PRODUCT-PACKAGING BAG

Bag, for packaging fruits and vegetables, which comprises a flexible tubular wrapping that accommodates the product in the central portion thereof, the two end longitudinal portions of the tubular wrapping being empty, closed and mutually and inseparably joined, said join defining a single closure zone of the bag, common to both ends of the tubular wrapping, said end longitudinal portions forming a handle for gripping of the bag and from which, when the bag is gripped, said central portion of the wrapping and, consequently, the product housed within, is suspended, the handle possibly being provided with a transverse strip that joins individual points that are contiguous to the central portion of the tubular wrapping, an arched bag portion that constitutes the handle proper being defined above the transverse strip.
Description

Technical Field of the Invention

[0001] The present invention relates to a bag for the packaging of products, preferably a mesh bag, particularly applicable to the packaging of fruit and vegetable products, such as citrus fruits or root vegetables.

Background of the Invention

[0002] A large variety of embodiments of bags for the packaging and the marketing of certain fruit products, and specifically of breathable bags intended for the packaging of fruit and vegetable products such as citrus fruits, root vegetables or the like, is currently known. Unlike conventional bags, these bags allow the product to breathe, extend its storage time and enable the buyer to inspect the appearance, touch and smell thereof.

[0003] This type of bag is usually manufactured from a flexible, continuous tubular sheet, preferably made of weldable material, generally in mesh form, which is transversely cut to form portions of tubular mesh. In the process of packaging the product, the end mouths of these portions of tubular mesh are separately closed by means of staples or by heat-welding, which operation requires the sufficient supply of heat from the outside for the fusion of the material forming the tubular mesh, the product being contained inside the tubular mesh without the possibility of coming out of its inside as the end mouths of said tubular mesh are closed. Occasionally, the continuous tubular mesh from which successive portions of tubular mesh are obtained is formed from a planar sheet of mesh the longitudinal edges of which are attached by heat-welding to form the actual tubular mesh.

[0004] To carry out the closing of the end mouths of the portions of tubular mesh by heat-welding, bands of heat-weldable material in pairs, applied on respective faces of the tubular mesh in each end thereof, are conventionally arranged, which bands are subsequently attached by heat-welding, the end portion of the tubular mesh being partially melted and embedded between the two bands of one and the same pair. In some variants of bags, the bands applied at the opposite ends of one and the same face of the tubular mesh are attached without interruption and optionally fixed by points to the corresponding face of the tubular mesh.

[0005] Also in the cases in which the continuous tubular mesh is formed from a planar sheet of mesh the longitudinal edges of which are attached by heat-welding, a band of heat-weldable material is applied along the line of attachment between both longitudinal edges, overlapping them to assure the correct attachment between them by the overlap of the actual planar sheet of mesh with the heat-weldable band.

[0006] What can be highlighted is that known bags need the incorporation of external elements, such as the staples or the bands of heat-weldable material described above, to carry out the closing of the upper and lower mouths of the tubular mesh.

[0007] In addition and due to the nature of the packaged product, the bags obtained have a considerable weight, therefore providing said bags with holding and transport means which allow gripping the bag as comfortably as possible is required.

[0008] Traditionally, to provide this type of bag with holding means, it has been chosen to incorporate to the bag an external element, such as a detachable handle, in a longitudinal end of the bag, supported by the staples or by the bands of heat-weldable material necessary for the closing of the tubular mesh.

[0009] An example of this type of embodiments is described in patent document EP405595, in which the holding means of the bag comprise a transport handle with a general inverted U shape, located between the inner faces of the walls of the bag. An alternative similar to said solution is described in Spanish utility model number U1050533, which describes a bag comprising an elongated strip of heat-weldable material, the ends of which are firmly secured in one of the ends of the bag and solidly fixed thereto by heat-weld points, such that said elongated strip determines a handle for gripping and holding the bag.

[0010] An alternative to the detachable handles consists of making oblong or circular holes, suitable for allowing the passage of two or more fingers of the person carrying the bag, at the free end of the bands which, attached by heat-welding and applied in respective faces of the tubular sheet, are incorporated for the closing of the upper end of the bag, as described for example in Spanish utility model number U8801019.

[0011] The described solutions have in common that the holding means are supported in or formed by elements external to the tubular mesh, which involves an extra cost in the manufacture of the bags in terms of material and additional operations.

[0012] Another drawback of the described bags is that the holding means are arranged in one of the longitudinal ends of the bag, which makes it difficult to access it when the bag is supported at rest on a flat surface. Indeed, since the bags have an oblong configuration, more elongated than narrow, they adopt a horizontal position, supported on a side of the tubular mesh, when they are left on a support surface such as a shelf for example.

