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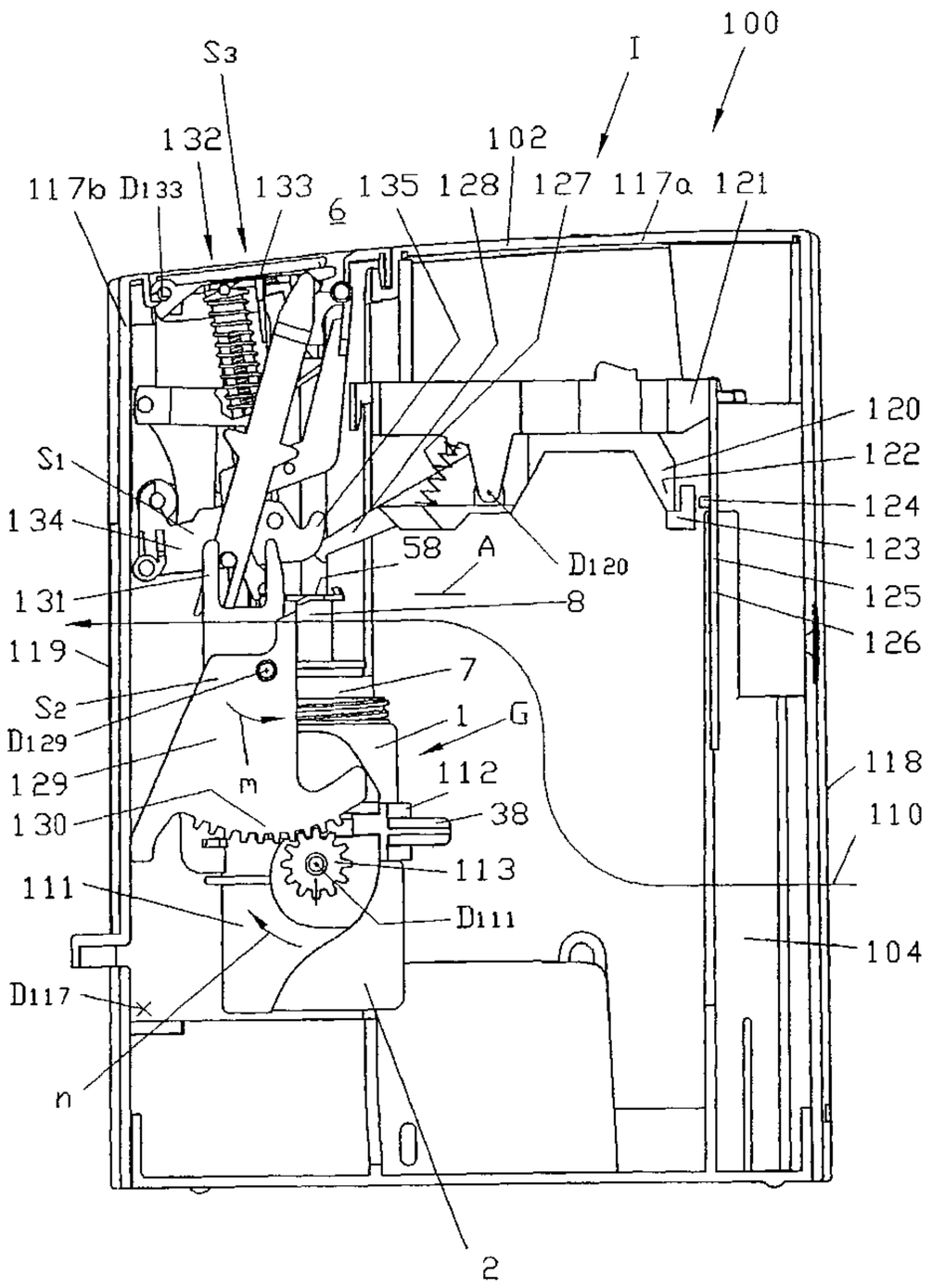
(71) Demandeur/Applicant:
VENTA-DUFT GMBH, DE

(72) Inventeurs/Inventors:
HITZLER, ALFRED, DE;
HARTER, ERICH, DE

(74) Agent: FETHERSTONHAUGH & CO.

(54) Titre : CARTOUCHE ODORANTE ET DISPOSITIF POUR DIFFUSER DES SUBSTANCES ODORANTES, ET PROCEDE DE COMMANDE

(54) Title: AROMATIC CARTRIDGE, DEVICE FOR DIFFUSING FRAGRANCES, AND METHOD FOR CONTROLLING THE SAME



(57) Abrégé/Abstract:
The invention relates to an aromatic cartridge (1) for a device (100) for diffusing fragrances. Said aromatic cartridge (1) comprises at least one container having at least one cavity for receiving an aromatic medium, the cavity comprising at least one opening which

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(57) Abrégé(suite)/Abstract(continued):
is closed by a dosing system (7). The invention also relates to the device (100) for diffusing fragrances from an aromatic cartridge (1), and to a method for operating said device (100).

Abstract:

The invention relates to a aroma cartridge (1) for a device (100) for dispensing aroma substances, the aroma cartridge (1) comprising at least one vessel having at least one cavity for receiving an aroma medium, the cavity having at least one opening, the opening being closed off by a metering device (7). Furthermore, the invention relates to the device (100) for dispensing aroma substances from a aroma cartridge (1) and to a method for operating the device (100).

(Figure 5a)

"Aroma cartridge and device for dispensing aroma substances, and control or regulation method"

The invention relates to an aroma cartridge, to a device for dispensing aroma substances and to a method for controlling or regulating the device in accordance with the preambles of claims 1, 20, 28 and 29, respectively.

Devices of this type are used in particular to improve the air in rooms and for therapeutic purposes to carry out what is known as aromatherapy. The prior art has disclosed numerous devices for emitting aroma substances. For example, the subject matter of EP 0 004 039 B1 is a liquid atomizer in which the liquid that is to be atomized is delivered via a wick, using the capillary action, to an atomizer plate, and the atomizer plate is excited by a vibration generator. German utility model DE 296 21 752 U1 has disclosed, for example, a device for the distribution of aroma substances, in which a fan blows onto a distributor mat which is impregnated from a tank, with a solenoid pump delivering the oil through a cannular from the tank to the distributor mat. One drawback of the prior art is that the known solutions either require a technically complex pump mechanism or rely on delivery by means of capillary action. Delivery with the aid of capillary action does not allow the delivery to be controlled, since delivery is constant. This leads to distribution of aroma or consumption of aroma substance even when use of the device is not desired. Furthermore, US 4,200,229 has disclosed an aroma distributor which comprises a stationary holder and a replaceable aroma cartridge. Delivery of the liquid into a cushion is in this case effected by a manually actuated pump. A drawback of this is that lines with a small internal diameter have the tendency to become blocked. A drawback of all the devices is that they do not allow the release of aroma to the environment to be

effectively switched off, since the impregnated carriers generally continue to release aroma to the environment even after any fan or other distributor which is present has been switched off.

