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

(11) EP 1 602 777 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.12.2005 Bulletin 2005/49

(51) Int Cl.[7]: **D06F 81/02**, D06F 81/08

(21) Application number: **05004167.2**

(22) Date of filing: **25.02.2005**

(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 MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR LV MK YU

(30) Priority: **25.02.2004 IT MO20040043**

(71) Applicant: **Amoretti, Luigi**
36065 Mussolente (VI) (IT)

(72) Inventors:
- **Amoretti, Luigi**
  36065 Mussolente (VI) (IT)
- **Pineschi, Massimiliano**
  41010 Villanova (MO) (IT)

(74) Representative: **Luppi, Luigi**
Luppi Crugnola Bergamini & Partners S.r.l.
Viale Corassori, 54
41100 Modena (IT)

(54) Ironing apparatus

(57) An apparatus comprises a base body (2), a board (3) provided with a support surface for items to be ironed and having a first end (4) supported on said base body (2) and a second end (117), opposite said first end (4), protruding from said base body (2), between said first end (4) and said base body (2) there being interposed rotating support means (5', 8) suitable for enabling the rotation of said board (3) in relation to said base body (2) according to a longitudinal axis (X) of said board (3).

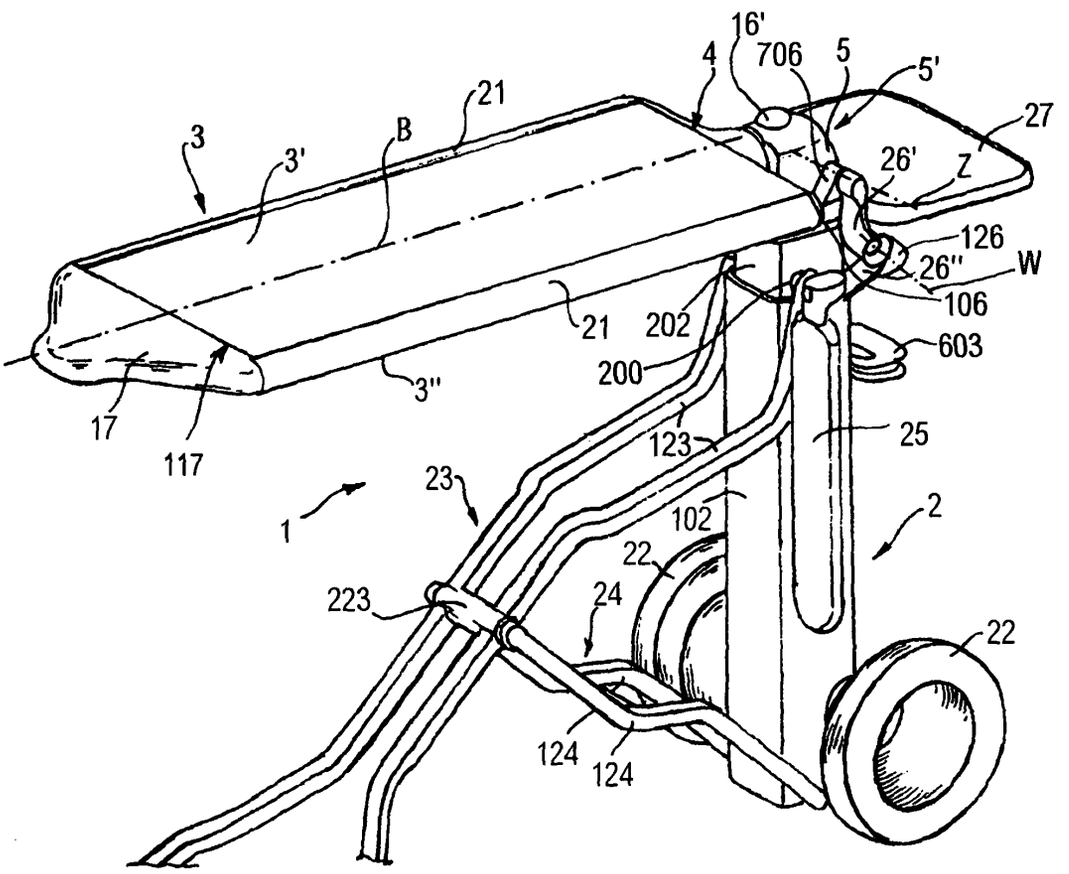


Fig. 1

EP 1 602 777 A2

Description

[0001] The invention relates to an ironing apparatus.

[0002] Ironing boards with a simplified structure for domestic use are known that comprise a board suitable for being arranged horizontally to provide a support plane for the clothes and linen to be ironed. The board is provided with support feet that cross over as an "X" and are hinged together in a median zone. The top ends of the feet are in turn hinged to the bottom face of the board with sliding couplings suitable for enabling the feet to be foldable against the latter when the ironing board is not used such as to limit its overall dimensions when it is to be put away.

[0003] From Italian patent application BO95A000207 an ironing board is known that comprises a board that is rotatable around its own longitudinal axis. This board is supported at both ends by a foldable frame that comprises a pair of vertical feet hinged on the board at each end in such a way as to each be foldable against the bottom face of the latter when the ironing board is not in use. Between the feet a transverse element stiffening and locking the feet in an open position is insertible, which element is in turn hinged on one of the aforementioned feet and is also foldable against the bottom face of the board when the ironing board is not in use.

[0004] As in the other ironing boards, also a sleeveboard is provided that is articulated at one of the feet, turned in the opposite direction to the board, and a suitable surface protruding from the frame to rest the iron during the ironing phases.

[0005] These known ironing boards have certain drawbacks.

[0006] A first drawback is that in the ironing boards of the simplest type, in the use configuration, the board is fixed to the feet. This obliges the user to turn a garment several times to be able to rest it on the top face of the board and iron it on both sides, inside and outside, i.e. straight and inside out.

[0007] A second drawback is that the garment to be ironed may slide in relation to the ironing board during ironing operations.

[0008] Furthermore, in the ironing board disclosed in patent application BO95A00020 when the board is rotated on itself, the item must be removed beforehand from the latter to prevent it sliding onto the floor and getting dirty or getting creased in the already ironed parts.

[0009] A third defect is that the structure of the ironing board that is the subject of the aforementioned patent application is extremely complex and is therefore heavy to handle, costly to make and therefore also costly for the purchasers.

[0010] A fourth drawback is that in order to iron items with a tubular structure, such as trousers or pullovers, the presence of a suitable additional ironing board is necessary that is deliberately provided for the purpose and is supported on the frame in a removable manner, to be used only in these particular ironing cases.

[0011] An object of the invention is to improve the known ironing boards.

[0012] Another object of the invention is to make an ironing board that is of a substantially simple structure and is therefore easy to handle and has moderate production and purchase costs in relation to the performance provided.

[0013] A further object of the invention is to make an ironing board that is both able to retain the items to be ironed on a support board and to facilitate their detachment.

[0014] A yet further object of the invention is to make an ironing board that is able to if necessary dry the ironing surface of the board.

[0015] Another object of the invention is to make an ironing board that enables the user to arrange the items to be ironed, especially garments, in a position that enables thorough ironing of each point thereof to be obtained and to keep the ironing as intact as possible even during removal of the item from the board, without the need for additional boards.

[0016] In a first aspect of the invention, there is provided an apparatus comprising a base body, a board provided with a support surface for items to be ironed and having a first end supported on said base body and a second end, opposite said first end, protruding from said base body, characterised in that between said first end and said base body there is interposed rotating support means suitable for enabling the rotation of said board in relation to said base body according to a longitudinal axis of said board.

[0017] In a second aspect of the invention, there is provided an apparatus comprising a base body, a board associated with said base body and having a support surface of items to be ironed, characterised in that said board has an internal structure such as to define longitudinal chamber means that is used to suck and/or blow air through said surface.

[0018] In a third aspect of the invention, there is provided an apparatus comprising a board provided with a support surface for items to be ironed and having an end hinged on a base body comprising a first member, said base body comprising a second member hinged on said first member in a zone of the latter leading to said end, it being provided for that between said second member and said end there is interposed elastic means at said zone.

[0019] The invention may be better understood and implemented with reference to the attached drawings that illustrate certain embodiments thereof by way of non-limitative example, in which:

Figure 1 is a perspective view of an ironing apparatus in the in-use position;

Figure 2 is a side view of the ironing apparatus in Figure 1 in the reclosed not-in-use position;

Figure 3 is a view from above of the ironing apparatus in Figure 1;

Figure 4 is a perspective view of the ironing apparatus in Figure 1 during a rotation phase of the ironing board;
Figure 5 is a section of the ironing apparatus in Figure 1 made along a vertical plane, showing a folding phase of the ironing board;
Figure 6 is a detail on an enlarged scale of Figure 5, showing an upper portion of the ironing apparatus;
Figure 7 is a detail like the one in Figure 6, showing the ironing apparatus in the in-use configuration;
Figure 8 is a very schematic partially sectioned view along a vertical plane of a locking/unlocking device with which the ironing apparatus in Figure 5 is provided;
Figure 9 is a view of a detail on an enlarged scale of the upper portion of the ironing apparatus in Figure 1 opposite the ironing board;
Figure 10 is a transparent view of means for locking and unlocking the rotation of the board of the ironing apparatus around its longitudinal axis;
Figure 11 shows, on an enlarged scale, a connecting unit between a head and an upright of the ironing apparatus in Figure 5;
Figure 12 is a view from above of a version of the ironing apparatus in Figure 3;
Figure 13 is the view of a detail on an enlarged scale of the upper portion of the ironing apparatus in Figure 12 opposite the ironing board.

[0020] With particular reference to Figure 1, there is shown an ironing apparatus 1, that comprises a first base member shaped as an upright 2 with a box-shaped structure, at a top end of which there is supported a board 3 for resting the items to be ironed.

[0021] The board 3 has a first end 4 that is supported on said top end of the upright 2 with the interposition of a support head 5.

[0022] The board 3 has both side edges that are provided with longitudinal guide elements 21 in which are insertable, preferably in a slidable manner, respective and corresponding finishing profiles 121 that have a chamfered transverse section in the part facing outside.

