(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 690 977 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
16.08.2006 Bulletin 2006/33

(51) Int Cl.:
D06F 81/04 *(2006.01)*

(21) Application number: **05017751.8**

(22) Date of filing: **16.08.2005**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **10.02.2005 IL 16681805**
11.08.2005 IL 17025005

(71) Applicant: **KETER PLASTIC LTD.**
Herzelyia 46852 (IL)

(72) Inventors:
- **Sagol, Sami**
  Ramat Hasharon 47254 (IL)
- **Haimoff, Efraim**
  Mevasereth Zion 90805 (IL)

(74) Representative: **Modiano, Micaela Nadia**
Modiano, Josif, Pisanty & Staub Ltd.,
Baaderstrasse 3
80469 München (DE)

(54) Ironing board

(57) An ironing board (10) having an ironing board top (100) formed from a plastic material, and a stand (200) movably mounted to the top. The stand (200) has first and second mutually pivotable legs (210,240), each said leg being formed from a plastic material and configured for providing suitable mechanical properties to the stand (200), the stand (200) being reversibly movable between a deployed position and a stowed position with respect to the top.

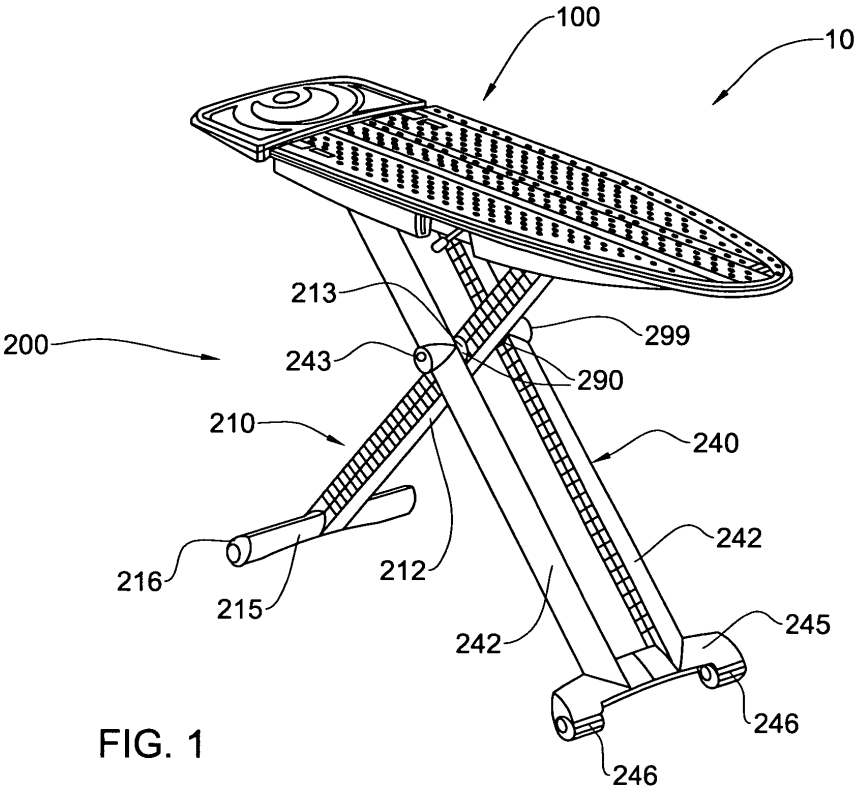


FIG. 1

EP 1 690 977 A2

Description

FIELD OF THE INVENTION

[0001] This invention relates to ironing boards, in particular to ironing boards that contain plastic materials.

BACKGROUND OF THE INVENTION

[0002] Ironing boards have been in use for many years, and traditionally comprise a perforated metallic top which combines mechanical strength with heat resistance, and a metallic stand. Perforations in the ironing top allow escape of residual moisture in the garment being steam ironed. The metal stand provides mechanical strength and stability to the ironing board, and requires to be mounted to the board top via bolts or some other similar arrangement, which is time consuming and adds to the assembly costs.

[0003] Recently, plastic materials have been introduced in the construction of some ironing tops, in very specific ways.

[0004] US 6,834,450 discloses an ironing board in which the ironing top is comprises a one-piece molded body comprising a hard foam plastics material. A traditional leg arrangement is provided, and is mounted to the top for movement to enable the legs to be folded away or deployed. The ironing top intentionally omits apertures to avoid loss therethrough of moisture from steam provided during steam ironing.

[0005] US 5,036,777 discloses an ironing board top formed as two members hinged together to enable the top to unfold from a compact configuration. Metallic brace members enable the top to be mounted onto a surface such as a table.

[0006] EP 712955 discloses an ironing top comprising a monocoque body made from a plastic material and having an upper metal perforated ironing plate. Means are provided for generating suction underneath the plate.

SUMMARY OF THE INVENTION

[0007] The present invention is directed to an ironing board comprising:-

an ironing board top formed from a plastic material; and

a stand movably mounted to said top and comprising first and second mutually pivotable legs, each said leg being formed from a plastic material and configured for providing suitable mechanical properties to said stand, said stand being reversibly movable between a deployed position and a stowed position with respect to said top.

[0008] Typically, the board top is formed as monolithic body from a plastic material.

[0009] In one embodiment described, the top preferably comprises an ironing platform formed with a plurality of through holes, and also preferably comprises a plurality of substantially longitudinal stiffening webs. The webs depend from an underside of said ironing platform and are hollow members, and the hollow members typically comprise a web opening at an upper side of said platform. Advantageously, a plurality of suitably-shaped covers may be used for covering said web openings. These covers comprise a plurality of segments serially joined by a hingeable element, said segments having an upper surface substantially flush with an upper surface of said platform when said cover is mounted thereto, and optionally the covers comprise a plurality of through holes. Typically, the covers are each formed as a monolithic body from a plastic material.

[0010] The ironing board according to the invention preferably comprises a first pair of said webs, one each formed on an inboard lateral part of said ironing platform. The first leg comprises a single strut having a free end and a foot joined at another end thereof, and said first pair of webs comprise a front bearing arrangement for enabling pivoting and translation of said free end of said first leg with respect thereto. The front bearing arrangement comprises a longitudinal slot formed on each said web on facing walls thereof configured to cooperate with a pair of transversely projecting first pivoting pins disposed one on each transverse side of said free end of said first leg. Each said slot is adapted for receiving and for allowing rotation and longitudinal translation of, a corresponding said first pin comprised at said free end of said first leg. The first pins are preferably chamfered to facilitate assembly of said first leg with respect to said slots. Optionally, a metal insert is provided, adapted for being inserted through said first pins for enhancing mechanical properties of said first pins. Advantageously, the first leg is configured to be accommodated between said first pair of webs, when said stand is in said stowed position.

[0011] The second leg comprises a pair of transversely spaced struts, each having a free end and a common foot joined at another end thereof, and further comprising a rear bearing arrangement for enabling pivoting of a free end of said second leg with respect thereto. The rear bearing arrangement comprises two pair of hinge members depending from said underside of said ironing platform, each said pair of hinge members configured to cooperate with transversely projecting second pivoting pins disposed one on each transverse side of said free end of a corresponding one or another of said struts of said second leg. Each said pair of hinge members comprises a first hinge part integrally formed with an outboard portion of a corresponding one or another said web of said first web pair and having a first pivoting aperture, and a second hinge part formed as a protuberance depending from said underside of said platform and comprising a second pivoting aperture substantially coaxial with said first pivoting aperture. Optionally, the second pins are chamfered to facilitate assembly of said struts of said

second leg with respect to corresponding said first and second apertures. Typically, the second hinge part comprises a resilient portion that is deflectable to facilitate cooperation of said second pins with said first and said apertures. Optionally, the first hinge part comprises a slot for guiding a said second pin towards the pivoting aperture thereof. Optionally, the second hinge part comprises rails for guiding a said second pin towards the pivoting aperture thereof. Advantageously, the second leg is configured such that the struts thereof may be accommodated one each on either outboard side of said first pair of webs, when said stand is in said stowed position.

[0012] Optionally, the ironing board further comprises a second pair of said webs, one each being formed on an outboard lateral part of said ironing platform with respect to said first pair of webs.

[0013] The ironing board typically further comprises an auxiliary platform, having a lower wall integrally joined with said ironing platform, said auxiliary platform being adapted for resting an iron thereon. The auxiliary platform comprises a metal plate for resting a said iron thereon, said lower wall being spaced from an underside of said metal plate, and the lower wall preferably comprises a plurality of through holes. The first pair of webs extends longitudinally to include said auxiliary platform.

[0014] A locking mechanism is provided for controlling the angular disposition of said first with respect to said second leg. The locking mechanism may comprise a spring loaded handle for releasing a ratchet joined for movement with said first pin. Advantageously, the ratchet is accommodated in a said web of said first pair of webs.

[0015] Preferably, the first leg and the second leg are each formed as a monolithic body from a plastic material.

[0016] Each one of said top, said first leg and said second leg is made from a plastic material including for example at least one of polyethylene and propylene.

[0017] Of course, it is possible to reverse many of the arrangements described herein. For example: the first leg may include two struts, while the second leg only comprises a single strut; the pin arrangement for the second legs may be formed integrally with the ironing platform, and the pivoting apertures are formed in the free ends of the struts; and so on.

