

(12) **UK Patent Application** (19) **GB** (11) **2 169 584 A**

(43) Application published 16 Jul 1986

(21) Application No **8604692**

(22) Date of filing **14 Oct 1983**

(30) Priority data

(31) **8229348** (32) **14 Oct 1982** (33) **GB**

(71) Applicant
**Graham Michael Arthur Simmons,
68 Baring Road, Beaconsfield, Buckinghamshire**

(72) Inventor
Graham Michael Arthur Simmons

(74) Agent and/or Address for Service
**Marks & Clerk, 57-60 Lincoln's Inn Fields,
London WC2A 3LS**

(51) INT CL⁴
G01F 15/06

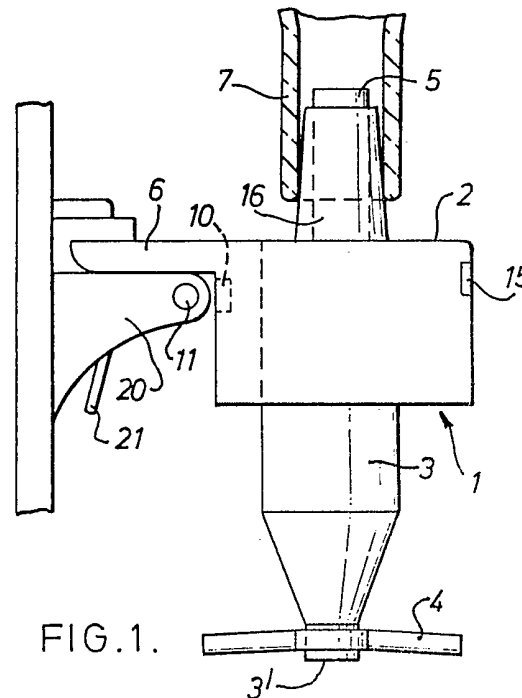
(52) Domestic classification (Edition H):
**B8N KL
U1S 1110 B8N**

(56) Documents cited
GB A 2067518

(58) Field of search
**B8N
Selected US specifications from IPC sub-class G01F**

(54) **Counting device for use in measuring and dispensing liquid from bottles**

(57) Apparatus for use in dispensing measures of liquid from bottles, comprising a device (1) for dispensing the measures of liquid and a support (20) to which the device is removably attachable, the device comprising a counter (15) for recording and displaying the number of bottles which have been fitted to the device and from which liquid has been dispensed, means (10,11) for detecting removal of the device from the support and/or reattachment of the device on the support, and means which, in response to a predetermined measure of liquid being dispensed by the device subsequent to such removal and/or reattachment of the device, adds a unit to the number recorded by the counter. Means (10,11) may comprise a magnet and Hall effect device or reed switch. A further counter may count the number of measures dispensed.



