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(54) Title: DRUM OF LAUNDRY CARE DEVICE

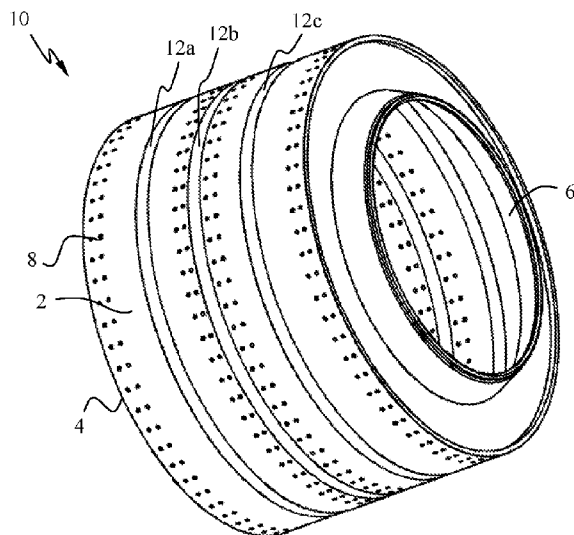


FIG. 1

(57) Abstract: A drum (10, 101, 102, 103) of a laundry care device, in particular a washing and/or drying device, is provided. The drum (10, 101, 102, 103) includes a side wall (2, 201, 202, 203), a bottom (4) located at one end of the side wall (2, 201, 202, 203), and an opening (6) opposite to the bottom (4). The side wall (2, 201, 202, 203) has at least one continuous rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) disposed circumferentially. The following beneficial effect is achieved by disposing at least one continuous rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) disposed circumferentially on the side wall (2, 201, 202, 203) of the drum (10, 101, 102, 103). As compared with the prior art, the strength of the side wall (2, 201, 202, 203) of the drum (10, 101, 102, 103) is effectively improved with low cost and easy processing.

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— *with international search report (Art. 21(3))*

DRUM OF LAUNDRY CARE DEVICE

The present invention relates to a laundry care device, in particular a device for washing and/or drying textiles, and more particularly to a rotating container for such laundry care device.

5 A laundry care device as embodied in a laundry washing and/or drying device usually includes a drum. In the working process of the device, the drum is driven to rotate, so as to wash, dehydrate, or dry laundry. When the drum rotates at a high speed, wet laundry produces a very large centrifugal force, which is applied to a side wall of the drum. The higher the rotation speed and the larger the load, the greater the pressure on the side wall
10 of the drum will be. Moreover, the laundry usually is not uniformly distributed in the drum, so that the pressure applied by the laundry to the side wall of the drum during rotation is non-uniform. The strength of the drum is required to be very large at a place where the pressure is concentrated. Further, as a large number of small holes are always disposed on the side wall of the drum, the strength of the drum is reduced to a certain extent.

15 Due to the above reasons in various aspects, the side wall of the drum is required to have high strength; otherwise, the side wall would be easily deformed or even torn. Such requirement is present in the entire circumferential direction of the side wall of the drum, and the part of the side wall that is not strengthened will be deformed with strengthening of only a segment in the circumferential direction.

20 The strength of the drum may be improved by increasing the thickness of the drum wall, especially, the thickness of the side wall, or installing an anchor ear outside the side wall of the drum. However, this practice increases the material cost or complicates the production process due to increased components.

25 The objective of the present invention is to improve the strength of a drum of a laundry care device without increasing the material cost and with reduced assembly procedures.

In view of this objective, the present invention provides an improved drum of a laundry care device, which drum includes a side wall, a bottom located at one end of the

side wall, and an opening opposite to the bottom. The side wall has at least one continuous rib extending circumferentially.

The following beneficial effect is achieved by disposing at least one continuous rib disposed circumferentially on the side wall of the drum. As compared with the prior art, the strength of the side wall of the drum is effectively improved with low cost and easy processing.

Preferably, the rib penetrates the entire side wall circumferentially. Through such a structure, the strength of the side wall is improved in the entire circumferential direction, and thus no part weak in strength exists, and concentration of the stress in one part is avoided, so as not to cause deformation of the drum.

Preferably, the rib and the side wall form an integral structure, so that no additional assembly steps are required.

Preferably, the rib has a slot shape recessed toward the inside or outside of the drum. Such a structure substantially does not increase the material cost as compared with the conventional drum without the rib, but has a strengthening effect.

The side wall and the rib may have a plurality of through holes disposed therein, and the through holes have the effect of drainage or ventilation together with through holes on the side wall of the drum.

