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PATENT SPECIFICATION

DRAWINGS ATTACHED

Inventor: JHI HUNG LEUNG

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COMPLETE SPECIFICATION

Improvements in or relating to Containers having Carrier Means

We, STAR INDUSTRIAL COMPANY LIMITED, a Company incorporated in Hong Kong under the companies' ordinance, of 25 Tai Yau Street, San Po Kong, Kowloon, Hong Kong, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to containers.

According to this invention there is provided a container having at opposite side wall portions thereof carrier means each comprising at least one pair of spaced lugs which extend outwardly of the respective side wall portions, transverse apertures through said lugs and bracing means extending between the two lugs of each pair. Each carrier means preferably comprises two pairs of lugs, and in addition a flexible rope strap or the like passing through the holes and being of sufficient length to form a loop by which the container may be carried. Each carrier means preferably further comprises a web member connecting the pairs of lugs to form a handle, which member has a pair of apertures therethrough, through which apertures the centre portion of the flexible member passes. The container is conveniently moulded, preferably from polyethylene and is preferably a moulded bowl having a moulded outer flange with which the lugs and said web member are integral, the said web member forming a preferably enlarged continuation of the said lugs.

The flexible member is conveniently in the form of a high density polyethylene rope which is preferably made from many filaments of high density polyethylene, preferably the same polyethylene from which the container is moulded.

The body of the container is preferably frusto-conical and is preferably stepped to increase strength.

Preferably the base of the container is provided with a plurality of ribs to hold it spaced from the supporting surface on which the container may be rested. These ribs are preferably arranged in circles and straight radiating arms. The base is also preferably provided with a number of blind apertures, which apertures may be bored through to provide a plurality of drainage holes. More of said apertures may be provided than are bored through for this purpose.

An embodiment of this invention will now be described by way of example with reference to the accompanying drawings.

In the drawings:—

Figure 1 is a side view of a container of the invention,

Figure 2 is a section on line 2—2 of Figure 1,

Figure 3 is a side view in the direction of arrow 3 of Figure 1,

Figure 4 is an underplan view of the container, and

Figure 5 is a perspective view from below.

Referring now to the drawings, the container of the invention comprises a base 11 surrounded by an upstanding side wall 12. At the upper end of the side wall 12 there is a peripheral rim 14 which is turned over at its edge 15. At diametrically opposed positions there are provided two carrier means 16. The carrier means 16 each comprise two pairs of spaced lugs which extend outwardly of the side wall 12. The lugs 17 and 18 of each pair are joined by a bracing member 19 forming a continuation of the edge 15. The inner lugs 18 of each pair extend outwardly to a greater extent than the outer lugs 17 and are connected by a web member including an enlarged flat portion 21 which forms in effect a continuation of the rim 14. A rim 22 extends around the periphery of this enlarged portion 21 forming an integral continuation of the inner lugs 18. The lugs 17 and 18 are each provided with an aperture 23 and the various apertures lie in the same

plane, which is transverse to the axial plane of the container. The enlarged portion 21 is provided with a pair of vertical apertures 24 which are re-inforced on the underside of the portion 21 by bosses 25 respectively. A rope 26 (see Figure 5) extends through the apertures being knotted outside the outermost lugs 17 and having a looped portion extending between the two apertures 24 in the portion 21. The knots 27 are provided at the end of the rope to prevent it passing through the apertures in the outermost lug.

The container is formed as a plastics moulding from high density polyethylene. The rope 26 is also made from the same material being about $\frac{3}{8}$ " in diameter and being wound from high density polyethylene filamentous yarn. The knots 27 at the end of the ropes 26 are heat sealed to ensure permanent security.

The wall 12 of the container is generally in frusto-conical shape. In fact it is formed from a plurality, three in this case, of frusto-conical co-axial sections of approximately the same cone angle, there being a step at the end of each section to the next section.

The base 11 of the container is provided with a substantial number of ribs 28 and 29 extending over the entire area of the base to support the base off the ground. These ribs 28 and 29 are about $\frac{1}{4}$ " high and $\frac{1}{8}$ " in width. The ribs 28 are in the form of five co-axial circles, the smallest circle surrounding an inner boss 31. Six radial ribs 29 extend between the inner and outer circles. At the intersection of the radial ribs 29 and the second outermost circular rib, there are provided hollow circular bosses 32. If desired the hollow bosses 32 may be through bored so that any liquid in the container may escape therethrough. Radial ribs 33 are provided near the carrier means 16 between the two outermost ribs 28.

It will be appreciated that the container may be provided with any desired number of frusto-conical sections. Similarly the base may be provided with more or less ribs and the bosses may be otherwise located.

We have found that the container described above has considerable advantages. The handle formed by the web 21 and rim 22 is easily handled. The provision of the two pairs of spaced lugs 17 and 18 together with the bracing piece 19 provide a very rigid lug support for the ends of the ropes 26 and it will be noted that by providing the aperture 24 in the portion 21, the direction of strain applied by the rope can be accurately computed so that a rigid design can easily be achieved.

The rope 26 is very tough and has a low stretchability as compared with nylon or hemp. The provision of the ropes as well as the handles enables the container to be handled both by hand and by hooks. The particular construction of the walls of the container and the base enable a very much more rigid structure to be provided at a light weight. Also the con-

tainer may be handled over rough surfaces without the base puncturing.

WHAT WE CLAIM IS:—

1. A container having at opposite side wall portions thereof carrier means each comprising at least one pair of spaced lugs which extend outwardly of the respective side wall portion, transverse apertures through said lugs and bracing means extending between the two lugs of each pair.