[0018] Thus, the present invention provides advantages including for example that both the ironing top and the stand may be formed from a plastic material, reducing the costs of these components, while these components still provide good mechanical stability and strength. For example, molding the ironing top to include a plurality of relatively deep hollow webs provides strength for a relatively low weight cost. At the same time, this enables the ironing board top to be molded using relatively simple molds, in that there are no parts of the ironing top that overlie other parts such as would necessitate a complicated mold. Providing a modular cover for closing the openings enables one cover design to be used in a number of places, thereby reducing costs further. The addition of suitable webs within the legs, and designing these perhaps of larger cross-section and thickness than metallic legs, also provides strength for relatively low weight and economical costs. Furthermore, the bearing arrangements for the legs may be configured for easy assembly of the components in a straightforward manner, doing away with nuts and bolts entirely, and reducing the assembly costs involved.

[0019] Also, the webs provide a convenient housing for enclosing the locking or ratchet mechanism used for fixing the relative angular position of the legs with respect to the top. This has advantages including avoiding the risk of a user's fingers being trapped by the mechanism, which sometimes may happen in the exposed mechanisms of many prior art ironing boards.

[0020] Furthermore, as opposed to metallic tops, the top according to the invention may be formed integrally comprising ventilation openings that allow steam from steam ironing to ventilate out. This may also help in reducing heat that the plastic material is exposed to in the top.

[0021] The iron stand, i.e., the auxiliary platform has a structural base made from plastic and integrally joined with the main ironing platform, and has a metal top to allow an iron to be seated thereon. However, the underside of the metal top is spaced from the plastic base, which is perforated, allowing cooling of the said underside. This may also help in reducing heat that the plastic material of the auxiliary platform is exposed to.

[0022] The ironing board top may be manufactured using a suitable plastic forming process, including, for example, any one of: injection molding, blowmolding, vacuum forming, pressure forming, thermo-forming, rotomolding, reaction injection molding, reinforced reaction injection molding, and so on.

[0023] Optionally, the ironing board top further comprises at least one layer of material overlying an upper surface thereof. Such a layer may include, for example, a layer of heat resistant material; at least one of: a metal layer, a fabric layer. Optionally, the at least one layer may be integrally formed with said board top.

[0024] The present invention is also directed to a mold for producing an ironing board top, wherein said ironing board top is as defined herein. The present invention is also directed a mold for producing at least one of a first leg and a second leg of a stand, wherein said legs and stand are as defined herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] In order to understand the invention and to see how it may be carried out in practice, a preferred embodiment will now be described, by way of nonlimiting example only, with reference to the accompanying drawings, in which:

Fig. 1 is an isometric view of an embodiment of the invention in the deployed position.

Fig. 2 is an isometric view of the embodiment of Fig.

1 in the retracted or stowed position.

Fig. 3 is a plan view of the embodiment of Fig. 1.

Fig. 4 is a side view of the embodiment of Fig. 3 as viewed along arrow A.

Fig. 5 is a bottom view of the ironing top of the embodiment of Fig. 1.

Fig. 6 is a transverse cross-sectional view of the embodiment of Fig. 5 take along B-B.

Fig. 7 is a fragmented isometric view of the rear hinge arrangement of the embodiment of Fig. 5.

Fig. 8 is a fragmented transverse cross-sectional view of the embodiment of Fig. 5 take along D-D.

Fig. 9 is a front or longitudinal cross-sectional view of the embodiment of Fig. 5 take along C-C.

Fig. 10 is a plan view of covers used in the embodiment of Fig. 3.

Fig. 11a and **11b** are fragmented longitudinal views of the front hinge arrangement of the embodiment of Fig. 5: **Fig. 11a** just prior to engagement of the leg therewith; **Fig. 11b** with the corresponding leg engaged with the front hinge arrangement.

Fig. 12 is a fragmented longitudinal view of the rear hinge arrangement of the embodiment of Fig. 5 just prior to engagement of the corresponding leg therewith.

Fig. 13 is a bottom fragmented view of an alternative embodiment to the embodiment of Fig. 5.

DETAILED DESCRIPTION OF THE INVENTION

[0026] An embodiment of the ironing board according to the invention is illustrated in Figs. **1** to **4,** and is generally designated with the numeral **10.** The ironing board **10** is generally portable, and foldable or movable between a deployed and a stowed position, and comprises an ironing board top **100** and an adjustable support structure or stand **200.** In Fig. 1 the ironing board **10** is seen in the normally deployed position, enabling ironing to be performed, and in Fig. **2** the ironing board **10** is seen with the stand in the normally retracted or stowed position, enabling the ironing board **10** to be stowed away taking up a minimum volume.

[0027] Referring in particular to Figs. **3** and **4,** the top **100** comprises an ironing platform **130** in the form of a planar plate member **131,** having a traditionally substantially wedge-shaped plan-form with a narrow rounded front end or tip **136** and wider rear end **138.** The plate member **131** comprises a substantially flat upper surface **110** for enabling ironing of garments and the like thereon, and the plate member **131** optionally comprises a plurality of through-holes **120** formed therein providing communication between the upper surface and an underside **150** of the member **131.** The holes may be formed at the same time as the top **100** is produced, for example by providing a suitable mold therefor, or may be made after the top is produced, for example by multiple drilling, punching and so on. Other plan forms for the platform **130** are also possible without departing from the spirit of the invention, for example, rectangular, oval and so on. An auxiliary platform **190** for resting an iron (not shown) is integrally joined longitudinally to the wide end **138** of the platform **130.**

[0028] Referring also to Figs. **5** and **9,** the platform **130** further comprises a pair of peripheral longitudinal stiffening webs **140** depending from the underside **150** substantially orthogonal thereto. The webs **140** are hollow, having a U-shaped transverse cross-section, and each extends along the sides **134** of the platform **130** from the wide end **138** to close to the narrow end or tip **136** of the platform **130,** and are joined to one another at the tip **136** by a web section **145,** contiguous with webs **140.** Thus, in plan form, as seen from the underside of the top **100,** the webs **140** and web section **145** form a continuous V- or U-shaped structure. The longitudinal webs **140** may be of constant depth with respect to the underside **150,** or alternatively of varying depth longitudinally. In the illustrated embodiment, and referring in particular to Fig. **4,** the longitudinal mid-section **142** of each web is deeper than the end sections **141, 143,** and the end section **141** closest to the web section **145** comprises a depth that smoothly tapers to the constant depth of the web section **145.**

[0029] Referring to Fig. **9** in particular, a narrow gap **155** spaces the outer facing surfaces **147** of the webs **140** and web section **145** from a lip **160** on the periphery of the platform **130.** The lip **160** depends from the underside **130** and extends around the periphery of the sides **134** and tip **136** of the platform. The wide end **138** comprises a plurality of tabs **139** (Fig. **3**) projecting longitudinally from the platform **130** in the rearwards direction towards the auxiliary platform **190** and the function of these tabs **139** shall become clearer as the description proceeds.

[0030] Referring in particular to Figs. **5, 6,** and **9,** a second pair of longitudinal ribs **170** are formed inboard of outer webs **140.** The inner webs **170** are parallel to one another and extend from inboard of the web section **145** towards and including the longitudinal extent of the underside of the auxiliary platform **190,** or at least a part thereof, and thus serve to connect the auxiliary platform **190** to the platform **130** and to provide mechanical support and stiffness thereto. The webs **170** are hollow, each having a U-shaped transverse cross-section, and comprising a constant depth with respect to the underside **150** for at least a mid-portion **175** thereof. The ends **171** and **176** of each web **170** closest to the tip **136** and the far end **195** of the auxiliary platform **190,** respectively, taper off to narrower depths thereat.

[0031] Referring in particular to Figs. **6, 11a, 11b,** a part of each of the mutually facing walls **177** of said mid-portion **175** comprises a part of a front hinge arrangement in the form of longitudinal slot **178.** The slots **178** are mutually parallel and are typically formed in a part of the mid-portion closer to the front end of the platform **130.**

[0032] Referring in particular to Figs. **5, 7,** and **12,** a second hinge arrangement comprises a pair of first hinge

part **156** and a pair of second hinge parts **153.** The webs **170** each comprise an integral first hinge part **156** typically formed in a part of the mid-portion closer to the rear end **138** of the platform **130.** The first hinge parts **156** each comprise a pivot aperture **157** on the outboard-facing face **158** thereof, and the hinge parts are formed with a slot **159** of width at least equal to the diameter of the aperture **157** extending from the aperture **157** in a direction substantially orthogonal with respect to the underside **150.** The underside **150** further comprises a pair of second hinge parts **153** in the form of brackets orthogonally extending from the underside **150.** The second hinge parts **153** are preferably formed having a relatively stiff root section **153a** and resilient tip section **153b,** and one each said second hinge part **153** is transversely spaced from each of the first hinge parts **156.** The root section **153a** may thus be formed as a hollow, double-walled protrusion extending from the underside **150,** while the tip section **153b** may be integrally formed therewith, but narrower. Each second hinge part **153** further comprises a pivot aperture **152,** typically of the same size as apertures **157** and coaxially aligned therewith, and typically about half of aperture **152** is formed in each one of the root section **153a** and tip section **153b,** for each second hinge part **153.** Preferably, a pair of guide rails **153c** is provided on an inboard face of the tip section **153b,** to form a guiding slot **153d** substantially parallel to slot **159.** The webs **170** each further comprises a semicircular cut-out or indentation **172** when the platform **130** is viewed from the side, located between the location of the slots **178** and the location of the first hinge parts **156.** The purpose of the slots **178,** indentations **172,** and hinge parts **156, 153** will become clearer hereinafter.

