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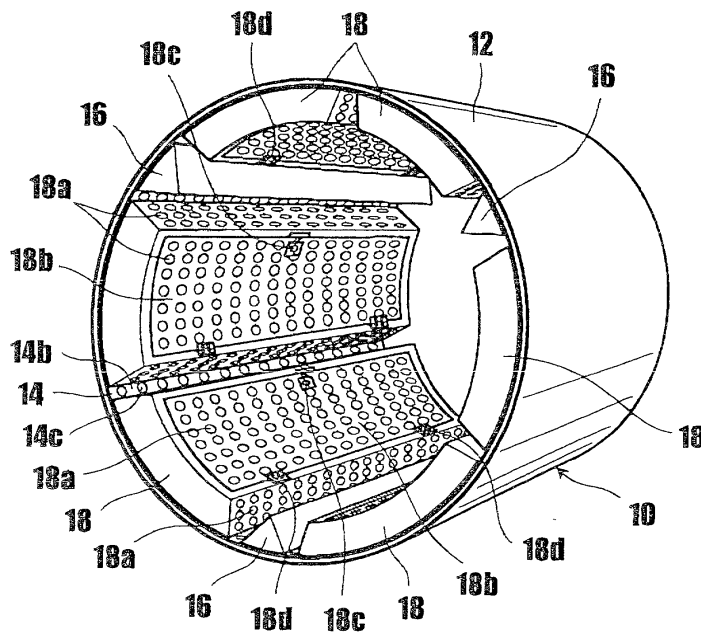
(54) **A wet cleaning device having an auxiliary laundry basket**

(57) The present invention provides a wet cleaning device having an auxiliary laundry basket, which comprises:

a laundry drum (10), a plurality of triangular cross-pieces (16) integrally provided at a regular interval on an inner periphery of the laundry drum, and a

plurality of arcuate flat laundry baskets (18) disposed on the inner periphery of the drum and between the crosspieces, whereby clothing or other material can be efficiently washed not only by wet cleaning but also by laundry-cleaning simultaneously.

FIG. 1



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Description

[0001] This invention relates to a washing machine for cleaning clothing, and more particularly, to a wet cleaning device having a laundry drum and an auxiliary laundry basket whereby washing such as clothing or other material are not unnecessarily crumpled in a laundry drum, but they can be efficiently cleaned not only by wet cleaning but also by laundry cleaning.

[0002] A laundry-cleaning method, a wet cleaning method and a dry cleaning method are commercially carried out in the cleaning industry.

[0003] Laundry cleaning is a method of cleaning clothes in water, and wet cleaning is a method of cleaning heavily soiled, oil stained or sweated clothes softly in water.

[0004] On the other hand, dry cleaning is a method of cleaning garments, etc. with benzene, gasoline, etc. rather than water.

[0005] Dry cleaning is mainly used for the most of washing for its workability, efficiency and the time for delivery, but some clothes such as white clothes, sheets, men's shirts, etc. are washed in water.

[0006] A large quantity of solvent is used for dry cleaning in the cleaning industry, thus causing pollution and bad influence to the environment.

[0007] Accordingly, use of solvent is either strictly restricted or controlled in the dry cleaning industry from an environmental point of view so that there is a need of cleaning the clothes efficiently without using solvent, and a new wet cleaning system is wanted.

[0008] From the environmental problem, the dry cleaning is shifting to the wet cleaning, some wet cleaning devices have been proposed for the wet cleaning, but when the big clothes such as a suit, overcoat, etc. are washed in water, some expensive special facility should have to be installed in addition to the conventional cleaning devices, thus requiring inefficient handwork of dipping and dehydrating the washed clothes.

[0009] Wet cleaning can only wash the clothes covered with water-soluble stains. When a user requests it, the wet cleaning is carried out, and a special treatment for removing the stain is carried out as well.

[0010] Under the circumstances, new water cleaning system has been proposed domestically or internationally.

