(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 382 951 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **89201337.6**

(51) Int. Cl.5: **B65D 88/16**

(22) Date of filing: **25.05.89**

(30) Priority: **06.02.89 ES 8900347 U**
06.02.89 ES 8900417

(43) Date of publication of application:
22.08.90 Bulletin 90/34

(84) Designated Contracting States:
AT BE CH DE FR GB GR IT LI NL SE

(71) Applicant: **CONDEPOLS, S.A.**
Ramirez de Arellano, s/n
E-28043 Madrid(ES)

(72) Inventor: **Pascual Alos, Ramón**
Avda. Andalucia, 12-5D
Alcala la Real (Jaén)(ES)
Inventor: **Bravo Morales, José**
Alferez Utrilla, 53
Alcala la Real (Jaén)(ES)

(74) Representative: **Ungria Lopez, Javier et al**
Avda. Ramon y Cajal, 78
E-28043 Madrid(ES)

(54) Method for manufacturing a flexible material container for transporting and storing products in bulk.

(57) The method for manufacturing a flexible material container for transporting and storing products in bulk includes the operations of forming and stitching the container which is to be made, from a flat or tubular rectangular sheet (1) of suitable material (fabric and/or plastic.) As of this sheet, by means of a series of folds, a square or rectangular bottom is obtained for the respective container (C1), in terms of the distance between the stitching reference points; this all without effecting any cut upon the corresponding sheet. The bottom may or may not be affected by an intermediateseam, while the container may or may not be affected by side seams.

A top feed opening is shaped in the container and the mouth can be open all along the container, or there may be access only through the end areas of the sides, upon the top edge forming a suspension handle being closed.

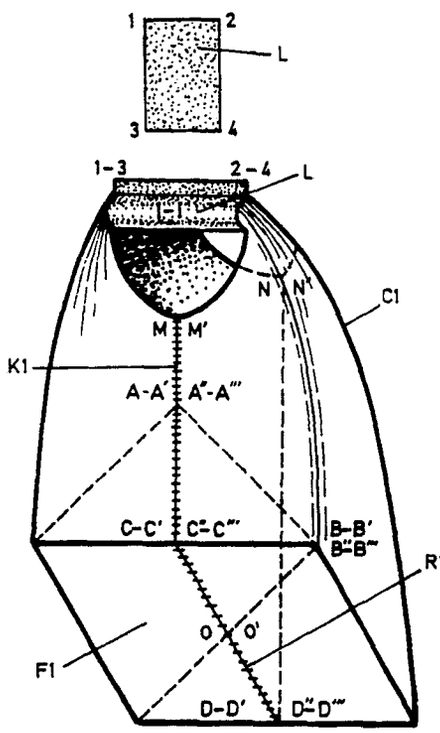

FIG.3

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OBJECT OF THE INVENTION

The invention refers to a method for forming a flexible material container for transporting and/or storing products in bulk (grains, fertilizers, , vegetables, etc.)

The container obtained according to the method of the invention has a square or rectangular bottom, forming a perfectly stable base when it is full of a product.

Said container can be obtained from a single rectangular sheet; or else from two identical duly superimposed sheets; and it even may be obtained from a tubular portion. In any case, it is necessary to fold certain parts to form tge container with its square or rectangular bottom.

BACKGROUND OF THE INVENTION

Generally, the handling of products in bulk, such as fertilizers, grains, flour, etc. be it for the transporting, storing, distributing and/or selling of the same requires some fabric or plastic sacks which are normally of a small capacity (25, 50, 100 kg.), all of which requires considerable labourers or in the best of cases a large loss of time in the moving of the numerous sacks necessary for containing large amounts of products in bulk such as the ones indicated.

For the purpose of eliminating to a large degree manpower or labourers, or in the best of the cases to reduce the time required for the handling of large amounts of products in bulk, presently large highly tough fabric sacks have been used which, of course, are handled for their loading and unloading by cranes or similar means so that by means of this technique it is possible to rationalize and cheapen the handling, transporting and storing of said products in bulk.

The above cited large capacity sacks, in general terms, can be said to consist of three basic parts or systems:

1) Suspension or support system
2) Container system
3) Sealing system

With regard to the first system, the so-called suspension or support system, the same can be made up of of highly tough tape strips, with strings, with strips formed of the same fabric, by handles called "loops" and which can be made out of the same material of the container or with pallet coupled to the bottom of the sack or container.

The function of this system is to make it possible to handle the sack once it is full of the corresponding product.

As to the container system, the same is made up of a highly resistant fabric upon which the load rests.

Finally, the sealing system, although it is not always necessary, when it is necessary it will consist of a film bag inserted inside the fabric.

Now then, given the large capacity of said containers, they need to have a good base; in other words, that their support base forms, once the container is full, a flat form. This flat base is obtained by means of cuts of the fabric which once they are stitched in the convenient manner form generally square or rectangular bottoms.

Examples of shaping of container bottoms, applying cutting methods for forming them, are in Spanish utility model 289577 of (31-8-84) filed by Norsk Hydro A.S. and French patents 2517280 of (1-12-1981) filed by Boussac Saint-Freres-FR and 2356569 of (27-6-1977) filed by Norsk Hydro.

These cuts to form the bottom of the container imply material wastes which raise the cost of the container and at the same time hinder and, in most cases, prevent the automatic manufacture of the container.

On the other hand, when a sealing system is sought by means of film bags, they require a bottom or base which adapts to the one of the container in order to prevent cavities which prevent the good setting of the container; and, at the same time, they require inflating or filling with air of the container to adapt to the geometric shape of the bottom of the container.

DESCRIPTION OF THE INVENTION

Now then, taking all these inconveniences into account, the invention proposes a method for obtaining the forming of a base of a flexible material container from a flat or tubular sheet made out of fabric, plastic or the like, by means of a series of folds, as will be indicated in this specification, obtaining a bottom or support base which is square or rectangular; with or without a closing seam in said bottom. Thus, by means of this method the cited inconveniences are solved effectively and advantageously, starting from a suspension system which can be adapted to conventional ones, the basic advantages of this method of formation are:

1st.) That starting with a rectanqular sheet made out of fabric, plastic or both combined, has the particular feature that for the forming of the base, either of a square or rectangular shape, no type of cut is necessary in said sheet.

