

# (11) **EP 3 037 557 A1**

(12)

## **EUROPEAN PATENT APPLICATION**

(43) Date of publication:

29.06.2016 Bulletin 2016/26

(51) Int CI.:

C14B 15/06 (2006.01)

(21) Application number: 14199640.5

(22) Date of filing: 22.12.2014

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated Extension States:

**BA ME** 

(71) Applicant: Mink Papir A/S 7500 Holstebro (DK)

(72) Inventor: The designation of the inventor has not yet been filed

(74) Representative: Nielsen, Henrik Sten

Budde Schou A/S Hausergade 3

1128 Copenhagen K (DK)

## (54) A pelt board and a method of manufacturing a pelt board

(57) An elongated pelt board (10) for accommodating an animal pelt. The pelt board comprises a first wall element (14, 20) defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member. The pelt board further comprises a second wall element (16, 18) defining a second outwardly oriented surface, a

second inwardly oriented surface facing said first inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member, and said first wall element (14, 20) and said second wall element (16, 18) being of identical configuration and each having a low curvature part (14, 16), and a high curvature part (18, 20) joint together along a line of junction (17, 19).

EP 3 037 557 A1

## Description

[0001] The present invention relates to an elongated pelt board for accommodating an animal pelt, and a method of manufacturing a pelt board for accommodating an animal pelt.

1

#### Background

[0002] In the drying of pelts, e.g. mink or fox pelt, after skinning and scraping off the layer of fat on the leather side of the pelt, the pelts are typically stretched on a pelt board which is often provided with a fat-absorbing material with the object of removing the remaining fat on the leather side of the pelt.

[0003] The use of pelt boards in connection with the drying of pelts is well known in the prior art and there has in the past been developed a great number of configurations of such pelt boards. There has also been established a standard of pelt sizes and thus also of pelt boards.

[0004] The most widespread pelt boards in the past were made of wood, and may in short be described as a flat piece of wood defining a longitudinal direction and having in the longitudinal direction a first broadside surface, a second broadside surface, a first narrow side surface and a second narrow side surface. One end of the board, the bottom end, is cut off at right angles to the longitudinal direction. The lower end adjacent the bottom has a constant breadth, which breadth gradually decreases towards a pointed and rounded end approaching the top end of the board. Such boards typically also have a longitudinal slot for allowing air to pass.

[0005] The drying procedure of the pelt shall be understood to be a drying-out of the leather side of the pelt to an extent which by experience prevents any attack on the pelt by mites. The drying process is typically effected by the blowing of dry air in the slot on the board via pipes which are introduces into the slot, where via the perforations in the walls of the pelt bag the dry air is diffused out of the leather side of the pelt and dries the pelt.

[0006] From WO 01/62985 is known a bag shaped holster, which is referred to as a fixing bag, which is used for securing the pelts on a pelt board during the drying process. The fixing bag is drawn over the board with the stretched pelt from the cranium end of the pelt so that the fur side of the pelt is in tight contact with the fur, which results in the pelt being pressed against the board with a force which is sufficient for the pelt to remain substantially in the stretched position during the drying.

[0007] Further prior art includes US 3,137,963 in which a pelt board comprising a flat body of sheet metal having perforations therein and beads along the sides is disclosed.

[0008] In WO 2005/026394 is disclosed a pelt board which is lockable in a position, in which it has a first circumference and can also assume a position in which it has a second circumference being smaller than the first

circumference by displacing opposing half parts in relation to each other. This results in a considerably easier removal of the pelt from the pelt board.

[0009] US 1,110,016 relates to a pelt board having a pair of longitudinal legs and a nose piece located there between.

[0010] US 3,526,967 relates to a pelt drying system including an air conditioning unit for supplying temperature controlled air to a number of manifolds having nozzles onto which the pelt drying frames are attached.

[0011] WO 82/03634 relates to a pelting board of nonabsorbing plastics having a plurality of channels near its edges to supply drying air to the edges of the board so that the pelt dry evenly and stick less often to the board.

[0012] US 3,303,038 relates to a pelt drying frame comprising opposite side rods joined at a nose over which frame a pelt may be drawn and held taut.

[0013] DK 2012 70519 A1 relates to a pelt board has a lower part and an upper part. The lower part has an outer cross section circumference which is substantially constant and the upper part has an outer cross section which is gradually decreasing.

[0014] DK 2013 00091 U4 relates to a pelt board has a lower part and an upper part. The lower part has an outer cross section circumference, which is substantially constant and the upper part has an outer cross section which is gradually decreasing. The lower part extends between 36cm and 50cm.

[0015] DK 177480 B1 discloses a pelt board having two broad elongated side surfaces. The pelt board comprises expansion means defining a narrow elongated side surface extending between side edges of the broad side surfaces. The expansion means are movable between an expanded position and a non-expanded position.

[0016] Some of the above pelt boards have an outer circumference made up of opposing non-movable surfaces and opposing movable surfaces. Pelt boards having this variable circumference for simplifying the removal of the pelt after drying are thus known in the prior art. The pelt boards are thus expanded during the drying process. As the pelt is fixated firmly during drying and may shrink slightly, the pelts may be difficult to remove from the pelt boards. Further, the pelts are typically fixated in a stretched state, thus increasing the pressure of the pelt onto the pelt board. By reducing the circumference of the pelt board, the pelt will be easier to remove from the pelt board.

[0017] However, the pelt boards used until now only feature a limited variation in the circumference in that only a limited part of the circumferential surfaces are moving/may be reduced. Although the pelt board according to the prior art may alter the total circumference and thereby relax the pelt, it has been noticed by the applicant that the pelt in some circumstances may still stick quite firm onto the pelt board at the locations of the pelt board at which the surface or circumference has not been re-

35

40

15

25

30

35

40

45

4

**[0018]** It is thus an object according to the present invention to provide technologies for simplifying the removal of the pelts from the pelt boards and avoiding the situations where the pelt due to the drying and stretching may stick to the pelt board, and at the same time ensure that the pelt board keeps a substantially elliptical circumference in order to distribute the inwardly oriented pressure of the pelt evenly over the pelt board.

**[0019]** It is an advantage according to the present invention that the pelt board may be locked in the expanded position and that the movement between the expanded position and the reduced position may be performed very accurately using very little force.

**[0020]** It is a feature according to the present invention that the pelt board may be modified to accommodate pelts of different sizes and shapes.