[0033] Referring to Fig. **5** in particular, webs **140** and/or webs **170** may optionally comprise through holes (not shown) to provide communication between the hollow portion thereof and the outside thereof. These hollow portions appear when viewed from the upper side of the top **100** as channels or well-like structures **300.**

[0034] Further optionally, transverse webs **152** may be provided, orthogonally depending from the underside **150,** and joining the inboard facing sides **147** of the webs **140** to the outboard facing sides **174** of the inner webs **170.** Further optionally, additional transverse webs **154** may be similarly provided in the space between the webs **170.**

[0035] Referring in particular to Fig. **8,** the auxiliary platform **190** is typically of a size sufficient to allow an iron to be rested upon it, and is typically in the form of a rectangular plate member **191** having a plurality of through-holes **122** providing communication between the upper surface thereof and an underside **195** thereof. The auxiliary platform **195** is joined to the rear side **138** via front-facing edge **198,** and comprises a contiguous peripheral web arrangement **196** extending in the form of a U in plan form close to the periphery of the sides **194** and rear edge **196.** The web arrangement **196** is hollow, having a U-shaped transverse cross-section, and comprising a constant depth with respect to the underside **150** for the rear edge **196** and part of the sides **194,** the depth increasing towards the front facing edge **198** to visually match the curvature of the webs **140** at the rear end **138,** as best seen in Fig. **4.** As stated earlier, the longitudinal webs **170** extend to the underside **195,** and a further two support webs **162,** parallel to webs **170** and transversely displaced therefrom in an outboard direction, are formed extending longitudinally from inboard of the rear end **138** to include at least as part of the longitudinal extent of the underside **195.**

[0036] Platform **190** comprises a lip **165** on the periphery thereof, projecting from the upper side thereof, and extends around the periphery of the sides **194,** front edge **198** and rear edge **196** thereof. The upwardly-facing free edges **166** of the lip **165** are on a plane, typically coplanar with the upper surface of platform **130,** and vertically displace the plate **191** therefrom by a gap **167.** The term "vertical" is herein used in a relative manner to denote a direction substantially orthogonal to the plane of the upper surface of the top **100,** where ironing takes place, whereupon said surface is usually substantially horizontal. A longitudinal gap **199** transversely extends to separate the upper part of platform **130** from the upper part of auxiliary platform **190.** Optionally, one or more wells **193** may be provided in said gap **199,** and may be used to mount thereon a frame for holding a part of the electrical cable of the iron during ironing.

[0037] Referring again to Figs. **3** and **9,** the top of the platform **130** comprises a plurality of longitudinal well structures **310** corresponding to the hollow webs **140, 170.** Accordingly, and referring to Fig. **10,** a plurality of covers **300** are provided adapted for closing the well structures **310** in a flush manner with respect to the upper surface of plate **131.** Advantageously, well structures **310** each comprise a pair of longitudinal shoulders **315** on which said covers **300** can be seated. The covers **300** comprise a plurality, for example four, cover segments **350,** each substantially rectangular in plan form and arranged in series longitudinally, such that the short facing edges **352** of adjacent segments **350** are joined to one another via a flexible strip **354.** The fiexibie strip enables the plan form of each of the covers **300** to conform to the plan form of the well structures **310,** which may curvilinear or rectilinear, as illustrated in Fig. **3.** Each segment comprises a plurality of through-holes **322** providing communication between the upper surface thereof and an underside thereof, and therefore the corresponding well structure **300** on which it is mounted. The segments **350** are typically mounted to the platform **130** via a suitable snap-fit arrangement, or any other suitable arrangement. Optionally, the covers **300** may be bonded to the platform **130** in any suitable manner.

[0038] The top **100** is typically of monolithic construction, formed as an integral piece, typically molded from a plastic material, preferably a heat resistant plastic. The structure of the various elements of the top, including the U-section of the webs **140, 170,** the plates **131, 191,** and

so on are particularly advantageous in permitting such molding in a relatively straightforward manner. Such molding techniques allow the thickness of the top **100** to be varied as desired, and thus parts of the structure wherein higher stresses are expected can be formed with a proportionately more material than other, less-stressed areas.

[0039] Optionally, a suitable layer or plurality of layers of suitable materials may be integrally formed on the upper surface of the platform **130.** Such a layer may comprise a single or multiple sandwiched layer may include any suitable fabric, cushioning material, foil, or any other suitable material. For example, such as for example cotton applied into polypropylene, or polyester based foil on polypropylene, and typically comprises a heat insulating material. Additionally or alternatively, a metallic heat reflective layer, for example aluminium foil, may also be included, typically between a fabric layer and the plastic upper surface of the platform **130.** Optionally, the metallic layer may be sandwiched between fabric layers, or bonded on one side thereof to a fabric layer.

[0040] The layer or multiple layers may be integrally formed with the platform **130,** or alternatively adhered thereto in a post-molding operation. For example, and referring to the embodiment described above with reference to Fig. 1, suitable layer(s) of material are placed in one half of the injection mold, the material layer(s) having been cut to the planform of the platform **130,** including strip-shaped apertures corresponding to the channels **310.** The mold halves are then closed and the injection process is initiated, resulting in the top **100** being integrally formed with the material layer(s) on the top surface of the platform **130.** A similar technique may be used for forming the covers **300,** which after being integrally formed with a corresponding material layer(s) may be snap-fitted in place over the channels **310,** as described above, *mutatis mutandis*.

[0041] Alternatively, the platform **130** and covers **300** are formed from a plastic material, and then assembled, as described above, and subsequently the material layer (s) is/are bonded to the upper surface of the assembled top **100,** for example by means of any suitable bonding technique, including, for example, any one of or combination of the following: the use of adhesives; heat-welding; ultrasonic welding; and so on. Where there is a plurality of material layers over the platform **130,** each layer may be sequentially added to the platform, or alternatively the layers may be bonded together in sandwich form, and the sandwiched layers then bonded to the platform **130.** The assembly of the top **100** and the subsequent bonding of the material layer may be done manually, or semi-automatically or fully automatically, for example employing robotic technology.

[0042] Alternatively, the various elements of the top **100** may be individually formed and joined together in a suitable manner.

[0043] Alternatively, the platform **130** may be formed from a suitable plastics material or the like using any other suitable technique. For example, the top **100** may be formed using blowmolding, vacuum forming, pressure forming, thermo-forming, rotomolding, reaction injection molding, reinforced reaction injection molding, or any other suitable techniques, which are known in the art. Typically, blowmolding, vacuum forming, pressure forming or thermo-forming techniques are based on molding sheet material with respect to a mold, and thus the top **100** thus formed typically has approximately uniform thickness throughout. Accordingly, it may be more appropriate in such cases to modify the stiffening arrangement of the top **100',** for example the webs **140** and **170** being replaced by a larger plurality of shallower webs **147,** as illustrated in Fig. 13. In such an arrangement, other features of the top **100** can be modified in a suitable manner to perform the required functions, such as for example the hinge arrangement illustrated in Fig. 7 (not shown in Fig. 13).

[0044] Alternatively, the top surface of the platform **130** may be formed as a continuous surface, preferably including said openings **120,** wherein the webs **140** and **170** are not open at **310** but rather are open at the bottom sides thereof, and these open sides may be closed by covers similar to those described above, *mutatis mutandis*. Such an embodiment is particularly advantageous in allowing a simplified procedure for integrally forming on the upper surface of the top an optional layer or plurality of layers of a suitable material, for example heat resistant material as described above, *mutatis mutandis*. Essentially, the layer(s), cut to the appropriate plan form corresponding to the plan form of the platform **130,** is laid on one of the mold halves, the mold halves closed, and the injection molding process is then initiated, integrally forming the layer(s) with the platform **130.** The corresponding webs can then be closed in the normal manner at the lower side of the platform **130** using suitable covers.

[0045] Alternatively, the top **100** according to this embodiment may be manufactured using any suitable manufacturing technique, for example formed using blowmolding, vacuum forming, pressure forming, thermoforming, rotomolding, reaction injection molding, reinforced reaction injection molding, or any other suitable techniques, which are known in the art.

[0046] Optionally, the U-shaped webs **170** and **140** may be replaced with a suitable plurality of thinner, solid webs, providing the necessary stiffness to the top **100.** In such an embodiment, the covers **300** are not necessary, and material layers can be integrally formed with the platform **130** in a similar manner to that described above, *mutatis mutandis*.

[0047] Suitable plastics for forming the top **100** may include, but are not restricted to, polyethylene, polystyrene, polycarbonate, nylon, and propylene, for example, or any suitable polymeric materials, or indeed any other suitable material. Suitable coloring and/or a design, logo and so on, optionally including surface relief, may be applied to the plastic material, as desired

[0048] Referring to Figs. **3** and **8,** a metallic plate **390** is provided for mounting onto the auxiliary platform **190,** for selectively stationing or depositing an iron thereat. The plate **390** may be fitted onto the auxiliary platform by any suitable means, for example a snap fit arrangement. The plate **390** rests on lip **165,** and is thus displaced from plate **191,** enabling circulation of air through holes **122** and gap **167** to cool, the underside of the metal plate **390** when this is heated by virtue of a hot iron resting thereon. Accordingly, heat conduction to the lip **165** is minimized.

[0049] Optionally, the auxiliary platform comprises a selectively deployable and retractable pole **330,** which may be used when deployed longitudinally to hang hangers therefrom, which may be useful when ironing a plurality of garments, each of which is hung on a hanger.