The rib is most preferably disposed close to a middle part of the side wall. The middle part of the side wall of the drum is the place where the stress is concentrated and deformation easily occurs, so it is necessary to improve the strength of this part.

The rib may have several forms, for example, is a closed structure perpendicular to a rotation axis of the drum, extends spirally, or is a closed structure inclined with respect to a rotation axis of the drum. As for the closed structure perpendicular to the rotation axis of the drum, since it is applied with forces in one plane in different directions at the same time, the deformation does not occur easily. Moreover, the spiral shape or the closed structure inclined with respect to the rotation axis of the drum can have the strengthening effect in a larger range. In addition, the drum may include at least two ribs inclined to opposite directions, or the ribs inclined to the opposite directions may even be intersected.

Such a construction also aims to enlarge the strengthening area and increase the strengthening effect.

The present invention will become more fully understood from the detailed description given herein below for illustration only and with reference to preferred specific
5 embodiments shown in the figures of the attached drawing; these preferred embodiments thus are not limitative of the present invention. In the drawing,

FIG. 1 is a three-dimensional view of a drum of a laundry care device according to a first specific embodiment;

10 FIG. 2 is a schematic view of a drum of a laundry care device according to a second specific embodiment;

FIG. 3 is a schematic view of a drum of a laundry care device according to a third specific embodiment; and

FIG. 4 is a schematic view of a drum of a laundry care device according to a fourth specific embodiment.

15

First Specific Embodiment:

As shown in FIG. 1, a drum 10 of a laundry care device as embodied in a washing and/or drying device includes a side wall 2, a bottom 4 located at one end of the side wall 2, and an opening 6 opposite to the bottom 4. A plurality of through holes 8 is disposed on
20 the side wall 2, for convenience of circulation of water or air inside and outside the drum. Three continuous ribs 12a, 12b, and 12c extending circumferentially are provided on the side wall 2, and penetrate the entire side wall 2 circumferentially.

The ribs 12a, 12b, and 12c form an integral structure together with the side wall 2, and may have a cross-sectional shape in any form well known to persons skilled in the art.
25 However, preferably, the ribs 12a, 12b, and 12c have a slot shape recessed toward the inside or outside of the drum.

In a preferred solution, a plurality of through holes (not shown) is disposed in the ribs 12a, 12b, and 12c, and the holes form circulation passages of water or air together with other through holes 8 on the side wall 2, so that laundry close to the ribs 12a, 12b, and 12c can discharge or contact water or air in a better way.

- 5 The ribs 12a, 12b, and 12c are disposed close to a middle part of the side wall 2, so as to particularly strengthen the middle part of the side wall 2.

In this embodiment, the ribs 12a, 12b, and 12c extend perpendicular to a rotation axis of the drum 10, so as to form a closed structure.

- 10 Apparently, the disposition of one, two, or more than three ribs also has the strengthening effect likewise, and thus falls within the protection scope of the present invention.

Second Specific Embodiment:

- 15 As shown in FIG. 2, a drum 101 of a laundry washing and/or drying device includes a side wall 201, and a continuous rib 121 extending circumferentially is disposed on the side wall 201, penetrates the entire side wall 201 circumferentially, and extends spirally. Other structural features may be the same as those in the first specific embodiment.

Third Specific Embodiment:

- 20 As shown in FIG. 3, a drum 102 of a laundry washing and/or drying device includes a side wall 202, and continuous ribs 122a and 122b extending circumferentially are disposed on the side wall 202, and penetrate the entire side wall 202 circumferentially. The ribs 122a and 122b extend in a direction inclined with respect to a rotation axis X1 of the drum 102, and form a structure. The number of the ribs 122a and 122b is not limited to two. Other structural features may be the same as those in the first specific embodiment.

Fourth Specific Embodiment:

- 25 As shown in FIG. 4, a drum 103 of a laundry washing and/or drying device includes a side wall 203, and continuous ribs 123a and 123b extending circumferentially are disposed on the side wall 203, and penetrate the entire side wall 203 circumferentially. The ribs 123a and 123b extend in directions inclined with respect to a rotation axis X2 of

the drum 102, and are inclined to opposite directions. In this embodiment, the two ribs 123a and 123b inclined to the opposite directions are intersected. In addition, the ribs 123a and 123b inclined to the opposite directions may also be not intersected, and the number of the ribs 123a and 123b is not limited to two. Other structural features may be the same as those in the first specific embodiment.

