June 29, 1965 R. J. SMITH 3,191,819

DETACHABLE HANDLE FOR DISPOSABLE GAS TANK

Filed Nov. 1, 1963

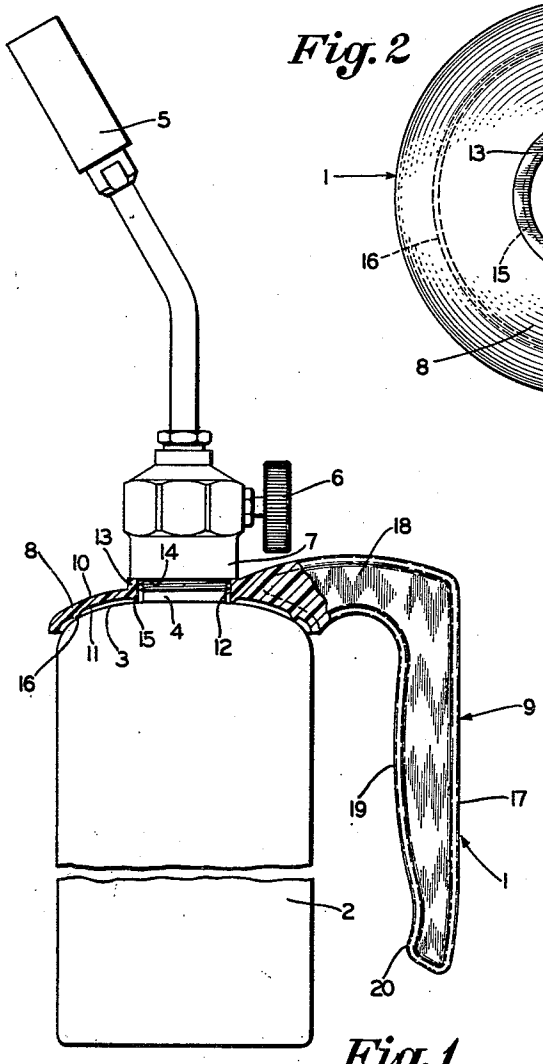


Fig. 1

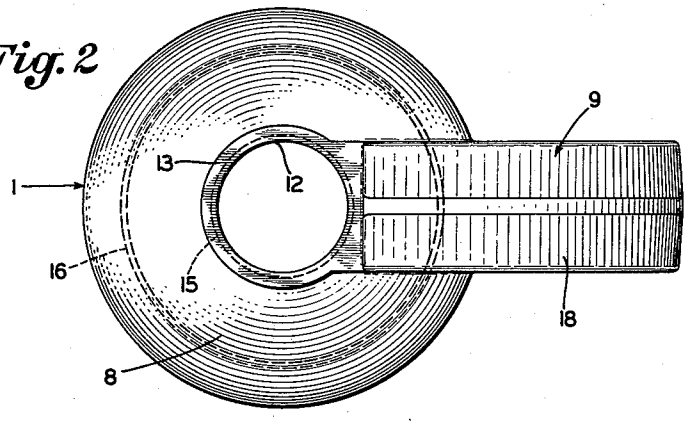


Fig. 2

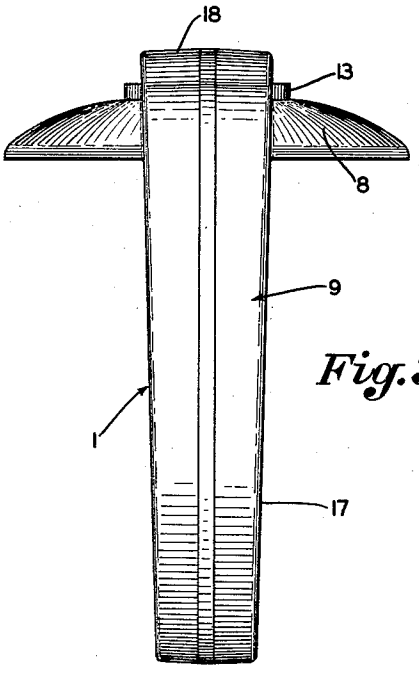


Fig. 3

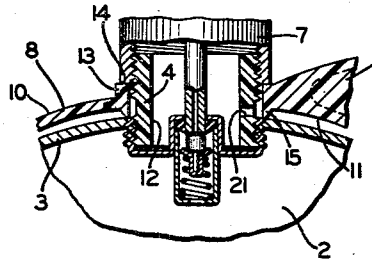


Fig. 5



Fig. 4

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United States Patent Office 3,191,819 Patented June 29, 1965

3,191,819

DETACHABLE HANDLE FOR DISPOSABLE GAS TANK

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Filed Nov. 1, 1963, Ser. No. 320,888
3 Claims. (Cl. 222—465)

This invention pertains to a handle for a pressurized gas cylinder and more particularly it releates to a unitized plastic handle adapted to be fitted in place on the valve end of the cylinder.