[0011] According to the new cleaning system, a detergent is added into water, the clothes are washed in a diluted detergent solution, and if necessary, chemicals are mixed into the diluted detergent solution, but its washing facility and device are very expensive so that the new cleaning system has not been widely adopted in the cleaning industry.

[0012] In accordance with the conventional wet cleaning device, the washed clothes entangle with other in the laundry drum, are easily frayed and their cuts are broken.

[0013] Accordingly, stockings, sweaters and other

soft clothes are usually put into a net bag, which is inserted into a laundry drum of a washing machine.

[0014] A principal object of this invention at least in its preferred forms, is to provide a wet cleaning device having an auxiliary laundry basket which comprises a laundry drum, a plurality of triangular crosspieces integrally provided at a regular interval on an inner periphery of the laundry drum, and a plurality of auxiliary arcuate flat laundry baskets integrally disposed on the inner periphery of the drum and between the crosspieces whereby clothing or other material can be efficiently washed not only by wet cleaning but also by laundry-cleaning simultaneously.

[0015] Another object of this invention at least in its preferred forms, is to provide a cleaning device having an auxiliary laundry basket which comprises a laundry drum, a plurality of triangular crosspieces integrally provided at a regular interval on an inner periphery of the laundry drum, and a plurality of auxiliary arcuate flat laundry baskets detachably disposed on the inner periphery of the drum and between the crosspieces whereby clothing or other material can be efficiently washed by either wet cleaning or by laundry-cleaning.

[0016] Another object of this invention at least in its preferred forms, is to provide a cleaning device having an auxiliary laundry basket which comprises a laundry drum, a plurality of triangular crosspieces integrally provided at a regular interval around an inner periphery of the laundry drum, and a plurality of auxiliary arcuate flat laundry baskets detachably disposed on the inner periphery of the drum and between the crosspieces, wherein each arcuate flat laundry basket consisting of a pair of arched flat laundry baskets whereby clothing or other material can be efficiently washed by either wet cleaning or by laundry-cleaning.

[0017] Still another object of this invention in its preferred embodiments is to provide a cleaning device having an auxiliary laundry basket which comprises a laundry drum having a plurality of triangular crosspieces integrally provided at a regular interval on the inner periphery of the laundry drum, and a plurality of elastic bindings for fixing the washed clothes whereby clothing or other material can be efficiently washed by laundry-cleaning.

[0018] Thus from a first aspect, the present invention provides a wet cleaning device having an auxiliary laundry basket which comprises: a laundry drum; a plurality of triangular crosspieces integrally provided at a regular interval around an inner periphery of the laundry drum; and a plurality of auxiliary arcuate flat laundry baskets integrally disposed on the inner periphery of the drum and between the crosspieces whereby clothing or other material can be efficiently washed not only by wet cleaning but also by laundry-cleaning simultaneously.

[0019] From a second aspect, the present invention provides a wet cleaning device having an auxiliary laundry basket which comprises: a laundry drum; a plurality of triangular crosspieces integrally provided at a regular

interval around an inner periphery of the laundry drum; and a plurality of auxiliary arcuate flat laundry baskets detachably disposed on the inner periphery of the drum and between the crosspieces whereby clothing or other material can be efficiently washed by either wet cleaning or by laundry-cleaning.

[0020] From a third aspect, the present invention provides a wet cleaning device having an auxiliary laundry basket which comprises: a laundry drum; a plurality of triangular crosspieces integrally provided at a regular interval on an inner periphery of the laundry drum; and a plurality of auxiliary arcuate flat laundry baskets detachably disposed on the inner periphery of the drum and between the crosspieces, wherein each arcuate flat laundry basket consisting of a pair of arcuate flat laundry baskets whereby clothing or other material can be efficiently washed by either wet cleaning or by laundry-cleaning.

[0021] From a further aspect, the present invention provides a wet cleaning device having an auxiliary laundry basket which comprises: a laundry drum having a plurality of triangular crosspieces integrally provided at a regular interval on the inner periphery of the laundry drum, and a plurality of elastic bindings for fixing the washed clothes whereby clothing or other material can be efficiently washed by laundry-cleaning.