The specific embodiments described in the above and shown in the figures are merely for the purpose of illustrating the present invention, but do not cover all aspects of the present invention. Variations in any form made by persons of ordinary skill in the art to the present invention without departing from the basic technical idea thereof all fall within the protection scope of the present invention.

Reference Numerals

	2	side wall
	4	bottom
5	6	opening
	8	through hole
	10	drum
	12a	rib
	12b	rib
10	12c	rib
	101	drum
	102	drum
	103	drum
	121	rib
15	122a	rib
	122b	rib
	123a	rib
	123b	rib
	201	side wall
20	202	side wall
	203	side wall

CLAIMS

1. A drum (10, 101, 102, 103) of a laundry care device, comprising a side wall (2, 201, 202, 203), a bottom (4) located at one end of the side wall (2, 201, 202, 203), and an opening (6) opposite to the bottom (4), **characterized in that** the side wall (2, 201, 202, 203) has at least one continuous rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) extending circumferentially.

2. The drum (10, 101, 102, 103) of a laundry care device according to claim 1, characterized in that the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) penetrates the entire side wall (2, 201, 202, 203) circumferentially.

3. The drum (10, 101, 102, 103) of a laundry care device according to claim 2, characterized in that the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) and the side wall (2, 201, 202, 203) form an integral structure.

4. The drum (10, 101, 102, 103) of a laundry care device according to claim 3, characterized in that the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) has a slot shape recessed toward the inside or outside of the drum (10, 101, 102, 103).

5. The drum (10, 101, 102, 103) of a laundry care device according to claim 4, characterized in that the side wall (2, 201, 202, 203) and the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) have a plurality of through holes (8) disposed therein.

6. The drum (10, 101, 102, 103) of a laundry care device according to any one of the preceding claims, characterized in that the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) is close to a middle part of the side wall (2, 201, 202, 203).

7. The drum (10, 101, 102, 103) of a laundry care device according to any one of claims 1 to 5, characterized in that the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) is a closed structure perpendicular to a rotation axis of the drum (10, 101, 102, 103).

8. The drum (10, 101, 102, 103) of a laundry care device according to any one of

claims 1 to 5, characterized in that the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) extends spirally.

9. The drum (10, 101, 102, 103) of a laundry care device according to any one of claims 1 to 5, characterized in that the rib (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) is
5 a closed structure inclined with respect to a rotation axis of the drum (10, 101, 102, 103).

10. The drum (10, 101, 102, 103) of a laundry care device according to claim 9, characterized by comprising at least two ribs (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) inclined to opposite directions.

11. The drum (10, 101, 102, 103) of a laundry care device according to claim 10,
10 characterized in that the ribs (12a, 12b, 12c, 121, 122a, 122b, 123a, 123b) inclined to the opposite directions are intersected.

