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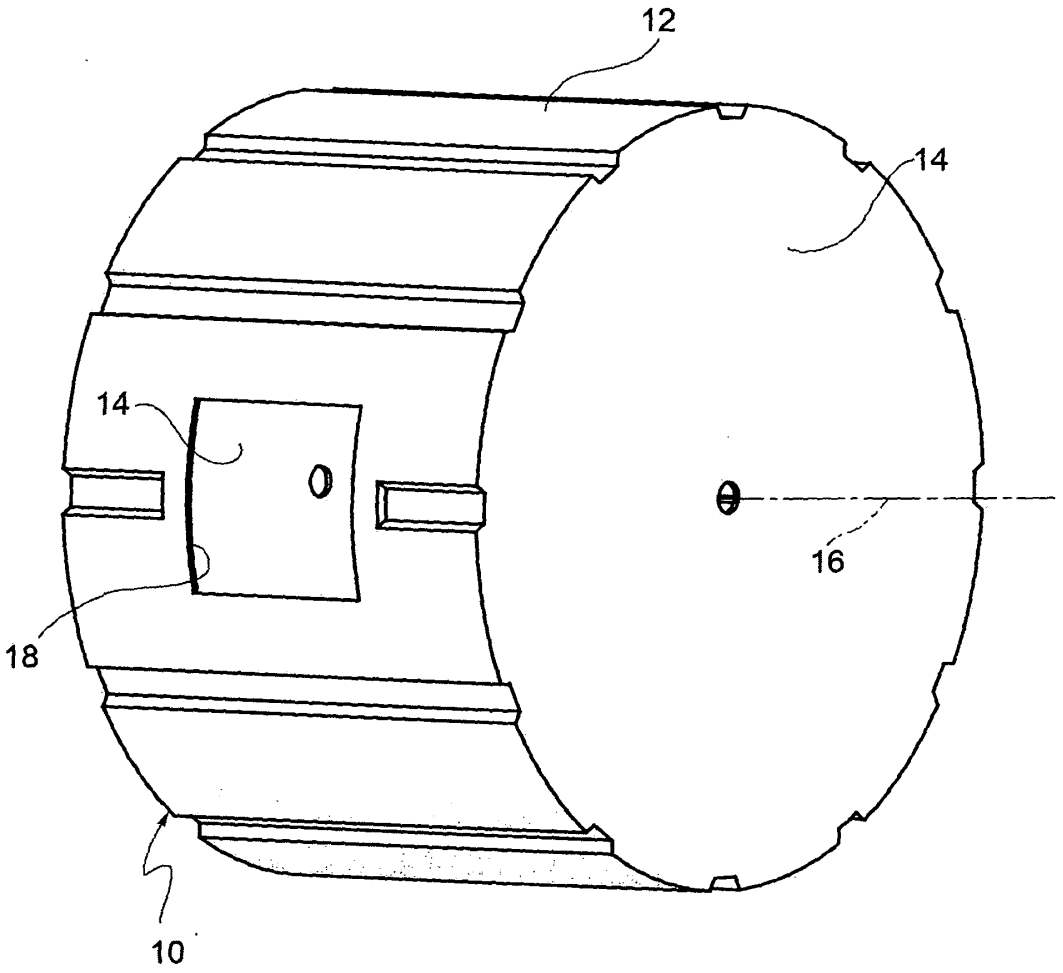
(71) Applicant: **Vallero International S.p.A.**
10080 Oglianico (Torino) (IT)

(72) Inventor: **Vallero, Giacomo**
10087 Valperga (Torino) (IT)

(74) Representative: **Gerbino, Angelo et al**
Jacobacci & Partners S.p.A.
Corso Emilia, 8
10152 Torino (IT)

(54) **Drum with housing having a monolithic structure**

(57) The drum for tanning, dyeing and/or treating hides and/or fabrics, comprises a housing (10) of generally cylindrical shape consisting of a side wall (12) closed at each end by an end wall (14) so as to define an internal cavity. The housing (10) is made of plastic and is of a monolithic structure.



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Description

[0001] The present invention relates to a drum for tanning, dyeing and/or treating hides and/or fabrics.

