

AUSTRALIA
Patents Act 1990

NOTICE OF ENTITLEMENT

We JOH. A. BENCKISER GmbH

of BENCKISERPLATZ 1
D-6700
LUDWIGSHAFEN/RHEIN
GERMANY

ing the nominated person/ applicant(s) in respect of an application for a patent for an invention entitled STORAGE FLASK II. (Application No. 18689/92), state the following:

1. The nominated person(s) has, for the following reasons, gained entitlement from the actual inventor(s):

The actual inventor is an employee of the applicant.

2. The nominated person(s) has, for the following reasons, gained entitlement from the basic applicant(s) listed on the patent request:

The nominated person is the basic applicant of the basic application listed on the patent request form.

3. The basic application(s) listed on the request form is the first application(s) made in a Convention country in respect of the invention.

DATE: 14 September 1994

JOH.A. BENCKISER GmbH

GRIFFITH HACK & CO.



Patent Attorney for and
on behalf of the applicant(s)

654564

PATENT REQUEST : STANDARD PATENT

I/We, being the person(s) identified below as the Applicant(s), request the grant of a Standard Patent to the person(s) identified below as the Nominated Person(s), for an invention described in the accompanying complete specification.

**Applicant(s) and
Nominated Person(s):** JOH A. BENCKISER GmbH

Address: BENCKISERPLATZ 1
D-6700
LUDWIGSHAFEN/RHEIN
GERMANY

Invention Title: STORAGE FLASK II.

**Name(s) of Actual
Inventor(s):** JURGEN SCHICK

Address for Service: GRIFFITH HACK & CO
509 ST KILDA ROAD
MELBOURNE VIC 3004

Attorney Code: HA

BASIC CONVENTION APPLICATION DETAILS

Application No	Country	Country Code	Application Date
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Drawing number recommended to accompany the abstract: 1

DATED this 30th day of June 1992

JOH. A. BENCKISER GmbH

GRIFFITH HACK & CO.



M 037375 300692

Patent Attorney for and
on behalf of the Applicant

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- (71) Applicant(s)
JOH A. BENCKISER GMBH
- (72) Inventor(s)
JURGEN SCHICK
- (74) Attorney or Agent
GRIFFITH HACK & CO , GPO Box 1285K, MELBOURNE VIC 3001
- (56) Prior Art Documents
AU 634255 59093/90 B65D
- (57) Claim

1. A storage flask for pourable materials comprising:

a body, constructed of a synthetic plastic material, having a cross-section of an elongate hexagonal-shape having six edges including a pair of opposed outer edges and two pairs of opposed inner edges, each pair of adjacent edges interconnected by a wall, adjacent walls at each of the outer edges defining an acute angle therebetween and adjacent walls at each of the inner edges defining an obtuse angle therebetween, a closable pour-out opening adjacent an end of the body, and at least one wall fold line adjacent an opposite end of the body and extending on a wall of the body between one of the pair of inner edges; and

a base having two pairs of opposed substantially horizontal base edges, each base edge extending, substantially parallel to an adjacent wall, from an end of each of the inner edges, a longitudinal fold line disposed between the two pairs of base edges defining a ridge in the base, a pair of opposed triangular-shaped portions an apex thereof substantially coinciding with an end of each of the outer edges of the body, the apex located at substantially

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the same height as the wall fold line, a transverse fold line extending substantially perpendicular to the longitudinal fold line between opposed walls of the body, and two opposed pairs of adjacent base portions an edge of each base portion substantially coinciding with the longitudinal fold line and an opposite edge of each base portion substantially coinciding with one of the base edges whereby, in use, the storage flask can be collapsed by applying pressure to at least one of the wall fold lines wherein the base can collapse about both the transverse and longitudinal fold lines and the opposing walls of the body can be pressed together wherein the outer edges fold.

