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GB-A- 2 245 881 US-A- 1 796 398
US-A- 5 249 380 US-A- 5 555 655

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Description

[0001] This invention relates to a label for a container of fluid under pressure.

[0002] Gases and volatile liquids are commonly stored under pressure, sometimes as high as 300 bar, in containers, typically cylindrical in shape, known as gas cylinders. A gas cylinder has a valve at its head through which its contents can be discharged.

[0003] It is desirable to ensure that a user of a gas cylinder has certain information readily available concerning the contents of the gas cylinder. It is also desirable that the gas cylinder carries information which is of use in the management of a large stock of cylinders.

[0004] US-A-5 555 655 discloses a neck ring which fits around the neck of a gas cylinder above a collar. A plurality of tags are hinged to the neck ring. The tags are provided with information-bearing labels. The neck ring has a plurality of flexible fingers which extend radially inwards and engage with threads on the cylinder neck so as to hold the neck ring securely in position.

[0005] GB-A- 2 245 881 discloses a collar adapted to fit around the neck of a beer keg. The collar has an annular position and a depending planar portion.

[0006] US-A-1 796 398 discloses a dose indicator (for a medicine bottle) which comprises an annular collar and a flat portion connected to the collar by a reduced neck portion.

[0007] There are practical difficulties in stencilling or otherwise applying informative indicia directly to the surface of a gas cylinder. Further, stencilled lettering tends over a period of use to become erased if the cylinder is caused repeatedly to rub against other surfaces. An adherent label provides a partial solution to such problems and is also able to carry a bar code. There is however a tendency for such a label to lose its adherency over a period of time or otherwise to become detached from the gas cylinder.

[0008] The invention particularly relates to a novel form of label aimed at combating the problems described above.

[0009] According to the present invention there is provided a label attachable to a cylinder containing fluid under pressure comprising a generally annular plastics collar able to be fastened around the cylinder valve, and a bib integral with the collar, wherein the label has moulded into it at least one information-bearing member, the bib has a configuration such that when the collar is in position around the cylinder valve the bib can extend over a part of the neck of the cylinder without the bib's sides protruding from the plane of the cylinder, characterised in that the collar has a radial split and a fastening member which in its fastening position extends from a point of engagement on one side of the radial split to a point of engagement on the other side of the radial split.

[0010] The information-bearing member is preferably carried by the bib. The information-bearing member preferably includes a bar code. If two bar codes are em-

ployed, one can be carried by the bib and the other by the collar.

[0011] The fastening is typically of a kind which does not readily permit accidental unfastening.

[0012] The label preferably has a straight linear fold between the collar and the bib. Such an arrangement makes it possible for the label to be made as a flat moulded article and then for the bib to be urged downwards into position over the neck of the cylinder.

[0013] The information-bearing member carried by the bib preferably contains printed indicia in addition to the bar code or bar codes. If desired, the collar may also carry an information-bearing member with a bar code and/or printed indicia.

[0014] The bib is preferably trapezoidal in shape, having upper and lower parallel sides in its position over the neck of the cylinder. The trapezoidal shape maximises the surface area of the bib available for carrying information.

[0015] The cylinder typically has a guard protecting the cylinder valve. In position around the valve the collar of the label is surrounded by the guard and the bib extends through an opening in the guard.

[0016] A label according to the invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is an exploded perspective view of the label; and

Figure 2 is a perspective view of a cylinder fitted with the label shown in Figure 1.

[0017] For ease of illustration the indicia and bar codes carried by the label are omitted from Figure 1.

[0018] Referring to Figure 1 of the drawings, a label collar 2 comprises a thin, flat, generally annular, disc-shaped collar 4 of plastics material. Polyurethane is one suitable plastics material from which the label 2 can be formed, for example, by injection moulding.

[0019] The label 2 has a trapezoidal bib 6 integral with the collar 4. The bib 6 forms the front of the label 2. The label 2 has a straight linear fold 8 between the collar 4 and the bib 6. The fold 8 has a reduced thickness in comparison with the collar 4 and the bib 6.

[0020] At the rear of the label 2 the collar is formed with a radial split 10. This split and the natural flexibility of the plastics material enables the label 2 to be readily fitted around the stem of a cylinder valve.