[0002] In more detail, this drum comprises a plastic housing of generally cylindrical shape consisting of a side wall closed at each end by an end wall so as to define an internal cavity.

[0003] In one prior art form, the side wall of such a drum is made by first rolling and then welding a sheet of homopolymeric polypropylene.

[0004] However, these welds represent weak points in the structure, being susceptible to failure following heat stress and fatigue stress. Moreover, only a limited number of plastic materials can be welded, which greatly limits the available range of component materials.

[0005] In order to overcome these problems, the subject of the present invention is a drum of the type indicated at the beginning of this description and characterized in that the abovementioned housing is of a monolithic structure.

[0006] For the purposes of the present description, the expression "monolithic structure" should be understood to mean a single structure that forms a substantial part of the end and side walls, without ruling out the possibility that one or more openings be made in these walls and provided with closing doors, and that the structure be fitted with other components, suitable for example for transmitting the rotational motion to the housing or improving the mixing of the material treated inside the drum.

[0007] The drum of the invention has no welds and therefore has a longer useful life than conventional drums, since it is not subject to failure under heat and fatigue stress. What is more, the range of choice of materials from which it can be made is not limited by the requirement that they be weldable. For example, it is possible to use various types of polyethylene (LLDPE, HDPE, crosslinked PE), polypropylene and polyamide, optionally reinforced with fibres and/or fillers and in general all thermoplastics that are resistant to chemical attack and abrasion and that have a low coefficient of friction.

[0008] It should also be observed that, for the same mechanical strength, the drum of the invention is lighter and has a larger loading capacity than conventional drums.

[0009] The monolithic structure of the housing of the drum of the invention is advantageously made by using the technique of rotation moulding, which is well known per se and can be carried out using machinery which is in wide use. The cost of producing the drum of the invention is thus found to be less than that of conventional drums.

[0010] The use of the rotational moulding technique also makes it possible, if desired, to give the drum housing different thicknesses in different places as a means of optimizing its structure with reference to the required performance and the fitting of inserts and the like.

[0011] Other advantages and features of the present invention will become clear in the course of the following detailed description, which is given by way of non-limiting example, with reference to the single accompanying figure, which is a diagrammatic perspective view of a housing of a drum of the invention.

[0012] A drum for tanning, dyeing and/or treating hides and/or fabrics comprises a plastic housing 10 of generally cylindrical form consisting of a side wall 12 closed at each end by a circular end wall 14 so as to define an internal cavity. The drum is also provided in a manner known per se and not shown in the figure with drive means for turning it about the housing's central longitudinal axis 16.

[0013] The housing is of a monolithic structure advantageously obtained by rotational moulding, which is a technique of producing in one piece, without the need for welding, hollow bodies that have no internal stresses and that have good uniformity of thickness.

[0014] As is known, this technique involves introducing a predefined quantity of resin into a desired mould consisting of a number of parts able to be joined hermetically together. The mould is then closed, rotated with a composite motion in at least two orthogonal planes, and heated, by for example blowing in hot air or placing it in an oven. The resin thus begins to melt, and is thrown against the walls of the mould by centrifugal force, where it clings in a layer of the desired thickness, which may vary from region to region. After a certain period of time, the mould is cooled down and opened, allowing the finished product to be extracted.

[0015] As illustrated in the single figure, an opening 18 is formed in the monolithic structure and will be provided with a closing door (not shown) to allow access to the internal cavity. The drum may also include any type of internal member, such as blades, agitators and the like.

[0016] Naturally, without altering the principle of the invention, the details of construction and forms of embodiment may depart considerably from those described purely by way of example, without thereby departing from the scope of the claims. For example, the drum may be of a fixed type rather than being mounted rotatably about its central longitudinal axis.