[0022] Preferred embodiments of the invention will now be described, by way of example only, and with reference to the accompanying drawings in which:

FIG. 1 is a simplified perspective view of a wet cleaning device having a plurality of auxiliary laundry baskets of this invention;

FIG. 2 is a simplified front view of a wet cleaning device having a plurality of auxiliary laundry baskets shown in FIG. 1;

FIG. 3 is an enlarged perspective view of a wet cleaning device, from which a laundry basket is being disengaged;

FIG. 4 is an enlarged perspective view of a laundry basket to be disposed on an inner periphery of a laundry drum and between the triangular crosspieces, with its door being opened; and

FIG. 5 is an enlarged perspective view of a laundry drum, in which the washed big cloth is being fastened by a pair of elastic bindings on an inner periphery of the laundry drum.

[0023] Referring now to the drawings, a laundry drum 10 according to a preferred aspect of this invention comprises an outer drum 12 and an inner drum 14 having a number of water openings 14c, which are provided at regular intervals on an inner periphery 14b of the inner drum 14.

[0024] As shown in FIGS. 1, 2 and 3, a plurality of triangular crosspieces 16 are integrally provided at a regular interval to locate longitudinally on the inner periphery 14b of the inner drum 14.

[0025] As is best shown in FIGS. 1 and 4, each auxiliary laundry basket 18 for containing the stockings, sweaters and other soft clothes 30b to be cleaned forms a cage-like structure which has an arcuate outer wall and an arcuate door 18b pivoted by a pair of hinges 18d. A lock 18c is provided opposite the hinges of the arcuate door 18b.

[0026] The lock 18c of the arcuate door 18b can be fitted into a female lock provided on the auxiliary laundry basket.

[0027] A number of water openings 18a are provided on the arcuate outer wall and the arcuate door 18b.

[0028] The auxiliary laundry basket 18 is preferably made of stainless steel, and a number of the water openings 18a permit maximum flow of the washing water.

[0029] The auxiliary laundry basket 18 is large and long enough to be fitted into between the triangular crosspieces 16.

[0030] As shown in FIG. 3, a pair of the arcuate flat laundry baskets 18 are inserted into the inner drum 14 through the opening 14a thereof to locate between the triangular crosspieces 16, and the bolts 20 are inserted into the water openings 18a and the water openings 14c of the inner drum 14 and fastened by the nuts (not shown) to secure the arcuate flat laundry baskets 18 on the inner periphery 14b of the inner drum 14.

[0031] In this drawing, six arcuate flat laundry baskets 18 are secured on the inner periphery 14b of the inner drum 14.

[0032] It is understood that a plurality of screw openings 14c are provided through the inner drum 14 at regular intervals thereof.

[0033] The screwed top portions (not shown) of the bolts 20 penetrating through the water openings 18a of the laundry baskets 18 are screwed also into the water openings 14c of the inner drum 14 in order to integrally secure the laundry baskets 18 on the inner periphery 14b of the inner drum 14.

[0034] In order to maintain a rotational balance of the laundry drum 10, more than a pair of the arcuate flat laundry baskets 18 is disposed at regular intervals on the inner periphery 14b of the inner drum 14.

[0035] As shown in FIG. 5, a pair of elastic bindings such as rubber bands 22, each having a hook 24 at each end portion, are disposed on the inner periphery 14b of the inner drum 14 in order to fasten big washed clothes such as a blanket or overcoat 30a on the inner periphery 14b of the inner drum 14.

[0036] As described in the foregoing paragraphs, the door 18b of the laundry basket 18 is opened, into which the stockings, sweaters and other soft clothes 30b are put, the door 18b is shut again and locked by the lock 18c, and subsequently the laundry drum 10 is rotated by a conventional electric motor (not shown).