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COMPLETE SPECIFICATION
STANDARD PATENT

Applicant(s): JOH A. BENCKISER GmbH
BENCKISERPLATZ 1
D-6700
LUDWIGSHAFEN/RHEIN
GERMANY

Invention Title: STORAGE FLASK II

The following statement is a full description of this invention, including the best method of performing it known to me/us:

Storage flask II

The present invention, as supplement to the German Patent Application P 40 01 429, relates to the further development of the foldable storage flask described therein for bulk- or pourable-goods. The flask may be especially fabricated to be
5 light in weight, thus requiring the use of only a very small amount of synthetic plastics material but it has, however, a high degree of stability because of its configuration. The body of the flask has a hexagonal elongated, flat cross-section with inner edges and acute outer angles running to foldable outer edges, in which case the base, with the formation of outer, rounded, base edges is pulled
10 inwards and possesses a foldable middle line extending between the ends of the outer edges, where the base edges possess four outer rising slopes which run together to the ends of the outer edges.

The shape of the flask is distinguished by the fact that, even with the use of very small wall thicknesses, it has a stable shape which stands firmly upright. At
15 the same time, it can easily be collapsed into a flat packet, because of which there is only a fraction of the amount of waste space which formerly had to be taken into account.

The raised-up base edges are rounded out to form four convex bulges, which originate from a contraction on the middle of the two inner flask surfaces and
20 run together in pairs to the ends of the outer edges. In this way there are formed four, approximately point-shaped, contacts on the surface on which the flask is placed.

The flask may have a conventional shape, where the inner edges of the elongated-hexagonal cross-section run together to the pour-out opening. Here it
25 is not necessary for the pour-out opening to be located in the region of the

central axis of the flask, but it may be offset, in particular towards the side.

The flask may have finger-grip grooves which, to facilitate the collapsing, likewise have linear folding edges with preferably small bending radii, in order to keep the flanging effect, which could occur with larger radii, as small as possible.

In particular, the flask is provided with a hollow handle, so where there is an aperture between this handle and the flask body. In this case, both the hollow handle and the flask body have their own inner and outer folding edges.

The flask mould is produced by the blowing method, in which case the initial wall thicknesses for the film of approximately 0.3 to 0.5 millimetres (for a flask volume of 1 litre) have been found particularly suitable.

The body itself is relatively flat, where the distances between the edges of the inner surfaces of the flask in the region - below the gathering together, which may be undertaken as required, for the pour-out nozzle - is approximately three times that of the distance between the outer edges and the inner edges.

The folding procedure itself takes place by collapsing or laying flat.

This solution of the problem has the following disadvantages. On the one hand, in the region of the contact points for standing on, the base edges may form so-called elephant's feet if the base of the flask, for example during transport in bulk parcels, is subjected to substantially higher stresses than the actual weight of the flask and contents. In addition to this, only one folding procedure is made positively possible by the given shape, a flipping-over of the base onto the side surface of the flask requires careful manipulation, because no possibility of

preferred.

According to the present invention there is provided a
5 storage flask for pourable materials comprising:

a body, constructed of a synthetic plastic
material, having a cross-section of an elongate hexagonal-
shape having six edges including a pair of opposed outer
edges and two pairs of opposed inner edges, each pair of
10 adjacent edges interconnected by a wall, adjacent walls at
each of the outer edges defining an acute angle
therebetween and adjacent walls at each of the inner edges
defining an obtuse angle therebetween, a closable pour-out
opening adjacent an end of the body, and at least one wall
15 fold line adjacent an opposite end of the body and
extending on a wall of the body between one of the pair of
inner edges; and

a base having two pairs of opposed substantially
horizontal base edges, each base edge extending,
20 substantially parallel to an adjacent wall from an end of
each of the inner edges, a longitudinal fold line disposed
between the two pairs of base edges defining a ridge in the
base, a pair of opposed triangular-shaped portions an apex
thereof substantially coinciding with an end of each of the
25 outer edges of the body, the apex located at substantially
the same height as the pair of wall fold lines, a
transverse fold line extending substantially perpendicular
to the longitudinal fold line between opposed walls of the
body, and two opposed pairs of adjacent base portions an
30 edge of each base portion substantially coinciding with the
longitudinal fold line and an opposite edge of each base
portion substantially coinciding with one of the base edges
whereby, in use, the storage flask can be collapsed by
applying pressure to at least one of the wall fold lines
35 wherein the base can collapse about both the transverse and



longitudinal fold lines and the opposing walls of the body can be pressed together wherein the outer edges fold.