It is an object of the invention to propose an aroma cartridge and a device for dispensing aroma substances, as well as a method for controlling or regulating the device, which, by virtue of a simple structure and simple procedure, allow reliable and controllable transfer of the aroma medium to the material which releases the aroma substance, and which also allow the dispensing of aroma to be effectively stopped within a very short time.

Starting from the features of the preamble, this object is achieved by the distinguishing features of claims 1, 20, 27 and 28. The features listed in the subclaims allow advantageous embodiments and refinements of the invention.

The invention relates to an aroma cartridge for a device for dispensing aroma substances, the aroma cartridge comprising at least one vessel which has at least one cavity for receiving an aroma medium, which cavity opens toward the environment, with a metering device closing off the opening; in this aroma cartridge, it is provided in particular that the metering device has a plunger which can be displaced into a first and a second limit position through the opening in the vessel, the limit positions lying opposite one another and the plunger, in the first limit position, being at least partially in an impregnation position within the vessel, and the plunger, in the second limit position, being in an aroma-dispensing position in which it is at least partially outside the vessel. With an aroma cartridge that is equipped with a metering device of this type or a metering valve of this type, it is possible for the

liquid or gaseous aroma medium to be carried out of the vessel into the environment without any risk of flexible tubes with a small diameter becoming blocked. The plunger forms a carrier medium used to temporarily store the aroma medium. Since the plunger can be displaced back into the cavity that is closed off with respect to the environment, the dispensing of aroma can be switched off quickly. This is because the plunger which releases the aroma is encapsulated inside the cavity after it has been retracted.

An advantageous development of the subject matter of the invention provides for the plunger to be assigned at least one seal and in particular two seals. This makes it possible to seal off the plunger or cavity with respect to the environment in the first and second limit positions, preventing the aroma medium from escaping from the aroma cartridge. In particular, there is provision to use seals made from Teflon, since such seals are particularly resistant to aggressive aroma media.

According to a particular embodiment of the subject matter of the invention, there is provision for the cavity to be sealed off from the outside by means of the first seal and for the cavity to be sealed off from the inside by means of the second seal. This makes the metering device of particularly simple construction, allowing simple and inexpensive assembly of the metering device.

The invention provides for the use of a plunger which allows temporary storage of the aroma medium at least in a portion thereof. This allows the volume of the store and its position on the plunger to be selected as desired such that it can easily be matched to the prevailing requirements.

One particular embodiment provides for at least one

cavity to be formed in the plunger, which cavity is closed off by a grid and holds a material which is suitable for storing the aroma medium. In a cage of this type, it is possible to use storage bodies or impregnation bodies with a very wide range of properties, e.g. different pore sizes, without the design of the plunger having to be modified.

The invention provides for in particular open-cell plastics or foams, in particular formed from polypropylene or polyethylene, or open-cell ceramic elements or Teflon meshes to be used as material for the storage body, with the meshes being, for example, wound up in order to form a storage body. Sponge-like storage bodies with a structure of this type allow storage of the preferably concentrated essential or natural oils used as aroma medium.

Furthermore, the invention provides for the metering device to be equipped with a spring element which presses the plunger into the first limit position. This ensures that in the as-delivered state of the aroma cartridge or in the at-rest position of the aroma cartridge, the plunger is always in a position in which it is as far as possible retracted into the cavity and in which the cavity is sealed off with respect to the environment. This effectively prevents the undesired escape of aroma medium.

According to the invention, there is provision for the metering device to be constructed from a closure cap in which the plunger is guided. This makes it possible to design the metering device as a structural unit which can be preassembled and merely has to be fitted onto the container in order to form a functioning aroma cartridge.

A particularly advantageous embodiment of the invention provides for the closure cap and the vessel to be

provided with a screw thread in order to allow the closure cap to be screwed onto the vessel. An aroma cartridge assembled in this way allows economic production and is also optimally suited to subsequent separation of the materials of value or to refilling.

Furthermore, it is provided for at least one guide element, at which the plunger is guided, to be arranged at the closure cap. This supporting feature for the plunger limits the extent to which the latter can be subject to load from laterally acting forces as it passes through the closure cap. This effectively prevents leaks which could be caused by transverse loads or the plunger being in sloping positions. Furthermore, the guidance assists with uniform, gentle sliding of the plunger between the limit positions.

According to the invention, in particular guide elements are provided, which are designed as a rail or a bar. By way of example, such guide elements can easily be molded onto the closure cap during the injection-molding process.

The invention also provides for the vessel to be formed from glass, in particular as a glass bottle, since aroma media often contain aggressive substances.

It is advantageous for the aroma cartridge to be provided, in particular at the vessel and/or the metering device, with at least one projection and/or recess. This allows simple handling of the aroma cartridge or its individual parts during the production process and during the filling operation. Furthermore, this also allows the aroma cartridge to be arranged in an accurate position in the device.

According to a variant embodiment, there is provision for the plunger to be of at least two-part design. In the case of a plunger with stops or of a plunger with

seals which protrude beyond the periphery of the plunger, this allows simple mounting of the plunger on the closure cap, since the plunger can be introduced into a through-bore in the closure cap from two sides.

The invention also provides for the seal to be designed as a sealing disk. This shape allows simple fitting of the seals to the plunger. Furthermore, these seals allow simple monitoring of their function.

According to a variant embodiment, the invention provides for the use of plunger ring seals as seals. These seals also allow the plunger to be sealed off with respect to the vessel or the closure cap during the movement between the limit positions.

A third variant embodiment provides for the seal to be designed in gland form, the gland being mounted in particular in the vessel or in the closure cap. If a gland is used, a single seal is sufficient to seal off the plunger or the cavity with respect to the environment.

According to the invention, it is also provided that at least one stop be arranged at the plunger. This prevents the plunger from being displaced undesirably far beyond a limit position. In particular, it is provided that the stop butts against the vessel and/or against the closure cap.

Furthermore, the invention relates to a device for dispensing aroma substances, having an aroma cartridge as described above which is held releasably in the device. In this device, it is provided that the plunger of the aroma cartridge be moved from the first limit position into the second limit position and from the second limit position into the first limit position by first control means of the device. It is possible to switch the aroma cartridge on and off by means of this

simple sequence of movements. The time required to displace the plunger is generally all that it takes to effect the switching on or off. As a result of being switched off, the plunger is retracted into the vessel, in which it is held in a sealed manner so that no further aroma is dispensed from the plunger.