#### Summary of the invention

**[0021]** The above object, the above features and the above advantage together with numerous other objects, advantages and features, which will be evident from the below detailed description of the present invention, are according to a first aspect of the present invention obtained by an elongated pelt board for accommodating an animal pelt, the pelt board defining a longitudinal direction, a first radial direction perpendicular to the longitudinal direction and a second radial direction perpendicular to the longitudinal direction and the first radial direction, the pelt board comprising:

a first wall element extending along said longitudinal direction and defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member,

a second wall element extending along said longitudinal direction and defining a second outwardly oriented surface, a second inwardly oriented surface facing said first inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member,

said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction,

said low curvature part of said first wall element defining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element defining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges,

said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direction,

said first wall element and said second wall element defining:

a contracted state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of said first wall element, and

an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said first radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said first radial direction and

an elongated core element extending within said cavity along said longitudinal direction between a top end and a bottom end and being movable in relation to said first wall element and second wall element, said elongated core element comprising a first cooperating member interacting with said first actuator member of said first wall element and second cooperating member interacting with said second actuator member of said second wall element, for allowing said first wall element and said second wall element, to selectively define said contracted state or said expanded state by moving said elongated core element in said longitudinal direction relative to said first wall element and said second wall element.

**[0022]** The above object, the above features and the above advantage together with numerous other objects, advantages and features, which will be evident from the below detailed description of the present invention, are according to a second aspect of the present invention obtained by an elongated pelt board for accommodating an animal pelt, the pelt board defining a longitudinal direction, a first radial direction perpendicular to the longitudinal direction and a second radial direction perpendicular to the longitudinal direction and the first radial direction, the pelt board comprising:

25

35

45

a first wall element extending along said longitudinal direction and defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member,

a second wall element extending along said longitudinal direction and defining a second outwardly oriented surface, a second inwardly oriented surface facing said first inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member,

said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction,

said low curvature part of said first wall element defining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element defining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges, said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direction.

said first wall element and said second wall element defining:

a contracted state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of said first wall element, and

an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said second radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said second radial direction, and

an elongated core element extending within said cavity along said longitudinal direction between a top end and a bottom end and being movable in relation to said first wall element and second wall element, said elongated core element comprising a first cooperating member interacting with said first actuator member of said first wall element and second cooperating member interacting with said second actuator member of said second wall element, for allowing said first wall element and said second wall element, to selectively define said contracted state or said expanded state by moving said elongated core element in said longitudinal direction relative to said first wall element and said second wall element.

[0023] The pelt board should have an overall size which is suitable for accommodating a pelt of an animal such as a mink or fox. The pelt board typically has a substantially elliptic cylindrical shape which is tapering in the longitudinal direction. The pelt is applied onto the pelt board by drawing in onto the pelt board in the longitudinal direction, while the pelt board assumes its expanded state. It is understood that state of the art pelt bags may be used between the pelt and the pelt board in order to remove fatty substances from the pelt. The wall elements typically include a large number of holes or nozzles for allowing ventilation air to pass from the cavity within the pelt board to the outside through the pelt. [0024] The first and second wall elements together define the substantially elliptical outer circumference of the pelt board, which is suitable for and adapted for accommodating a pelt of an animal, through its respective outwardly oriented surfaces. The inwardly oriented surfaces may preferably define a concave shape, which surfaces together define the cavity in the pelt board. The wall elements are typically made of plastics. The wall elements are further delimited in the circumferential direction by longitudinal edges.

[0025] The elongated core element, which is located in the cavity, is movable in the longitudinal direction in relation to the wall elements. The actuator members of the wall elements and the cooperating members of the core element interact when the core element is moved in the longitudinal direction within the cavity. The cooperating members move in the longitudinal direction together with the elongated core whereas the actuator members move in any of the radial directions along with its respective wall element. The interaction between the cooperating members and the actuator members translate the longitudinal movement of the cooperating members to a radial movement of the actuator members.

**[0026]** The actuator members and the cooperating members thus cause the wall elements to move towards each other or away from each other in the respective first or second radial direction, thus making the cavity smaller or larger, when the core element is moved in the longitudinal direction relative to the wall elements. The wall elements are thus movable between the contacted state,

30

40

in which the wall elements have moved towards each other, reducing the radial distances, and consequently the circumference of the pelt board and the cavity is small, and an expanded state in which the wall elements have moved away from each other, increasing the radial distances and consequently the circumference of the pelt board and the cavity is large. Typically, an upward movement of the elongated core element in relation to the wall elements yields an expansion of the circumference of the pelt board, whereas a downward movement of the elongated core element in relation to the wall elements yields a contraction of the circumference of the pelt board.

**[0027]** The outer surface of the wall elements will constitute the contacts surface between the pelt and the pelt board, not taking into account the optional presence of a pelt bag between the pelt and the pelt board.

[0028] When in the expanded state, the circumference of the pelt board is large. In this state the pelt is applied to the pelt board, optionally using a pelt bag. During the drying process, the pelt looses fat and moist and consequently contracts slightly. It may thereafter be very difficult to remove the pelt from the board. By contacting the pelt board by moving the wall element towards each other, the circumference of the pelt board defined by the outer surface of the wall elements will be smaller and thus allow the pelt to loosen from the outer surfaces of the wall elements, such that the pelt may be removed from the pelt board. In this context, the complete circumference of the pelt board will contract, effectively eliminating the risk of the pelt sticking to the pelt board.

[0029] In order to simplify the overlapping of the wall elements and allow the gap between adjacent wall elements to be minimized, the wall elements may be partially flexible. Although it is fully feasible to realize an expansion and contraction of the pelt board via the wall element using rigid wall elements, the thickness of the wall element will typically prevent a fully flush outwardly oriented surface in the expanded state. By allowing the part of the wall element which is going to be pushed below and/or above an adjacent wall element in the contracted state to be flexible in relation to the part of the wall element which is going to remain exposed to the pelt, the longitudinal edges of adjacent wall elements may be caused to be fully flush or continuous in the expanded state.

**[0030]** According to a further embodiment according to the present invention, the first actuator member and the second actuator member constitute pins and the first cooperating member and the second cooperating member constitute grooves, e.g. linear or curved grooves, in which the pins are guided between the contracted state and the expanded state, or, wherein the first cooperating member and the second cooperating member constitute pins and the first actuator member and the second actuator member constitute grooves, e.g. linear or curved grooves, in which the pins are guided between the contracted state and the expanded state.

[0031] The above guiding principle using a pin which is guided by a groove allows a well defined movement

of the wall elements. It is evident that the opposite configuration is equally feasible, i.e. having the first actuator member and the second actuator member constitute grooves, e.g. linear or curved grooves, and the first cooperating member and the second cooperating member constitute pins which are guided by the grooves between the contracted state and the expanded state, or any combination thereof. The longitudinal movement of the elongated core thus translates into a radial movement of the wall elements. The groove/pin configuration also allows for a very convenient latching of the wall elements and the core.

