaserkabel ist.

4. Gehäuse nach einem der Ansprüche 1 bis 3, wobei das Lichtaussendemittel (9) eine Glühlampe, ein Strahler, eine Leuchtstoffröhre oder eine Leuchtdiode ist.

5. Gehäuse nach einem der Ansprüche 1 bis 4, wobei das Lichtaussendemittel (9) durch eine lichtstreuende Tafel (13) abgedeckt ist.

6. Kraftstoffabgabeeinheit, wie etwa eine Benzinpumpe,
dadurch gekennzeichnet, dass sie ein Gehäuse nach einem der Ansprüche 1 bis 5 umfasst.

Revendications

1. Boîtier pour unité de distribution de carburant, comprenant une partie de sommet (3), une partie de base (5) et au moins une colonne (7) s'étendant entre la partie de base (5) et la partie de sommet (3),
caractérisé en ce que
ladite partie de base (5) renferme des moyens de traitement de carburant et comprend un moyen d'émission de lumière (9) agencé afin d'émettre de la lumière, et
ladite partie de sommet (3) comprend un moyen de direction de lumière (11) pour diriger la lumière émise vers la partie de base (5).

2. Boîtier selon la revendication 1, dans lequel le moyen de direction de lumière (11) est un moyen réflecteur.

3. Boîtier selon la revendication 1, dans lequel le moyen de direction de lumière (11) est un câble de fibre optique.

4. Boîtier selon une quelconque des revendications 1 à 3, dans lequel le moyen d'émission de lumière (9) est une ampoule, un projecteur, un tube fluorescent ou une diode émettrice de lumière.

5. Boîtier selon une quelconque des revendications 1 à 4, dans lequel le moyen d'émission de lumière (9) est couvert par un panneau de diffusion de lumière (13).

6. Unité de distribution de carburant, comme une pompe à essence, **caractérisée en ce que** elle comprend un boîtier selon une quelconque des revendications 1 à 5.