2nd.) With the applying of the method a base is attained in the container which makes it

possible to stitch the film bag, when the former requires sealing, with which a perfect fixing of said bag to the container is obtained and at the same time it avoids the operation of inflating the bag to adapt it to the container.

3rd.) Due to the fact that for the forming of the bottom of the container, it is not necessary to make any type of cut in the original sheet, we can make in said sheet any type of design in order to suspend the container.

4th.) The method of forming the bottom of the con tainer is perfectly valid to be done with sheets of fabric, plastic or the like, of a tubular shape.

5th.) Given that for the applying of the method of forming the bottom of the container, be it from flat or tubular fabric and/or plastic sheets, it is not necessary to make any type of cut; material waste is avoided and at the same time weak points are avoided, since the cuts have to be stitched and the more seams a bottom has the more working points appear in it, increasing the risk of breakage.

Finally, it should be said that the feed opening corresponding to the container is formed by the open sides shaped at both sides of the suspension area for flat fabric; or else, by fusion cutting perpendicular to the suspension area for tubular fabric.

In order to complement the description which is going to be made hereinafter and for the purpose of providing a better understanding of the features of the invention, the present specification is accompanied by a set of drawings, whose figures represent the following:

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 - It shows a view in development of the sheet from which the container object of the invention is made, it being possible to clearly see that from the central axis whose lined area is for suspension, the folding or superposition of the parts of the sheet which are formed at both sides of the central axis has to be effected and been stitched to form the container itself.

Figure 2 - It shows a general perspective view of the container obtained from the sheet represented in figure 1, it being possible to see the flat rectangular shape of the bottom.

Figure 3 - It shows the same container of the previous figure, with the suspension area formed by gathering of the top part, the gathered part being that which remains clasped by a fastening portion to form said area or suspension handle of the container.

Figure 4 - It shows a view in development of another sheet similar to the one of figure 1 in order to obtain another container from the same, varying from the first one in the way of effecting the folding.

Figure 5 - It shows a general view in perspective of the container obtained from the sheet represented in figure 4.

Figure 6 - It shows a view in development of two sheets from which a container can also be obtained, based on the same principles as those on which the containers referred to in the above figures are based.

Figure 7 - It shows a general view in perspective of the container obtained from the two sheets represented in figure 6.

Figure 8 - It shows a view in development of a tubular sheet from which another container also based on the same principles is obtained.

Figure 9 - It shows a perspective view of the container obtained from the sheet or tubular portion represented in figure 8.

Figure 10 - It shows the same container of the previous figure with the handle or suspension area formed.

Figure 11 - It shows a view of another tubular sheet different from the one of figure 8 from which another container is obtained.

Figure 12 - It shows the container obtained from the sheet or tubular portion represented in figure 11.

Figure 13 - It shows a perspective view of the container obtained from the sheet represented in figure 1, but using a variant in the forming steps, as will be described later on.

Figure 14 - It shows the same container of the previous figure with the handle or suspension area formed.

DESCRIPTION OF EXAMPLES OF PREFERRED EMBODIMENTS

As can be seen in the figures alluded to, the method of the invention has the purpose of obtaining a container with a square or rectangular bottom or support base which, when said container is full, is a perfectly stable base. Likewise, the method has the purpose of obtaining a container from a sheet, be it flat or tubular, and in any case made out of fabric, plastic or the like, all of this without it being necessary to make any cut to obtain said square or rectangular bottom, which may or may not have a seam.

Now then, now going on with the description of the way of obtaining the represented container or containers, also based on the same principles, figure 1 shows a sheet to obtain precisely one of the containers of the invention. In other words, the container object of the invention is made from a sheet (1) of suitable material, be it fabric, plastic or the like. As is seen in said sheet (1) there is no

type of cut to form the bottom (F1) of the container shown in figures 2 and 3. Now then, to obtain the forming of the container (C1) shown in figures 2 and 3, it suffices to fold the sheet shown in figure 1 along the central axis (I-I′) in such a way that points (A-A′), (C-C′), (O-O′), (D-D′) and (B-B′) are made to coincide, and the edges formed by said points are later stitched. Logically, if a film bag is introduced between the edges formed by points (C-D) and (C′-D′) prior to the stitching, this bag will remain fixed to the bottom of the container, between said points.

Then the vertex (B-B′) is taken inside up to the coinciding points (B″-B‴), in such a way that the points (D″ with D) and (D‴ with D′) are made to coincide, and subsequently, it is stitched from the common point (D″-D-D‴-D′) to point (N-N′,) the side remaining closed.

In the same way the other side formed by the superposition of points (M-M′), (A″-A‴), (C″-C‴) and (A-A′) would be stitched, taking inside the vertex (A-A′) up to the coinciding points (A″-A‴), in such a way that points (C″ with C) and (C‴ with C′) coincide forming the seam (K1.)

The filling area of the container (C1) remains defined by the areas of the unstitched sides, included by the coinciding points (N-N′) and (M-M′) and the folding axis (I-I′.)

Figure 2 shows in perspective the forming of the container (C1), according to the above cited process, wherein the forming of a square bottom stands out as a preponderant factor, making equal divisions in the bottom (A-A′/C-C′) = (C-C′/O-O′) = (O-O′/D-D′) = (D-D′/B-B′); or a rectangular bottom making (A-A′/C-C′) = (D-D′/B-B′) and different from (C-C′/O-O′) = (O-O′/D-D′); and always from a sheet of fabric, plastic or the like without effecting any type of cut in it and with a seam (R1) in said bottom (F1.)

The suspension area remains comprised by the lined fringe of figure 1, which after the gathering of the material base in a point, subsequently it is clasped by an independent flat sheet (L), of suitable dimensions (according to the detail of figure 3), of identical or different technical features to the material base; and that stitched by its free edges (1-2 and 3-4), once superimposed, gives rise to the "loop" or suspension point, just as is shown in figure 3.