**[0032]** Another guiding principle is employed by using wedge members which exhibit an angle and may consequently slide outwardly when pushed. The longitudinal movement of the elongated core element thus translates into a radial movement by interaction between the sloped members. This guiding principle may preferably be used when changing from said contracted state to said expanded state.

**[0033]** Yet another guiding principle is employed by using actuator members acting on the side of the elongated core element which is located opposite the wall element to be moved. The longitudinal movement of the elongated core element thus translates into a radial movement by interaction typically by using sloped members. This guiding principle may preferably be used when changing from said expanded state to said contracted state.

**[0034]** According to a further embodiment according to the present invention, the first wall element and the second wall element have an arched shape such that the first outwardly oriented surface and the second outwardly oriented surface define a convex shape.

**[0035]** Using a convex shape of the wall element will allow the outer surfaces of the wall elements to adapt to the pelt which typically has a cylindrical shape.

**[0036]** According to a further embodiment according to the present invention, the first wall element and the second wall element comprise ventilation grooves between the cavity and the outside of the pelt board.

**[0037]** Ventilation grooves may be present in order to allow dry air to be injected into the pelt for removing any remaining moisture in the pelt and thereby decrease the drying time of the pelt.

**[0038]** According to a further embodiment according to the present invention, the first wall element and the second wall element define an opening between the cavity and the outside of the pelt board at the bottom end for allowing ventilation air to enter the cavity.

**[0039]** The dry air injected into the pelt via the pelt board and used for decreasing the drying time of the pelt may be let into the pelt board via a cavity near the bottom end of the pelt board. The bottom end of the pelt board is typically attachable to a drying unit for holding the pelt board in an upright position and for supplying the drying air

[0040] In accordance with the presently preferred em-

30

40

45

50

55

bodiment of the elongated pelt board according to the first and the second aspect of the present invention, the first wall element and the third wall element are constituted by a first unitary structure, the second wall element and the fourth wall element are constituted by a second unitary structure and the core element and the core extension element are constituted by a second unitary core element structure. Consequently, this presently preferred embodiment of the pelt board according to the first and the second aspect of the present invention is assembled from three separate elements, namely a single unitary core element structure and two identically shaped unitary wall element structures.

[0041] In order to increase the rigidity of the pelt board and for allowing the pelt board to easily connect to a drying unit, the pelt board may assume the same circumference at the bottom end both in the expanded state and in the contracted state. This may be made by fixedly connecting the wall elements at constant distance relative to each other near the bottom end and allowing the flexibility of the wall elements to determine the movement of the lower portion of the pelt board. The lower extreme of the pelt board is typically not used for accommodating the pelt since the pelt boards are typically made longer than the longest pelts for which the pelt board is intended. [0042] According to a further embodiment according to the present invention, the first wall element defines a first radial edge adjacent the top end of the elongated core, the second wall element comprising a second radial edge adjacent the top edge of the elongated core, the pelt board further comprising:

a third wall element adjacent to the first wall element at the first radial edge, the third wall element extending along the longitudinal direction and away from the second wall element, the third wall element defining a third outwardly oriented surface and a third actuator member, a fourth wall element adjacent to the second wall element at the second radial edge, the fourth wall element extending along the longitudinal direction and away from the second wall element, the fourth wall element defining a fourth outwardly oriented surface and a fourth actuator member, the third and fourth wall elements being spaced apart in the first radial direction, and

a core extension element connected to the top end of the elongated core element and extending along the longitudinal direction away from the elongated core element, the core extension element being movable in relation to the third wall element and fourth wall element, the core extension element comprising a third cooperating member interacting with the third actuator member of the third wall element and a fourth cooperating member interacting with the fourth actuator member of the fourth wall element for allowing the third wall element and the fourth wall element to change between the contracted state and the expanded states by moving the elongated core element and the core extension element in the longitudinal direction relative to the first wall element, the second wall element, the third wall element,

the third wall element and the fourth wall element.

[0043] Although it is sometimes feasible, having a pelt board which is expandable along its entire circumference may be undesirable near the upper part of the pelt board. The upper part of the pelt board is intended to accommodate the neck and head part of the animal and since the neck and head part of the animal pelt have a smaller circumference than the body part of the pelt, the pelt board usually is tapered towards the top end having a thickness of the pelt board which is reduced near the top of the pelt board, as described above. Since the actuator members, cooperating members and elongated core element require some space within the cavity, it may not be feasible to allow the pelt board to expand and contract along its entire circumference, at the top end of the board. [0044] According to a further embodiment according to the present invention, the third wall element and the fourth wall element comprise opposing extension elements partially enclosing the core extension element.

**[0045]** According to a further embodiment according to the present invention, the pelt board comprises:

a lower section including the first wall element and the second wall element and the elongated core element.

an upper section comprising the third wall element, the fourth wall element and the core extension element, and

an intermediate section located between the lower section and the upper section and comprising a core connecting element interconnecting the elongated core element and the core extension element.

[0046] According to a further embodiment according to the present invention, the third cooperating member and the fourth cooperating member constitute pins and the third actuator member and the fourth actuator member constitute grooves, e.g. linear or curved grooves, in which the pins are guided between the contracted state and the expanded state, or, the third actuator member and the fourth actuator member constitute pins and the third cooperating member and the fourth cooperating member constitute grooves, e.g. linear or curved grooves, in which the pins are guided between the contracted state and the expanded state.

**[0047]** The above guiding principle using a pin which is guided by a groove allows a well defined movement of the wall elements. This principle has been explained above in connection with the first and second actuator members.

**[0048]** According to a further embodiment according to the present invention, the third wall element is connected to the first wall element at the first radial edge and the fourth wall element is connected to the second wall element at the second radial edge.

**[0049]** By connecting the third wall element to the first wall element at the first radial edge and connecting the fourth wall element to the second wall element at the

20

25

35

40

45

50

55

second radial edge, it may be assured that the third wall element and the fourth wall element moves uniformly and synchronous with the respective first wall element and second wall element. It may also be avoided that the pelt is squeezed in-between the wall element and the arched wall elements at the first and second radial edges.

[0050] According to a further embodiment according to the present invention, the elongated core element comprises a first protrusion adjacent the bottom end, the elongated core element being spring-loaded at the bottom end and defining a centralized relaxed position and a non-centralized loaded position in the first radial direction and/or second radial direction, the first wall element and the second wall element comprise a second protrusion cooperating with the first protrusion such that when the first wall element and the second wall element define the expanded state and the elongated core element defines the centralized related position, the first and second protrusions prevent any longitudinal movement of the elongated core element, whereas when the elongated core element defines the non-centralized loaded position, the first and second protrusions allow longitudinal movement of the elongated core element.