Handles for articles, such as blowtorches and cooking utensils, have been used previously. For the most part such handles have been constructed of several parts which involved costly fabrication and assembly procedures. For that reason, such handles have not always been completely satisfactory for the purpose intended and at competitive prices.

Associated with the foregoing has been the problem of hand comfort in working with propane gas cylinders. Heretofore a handle for such a cylinder has not been deemed necessary. During extended periods of use, however, the cylinder becomes more uncomfortable to hold and manipulate due primarily to its diameter. The tank is also uncomfortable during cold weather.

It has been found that the foregoing difficulties may be overcome by the provision of a detachable plastic unit having a single part which is adapted to fit over the end of the cylinder. The handle has a center aperture for receiving the gas outlet valve and a commercially available pressurized gas cylinder which, in conjunction with a gas nozzle which is threadably attached to the valve, holds the handle in place and thereby facilitates comfortable handling of the cylinder. For example, during cold weather a plastic handle remains warm in the user's hand. Moreover, the handle permits a more comfortable grip and thereby is easier to manipulate than is possible by holding the cylinder. As a result of the foregoing the handle is conducive to safer manipulation.

Generally, it is an object of this invention to provide a detachable handle for a disposable gas tank which is conducive to a more comfortable manipulation of the tank.

It is another object of this invention to provide a detachable handle for a disposable gas tank which avoids the discomfort of holding a large metal member during cold weather.

It is another object of this invention to provide a detachable handle for a disposable gas tank which is composed of a single piece of plastic.

Finally, it is an object of this invention to provide an improved handle which accomplishes the foregoing desiderata in an inexpensive manner and with simplified maintenance and expense.

These and other objects and advantages, apparent to those skilled in the art from the following description and claims, may be obtained, the stated results achieved, and the described difficulties overcome, by the apparatus, constructions, arrangements, combinations, subcombinations, elements, parts, and principles, which comprise the present invention, the nature of which is set forth in the foregoing general statements, a preferred embodiment of which—illustrative of the best mode in which applicant has contemplated applying the principles—is set forth in the following description and shown in the drawings, and which is particularly and distinctly pointed out and set forth in the appended claims forming part hereof.

The nature of the improved apparatus of the present invention may be stated in general terms as including a pressurized gas cylinder having a discharge valve at one

end thereof, a detachable nozzle secured to the valve and seated around the outer surface thereof, a detachable handle for the cylinder including a dome-shaped body portion having inner and outer curved surfaces, the body portion having a central aperture fitting around the discharge valve, the body portion around the aperture being clamped between the end wall of the cylinder and the nozzle, at least two concentric ribs mounted on the inner surface of the body portion and being compressible against the end wall of the cylinder, the handle having an L-shaped hand-grasping portion extending from one side of the body portion, the hand-grasping portion extending on an axis substantially parallel to the axis of the cylinder, and the body portion and the hand-grasping portion being an integral unit.

In the drawings:

FIGURE 1 is an elevational view, partly in section, of a pressurized gas cylinder with a detachable handle mounted thereon;

FIG. 2 is a plan view of the handle;

FIG. 3 is a side view of the handle;

FIG. 4 is a horizontal sectional view through the handle; and

FIG. 5 is a fragmentary vertical sectional view through the nozzle.

Similar numerals refer to similar parts throughout the drawings.

As shown in FIG. 1 a handle is generally indicated at 1 and is mounted on a tank or cylinder 2 for pressurized gas. The tank 2 is a disposable type which is commercially available for the sale of propane fuel. The tank 2 includes a closed end 3 having a discharge valve 4 centrally disposed therein. In addition the tank is provided with a detachable nozzle 5 having a manual valve 6 and an end portion 7. The end portion 7 is preferably threaded on the inner surface for attachment on the threaded outer surface of the discharge valve 4.