An advantageous development of the subject matter of the invention provides for the aroma cartridge to be rotated by second control means, in order for the plunger or the material arranged in or at the plunger to be completely impregnated. This allows even short plungers to be used and the aroma medium contained in the aroma cartridge to be used in full for spreading the aroma, without residual quantities having to be left in the aroma cartridge.

Furthermore, the invention provides for the first and/or second control means to be controlled with the aid of third control means. This makes it possible to maintain a predefined sequence of movements and prevents incorrect control sequences with respect to independent actuation of the first and second control means.

According to the invention, the control means are designed as mechanical and/or electromechanical and/or electronic control means. Mechanical control means provided are in particular levers, slot guides, tensioning means and gearwheels. As electromechanical control means, the invention provides in particular electric motors, pneumatic cylinders and electromagnets. According to the invention, electronic control means are intended in particular to be integrated circuits.

Furthermore, there is provision for the control means to be regulated by a higher-level electronic regulation system or for the control means to be combined with an

electronic regulation system. This ensures that the individual components interact in the planned way and/or interact with further components.

In addition, there is provision for at least one sensor to be connected to the regulation system. This makes it possible to react to further parameters during regulation.

An advantageous refinement of the subject matter of the invention provides for the device to be assigned at least one fan, by which the plunger can be exposed to a flow of air in the aroma-dispensing position. This allows the aroma to be distributed through a wide area.

According to the invention, stepped or continuous regulation of the power of the fan is also provided. This makes it possible to match up with individual conditions and requirements.

Finally, the invention relates to a method for controlling or regulating the device described above for dispensing aroma substances, comprising the following steps: firstly, rotating the aroma cartridge out of an upright basic position, in which the plunger is approximately vertical, through approximately 90° to 180° into a loading position, in which the plunger is then in the first limit position; secondly, holding the aroma cartridge in the loading position in order to effect impregnation of the material which is able to take up liquid; thirdly, pivoting the aroma cartridge back into the basic position; fourthly, raising the plunger into the second limit position; fifthly, directing an air flow onto the plunger in order to dispense aroma substances, and sixthly, moving the plunger back into the first limit position. A method of this type allows repeated, controllable introduction of aroma into an environment.

Alternatively, a further method for controlling or regulating the device described above for dispensing aroma substances is provided, comprising the following steps: firstly, raising the plunger out of the first limit position into the second limit position; secondly, directing an air flow onto the plunger in order to dispense aroma substances, and thirdly, moving the plunger back into the first limit position. A method of this type likewise allows repeated, controllable dispensing of aroma into an environment.

Further details of the invention are described in the drawing on the basis of diagrammatically depicted exemplary embodiments. In the drawing:

Figures 1a - 1c: show a first, diagrammatically depicted aroma cartridge in various operating positions,

Figures 2a - 2c: show a second diagrammatically depicted aroma cartridge in various operating positions,

Figure 3a: shows a third diagrammatically depicted aroma cartridge,

Figure 3b: diagrammatically depicts a device for operating the aroma cartridge shown in Figure 3a,

Figures 3c - 3e: diagrammatically depict the device with inserted cartridge in various operating positions and views,

Figures 4a - 4n: show a number of different illustrations of a fourth aroma cartridge,

Figures 5a - 5j: show a device for operating the aroma cartridge illustrated in Figures 4a to 4n in various operating positions and views, and

Figure 6: diagrammatically depicts a further device with aroma cartridge.

Surfaces taken in section are not generally illustrated in hatched forms in the figures, in order to maintain clarity of the figures.

Figures 1a to 1c diagrammatically depict a first aroma cartridge 1 in various operating positions. First of all, a thorough description of the aroma cartridge 1 will be given with reference to Figure 1a. The aroma cartridge 1 comprises a vessel 2 having a cavity 3, the cavity 3 holding a liquid aroma medium 4. The vessel 2 has an opening 5, by means of which the cavity 3 is open toward the environment 6. The opening 5 is closed off by a metering device 7. The metering device 7 comprises a plunger 8, which at each of its end-side ends 9 and 10 has a seal 11 and 12, respectively. The seals 11 and 12 are designed as sealing disks 13 and form stops 14 and 15. The opening 5 in the vessel 8 forms a sliding guide 16 for the plunger 8, in which the latter can move in arrow directions x and x'. The plunger 8 can be displaced out of a first limit position A, illustrated in Figure 1a, into a second limit position B, illustrated in Figure 1c, in arrow direction x. Since the plunger 8 is pressed into limit position A by a spring element 17, a force F is required for the displacement into the second limit position B. The spring element 17, which is designed as a coil spring 17, is supported against an inner wall 18 of the vessel 2 and acts on the plunger 8 via the second seal 12. In the first limit position A, the

first seal 11 forms the stop 14 and seals off the interior 3 of the vessel 2 with respect to the environment 6 from the outside. In this case, the stop 14 bears against an outer wall 19 of the vessel 2 and prevents the plunger 8 from being pulled further into the cavity 3 by the spring element 17. In the second limit position B of the plunger 8 (cf. Figure 1c), the second seal 12 forms the stop 15, which bears against the inner wall 18 of the vessel 2 and prevents the plunger 8 from being pulled out further in the arrow direction x. In the second limit position B, the spring element 17 is fully compressed and is located in an annular recess 20 in the vessel 2. Furthermore, the seal 12 seals off the interior 3 of the vessel 2 with respect to the environment 6. The plunger 8 consists of a material 21, for example a porous ceramic body, which is suitable for taking up the aroma medium 4. In principle, the following procedure is provided for the dispensing of aroma to the environment 6: the aroma cartridge 1 is turned from an upright basic position G (cf. Figure 1a) for approximately 180° into an impregnation position T (cf. Figure 1b), with the plunger 8 in the first position A, i.e. a plunger impregnation position A. In the impregnation position T of the aroma cartridge 1, the plunger 8 or the impregnatable material 21 which forms the plunger is completely surrounded by the aroma medium 4. The aroma medium 4 is prevented from escaping in the impregnation position T by the first seal 11. After impregnation, the aroma cartridge 1 is rotated back out of the impregnation position T into the basic position G, for approximately 180°, and the plunger 8 is raised in arrow direction x. In this second limit position B of the plunger 8, which is an aroma-dispensing position B, the aroma medium 4 which has been taken up by the plunger 8 is dispensed to the environment 6. As a result of the plunger 8 being released, it springs back into the first limit position A and the aroma-releasing operation is at an end, with further release of aroma

to the environment 6 by the plunger 8 being prevented. In the first limit position A, the plunger 8 is once again completely inside the interior 3 of the vessel 2, so that it is possible to describe the aroma cartridge 1 as having been switched off. When using a gaseous aroma medium 4, it is not generally necessary for the aroma cartridge 1 to adopt the impregnation position T, since the plunger is already completely surrounded by the aroma medium 4 in the basic position G of the aroma cartridge and can therefore take this up.

