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(54) **Container bag.**

(57) A container bag comprises a body of flexible material and lifting loops characterised in that four lifting loops are provided in two pairs, each pair of lifting loops being loosely held together and each loop extending from near to a corner on one face to adjacent the far corner on the adjacent face. In this manner the IBC can be lifted by a fork lift truck and also, by grasping the the two pairs and pulling them together on a hook or the like, the IBC can be lifted easily from a single point.

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CONTAINER BAG

This invention relates to container bags and in particular relates to container bags for carrying loads in the range of 1/2 to 2 tonnes and known as intermediate bulk containers (IBC).

Intermediate bulk containers are increasingly employed in cargo handling and transporting situations, specially for the carriage of particulate or pulverulent material. A typical IBC will be manufactured from a fabric woven from polyolefin tape yarns and will have integral lifting loops. Examples of such containers are described in UK Patent Numbers 1591091 and 2063816. IBC's have to meet various national and international safety standards. For example it is normal to require a five-to-one safety ratio: that is, an IBC rated at one tonne should not break under a load of less than 5 tonnes.

Particularly useful IBC's of the kind described in the above mentioned patents comprise a generally square body having four lifting loops, each loop being open ended and straddling an adjacent corner. This configuration is useful since the IBC can be lifted by the tines of a forklift truck approaching any of its four faces. However, for certain handling requirements such as the loading of cargo into ships, it is convenient to be able to lift the IBC on a single point, eg. the hook of a crane, with the minimun of manual handling.

The present invention seeks to provide an IBC improved in the latter respect.

According to the present invention there is provided a container bag which comprises a body of flexible material and lifting loops characterised in that four lifting loops are provided in two pairs, each pair of lifting loops being loosely held together and each loop extending from near to a corner on one face to adjacent the far corner on the adjacent face.

This configuration gives, in effect, two lifting loops which can be entered by the tines of a forklift truck but, more importantly, can simply be brought together and attached to the hook of a crane to give a single point lift.

Since each individual loop extends from an adjacent corner to a far corner the length of webbing employed as the loop material will in general be longer than the loops employed in our above mentioned patents, typically one and a half metres of webbing will be employed for each loop.

The fabric from which the IBC of the invention is formed may be a conventional fabric for use in this type of container bag and may be woven from polyethylene or polypropylene tape yarns. Preferably, however, least the side walls of the container bag are made from a fabric having reinforced zones or areas of inter-woven reinforcing yarns, for example as disclosed in our UK Patent Number 1591091. Where such reinforcing yarns are provided, they may be as described in that patent and may be formed of inter-woven threads of higher tensile strength reinforcing yarns such as polyamide, polyester or twisted or fibrillated polypropylene. The lifting loops will then be attached to such areas. Alternatively, the lifting loops may be attached to patches attached to the lag fabric, or the IBC may be "underslung" where the lifting loops extend down the side walls and under the base of the container body. In either case the lifting loops will preferably ccomprise woven webbings of synthetic yarns, for example of the type used for car seat belts, such as polyamide or polyester webbngs, or may be ropes or hawsers of suitable strength.

The container bag of the invention may be fitted with a top and/or filling spout as well as a discharge spout as is conventional in the IBC art.

The invention will be described further, by way of example, with reference to the accompanying drawing, in which the sole figure is a diagramatic perspective view of an IBC constructed in accordance with the invention.

Referring to the drawing, an IBC generally designated (10) has side walls (12), a top (14) carrying a filling spout (16) and a base (18). In the embodiment illustrated the side walls (12) are reinforced with strips or "tramlines" (20) of additional interwoven reinforcing yarns.

Four lifting loops are provided in two pairs (22,24). Taking the pair (22), an individual loop (26) is stitched at (28) to a tramline (20) and then is taken to the far corner of the adjacent face (12a) where it is stitched at (30) to the tramline adjacent that corner. Similarly, a loop (32) extends from the back left hand face (as viewed in the drawing) to adjacent the front corner. These two loops comprise the pair (22) and are loosely attached together at (34) by means of a loose tubular fabric sleeve. Similarly, loops (36) and (38) are attached at (40) to form the pair (24). Each pair (22), (24) effectively forms one lifting loop.

In use, the IBC of the invention can be lifted in a conventional manner with the tines of a forklift truck inserted as shown by arrows A or B. However, and this is of special interest, the two loops (22) (24) can be brought together in the centre of the top of the IBC and a single hook or other lifting means put under the both of them. In this way the IBC can be lifted on a single point with very little manual manipulation. The two pairs (22) and (24) are simply grasped pushed together and the hook

put in place.

The fabric sleeve (34) is deliberately left fairly loose so that when the IBC is lifted on the loops each individual loop (26),(32),(36),(38) can slide independantly so as to facilitate the equalisation of lifting strains.

The IBC of the invention provides a simple inexpensive and easy to use way of providing a single point lift where required while retaining the facility for being lifted by a forklift truck.

