May 21, 1968 J. L. G. SINGIER 3,384,258

FLASKS OF FLEXIBLE MATERIAL WITH A SUPPORTING BASE

Filed July 19, 1966

FIG.1

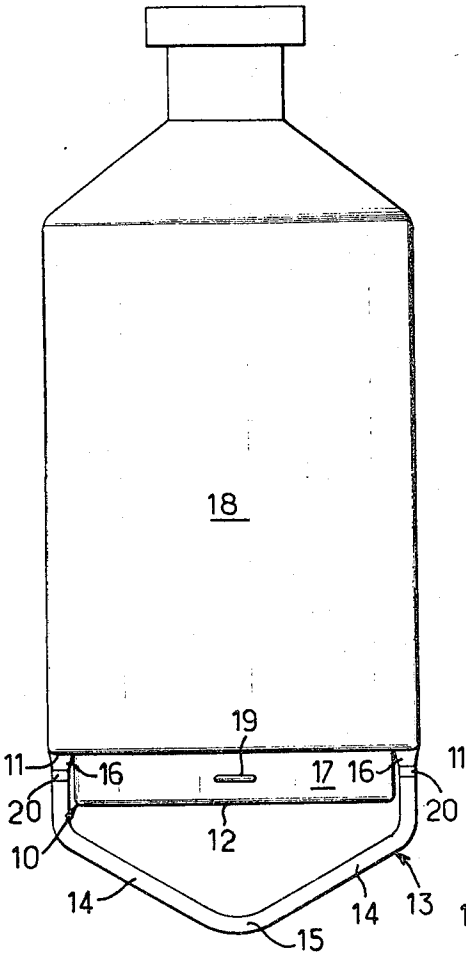



FIG.2

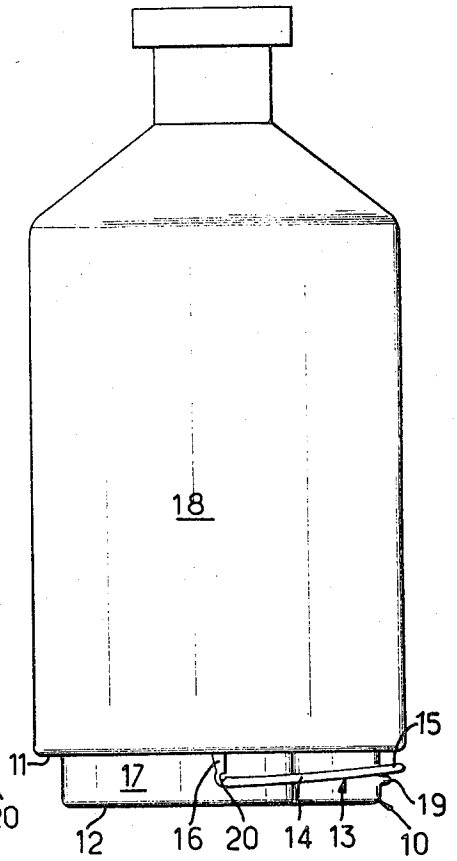
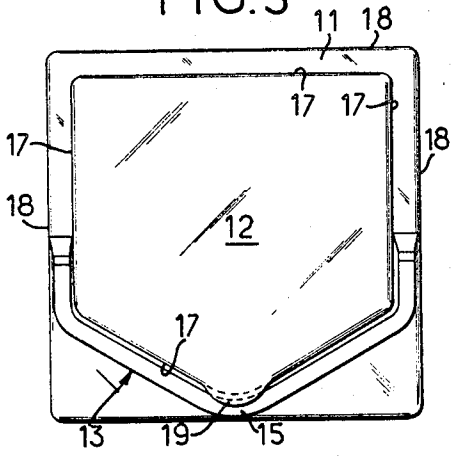



FIG.3



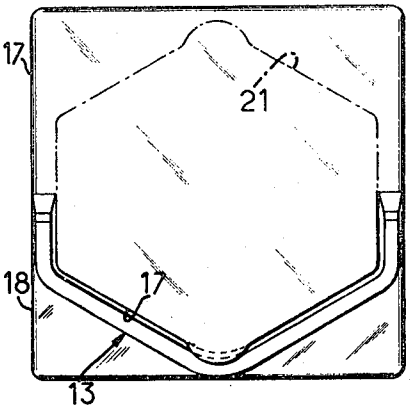




FIG.4

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# FLASKS OF FLEXIBLE MATERIAL WITH A SUPPORTING BASE

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14 Claims. (Cl. 215—100)

## ABSTRACT OF THE DISCLOSURE

A one-piece molded plastic bottle has a body portion, a supporting base, and a suspension device. The suspension device is in the form of a bail that fits in a peripheral recess or rebate about the base of the body.