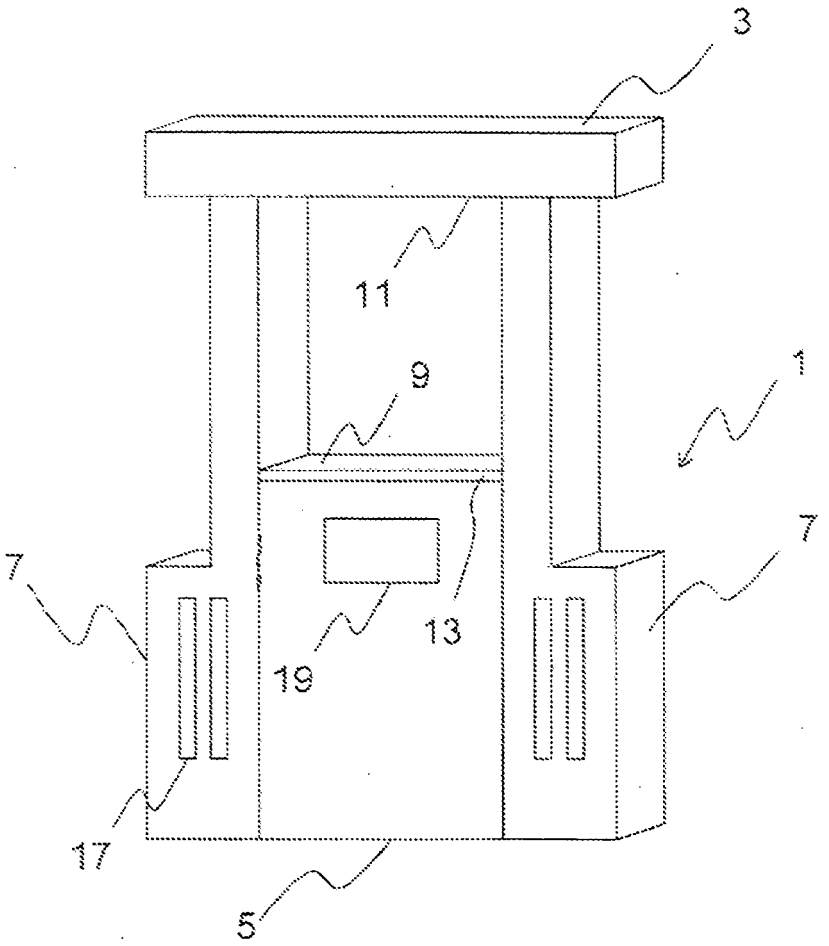

Fig. 1

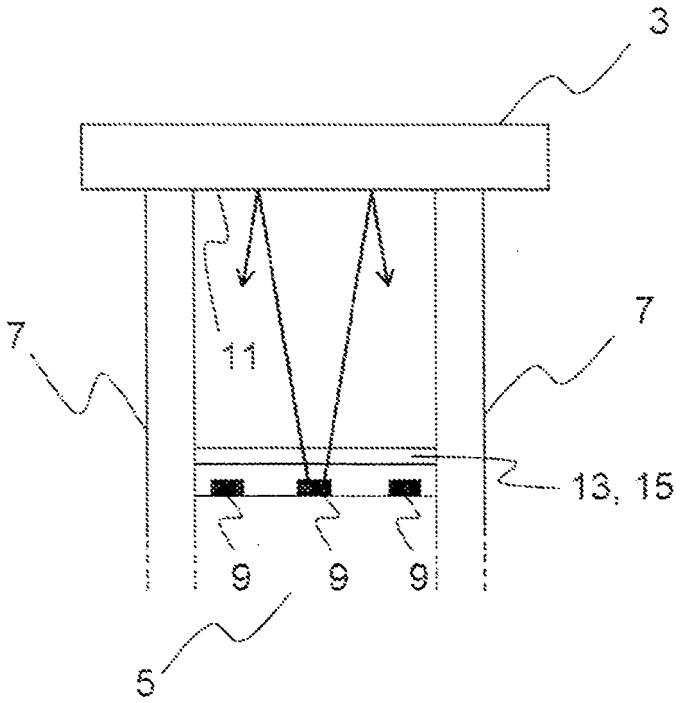

Fig. 2

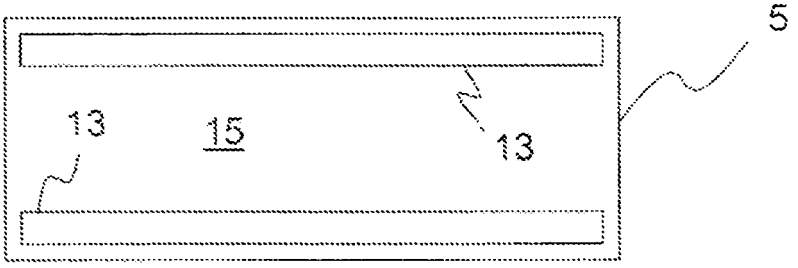

Fig. 3

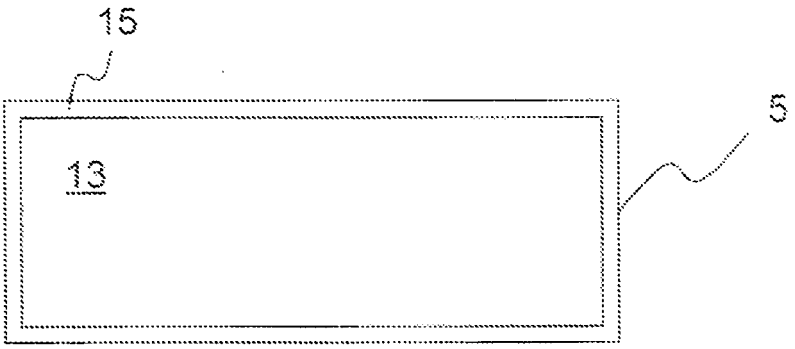

Fig. 4

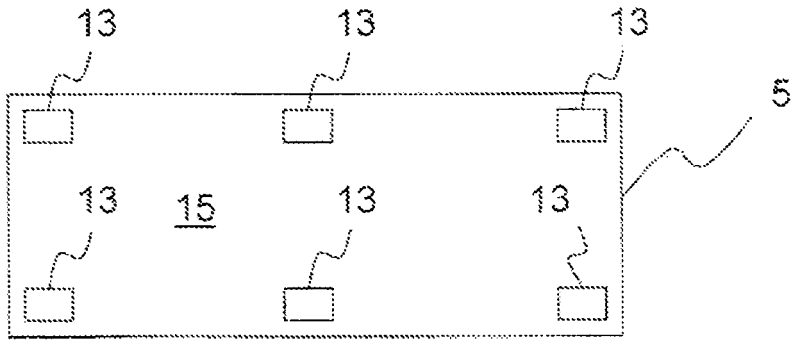

Fig. 5

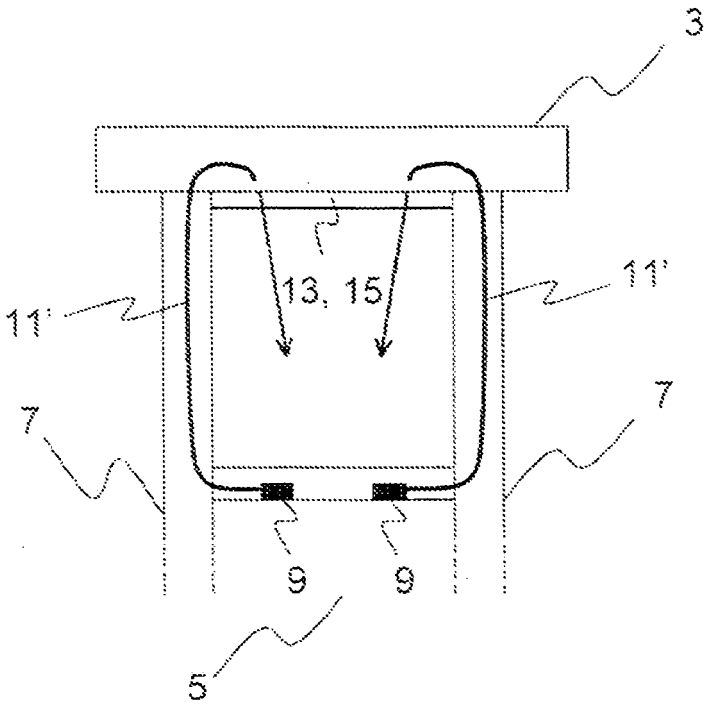

Fig. 6

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1775186 A **[0005] [0008]**
- GB 441185 A **[0006]**