Figures 2a to 2c diagrammatically depict a second aroma cartridge 1 in various operating positions. The description above in connection with Figures 1a to 1c in principle also applies to Figures 2a to 2c. Unlike in the case of the aroma cartridge illustrated in Figures 1a to 1c, Figures 2a to 2c show an aroma cartridge 1 which has a plunger 8 that in the first limit position A, on account of its length l_8, extends all the way to a base 22 of the vessel 2. Therefore, in contradiction to the aroma cartridge illustrated in Figures 1a to 1c, there is no difference between a basic position G of the aroma cartridge 1 and an impregnation position T of the aroma cartridge 1, since there is no need to turn the aroma cartridge 1. Consequently, the aroma cartridge 1 is simultaneously in positions G and T. Furthermore, the plunger 8 is not continuously made from a material for taking up the aroma medium 4, but rather has a cage 24 which is delimited by a grate 23 and is filled with material 21 for taking up the aroma medium 4. To dispense the aroma medium 4 stored in the material 21, the plunger is raised from the first limit position A (cf. Figure 2a), via an intermediate position Z (cf. Figure 2b), into the second limit position B (cf. Figure 2c), counter to the force of a spring element, which is not illustrated in Figures 2a to 2c. In the second limit position B, the plunger 8 or the material 21 arranged in the cage 24 dispenses the aroma substance 4 which it has taken

up to the environment 6. The aroma cartridge 1 is "switched off" by the plunger 8 being retracted into the first limit position A, which is illustrated in Figure 2a. Contrary to the sequence shown in Figures 1a to 1c, the aroma cartridge 1 shown in Figures 2a to 2c is in the basic position G during all the steps; in this case, there is no need to turn the aroma cartridge 1.

Figure 3a diagrammatically depicts a third aroma cartridge 1. The description given in connection with Figures 1a to 1c in principle also applies to Figure 3a. Figure 3a shows an aroma cartridge 1 with a different form of metering device 7 compared to the aroma cartridge illustrated in Figures 1a to 1c. The metering device 7 comprises a closure cap 25 which is screwed to a neck 26 of the vessel 2 (the screw threads are not illustrated) and projects through the opening 5 in the vessel 2 into the interior 3 of the latter. The plunger 8 is mounted in a cylindrical passage 27 in the closure cap 25. The plunger 8 or the interior 3 is sealed off with respect to the closure cap 25 or the environment 6 by means of the two seals 11 and 12, which are designed as plunger ring seals 28. Stops 14 and 15, which in the limit positions A and B of the plunger 8 (cf. also Figure 3e) butt against a top side 29 and an underside 30, respectively, of the closure cap 25, are formed at the end-side ends 9 and 10 of the plunger 8. A pocket 31, into which a lever 101 (cf. for example Fig. 3b or 3c) can be introduced, is formed at the upper stop 14. Furthermore, the plunger 8 does not completely consist of a material for taking up the aroma medium 4, but rather has a cage 24 that is delimited by a grid 23 and holds material 21 which is suitable for temporarily storing the medium 4. Journals 32 and 33, which are provided for the purpose of suspending the aroma cartridge 1 such that it can rotate about an axis of rotation D_2, are formed integrally on the vessel 2 of the aroma cartridge 1.

The journal 32 has a flattened portion 34, thereby allowing the journal 32 to be coupled to a rotary button 103 in a manner fixed in terms of rotation (cf. Figure 3b).

Figure 3b shows a device 100 for dispensing aroma substances into which the aroma cartridge 1 shown in Figure 3a can be inserted. The device 100 substantially comprises a housing 102 at which the abovementioned lever 101, the abovementioned rotary button 103 and a fan 104 are mounted. Furthermore, two limbs 105 and 106, which have bores 107 and 108 for mounting the journals of the aroma cartridge about axes of rotation D_2, are formed integrally on the housing 102.

Figure 3c shows the device 100 illustrated in Figure 3b with the aroma cartridge 1 illustrated in Figure 3a having been inserted in the device 100. The aroma cartridge 1 is in this figure in a basic position G, with the device 100 in an at-rest position I. The lever 101 forms first control means S_1, which can be used to raise the plunger 8 out of the first limit position A into the second limit position B (cf. Figure 3e). For this purpose, the lever 101 engages in the pocket 31 in the stop 14 and is moved upward in arrow direction x. The pocket 31 is designed to be open toward the person viewing the figure. The rotary button 103 forms second control means S_2 which allow the aroma cartridge 1 to be rotated about the axis of rotation D_2. For this purpose, a plug connection which is fixed in terms of rotation is formed between the rotary button 103 and the journal 32, which is designed as an extension of the vessel 2. The aroma medium 4 is at a level N_G in the interior 3 of the vessel 2. The material 21 mounted in the plunger 8 for taking up the aroma medium 4 is located above the level N_G of the aroma medium 4.

Figure 3d shows the device 100 illustrated in Figure 3c in a filling position II, with the aroma cartridge 1 in

an impregnation position T. The aroma cartridge 1 is transferred from the basic position G shown in Figure 3c into the impregnation position T shown in Figure 3d by the rotary head 103 being rotated through 180° about the axis of rotation D_2. Rotation of the aroma cartridge 1 disconnects the stop 14 and the lever 101 from one another. In the impregnation position T, the material 21 for taking up the aroma medium 4 is fully in the aroma medium 4, which fills the aroma cartridge 1 up to a level N_T in the impregnation position T. After impregnation, the aroma cartridge 1 is then rotated back into the basic position G shown in Figure 3c by means of the rotary button 103 or the second control means S_2. In the process, the lever 101 engages in stop 14 once again. Therefore, after this step of rotating back, the stop 14 or the plunger 8 can be displaced out of the first limit position A into the second limit position B by the lever 101 or the first control means S_1 (cf. Figure 3e).

Figure 3e shows the device 100 in the aroma position III described above, in which the aroma cartridge 1 is held in the basic position G and the plunger 8 with the freshly impregnated material 21 has been displaced into its second limit position B. For this purpose, the lever 101 or the first control means S_1 was moved in the arrow direction x at the housing 102. In the second limit position B of the plunger 8, the plunger 8 has been extended out of the vessel 2 or the closure cap 25 to such an extent that the material 21 that has been impregnated with the aroma medium 4 is located in a freely accessible position outside the vessel 2 and outside the closure cap 25, in an interior space 109 of the device 100. It is preferable for the material 21 or the plunger 8 to be exposed to an air flow 110 from the fan 104 in order at least from time to time to rapidly distribute the aroma medium in the environment 6 outside the housing 102. For this purpose, the housing 102 has openings (not shown) which allow air to be

exchanged between the interior 109 and the environment 6. The distribution of aroma to the environment 6 is effected by switching off the fan 104 and retracting the plunger 8 into the first limit position A with the aid of the lever 101. The device 100 is then once again in the at-rest state shown in Figure 3c.