[0037] Accordingly, entanglement of the stockings, sweaters and other soft clothes 30b, which are put in the laundry baskets 18, is preferably decreased so that stains and dirt of the washed clothes 30b can be cleaned

quickly and efficiently by washing water passing through the water openings 18a and the water openings 14c of the inner drum 14.

[0038] To this end, the laundry baskets 18 (or wet cleaning in water) can be applied to all of the wool, silk, rayon, stockings and sweaters, but other soft clothes such as those stained with water-soluble stains and sweated clothes can be cleaned by the wet cleaning as well.

[0039] Accordingly, a fatal loss of the washed clothes such as a worn-out, nap, shrinkage, loss of shape or change of feeling which are usually caused by a long crumpling or rubbing of the clothes in the conventional water washing can be prevented, thus avoiding a possible trouble with a user.

[0040] In accordance with the wet cleaning device having a simple construction of this invention, the cost of equipment is small, a safety of the washed clothes is promised, the environmental problem can be maintained, and a high quality wet cleaning can be efficiently carried out.

[0041] The range of wet cleaning can be remarkably widened in order to make a big benefit to the cleaning industry.

[0042] Accordingly, most of the clothes, which have been washed by dry cleaning, can be shifted to wet cleaning without using solvent.

[0043] It should be understood that the laundry drum 10 and a plurality of the arcuate flat laundry baskets 18 of this invention enables to wash the clothing or other material efficiently not only by wet cleaning but also by laundry-cleaning simultaneously so that the washing is not crumpled unnecessarily.

[0044] Since certain changes may be made in the above wet cleaning device having an auxiliary laundry basket without departing from the scope of the invention herein claimed, it is intended that all matter considered in the above description or shown in the accompanying drawings shall be interpreted in an illustrative and not in a limiting sense.

Claims

1. A wet cleaning device having an auxiliary laundry basket which comprises:

a laundry drum (10) consisting of an outer drum (12) and an inner drum (14) having a number of water openings (14c), which are provided at regular intervals on an inner periphery (14b) of the inner drum (14),
 said inner drum (14) having a plurality of triangular crosspieces (16) integrally provided at a regular interval on the inner periphery (14b) of said inner drum (14),
 said inner drum (14) having a plurality of arcuate flat laundry baskets (18) disposed on said

inner periphery (14b) of said inner drum (14) and between the crosspieces (16); and
 each said arcuate flat laundry basket (18) having a number of water openings (18a), a door (18b) having a number of water openings (18a) and pivoted to said laundry basket (18) by a pair of hinges (18d), and a lock (18d) provided at an open portion of said door (18b).

2. A wet cleaning device having an auxiliary laundry basket as claimed in claim 1, which comprises a laundry drum (10), a plurality of triangular crosspieces (16) integrally provided at a regular interval around the inner periphery (14b) of said inner drum (14) and between the crosspieces (16), and a plurality of the arcuate flat laundry baskets (18) detachably disposed on the inner periphery (14b) of said inner drum (14) and between the crosspieces (16).
3. A wet cleaning device having an auxiliary laundry basket as claimed in claim 1, which comprises a laundry drum (10), a plurality of triangular crosspieces (16) integrally provided at a regular interval around the inner periphery (14b) of said inner drum (14) and between the crosspieces (16), a plurality of the arcuate flat laundry baskets (18) detachably disposed on the inner periphery (14b) of said inner drum (14) and between the crosspieces (16), and a plurality of elastic bindings (22), each said elastic binding (22) having a hook (24) at each end portion.
4. A wet cleaning device having an auxiliary laundry basket which comprises: a laundry drum (10); a plurality of crosspieces provided at a regular interval around an inner periphery of the laundry drum; and a plurality of auxiliary arcuate flat laundry baskets (18) disposed on the inner periphery of the drum and between the crosspieces.