[0021] The collar 4 has a fastening member 12 in the form of a strip typically of the same plastics material as the rest of the label 2. The fastening member has a pair of studs 14 which are adapted to engage complementary sockets 16 formed at two points in the collar 4, one on one side of , and the other on the other side of the radial split 10. Each stud 14 has a shank 18 terminating in a prong 20 tapering in the direction of its complementary socket 16. The prong 20 is at its wider end of greater diameter than the shank 18. The natural resilience of the

prongs 20 and their tapering configuration enable the fastening strip 12 to be readily snapped manually into engagement with the sockets 16 but prevent accidental opening of the fastening 12.

[0022] As shown in Figure 2, both the collar 4 and the bib 6 carry printed indicia 22 conveying information about the contents of a cylinder 30 to which the label 2 is fitted and the contents of the cylinder 30. In addition the collar 4 carries a bar code 24 and the bib 6 a bar code 26. One of the bar codes 24 and 26 contains information about the fluid contained in the cylinder 30. The other of the bar codes 24 and 26 contains the serial number of the cylinder 30. Thus, each cylinder in a stock containing the same product can be uniquely identified.

[0023] The bar codes 24 and 26 are carried on individual members (not shown) of the same plastics material as the rest of the label 2 which are moulded into the label 2 during its manufacture. During the moulding process, the bar code carrying members merge with the rest of the label 2 and therefore in the finished product no joins therebetween can be detected by unaided visual inspection. Lettering and other indicia can be applied by a printing process after the label 2 with its bar codes 24 and 26 has been made or can be applied to a plastics member which is moulded into the label at the same time as the bar codes. The plastics material from which the label 2 is made is preferably white so as to make lettering in black or of a dark colour stand out prominently and thus be easy to read.

[0024] As shown in Figure 2, the cylinder 30 has a valve 32. The collar 4 of the label 2 fits around the stem of the valve 2. The neck 34 of the cylinder 30 has an upstanding valve guard 36 which is open at its front to permit ready manual access to the valve 32. The bib 6 of the label 2 extends through the front of the valve guard 36. Although the shorter one of the two parallel ends of the trapezoidal bib 6 is not as wide as the guard 36, the longer one is wider than this guard 36. Nonetheless, as shown in Figure 2, the bib 6 does not protrude at its sides from the plane of the cylinder 30 as the label is thus unlikely to be damaged by impact with another object for example another cylinder during handling of a stock of cylinders.

[0025] Also as shown in Figure 2, the bib 6 is in a position in which it has been bent downwards from the fold 8 over a part the neck 34 of the cylinder.

[0026] Because the bar codes 24 and 26 are moulded into the label 2 they are not readily detachable therefrom. The label 2 thus provides a means of individually identifying the cylinder over an indefinite period of time.

[0027] The label according to the invention may be used to identify a cylinder containing any industrial gas or volatile liquid under pressure. It is of particular utility if the fluid is toxic or otherwise hazardous or if it potentially has adverse effects on the environment or in the earth's atmosphere, for example if it is a fluorinated hydrocarbon.

[0028] If the neck of the cylinder has an upstanding portion in which the valve is received, the label may rest on or around this portion when fitted to the cylinder.

Claims

1. A label (2) attachable to a cylinder (30) containing fluid under pressure comprising a generally annular plastics collar (4) able to be fastened around the cylinder valve (32), and a bib (6) integral with the collar (4), wherein the label (12) has moulded into it at least one information-bearing member (24, 26), the bib (6) has a configuration such that when the collar (4) is in position around the cylinder valve (32) the bib (6) can extend over a part of the neck (34) of the cylinder (30) without the bib's (6) side protruding from the plane of the cylinder (30), **characterised in that** the collar (4) has a radial split (10) and a fastening member (12) which in its fastening position extends from a point (16) of engagement on one side of the radial split (10) to a point (16) of engagement on the other side of the radial split (10).
2. A label as claimed in claim 1, in which the information-bearing member is carried by the bib.
3. A label as claimed in claim 1 or claim 2, in which the information-bearing member includes a bar code.
4. A label as claimed in claim 3, in which there are two bar codes, one on the bib and the other on the collar.
5. A label as claimed in any one of the preceding claims, in which the label has a straight linear fold (8) between the collar (4) and the bib (6).
6. A label as claimed in claim 3, in which the information-bearing member carries printed indicia in addition to the said bar code.
7. A label as claimed in any one of the preceding claims, in which the bib (6) is trapezoidal in shape having upper and lower sides when in position over the neck (34) of the cylinder.
8. A cylinder containing a fluid under pressure, the cylinder being fitted with a label as claimed in any one of the preceding claims.
9. A cylinder as claimed in claim 8, in which the cylinder has a guard (36) protecting the cylinder valve (32), the collar (4) of the label (2) being surrounded by the guard (36) and the bib (6) extending through an opening in the guard.