If we start from the rectangular sheet (1′) of fabric, plastic or the like, represented in figure 4 and applying the same process cited above, but leaving the axis (I-I′) as the base upon which we fold the sheet, in figure 5 it is seen how the container (C1′) is formed with a square or rectangular base without having made any prior cut in the sheet and without any type of subsequent stitching to give form to said bottom of the container; and with the particular feature that the opening remains open, with which we can adopt any type of design for the suspension and filling of the container.

Now then, in order to obtain the forming of the container (C1′) we fold the sheet (1′) of fabric, plastic or the like, in such a way that the points (A-A′), (B-B′), (E-E′) and (F-F′) are made to coincide. Then, the vertex defined by (I′) is made to coincide inside with the coinciding points (F-F′), subsequently we make points (D′) and (D″) coincide outside with point (D.) Then, it is stitched from the connection of the points (D), (D′) and (D″) up to the point formed by the superposition of points (M′) and (N′), the edges closing at the sides.

In the same way the other side formed by the superposition of points (A-A′), (M-N), (E-E′) and (C′-C″) would be stitched, taking inside the vertex (I) up to the coinciding points (E-E′) in such a way that we make points (C′), (C″) and (C) coincide outside.

If the process is followed it is observed that a container (C1′) is formed with an open opening, opening which can be used for any type of design of suspension and filling of the container. At the same time it is shown that the bottom of the container (C1′) represented in figure 5 is formed without any type of seam in it. Just like the container (C1) represented in figures 2 and 3, in this case a square or rectangular bottom can also be obtained with no more than changing the distances between the stitching reference points, applying the forming principles described previously for said figures 2 and 3.

If we start with two equal sheets (2) of fabric, plastic or the like, represented in figure 6, and after the superposition of the sheets in such a way that we make the points identified by the same letter coincide and following the manufacture operations indicated to obtain the container represented in figure 2 from the development of figure 1, the container (C2) represented in figure 7 is obtained. A container which may have the bottom square or rectangular according to the principles explained for the container of figure 2, and with the opening open, opening which can be used for any type of design of suspension and filling of the container.

If we use tubular sheets (3) or (3′) of fabric, plastic or the like, the design of the container object of the invention allows us two possibilities when transmitting stress when the latter is working, in other words, full and suspended; one in direction of the warp (see figures 8 and 9) and the other in the direction of the weft (see figures 11 and 12). In said figures 8 and 11 the arrow X represents the direction of the warp; while the arrow Y represents the direction of the weft.

If we center ourselves on figure 11, we see that it is a tubular sheet (3′) which may be of fabric,

plastic or the like. Now then, to obtain the formation of the container (C3′) of figure 12 we refer back to what has been explained above for figures 1 and 2, since if we center ourselves on them we clearly see that when we fold the rectangular piece at the axis (I-I′), we obtain a bottom in figure 4 identical to the one of figure 11 and a suspension in figure 1 identical to that of figure 12.

If we wish to obtain the container (C3) object of the invention from the tubular sheet (3) of fabric, plastic or the like, as is represented in figure 6, and in order to avoid side seams for the formation of the bottom of the container which would reduce the diameter of said base, it is necessary to proceed as follows:

If the process is followed, it is observed that that a container (C3) is formed, according to figure 9, with the opening open, an opening which can be used for any type of design of suspension and filling of the container. Equally and by the same criteria explained above in this specification, for flat sheets of fabric, plastic or the like; with tubular sheets of identical technical characteristics, we can obtain square or rectangular bottoms, with no more than changing the stitching reference points. Now then, if we want to obtain the container (C3) represented in figure 9, which is assumed to be full, from a tubular sheet according to figure 8, it suffices to take inside the vertex (C) up to the coinciding points (O-O′), in such a way that point (E) occupies the initial position of (C) and that the coinciding points (A-A′) clasp outside (E) and we begin the stitching; before starting to stitch to point (O-O′-C) we repeat the process with the other end, taking inside the vertex (D) up to the coinciding points (O-O′) in such a way that the point (F) occupies the position of point (D) and that the also coinciding points (B-B′) clasp outside point (F) in its new position, then continuing to finish the stitching of the seam.

In this case we can also insert a film bag between the coinciding points (B-B′) and (A-A′) and stitch it simultaneously to the seam of the bottom (F3) of the container. Logically, if the vertices (C) and (D) are taken inside at an equidistant distance from (O-O′) and the above explained forming process is followed, the shape of the bottom of the container would be rectangular with the seam (R3) in the same.

Equally and by the same above explained criterion, for flat sheets of fabric, plastic or the like, with tubular sheets of identical technical characteristics, we can obtain square or rectangular bottoms, with no more than changing the distances of the stitching reference points. To form the suspension of the container, as is shown in figure 10 the edges (M-N and M′-N′) are stitched superimposed and subsequently the stitched parts are gathered over the central axis of the container. Then, we clasp the whole with the independent material sheet (L), with suitable dimensions, of identical or different technical characteristics to the material base; which is stitched at its free superimposed edges, as has been indicated above (see detail along with figure 3), forming the "loop" or suspension point. The feed opening remains defined by fusion cuts, which are unstitched (M-M′/K and N-N′/K′.)

Logically, this form of forming the bottom in tubular sheets is perfectly applicable for flat sheets of fabric, plastic or the like (see figures 13 and 14.)

In effect, if we center on figure 1, the first thing that is done is the folding of the sheet by the central axis (I-I′) in such a way that we make points (B-B′), (D″-D‴), (B″-B‴), (N-N′), (D-D′), (O-O′), (C-C′), (A-A′), (C″-C‴), (A″-A‴) and (M-M′) coinciding; and the side edges formed by the coinciding points (B-B′), (D″-D‴), (B″-B‴) and (N-N′) are begun to be stitched; and (A-A′), (C″-C‴), (A″-A‴) and (M-M′.) Subsequently the vertex (B-B′) is taken inside to (O-O′) in such a way that (D″-D‴) occupies the place of (B-B′) and that (D-D′) clasps outside (D″-D‴) in its new position and the stitching thereof is proceeded with. Before reaching (O-O′)/B-B′), the operation is repeated with the other end, taking inside the vertex (A-A′) up to (O-O′/B-B′) in such a way that (C″-C‴) occupies the position of (A-A′) and that clasps outside (C″-C‴) in its new position and the above commented stitching is completed.