[0023] As shown in Figures 6, 7, 8, also the support head 5 has a box-shaped structure and is in turn articulated at the top end of the upright 2 with a hinge coupling 6 set up to allow rotation of the head 5 and therefore of the board 3 around a first axis "A" that is horizontal and transverse in relation to the board 3, to enable it to go from a position in which it is fixed to the top of the upright 2 to a position that is overturned on one side; as a result, also the board 3 may alternatively take on a corresponding substantially horizontal protruding position when in use or a position rotated downwards around the axis "A", resting against said upright 2 in a folded configuration of maximum compactness, to enable the ironing apparatus 1 to be put away when not in use.

[0024] The hinge coupling 6, as shown in Figures 5, 6, 7 and 11, comprises a collar 106 that is fixed to the top of the upright 2 and which forms a pair of eyelets 206 that project from the collar 106 towards the board 3 and together define a seat for inserting a bracket 306; the latter extends integrally from the base of the head 5 and is provided with a transverse through hole aligned on the eyelets 206, to enable a swivel pin 406 to be fitted.

[0025] According to Figure 9, on an opposite side, the collar 106 has a hinged U-bolt 307 that is suitable for engaging a square notch 306 obtained in the head 5 on the side opposite the board 3 to prevent accidental rotation of the latter around the axis "A".

[0026] The U-bolt 307 is also provided at the base with a stopping arch 309 to hold it in place and prevent its complete overturning to the upright 2 when it is in a configuration that is disengaged from the notch 308.

[0027] Between the first end 4 of the board 3 and the head 5 there is provided a rotating coupling that comprises a first head 7 that is connected to the first end 4 and forms a projecting cylindrical shank 8; the cylindrical shank 8 penetrates inside a seat 5' of the head 5 and is traversed by an axial cavity 108; the shank 8 is substantially centred on a longitudinal symmetry plane "B" of the board 3.

[0028] The head 5 forms, inside itself, a cylindrical sleeve 9 into which the shank 8 is inserted and a second chamber 105 that communicates with the inside of the box-shaped upright 2.

[0029] Between the shank 8 and the sleeve 9 there are interposed two bearings 10 to enable easy rotation of the shank 8 inside the sleeve 9.

[0030] Up against one of the bearings 10 there is interposed a ring 400 splined and fixed onto the shank 8 to prevent axial sliding of the latter inside the sleeve 9.

[0031] Between the latter and the shank 8 there is also provided, as visible in figures 6, 7 and 10, a body 11 shaped as a ring to lock and unlock rotation of the board 3 around a centred longitudinal axis "X"; the body 11 is inserted between the ring 400 and one of the bearings 10 and loosely surrounds the shank 8.

[0032] The body 11 has, at an upper peak point, a first prismatic element 111 that projects in a radial direction outwards and is slidingly guided inside a transverse opening 12, obtained in the upper portion of the sleeve 9 and which places the latter in communication with the exterior.

[0033] In a position that is diametrically opposite said upper peak point the body 11 is equipped with a second prismatic element 211 turned to the centre.

[0034] At the body 11 along the sleeve 8, and the second prismatic element 211 of the latter a cradle-shaped fixed body 311 projects above the internal walls of the second chamber 105, that is arranged transversely to the sleeve 8 and loosely surrounds the body 11.

[0035] In the lower zone, the fixed body 311 forms a prismatic seat 411 from which a pin 13 rises that is directed to the body 11 and around which a spiral spring 16 is wound that is thus interposed between the second

prismatic element 211 and the prismatic seat 411.

[0036] The spring 16 is preloaded and keeps the body 11 normally pushed in sliding contact with a collar 15 that is preferably indented, that is fixed relative to the perimeter of the shank 8 at the body 11 and slightly extends above the latter, lying inside said ring body 11.

[0037] In the collar 15 there are obtained at least two transverse windows 115, in positions that are diametrically opposite one another: a first one is obtained at the upper peak point of the collar 15 and the other is obtained at the lower peak point thereof.

[0038] The windows 115 are alternatively engageable by the second transverse prismatic element 211 to stop the rotation of the shank 8 in the sleeve 9 in at least two pre-selectable angular positions of the board 3, namely to turn one or other of the faces of the latter to each other, indicated respectively as 3' and 3".

[0039] The engagement between the second prismatic element 211 and a corresponding window 115 is deactuatable from the outside by the user by pressing a button 16' that is fitted on the first prismatic element 111, through the opening 12 with a sleeve 116 protruding from inside the button 16'.

[0040] Pressing the button 16' slides the first prismatic element 111 into the aperture 12 and the body 11 shifts transversely in relation to the shank 8; at the opposite end of the body 11 the second prismatic element 211, by overcoming the contrast action of the spring 16, is disengaged from the corresponding engaged window 115 freeing, as has been said, rotation of the shank 8 in the sleeve 9.

[0041] The board 3 has a second projecting end 117, opposite the first end 4, which is also provided with a second head 17; this is shaped as a clothes hanger, to be able to correctly fit a garment to be ironed that has or may take on a tubular shape, such as for example a buttoned shirt or a closed pullover.

[0042] According to an embodiment of the ironing apparatus 1, the board 3 has a box-shaped structure and internally forms a pair of first chambers 18' and 18" separated by a first longitudinal partition 118 parallel to the faces 3' and 3" and substantially equidistant from them.

[0043] Each of the first chambers 18' and 18" communicates with a respective face 3' or 3" of the board 3 through a plurality of through holes 19; both the first chambers 18' and 18" have ends turned to the second head 17 and are closed whilst those turned to the upright 2 are open and terminate in the first head 7; the latter is hollow and receives fitted inside itself and inside the shank 8 a further second sleeve 107 the axial cavity of which is longitudinally traversed by a second longitudinal and diametric partition 207.

[0044] The latter is substantially coplanar with the first partition 118, making an ideal extension thereof without substantial solution of continuity and which divides the shank 8 in a longitudinal direction into two contiguous portions 8' and 8" that are substantially coplanar to the first chambers 18' and 18", constituting an extension thereof inside the head 5.

[0045] The second sleeve 107 is rotatingly integral with the shank 8 and has a length that is slightly greater than the latter; as a result, it has a portion that extends inside the second chamber 105 from the end of the shank 8 turned the opposite way from the head 7.

[0046] On the portion that extends, there are splined rings 50 in conductive material that are parallel to one another and which are connected to respective internal connections 51; these rings 50 are part of a series of sliding contacts 52 that are fitted transversely to said portion that extends, supported inside a small shaped guard 53, which is fixedly fitted to the head 5; the sliding contacts 52 and the corresponding rings 50 and connections 51 carry, by means of cables 51', an electric supply inside the board 3 in which an electric resistance 150 is fitted that is actuatable if necessary to heat the faces 3' and 3 " of the board 3.

[0047] The shaped guard 53 also forms a breech 53' facing a concurrent end of the second sleeve 107 opposite the first head 7 and in which there is obtained an opening 54; the opening 54 is equipped with a facilitating tilted slide 55 that converges on the concurrent end of the second partition 207; on said concurrent end of the second sleeve 107 there is fitted an annular cap 56 equipped with seals 57 in elastic material that are kept in sliding contact with the breech 53'. The opening 54 alternately connects the chamber 105 with just one of the contiguous portions 8' or 8" and thus with one of the first chambers 18' or 18" , during rotation of the shank 8 inside the sleeve 9.

[0048] The upright 2 has a telescopic structure to enable it to be adjusted to different heights of use of the ironing apparatus 1 and consists of just two elements, a first external element 102 and a second internal element 202, the latter being removable in relation to the external one 102.

[0049] The structure of both elements 102 and 202 delimits, inside the upright 2, a longitudinal cavity 302 that in a zone near the base houses an invertible action suction unit 210 in such a way as to also become blowing if required and which is not disclosed in detail because in itself known.

[0050] According to a possible second embodiment of the invention illustrated in Figures 12 and 13, a suction group 210' is fitted directly on the support head 5 of the ironing apparatus 1 opposite the board 3, and is connected with the chamber 105, which in this case is equipped with a closing bottom 61 that insulates it in a substantially sealed manner from the longitudinal cavity 302, by means of a conduit 62 that terminates in the second chamber 105.

[0051] There is also provided stabilising means 60 that is fitted to the head 5 and is designed to engage in the first end 4 of the board 3, to keep it more stable when it is used.

[0052] In particular, the stabilising means 60 compris-

es a pair of linear actuators that are equipped with respective pins 67 that are fittable in corresponding holes 68 obtained in the first head 7 when the board 3 is located in the operating position and are extractable from the holes 68 when the board 3 has to be rotated.

[0053] When the suction unit 210 or the suction unit 210' is actuated a vacuum (or overpressure and thus a jet) is created that from the inside of the cavity 302 extends into the second chamber 105, or which is created directly in the latter in the case of the second possible embodiment disclosed above; the vacuum or overpressure, reaches, through the opening 54, inside one of the contiguous portions 8' or 8" and the relative first chamber 18' or 18", conveying the suction or jet effect through the through holes 19 onto one of the faces 3' or 3 " .

[0054] The upright 2 is provided at the base with a pair of coaxial wheels 22 facing the outside that act as a first and a second foot and to enable easy shifts of the ironing board 1 on the floor. The upright 2, in the direction of the board 3, carries hinged with pins 200 the top end of a third foldable foot 23; the third foot 23 consists of a pair of shaped rods 123 that are joined together by a tubular crosspiece 223; the opposite end of the third foot 23 forms a support 605.

[0055] Between the foot 23 and the upright 2 there is provided a further transverse connecting element 24, which also is foldable, which consists of a pair of parallel rods 124; the top ends of the parallel rods 124 are hinged on the tubular crosspiece 223, with a suitable pin and the bottom ends are hinged near the base of the first element 102.

[0056] When the board 3 is folded against the upright 2 in the not-in-use position the head 5 that supports it rotates around the hinge coupling 6.

[0057] Between the head 5 and the top internal end of the second internal element 202 there is positioned a reciprocal connecting unit 500.

[0058] As visible in Figures 5 and 11, the unit 500 comprises a series of three reciprocally articulated bodies each of which rotates in relation to the others as disclosed below.

[0059] A first body comprises a connecting rod 501 the foot 502 of which is articulated at the hinge points 200 of the ends of the parallel rods 123 and is rotationally integral with the latter whereas the head 503 is shaped as an eyelet.

[0060] In the eyelet 503 there is hinged, by means of a suitable pin, which has been removed from the drawings for better understanding, a concurrent eyelet-shaped end 511 of a side of a second body, comprising a square 510 with a substantially triangular shape the peak 512 of which in turn forms an eyelet 513 and the other side of which forms a support and stop surface 517.