The handle 1 is a one-piece or integral unit preferably composed of plastic. It includes an annular dome-like body portion 8 and an L-shaped hand-gripping portion 9. The body portion 8 is preferably .08" thick and has upper and lower surfaces 10 and 11. The portion 8 is also provided with a central aperture 12 formed within a collar 13 which aperture encases the valve 4 as shown in FIG. 1. For that purpose, the body portion is secured tightly in place between the end portion 7 of the nozzle and the tank end wall 3. More particularly the lower end 14 of the nozzle 5 clamps the collar 13 against the end wall 3 of the cylinder.

In addition to the foregoing, the body portion 8 is provided with at least two concentric ribs 15 and 16 (FIG. 2). The handle 1, being composed of plastic, permits the ribs to be pressed against the end wall 3 of the cylinder for the purpose of increasing the frictional fit on the end wall.

The L-shaped portion 9 of the handle 1 extends from one side of the body portion 8 and is preferably an integral portion thereof as where the entire handle is a precast plastic member. The portion 9 includes an elongated hand member 17 and a shorter member 18. The elongated hand member 17 has an axis substantially parallel to that of the cylinder 2. The side 19 is preferably arcuate to provide a more comfortable grip. In addition the lower end of the side 19 has an outturned portion 20 for preventing slipping and for providing a stronger grip during use. The ribs 15 and 16 are preferably triangular in cross-section.

As shown in FIG. 4, the horizontal cross-section of the elongated member 17 has an H-shape for greater rigidity in conformity with easy casting. The plastic material of the handle 1 is preferably polypropylene.

The discharge valve 4 is provided with a gas-escape aperture 21 which extends from the interior of the nozzle to the exterior near the end wall 3. The valve 4 may be similar to that disclosed in Pat. No. 3,011,686. During the short interval of time when the lower end of the stem of the nozzle 5 is being disconnected from (or connected to) the interior of the tank, a small quantity of gas escapes from the tank. The dome-shaped body 8 of the handle operates as a deflector of any gas which escapes through the aperture 21 and prevents blasts of flammable gas from being directed toward the face of the user which could be extremely dangerous if it were ignited such as by a lighted cigarette of a user.

The handle 1 of the device of the present invention provides a safer and more comfortable means for handling propane gas cylinders. The handle is preferably an integral plastic unit which is detachably mounted on the valve end of a commercially available fuel cylinder when a gas nozzle is attached thereto. The plastic handle is more conducive to outside use during cold weather and avoids the uncomfortable cold grip which normally occurs when holding the metal cylinder without the handle 1.

In the foregoing description certain terms have been used for brevity, clearness and understanding, but no unnecessary limitations have been implied therefrom as such words are used for descriptive purposes and are intended to be broadly construed.

Moreover, the embodiment of the improved construction illustrated and described herein is by way of example and the scope of the present invention is not limited to the exact construction shown.

Having now described the invention, construction, operation and use of a preferred embodiment thereof and the advantageous, new and useful results obtained thereby; the new and useful detachable handle for disposable gas tank and reasonable mechanical equivalents thereof obvious to those skilled in the art are set forth in the appended claims.

What is claimed is:

1. A detachable handle for use with a pressurized gas cylinder having a discharge valve at one end and having a detachable nozzle mounted on the discharge valve, the handle including a dome-shaped body member with a central aperture fitting around a discharge valve and clamped between a cylinder end wall and a nozzle, the dome-shaped body member having friction surface means engageable with the end wall, the handle also having an L-shaped hand-grasping member extending from one side of the body portion and having an axis of a portion of said L-shaped member substantially parallel to the axis of the cylinder, and the handle being composed of an integral unit of slightly compressible material.

2. The handle construction set forth in claim 1 in which the friction surface means includes at least two concentric ribs compressible against a cylinder end wall.

3. The handle construction as set forth in claim 1 in which the associated discharge valve has a gas escape aperture near the cylinder end wall, in which the friction surface means engageable with the end wall includes an annular rib having a diameter larger than the outer surface of the valve, whereby any gas entrapped between the nozzle and the valve is vented through the aperture and whereby the dome-like body member acts as a baffle for spreading the gas.

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