- 5 Preferably the base further comprises four flanges each flange starting from inner end of each of the base edges and terminating at a mid-point of the base.

Preferably the sides of the triangular-shaped portions have in total length approximately three to four times the length of the longitudinal fold line.

- 10 Preferably the storage flask further comprises an outer flange pair running parallel to each of the outer edges and each outer flange located at a very small distance away from each of the outer edges.

- 15 Preferably each of the triangular-shaped portions adjoin each of the base edges at an angle of between 150° to 170° .

The present invention will now be described in greater detail with reference to the accompanying drawings, in which:

- 20 Fig. 1 is the side elevation of the broad side of the flask.

Fig. 2 is the side elevation of the narrow side of the flask.

Fig. 3 depicts the base of the flask seen from below.



As shown in Fig. 1, the flask 1 in accordance with the present invention, which has a hexagonal cross-section, corresponds largely with structure described in the main application which has the outer edges 2 as well as the inner edges 10.

On the base, directed towards the narrow faces, there are triangular flattened areas 7 (Fig. 2), the sides 8 of which form an apex at the outer edges 2, and which have adjacent outwardly-rounded regions 9 passing over below into four base edges 4, which are joined together centrally at the upwardly-directed apex 5 of the pulled-in region. The base edges 4 form the four contact sites with the surface on which the flask 1 stands upright. Above the level of the apex 5 of the pulled-in region, on at least one of the broad faces 12, there is a folding line 16 impressed by a profile in the blow mould. The folding line is disposed here in such a way that it is parallel to the base edges 4 and at the same level as the point of intersection of the sides 8 of the triangular flattened area, and said line ends at the inner edges 10.

For the folding operation, the flask 1 is laid down on a support surface. With the use of the hands, the flask is pushed inwards in the region of the folding line, in which case the base is folded over. The base is pressed against the side face of the flask so that it is flattened and any air inside it is expelled.

If the flask which has been emptied is then closed (with the screw cap), the flask will remain in its flattened condition, so that waste space is very substantially reduced.

The laying together of the flask bodies is facilitated by the pulled-in flanges 15 which are parallel to the outer edges at a small distance (approximately 5 millimetres) away from them, in which case they can extend up to the upper edge of the threaded pour-out nozzle.

Fig. 2, in the elevation of the narrow face, shows the rounded portions 9 as well as the profile of the base 4, which likewise may be slightly rounded. In the plan view, the ~~higher~~^{higher} situated longitudinal middle edge 6 between the base edges may be recognised, as well as the triangular flattened areas 7 between the sides 8 of the triangle and the transition line 18 from the under surface of the base to the flattened area 7.

The folding lines 16 may be seen in the side view. These end at the inner edges 10 and it is actually only necessary to have one such folding line.

Fig. 3 is a plan view of the base 3. The base of the flask runs out between the sides 8 of the triangles to form acute angles α and is here pulled upwards to form the triangular flattened areas 7. The flattened area 7 is bounded at the base by the transition line 18. Adjacent to this there are the four base edges 4 slightly offset towards the middle and it is on these edges that the standing flask rests, the triangular flattened areas 7 adjoining the base edges 4 at an angle β (150° - 170°) as shown in Fig. 1.

The base edges do not run as far to the moulded-in line 11 (Fig. 3) but finish about halfway and below continue on, by way of the base flanges 13, to the midpoint 14 of the base, thus forming triangular regions 19 which slope upwards towards the transverse line 11.

The middle edge 6 stands out and is formed by the mould division during blowing. The flask may also be folded along this line if the flask which is lying down is only pressed flat without having first folded the base.



List of components

- | | |
|----|-----------------------|
| 1 | Flask body |
| 2 | Outer edges |
| 3 | Base |
| 4 | Edge of base |
| 5 | Pulled-in portion |
| 6 | Middle edge |
| 7 | Flattened areas |
| 8 | Sides of triangle |
| 9 | Rounded portions |
| 10 | Inner edges |
| 11 | Transverse line |
| 12 | Broad faces |
| 13 | Flanges |
| 14 | Mid-point of base |
| 15 | Outer pair of flanges |
| 16 | Folding line |
| 17 | Edge of threaded neck |
| 18 | Transition lines |