[0013] An alternative to attempt to remedy this latter drawback is described in Spanish utility model U1027615, which discloses a mesh bag comprising a central body carrying the products to be contained and having longitudinally arranged a narrow strip of strong synthetic material, welded at its ends to the ends of the mesh bag according to the actual closing welds thereof, means for holding the bag like a longitudinal handle being determined. Although the strip or band with a small width forms a longitudinal handle, unlike what is known by documents EP405595, U1050533 or U8801019 which use handles in a transverse arrangement and arranged at an
end of the bag, this solution still does not solve the problem of different elements for manufacturing the bag and the actual handle still being required.

[0014] Another drawback common to the described bags is the little comfort conferred by a detachable handle formed by a generally narrow and flexible strip, or formed by the perforated bands, used for the closing of the upper end of the bag, since the weight of the packaged products is distributed over a small effective gripping surface when the bag is transported.

Disclosure of the Invention

[0015] The bag of the invention is intended for the packaging of fruit and vegetable products and is essentially characterized in that it comprises a flexible tubular wrapping housing the product in its central portion, the two end longitudinal portions of the tubular wrapping being empty, closed and attached mutually and inseparably, said attachment determining a single closing area of the bag common for both ends of the tubular wrapping, the mentioned end longitudinal portions forming a handle intended for gripping the bag and from which, when the bag is gripped, the mentioned central portion of the wrapping, and consequently the product housed therein, is suspended.

[0016] Advantageously, with this feature the bag is provided with a handle formed by the actual material forming the tubular wrapping, without needing to add external elements or detachable handles, as occurs in the bags known to date.

[0017] Furthermore, since the handle is formed by a compactable portion of the material forming the tubular wrapping in its end longitudinal portions, the handle has a certain thickness and the bag can be gripped more comfortably.

[0018] According to another feature of the invention, at least in the closing area the two end longitudinal portions of the tubular wrapping are constricted and juxtaposed.

[0019] According to another feature of the invention, the end longitudinal portions are tightened in respective points contiguous to the central portion of the tubular wrapping, determining respective ends of the handle.

[0020] In an embodiment of particular interest, the handle is provided with a transverse strip attaching respective points contiguous to the central portion of the tubular wrapping, an arched bag portion forming the actual handles being determined above the transverse strip.

[0021] According to a variant of the invention, one of the ends of the transverse strip is attached to the handle in the single closing area of the bag, the arched bag portion forming the handle being formed by one and the same end longitudinal portion of the tubular wrapping.

[0022] According to another feature of the mentioned embodiment, the rigidity of the transverse strip is sufficient to maintain the points of attachment with the handle separated when the bag is at rest and rests supported on a shelf or the like.

[0023] Preferably, the transverse strip is arranged in relation to the wrapping such that the end edges of the transverse strip are folded over themselves, surrounding at least partially and tightening a corresponding section of the tubular wrapping.

[0024] According to another feature of the invention, the mentioned end longitudinal portions of the tubular wrapping are attached to one another by means of stitching, stapling or the like.

[0025] According to an embodiment of the invention, the tubular wrapping is formed from a plastic material and the two end longitudinal portions of the tubular wrapping are attached to one another by welding.

[0026] In a preferred embodiment, the tubular wrapping is formed from a plastic material and the two end longitudinal portions of the tubular wrapping are attached to one another and to the transverse strip by the fusion of the actual material forming the tubular wrapping and the transverse strip.

[0027] Preferably, the tubular wrapping is formed by an extruded-type or woven tubular mesh.

Brief Description of the Drawings

[0028] The attached drawings show, by way of a non-limiting example, three different embodiments of the bag according to the invention. Specifically:

Figure 1 shows a bag formed by a tubular wrapping the end longitudinal portions of which are attached by means of gluing or stitching;

Figure 2 shows a breathable bag in which the tubular wrapping is formed by a woven tubular mesh of plastic material, the end longitudinal portions of which are attached by means of welding, by the fusion of the actual material forming the tubular mesh;

Figures 3 and 4 show another embodiment of a bag according to the invention, provided with a transverse strip tightening the wrapping and above which the handle of the bag is formed; and

Figure 5 shows another alternative variant of a bag according to the invention.

Detailed Description of the Drawings

[0029] Figures 1 to 3 depict respective bags 1 for the packaging of fruit and vegetable products 4 which comprise a flexible tubular wrapping 2 housing the product 4 in its central portion 3.

[0030] It can be observed in Figures 1 to 3 that the two end longitudinal portions 5 and 6 of the tubular wrapping 2 are empty, closed and attached mutually and inseparably along a single closing area 7 of the bag 1, common for both end mouths of the tubular wrapping 2. This closing area 7 is intended in all the cases for the gripping of the bag 1, such that the rest of the bag 1, and especially the central portion 3 of the tubular wrapping 2 forming it,
as well as the product 4 housed therein, are suspended from the closing area 7 when the bag 1 is gripped by a user.