[0050] Referring to Figs. **1, 2,** and **4** in particular, the stand **200** comprises a pair of pivotable legs **210, 240.** Leg **210** is T-shaped, comprising a single strut **212,** having a foot **215** at one end thereof orthogonal to the strut **212,** and a pair of coaxial pins **218** at another end of the strut **212,** each pin transversely extending from opposite transverse sides of the strut **212.** The pins **218** are part of the front bearing arrangement. Referring to Figs. **11a** and **11b,** the pins **218** comprise a chamfered portion **219,** preferably each formed as a planar surface on a part of the pin. Less preferably, an annular chamfer or beveled edge, or no chamfer at all, may be provided. The purpose of the chamfered portion **219** will become clearer as the description proceeds. Leg **210** further comprises a pivot aperture **213,** typically midway along the strut **212,** traversing the transverse width of the strut **212.** The axis of the aperture **213** is parallel to the axis **211** of the pins **218.**

[0051] Leg **240** is similar to leg **210,** but comprises a pair of struts **242,** laterally displaced on from the other, and joined at one end thereof to a foot **245,** typically similar to foot **215.** The transverse spacing between the struts **242** is sufficient at least for accommodating strut **212** therebetween. At the free ends of each of the struts **242,** a pair of coaxial pins **248** is provided, each pin transversely extending from opposite transverse sides of the strut **242.** The pins **248** of each strut are part of the rear bearing arrangement. Referring to Fig. **12** the pins **248** comprise a chamfered portion **249,** preferably each formed as a planar surface on a part of the pin. Less preferably, an annular chamfer or beveled edge may be provided. The purpose of the chamfered portion **249** will become clearer hereinafter. Leg **240** further comprises a pivot aperture **243,** typically midway along each of the strut **242,** traversing the transverse width of the struts **242.** The axis of the aperture **243** is also parallel to the axis **241** of the pins **218.**

[0052] A transverse spacer portion **290** is provided to one or both said legs **210, 240** to transversely space the strut **212** from struts **242** to take account of the transverse thickness of the webs **170.** The spacer **290** is typically integral with one or the other of legs **210, 240,** and is located at the pivoting axis **299** of the legs. In order to enable the legs to fold into the retracted or stowed configuration illustrated in Fig. **2,** the spacer **290** is advantageously accommodated in the recess **172** provided therefor in webs **170.**

[0053] A suitable pivot (not shown) is mounted through said apertures **243, 213,** to enable the legs **210, 240** to mutually pivot about the pivot axis **250.** The location of the apertures **243** and **213** are chosen such as to enable the legs **210, 240** to mutually pivot such that when the stand **200** is properly mounted to the top **100** and in the deployed position, the top is substantially parallel to the surface on which the feet **215, 245** are standing.

[0054] Legs **210** and **240** are each advantageously of monolithic construction, each leg being formed as an integral piece, typically molded from a plastic material. The structure of the various elements of the leg **210** or leg **240,** including the strut **212,** pins **218** and foot **215,** or struts **242,** pins **248** and foot **245,** respectively, are particularly advantageous in permitting such molding in a relatively straightforward manner. For example, the struts **242** may be hollow and rectilinear, and comprise a rectangular or circular cross-section, and the foot **245** may optionally comprise reinforcing webs **244** that are on planes substantially parallel to the axis of the strut **212.** Pins **248** may be formed integral with the end **217** of strut **212** when carried out in a plastic material more easily and more cost effectively than the equivalent rendered in metal, or with respect to regular nut and bolt bearing arrangements known in the art. Similar considerations may be applied to leg **210.** Alternatively, the struts **212** and/or **242** may be of any other suitable shape. Alternatively, the various elements of each leg may be individually formed and joined together in a suitable manner, for example by bonding, welding and so on. Suitable plastics may include, but are not restricted to, polyethylene and propylene, for example. Suitable coloring may be applied to the plastic material, as desired.

[0055] Each said foot **215, 245,** preferably optionally comprises a pair of inserts **216, 246,** respectively, for better gripping a surface on which the ironing board **10** is to be used. Further optionally, plugs **252** are provided for locking the pivot in place in apertures **213, 243.**

[0056] The transverse width of strut **212** is advantageously such as to enable the same to be accommodated within the longitudinal channel **262** formed on the underside **150** between the webs **170.** Furthermore, the said pins **218** extend transversely sufficiently so that one each is received within the corresponding one or the other slots **178.** The chamfered portions **219** are formed on the parts of pins **218** facing towards the free end **217** of the strut **212,** and facilitate engagement of the pins **218** with the slots **178** during assembly of the ironing board **10** by gently elastically deforming the walls **177** when the strut **212** is orthogonally aligned with the plate **131.** This is facilitated by the webs **170** being formed from plastic material. Once engaged, the material of the web springs back to its original position trapping therein the pins, and the strut **212** is pivoted about pins **218.** In operation, the

leg **210** assumes an angle with respect to the plate **131** less than **90°,** typically between about **0°** in the retracted position (Fig. **2**) and about **45°** or more in the fully deployed position (Fig. **1**), depending on the height required for the top **100.** Optionally, and advantageously, a metal insert **262** extending through a suitable aperture in pins **218,** provides mechanical strength to the pins **218.** Insert **262** can be fixed in place via an access hole **261** provided at one location on an outboard facing wall of a web **170.**

[0057] The transverse spacing between the struts **242** is advantageously such as to enable the struts to be located outboard of the webs **170** when the leg **240** is in the retracted position, and typically to be accommodated one each within the longitudinal channel **272** formed on the underside **150** between a pair of adjacent webs **140** and **170.** Furthermore, the said pins **248** extend transversely sufficiently so that one each is received within the corresponding one or the other pivot aperture **157** or **152** of the corresponding first hinge part **156** or second hinge part **153,** respectively.

[0058] The chamfered portions **249** are formed on the parts of pins **248** facing towards the free end **247** of each strut **242,** and facilitate engagement of the pins **248** with the corresponding pair of apertures **157** and **152** during assembly of the ironing board **10** by gently elastically deforming the resilient tip section **153b** while the pins **248** are being guided along slots **153d** and **159,** when the corresponding strut **242** is orthogonally aligned with the plate **131.** Once engaged, the resilient tip section **153b** springs back to its original position trapping therein the pin, and the struts **242** are pivoted about pins **248,** which are coaxial with one another. In operation, the leg **240** assumes an angle with respect to the plate **131** similar but opposite to that of leg **210,** i.e., less than **90°,** typically between about **0°** in the retracted position (Fig. **2**) and about **45°** or more in the fully deployed position (Fig. **1**), depending on the height required for the top **100.**

[0059] Referring to Figs. **2** and **3,** the ironing board **10** further comprises a suitable locking mechanism **400,** for example a ratchet mechanism, for selectively and reversibly locking the stand **200** in one of a plurality of preset positions, corresponding to preset heights of the top **100** with respect to the surface on which the stand **200** is standing. A ratchet **420,** typically made from metal is accommodated in one of the well structures **310** of a said web **170,** and connected to the insert **262** for movement therewith in a longitudinal direction within the well structure **310.** A spring-loaded handle **410** operates a release mechanism which cooperates with the ratchet, enabling the legs **210, 240** to assume the retracted position, so that the ironing board may be stowed taking up a minimum volume. The handle **410** may be located in a recess **450** formed in the corresponding web **140,** as illustrated in Figs. **2** and **5,** for example. The locking mechanism may be assembled via any suitable apertures that may be formed in the top **100** and/or stand **200,** as required. Many variations of the locking mechanism are possible without deviating from the spirit of the invention.

[0060] The platform **130** may be covered with a suitable cover (not shown). Such covers are well-known and may comprise, for example, a multilayered material having an upper aluminium, metallic or cotton layer, and a lower felt layer. Such covers are typically replaceable and are provided with a tensioning chord along its periphery. When fixing the cover on the platform **130,** the cover is first laid over the platform so that the periphery of the cover drapes over the sides **134,** tip **136** and rear end **138** of platform. Then, the chord is pulled and tied under the projections **139,** which together with the lip **160** lock the cover in place, the chord (still in its sheath around the cover) being accommodated in the gap **155.**

[0061] The present invention is also directed to molds for producing the ironing top and stand, including the legs thereof, and covers of the present invention. In particular, said molds are adapted for forming these components of the ironing board of the invention by injection of suitable molten plastic or any other suitable material to said molds. Alternatively, the molds may be used for forming a model of the components out of wax or similar material, and a suitable lost wax process may be applied to produce the plastic components therefrom.

[0062] Finally, it should be noted that the word "comprising" as used throughout the appended claims is to be interpreted to mean "including but not limited to".

[0063] While there has been shown and disclosed exemplary embodiments in accordance with the invention, it will be appreciated that many changes may be made therein without departing from the spirit of the invention.

Claims

1. An ironing board comprising:-

an ironing board top formed from a plastic material; and

a stand movably mounted to said top and comprising first and second mutually pivotable legs, each said leg being formed from a plastic material and configured for providing suitable mechanical properties to said stand, said stand being reversibly movable between a deployed position and a stowed position with respect to said top.

2. An ironing board according to claim 1, wherein said top comprises an ironing platform formed with a plurality of through holes.

3. An ironing board according to claim 1, wherein said top comprises a plurality of substantially longitudinal stiffening webs, wherein optionally said webs depend from an underside of said ironing platform and are hollow members, wherein optionally said hollow members comprise a web opening at an upper side of said platform, wherein optionally further compris-

ing a plurality of suitably-shaped covers for covering said web openings, wherein optionally each said covers comprise a plurality of segments serially joined by a hingeable element, said segments having an upper surface substantially flush with an upper surface of said platform when said cover is mounted thereto, wherein optionally said covers comprise a plurality of through holes, wherein optionally each said covers is formed as a monolithic body from a plastic material, and wherein optionally comprising a first pair of said webs, one each formed on an inboard lateral part of said ironing platform.