Claims

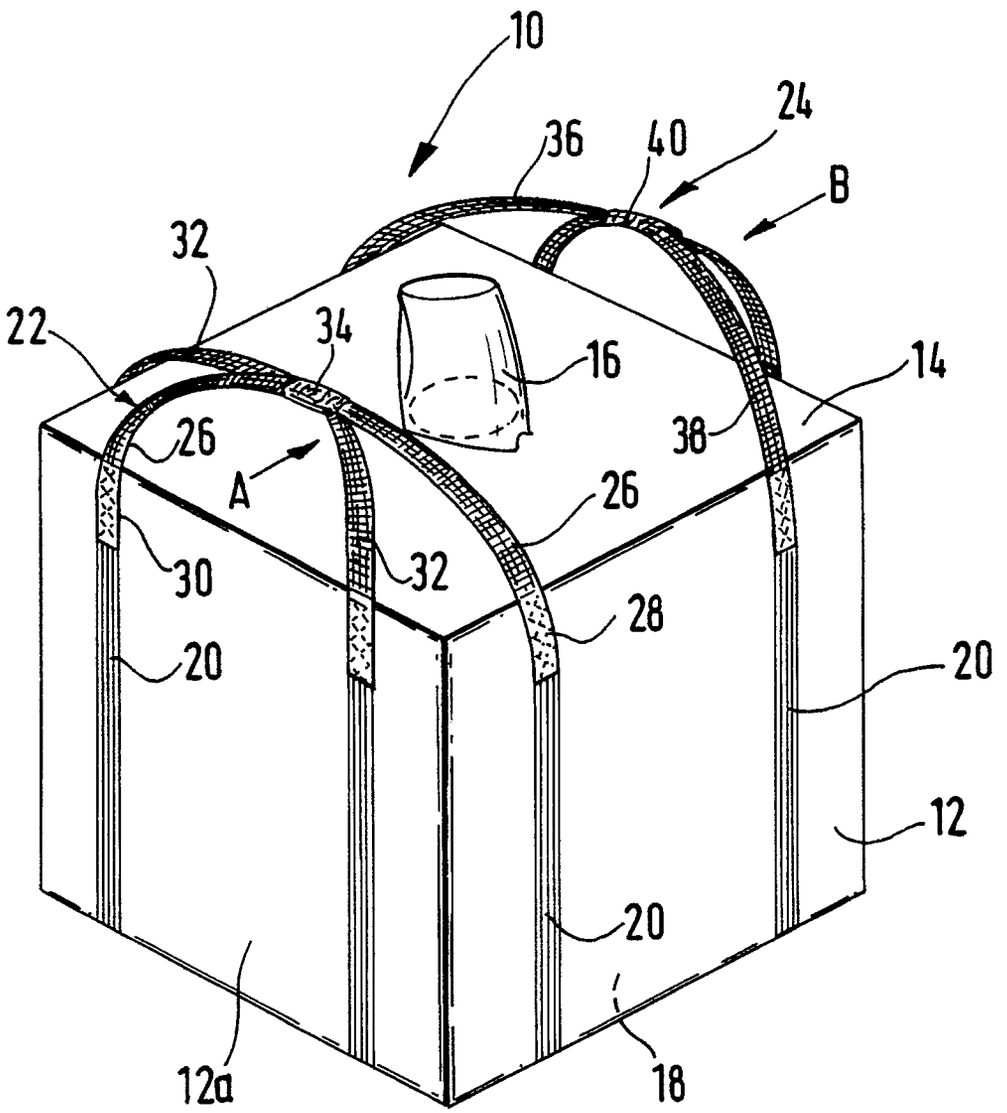
1. A container bag which comprises a body (10, 14) of flexible material and lifting loops (22, 24) characterised in that four lifting loops (26, 32, 36, 38) are provided in two pairs (22, 24), each pair of lifting loops being loosely held together (34) and each loop extending from near to a corner on one face to adjacent the far corner on the adjacent face.

2. A bag as claimed in claim 1 formed woven polyethylene or polypropylene tape yarns and having reinforced zones or areas (20) of inter-woven reinforcing yarns of higher tensile strength reinforcing material such as polyamide, polyester or twisted or fibrillated polypropylene to which the lifting loops (26, 32, 36, 38) are attached.

3. A bag as claimed in either of claims 1 or 2 in which the lifting loops (26, 32, 36, 38) comprise woven webbings of synthetic yarns, for example of the type used for car seat belts, such as polyamide or polyester webbings, or may be ropes or hawsers of suitable strength.

4. A bag as claimed in any of claims 1 to 3 in which a top (14) and/or filling spout (16) as well as a discharge spout is fitted.

5. A bag as claimed in any of claims I to 4 in which the pairs of lifting loops are loosely held together by means of a loose tubular fabric sleeve (34).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