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BOTTLE FOR A LIQUEFIED COMBUSTIBLE GAS

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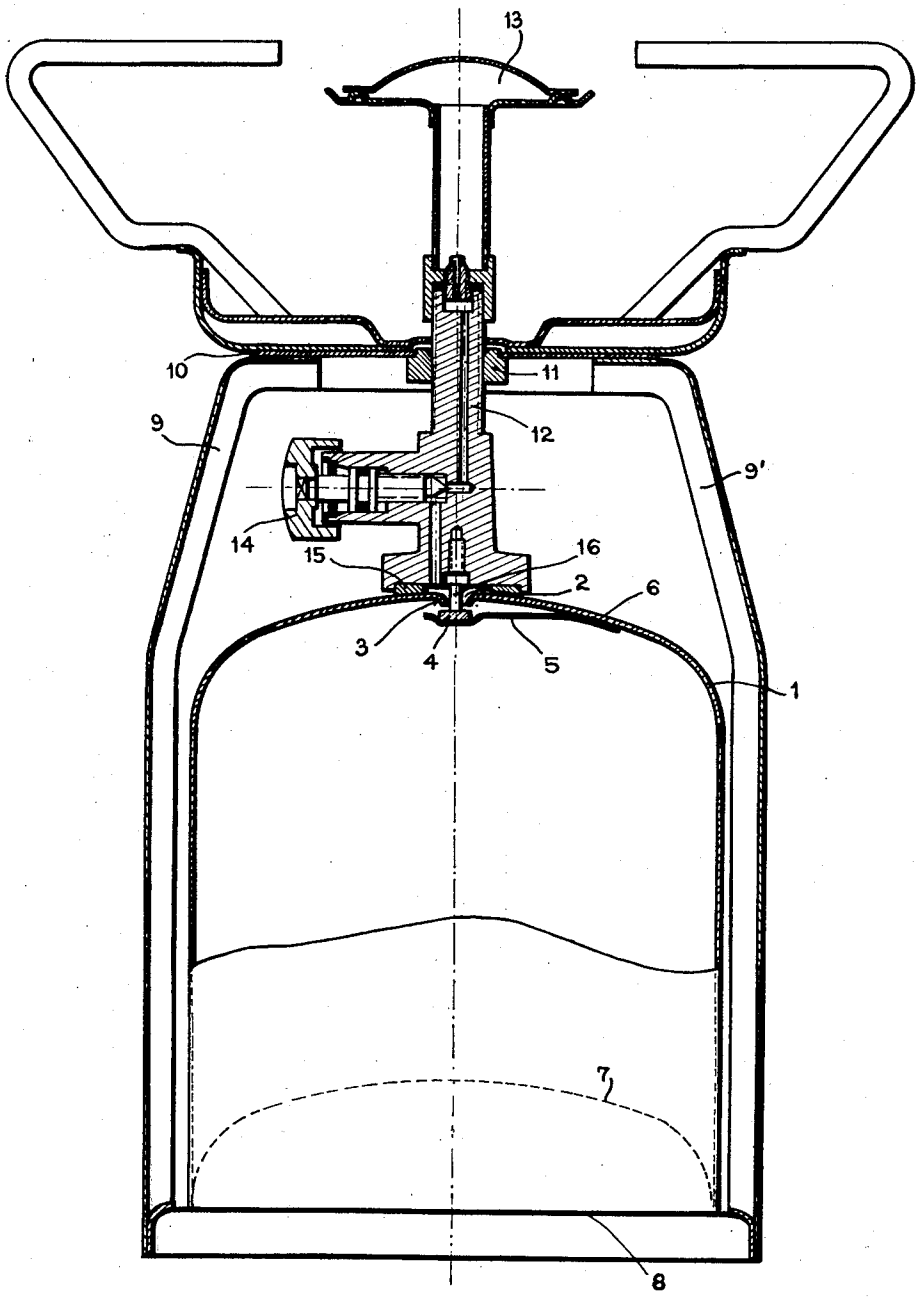

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BOTTLE FOR A LIQUEFIED COMBUSTIBLE GAS

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1 Claim. (Cl. 141—353)