Patentansprüche

1. Etikett (2), das an einem druckbeaufschlagtes Fluid enthaltenden Zylinder (30) befestigt werden kann, mit einer allgemein ringförmigen Kunststoffmanschette (4), die um das Zylinderventil (32) herum an-

gebracht werden kann, und einem integral mit der Manschette (4) ausgebildeten Latz (6), wobei in dem Etikett (2) mindestens ein Informationstragsglied (24, 26) geformt worden ist, wobei der Latz (6) eine solche Konfiguration aufweist, dass sich der Latz (6) über einen Teil des Halses (34) des Zylinders (30) erstrecken kann, ohne dass die Seite des Latzes (6) von der Ebene des Zylinders (30) vorragt, wenn sich die Manschette (4) in Position um das Zylinderventil (32) herum befindet,

dadurch gekennzeichnet, dass die Manschette (4) einen radialen Spalt (10) und ein Befestigungsglied (12) aufweist, das sich in seiner Befestigungsposition von einer Eingriffsstelle (16) auf einer Seite des radialen Spalts (10) zu einer Eingriffsstelle (16) auf der anderen Seite des radialen Spalts (10) erstreckt.

2. Etikett nach Anspruch 1, wobei das Informationstragsglied von dem Latz getragen wird.
3. Etikett nach Anspruch 1 oder 2, wobei das Informationstragsglied einen Strichcode enthält.
4. Etikett nach Anspruch 3, wobei zwei Strichcodes vorgesehen sind, einer auf dem Latz und einer auf der Manschette.
5. Etikett nach einem der vorhergehenden Ansprüche, wobei das Etikett einen geraden linearen Falz (8) zwischen der Manschette (4) und dem Latz (6) aufweist.
6. Etikett nach Anspruch 3, wobei das Informationstragsglied neben dem Strichcode gedruckte Angaben trägt.
7. Etikett nach einem der vorhergehenden Ansprüche, wobei der Latz (6) eine Trapezform aufweist, die eine Ober- und eine Unterseite aufweist, wenn er sich in einer Position über dem Hals (34) des Zylinders befindet.
8. Ein druckbeaufschlagtes Fluid enthaltender Zylinder, wobei der Zylinder mit einem Etikett nach einem der vorhergehenden Ansprüche ausgestattet ist.
9. Zylinder nach Anspruch 8, wobei der Zylinder einen Schutz (36) aufweist, der das Zylinderventil (32) schützt, wobei die Manschette (4) des Etiketts (2) von dem Schutz (36) umgeben wird und sich der Latz (6) durch eine Öffnung im Schutz erstreckt.

un collier plastique (4) généralement annulaire capable d'être accroché autour du robinet (32) de la bouteille, et une bavette (6) intégrée au collier (4), au moins un élément (24, 26) porteur d'informations étant moulé dans l'étiquette (12), la bavette (6) présentant une configuration telle que, lorsque le collier (4) est en position autour du robinet (32) de la bouteille, la bavette (6) puisse s'étendre au-dessus d'une partie du col (34) de la bouteille (30) sans que le côté de la bavette (6) ne dépasse du plan de la bouteille (30), **caractérisée en ce que** le collier (4) présente une fente radiale (10) et un élément (12) de fixation qui, dans sa position de fixation, s'étend d'un point (16) de prise sur un côté de la fente radiale (10) à un point (16) de prise sur l'autre côté de la fente radiale (10).

