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(54) **Method for making fibre box-like containers and related covers, and containers made thereby.**

(57) The present invention relates to a method for making fibre-box like containers and related covers, which comprises the steps of making a tubular body, including superimposed sheets of a paper material, and stretching this tubular body by rollers arranged at corner portions thereof, in order to cause the tubular body to assume a substantially parallelepipedal shape.

The main feature of the invention is that the method further comprises the steps of : deforming, by a mold, an axial end of the tubular body, so as to provide a substantially parallel edge band recessed with respect to the side surface of the tubular body, inwardly bending the corner regions in order to remove the material excess and, finally forming a cover having the same peripheral extension as the box-like body.

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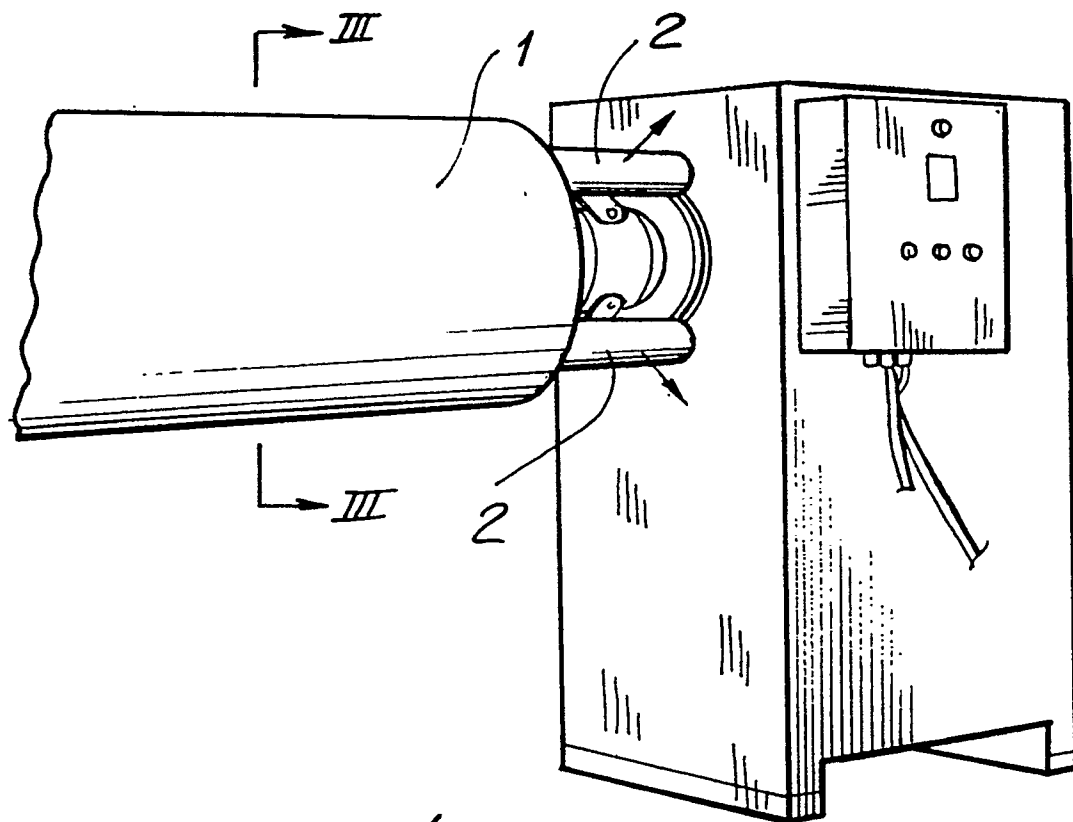


FIG. 1

BACKGROUND OF THE INVENTION

The present invention relates to a method for making fibre box-like containers and related covers, and the containers made thereby.

There are already known box-like bodies, provided with a respective cover, which have a substantially parallelepipedal shape and are made of fibre materials, that is including a plurality of superimposed kraft paper layers, glued to one another so as to provide a desired consistency.