Claims

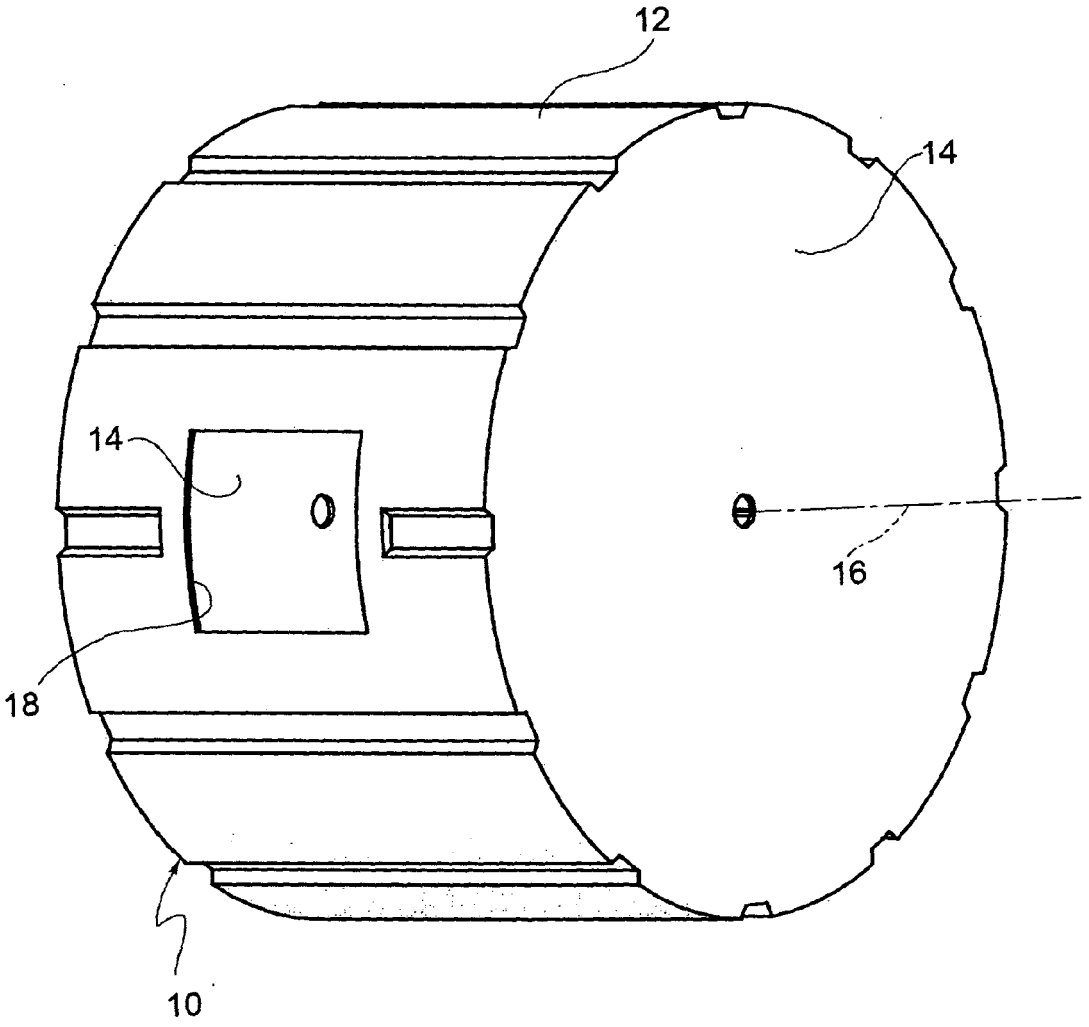
1. Drum for tanning, dyeing and/or treating hides and/or fabrics, comprising a plastic housing (10) of generally cylindrical shape consisting of a side wall (12) closed at each end by an end wall (14) so as to define an internal cavity,
   said drum being **characterized in that** said housing (10) is of a monolithic structure.

2. Drum according to Claim 1, in which said monolithic housing (10) is made by rotational moulding.

3. Drum according to Claim 1 or 2, in which said housing

(10) is of a material selected from the group consisting of polyethylene, polypropylene and polyamide, optionally reinforced with fibres and/or fillers.

4. Drum according to any one of the preceding claims, in which the thickness of said housing (10) varies in different places.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EUROPEAN SEARCH REPORT

Application Number
EP 08 42 5094

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D06B
C14B
D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	24 July 2008	Bichi, Marco

CATEGORY OF CITED DOCUMENTS

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