[0061] On the eyelet 513 there is in turn hinged still with a non-visible pin, the eyelet base 514 of a third body, comprising a rod 518 the opposite end of which forms an eyelet 515 rotationally engaged on a pin 516 extending transversely integral from the base of the head 5.

[0062] The rod 518 forms, near the eyelet 515, a window for attaching an end of a preloaded spring 520 that is reactive to traction, the opposite end of which is hooked to the hinge pin (not visible) fitted in the eyelets 503 and 511 and is suitable for dampening both rotation of the head 5 and vertical movements of the second element 202 inside the first element 102.

[0063] In order to obtain an effective dampening action, the spring 520 is preloaded to a contrast force value that is substantially the same as the overturning momentum generated by the total weight of the board 3 and of the head 5.

[0064] When for example the board 3 is pushed downwards the second element 2 enters the first element 102 and the foot 23 rotates around the hinge pins 200, making the connecting rod 501 rotate to the bottom of the upright 2 and progressively widening in relation to the upright 2; rotation of the connecting rod 501 is progressively contrasted by the spring 520 and the descent of the second element 202 is in this way braked.

[0065] Similarly, when the head 5 is rotated downwards to bring the board 3 up to rest against the upright 2, the pin 516 drags the rod 518 to follow the overturning movement of the head 5; the rod 518 exerts traction on the spring 520 that opposes rotation of the head, 5, partially elastically extending by overcoming the pre-load value, and partially acting on a connecting rod 501, by making it rotate upwards.

[0066] Rotation of the connecting rod 501 generates torque on the hinge pins 200 that is transmitted to the ends of the third foot 23, rotating it progressively to the upright 2.

[0067] Rotation of the third foot 23 progressively pushes the second element 202 upwards to completion of rotation of the board 3 around the axis "A" and the rest of the latter against the upright 2; lifting the second element 202 prevents slipping of the second head 17 on the floor during rotation of the board 3.

[0068] Between the first element 102 and the second element 202 there is also provided a pawl coupling 600 for locking sliding between the second internal element 202 and the first external element 102 at the different desired heights of the board 3.

[0069] The pawl coupling 600 comprises, as schematically visible in figure 8, an indentation 601 with positioned teeth that is obtained directly on a face of the second element 202, parallel to the longitudinal axis of the latter and a corresponding tooth 602 that is transversely supported on the first element 102 at the indentation.

[0070] The tooth 602 is alternately movable between two positions, a first engagement position in one of the teeth of the indentation 601 and a second position of disengagement from the latter: in the first position, the slide between the second element 202 and the first element 102 is locked whereas in the second position the

slide is free.

[0071] The tooth 602 is operated by pulling the grip 603 from the outside and overcoming the contrast action of a spring 604 interposed between the tooth 602 and an internal wall of a guard 606 that encloses the entire pawl coupling 600 and is applied to the external surface of the first element 102.

[0072] The ironing apparatus 1 is also equipped with a sleeveboard 25 that has a support arm consisting of two reciprocally articulated segments 26' and 26" rotating around a axis "W" with a hinge coupling 126.

[0073] The segment 26' has its own rotation fulcrum on the collar 106 to rotate around a axis "Z" by means of a bracket 706 projecting from it.

[0074] In this way, the sleeveboard 25 can be simultaneously rotated around the axis "W" and the axis "Z" to be taken from a raised and horizontal use position visible in Figure 3 to a rest position rotated downwards visible in Figures 1, 2, 4, and vice versa.

[0075] In addition to the sleeveboard 25 there is also provided, positioned on an opposite side of the upright 2 in relation to the board 3, a surface 27 for supporting an iron.

[0076] The surface 27 can also be brought from a raised position of use, as shown in Figures 1, 3 and 4, to a downwardly folded position, as shown in Figure 2, and vice versa.

[0077] Shifting of the surface 27 is made possible by a further hinge coupling rotating around the "Z" axis of a pin integral with the surface 27 and engaged in a bracket 806 projecting from the collar 106 on an opposite side of the bracket 106 in relation to the head 5.

[0078] The ironing board 1 has the following use: starting from the folded configuration illustrated in figure 2, the user rotates the board 3 upwards and locks the head 5 on the collar 106 by inserting the U bolt 307 into the notch 308.

[0079] Subsequently, he opens the foot 23 by rotating it around the hinging pins 200; in the rotation the connecting transverse element 24 is also dragged that places itself between the foot 23 and the base of the upright 2, in such a way as to avoid accidental spontaneous closing of the foot 23.

[0080] Once the opening operations are completed, the user arranges the board 3 at the right use height and, if required, inserts the removable stabilisation means 60.

[0081] To reach the correct height, he frees the slide of the second element 202 in relation to the first element 102 by acting on the grip 603 and disengaging the tooth 602 from the indentation 601; when the correct height has been reached he releases the grip 603 and the expansion of the spring 604 automatically restores engagement of the tooth 602 in the indentation 601, locking sliding of the second element 202 at the required height.

[0082] Both the operations of opening and positioning the board 3 are facilitated by the action of traction exerted by the preloaded spring 520: the preloading force, which substantially corresponds to the weight of the board 3, eliminates the effort that the user has to make to lift the entire weight of the board 3 and of the head 5 during the phase of positioning at the different heights or during the phase of lowering or lifting of the board 3 into, or from, the folded configuration.

[0083] The user thus has an item to iron on the board 3 and, if necessary, actuates the suction unit 210 or 210' that generates a vacuum that retains the item on the face of the board 3, for example the face 3'.

[0084] If the item has a tubular conformation such as, for example, a sweater, it is placed on the board 3 at the end 107 of the latter.

[0085] The user irons the part of the tubular item that rests on the top face 3'; when he has completed ironing of this part, to proceed to iron the opposite part, he presses the button 16' to free the board 3 in relation to the head 5 that supports it and to allow it to rotate by 180° around the axis "X" and invert the position of faces 3' and 3" .

[0086] By completing rotation after releasing the button 16', the second prismatic element 211 jumps on the indented collar 15 until it matches the corresponding window 115, engaging in the latter and locking rotation of the shank 8 in the sleeve 9: in this way the board 3 again remains locked on the head 5.

[0087] It is also possible, in the second version of the ironing apparatus 1, to stabilise the position of the board 3 by actuating the linear actuators 66 in such a way that they push their pins 67 into the holes 68; actuation of the linear actuators 66 occurs, for example, by means of respective control buttons 69.

[0088] At the end of the steering operations the user inverts the action of the suction unit 210 (or 210'), which starts to blow and sends a flow of air through the holes 19.

[0089] This facilitates removal of the ironed item, which normally tends to stick to the face on which it rests during ironing and which is normally clad in a thermally insulating cloth.

[0090] It is also possible to heat the board 3 by conduction, by exciting the resistance 150, which receives electric power through the cables 51' to the internal connections 51 and the sliding contacts 52, the latter being directly connected to the normal domestic power supply.

[0091] During use of the ironing board 1 it is also possible to arrange the surface 27 in a horizontal position to be able to rest an iron by rotating said surface 27 in the bracket 806 and locking it in a position that is known to those skilled in the art.

[0092] Also the sleeveboard 25 can be rotated around the axes "W" and "Z" to be arranged either in a position parallel to the board 3 or in a position that is folded in relation to the upright 2.

[0093] When use of the ironing board 1 finishes, the user folds the transverse element 24 and the foot 23

against the upright 2.

[0094] He then frees the head 5 from the U bolt 307 by extracting it from the notch 308 and pushes it to the end 117 of the board 3 by making it progressively rotate to the upright 2.

[0095] When the ironing apparatus 1 has been completely reclosed, the user can shift it without trouble by making it move along the floor on the wheels 22 to a place in which the apparatus is stored.

Claims

1. Apparatus comprising a base body (2), a board (3) provided with a support surface for items to be ironed and having a first end (4) supported on said base body (2) and a second end (117), opposite said first end (4), protruding from said base body (2), **characterised in that** between said first end (4) and said base body (2) there is interposed rotating support means (5', 8) suitable for enabling the rotation of said board (3) in relation to said base body (2) according to a longitudinal axis (X) of said board (3).

2. Apparatus according to claim 1, wherein said board (3) has an internal structure such as to define longitudinal chamber means (18, 18') that is used to suck and/or blow air through said surface.

3. Apparatus according to claim 1, or 2, wherein said base body comprises a first member (2), on which there is hinged an end of said board (3) and a second member (23) hinged on said first member (2) in a zone of the latter, leading to said end (4), it being provided for that between said second member (23) and said end (4) there is interposed elastic means (500) at said zone.

4. Apparatus comprising a base body (2), a board (3) associated with said base body (2) and having a support surface of items to be ironed, **characterised in that** said board (3) has an internal structure such as to define longitudinal chamber means (18, 18') that is used to suck and/or blow air through said surface.

5. Apparatus according to claim 4, wherein said board (3) comprises a first end (4) supported on said base body (2) and a second end (117), opposite said first end (4), protruding from said base body (2), between said first end (4) and said base body (2) there being interposed rotating support means (5', 8) suitable for enabling the rotation of said board (3) in relation to said base body (2) according to a longitudinal axis (X) of said board (3).

6. Apparatus according to claim 4, or 5, wherein said base body comprises a first member (2), on which there is hinged an end of said board (3) and a second member (23) hinged on said first member (2) in a zone of the latter leading to said end (4), it being provided for that between said second member (23) and said end (4) there is interposed elastic means (500) at said zone.

7. Apparatus comprising a board (3) provided with a support surface for items to be ironed and having an end (4) hinged on a base body comprising a first member (2), said base body comprising a second member (23) hinged on said first member (2) in a zone of the latter leading to said end (4), it being provided for that between said second member (23) and said end (4) there is interposed elastic means (500) at said zone.

8. Apparatus according to claim 7, wherein said board (3) has an internal structure such as to define longitudinal chamber means (18, 18') that is used to suck and/or blow air through said surface.

9. Apparatus according to claim 8, or 9, wherein said board (3) comprises a first end (4) supported on said base body (2) and a second end (117), opposite said first end (4), protruding from said base body (2), between said first end (4) and said base body (2) there being interposed rotating support means (5', 8) suitable for enabling the rotation of said board (3) in relation to said base body (2) according to a longitudinal axis (X) of said board (3).