GB 2 169 584 A

1/1

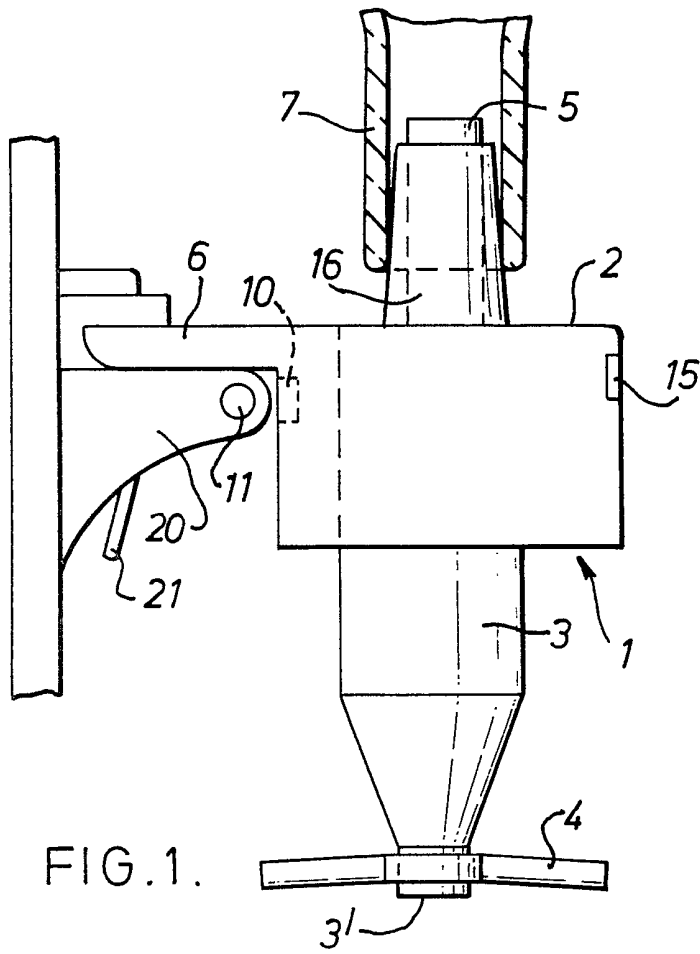


FIG. 1.

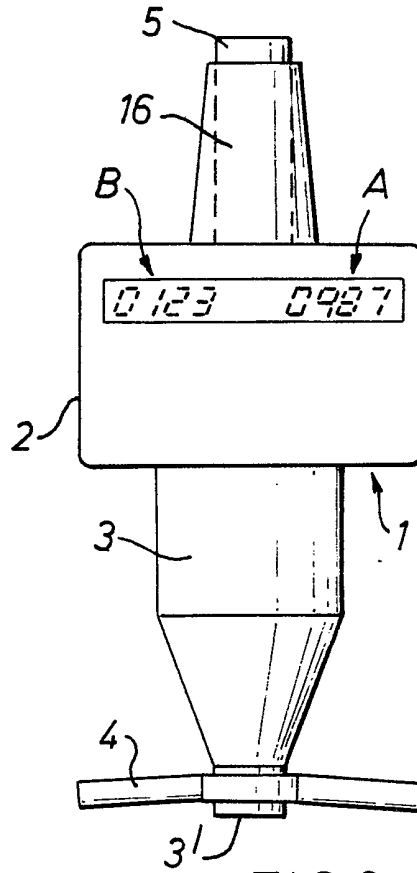


FIG. 3.

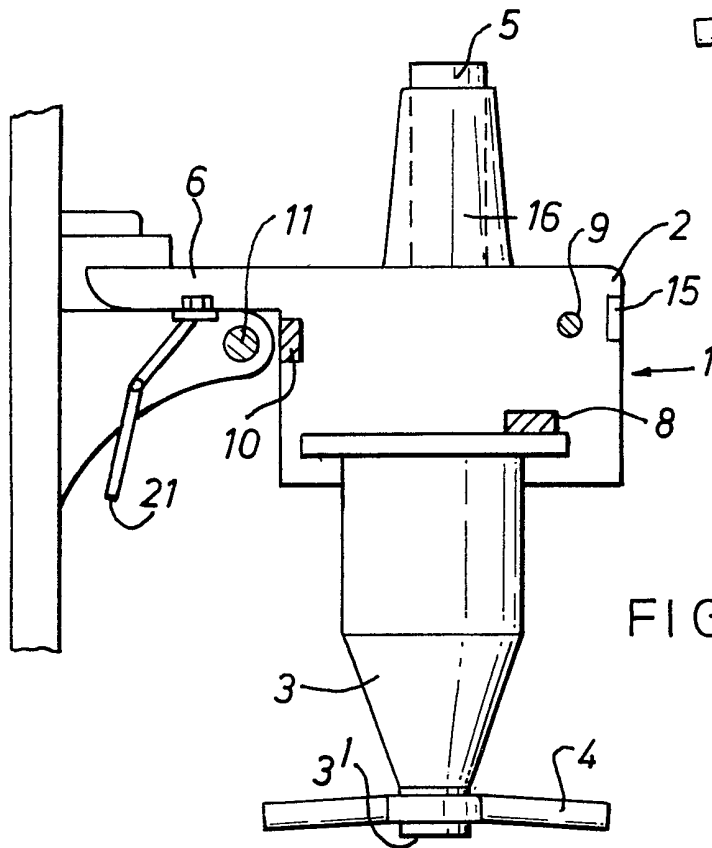


FIG. 2.