2. Étiquette selon la revendication 1, l'élément porteur d'informations étant porté par la bavette.
3. Étiquette selon la revendication 1 ou la revendication 2, l'élément porteur d'informations comprenant un code à barres.
4. Étiquette selon la revendication 3, comportant deux codes à barres, l'un sur la bavette et l'autre sur le collier.
5. Étiquette selon l'une quelconque des revendications précédentes, l'étiquette présentant un pli linéaire rectiligne (8) entre le collier (4) et la bavette (6).
6. Étiquette selon la revendication 3, l'élément porteur d'informations portant des indications imprimées en plus dudit code à barres.
7. Étiquette selon l'une quelconque des revendications précédentes, la bavette (6) présentant une forme trapézoïdale dotée de côtés supérieur et inférieur lorsqu'elle est en position sur le col (34) de la bouteille.
8. Bouteille contenant un fluide sous pression, la bouteille étant équipée d'une étiquette selon l'une quelconque des revendications précédentes.
9. Bouteille selon la revendication 8, la bouteille étant dotée d'une collerette (36) protégeant le robinet (32) de la bouteille, le collier (4) de l'étiquette (2) étant entouré par la collerette (36) et la bavette (6) s'étendant à travers une ouverture dans la collerette.

Revendications

1. Étiquette (2) susceptible d'être fixée à une bouteille (30) contenant un fluide sous pression, comportant