In this way we obtain a bottom (F4) of the container (C4) represented by figures 13 and 14, a bottom which can be square or rectangular in terms of the distance between the stitching reference points. Just like in the previous cases, if the container is to be leakproof, a film bag can be inserted in it between the points (C-C′ and D-D′), prior to the stitching of the bottom and connect it simultaneously to the forming thereof. In the bottom (F4) seam (R4) is originated.

The suspension and filling area would be formed according to what has been explained for the container represented in figure 3 from the sheet of suitable material represented in the first figure, the container (C4) remaining as is shown in figure 14.

Claims

1. Method for manufacturing a flexible material container for transporting and storing products in bulk, wherein the container itself (C1; C1′; C2; C3; C3′ and C4) is obtained by means of a suitable stitching of a tubular portion of flexible material, such as plastic and/or fabric, whose tubular portion is susceptible to being formed (3 or 3′) or obtained from a rectangular sheet (1 or 1′) which is folded

along its middle transversal line (I-I′) or else can be obtained from two identical superimposed sheets (2), etc.: essentially characterized because the method in itself includes the operations of folding towards the inside the corners of one of the ends of the tubular portion; and connecting by means of stitching, prior folding of the corresponding areas, a series of points of that tubular portion to finally effect the stitching of the sides and manage to delimit a flat area forming the bottom of the container, without cuts of the original sheet; all of this in such a way that in terms of the distance between certain points of those that are connected, a square or rectangular bottom will be obtained.

2. Method for manufacturing a flexible material container for transporting or storing products in bulk, according to claim 1, characterized because for obtainment of the containere (C1,) the sheet (1) is folded at its transversal middle line (I-I′), making points (A-A′), (C-C′), (O-O′), (D-D′) and (B-B′) coincide, then proceding to stitch the edges formed by those points; then effecting the folding of the corners corresponding to the end which is going to form the bottom, making the vertex (B-B′) coincide with points (B″ and B‴), prior folding of the former towards the inside and likewise making points (D″ with D) and (D‴ with D′) coincide, then stitching from the common point (D-D′-D″-D‴) until point (N-N′), thus forming the seam and respective closing of that side; proceding in a similar form for the other side, in such a way that the side folds of the bottom are stitched in correspondence with said side seams, obtaining container C1 with the middle seam of the bottom and the feed opening and top suspension area formed by the unstitched side areas and included between the coinciding points (N-N′), (M-M′) and the folding line (I-I′.)

3. Method for manufacturing a flexible material container for transporting or storing products in bulk, according to claim 2, characterized because the side folds of the bottom are stitched in the center (O-O′) of the latter, obtaining the formation of the container (C4.)

4. Method for manufacturing a flexible material container for transporting or storing products in bulk, according to claims 2 and 3, characterized because the rectangular bottom of the container (C1 or C4) is obtained when the distances (C-O′ and D-O′) or (C′-O and D′-O) are different from the distances (A-C and B-D) or (A′-C′ and B′-D′); while the square bottom is obtained when said distances are identical to each other.

5. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 1, characterized because for the obtainment of the container (C1′), the sheet (1′) is folded at its transversal middle line (I-I′), making points (A-A′), (B-B′), (E-E′) and (F-F′) coincide; to then make point (I′) coincide with the coinciding points (F-F′), while the points (D′ and D″) are made to coincide outside with point (D), then proceding with the stitching from those common points (D-D′-D″) up to the common point (M′-N′,) thus forming the seam and respective side closure; proceding in a similar manner for the other side, in such a way that the side folds of the bottom are stitched in correspondence with said side seams, thus obtaining the container (C1′) without a seam in its bottom and with its feed opening totally open to permit the mounting of any suspension means to the same.

6. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 5, characterized because the square bottom of the container (C1′) is obtained when the distances of the stitching reference points (I-C) and (I′-D) are equal to the distances from points (C) and (D) to the center; while the rectangular bottom is obtained when said distances are different.

7. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 1, characterized because for the obtainment of the container (C2) the two identical sheets (2) are superimposed, making points (A-A), (O-O,(D-D), (F-F) and (H-H) of the same coincide, then proceding with the folding of the corners corresponding to the ends that is going to form the bottom, making points (B) with (G), (D) with (I) and (A) with (F), as well as (D) with (H) coincide, then stitching the sides up to points (M-M′) and (N-N′), forming the seams and respective side closures, and forming at the top a totally open feed opening and a flat bottom with an intermediate seam, and wherein the side folds of the bottom are stitched at the side seams themselves.

8. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 7, characterized because the square bottom of the container (C2) is obtained when the distances (A-B) and (B-O) are equal to the distances (C-D) and (C-O); while the rectangular bottom is obtained when said distances are different.

9. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 1, characterized because for the obtainment of the container (C3) a tubular portion (3) is started with, proceding in the first place to take point (C) up to the coinciding point (O-O′), point (E) occupying the initial position of point (E), while points (A-A′) are made to clasp at point (E); then the stitching of the edges formed by these points is started, in such a way that before reaching the common point (O-O′-C) the process is repeated in the part which is symmetric regarding

point (O-O′), taking point (D) up to such coinciding points (O-O′), making point (F) occupy the initial position of point (D), while points (B-B′) are made to clasp outside point (F) in its new position in order to continue stitching until finishing the seam; all of this in such a way the container (C3) is obtained with a flat bottom in which the folds of the same are stitched over the central point (O-O′-C-D) of the same, while the feed opening thereof is totally open.

10. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 9, characterized because the square bottom of the container (C3) is obtained when the distances (D-B) and (B-O) are identical to each other and equal to the distances (C-A) and (A-O), while the rectangular bottom is obtained when said distances are different.

11. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 1, characterized because for the obtainment of the container (C3′) the tubular portion (3′) is started with, proceding to make points (C-C′-C″) and (D-D′-D″) coincide, likewise effecting the folding of the corners with nothing more than making point (I) coincide with the common points (F-F′) and point (I′) with points (E-E′), then proceding with the stitching from the coinciding points (C-C′-C″) and (D-D′-D″) until reaching the points (M-M′) and (N-N′), respectively, forming the container (C3′) with the seams and respective side closures, a flat bottom without a seam and a feed opening with suspension elements, the latter formed by the unstitched opening between points (M-M′) and (I), and points (N-N′) and (I′); with the particular feature that the side folds of the bottom are stitched to the side seams of the container itself.

12. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to claim 11, characterized because the square bottom of the container (C3′) is obtained when the distances (I′-C) and (I-D) are the same between each other and besides the distances from points (C) and (D) to the center are also equal; while the rectangular bottom is obtained when said distances are different.

13. Method for manufacturing a flexible material container for transporting and storing products in bulk, according to any of the above claims, characterized because the container (C1, C3 and C4) have a gathering of material in the part opposite the corresponding bottom, to whose gathered material a sheet (1) with identical or different technical characteristics is attached, an attachment which is effected by wrapping of said sheet to form a suspension "loop" and under it the corresponding feed opening of the container itself.

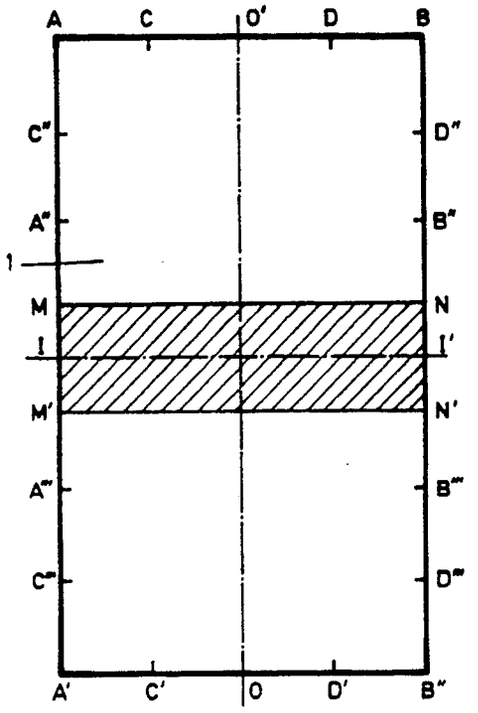


FIG.1

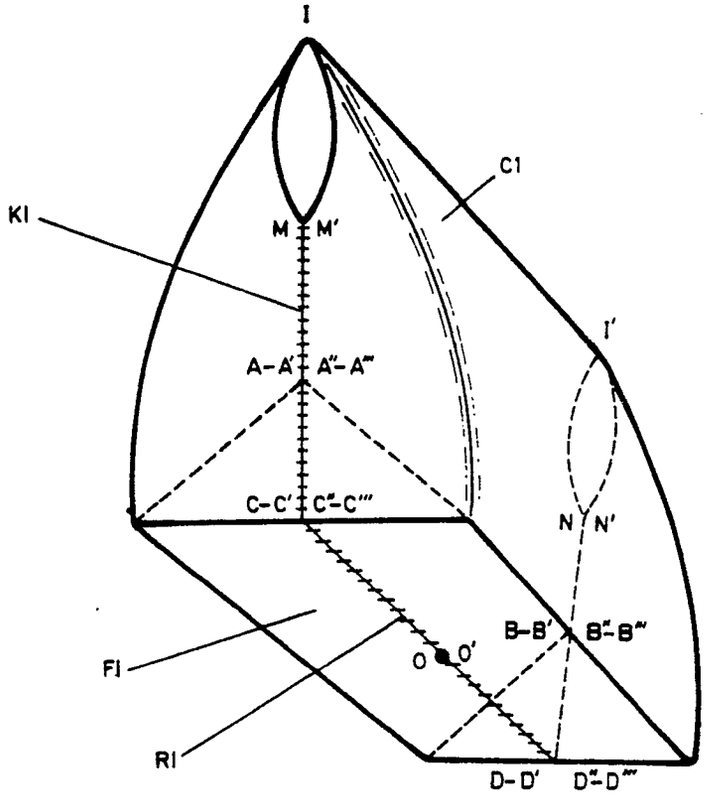
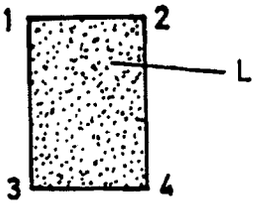