4. An ironing board according to claim 1, wherein said first leg comprises a single strut having a free end and a foot joined at another end thereof, and wherein said first pair of webs comprise a front bearing arrangement for enabling pivoting and translation of said free end of said first leg with respect thereto, and wherein optionally said front bearing arrangement comprises a longitudinal slot formed on each said web on facing walls thereof configured to cooperate with a pair of transversely projecting first pivoting pins disposed one on each transverse side of said free end of said first leg, wherein optionally each said slot is adapted for receiving and for allowing rotation and longitudinal translation of, a corresponding said first pin comprised at said free end of said first leg, wherein optionally said first pins are chamfered to facilitate assembly of said first leg with respect to said slots, and wherein optionally further comprising a metal insert adapted for being inserted through said first pins for enhancing mechanical properties of said first pins.

5. An ironing board according to claim 4, wherein said top comprises a first pair of substantially longitudinal stiffening webs, one each formed on an inboard lateral part of said ironing platform, and wherein said first leg is configured to be accommodated between said first pair of webs, when said stand is in said stowed position, wherein optionally said second leg comprises a pair of transversely spaced struts, each having a free end and a common foot joined at another end thereof, and further comprising a rear bearing arrangement for enabling pivoting of a free end of said second leg with respect thereto, wherein optionally said rear bearing arrangement comprising two pair of hinge members depending from said underside of said ironing platform, each said pair of hinge members configured to cooperate with transversely projecting second pivoting pins disposed one on each transverse side of said free end of a corresponding one or another of said struts of said second leg, wherein optionally each said pair of hinge members comprises a first hinge part integrally formed with an outboard portion of a corresponding one or another said web of said first web pair and having a first pivoting aperture, and a second hinge part formed as a protuberance depending from said underside of said platform and comprising a second pivoting aperture substantially coaxial with said first pivoting aperture, wherein optionally said second pins are chamfered to facilitate assembly of said struts of said second leg with respect to corresponding said first and second apertures, wherein optionally said second hinge part comprises a resilient portion that is deflectable to facilitate cooperation of said second pins with said first and said apertures, wherein optionally said first hinge part comprise a slot for guiding a said second pin towards the pivoting aperture thereof, and wherein optionaiiy said second hinge part comprise rails for guiding a said second pin towards the pivoting aperture thereof.

6. An ironing board according to claim 5, wherein said second leg is configured such that the struts thereof may be accommodated one each on either outboard side of said first pair of webs, when said stand is in said stowed position.

7. An ironing board according to claim 3, further comprising a second pair of said webs, one each being formed on an outboard lateral part of said ironing platform with respect to said first pair of webs.

8. An ironing board according to claim 5, further comprising an auxiliary platform, having a lower wall integrally joined with said ironing platform, said auxiliary platform being adapted for resting an iron thereon.

9. An ironing board according to claim 26, said auxiliary platform comprising a metal plate for resting a said iron thereon, said lower wall being spaced from an underside of said metal plate, wherein optionally said lower wall comprises a plurality of through holes, and wherein optionally said first pair of webs extends longitudinally to include said auxiliary platform.

10. An ironing board according to claim 5, comprising a locking mechanism for controlling the angular disposition of said first with respect to said second leg, wherein optionally said locking mechanism comprises a spring loaded handle for releasing a ratchet joined for movement with said first pin, and wherein optionally said ratchet is accommodated in a said web of said first pair of webs.

11. An ironing board according to 5, wherein at least one of said ironing board top, said first leg, and said second leg is formed as monolithic body from a plastic material.

12. An ironing board according to claim 11, wherein each one of said top, said first leg and said second leg is

made from a plastic material including at least one of polyethylene polystyrene, polycarbonate, nylon, and propylene.

13. An ironing board according to claim 11, wherein said top is manufactured using a suitable plastic forming process, and wherein optionally said process includes any one of : injection molding, blowmolding, vacuum forming, pressure forming, thermo-forming, rotomolding, reaction injection molding, reinforced reaction injection molding, or the like.

14. An ironing board according to claim 1, wherein said top further comprises at least one layer of material overlying an upper surface thereof, wherein optionally said at least one layer includes a layer of heat resistant material, wherein optionally said at least one layer includes at least one of: a metal layer, a fabric layer, and wherein optionally said at least one layer is integrally formed with said board top.

15. A mold for producing an ironing board top, wherein said ironing board top is as defined in any one of claims 1 to 14.

16. A mold for producing at least one of a first leg and a second leg of a stand, wherein said stand is as defined in any one of claims 1 to 14.