SPECIFICATION

Apparatus for use in measuring and dispensing liquid from bottles

5 The present invention relates to a liquid measuring and dispensing apparatus. The apparatus may comprise a device of the type commonly known as a spirit measure.

10 A known liquid measuring and dispensing device comprises a mechanical counter (referred to below as the "dispense counter") for recording and displaying the number of measures of liquid dispensed. The device is used to dispense liquid, e.g.

15 alcoholic beverages, from bottles.

The mechanical counters used with the known devices have proved unreliable and inaccurate.

It is also known to connect liquid measuring and dispensing devices to a computer to record and

20 display the number of bottles of liquid from which liquid has been delivered and dispensed by means of the device.

However, when fitting a bottle to the known device some adjustment and repositioning of the bottle, or even removal and replacement of the bottle may be necessary to eliminate leaks at the connection of the bottle with the device. Where the device is connected to a computer to count the number of bottles from which liquid has been dispensed, the

25 adjustment and repositioning or removal and replacement of the bottle may cause the computer to record an erroneously high reading.

The invention aims to overcome or mitigate the aforementioned disadvantages relating to the dispense counter and to provide a counter to detect and record reliably and accurately the changing of bottles, the latter counter preferably being carried by or being conveniently close to the device itself.

In accordance with the present invention, there is

35 provided apparatus for use in dispensing measures (measured amounts) of liquid from bottles, comprising a device for dispensing the measures of liquid and a mounting bracket, clip or other support to which the device is removably attachable, the

45 device comprising a counter for recording and displaying the number of bottles which have been fitted to the device and from which liquid has been dispensed, means for detecting removal of the device from the support and/or replacement of the device on the support, and means which, in response to a predetermined measure of liquid being

50 dispensed by the device subsequent to such removal and/or replacement of the device, adds a unit to the number displayed by the counter.

It is to be understood that the term "bottle" as used herein means a conventional bottle or other openable container used for holding liquid to be dispensed in measured amounts.

Preferably the predetermined measure of liquid

60 is one of the first to fifth measures of liquid dispensed by the device subsequent to said removal or replacement.

More preferably the predetermined measure of liquid is the first measure of liquid dispensed by

65 the device subsequent to said removal or replace-

ment.

Preferably the counter is a digital counter and also preferably the counter is an electronic counter.

70 The device preferably comprises means, preferably electronic, for recording in a memory removal of the device from the support or replacement of the device on the support and means, preferably electronic, which in response to the predetermined measure of liquid being dispensed by the device either subsequent to said removal of the device or

75 said replacement of the device, adds a unit to the number recorded by the counter.

80 The device may further comprise means, preferably electronic, for recording and displaying the number of measures of liquid dispensed by the device. Such means may comprise a second counter and means, preferably electronic, for adding a unit to the number displayed by the counter each time a measure of liquid is dispensed by the device.

85 The second counter is preferably a digital counter and it also is preferably an electronic counter.

90 The second counter may be operated by a Hall effect device, a reed switch or a microswitch associated with a part of the dispensing device which is moved whenever a measure of liquid is dispensed. The device may include a movable measuring bowl carrying means which actuates the Hall effect device, reed switch or microswitch. Alternatively

95 the device may comprise a static measuring bowl and be provided with an air intake valve actuated by operation of the device to dispense a measure of liquid, the valve having a movable part such that its movement resulting from such operation actuates the Hall effect device, reed switch or microswitch.

100 The means for detecting removal of the device from the support and/or replacement of the device on the support may comprise means carried by the support and means carried by the device, the latter means being actuated either on removal of the device from the support or replacement of the device on the support. The means carried by the support may be a magnet and the means carried by the device may be a Hall effect device, reed switch or other means actuated on being brought into proximity with the magnet.