In the example of Figure 1, the tubular wrapping 2 is formed from a material such as cloth, plastic, leather or paper and the two end longitudinal portions 5 and 6 of the wrapping are gathered compacted and juxtaposed along a section 15, and inseparably attached along an attachment area 7, sufficient to form an elongated, tightened and narrow closing area determining a handle 7a. The end longitudinal portions 5 and 6 are attached in this example by means of a series of staples 11.

In the example of Figure 2, the tubular wrapping 2 is formed from a material such as cloth, plastic, leather or paper and the two end longitudinal portions 5 and 6 of the wrapping are gathered compacted and juxtaposed along a section 15, and inseparably attached along an attachment area 7, sufficient to form an elongated, tightened and narrow closing area determining a handle 7a. The end longitudinal portions 5 and 6 are attached in this example by means of a series of staples 11.

In this example, with the tubular wrapping 2 being formed from a plastic material, the two end longitudinal portions 5 and 6 are as in the previous case gathered, compressed and put together along a section 15 sufficient to form a handle 7a, but in the example depicted in Figure 2 the gathered end longitudinal portions 5 and 6 are attached along an attachment area 7 by welding. It must be stated that the end longitudinal portions 5 and 6 can be put together along the section forming the handle 7a either by the juxtaposition of both portions, previously constricted in a disorderly manner or folded over themselves, preferably along longitudinal fold lines, in an intertwined manner or by means of the introduction of a end longitudinal portion 5 or 6 in the other end longitudinal portion 6 or 5, both portions being compacted or constricted in a disorderly or orderly manner before or after the operation of introduction of a first portion in the second portion, simultaneously or separately.

The attachment by welding can be carried out by the fusion of the actual material forming the tubular wrapping 2, i.e., by the fusion of the tubular mesh along the attachment area 7 without using external element for such purpose. In this case, in a preferred manner, the fusion of the material forming the wrapping would occur by means of the application of ultrasounds.

Both in the example depicted in Figure 1 and in the example of Figure 2, the bag 1 obtained incorporates a handle 7a formed by the actual material forming the tubular wrapping 2, preventing having to add detachable handles as occurs in the bags known to date, and even preventing the use of external elements to perform the closing of the longitudinal ends 5 and 6 of the tubular wrapping 2, as occurs in the bag 1 according to the example of Figure 2. Furthermore, since the handle 7a is formed by a compact, tightened mass of the material forming the tubular wrapping 2, the handle 7a is provided with a certain thickness and the bag 1 can be gripped more comfortably by the carrier.

In the embodiment depicted in Figures 3 and 4, in which the wrapping is formed by a plastic tubular mesh, it is seen that the handle 7a is provided with a strip 16, preferably bearing identifying and/or advertising legends and graphics, arranged taut between two points to opposite areas of the handle 7a, both contiguous to the central portion 3 of the tubular wrapping 2. The transverse strip 16 is advantageously made integral with the tubular wrapping 2 by means of welding, being able to simultaneously carry out the mutual attachment between the two end longitudinal portions 5 and 6 along the attachment area 7, and the attachment between such portions and the transverse strip 16 when the latter is applied or surrounds the mentioned attachment area 7, as depicted in the embodiment of Figures 4 and 5.

In the context of the invention, the attachment area 7 can be short, being formed for example by a mere transverse weld segment, or can be more elongated, being formed by several separated transverse weld segments or by respective juxtaposed or overlapped sections of the end longitudinal portions 5 and 6 mutually attached by thermofusion.

It is seen in Figures 3 and 4 that one of the ends of the transverse strip 16 is attached to the handle 7a in the single closing area 7 of the bag, the arched bag portion intended to be gripped by the user being integrally formed by the end longitudinal portion 6 of the tubular wrapping 2.

It must be observed that if the transverse strip 16 is rigid or semi-rigid, the points of attachment of the transverse strip 16 with the handle 7a are maintained separated at a predetermined distance, such that the arched bag portion is upright, facilitating its gripping when the bag is supported on a shelf or the like. This effect would be smaller in the event that the transverse strip 16 were formed from a material which is ductile in excess, which could be easily deformed when the bag rests on a shelf or the like.

The length of the transverse strip 16 can vary. However, it is possible to select a length such that, once attached to the tubular wrapping 2 forming the handle 7a, when said transverse strip 16 is tensed the separation distance between the two branches 7a is comprised between approximately 50 mm and approximately 150 mm, so that the handle 7a can be comfortably gripped by a user. In the embodiment depicted in Figures 3 and 4, it is furthermore observed that by selecting a suitable length, the transverse strip 16 can be arranged in a vertical plane when the bag 1 is gripped.