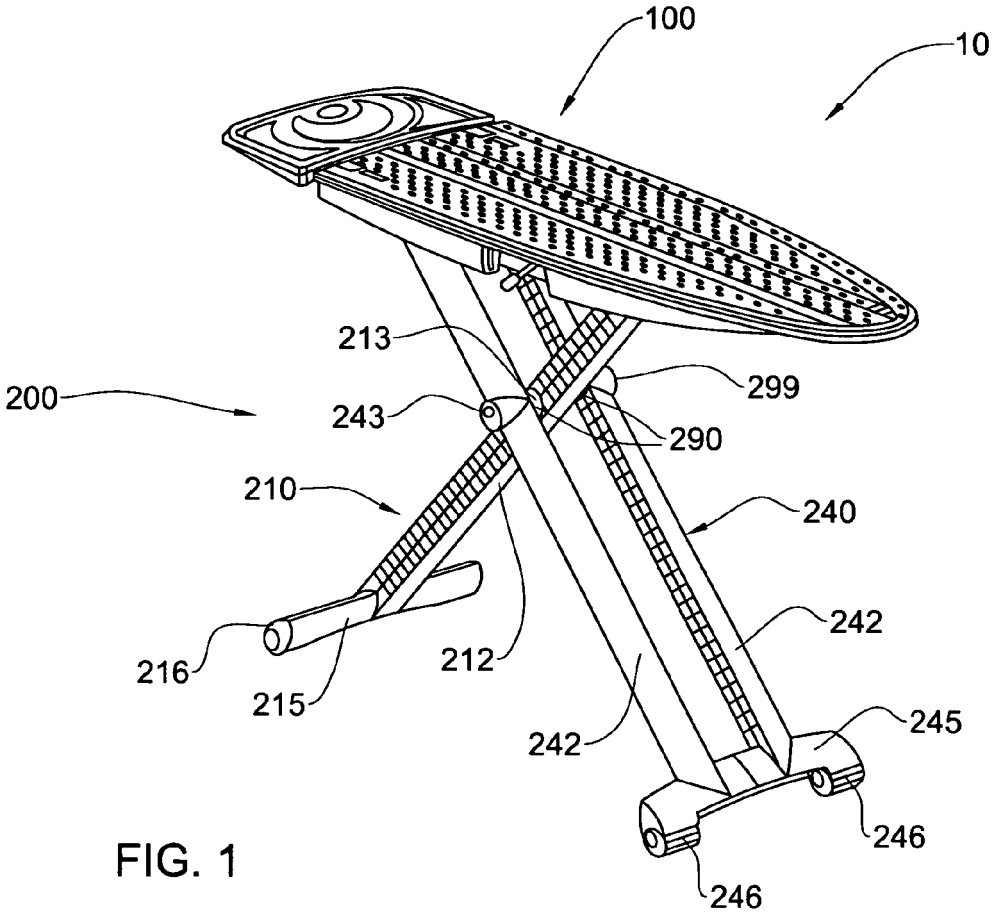

100
10
213
200
243
299
290
210
240
242
216
212
215
242
245
246
246

FIG. 1

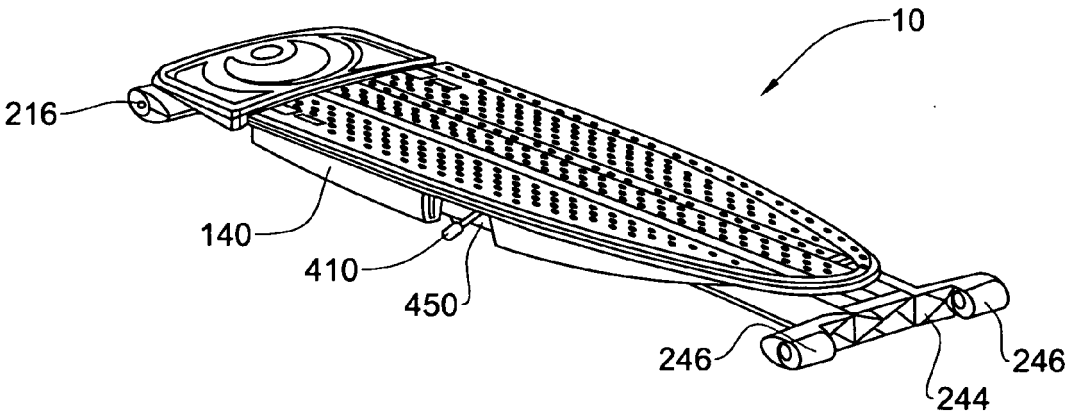

10
216
140
410
450
246
246
244

FIG. 2

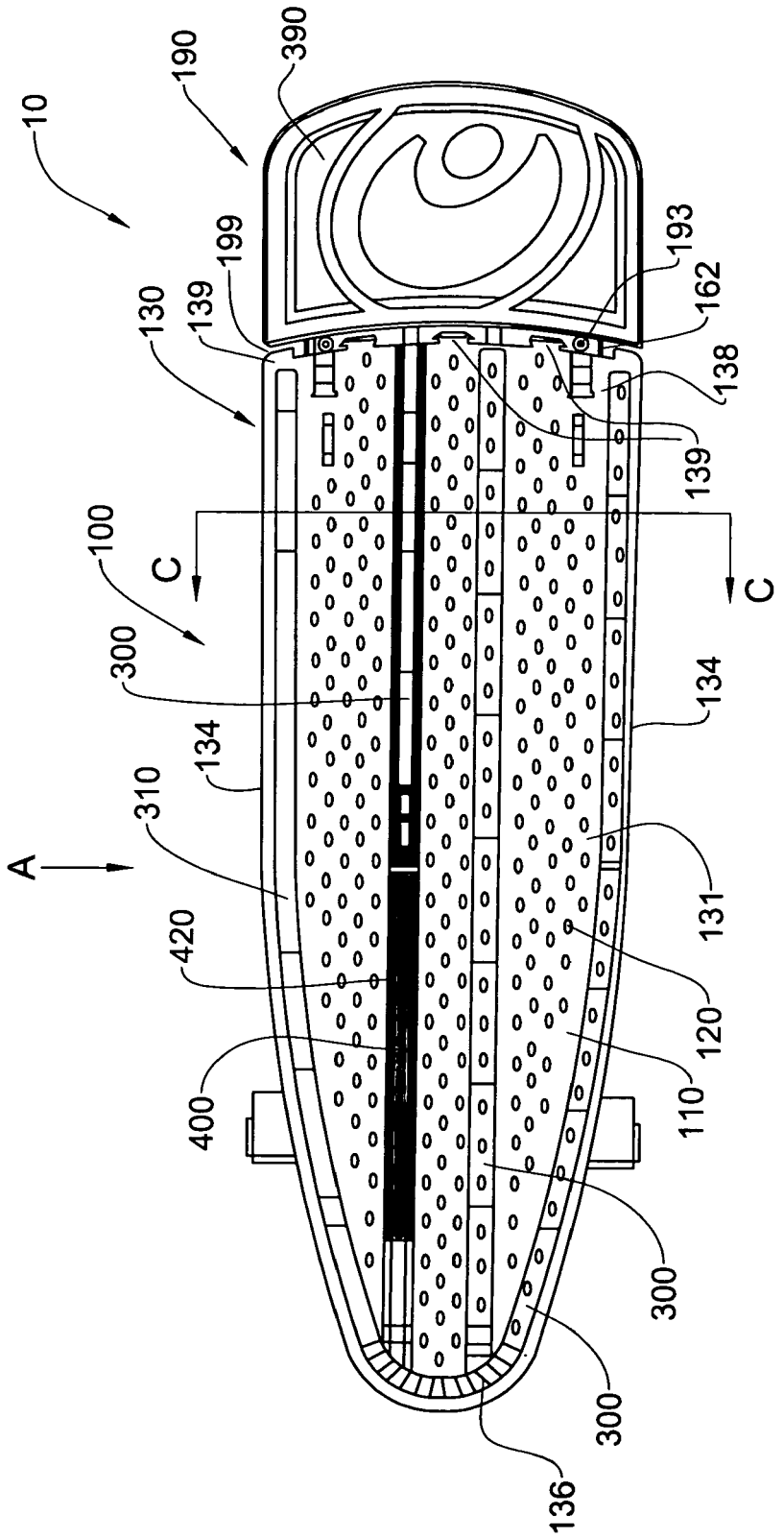

10
190
390
199
193
130
139
162
138
139
100
C
C
300
134
134
310
A
131
420
120
400
110
300
300
136

FIG. 3

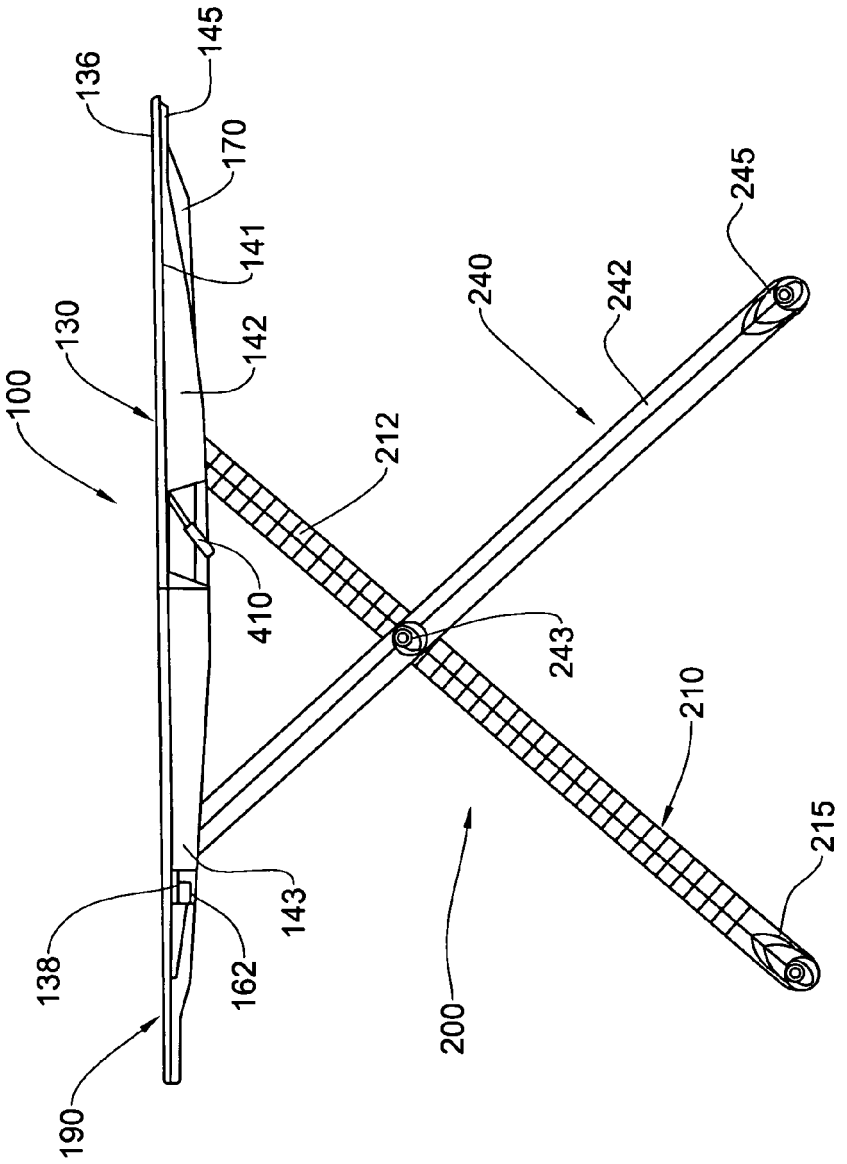

145
136
170
141
245
240
242
130
142
100
212
410
243
210
215
143
138
162
200
190

FIG. 4

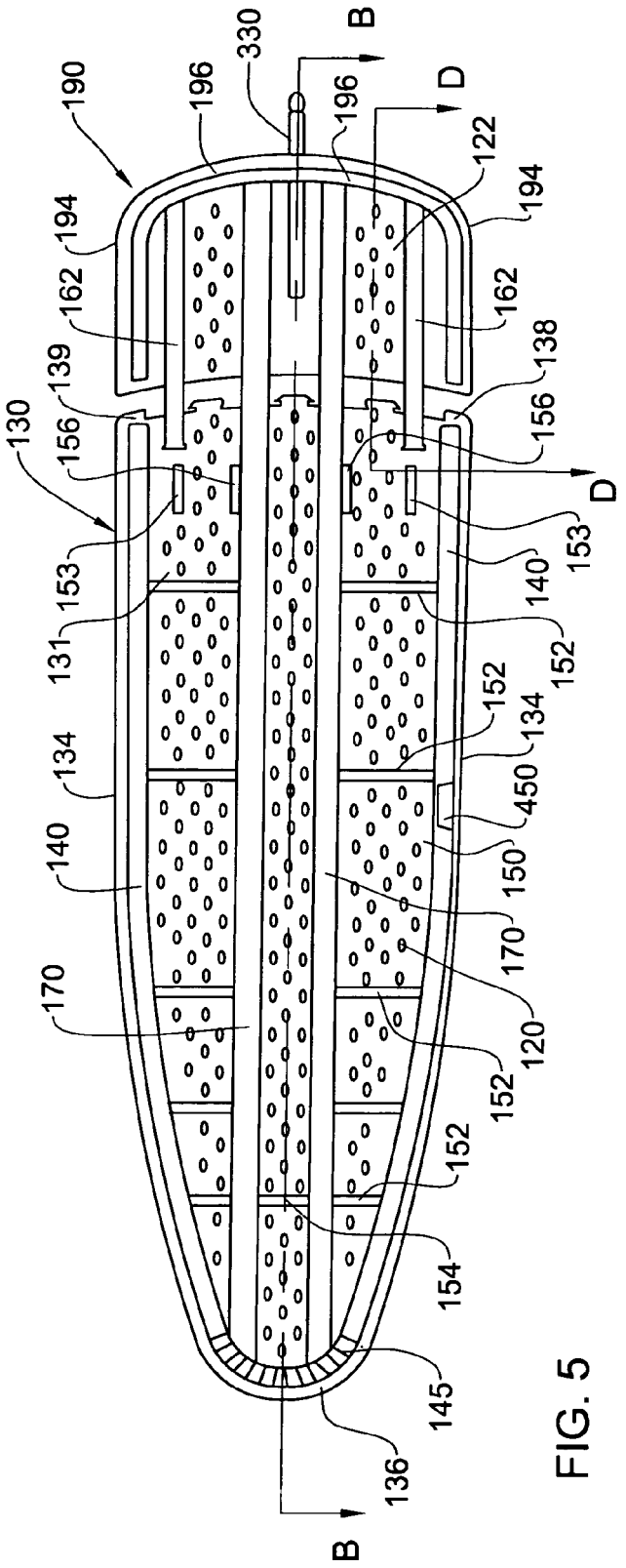
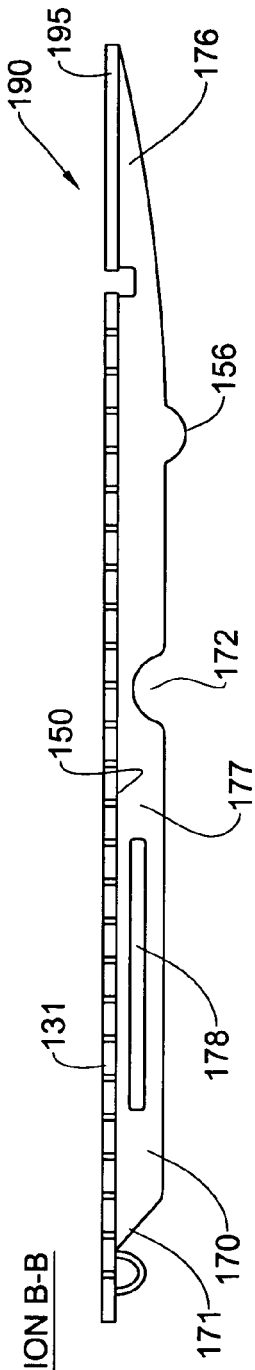