10. Apparatus according to any one of claims 1 to 3, or according to claim 5, or according to claim 6 as appended to claim 5, or according to claim 9, wherein said rotating support means comprises projecting means (8) projecting from said board (3) and seat means (5') associated with said base body means (2), said projecting means (6) being rotationally supported on said seat means (5').

11. Apparatus according to claim 10, wherein said seat means (5') is hinged on said base body means (2).

12. Apparatus according to claim 10, or 11, wherein between said projecting means (8) and said seat means (5') there is interposed locking means (711) arranged to monitor a rotation of said projecting means (8) in relation to said seat means (5').

13. Apparatus according to claim 12, wherein said locking means (711) comprises an annular body (11) that surrounds said projecting means (8).

14. Apparatus according to claim 13, wherein said locking means (711) furthermore comprises pressing means (16) arranged to press said annular body

(11) against said projecting means (8) to prevent rotation of said projecting means (8) in relation to said seat means (5').

15. Apparatus according to claim 14, wherein said pressing means comprises spring means (16).

16. Apparatus according to any one of claims 13 to 15, wherein in said projecting element (8) there is provided window means (115) arranged to receive a locking element (211) projecting from said annular body (11).

17. Apparatus according to any one of claims 13 to 16, wherein said locking means (711) furthermore comprises driving means (16') arranged to move said annular body (11) away from said projecting means (8), to enable a rotation of said projecting means (8) in relation to said seat means (5).

18. Apparatus according to claim 17, wherein said driving means comprises manually operatable switch means (16').

19. Apparatus according to claim 18, wherein said driving means furthermore comprises an elongated element (111) having a first end associated with said switch means (16') and a second end associated with said annular body (11), said elongated element (111) extending transversely in relation to said seat means (5') passing through opening means (12) obtained in said seat means (5).

20. Apparatus according to any one of claims 13 to 19, wherein said projecting means (8) is provided with friction promoting means (15) arranged to interact with said annular body (11).

21. Apparatus according to claim 20, wherein said friction promoting means comprises collar means (15) that embraces said projecting means (8), said collar means (15) being interposed between said projecting means (8) and said annular body (11).

22. Apparatus according to claim 2, or according to any claim 3 as appended to claim 2, or according to any one of claims 4 to 6, or according to claim 8, or according to claim 9 as dependent on claim 8, or according to any one of claims 10 to 21 as claim 10 is appended to claim 2, or to claim 3 as appended to claim 2, or to claim 5, or 6, or to claim 9 as appended to claim 8, wherein said chamber means comprises a first longitudinal chamber means (18') and a second longitudinal chamber means (18") separated from each other by a partition (118).

23. Apparatus according to claim 22, and furthermore comprising suction/blowing means arranged to alternately suck and/or blow air from or into said first chamber (18') or into said second chamber (18").

24. Apparatus according to claim 22, or 23, and furthermore comprising further chamber means (105) arranged to be placed alternately in communication with said first chamber (18') or with said second chamber (18").

25. Apparatus according to claim 24, wherein said further chamber means (105) is obtained in a unit (5) that rotatingly supports said board (3).

26. Apparatus according to any one of claims 23 to 25, wherein said suction/blowing means is arranged inside said base body (2).

27. Apparatus according to claim 25 as claim 24 is appended to claim 23, wherein said suction/blowing means is associated with said unit (5).

28. Apparatus according to claim 27, wherein said suction/blowing means and said board (3) are arranged on opposite sides in relation to said unit (5).

29. Apparatus according to claim 25, or according to claim 26 as appended to claim 25, or according to claim 27, or 28, wherein said board (3) is provided with a shank (8) fitted in a sleeve (107) provided in said unit(5).

30. Apparatus according to claim 29, wherein said sleeve (107) comprises an end opposite said board (3) and provided with conductor means (50, 51, 52) of electric power.

31. Apparatus according to claim 30, wherein in said first chamber (18') and/or in said second chamber (18") heating means is provided that is suppliable with said conductor means (50, 51, 52).

32. Apparatus according to claim 30, or 31, wherein said conductor means (50, 51, 52) comprises ring means in conductive material externally surrounding said shank (8) and cooperating with sliding contact means fitted to said sleeve (107).

33. Apparatus according to claim 3, or according to claim 6, or according to any one of claims 7 to 9, or according to any one of claims 10 to 21 as claim 10 is appended to claim 3, or 6, or 9, or according to any one of claims 22 to 32 as claim 22 is appended to claim 3, or to claim 6, or to claim 9, or to any one of claims 10 to 21 as claim 10 is appended to claim 3, or 6, or 9, wherein said base body comprises a telescopic upright (2) provided with a first block (102) inside which a second block is slidable (202) .

34. Apparatus according to claim 33, wherein said second member (23) is rotationally supported on said first block (102) at hinge means (200).

35. Apparatus according to claim 34 wherein said elastic means (500) comprises a first element (501) having a first end (502) integral with said second member (23) and rotationally supported on said first block (102) at said hinge means (200).

36. Apparatus according to claim 35, wherein said elastic means (500) comprises a second element having a zone (511) hinged on a second end (503) of said first element (501) .

37. Apparatus according to claim 36, wherein said elastic means comprises a third element (518) having an end portion (514) hinged on a further zone (513) of said second element and a further end portion hinged on said end (4).

38. Apparatus according to claim 37, wherein said second element (510) comprises a first portion extending between said zone (511) and said further end (512) and a further portion extending transversely to said first portion to define an abutment (517) for said third element (518).

39. Apparatus according to claim 37, or 38, wherein said elastic means comprises a spring (520) interposed between said first element (501) and said third element (518).

40. Apparatus according to any one of claims 34 to 39, wherein with said first block (102) head means (5) is associated that is provided with a housing (5') rotatingly supporting said end (4).

41. Apparatus according to claim 40, wherein said elastic means (500) is interposed between said head means (5) and said second block (202).

42. Apparatus according to any preceding claim, and furthermore comprising stabilising means (60) arranged to prevent said board (3) from rotating in relation to said base body (2).

43. Apparatus according to claim 42, wherein said stabilising means (60) comprises pin means (67) rotatingly supported by said base body (2) and movable between a position wherein said pin means (67) is received inside said base body (2) and a further position wherein said pin means (67) protrudes from said base body (2) to be received inside hole means (68) provided in said board (3).

44. Apparatus according to claim 43, and furthermore comprising linear actuating means (66) arranged to move said pin means (67) between said position and said further position.