According to a variant embodiment (not shown), there is provision for the first and second control means to be designed as electromechanical control means, in each case comprising an electric motor and mechanical components. A third control means, designed, for example, as control electronics which simultaneously also control operation of the fan, is provided for the purpose of controlling the first and second control means.

Figures 4a to 4n show a fourth embodiment of an aroma cartridge 1 in the form of various different illustrations. Figure 4a shows a side view of the aroma cartridge 1. This view shows a vessel 2, a closure cap 25 and a cover 35 for the closure cap 25 of the aroma cartridge 1.

Figure 4b shows a section through Figure 4a on section line IVb-IVb. The vessel 2 has a neck 26 with an external screw thread 36, onto which the closure cap 25, which has an internal screw thread 37, is screwed. A clip 38, which is used to fix the aroma cartridge 1 in the correct position in a device 100 (cf. for example Figure 5c), is formed integrally on the closure cap 25.

Figure 4c shows a perspective illustration of the aroma cartridge 1 which has already been shown in Figure 4a. This figure reveals how the clip 38 surrounds the closure cap 25 in the form of a bead.

Figure 4d shows a perspective illustration of the

section indicated in Figure 4a. The closure cap 25 and a plunger 8 together with further components form a metering device 7 that can be screwed onto the vessel 2.

Figure 4e shows a side view of the aroma cartridge 1 with the cover unscrewed. The plunger 8 is visible above the closure cap 25. A guide element 39, which extends in an arrow direction x and forms a guide with a T-groove is formed at the closure cap 25. The plunger 8 is guided in this T-groove of the guide element 39 by means of a web 40 that is T-shaped in cross section, in order to prevent the plunger from tilting in the event of an up-and-down movement out of the first limit position A into the second limit position B (cf. for example Figure 4k) as a result of laterally acting forces. The web 40 itself is stabilized by a first disk 41, beneath which a first seal 11 is located. The seal 11 closes off the vessel 2 in the first limit position A, shown in Figure 4e, of the plunger 8.

Figure 4f shows a view of the aroma cartridge 1 from arrow direction IVf illustrated in Figure 4e. The web 40 is covered in this view.

Figure 4g shows a section through Figure 4f on section line IVg-IVg. In addition to the upper disk 41 and the first seal 11, Figure 4g also reveals a lower disk 42 and the second seal 12, which belong to the plunger 8. The material 21 for taking up the aroma medium 4 is arranged between the seals 11 and 12 in an interior 3 of the vessel 2. This is approximately in the form of a hollow cylinder, with the diameter d_{21} of the impregnation body 21 being smaller than the diameters d_{11} and d_{12} of the seals 11 and 12. It is therefore possible for the impregnation body to pass through the cylindrical passage 27 in the closure cap 25 in arrow directions x and x'. The cylindrical passage 27 is formed by a shoulder 43 of the closure cap 25. A top

side 29 of the shoulder 43 forms a bearing surface 29 for the first seal 11, and an underside 30 of the shoulder 43 forms a bearing surface 30 for the second seal 12. The plunger 8, which can be displaced in arrow directions x and x' in the closure cap 25, therefore substantially comprises a lifting tube 44, on which the web 40 and the disk 41 are formed integrally, and the second disk 42, which is formed by a cap 45 fitted onto the lifting tube 44. The plunger 8 also includes the sealing rings 13, which hold the impregnation body 21 between them. The metering device 7 is completed by a pin 46 which runs in a cylindrical interior 47 of the lifting tube and has a mushroom-shaped first end 48. The first end 48 forms a first abutment 49 for a spring element 17. A second abutment 50 for the spring element 17 is formed by the cap 45. A second end 51 of the pin 46 is designed as a basket 52, which is supported from below against the shoulder 43 of the closure cap 25. According to an embodiment which is not illustrated, the pin and the basket are of two-part design and are preferably held together by means of a latching connection.

Figures 4h to 4j show a perspective view of Figures 4e to 4g. It can be seen from Figure 4h that in the region of the clip 38 the closure cap 25 has a projection 53 which is intended to engage in a positively locking manner in the device 100.

Figure 4i clearly illustrates the T-shaped cross section of the web 40, without the T-groove formed in the guide element 39 being illustrated in detail, in order to simplify the figures.

Figure 4j clearly shows the basket 52 formed integrally at the second end 51 of the pin 46. The basket is substantially formed by arms 54 which merge into a ring 55 that bears against the closure cap 25 and is supported against a shoulder 43 of the closure cap 25.

A seal 56 is arranged between the vessel 2 and the closure cap 25 in order to seal off the two components with respect to one another. Raising of the plunger 8 or the lifting tube 44 out of the first limit position A, illustrated in Figures 4a to 4j, also moves with it the cap 45, which is fixedly connected to the lifting tube 44, and therefore the seals 11 and 12 and the impregnation body 21. The raising of the plunger 8 and of the components fixedly connected to it takes place counter to the force of the spring element 17. As the plunger 8 is raised in arrow direction x, the spring elements 17 is compressed to an increasing extent by the abutment 50 formed by the cap 45. The pin 46 remains in an unchanged position, since it is supported against the closure cap 25 by means of the basket 52. Therefore, the plunger 8 forms a moveable part of the metering device 7, and the pin 46, together with the basket 52, forms a stationary part of the metering device 7. The impregnation body 21 is generally impregnated before the plunger 8 is raised. For this purpose, the liquid 4 that is present in the interior 3 of the vessel 2 can advance to the impregnation body 21 through gaps 57 which are formed between the arms 54 of the basket 52. In the embodiment of the aroma cartridge 1 illustrated in Figures 4a to 4n, the impregnation takes place in particular when the aroma cartridge 1 has been pivoted through approximately 90° to 180° out of the upright position G shown. To raise the plunger 8, a device 100 engages (cf. for example Figure 5h) in particular on a cover 58 of the lifting tube 44.

Figure 4k shows a side view of the metering cartridge 1, with the plunger 8 here in the second limit position B. This illustration should in particular be compared with Figure 4f, which shows the metering cartridge in the same view but in the first limit position A of the plunger 8. In the second limit position B, the plunger 8 has been extended from the vessel 2 or the closure cap 25 sufficiently far for the impregnation body 21 to

be virtually completely projecting above the top side 29 of the closure cap 25.