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A storage flask for pourable materials comprising:

5 a body, constructed of a synthetic plastic material, having a cross-section of an elongate hexagonal-shape having six edges including a pair of opposed outer edges and two pairs of opposed inner edges, each pair of adjacent edges interconnected by a wall, adjacent walls at each of the outer edges defining an acute angle therebetween and adjacent walls at each of the inner edges
10 defining an obtuse angle therebetween, a closable pour-out opening adjacent an end of the body, and at least one wall fold line adjacent an opposite end of the body and extending on a wall of the body between one of the pair of inner edges; and

15 a base having two pairs of opposed substantially horizontal base edges, each base edge extending, substantially parallel to an adjacent wall, from an end of each of the inner edges, a longitudinal fold line disposed between the two pairs of base edges defining a ridge in the
20 base, a pair of opposed triangular-shaped portions an apex thereof substantially coinciding with an end of each of the outer edges of the body, the apex located at substantially the same height as the wall fold line, a transverse fold line extending substantially perpendicular to the
25 longitudinal fold line between opposed walls of the body, and two opposed pairs of adjacent base portions an edge of each base portion substantially coinciding with the longitudinal fold line and an opposite edge of each base portion substantially coinciding with one of the base edges
30 whereby, in use, the storage flask can be collapsed by applying pressure to at least one of the wall fold lines wherein the base can collapse about both the transverse and longitudinal fold lines and the opposing walls of the body can be pressed together wherein the outer edges fold.



2. The storage flask according to Claim 1, wherein the base further comprises four flanges each flange starting from an inner end of each of the base edges and terminating at a mid-point of the base.

5 3. The storage flask according to Claim 1 or 2, wherein the sides of the triangular-shaped portions have in total length approximately three to four times the length of the longitudinal fold line.

10 4. The storage flask according to any one of the preceding claims, wherein an outer flange pair runs parallel to each of the outer edges and each outer flange is located at a very small distance away from each of the outer edges.

15 5. The storage flask according to any one of Claims 1 to 3, wherein each of the triangular-shaped portions adjoin each of the base edges at an angle of between 150° to 170° .

6. A storage flask substantially as herein described with reference to and as illustrated in any one or more of the accompanying drawings.

Dated this 14th day of September, 1994

20 JOH. A. BENCKISER GMBH

By Its Patent Attorneys

GRIFFITH HACK & CO

Fellows Institute of Patent Attorneys of Australia



ABSTRACT

The present invention relates to a storage flask for bulk- or pourable-materials, especially for household materials, which comprises a synthetic plastics material body with a closable pour-out opening, in which the body has a hexagonal elongated, flat cross-section with inner edges and essentially acute outer angles running out to foldable outer edges, and the base, with the formation of outer edges, is pulled inwardly upwards and possesses a foldable middle line extending longitudinally, as well as a pulled-in cross-line running transversely to it, so that each of the outer edges run out into triangular upwardly sloping flattened areas possessing sides which change over into outwardly directed rounded portions and, on the sides and parallel to the centre line, slightly offset to the inside, there are adjoining horizontal portions as base edges, which are centrally pulled up towards the cross-line, and the broad surfaces approximately at the height of the point of intersection of the sides of the triangle have at least one folding line between the inner edges.