The present invention relates to flasks of flexible material with a supporting base, and is more particularly concerned with flasks of this type intended to contain injectable medical products.

As is well known, in order to administer a product of this kind to a patient, the flask is inverted and is suspended by a device provided for that purpose at the end of the flask opposite to the outlet of the product.

In the flasks of plastic material with a supporting base which are known at the present time, the suspension devices are fixed on the base itself and comprise either eyelets moulded together with the flask and intended to receive subsequently a suspension member, or a handle moulded in one single piece and permitting directly the suspension of the flask. In addition, in order that these flasks may be of the supporting base type, that is to say they can rest normally on their base, these suspension devices are arranged inside a central shallow recess in the base and are designed either to be folded back into this central recess, protected by a peripheral zone which supports the base, or to have sufficient height so that they do not normally project from this supporting zone.

This arrangement has many disadvantages.

The construction with a central shallow recess in the bottom of the flask, obtained directly during moulding and generally by extrusion-blowing of the flask, involves a drawing effect on the most remote parts. This drawing action results in thinning of the wall of the flask at the level of the supporting zone on which the flask rests, whereas normally the thickness of this zone, which is subjected to shocks and frictional wear, should rather be reinforced. This drawback is aggravated by the fact that during extrusion-blowing of a tube of constant thickness, and in consequence of the drawing of this latter due to its own weight, it is precisely the bottom of the flask which tends to have the smallest thickness.

In addition, when the suspension device can be folded back, its own elasticity may be sufficient to interfere with the stability of the empty flask and even that of a full flask. In consequence, the various handling operations of the flask, such as storage, filling or conditioning, are thereby hampered.

Furthermore, the fixing of the suspension device inside a shallow recess in the base limits the dimensions of this device to those of the space available in this shallow recess. The result is that the suspension device is much smaller than those generally employed for the usual equivalent glass flasks. The hooking attachment of the flask may be rendered more difficult and access to the base for the purpose of adding additional medical substances and the placing in position of an air-intake are rendered less easy. These latter disadvantages are especially important to personnel who are traditionally attached to the type of equipment with which they are familiar.



The present invention has for its object a flask of flexible material with a supporting base, which eliminates these drawbacks.

In accordance with one of the aspects of the invention, a flask of flexible material with a supporting base, of the kind of comprising a body, a supporting base and a suspension device, is characterized by the provision, around at least a part of the base, of a stowage space formed by a rebate in the body above the said base in order to permit the folding back and the housing of the suspension device which, according to a preferred form of embodiment, is a handle moulded in one single piece during the moulding of the flask.

An arrangement of this kind makes it possible to keep the base completely free, especially for the purpose of the ultimate provision of any desired device such as an air-intake. In addition, access to these devices is facilitated by the fact that, as the points of attachment of the suspension handle are transferred to the immediate proximity of the walls of the flask body, the handle has a span corresponding to the diameter of the flask, in the same way as that fixed on the usual glass flask.

According to another aspect of the invention, an arrangement is provided for fastening the suspension device in the folded-back position, which facilitates the vertical stability of the flask by preventing effects due to the elasticity of the material, and in consequence assisting its automatic filling and conditioning.

The objects, characteristic features and advantages of the invention will further be brought out from the description which follows below of forms of construction given solely by way of examples and not in any limitative sense, reference being made to the accompanying drawings, in which:

FIG. 1 is a view in elevation of a flask according to the invention, the suspension handle being in the extended position;

FIG. 2 is a side view of this flask, the suspension handle being fastened in the folded-back position;

FIG. 3 is a view looking on the underside of this flask;

FIG. 4 is a view similar to that of FIG. 3, and relates to an alternative form of construction.

In accordance with the form of embodiment chosen and shown in FIGS. 1 to 3, the flask according to the invention, formed by extrusion-blowing of a thermosterilizable plastic material comprises a body **18** of generally square section and a supporting base surmounted by a stowage space **10** formed by a rebate of the body **18** comprising a horizontal wall **11** parallel to the bottom **12**, and a vertical wall **17** above and round the bottom **12**.

In addition, the flask according to the invention is provided with a suspension handle **13**, the arms of which enclose an elbowed central section **15** and are coupled to the horizontal wall **11** of the stowage space **10** at attachment points **16** which are symmetrically arranged on each side of a central plane of the flask. In the vicinity of their points of attachment **16**, the arms **14** are locally thinned-down at **20**.