Figure 4l shows a section through the aroma cartridge 1 illustrated in Figure 4k on section line IVl-IVl. In the second limit position B of the plunger 8, the pin 46 is in an unchanged position with respect to the vessel 2 or with respect to the closure cap 25. The spring element 17 is now more compressed between the mushroom-shaped end 48 of the pin 46 and the abutment 50 formed by the cap 45. The interior 3 of the vessel 2 is sealed off in position B of the plunger 8 by the second seal 12, which is pressed by the disk 42 onto the underside 30 of the annular shoulder 43 of the closure cap 25. The compressed spring element 17 presses the plunger 8 back out of the second limit position B into the first limit position A, with the spring element 17 in the process being relieved of stress by the abutment 50 migrating back into the vessel 2 in direction x'. In the first limit position A too (cf. for example Figure 4g), the spring element 17 still presses the plunger 8 in arrow direction x' by way of the abutment 50. This ensures that the seal 11 bears with pressure against the closure cap 25 and in the first limit position A good sealing of the interior 3 with respect to the environment 6 is produced. As an alternative to the illustration presented in Figure 41, the invention provides, according to a variant embodiment, for the web 40 still to be guided in the guide element even in limit position B. This is achieved, for example, by a lengthened guide element or a reduced displacement of the plunger.

Figures 4k and 4l are illustrated once again in perspective in Figures 4m and 4n. Figure 4m shows the bearing surface 29, on which the seal 11 comes to bear in the first limit position A of the plunger 8. The closure cap 25 has a further screw thread 59, which is intended for the cover 35 to be screwed onto (cf.

Figure 4a).

Figure 4n also illustrates a displacement h_8 covered by the plunger 8 between the first limit position A and the second limit position B. The spring element 17 has not been illustrated in some of Figures 4a to 4n, in order to maintain clarity within the figures.

Figures 5a to 5j show the abovementioned device 100 for operating the aroma cartridge 1 illustrated in Figures 4a to 4n.

Figure 5a shows a side view of the device 100, illustrating a sectional view through a housing 102. The housing 102 substantially comprises a first housing part 117a and a second housing part 117b. The aroma cartridge 1 is held in a positively locking manner in a holder 111, with an arm 112 engaging over the clip 38 of the aroma cartridge 1. Gearwheels 113 and 114 are connected in a rotationally fixed manner to the holder 111 (cf. also Figure 5c). Journals 115 and 116, which are mounted in bores (not illustrated) in the second housing part 117b such that they can rotate about an axis of rotation D_{111}, are formed integrally at the gearwheels 113 and 114. The housing part 117b can be pivoted out of the housing part 117a, together with the holder 111 for the aroma cartridge 1, about an axis of rotation D_{117}. As a result, the aroma cartridge 1 is readily accessible and consequently easy to exchange. A fan 104 is arranged in the housing 102 and sucks in ambient air through openings (not shown) at a rear side 118 of the housing 102 and blows this air into the environment 6 through openings (not shown) at a front side 119 of the housing 102. The plunger 8 of the aroma cartridge 1 is positioned in this air flow 110. However, in Figure 5a the plunger 8 is in the first limit position A, in which it is not intended to dispense aroma by means of the metering device 7. Basic operational readiness of the fan 104 is controlled by

means of a lever 120 which is arranged at a bridge 121 such that it can rotate about an axis of rotation D_{120}. At a first end 122, the lever 120 bears a permanent magnet 123. The permanent magnet 123 interacts with a sensor 124 arranged on a printed circuit board 125. The first lever 120 adopts the position illustrated in Figure 5a when the aroma cartridge 1 is in the first limit position A. In this position, the sensor 124 detects the permanent magnet 123 and switches off the fan 104 by means of control electronics 126 arranged on the printed circuit board 125. The first lever 120 is held in this switched-off position by a spring 127. In the second limit position B of the aroma cartridge 1, a second end 128 of the first lever 120 is actuated by the cover 58 arranged on the plunger 8 (cf. Figure 5h). In the process, the spring 127 is then compressed.

The holder 111 for the aroma cartridge 1 interacts with a vibrating bridge 129 by way of the gearwheels 113 and 114. The vibrating bridge 129 (cf. also Figure 5c) is suspended from the housing part 117b such that it can rotate about an axis of rotation D_{129} and is designed in part as a toothed segment 130 and in part as a fork 131. The vibrating bridge 129 interacts with the gearwheels 113 and 114 via the toothed segments 130.

The vibrating bridge 129 and the holder 111 together form a second mechanical control means S_2, which is able to effect rotation of the aroma cartridge 1. Rotation of the vibrating bridge 129 about the axis of rotation D_{129} in an arrow direction m is effected by means of the forks 131. As a result, rotation of the gearwheels 113 and 114 in an opposite arrow direction n about the axis of the rotation D_{111} is effected by way of the toothed segments 130, so that the holder 111 together with the aroma cartridge 1 rotates out of a basic position G in the direction of arrow n about the axis of rotation D_{111} into an impregnation position T (cf. Figure 5d). The second mechanical control means S_2

are actuated by third mechanical control means S_3. The third control means S_3 are formed by a switch mechanism 132. The switch mechanism 132 comprises a button 133 which is secured to the housing part 117b such that it can rotate about an axis of rotation D_{133}. The button 133 actuates numerous levers which, as the third control means S_3, control the second control means S_2 and first control means S_1. The first control means S_1 substantially comprise a lifting fork 134 which is provided for the purpose of lifting the plunger 8. For this purpose, the lifting fork 134 engages beneath the cover 58 of the plunger 8 by way of lugs 135 (cf. also Figure 5h).

Figure 5b illustrates only the housing part 117b of the housing 102 which is shown in Figure 5a. The second housing part 117b can be pivoted out of the first housing part 117a about axis of rotation D_{117}. If necessary, the two housing parts 117a and 117b can also be separated from one another. Exclusively mechanical components are arranged in the second housing part 117b. The electrical and electronic components are located exclusively in housing part 117a.

Figure 5c illustrates Figure 5b from arrow direction Vc. The control means S_1, S_2 and S_3 are constructed substantially symmetrically with respect to a center line M of the device 100. For example, the vibrating bridge 129 includes the two forks 131 and the two gearwheels 113 and 114, which are arranged mirror-symmetrically with respect to the center line M.

The following Figures 5d to 5g each illustrate only the control means S_1 or S_2 or S_3 which are of interest to the respective step of the sequence, in order to maintain clarity of the illustrations. Figures 5c and 5i in each case show all the control means S_1 and S_2 and S_3 which are visible in the respective view.

Figure 5d shows part of the device 100 with the aroma cartridge 1 pivoted into an impregnation position T. The pivoting of the aroma cartridge 1 out of the basic position G illustrated in Figures 5a to 5c into the impregnation position T is effected by manually depressing the button 133, which in the process rotates about its axis of rotation D_{133}. As a result, control levers 136 which are fixed to the button 133 are moved in directions x' and y'. Via bolts 137, the control levers 136 interact with tines 138 of the forks 131 of the vibrating bridge 129 and thereby rotate the vibrating bridge 129 in the direction of arrow m, so that the toothed segments 130 drive the gearwheels 113 and 114 (cf. Figure 5c). With the gearwheels 113 and 114, the holder 111 together with the aroma cartridge 1 rotates through 180° in arrow direction n about axis of rotation D_{111}, so that the aroma cartridge 1 adopts the impregnation position T. The device 100 is now in what is referred to as a filling position II, having previously adopted at an at-rest position I (cf. Figures 5a to 5c).