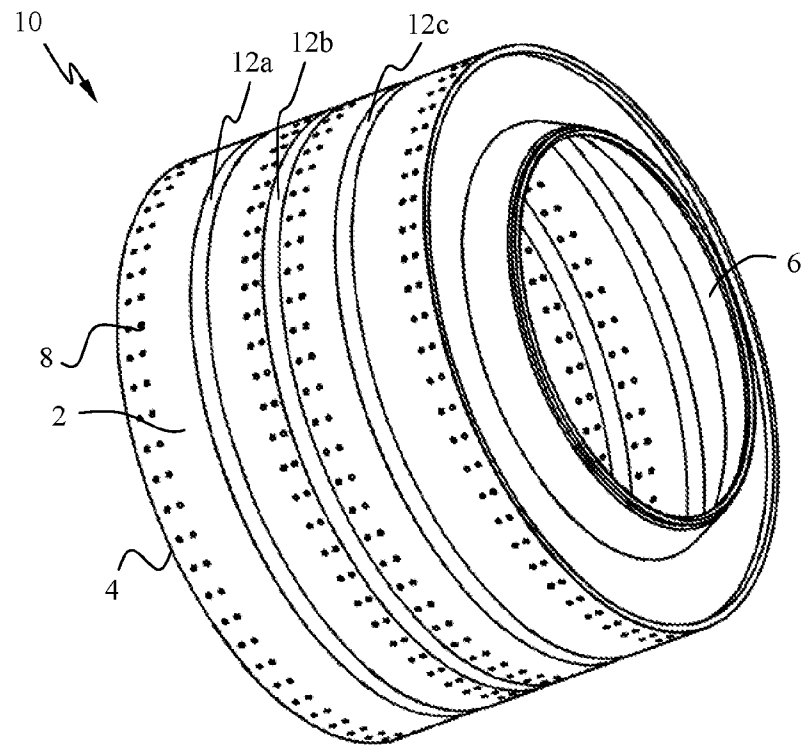


FIG. 1

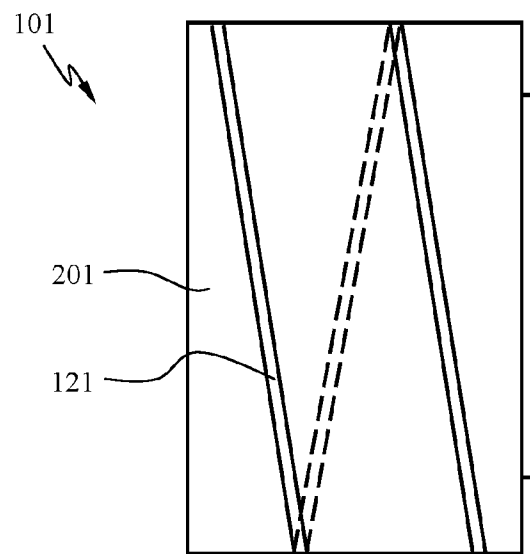


FIG. 2

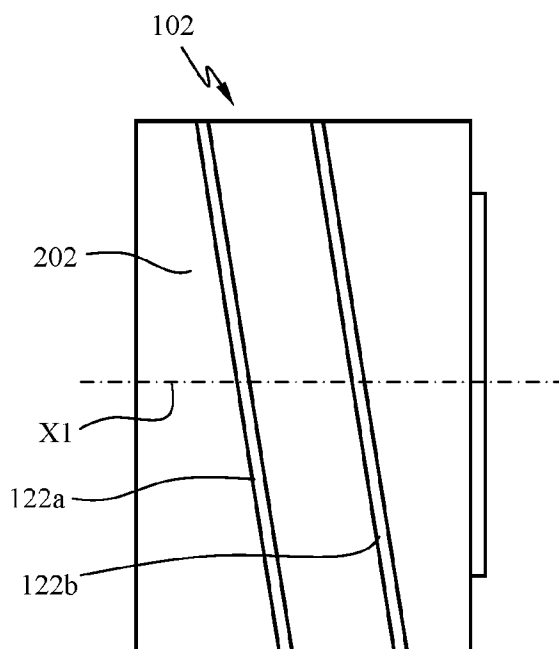


FIG. 3

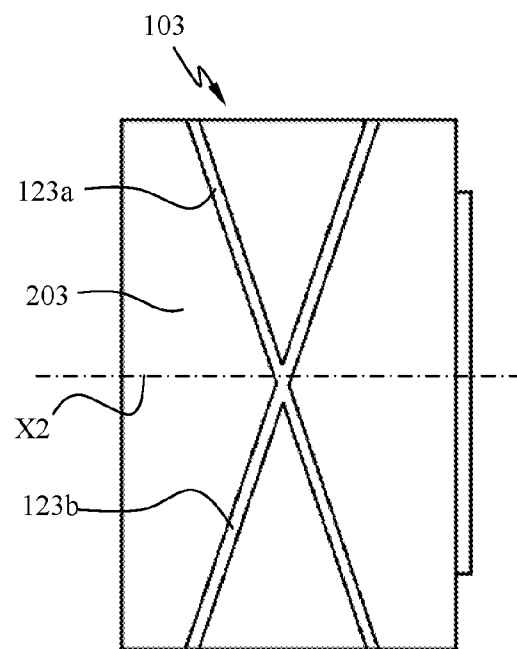


FIG. 4

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2011/055076

A. CLASSIFICATION OF SUBJECT MATTER

INV. D06F37/06 D06F37/14 D06F37/02
ADD.

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)

D06F B65D

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	abstract paragraphs [0001], [0002], [0004], [0013], [0035], [0037], [0057]; figures 1-4	8-11
Y	----- GB 978 982 A (METAL CONTAINERS LTD) 1 January 1965 (1965-01-01) the whole document	8,9
Y	----- DE 195 12 533 A1 (MIRTSCH FRANK DR [DE]) 10 October 1996 (1996-10-10) abstract column 5, line 51 - column 6, line 13; figure 4	10,11
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Further documents are listed in the continuation of Box C.



See patent family annex.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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Date of the actual completion of the international search

23 May 2011

Date of mailing of the international search report

31/05/2011

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2011/055076

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Information on patent family members

International application No

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