[0051] In the state of the art expandable and contactable pelt boards, the pelt board is maintained in the expanded state merely due to the design of and internal friction between the movable parts of the pelt board. The friction increases with the pressure applied to the pelt board and although an increased friction may help keeping the pelt board in the expanded state also when a large inwardly pressure is applied from the pelt, it may also be very difficult to contract the pelt board. Experience has shown that after the drying, when the pelt has shrunk and thus applies a large pressure onto the pelt board, the users have to apply a large manual force to cause the pelt board to collapse. This work is very tedious and may lead to work related injuries.

[0052] The locking mechanism described above making use of cooperating protrusions for preventing movement of the elongated core element and thereby contraction of the pelt board allows the pelt board to remain in the expanded state even when exposed to very large inwardly oriented pressure, while reducing the amount of work needed for changing the pelt board into the contracted state. The first and second protrusions will interlock when the elongated core is in its central position, effectively preventing any longitudinal movement of the elongated core, which in turn prevents any radial movement of the wall elements.

**[0053]** By merely exposing the elongated core element to a small radial force, overcoming the friction between the first and second protrusion and the spring constant of the elongated core element, the inwardly oriented pressure from the dried pelt will cause the wall element to move inwardly and the pelt board to contact, while the elongated core element is moved in the longitudinal direction and the first protrusion is passing by the second protrusion. This mechanism will also be less prone to

accidental activation since it is not depending on any hard to determine internal friction between the activation members and the cooperating members.

[0054] It is evident that the above locking mechanism may be used for a generic pelt board which does not necessarily have to encompass the four way expansion. Such pelt board may e.g. be defined as an elongated pelt board for accommodating an animal pelt, the pelt board defining a longitudinal direction, a first radial direction perpendicular to the longitudinal direction and a second radial direction perpendicular to the longitudinal direction and the first radial direction, the pelt board having a wall element and an elongated core element covered by the wall element, the wall element being capable of assuming an expanded state and a contacted state by longitudinal movement of the elongated core element, the elongated core element comprising a first protrusion adjacent a bottom end of the pelt board, the core element being springloaded at the bottom end and defines a centralized relaxed position and a non-centralized loaded position in the first radial direction and/or second radial direction, the wall element comprising a second protrusion cooperating with the first protrusion such that when the wall element define the expanded state and the elongated core element define the centralized related position, the first and second protrusions preventing any longitudinal movement of the elongated core element, whereas when the elongated core element define the non-centralized loaded position, the first and second protrusions allow longitudinal movement of the elongated core element.

[0055] The change from expanded state to contracted state may preferably be made when the bottom end of the elongated core element is attached to the drying unit, e.g. by tilting the pelt board sideways, thereby also taking advantage of the leverage provided by the pelt board for overcoming the friction between the first and second protrusions. The above object, the above features and the above advantage together with numerous other objects, advantages and features which will be evident from the below detailed description of the present invention are according to a third aspect of the present invention obtained by a method of manufacturing a pelt board for accommodating an animal pelt, the method comprising:

providing a first wall element defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member,

providing a second wall element defining a second outwardly oriented surface, a second inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member, said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction,

said low curvature part of said first wall element de-

15

20

25

30

35

40

45

50

55

fining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element defining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges, said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direction,

providing an elongated core element comprising a first cooperating member and a second cooperating member.

positioning said first wall element and said second wall element along a longitudinal direction such that said first inwardly oriented surface is facing said second inwardly oriented surface and spaced apart along a first radial direction perpendicular to said longitudinal direction, such that said first inwardly oriented surface and said second inwardly oriented surface together define a cavity along said longitudinal direction,

interacting said first cooperating member and said second cooperating member with said first actuator member of said first wall element and said second actuator member of said second wall element, respectively, and

moving said elongated core element in said longitudinal direction relative to said first wall element and said second wall element causing said first wall element and said second wall element to move between a contracted state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of said first wall element, and

an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said first radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said first radial direction.

**[0056]** The above object, the above features and the above advantage together with numerous other objects, advantages and features which will be evident from the below detailed description of the present invention are according to a fourth aspect of the present invention obtained by a method of manufacturing a pelt board for accommodating an animal pelt, the method comprising:

providing a first wall element defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member,

providing a second wall element defining a second outwardly oriented surface, a second inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member, said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction,

said low curvature part of said first wall element defining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element defining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges, said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direction,

providing an elongated core element comprising a first cooperating member and a second cooperating member,

positioning said first wall element and said second wall element along a longitudinal direction such that said first inwardly oriented surface is facing said second inwardly oriented surface and spaced apart along a first radial direction perpendicular to said longitudinal direction, such that said first inwardly oriented surface and said second inwardly oriented surface together define a cavity along said longitudinal direction.

interacting said first cooperating member and said second cooperating member with said first actuator member of said first wall element and said second actuator member of said second wall element, respectively, and

moving said elongated core element in said longitu-

continuities.

dinal direction relative to said first wall element and said second wall element causing said first wall element and said second wall element to move between a contracted state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of said first wall element, and

an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said second radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said first radial direction.

[0057] The above method according to the third and fourth aspects may preferably be used together with the pelt board according to the first and second aspects. The wall elements and the elongated core are preferably made as separate molded plastic items. The wall elements are typically snap fitted together. In some cases, the first wall element and the second wall element may constitute two or more items which are snap fitted together.

## Brief description of the drawings

## [0058]

FIGS. 1A, 1B and 1C are a series illustrating schematically a first embodiment of a pelt board according to the present invention,

FIGS. 2A, 2B and 2C are a series similar to the series of FIGS. 1A, 1B and 1C, respectively, illustrating an alternative embodiment of the pelt board according to the present invention,

FIGS. 3A, 3B and 3C are a series similar to the series of FIGS. 2A, 2B and 2C, respectively, illustrating a modification of the embodiment shown in FIGS. 2A, 2B and 2C,

FIGS. 4A and 4B are illustrations similar to the illustrations of FIGS. 1A and 1B, respectively, of a complete pelt board,

FIG. 5 illustrates details of the pelt board shown in FIGS. 1A-1C, and

FIG. 6 illustrates further details of the assembling of the pelt board shown in FIG. 5.

#### Detailed description of the drawings

**[0059]** FIG. 1A shows a perspective view of a part of a first embodiment of a pelt board 10 in its contracted or non-expanded state. The part of the pelt board shown in FIG. 1A is designated the reference numeral 12 and the entire first embodiment 10 of the pelt board is shown in FIGS. 4A and 4B, which will be described in greater details below.