(Cf. for the following description in particular Figures 5e and 5b) During rotation of the holder 111 with the aroma cartridge 1 into the filling position II, the lifting forks 134 are clamped and latched in order to retain the lifting forks 134 in a lower position L until the holder 111 together with the aroma cartridge 1 has rotated back into the basic position G of the aroma cartridge 1. Figure 5e shows the lifting fork 134 in a clamped and latched position. The following sequence is intended for the clamping and latching of the lifting fork 134. The lifting fork 134 is initially in an upper position K and is mounted at the housing part 117b such that it can rotate about an axis of rotation D_{134} (cf. Figure 5b). Depressing button 133 causes a pressure fork 139, which is arranged in an articulated manner at the button 133 and grips a bolt 140 arranged fixedly on the lifting fork 134, to move

substantially in arrow direction x', thereby rotating the lifting fork 134 in an arrow direction o about its axis of rotation D_{134}. During this rotary movement about the axis of rotation D_{134}, a roller 141 mounted rotatably on the lifting fork 134 rolls down a limb 142 of a rocker 143. In the process, the rocker 143, which is mounted on the housing part 117b, rotates about an axis of rotation D_{143} in an arrow direction p about the axis of rotation D_{143}. The rotary movement of the rocker 143 in the arrow direction p takes place counter to a spring leg 144 which is mounted at the button 133 such that it can pivot about an axis of rotation D_{144}. The spring leg 144 comprises a bolt 145 with a slot 146. A compression spring 147 is drawn onto the bolt 145. A web 148, which is fixedly connected to a second limb 149 of the rocker 143, is guided in the slot 146. During the rotation of the rocker 143 in arrow direction p, the web 148 compresses the compression spring 147 to an ever greater extent, thereby stressing the latter. Furthermore, a clamping fork 150 (cf. also Figure 5c), which can pivot about an axis of rotation D_{150}, is also suspended from the housing part 117b. The clamping fork 150 has two tines 151, at which grippers 152 are arranged. Shortly before the button 133 has been fully depressed, bolts 153 which are formed integrally on the lifting fork 134 butt against contact surfaces 154 of the grippers 152 from above and press them in an arrow direction y'. In the process, a leaf spring 155 formed integrally at the clamping fork 150 is slightly prestressed against the pressure fork 139. This prestressing causes the grippers 152 to catch the bolts 153 of the lifting fork 134 with a rapid movement in arrow direction y as soon as the lifting fork 134 has reached its lower position L. The rapid movement of the clamping fork 150 in arrow direction y is effected by the stress of the leaf spring 155 being relieved when the bolts 153 slip over lugs 156 of the grippers 152. The holder 111 (not shown in Figure 5e) together with the aroma cartridge 1 is now in the position II

shown in Figure 5d, and the impregnation body is impregnated, with the lifting fork prestressed, as shown in Figure 5e. In this position II, the button 133 is fully depressed and is then either held down by the user or immediately released by the user. Despite the subsequent movement of the button in arrow direction x, the lifting fork 134 is held in its lower position L by the clamping fork 150 (cf. Figure 5e). As a result, the rocker 143 and the spring leg 144 are also indirectly blocked. The stress in the compression spring 147 can also be relieved slightly as a result of the button 133 being raised back into its starting position, with the holder 111 together with the aroma cartridge 1 simultaneously rotating back (cf. Figure 5f), but the compression spring 147 remains partially stressed by the web 148 which is indirectly blocked via the clamping fork 150. This means that the energy of the compression spring 147 is partially stored. The aroma cartridge 1, which together with the holder 111 forcefully rotates back out of the impregnation position T shown in Figure 5d into the position shown in Figure 5f, which is similar to the basic position G, butts against a web by way of the upper end of the guide element 39; this web connects two further tines 157 (cf. Figure 5c - the web itself is covered) of the clamping fork 150. This butting action causes the bolts 153 to slip out of the grippers 152, thereby releasing the lifting fork 134. In the process, the clamping fork 150 rotates about its axis of rotation D_{150}. On account of the compression spring 147 acting on the web 148, so that it can release the stored energy, the rocker 143 is then rotated about its axis of rotation D_{143} in arrow direction p' and for its part causes the lifting fork 134 to rotate about its axis of rotation D_{134} in arrow direction o'. In the process, the lugs 135 of the lifting fork 134 lift the plunger 8 at its cover 58, so that the plunger 8 is lifted out of its first limit position A into its second limit position or aroma-releasing position B (cf. Figures 5g to 5i, which show

the device 100 in an aroma-releasing position III). In the aroma-releasing position III, the stress of the compression spring 147 is now fully relieved again (cf. Figure 5g).

Figure 5h once again shows a sectional side view of the housing 102 composed of housing parts 117a and 117b, with the device 100 in the aroma-releasing position III, in which the plunger 8 of the aroma cartridge 1 is in the second limit position B. When the plunger 8 is raised by the lugs 135 of the lifting fork 134, the cover 58 of the plunger 8 interacts with the lever 120 mounted at the bridge 121 and presses the second end 128 of the lever 120 in arrow direction x counter to the force of the spring 127. This causes the permanent magnet 123 arranged at the first end 122 of the lever 120 to pivot away from the sensor 124. Therefore, the sensor 124 provides the control electronics 126 with the information that the plunger 8 of the aroma cartridge 1 is in the aroma-dispensing position B. The fan 104 can then be controlled accordingly and can cause its air flow 110 to act on the impregnation body 21.

Figure 5i shows an illustration of Figure 5g from arrow direction Vi. This view shows the two lugs 135 of the lifting fork 134, which raise the plunger 8 at its cover 58.

Finally, figure 5j shows an illustration, corresponding to Figure 5b, of the housing part 117b of the device 100. In this figure, the at-rest position I of the device 100, the upper position K of the lifting fork 134, the first limit position A of the plunger 8 and the basic position G of the aroma cartridge 1 have been reached again. The switching-off of the aroma cartridge 1 or the displacement of the plunger 8 out of position B into position A is effected by the button 133 being depressed slightly (cf. Figures 5c, 5g to 5i). In the

process, the web arranged between the further tines 157 of the clamping fork 150 presses on the guide element 39 of the aroma cartridge 1 or the closure cap 25 and as a result slides the cover 58 off the lugs 135 of the lifting fork 134. As soon as the cover 58 slides off the lugs 135, the plunger 8 is retracted into the vessel 2 by the spring element 17. This then also causes the lever 120 to spring back into the position shown in Figure 5a, in which the permanent magnet 123 is positioned opposite the sensor 124. In the process, the holder 111 together with the aroma cartridge 1 rotates slightly in arrow direction n about the axis of rotation D_{111} until the cover 58 slips off the lugs 135 and then swings back into the basic position G in arrow direction n' (cf. in particular Figure 5h). The slight depression of the button 133 can be continued by deep depression of the button 133, so that the device 100 adopts the filling position II, in which the aroma cartridge 1 is impregnated and the sequence which has already been described commences.