In order to apply to these box-like containers a cover member, two procedures are conventionally adopted, the first of which consists of making a cover having a peripheral profile larger than the peripheral edge of the box-like body so as to provide an overlaying type of coupling, with the cover projecting from the side surface of the container body.

Such approach is not well accepted, since the cover, which projects from the container body, can be damaged by impact or removed from the container.

In order to overcome the above mentioned drawback, another approach has been designed providing to apply, inside the parallelepipedal box-like body, a core, that is a band, extending starting from the bottom of the container and projecting, at the top of said body, so as to define the coupling region for a cover, which has the same peripheral shape as the box-like body.

While this approach is valid from a practical standpoint, since the container has an overall flush outer surface, it has the drawback that an inner core must be provided, with a great waste of material, on the overall inner side surface of the box-like body, in addition, of course, to the portion which projects at the top thereof.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks by providing a method for making fibre box-like containers and related covers, which provides a container having a smooth side surface, that is with a flush arranged container cover, without using any additional elements, such as an inner core member.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a method which allows a container to be made which has an increased mechanical strength.

Yet another object of the present invention is to provide such a container making method which is very reliable and affords the possibility of making containers starting from easily available materials and elements.

Yet another object of the present invention is to provide such a method which is adapted to make containers and related covers which are very competitive

from a mere economic standpoint.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a method for making fibre box-like containers and related covers, comprising the steps of making a tubular container body including superimposed paper material sheets, stretching said tubular body by rollers arranged at corner portions of said tubular body, causing said tubular body to assume a substantially parallelepipedal shape, characterized in that said method further comprises the following steps of: deforming, by a mold, an axial end portion of the tubular body so as to provide an edge substantially parallel band recessed from a side surface of said tubular body, inwardly bending corner regions of said tubular body in order to remove the material excess and making a container cover having the same peripheral extension as said box-like container body.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the invention will become more apparent from the following detailed disclosure of a preferred, though not exclusive, embodiment of a method for making fibre box-like containers and related covers, which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

Figure 1 is a schematic view showing a method step for applying a tubular container body, of substantially circular shape, on stretching or tension rollers;

Figure 2 shows a stretching step in which the tubular body is stretched in order to cause it to assume a parallelepipedal configuration;

Figure 3 is a cross-sectional view substantially taken along the section line III-III shown in Figure 1;

Figure 4 is a further cross-sectional view, substantially taken along the section like IV-IV shown in Figure 2;

Figure 5 is a further cross-sectional view showing the application of an axial end portion of the tubular body to a mold for deforming an edge of said tubular body;

Figure 6 shows a further step of the subject method, in which the axial edge of the container tubular body is shaped by deformation;

Figure 7 illustrates a further shaping step as applied on a corner region of the container body; Figure 8 is a cross-sectional view, in exploded form, of the container made according to the subject method;

and

Figure 9 is a perspective view showing the subject container in a closed position thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the figures of the accompanying drawings, the method for making fibre box-like containers, and related covers, according to the present invention, comprises the step of preliminarily making a tubular body 1, of a substantially circular cross-section, which is made, in a known way, by superimposing and glueing a plurality of kraft paper sheets, so as to provide an article of manufacture having a desired consistency.

After having made the container tubular body 1, of circular cross-section, it is arranged on rollers 2 which are subjected to a spreading movement so as to stretch the tubular body, as is shown in figures 2 and 4, in order to cause said tubular body to assume a substantially parallelepipedal shape, with rounded corners, at the region in which said rollers 2 operate.

After having made the tubular body, having a polygonal cross-section and a desired size, lengths of tubular body corresponding to the length of the box-like body to be made are cut therefrom.

After this preliminary step, an axial end of the tubular body length is introduced into a mold 10 having an inner die 11 including, on its side surface, recessed portions 12 arranged under a projecting portion 13 turned toward said tubular body.

Facing each side of the die, there is provided a pressing element 20, driven by hydraulic or the like driving means, and including a shaping projection 21 arranged at the mentioned recess, and with a restraining undercut 22, arranged at said projection 13.

As on the edge band 30 a pressure is exerted, the axial end portion of the tubular body will be deformed so as to provide a recessed edge with parallel faces, with respect to the side surface of the container.