105 The invention is further described below by way of example with reference to the accompanying drawings, in which:

Figure 1 is a side view of a device and its support bracket according to the invention;

110 *Figure 2* is a diagrammatic view, partly in section, of the device and its support bracket, showing some internal parts of the device and its support bracket; and

Figure 3 is a front view of the device.

115 Referring to the drawings, a liquid measuring and dispensing device 1 comprises a casing 2, a liquid measuring bowl 3 movable relative to the casing, arms 4 carried by the bowl 3 and a tube 5 for entering a bottle from which liquid is to be dispensed.

120 The casing 2 is provided with a lug or projection 6 by means of which the device may be attached

to a support bracket or clip 20 fixed, e.g. to a wall or shelf in a bar. The bowl 3 is movable upwardly and downwardly.

The bracket 20 incorporates a pivoted lever 21 resiliently biased for releasably engaging with the projection 6 and locating the device 1 in position relative to the casing 2. The bowl 3 and the casing 2 together with other parts not shown in the drawings comprise a mechanism or arrangement such as described in my British patent no. 2040879 for dispensing measured volumes of liquid. Thus when a bottle has been fitted to the device, each time the bowl 3 is pushed upwardly to the limit of its travel and released there is dispensed through an outlet valve and an outlet opening 3' a measured volume of liquid from the bottle. The arms 4 are provided so that a glass into which a measure of liquid is to be dispensed can be engaged with them and used to push the bowl 3 up. When the glass is taken away the bowl 3 descends and is refilled with liquid from the bottle through an inlet valve (not shown) in the device. The tube 5 is fitted with a cork 6 for sealingly engaging within the neck 7 of a bottle from which liquid is to be dispensed. To fit the first bottle to the device 1 or to change the bottle on the device, the device is temporarily removed from the support bracket 20 while the bottle is fitted.

The bowl 3 carries adjacent its rim a member 8 (see Figure 2) which actuates a reed switch or Hall effect device 9, which is fixedly mounted in the casing 2, when the bowl passes a selected point in its travel, preferably its upward travel. The member 8 is a permanent magnet if 9 is a Hall effect device. As described below the switch or device 9 is subsequently reset after being actuated. At the front of the casing 2 (see Figure 3) is provided an electronic digital counter unit 15 for displaying at A the number of measures of liquid which have been dispensed by the device and at B the number of bottles of liquid which have been fitted to the device and from which liquid has been dispensed.

The casing 2 houses electronic circuitry, including an electronic memory. The operation of this electronic circuitry is described below.

When the bowl 3 is pushed upwardly for the purpose of dispensing a measure of liquid, the member 8 actuates the switch or device 9 to cause a unit to be added to the reading at A.

The member 8 and the reed switch or Hall effect device 9 should be positioned so that the switch or device 9 is not actuated (and hence the count at A on the display unit 15 remains unchanged) if accidental movement of the bowl 3 insufficient to dispense any liquid occurs but if the movement is larger and sufficient to dispense any liquid, even less than a full measure, then the switch or device 9 is actuated and a unit is added to the count at A. Preferably if the movement is almost but not quite sufficient to cause any liquid to be dispensed then the switch or device 9 is actuated but if movement is any less then the switch or device 9 is not actuated.

The downward movement of the bowl 3 from the fully dispensed position (i.e. its uppermost po-

sition) with the bowl empty will cause the Hall effect device or reed switch 9 to be reset upon the opening of the inlet valve from the bottle so that no possibility of bleeding the bowl without adding to the count at A resulting from the previous dispense operation exists.

There is provided within the upper rear part of the top cover of the casing 2 a reed switch or Hall effect device 10. Mounted in the support bracket 20 is a device 11 for actuating the switch or device 10, the device 11 being a permanent magnet if 10 is a Hall effect device. Following a fresh bottle being fitted to the device 1, when the device is replaced on the support bracket 20, the switch or device 10 is actuated by the device 11 and the actuation causes a signal to be passed to and stored in the memory.