FIG. 1

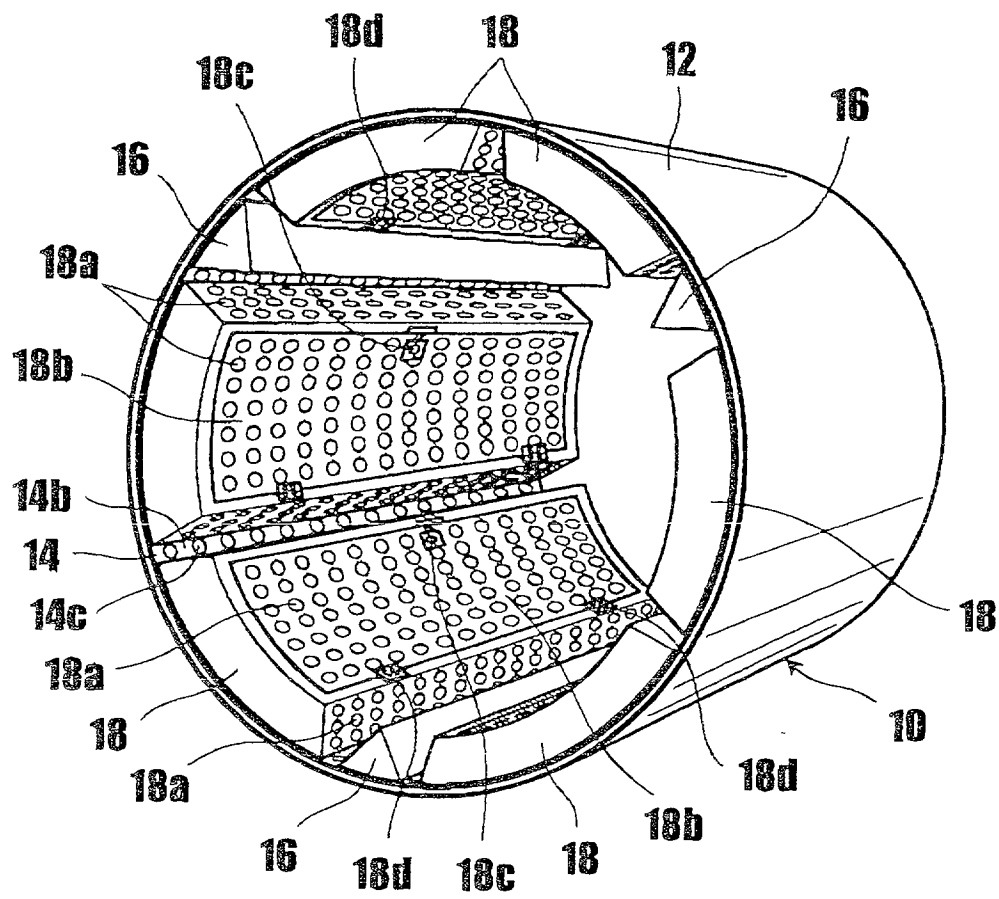


FIG. 2

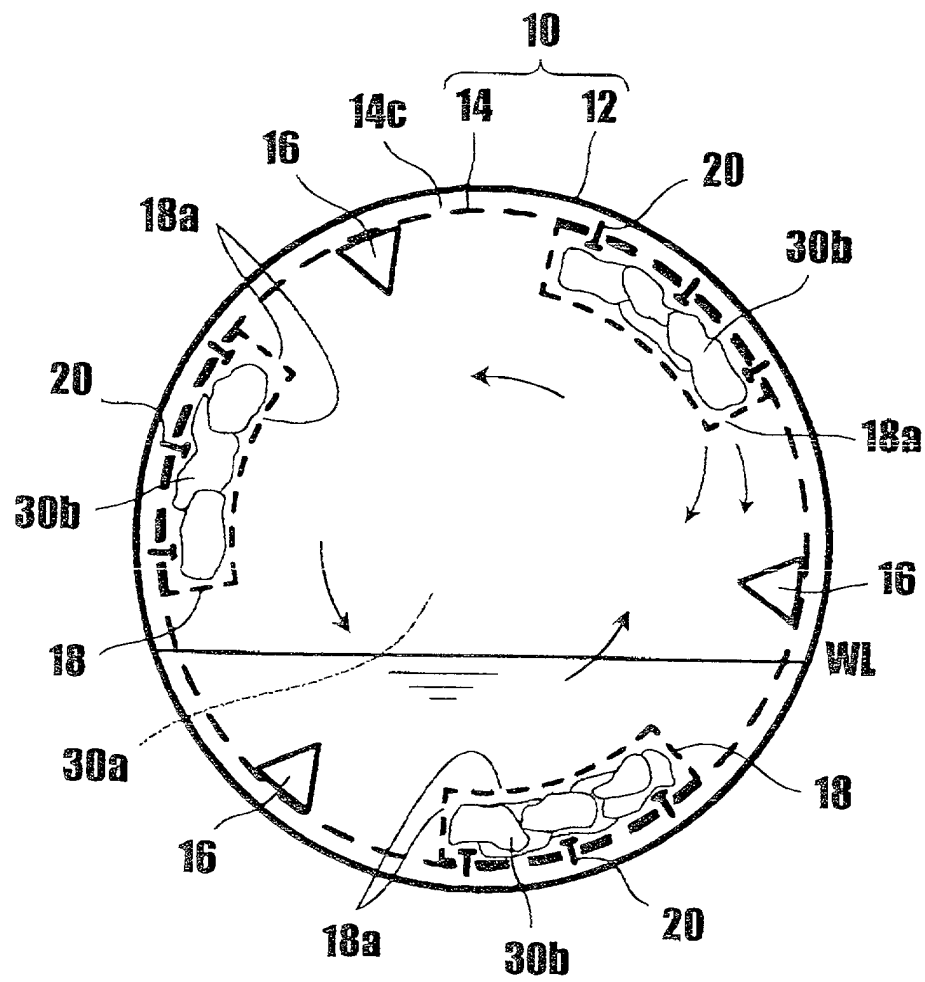


FIG. 3

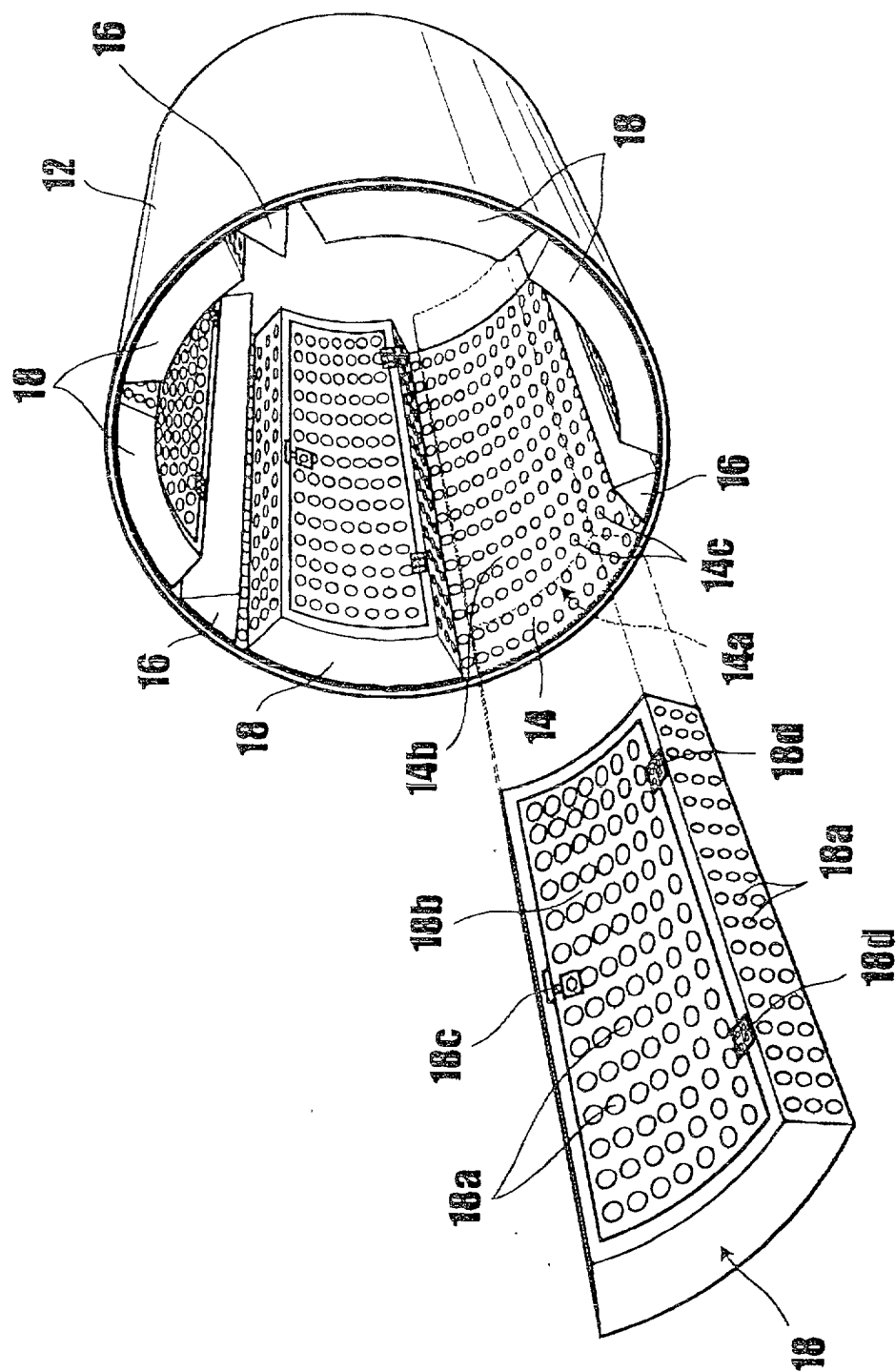