FIG.2



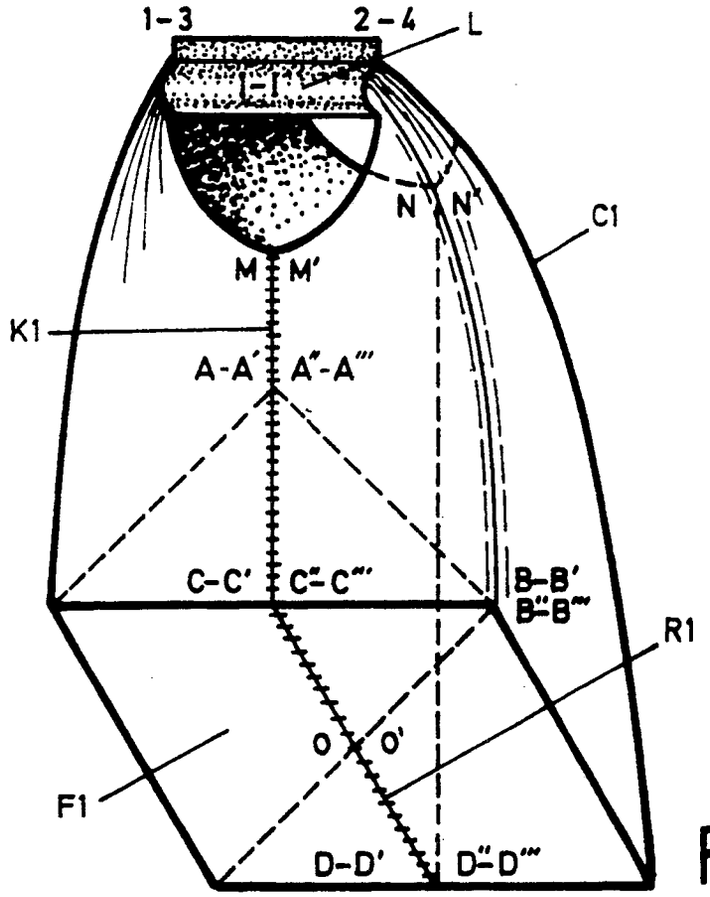


FIG.3

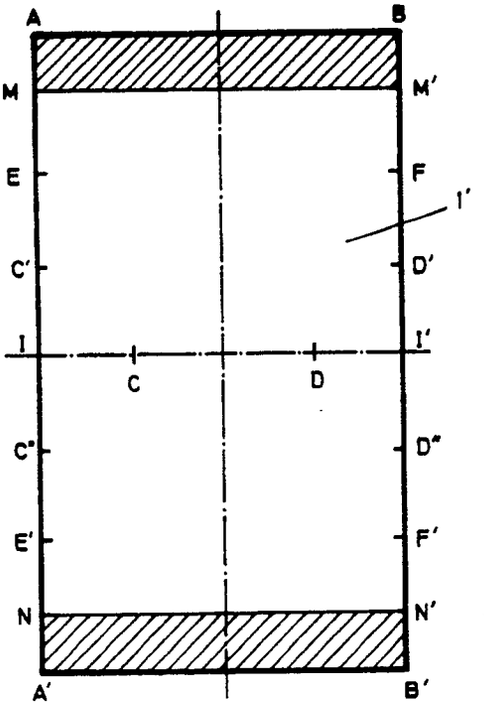


FIG.4

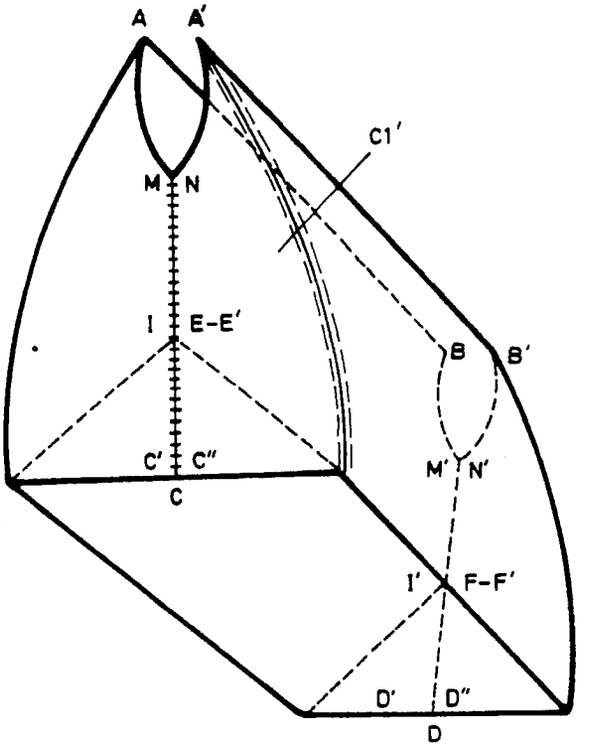


FIG.5

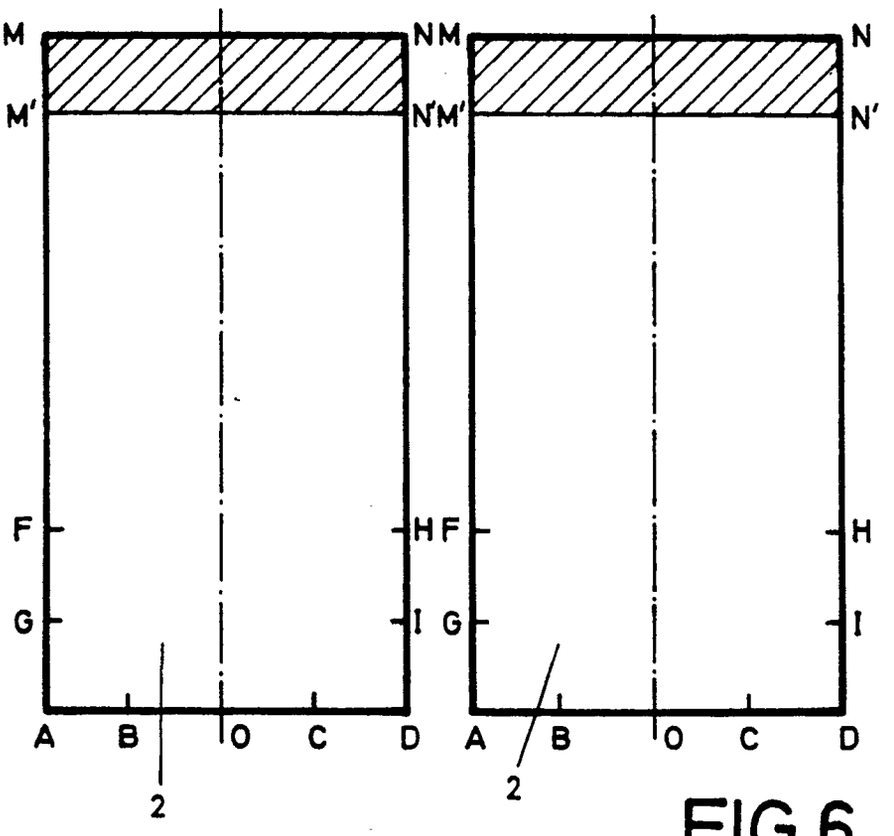


FIG.6

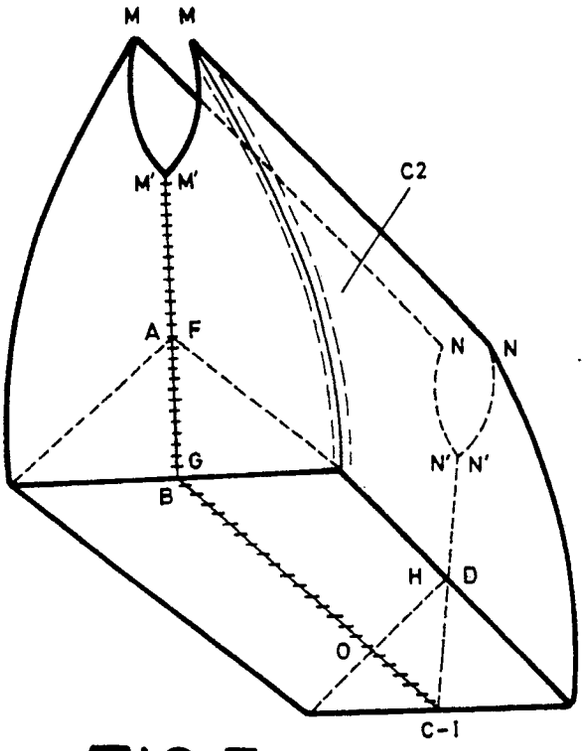


FIG.7

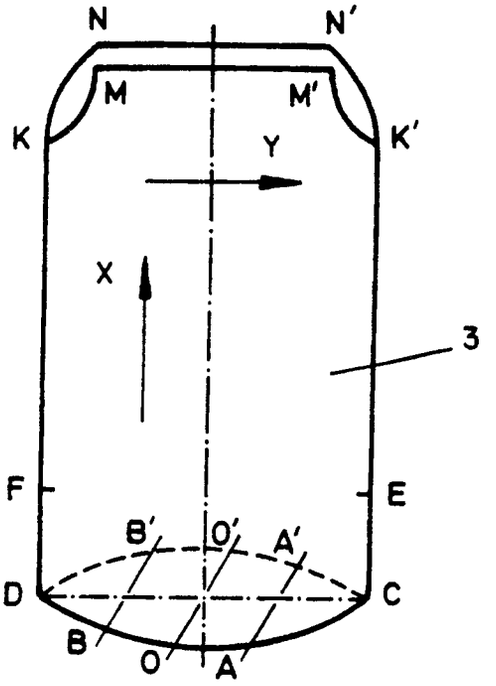


FIG.8

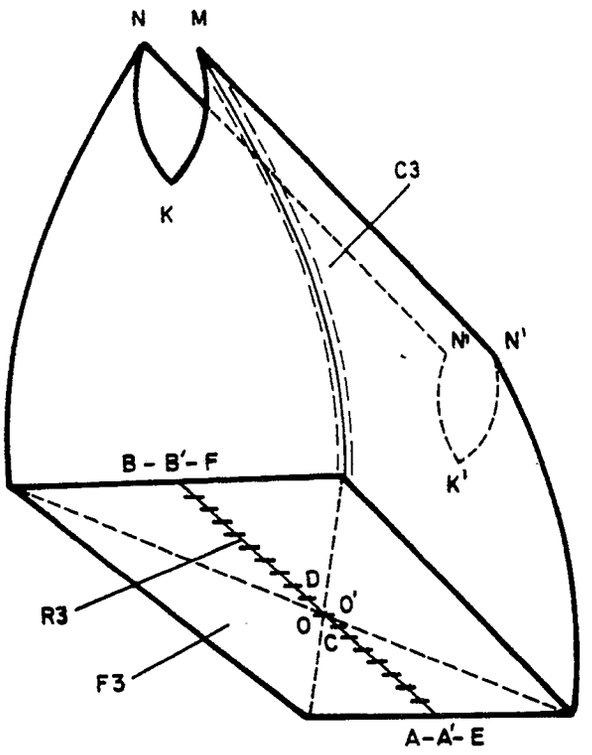


FIG.9

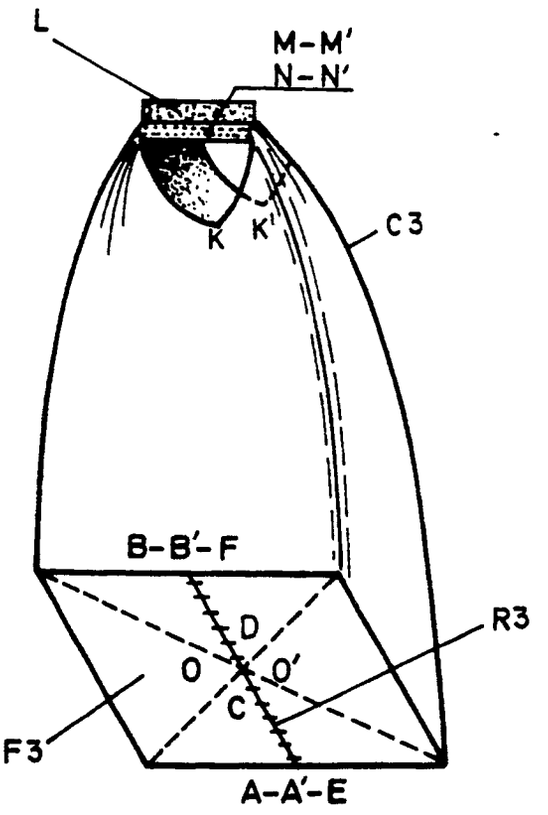


FIG.10

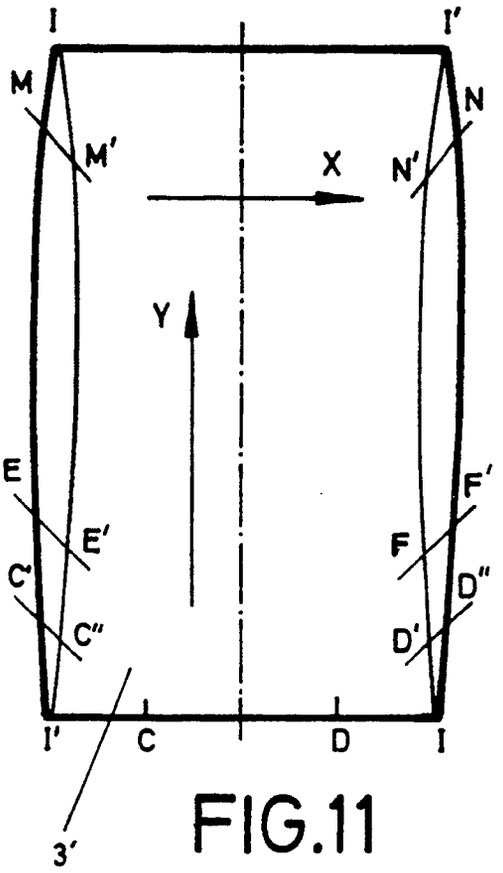


FIG.11