Whilst no liquid is dispensed by the device the signal remains stored in the memory but the memory stores no further signals even if the bottle is repositioned and adjusted or removed and replaced or the device 1 is temporarily removed from the support bracket 20 any number of times. When, however, the first measure of liquid is dispensed by the device following fitting of the bottle on the device 1 and replacement of the device 1 on the bracket 20 the signal is transmitted from the memory to cause a unit to be added to the reading at B.

When the device 1 is removed from the bracket 20 the device 10 is reset.

If desired, means may be provided, to prevent the reading at A and B being visible until an authorised person inspects the device 1.

No means to zero the readings are required because when the number recorded at either of positions A and B reaches its maximum it will return to zero when the next unit is added.

105 CLAIMS

1. Apparatus for use in dispensing measures (measured amounts) of liquid from bottles, comprising a device for dispensing the measures of liquid, and a support to which the device is removably attachable, the device comprising a counter for recording and displaying the number of bottles which have been fitted to the device and from which liquid has been dispensed, means for detecting removal of the device from the support and/or reattachment of the device on the support, and means which, in response to a predetermined measure of liquid being dispensed by the device subsequent to such removal and/or reattachment of the device, adds a unit to the number recorded by the counter.

2. Apparatus according to claim 1, wherein said predetermined measure of liquid is one of the first to fifth measures of liquid dispensed by the device subsequent to said removal or reattachment.

3. Apparatus according to claim 2, wherein said predetermined measure of liquid is the first measure of liquid dispensed by the device subsequent to said removal or reattachment.

4. Apparatus according to any preceding claim,

wherein the counter is a digital counter.

5 5. Apparatus according to any preceding claim, wherein the device comprises means for recording in a memory removal of the device from the support and/or reattachment of the device and means which in response to the predetermined measure of liquid being dispensed by the device either subsequent to said removal of the device or said reattachment of the device, adds a unit to the number recorded by the counter.

6. Apparatus according to any preceding claim, wherein the device further comprises means for recording and displaying the number of measures of liquid dispensed by the device.

15 7. Apparatus according to claim 6, wherein the means referred to in claim 6 includes a second counter having a read-out display and means for adding a unit to the number recorded by the counter each time a measure of liquid is dispensed by the device.

20 8. Apparatus according to claim 7, wherein the second counter is operated by a Hall effect device, a reed switch or a microswitch associated with a part of the dispensing device which is moved whenever a measure of liquid is dispensed.

25 9. Apparatus according to claim 8, wherein the device includes a movable measuring bowl carrying means which actuates the Hall effect device, reed switch or microswitch.

30 10. Apparatus according to claim 8, wherein the device comprises static measuring bowl and provided with an air intake valve actuated by operation of the device to dispense a measure of liquid, the valve having a movable part such that its movement resulting from such operation actuates the Hall effect device, reed switch or microswitch.

35 11. Apparatus according to any preceding claim, wherein the means for detecting removal of the device from the support and/or reattachment of the device to the support comprises means carried by the support and means carried by the device, the latter means being actuated either on removal of the device from the support or replacement of the device on the support.

45 12. Apparatus according to claim 11, wherein the means carried by the support is a magnet and the means carried by the device is a Hall effect device, reed switch or other means actuated on being brought into proximity with the magnet.

50 13. A liquid measuring and dispensing device comprising a counter for recording and displaying the number of measures of liquid dispensed by the device, the counter being a counter having a read-out display for adding a unit to the number recorded by the counter each time a measure of liquid is dispensed by the device.

55 14. Apparatus for use in dispensing measures of liquid, substantially as described herein with reference to the accompanying drawings.

15. A liquid measuring and dispensing device substantially as described herein with reference to and as illustrated in the accompanying drawings.

Printed in the UK for HMSO, D8818935, 5/86, 7102.
Published by The Patent Office, 25 Southampton Buildings, London,
WC2A 1AY, from which copies may be obtained.