Preferably, the end edges 14 and 15 of the transverse strip 16 are folded over themselves surrounding at least partially and tightening the tubular wrapping
2 in respective points A and B contiguous to the central portion 3 of said tubular wrapping 2. In this case, the mentioned points are actually formed by sections of tubular wrapping 2. It is thus achieved that the section or sections of the tubular wrapping 2 forming the mentioned arched portion of the handle 7a is maintained without expanding transversely, adopting an ergonomic compact shape, like a rope, and which facilitate its gripping. The handle 7a can be provided with different finishes by varying the length of the constricted sections.

[0042] In the variant of Figure 5, the tubular wrapping 2 is likewise tightened in two points A and B contiguous to the central portion 3, but unlike the bag of Figures 3 and 4 said points are not attached by one and the same transverse strip, but rather the wrapping 2 is tightened by means of independent elements 12 and 13, the configuration of which can vary according to the length of the sections to be tightened of the tubular wrapping 2.

[0043] The possibility of dispensing with strips or independent elements for tightening the wrapping 2 is furthermore contemplated, since a similar effect can be achieved by means of the compression and welding of the tubular wrapping 2 along respective points, or sections, A and B contiguous to the central portion 3. In any case, the handle 7a can be provided with a more compact shape, its transverse expansion being prevented, by varying the length and proximity of the mentioned points A and B.

[0044] Despite the fact that in the variant of Figure 5 the attachment of the element 12, formed in the example by a short strip portion, to the handle 7a coincides with the attachment area 7 between the end longitudinal portions 5 and 6, the possibility that this is not so is also contemplated.

[0045] Naturally, the tubular wrapping 2 forming the bags 1 described above can be obtained from originally planar sheets, attached along the longitudinal edges thereof. In this sense, and in the event that the tubular wrapping 2 is formed by a tubular mesh, the latter can be a seam-free extruded mesh or can be formed from a planar woven mesh, with its longitudinal edges attached by heat-welding for example.

Claims

1. A bag (1) for the packaging of products, particularly applicable to the packaging of fruit and vegetable products, characterized in that it comprises a flexible tubular wrapping (2) housing the product (4) in its central portion (3), the two end longitudinal portions (5 and 6) of the tubular wrapping being empty, closed and attached mutually and inseparably, said attachment determining a single closing area (7) of the bag common for both ends of the tubular wrapping, the mentioned end longitudinal portions forming a handle (7a) intended for the gripping of the bag and from which, when the bag is gripped, the mentioned central portion of the wrapping, and consequently the product housed therein, is suspended.

2. The bag (1) according to claim 1, characterized in that at least in the closing area (7) the two end longitudinal portions (5 and 6) of the tubular wrapping (2) are constricted and juxtaposed.

3. The bag according to claim 1 or 2, characterized in that the end longitudinal portions (5, 6) are tightened in respective points (A, B) contiguous to the central portion (3) of the tubular wrapping, determining respective ends of the handle (7a).

4. The bag according to claim 1 or 2, characterized in that the handle (7a) is provided with a transverse strip (16) attaching respective points (A, B) contiguous to the central portion (3) of the tubular wrapping (2), an arched bag portion forming the actual handle being determined above the transverse strip.

5. The bag according to claim 4, characterized in that one of the ends of the transverse strip (16) is attached to the handle (7a) in the single closing area of the bag, the arched bag portion forming the handle (7a) being formed by one and the same end longitudinal portion (5 or 6) of the tubular wrapping (2).

6. The bag according to claim 4 or 5, characterized in that the rigidity of the transverse strip (16) is sufficient to maintain the points of attachment with the handle (7a) separated when the bag is at rest and rests supported on a shelf or the like.

7. The bag according to any one of claims 4 to 6, characterized in that the end edges (14, 15) of the transverse strip (16) are folded over themselves, surrounding at least partially and tightening a corresponding section of the tubular wrapping (2).

8. The bag according to the previous claims, characterized in that the mentioned end longitudinal portions (5 and 6) of the tubular wrapping (2) are attached to another by means of stitching, gluing, stapling or the like.

9. The bag according to claims 1 to 7, characterized in that the tubular wrapping (2) is formed from a plastic material and the two end longitudinal portions (5 and 6) of the tubular wrapping are attached to one another by welding.

10. The bag according to any one of claims 2 to 6, characterized in that the tubular wrapping (2) is formed from a plastic material and the two end longitudinal portions (5 and 6) of the tubular wrapping are attached to one another and to the transverse strip.
(16) by the fusion of the actual material forming the tubular wrapping (2) and the transverse strip (16).

11. The bag according to any one of the previous claims, characterized in that the tubular wrapping (2) is formed by an extruded-type or woven tubular mesh (2).
### INTERNATIONAL SEARCH REPORT

**International application No**

PCT/ES2010/070113

#### A. CLASSIFICATION OF SUBJECT MATTER

**INV. B65G30/06**

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

**Minimum documentation searched (classification system followed by classification symbols)**

B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

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REFERENCES CITED IN THE DESCRIPTION

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