2. A container as claimed in claim 1, wherein each carrier means comprises two pairs of lugs, and further comprising a flexible rope strap or the like passing through the holes and being of sufficient length to form a loop by which the container may be carried.

3. A container as claimed in claim 2, wherein each carrier means further comprises a web member connecting the pairs of lugs to form a handle, which member has a pair of apertures therethrough, through which apertures the centre portion of the flexible member passes.

4. A container as claimed in any one of the preceding claims wherein the container is moulded.

5. A container as claimed in Claim 4 wherein the container is moulded from polyethylene.

6. A container as claimed in claim 3 and either claim 4 or 5 wherein the container has a moulded outer flange with which the lugs and said web member are integral, the said upper member forming a continuation of the said lugs.

7. A container as claimed in Claim 6 wherein the said web member forms an enlarged continuation of the said lugs.

8. A container as claimed in any one of the preceding claims wherein the flexible member comprises a high density polyethylene rope.

9. A container as claimed in Claim 8 wherein a high density polyethylene rope is made from filaments of high density polyethylene.

10. A container as claimed in Claim 9 wherein the rope is made from the same polyethylene from which the container is moulded.

11. A container as claimed in any one of the preceding claims wherein the body of the container is frusto-conical.

12. A container as claimed in any one of the preceding claims wherein the body of the container is stepped to increase its strength.

13. A container as claimed in any one of the preceding claims wherein the base of the container is provided with a plurality of ribs to hold it spaced from the supporting surface on which the container may be rested.

14. A container as claimed in Claim 13 wherein the ribs are arranged in circles and straight radiating arms.

15. A container as claimed in any one of the preceding claims wherein the base is provided with a number of blind apertures, which



plane, which is transverse to the axial plane of the container. The enlarged portion 21 is provided with a pair of vertical apertures 24 which are re-inforced on the underside of the portion 21 by bosses 25 respectively. A rope 26 (see Figure 5) extends through the apertures being knotted outside the outermost lugs 17 and having a looped portion extending between the two apertures 24 in the portion 21. The knots 27 are provided at the end of the rope to prevent it passing through the apertures in the outermost lug.

The container is formed as a plastics moulding from high density polyethylene. The rope 26 is also made from the same material being about $\frac{3}{8}$ " in diameter and being wound from high density polyethylene filamentous yarn. The knots 27 at the end of the ropes 26 are heat sealed to ensure permanent security.

The wall 12 of the container is generally in frusto-conical shape. In fact it is formed from a plurality, three in this case, of frusto-conical co-axial sections of approximately the same cone angle, there being a step at the end of each section to the next section.

The base 11 of the container is provided with a substantial number of ribs 28 and 29 extending over the entire area of the base to support the base off the ground. These ribs 28 and 29 are about $\frac{1}{4}$ " high and $\frac{1}{8}$ " in width. The ribs 28 are in the form of five co-axial circles, the smallest circle surrounding an inner boss 31. Six radial ribs 29 extend between the inner and outer circles. At the intersection of the radial ribs 29 and the second outermost circular rib, there are provided hollow circular bosses 32. If desired the hollow bosses 32 may be through bored so that any liquid in the container may escape therethrough. Radial ribs 33 are provided near the carrier means 16 between the two outermost ribs 28.

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The rope 26 is very tough and has a low stretchability as compared with nylon or hemp. The provision of the ropes as well as the handles enables the container to be handled both by hand and by hooks. The particular construction of the walls of the container and the base enable a very much more rigid structure to be provided at a light weight. Also the con-

tainer may be handled over rough surfaces without the base puncturing.

WHAT WE CLAIM IS:—

1. A container having at opposite side wall portions thereof carrier means each comprising at least one pair of spaced lugs which extend outwardly of the respective side wall portion, transverse apertures through said lugs and bracing means extending between the two lugs of each pair.

2. A container as claimed in claim 1, wherein each carrier means comprises two pairs of lugs, and further comprising a flexible rope strap or the like passing through the holes and being of sufficient length to form a loop by which the container may be carried.

3. A container as claimed in claim 2, wherein each carrier means further comprises a web member connecting the pairs of lugs to form a handle, which member has a pair of apertures therethrough, through which apertures the centre portion of the flexible member passes.

4. A container as claimed in any one of the preceding claims wherein the container is moulded.

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6. A container as claimed in claim 3 and either claim 4 or 5 wherein the container has a moulded outer flange with which the lugs and said web member are integral, the said upper member forming a continuation of the said lugs.

7. A container as claimed in Claim 6 wherein the said web member forms an enlarged continuation of the said lugs.

8. A container as claimed in any one of the preceding claims wherein the flexible member comprises a high density polyethylene rope.

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11. A container as claimed in any one of the preceding claims wherein the body of the container is frusto-conical.

12. A container as claimed in any one of the preceding claims wherein the body of the container is stepped to increase its strength.

13. A container as claimed in any one of the preceding claims wherein the base of the container is provided with a plurality of ribs to hold it spaced from the supporting surface on which the container may be rested.

14. A container as claimed in Claim 13 wherein the ribs are arranged in circles and straight radiating arms.

15. A container as claimed in any one of the preceding claims wherein the base is provided with a number of blind apertures, which

apertures may be bored through to provide a plurality of drainage holes. STEVENS, LANGNER, PARRY & ROLLINSON,

16. A container substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

Chartered Patent Agents,
Agents for the Applicants.

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