[0060] The lower part 12 of the pelt board 10 is composed of a total of three components, namely two identically shaped shell parts 22 and 24 and a central elongated core element 26.

[0061] Each of the shell parts 22 and 24 comprise a major low curvature wall part 14 and 16, respectively, and a minor high curvature wall part 18 and 20, respectively. The major low curvature wall parts 14 and 16 are joint to the minor high curvature parts 18 and 20, respectively, through imaginary lines 17 and 19, respectively. [0062] The first embodiment of the pelt board 10 shown in FIG. 1A is of a structure, in which the two identically shaped shell parts 22 and 24 in the contracted or nonexpanded state shown in FIG. 1A constitute an almost

expanded state shown in FIG. 1A constitute an almost perfectly configured elliptical cross sectional configuration as the longitudinal edges of the oppositely positioned shell parts 22 and 24 join one another in a basically unbroken elliptically cross sectional configuration. The elliptical cross sectional configuration of the pelt board 10 shown in FIG. 1A is believed to improve the ability of the pelt board to allow an easy removal of the pelt from the pelt board after the tanning of the pelt as the outer surface of the pelt board in its contracted or collapsed state is almost "perfectly" uniform without any substantive dis-

[0063] In FIG. 1B, the first embodiment of the pelt board 10 is shown in its expanded state, in which the two shell parts 22 and 24 are caused to be shifted away from one another establishing a gap between the edges of the oppositely positioned shell parts 22 and 24. The shift of the shell parts 22 and 24 away from one another as illustrated in FIG. 1B and indicated by arrows is accomplished by shifting the central elongated core element 26 in a direction also indicated by an arrow inwardly into the interior of the pelt board 10 forcing the shell parts 22 and 24 away from one another.

[0064] The separation or the shifting of the shell parts 14 and 16 is accomplished by means of cooperating actuator elements 34 and 36 shown in FIG. 1C, the actuator elements 34 being constituted by triangularly shaped bodies extending inwardly from the central part of the major low curvature wall part 22 of the shell part 22 and likewise from the major low curvature wall part 16 of the shell part 24, and the central elongated rod 26 is provided with actuator members 36 defining cooperating sloping cam surfaces with which the actuator members 34 cooperate for pushing the shell parts 22 and 24 away from one another to the expanded state shown in FIG. 1C.

[0065] In FIGS. 2A, 2B and 2C, a second embodiment

of the pelt board 10<sup>1</sup> is shown having the same shell parts 22 and 24 as illustrated in FIGS. 1A, 1B and 1C as described above and the central elongated core element 26. Whereas in FIGS. 1B and 1C, the expansion of the pelt board is established as a vertical separation by pushing the shell parts away from one another, the second embodiment shown in FIGS. 2A, 2B and 2C establishes the expansion of the pelt board by shifting the shell parts 22 and 24 sidewise as illustrated in FIG. 2B and as accomplished by the cooperation between the actuator members 34<sup>1</sup> and 36<sup>1</sup> shown in Fig. 2C. To be more precise, in FIG. 2B, the shell part 22 is shifted to the right and similarly, the shell part 24 is shifted to the left relative to the central elongated core elements 26.

**[0066]** In FIGS. 3A, 3B and 3C, a modified or alternative embodiment of the second embodiment shown in FIGS. 2A, 2B and 2C, respectively, is illustrated differing from the above described second embodiment 10<sup>1</sup> in that the modified embodiment having the reference numeral 10" shifts the shell parts 22 and 24 in opposite directions as compared to the shifting shown in FIG. 2B and is illustrated in FIG. 3B, the shell part 22 is shifted to the left and simultaneously, the shell 24 is shifted to the right as accomplished by the modified cooperating actuator members 34" and 36".

[0067] In FIGS. 4A and 4B, the entire pelt board 10 is shown having in addition to the lower part 12 shown in FIG. 1A, an upper part 30 constituting a geometrical extension and continuation of the lower part 12 and having a tapering configuration. The upper part 30 also comprises two shell parts 32 and 34 which, like the shell parts 22 and 24 of the lower part 12, are caused to be separated similar to the separation of the shell parts 22 and 24 of the first embodiment 10 described above with reference to FIGS 1A, 1 B and 1C. It is readily understood that the separation of the two shell parts 32 and 34 of the upper part 30 is accomplished in the same manner as described above with reference to FIGS. 1A, 1B and 1C in relation to the lower part 12 of the pelt board 10, and like the second embodiment 10<sup>I</sup> shown in FIGS. 2A, 2B and 2C and the modified embodiment 10" shown in FIGS. 3A, 3B and 3C, the complete pelt board 10 shown in FIGS. 4A and 4B may be modified into establishing the sidewise expansion described above with reference to FIGS. 2A, 2B and 2C and also FIGS. 3A, 3B and 3C.

[0068] FIG. 5 and FIG. 6 illustrate in greater details a further embodiment 10<sup>III</sup> of the pelt board according to the present invention, which embodiment exhibits the highly advantageous feature of being composed of no more than three components, namely two identically shaped shell parts 38 and 40 and a central core element 36. The shell parts 38 and 40 integrally comprise the shell parts 22, 32 and 24, 34, respectively, of the first embodiment 10 of the pelt board, as the shell parts 22 and 32 and similarly the shell parts 24 and 34 of the lower and upper parts 12 and 30, respectively, of the pelt board 10 are constituted by a single integral component 38 and 40, respectively.

**[0069]** Likewise, the central elongated core element serving to shift in a forced manner the shell parts 38 and 40 from the contracted or non-expanded state to the expanded state and vice versa serve to engage with the actuator elements of the shell parts 38 and 40.

#### Reference numerals used in the drawings

## [0070]

- 10. Pelt board
- 12. Lower part
- 14. Major low curvature wall part
- 16. Major low curvature wall part
- 17. Imaginary line
  - 18. Minor high curvature wall part
  - 19. Imaginary line
  - 20. Minor high curvature wall part
  - 22. Shell part
- 24. Shell part
  - 26. Elongated core element
  - 30. Upper part
  - 32. Shell part
  - 34. Shell part
- 25 36. Central core element
  - 38. Shell part
  - 40. Shell part

#### 30 Claims

35

40

45

50

- An elongated pelt board for accommodating an animal pelt, said pelt board defining a longitudinal direction, a first radial direction perpendicular to said longitudinal direction and a second radial direction perpendicular to said longitudinal direction and said first radial direction, said pelt board comprising:
  - a first wall element extending along said longitudinal direction and defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member,
  - a second wall element extending along said longitudinal direction and defining a second outwardly oriented surface, a second inwardly oriented surface facing said first inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member, said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction,
  - said low curvature part of said first wall element defining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element de-

15

20

35

40

45

fining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges, said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direc-

said first wall element and said second wall element defining:

a contracted state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of said first wall element, and an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said first radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said first radial direction and

an elongated core element extending within said cavity along said longitudinal direction between a top end and a bottom end and being movable in relation to said first wall element and second wall element, said elongated core element comprising a first cooperating member interacting with said first actuator member of said first wall element and second cooperating member interacting with said second actuator member of said second wall element, for allowing said first wall element and said second wall element, to selectively define said contracted state or said expanded state by moving said elongated core element in said longitudinal direction relative to said first wall element and said second wall element

ement.