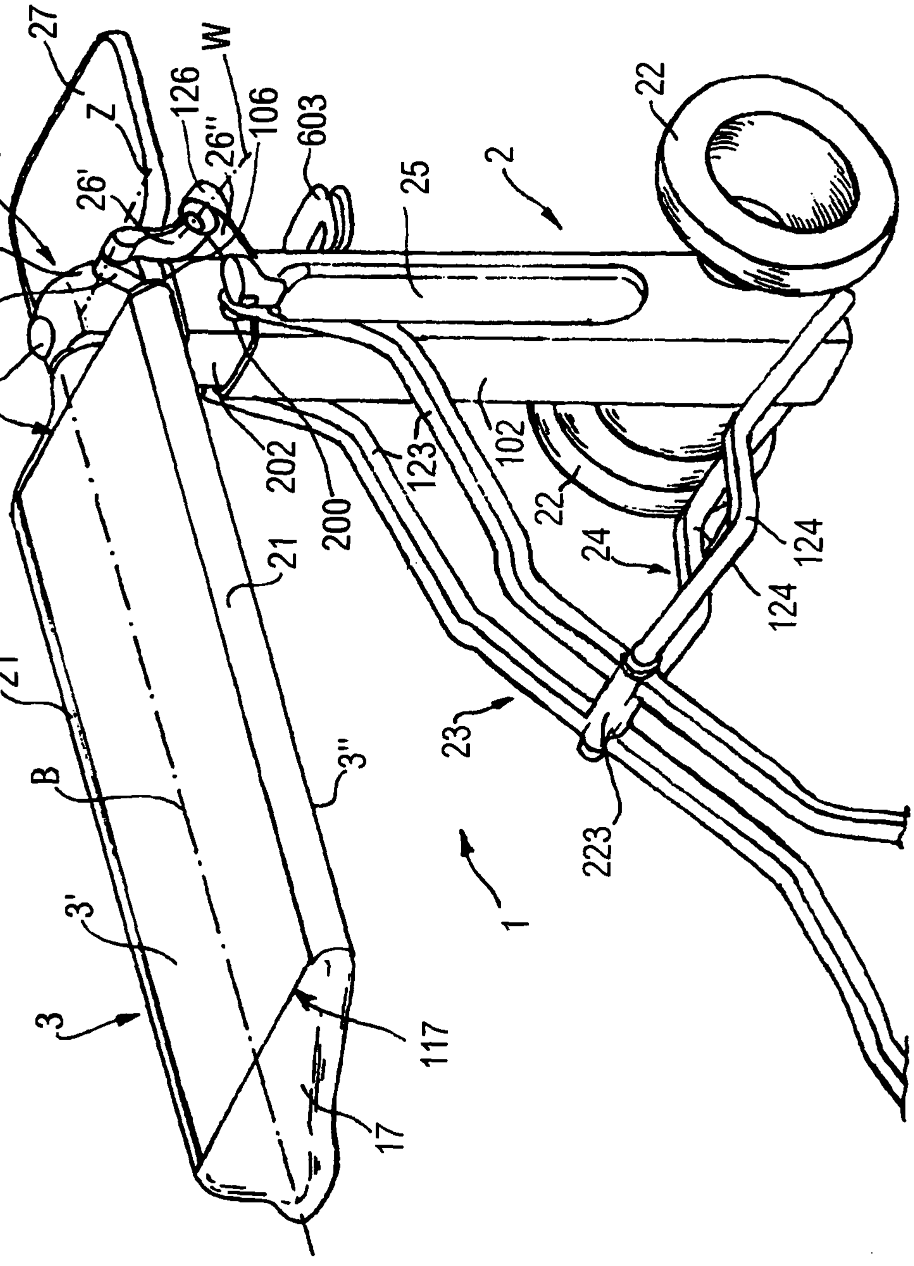

27
W
126
Z
26''
106
603
5'
26'
5
706
16'
4
25
2
22
22
102
123
202
200
21
21
B
3''
23
24
124
124
223
3'
3
117
17
1

Fig. 1

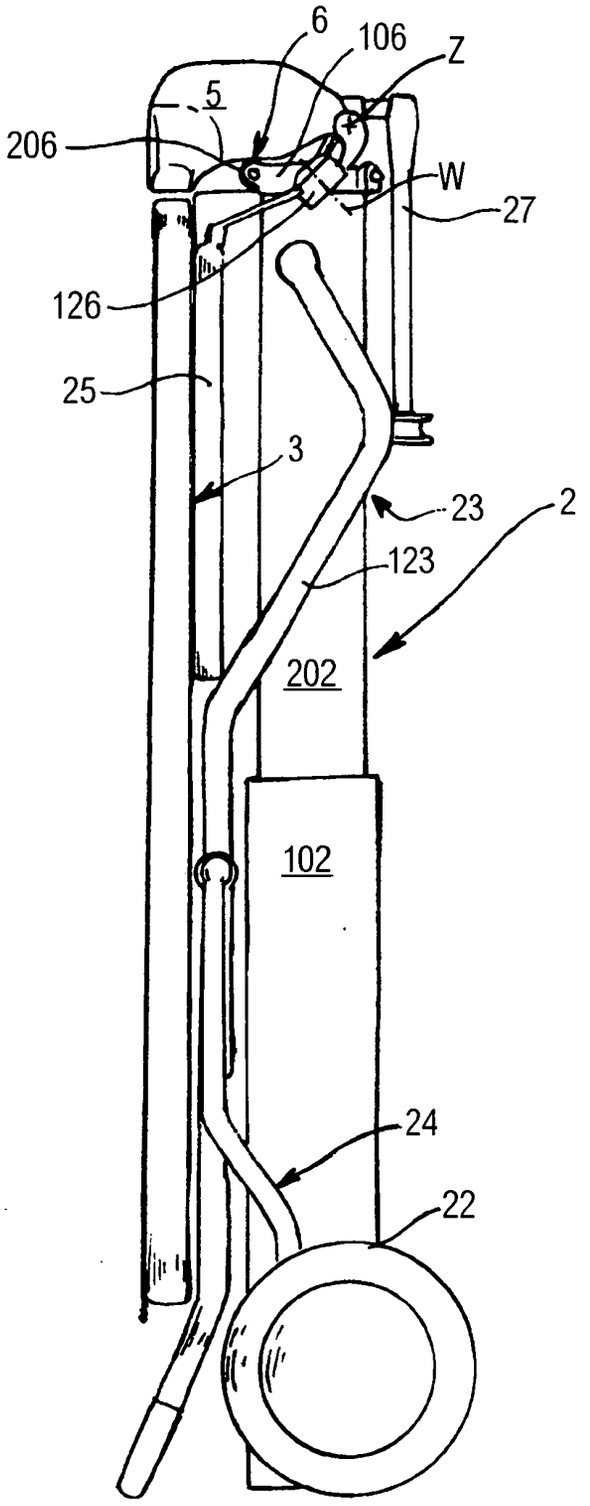


Fig. 2

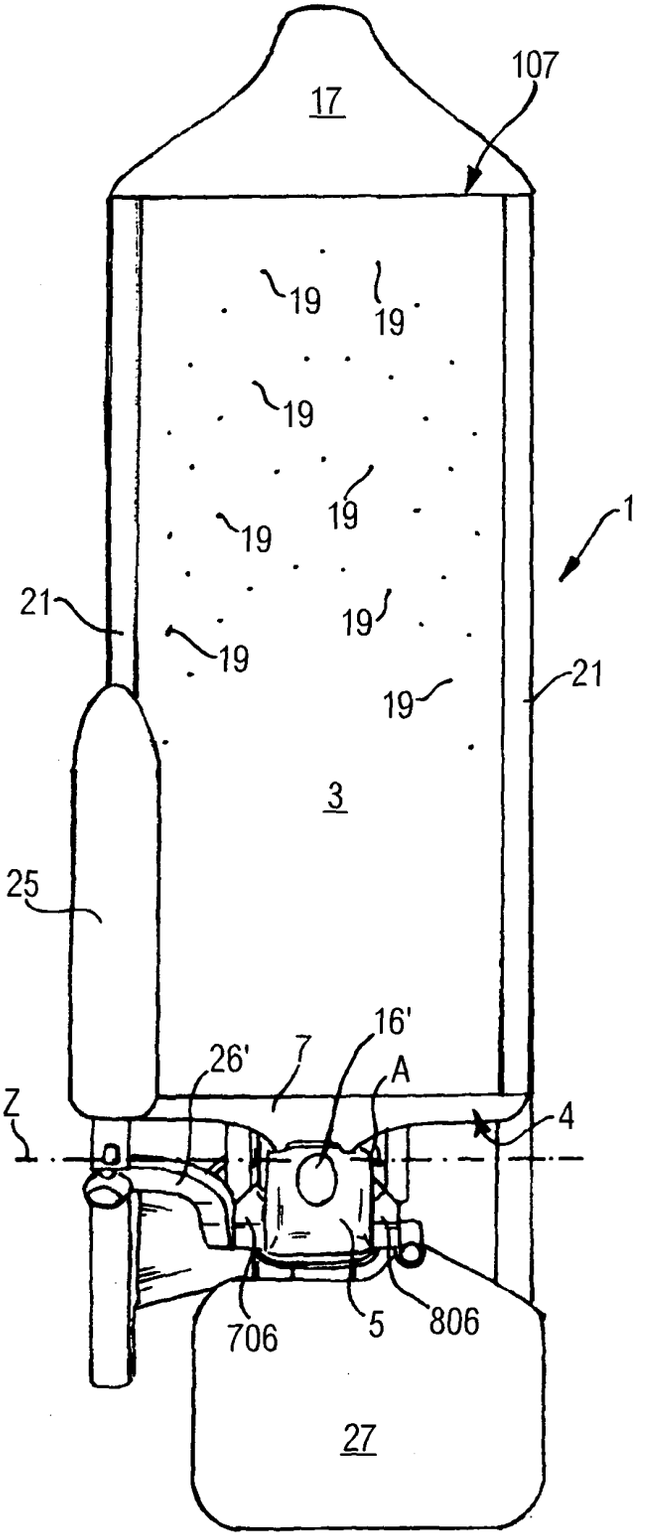


Fig. 3

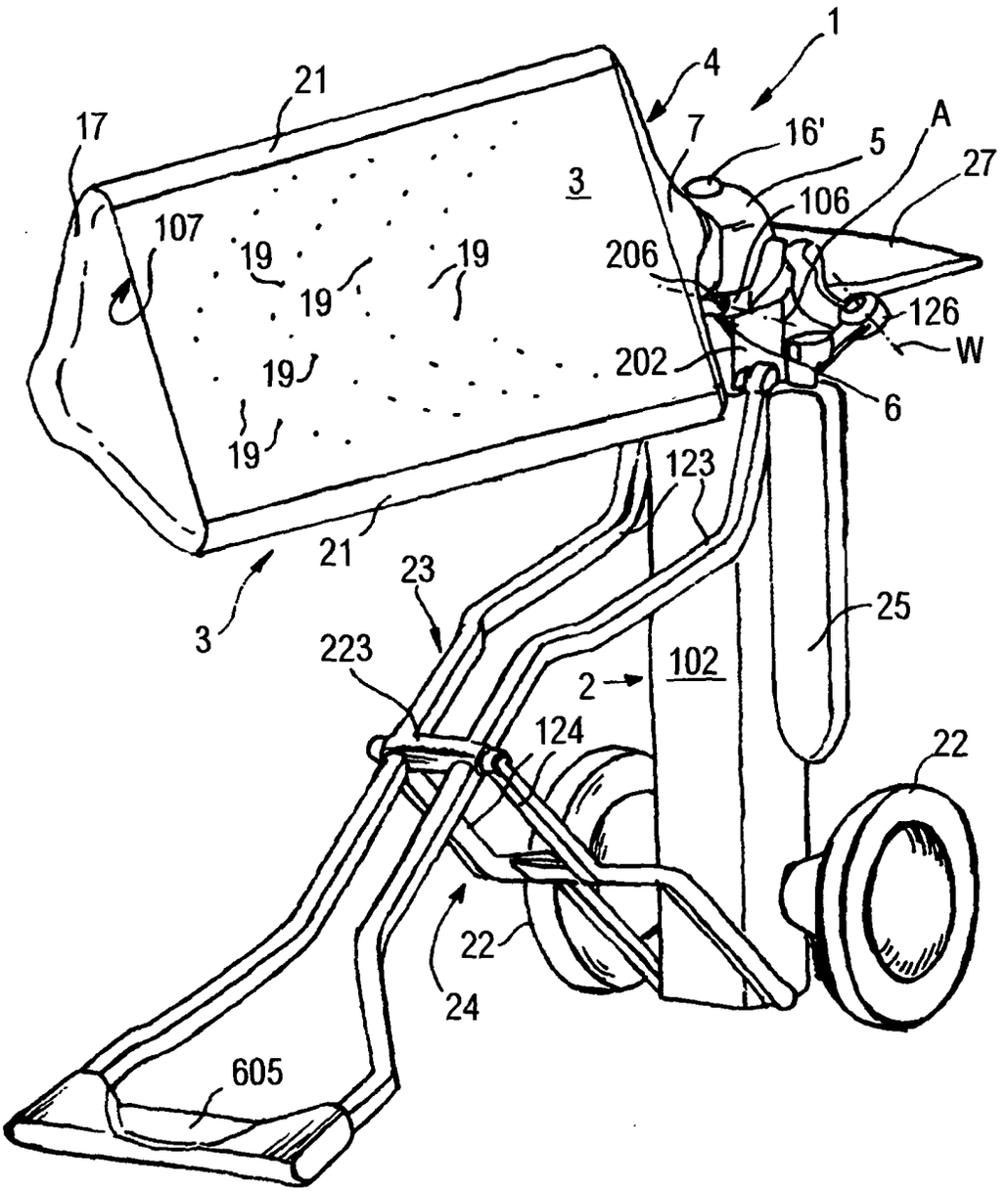

1
4
21
17
7
16'
5
A
27
3
106
107
19
19
206
19
126
W
19
202
6
19