At the corner regions, in order to remove the material excess, which would be formed, there are provided shaped pressing elements 25 adapted to form a recessed zone 26 at the corner region of the edge band, so as to allow the material excess provided by the edge band recess, to be inward displaced with respect to the side surface.

Thus, a region will be formed, i.e. the edge band, which is so shaped that it can be easily introduced inside a cover 50, made by a conventional method which, in its assembled condition, will be flush with respect to the container body.

With the disclosed making method, the edge band will practically also provide a stiffening rib along the overall extension of the tubular body.

Moreover, the coupling region between the edge band and the side surface, indicated at 27 will operate as an abutment element for the free edge of the container cover.

Thus, a fibre container will be obtained which will have a perfectly smooth outer surface, that is with the

container cover flush assembled with the container body, and this without the provision of any inner core as it would be provided in prior containers.

From the above disclosure it should be apparent that the invention fully achieves the intended aim and objects.

While the invention has been disclosed with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to several modifications and variations all of which will come within the spirit and scope of the appended Claims.

Claims

1. A method for making fibre box-like containers and related covers, comprising the steps of making a tubular container body including superimposed paper material sheets, stretching said tubular body by rollers arranged at corner portions of said tubular body, causing said tubular body to assume a substantially parallelepipedal shape, characterized in that said method further comprises the following steps: deforming, by a mold, an axial end portion of the tubular body so as to provide an edge substantially parallel band recessed from a side surface of said tubular body, inwardly bending corner regions of said tubular body in order to remove the material excess and making a container cover having the same peripheral extension as said box-like container body.
2. A method according to Claim 1, characterized in that it further comprises the step of making, at corner regions of said container body, a recess turned toward the inside of said box-like body.
3. A method according to one or more of the preceding Claims, characterized in that said recess is made by shaped pressing elements acting on corner regions of the container body, from the outside toward the inside thereof.
4. A box-like container, and related cover, having a substantially parallelepipedal configuration, characterized in that it comprises a box-like body having, at a free edge thereof, a parallel edge band recessed from the side surface of the box-like body, said edge band being made in a single piece with said box-like body.
5. A container according to Claim 4, characterized in that said container comprises, at the corner regions of said edge band, recessed deformed portions directed toward the inside of the container.

6. A container according to Claims 4 and 5, characterized in that between the side surface of said container and said edge band there is provided a coupling portion adapted to operate as an abutment element for the free edge of the container cover. 5

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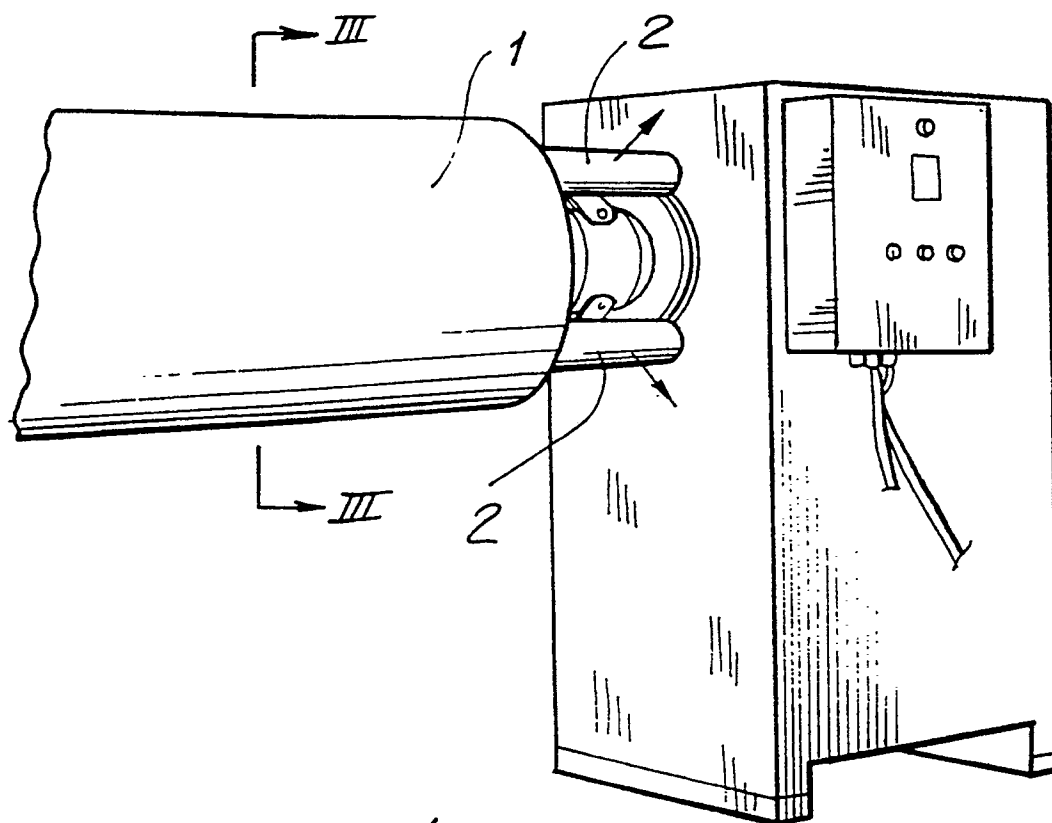