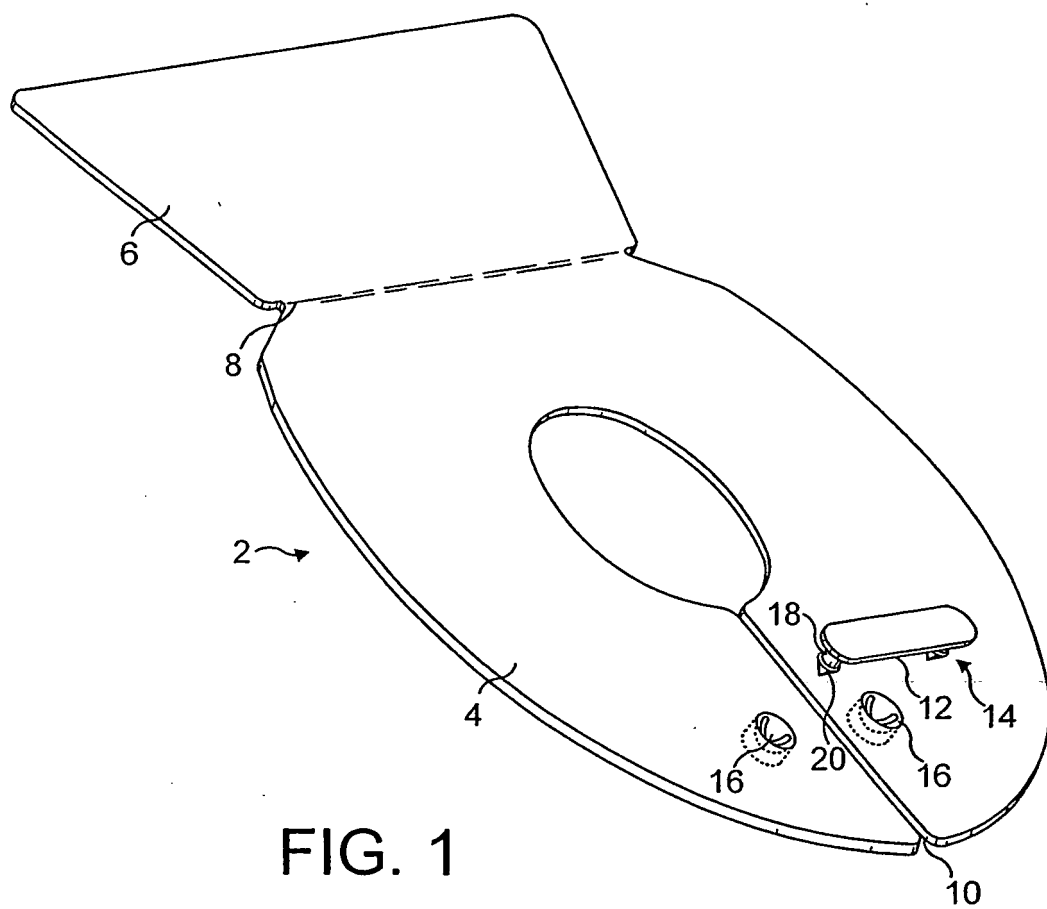


FIG. 1

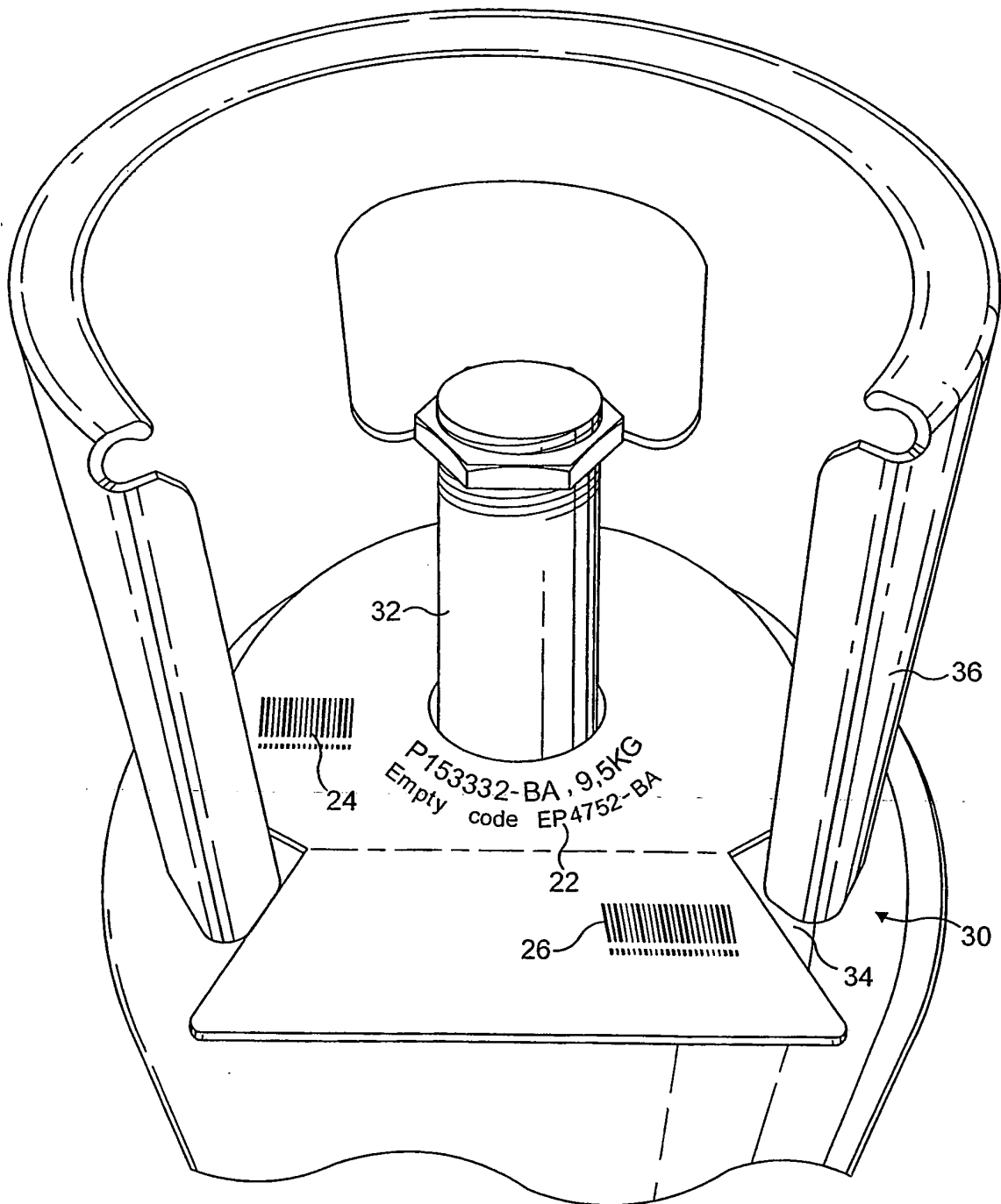


FIG. 2

REFERENCES CITED IN THE DESCRIPTION

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