123
21
23
25
3
223
102
2
124
22
22
24
605

Fig. 4

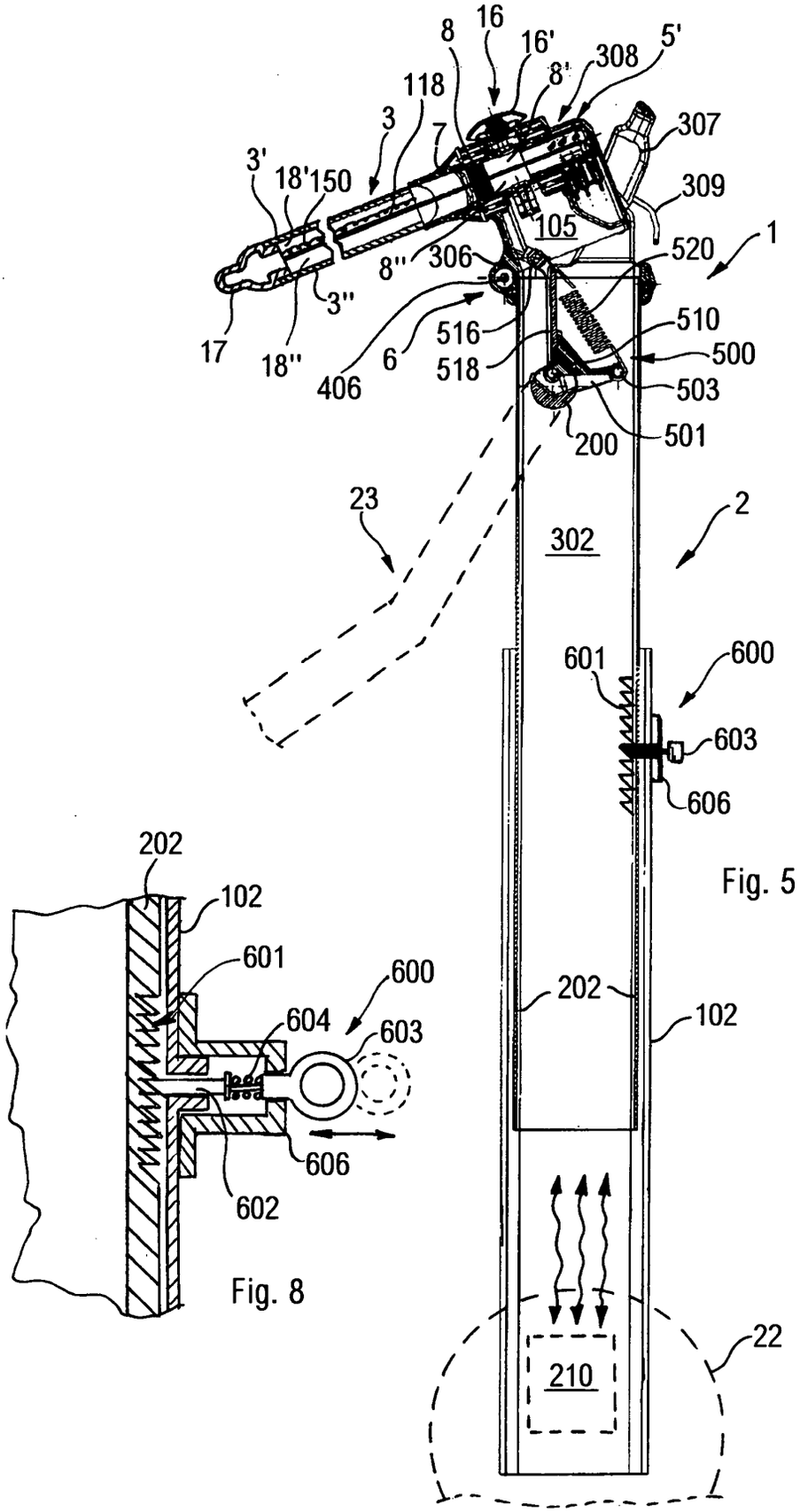

8
16
16'
5'
308
8'
118
3
7
307
3'
18'
150
309
105
1
520
8''
306
3''
510
516
17
18''
6
406
518
500
503
501
200
23
2
302
601
600
603
606
202
102
601
600
604
603
606
602
202
102
210
22

Fig. 5

Fig. 8

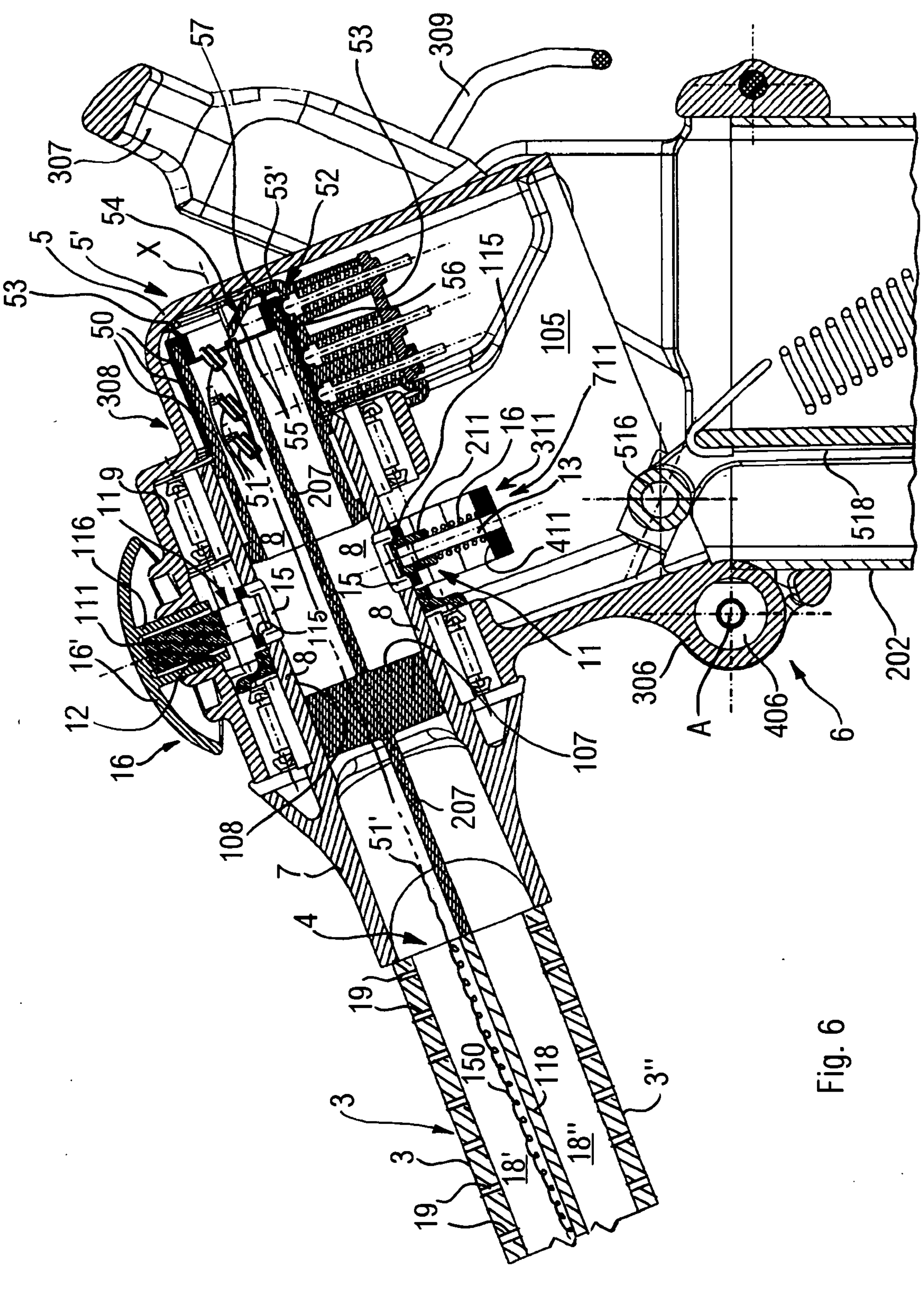
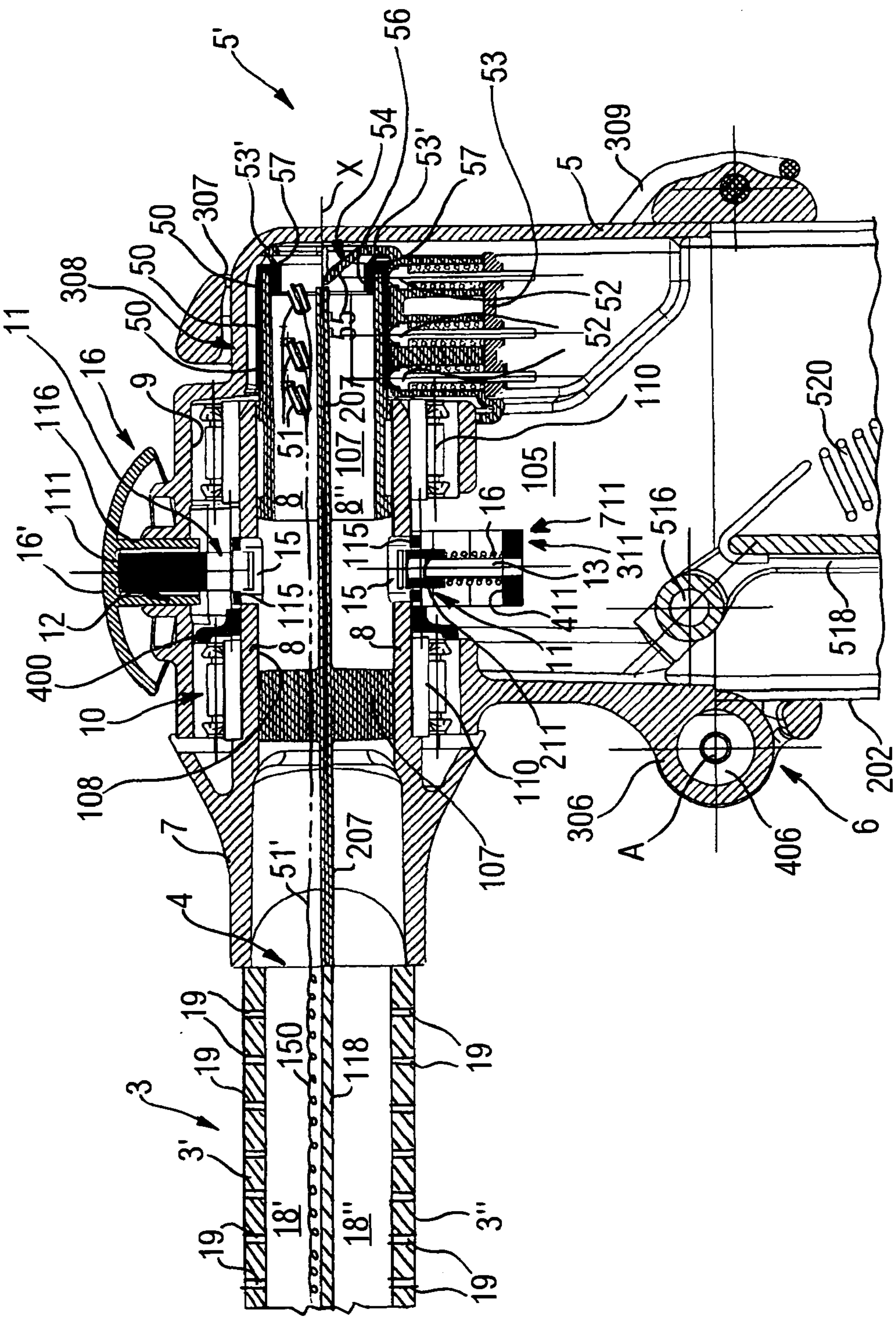