FIG. 5



SECTION B-B

FIG. 6

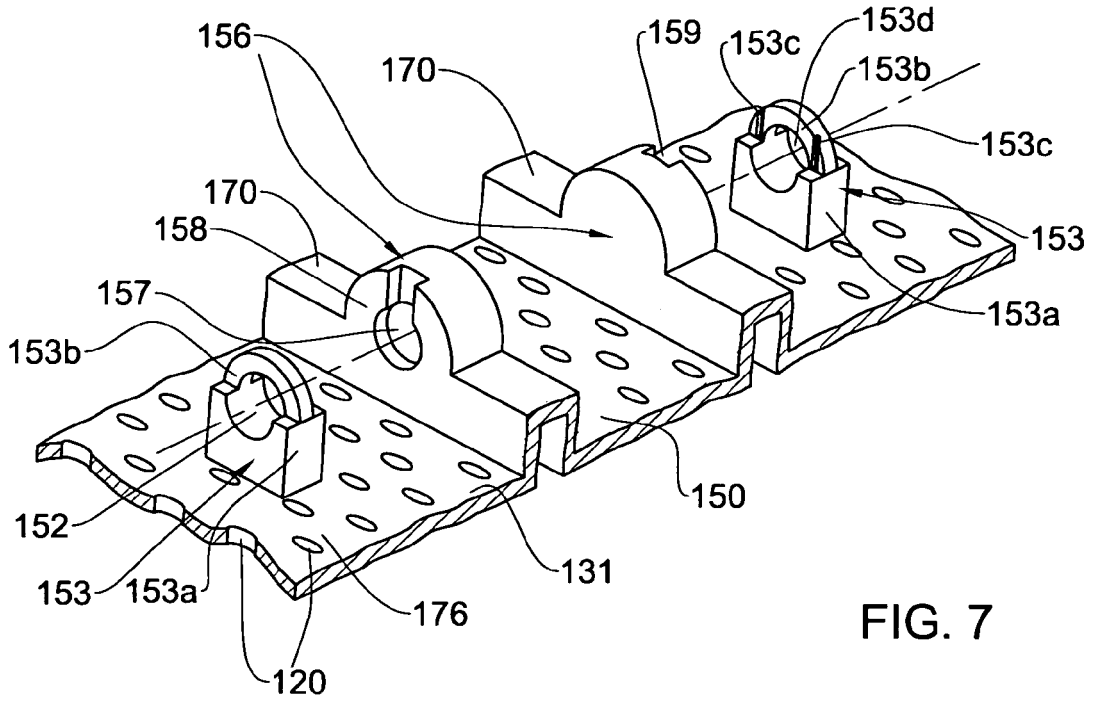


FIG. 7

SECTION D-D

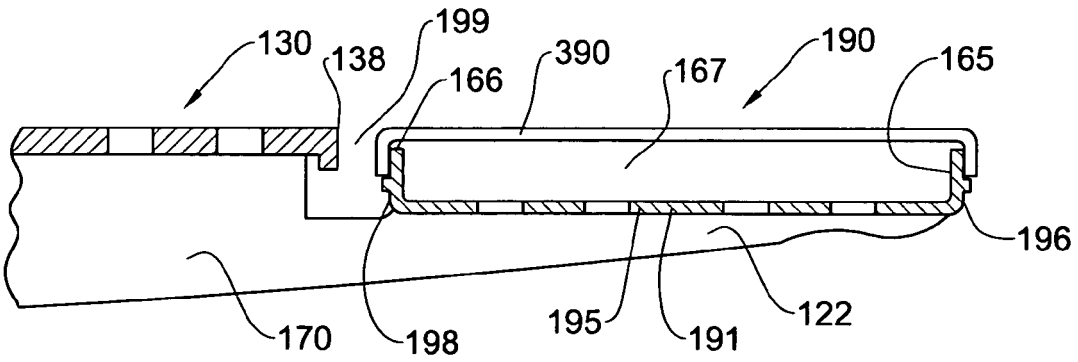


FIG. 8

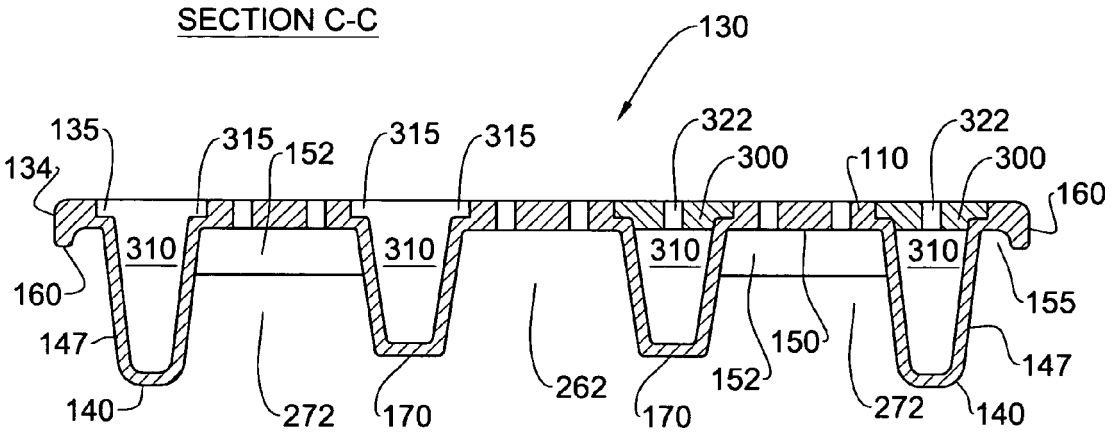

SECTION C-C
130
135
134
315
152
315
315
322
300
110
322
300
160
310
310
310
310
160
155
147
150
147
140
272
170
262
170
152
272
140