FIG. 1

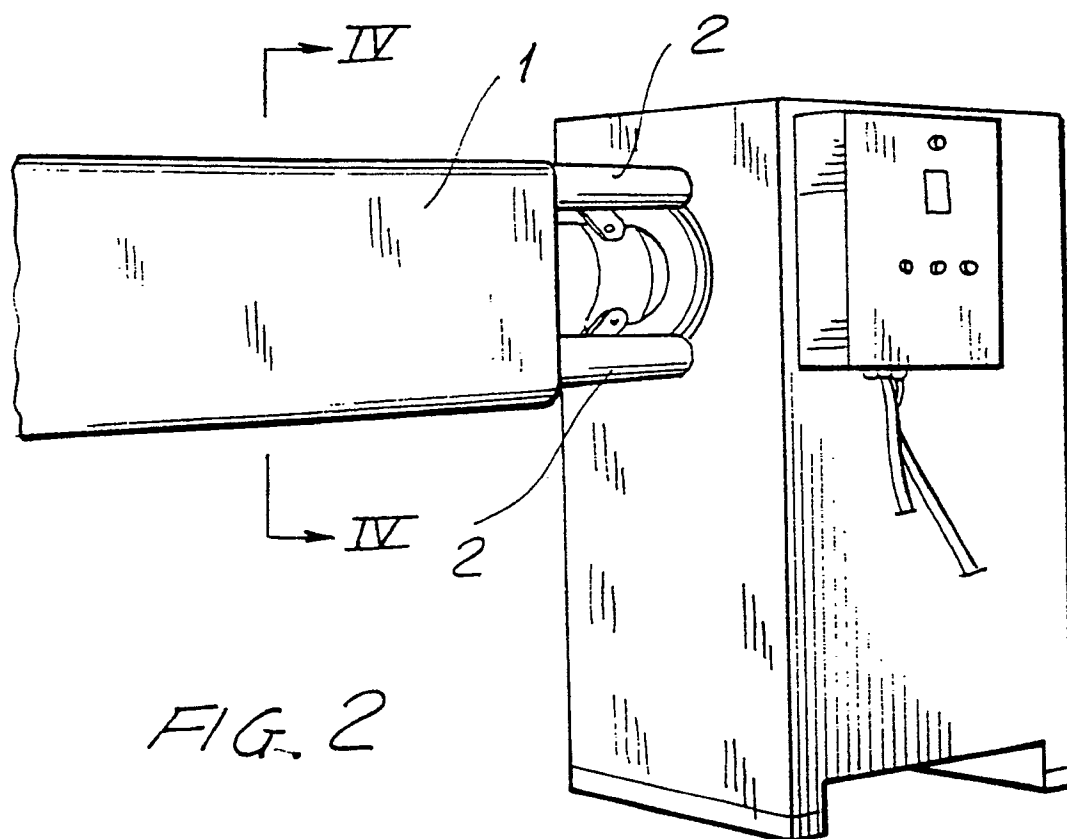


FIG. 2

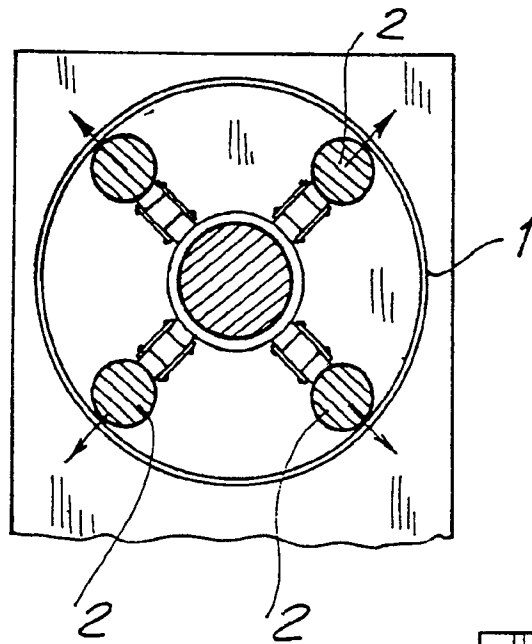


FIG. 3

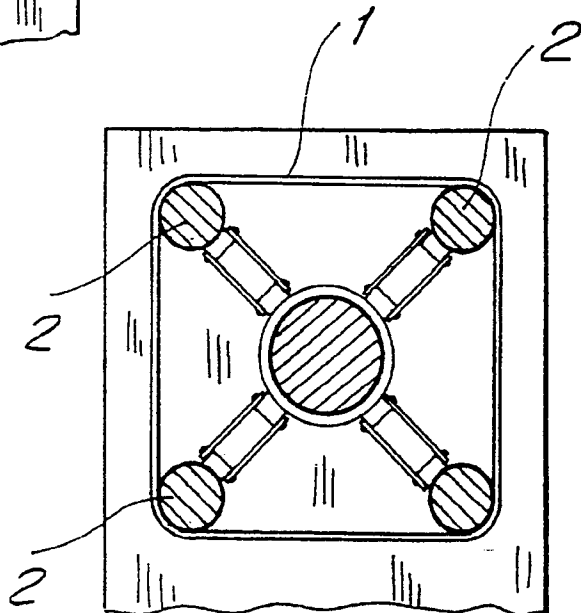