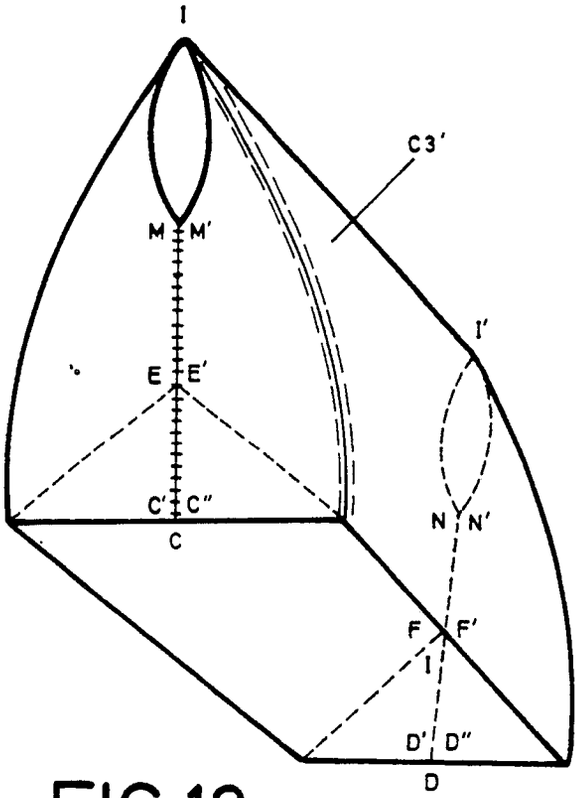


FIG.12

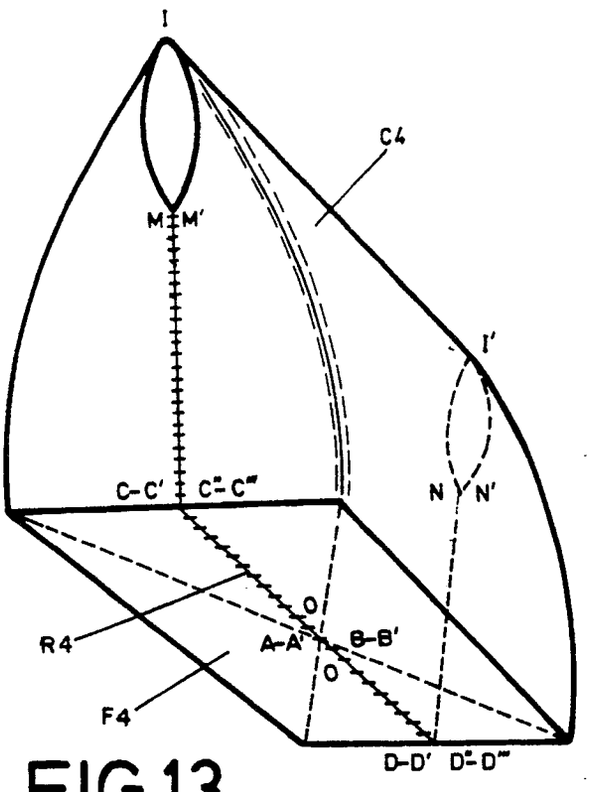


FIG.13

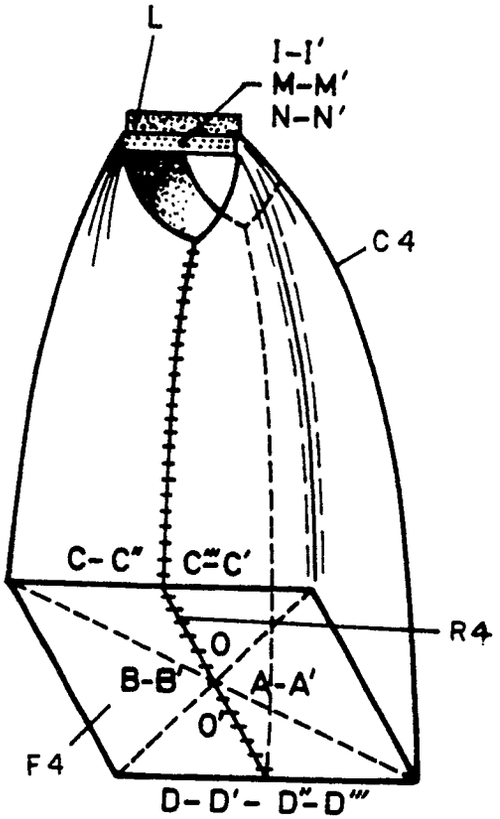


FIG.14

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 89 20 1337

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	GB-A-1 604 442 (TAY TEXTILES LTD) * Claims 1,4,5,8; fig. *	1	B 65 D 88/16
A	---	2,5,6	
A	EP-A-0 121 266 (C.J. MALGO) * Claims 1,5,8,12,13; fig. *	1,2,3,4,6	
A	---		
A	EP-A-0 234 788 (AGRIPAC LTD) * Claims 1,3,6; fig. *	1,13	
A	---		
A	US-A-4 191 229 (J. SKAADEL) * Figures 1,3; column 2, lines 10-30; column 3, lines 8-22 *	1,4,6,8	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B 65 D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	22-05-1990	VAN ROLLEGHEM F.M.

CATEGORY OF CITED DOCUMENTS

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E : earlier patent document, but published on, or after the filing date
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