2. An elongated pelt board for accommodating an animal pelt, said pelt board defining a longitudinal direction, a first radial direction perpendicular to said longitudinal direction and a second radial direction perpendicular to said longitudinal direction and said first radial direction, said pelt board comprising:

20

a first wall element extending along said longitudinal direction and defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member,

a second wall element extending along said longitudinal direction and defining a second outwardly oriented surface, a second inwardly oriented surface facing said first inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member, said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction,

said low curvature part of said first wall element defining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element defining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges, said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direc-

said first wall element and said second wall element defining:

a contracted state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of

20

35

40

45

50

55

said first wall element, and an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said second radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said second radial direction and

an elongated core element extending within said cavity along said longitudinal direction between a top end and a bottom end and being movable in relation to said first wall element and second wall element, said elongated core element comprising a first cooperating member interacting with said first actuator member of said first wall element and second cooperating member interacting with said second actuator member of said second wall element, for allowing said first wall element and said second wall element, to selectively define said contracted state or said expanded state by moving said elongated core element in said longitudinal direction relative to said first wall element and said second wall element.

- 3. The pelt board according to any of the preceding claims, wherein said first actuator member and said second actuator member constitute pins and said first cooperating member and said second cooperating member constitute grooves, e.g. linear or curved grooves, in which said pins are guided between said contracted state and said expanded state, or, wherein said first cooperating member and said second cooperating member constitute pins and said first actuator member and said second actuator member constitute grooves, e.g. linear or curved grooves, in which said pins are guided between said contracted state and said expanded state.
- 4. The pelt board according to any of the preceding claims, wherein said first wall element and said second wall element comprise ventilation grooves between said cavity and the outside of said pelt board.
- 5. The pelt board according to any of the preceding claims, wherein said first wall element and said second wall element define an opening between said cavity and the outside of said pelt board at said bottom end for allowing ventilation air to enter said cavity.

- 6. The pelt board according to any of the preceding claims, wherein said first wall element and said second wall element have an arched shape such that said first outwardly oriented surface and said second outwardly oriented surface define a convex shape.
- 7. The pelt board according to any of the preceding claims, wherein said first wall element defines a first radial edge adjacent said top end of said elongated core and said second wall element defines a second radial edge adjacent said top edge of said elongated core, said pelt board further comprising:

a third wall element adjacent to said first wall element at said first radial edge, said third wall element extending along said longitudinal direction and away from said second wall element, said third wall element defining a third outwardly oriented surface and a third actuator member, a fourth wall element adjacent to said second wall element at said second radial edge, said fourth wall element extending along said longitudinal direction and away from said second wall element, said fourth wall element defining a fourth outwardly oriented surface and a fourth actuator member, said third and fourth wall elements being spaced apart in said first radial direction, and

a core extension element connected to said top end of said elongated core element and extending along said longitudinal direction away from said elongated core element, said core extension element being movable in relation to said third wall element and fourth wall element, said core extension element comprising a third cooperating member interacting with said third actuator member of said third wall element and a fourth cooperating member interacting with said fourth actuator member of said fourth wall element for allowing said third wall element and said fourth wall element to change between said contracted state and said expanded states by moving said elongated core element and said core extension element in said longitudinal direction relative to said first wall element, said second wall element, said third wall element and said fourth wall element.

- 8. The pelt board according to claim 7, said first wall element and said third wall element being constituted by a first unitary wall element structure, said second wall element and said fourth wall element being constituted by a second unitary wall element structure and said core element and said core extension element being constituted by a single unitary core element structure.
- 9. The pelt board according to any of the claims 7-8,

20

25

35

40

45

50

wherein said pelt board comprises:

a lower section including said first wall element and said second wall element and said elongated core element.

an upper section comprising said third wall element, said fourth wall element and said core extension element, and

an intermediate section located between said lower section and said upper section and comprising a core connecting element interconnecting said elongated core element and said core extension element.

- 10. The pelt board according to any of the claim 7-9, wherein said third wall element being connected to said first wall element at said first radial edge and said fourth wall element being connected to said second wall element at said second radial edge.
- 11. The pelt board according to any of the claims 7-9, wherein said third cooperating member and said fourth cooperating member constitute pins and said third actuator member and said fourth actuator member constitute grooves, e.g. linear or curved grooves, in which said pins are guided between said contracted state and said expanded state, or wherein said third actuator member and said fourth actuator member constitute pins and said third cooperating member and said fourth cooperating member and said fourth cooperating member constitute grooves, e.g. linear or curved grooves, in which said pins are guided between said contracted state and said expanded state.
- 12. The pelt board according to any of the preceding claims, wherein said elongated core element comprises a first protrusion adjacent said bottom end, said elongated core element being spring-loaded at said bottom end and defines a centralized relaxed position and a non-centralized loaded position in said first radial direction and/or second radial direction, said first wall element and said second wall element comprise a second protrusion cooperating with said first protrusion such that when said first wall element and said second wall element define said expanded state and said elongated core element define said centralized related position, said first and second protrusions prevent any longitudinal movement of said elongated core element, whereas when said elongated core element define said non-centralized loaded position, said first and second protrusions allow longitudinal movement of said elongated core element.
- **13.** A method of manufacturing a pelt board for accommodating an animal pelt, said method comprising:

providing a first wall element defining a first out-

wardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member, providing a second wall element defining a second outwardly oriented surface, a second inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member,

said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction, said low curvature part of said first wall element

said low curvature part of said first wall element defining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element defining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges, said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direc-

providing an elongated core element comprising a first cooperating member and a second cooperating member,

positioning said first wall element and said second wall element along a longitudinal direction such that said first inwardly oriented surface is facing said second inwardly oriented surface and spaced apart along a first radial direction perpendicular to said longitudinal direction, such that said first inwardly oriented surface and said second inwardly oriented surface together define a cavity along said longitudinal direction, interacting said first cooperating member and said second cooperating member with said first actuator member of said first wall element and said second actuator member of said second wall element, respectively, and

moving said elongated core element in said longitudinal direction relative to said first wall element and said second wall element causing said first wall element and said second wall element to move between a contracted state in which said first radial distance between said first inwardly oriented surface and said second inward-

ly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of said first wall element, and

an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said first radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said first radial direction.