FIG. 9

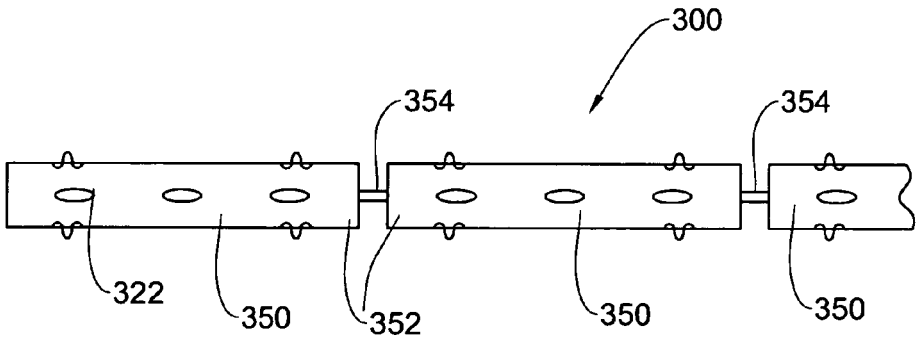

300
354
354
322
350
352
350
350

FIG. 10

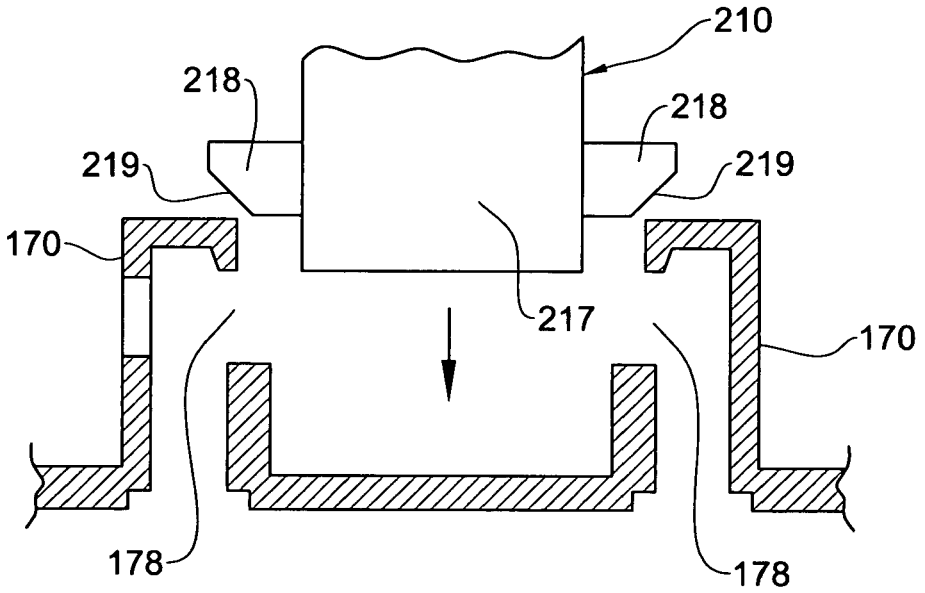


FIG. 11a

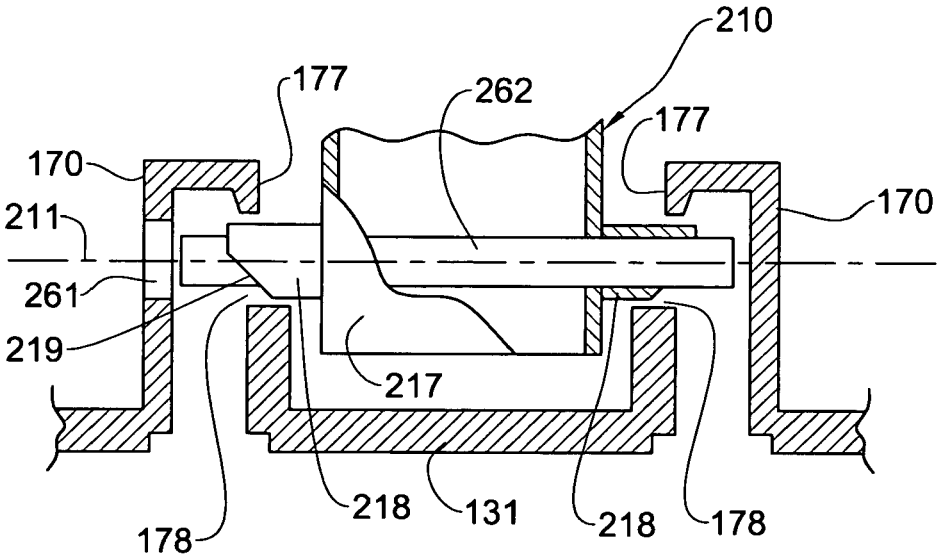


FIG. 11b

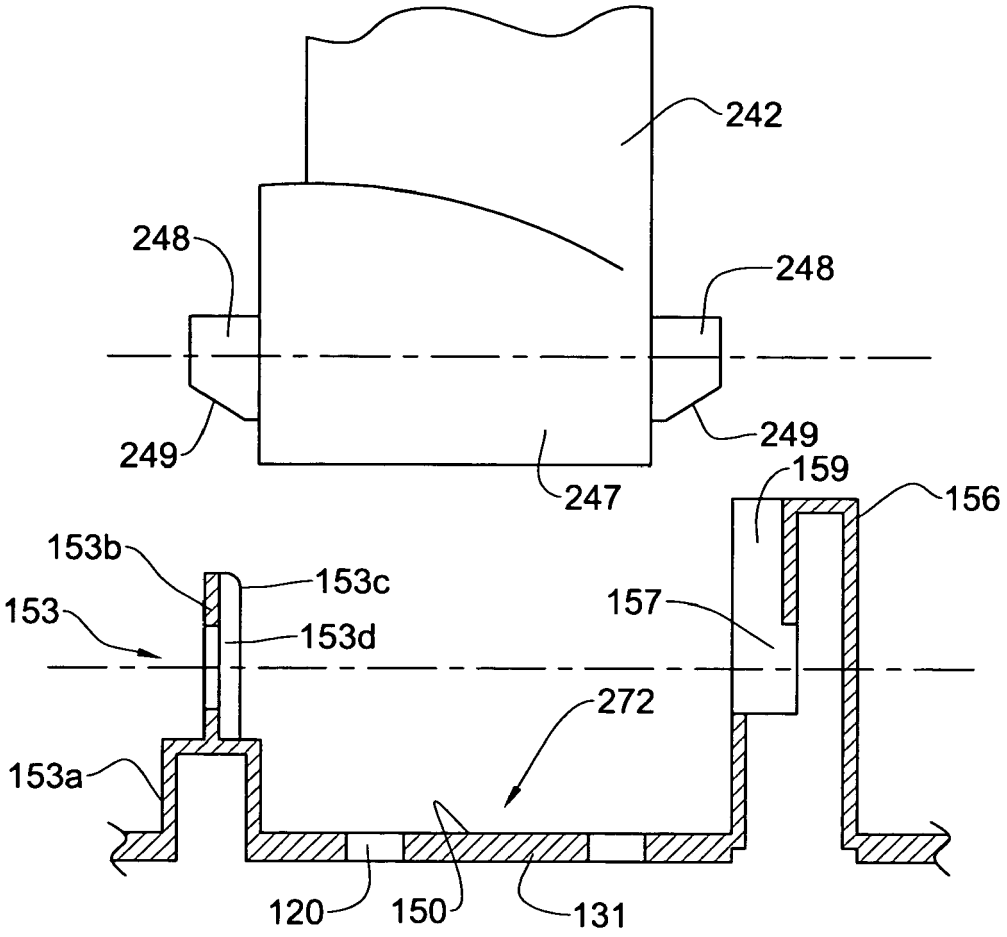

242
248
248
249
249
247
159
156
153b
153c
153
153d
157
272
153a
120
150
131

FIG. 12

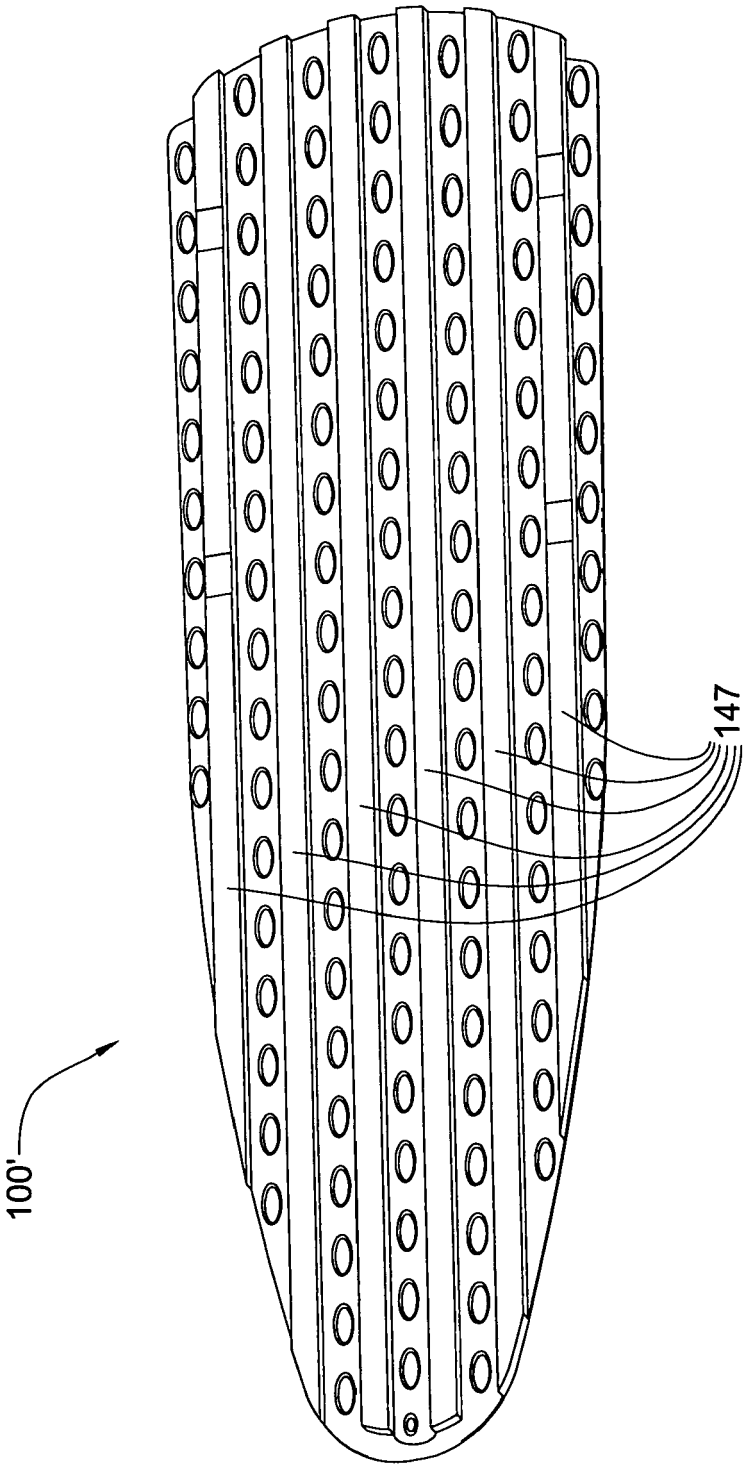


FIG. 13