The wall **17** of the stowage space **10** has a transverse section of which one half follows the contour of the handle **13** while the other half follows the contour of the walls of the body **18** of the flask, and recessed with respect to the said walls. At the mid-height, the wall **17** is provided with a transverse fastening lip **19**, which extends laterally on each side of its plane of symmetry, to correspond with the elbowed portion **15** of the handle **13**.

In the closed or folded-back position shown in FIGS. 2 and 3, the handle **13** is engaged on the lip **19** by its elbowed portion **15**, and the locking action which results makes it possible to ensure that, in spite of its inherent elasticity, the handle **13** remains in the folded-back position. The thin portions **20** facilitate this folding-back movement. In addition, it will be noted that in the folded-back position, the handle **13** is wholly contained advantageously within the apparent contour of the flask.

In the opened out position shown in FIG. 1, the handle **13** permits direct hooking of the flask in the inverted position, its elbowed portion **15** then facilitating the centering of the flask.

In the alternative form shown in FIG. 4, the wall **17** of the stowage space **10** follows, as to one half, the contour of the handle **13** and is to the other half, it is in the extension of the walls of the body **18**, so that the stowage space **10** is only associated with one part of the lower periphery of the body **18**.

According to a further embodiment, shown diagrammatically in chain-dotted lines at **21**, the wall **17** is symmetrical with respect to the line of attachment of the handle **13**, which enables the handle **13** to be folded back either to one side or to the other.

It will of course be understood that the present invention is not limited to the forms of construction chosen and shown, but includes all alternative forms of execution, especially as regards the contour of the suspension handle and in consequence of the wall of the stowage space and also as regards the transverse section of the flask. Furthermore, it will be understood that the base can be fitted with any necessary device, such as an air-intake for example, which can be arranged inside a recessed portion of this base, and that in addition the suspension device adopted could be of any other type than the handle more particularly described.

What I claim is:

**1.** A flask of flexible material with a supporting base comprising, molded in one single piece, a body portion, a supporting base and a suspension device; a stowage space disposed around at least part of said base in the region of the outer periphery thereof, said stowage space being constituted by a rebate formed in said body above said base so as to permit the folding-back and the housing of said suspension device inside the actual contour of said body.

**2.** A flask of flexible material as claimed in claim **1**, in which said stowage space is formed by a horizontal wall joined perpendicularly to said flask body, and by a vertical wall joined to said flask base and perpendicular to said base.

**3.** A flask of flexible material as claimed in claim **2**, in which said suspension device is joined to the horizontal wall of said stowage space.

**4.** A flask of flexible material as claimed in claim **2**, in which said suspension device is joined to the horizontal wall of said stowage space through the intermediary of a coupling section of reduced thickness.

**5.** A flask of flexible material as claimed in claim **1**, in which means are provided for holding and retaining said suspension device in the folded back position.



**6.** A flask of flexible material as claimed in claim **5**, in which said stowage space is bounded inwardly by a wall and said means for retaining said suspension device in the folded-back position comprise at least one protuberant lip formed on said wall.

**7.** A flask of flexible material as claimed in claim **1**, in which said suspension device is a handle.

**8.** A flask of flexible material as claimed in claim **7**, in which said stowage space is bounded inwardly by a wall and at least a portion of said wall has substantially the same contour as said suspension handle.

**9.** A flask of flexible material as claimed in claim **1**, in which said stowage space is formed around the entire lower periphery of said flask body.

**10.** A flask of flexible material as claimed in claim **1**, in which said storage space constitutes a part only of said rebate and has the same contour as the internal contour of said suspension device, said stowage space being formed on one side of an axial plane passing through the points of attachment of said suspension device.

**11.** A flask of flexible material as claimed in claim **1**, in which said stowage space has the same contour as said suspension device, and is symmetrically disposed with respect to an axial plane passing through the points of attachment of said suspension device.

**12.** A flask of flexible material with a supporting base comprising, molded in one single piece, a body portion, a supporting base and a suspension device; the flask having a stowage space comprising a rebate formed in said body above said base so as to permit the folding back and housing of said suspension device inside the actual contour of said body, the inner side of said rebate being bounded by an outwardly facing wall that extends about at least a portion of the periphery of said base.

**13.** A flask of flexible material as claimed in claim **12**, said suspension device being in the form of a bail that extends about at least a portion of the periphery of said base.

**14.** A flask of flexible material as claimed in claim **13**, said bail having susbstantially the same shape as said outwardly facing wall.


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