Fig. 1

Fig. 1

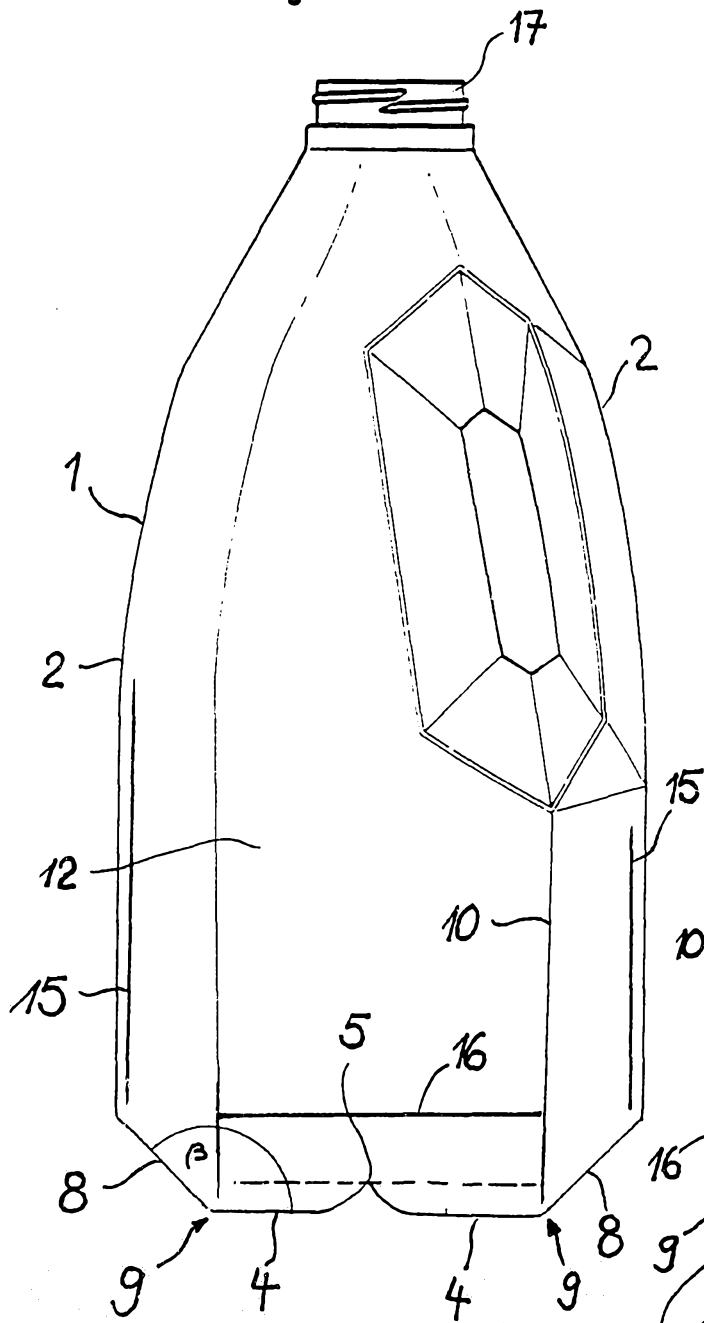
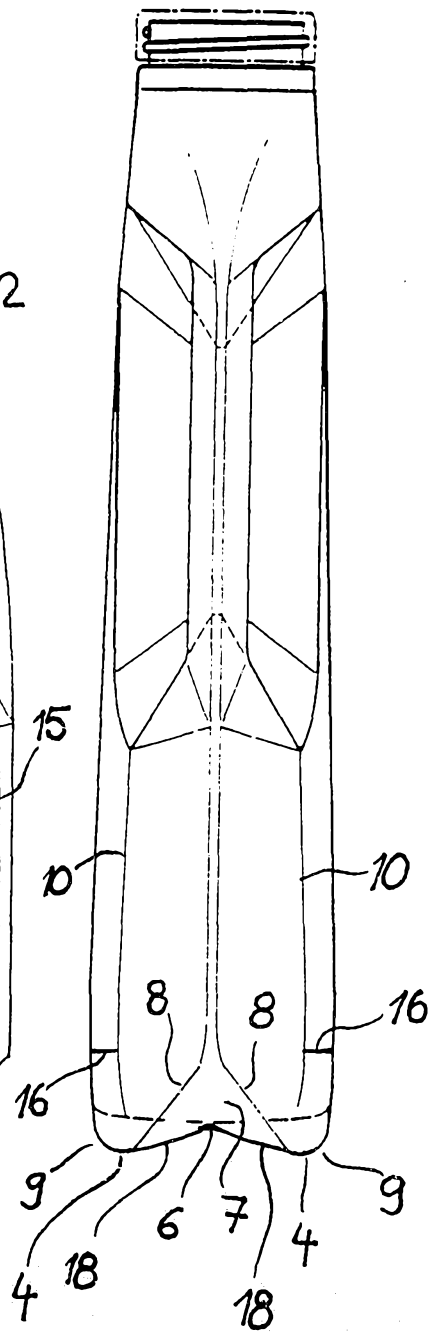


Fig. 2



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Fig. 3