FIG. 4

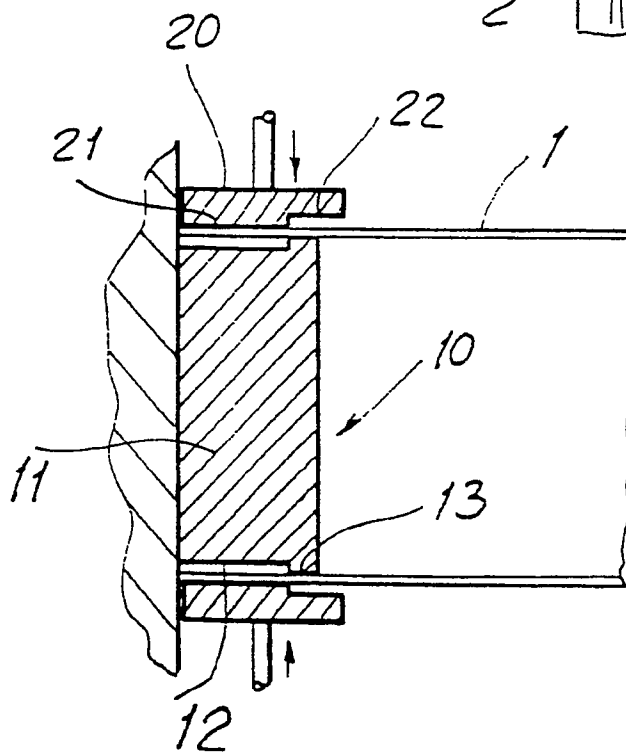


FIG. 5

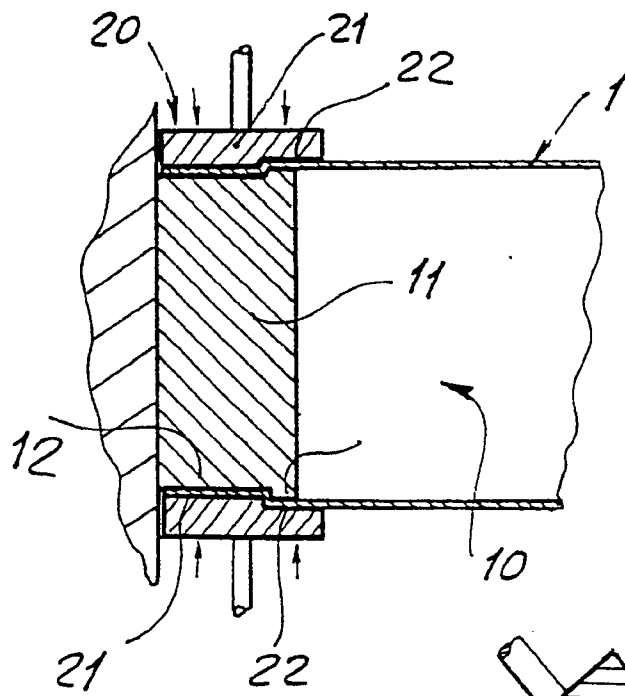


FIG. 6