FIG. 4

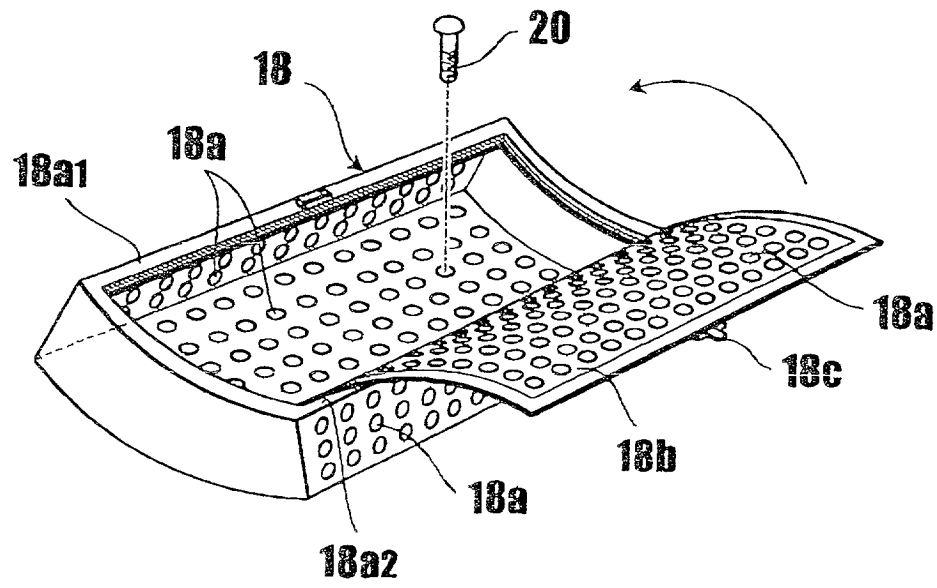
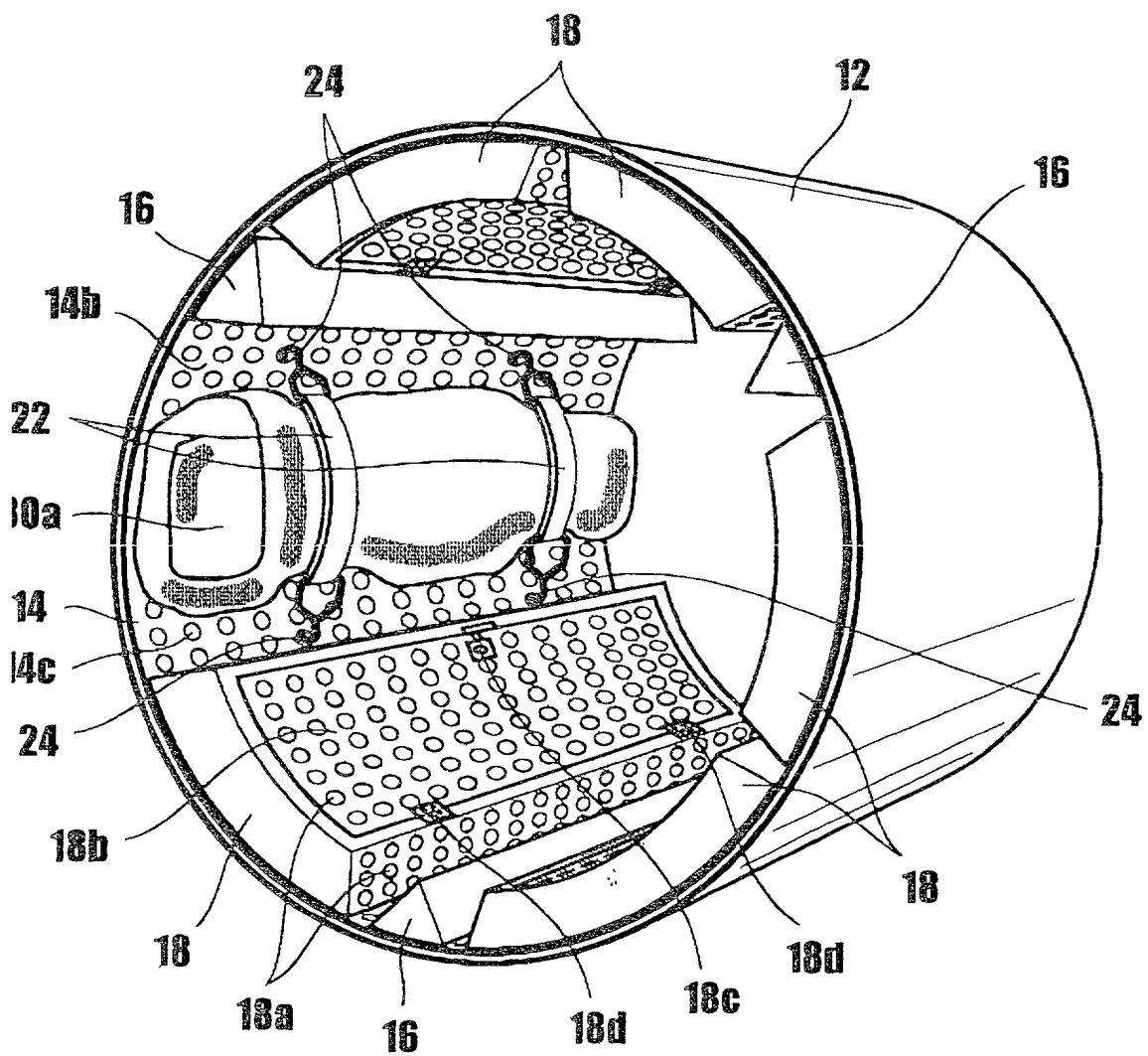


FIG. 5





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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 1309

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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 August 2001	Examiner Debard, M
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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