The present invention relates to a new bottle for a liquefied combustible gas and particularly to a small-sized bottle or "cartridge," containing about 500 gr. which is used for stoves and other apparatus using butane gas and is thrown away when the load of gas has been used. One knows "lost" cartridges of this type which, at their mounting on the utilization apparatus, are striked or punched at their top by a pusher integral with a nozzle, said nozzle being clamped upon the bottle, with interposition of a gas-tight joint, by the frame forming a support for the apparatus fed through said nozzle. The drawback of this device is that the cartridge is to be filled up in an overturned position before the setting of its bottom: a filling under pressure is impossible in such a case and the gas must be cooled to a very low temperature to avoid strong evaporation during the pouring of the liquefied gas into the bottle and the setting of the bottom. This supplementary cooling of the gas is a very expensive step and furthermore does not prevent substantial gas losses due to evaporation during the filling up and the setting of the bottom on the cartridge. In addition, once the cartridge is mounted on the stove and has been punched, this stove cannot be dismantled as long as the gas is not entirely exhausted.

The present invention aims at meeting these drawbacks by supplying a bottle or cartridge provided with a simple, strong and cheap valve, allowing a filling under pressure or a filling by gravity and securing a gas-tight closing in case the bottle should be dismantled.

The cartridge according to the invention is characterized in that it includes in its upper, dome shaped, part a central stamped aperture, with an internally bent wall to form an inner seat cooperating with a valve member which is constituted by a washer, made of an elastically distortable material, fixed on a spring blade the end of which is welded to the inner wall of the bottle and secures the closing of this valve-member. At the filling or at the utilization of the bottle, this valve member is maintained in the open position by a pusher integral with a nozzle kept applied to the bottle by a joint concentric to the aperture.

By way of example, a cartridge according to the invention is described hereafter and illustrated in the annexed drawing in its utilization position on a camping stove.

As shown in the drawing, the bottle or cartridge **1**, made of sheet steel is provided at its top with a central opening **3** having an inwardly bent circular edge adapted to form a valve seat which is straightened from inside

before the setting of the bottom of the bottle. The seat **3** cooperates with a valve member **4**, made of an elastically distortable material, fixed at one end to a spring blade **5**, the other end **6** of said spring being electrically welded to the inner wall of the bottle **1**: the concave bottom **7** of the bottle is then set in a known way on the body **1**. The bottle is filled under pressure, the opening of the valve member being produced either simply by the pressure of the gas but, preferably, by means of a pusher integral with the filling nozzle by the aid of a device similar to the device illustrated in the drawing and bringing about the opening of the bottle at its use. Therefore, the bottle or cartridge is placed in a known way in a frame formed by a bottom **8** and two uprights **9**, **9'**, upon which is welded a small plate **10**: this plate is centrally set on a nut **11** in which is engaged an externally threaded nozzle **12**; integral with the burner **13** and provided with a plug **14**. The nozzle is provided at its basis with an embedded rubber joint **15** and a pusher **16**: the screwing of the nozzle **12** in the nut **11** brings about first the gas-tight application of the joint **15** on the bottle **1** around the aperture **2** of the valve and afterwards the spacing by the pusher **16** of the valve member from its seat **3**. If it is wished to dismantle the stove before the exhaustion of the gas in the can **1**, the nozzle **12** is simply unscrewed in the nut **11**, whereby the push rod **16** is raised and valve member **4** is forced against valve seat **3** by the spring **5** and by the pressure of the gas remaining in the can **1**.

What is claimed is:

In a portable burner or like apparatus using a combustible liquefied gas, a gas container forming a non-refillable can adapted to be rejected after use, a frame comprising a bottom plate to support said can, two uprights and a top plate carried by said uprights and provided with a central opening, a nut fixed in said opening, an externally threaded nozzle engaging said nut and adapted to be connected to the burner at its upper end, a packing ring provided at the lower end of the nozzle and adapted to be tightened on the top of the can when screwing said nozzle into the said nut, a central aperture provided against the top of the can and having an inwardly bent circular collar shaped edge forming a valve seat, a valve member constituted by a washer made of elastically deformable material cooperating with said seat, a spring blade upon which said valve member is fixed at one end whereas its other end is welded on the inner wall of the can, an axially arranged push rod provided on the lower end of the nozzle and adapted to project into the said central opening of the can and to open said valve member when said nozzle is tightened against the top of the can.

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