**14.** A method of manufacturing a pelt board for accommodating an animal pelt, said method comprising:

providing a first wall element defining a first outwardly oriented surface, a first inwardly oriented surface, a first set of oppositely located longitudinal edges and a first actuator member, providing a second wall element defining a second outwardly oriented surface, a second inwardly oriented surface, a second set of oppositely located longitudinal edges and a second actuator member,

said first wall element and said second wall element being of identical configuration and each having a low curvature part and a high curvature part joint together along a line of junction extending generally in said longitudinal direction, said low curvature part of said first wall element defining a first longitudinal edge of said first set of oppositely located longitudinal edges, said high curvature part of said first wall element defining a second longitudinal edge of said first set of oppositely located longitudinal edges, said low curvature part of said second wall element defining a first longitudinal edge of said second set of oppositely located longitudinal edges, said high curvature part of said second wall element defining a second longitudinal edge of said second set of oppositely located longitudinal edges, said first edge of said first wall element being positioned juxtaposed said second edge of said second wall element and said first edge of said second wall element being positioned juxtaposed said second edge of said first wall element, said first inwardly oriented surface and said second inwardly oriented surface together defining a cavity along said longitudinal direc-

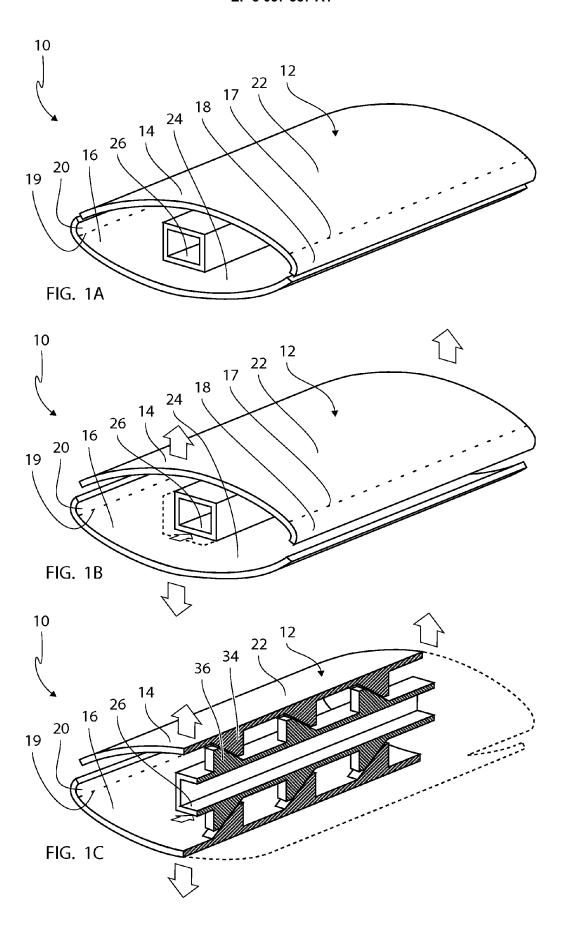
providing an elongated core element comprising

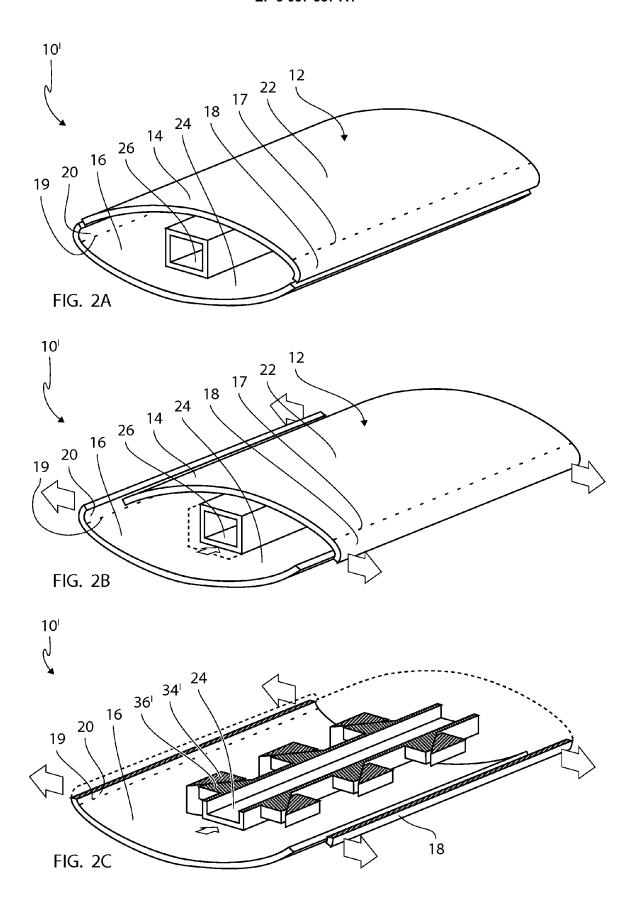
a first cooperating member and a second cooperating member,

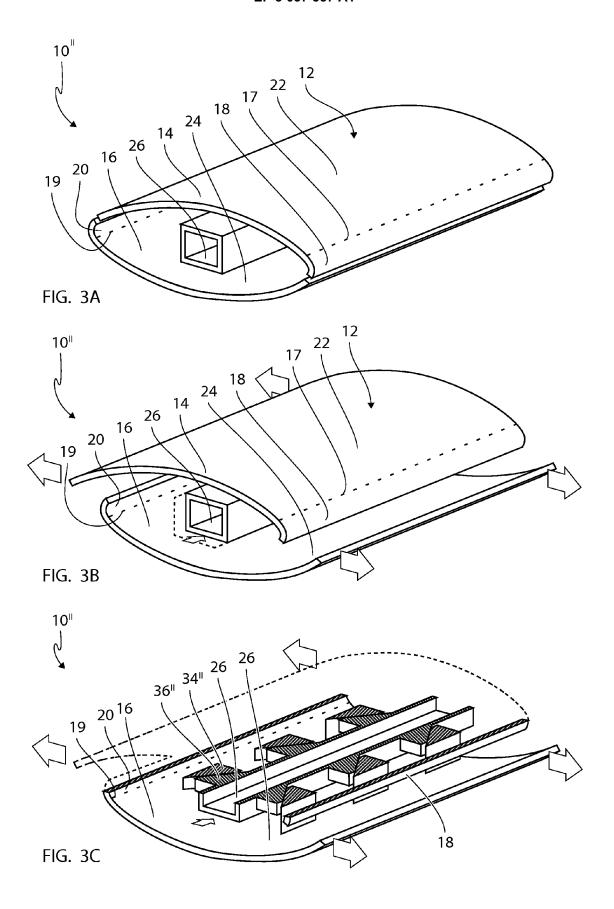
positioning said first wall element and said second wall element along a longitudinal direction such that said first inwardly oriented surface is facing said second inwardly oriented surface and spaced apart along a first radial direction perpendicular to said longitudinal direction, such that said first inwardly oriented surface and said second inwardly oriented surface together define a cavity along said longitudinal direction, interacting said first cooperating member and said second cooperating member with said first actuator member of said first wall element and said second actuator member of said second wall element, respectively, and