Fig. 6



5'
56
53
309
5
53'
57
X
54
53'
57
307
50
50
308
50
52
52
55
11
16
9
116
16
111
16'
12
400
10
108
7
4
51'
207
107
51
8
8''
107
207
110
105
711
13
311
516
520
518
202
6
406
A
306
110
211
411
11
15
115
16
115
15
8
8
3
3'
19
150
118
18'
18''
3''

Fig. 7

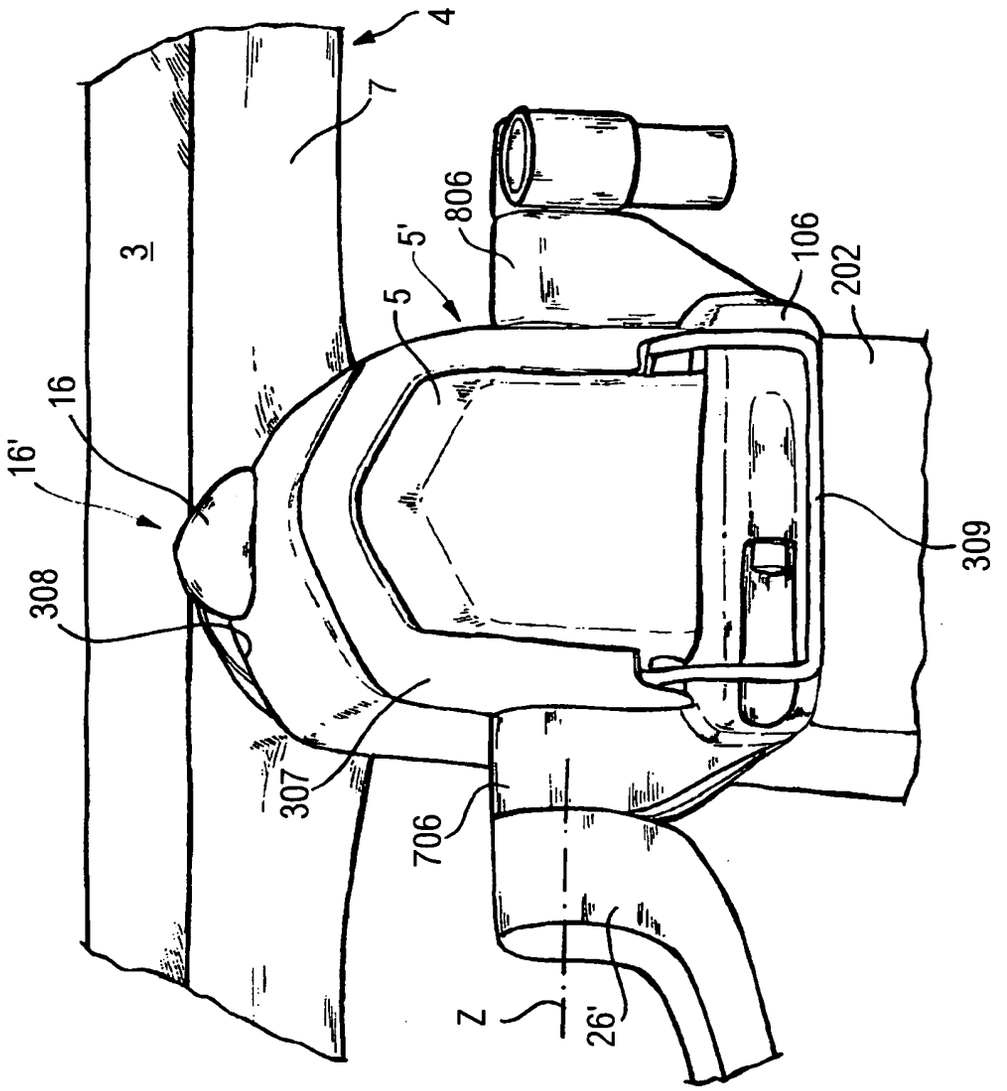


Fig. 9

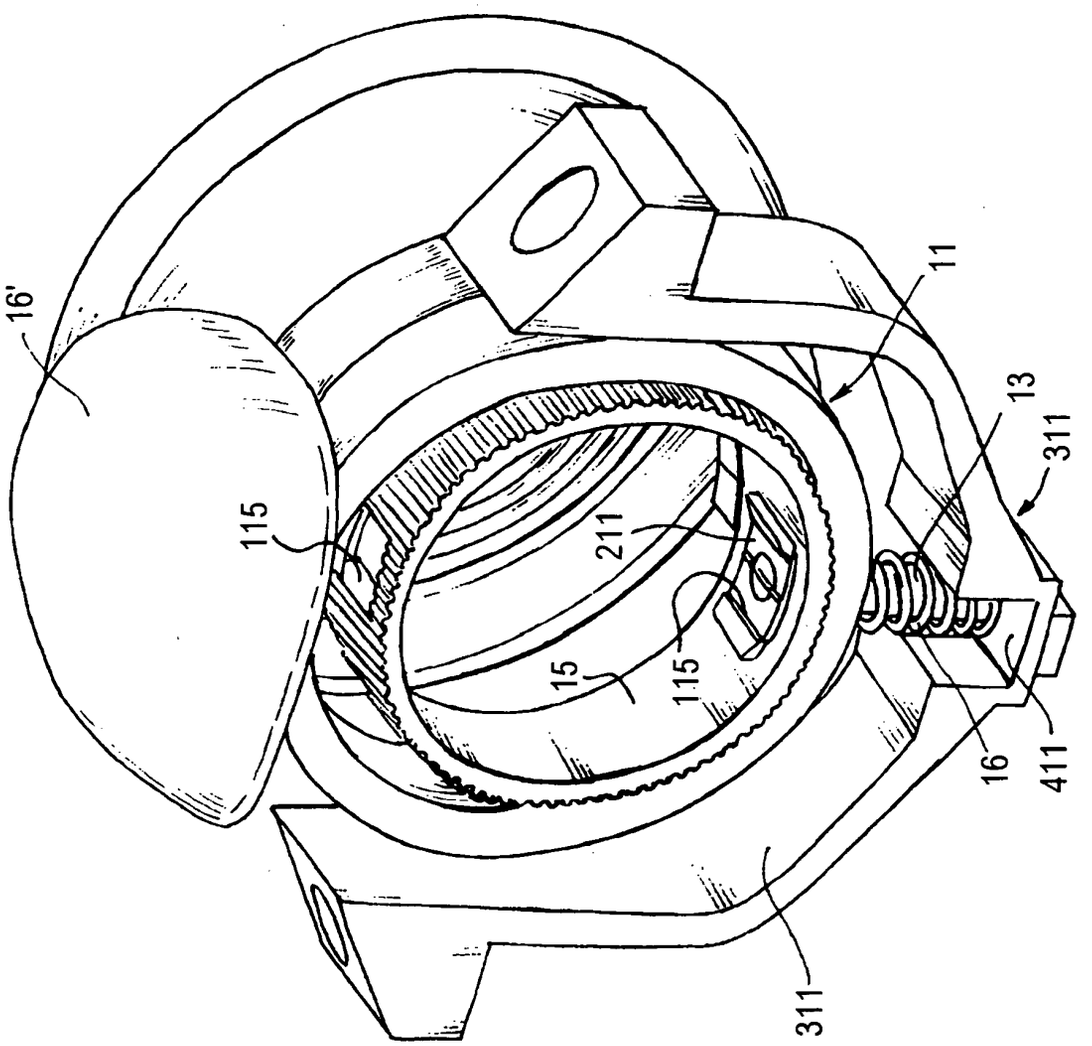


Fig. 10

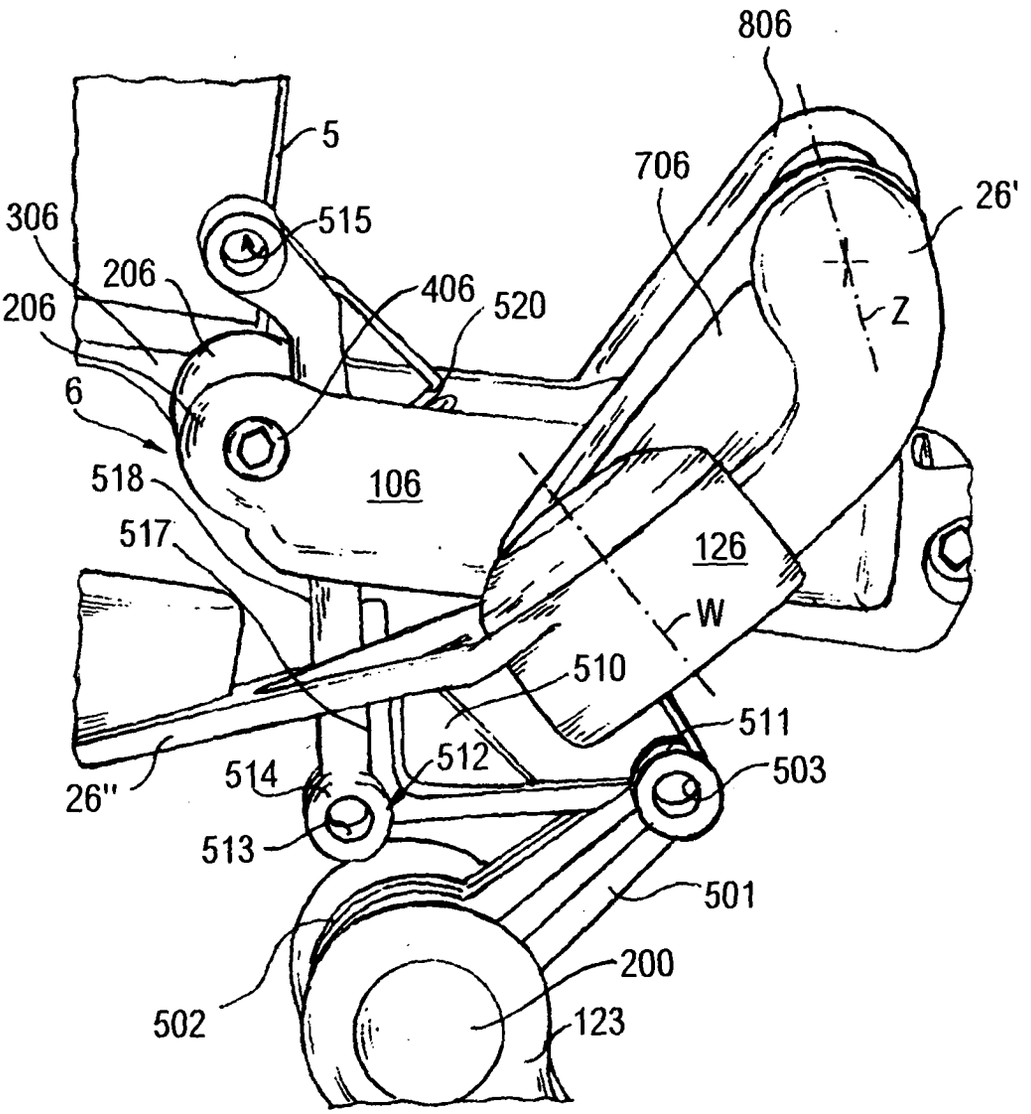

806
5
706
26'
306
515
206
406
520
Z
206
6
106