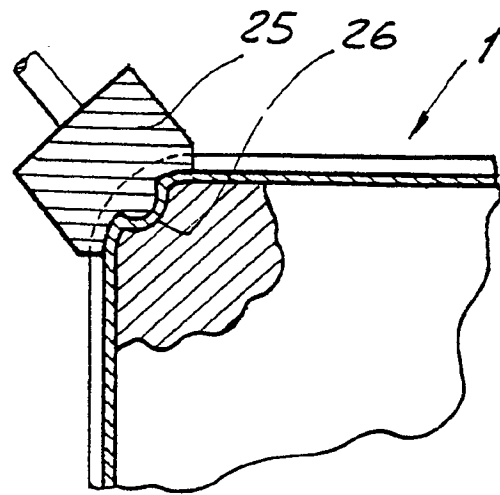


FIG. 7

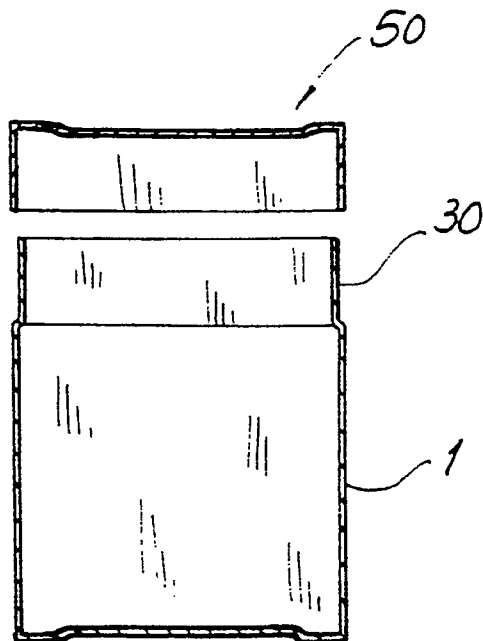


FIG. 8

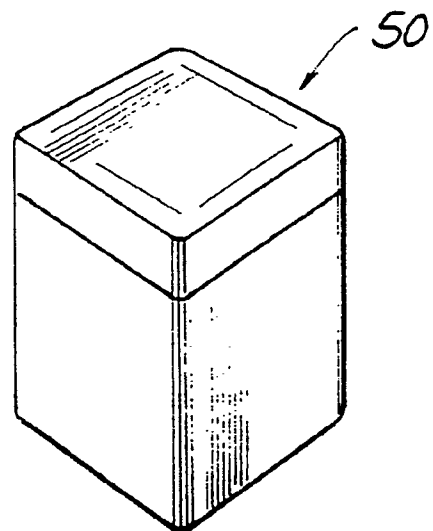


FIG. 9