moving said elongated core element in said longitudinal direction relative to said first wall element and said second wall element causing said first wall element and said second wall element to move between a contracted state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is reduced, in which said first edge of said first wall element is positioned closely against said second edge of said second wall element, and in which said first edge of said second wall element is positioned closely against said second edge of said first wall element, and

an expanded state in which said first radial distance between said first inwardly oriented surface and said second inwardly oriented surface is increased, in which said first edge of said first wall element and said second edge of said second wall element is positioned in spaced apart relationship in said second radial direction, and in which said first edge of said second wall element and said second edge of said first wall element are positioned in spaced apart relationship and said first radial direction.







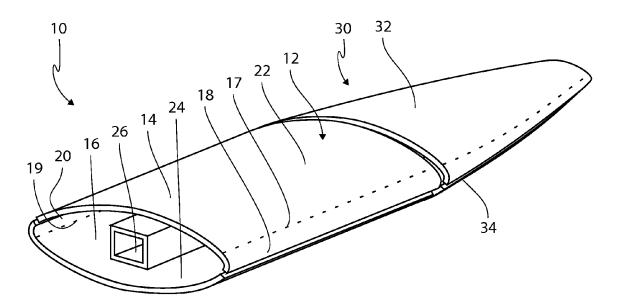
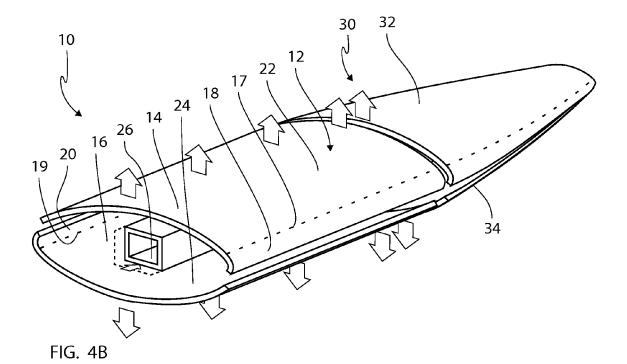
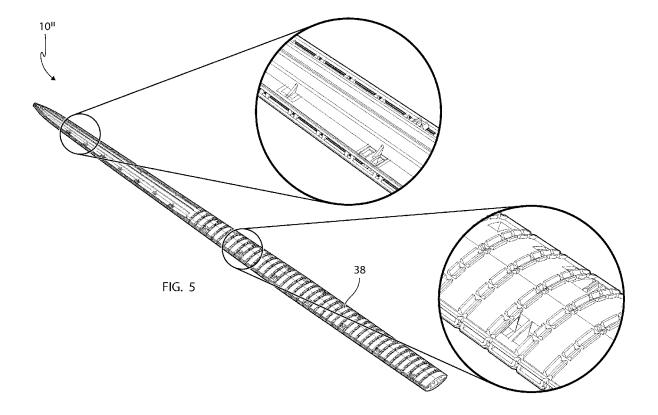
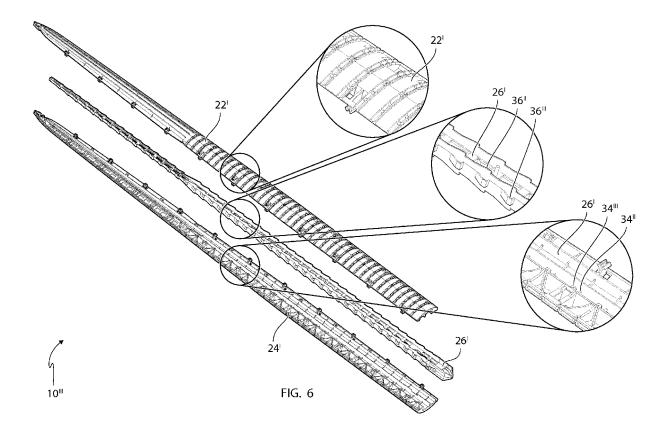


FIG. 4A









## **EUROPEAN SEARCH REPORT**

**DOCUMENTS CONSIDERED TO BE RELEVANT** 

**Application Number** 

EP 14 19 9640

0		

5

15

20

25

30

35

40

45

50

55

EPO FORM 1503 03.82 (P04C01) accument of the same category A: technological background O: non-written disclosure P: intermediate document

Category	Citation of document with indic of relevant passage		Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	WO 2005/026394 A1 (MA [DK]; HEDEGAARD JENS 24 March 2005 (2005-0	[DK])	1-6, 12-14	INV. C14B15/06
Α	* page 18, line 30 - claims 12-15,18-24 *	page 20, line 17;	7-11	
A	WO 2014/032950 A1 (4M 6 March 2014 (2014-03 * the whole document	3-06)	1-14	
				TECHNICAL FIELDS SEARCHED (IPC)
				C14B
	The present search report has bee	·		
	Place of search Munich	Date of completion of the search  2 June 2015	Bic	Examiner hi, Marco
X : part Y : part	ATEGORY OF CITED DOCUMENTS ticularly relevant if taken alone ticularly relevant if combined with another ument of the same category	T : theory or principle E : earlier patent doc after the filing dat D : document cited ir L : document cited f	underlying the in ument, but publis e the application	nvention

& : member of the same patent family, corresponding document

## EP 3 037 557 A1

## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 14 19 9640

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

02-06-2015

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

## EP 3 037 557 A1

#### REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

## Patent documents cited in the description

- WO 0162985 A [0006]
- US 3137963 A [0007]
- WO 2005026394 A **[0008]**
- US 1110016 A [0009]
- US 3526967 A [0010]

- WO 8203634 A [0011]
- US 3303038 A [0012]
- DK 201270519 A1 [0013]
- DK 201300091 U4 [0014]
- DK 177480 B1 [0015]