518
517
126
W
510
511
512
503
514
26"
513
501
200
502
123

Fig. 11

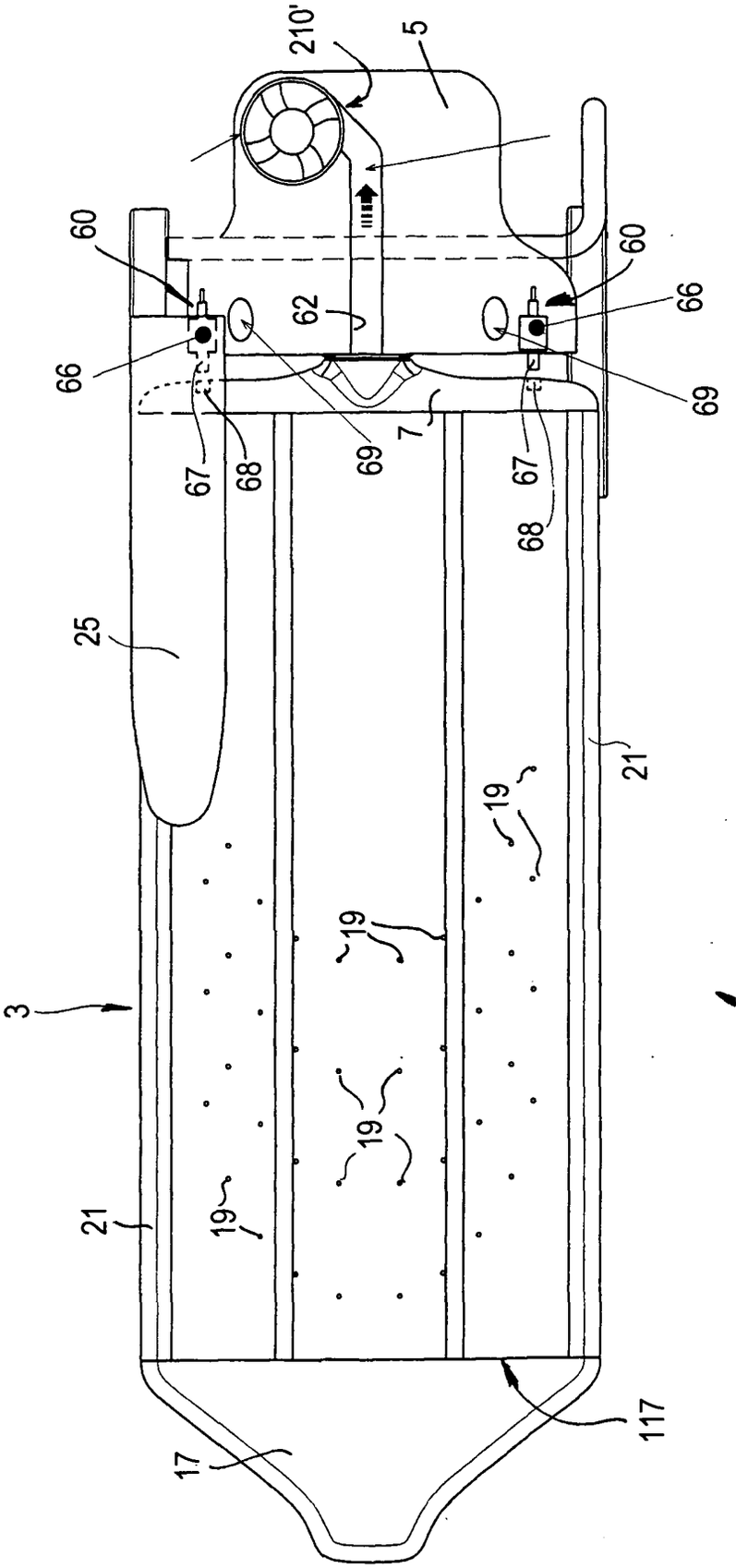

210'
5
60
60
62
66
66
69
7
67
68
69
67
68
25
21
19
19
3
1
19
19
21
19
117
17

Fig. 12

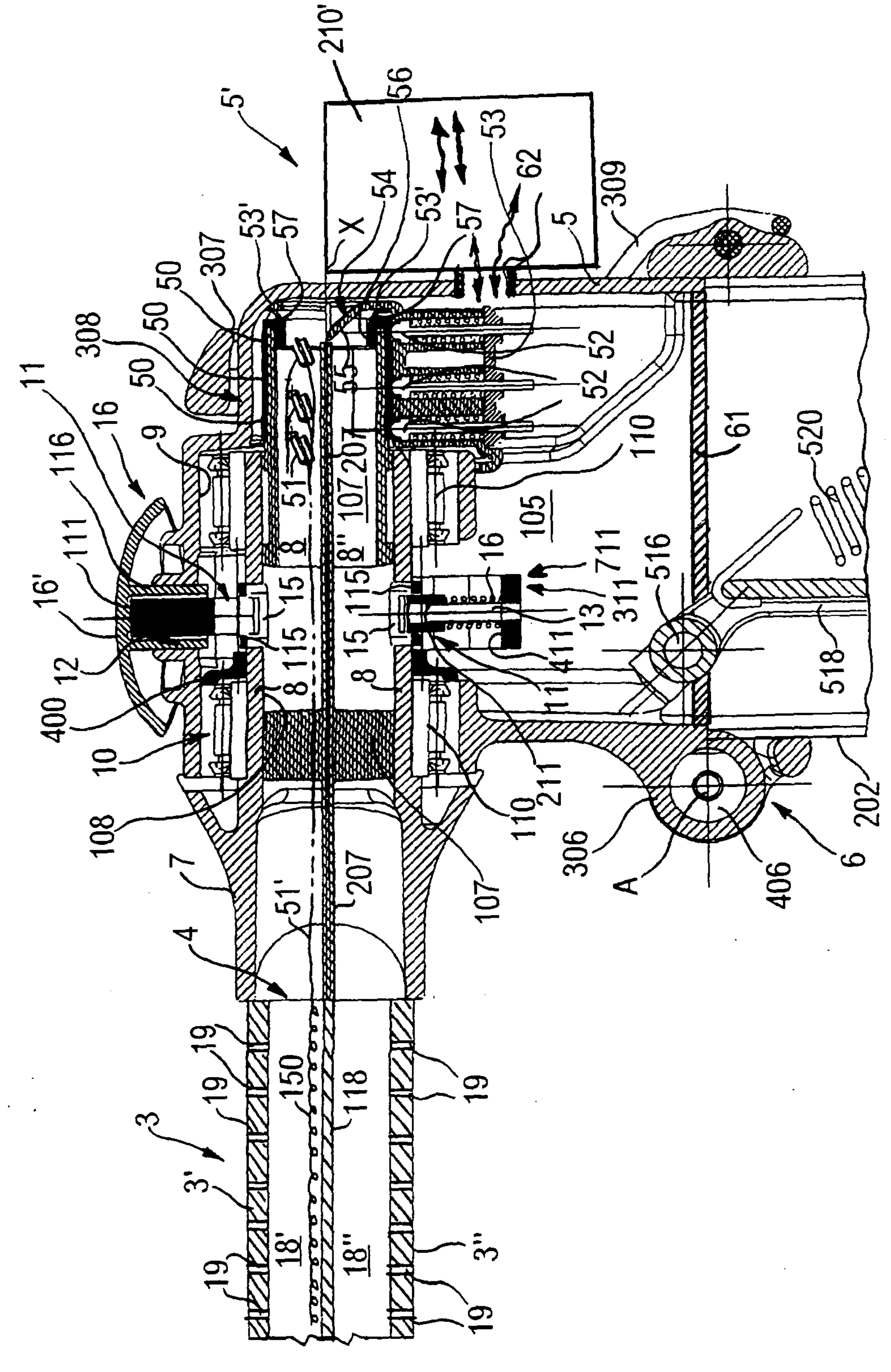

5'
210'
56
53
62
309
X
54
53'
57
5
307
308
50
11
116
16
9
51
107
207
8
8''
110
105
61
520
711
311
13
516
16'
111
12
400
10
115
15
411
211
518
108
7
306
A
406
6
202
4
51'
207
107
19
150
118
3
3'
18'
18''
3''

Fig. 13