To summarize, with regard to the control means S_1, S_2 and S_3, the following statements can be made in connection with Figures 5a to 5j: the first control means S_1, which are responsible for raising the plunger 8, are formed by the lifting fork 134 (cf. for example Figure 5h). The holder 111 and the vibrating bridge 129 (cf. for example Figure 5d) serve as second control means S_2, which are responsible for pivoting the aroma cartridge 1. The switching mechanism 132, which substantially comprises the button 133, the lifting fork 134, the control lever 136, the pressure fork 139, the rocker 143, the spring leg 144 and the clamping fork 150 (cf. for example Figures 5a, 5d and 5e), serves as third control means S_3, which control the first and second control means S_2 and S_3.

Figure 6 shows a diagrammatic view of a further device 100 in which an aroma cartridge 1 is arranged. First

control means S_1 are designed as electromechanical control means 158, which by means of an electric motor move an arm 159 in arrow directions x and x' in order to extend a plunger 8 out of the aroma cartridge 1 and slide it back into the cartridge. The first control means S_1 are connected to third control means S_3 via a control line L_1. The third control means S_3 are designed as electronic control means 160 which control the first control means S_1 by means of electronics. Furthermore, the third control means S_3 control a fan 104 via a control line L_v. The third control means S_3 receive information about the position of the plunger 8 from a sensor 124 via a control line L_S. When using an aroma cartridge 1 which in principle corresponds to the aroma cartridge described in Figures 2a to 2c, it is possible to dispense with second control means S_2, which pivot the aroma cartridge 1 by means of an electric motor serving as electromechanical control means 161. The second control means S_2 are connected to the third, higher-level control means S_3 by way of a control line S_2.

The invention is not restricted to exemplary embodiments that have been illustrated or described. Rather, it also encompasses refinements to the invention within the scope of the claims. In particular, the invention also provides for power to be supplied to the fan and also any further electrical or electronic components by means of a mains fitting or (storage) batteries and/or solar cells. A further variant embodiment provides for the device to be equipped with a wind-up fan, making it possible to produce a device which can be operated without electrical energy.

List of reference symbols:

1	Aroma cartridge
2	Vessel
3	Cavity, interior of 2
4	Aroma medium, liquid
5	Opening in 2
6	Environment
7	Metering device
8	Plunger
9, 10	End-side end of 8
11, 12	First, second seal
13	Sealing disk, sealing ring
14, 15	Stop of 8
16	Sliding guide
17	Spring element, compression spring
18	Inner wall of 2
19	Outer wall of 2
20	Annular recess for 17 in 2
21	Material for taking up 4, impregnation body
22	Base of 2
23	Grid at 8
24	Cage at 8
25	Closure cap
26	Neck of 2
27	Cylindrical passage in 25
28	Plunger ring seal at 8
29	Top side or bearing surface of 25
30	Underside or bearing surface of 25
31	Pocket at 14
32, 33	Journal at 2
34	Flattened section at 32
35	Cover for 25
36	External screw thread of 26
37	Internal screw thread of 25
38	Clip on 25
39	Guide element on 25
40	Web at 44

41, 42	Plate at 44
43	Annular shoulder of 25
44	Lifting tube
45	Cap for 44
46	Pin guided in 44
47	Cylindrical interior of 44
48	First mushroom-shaped end of 46
49	First abutment for 17 at 46
50	Second abutment for 17 at 45
51	Second end of 46
52	Basket
53	Projection at 25
54	Arm of 52
55	Ring of 52
56	Seal between 2 and 25
57	Gap
58	Cover of 44
59	Screw thread at 25
100	Device
101	Lever for engagement in 31
102	Housing
103	Rotary button
104	Fan
105, 106	Limb at 102
107, 108	Bore in 105 or 106
109	Interior of 100
110	Air flow of 104
111	Holder for 1
112	Arm of 111
113, 114	Gearwheel at 111
115, 116	Journal of 113 or 114
117a, 117b	First or second housing part of 102
118	Rear side of 102
119	Front side of 102
120	First lever
121	Bridge
122	First end of 120
123	Permanent magnet at 120

124	Sensor
125	Printed circuit board
126	Control electronics
127	Spring at 120
128	Second end of 120
129	Vibrating bridge
130	Toothed segment of 129
131	Fork of 129
132	Switching mechanism
133	Button
134	Lifting fork
135	Lug of 134
136	Control lever
137	Bolt at 136
138	Tine of 131
139	Pressure fork
140	Bolt at 134
141	Roller rotatably mounted at 134
142	Limb of 143
143	Rocker
144	Spring leg
145	Bolt of 144
146	Slot in 145
147	Compression spring of 144
148	Web of 149
149	Second limb of 143
150	Clamping fork
151	Tine of 150
152	Gripper of 150 at 151
153	Bolt at 134
154	Contact surface of 152
155	Leaf spring at 150
156	Lug at 150
157	Further tine at 150
158	Electromechanical control means
159	Arm
160	Electronic control means
161	Electromechanical control means

A	First limit position, impregnation position of 8
B	Second limit position, odor-dispensing position of 8
D_2	Axis of rotation of 2 or 33, 34 or 1
D_{111}	Axis of rotation of 111
D_{117}	Axis of rotation of 117
D_{120}	Axis of rotation of 120
D_{129}	Axis of rotation of 129
D_{134}	Axis of rotation of 134
D_{143}	Axis of rotation of 143
D_{144}	Axis of rotation of 144
D_{150}	Axis of rotation of 150
F	Force for extending 8
G	Basic position of 1
K	Upper position of 134
L	Lower position of 134
L_1 - L_3	Control lines
L_S	Control lines between 124 and S_3
L_V	Control lines between 104 and S_3
M	Center line of 100
N_G	Level of 4 in position G
N_T	Level of 4 in position T
S_1	First control means
S_2	Second control means
S_3	Third control means
T	Impregnation position of 1
Z	Intermediate position of 8
d_{11}, d_{12}	Diameter of 11 or 12
d_{21}	Diameter of 21
h_8	Displacement of 8
l_8	Length of 8
m	Arrow direction
n, n'	Arrow direction
o, o'	Arrow direction
p, p'	Arrow direction
x, x'	Arrow direction
I	At-rest position of 100
II	Filling position of 100

III Aroma-releasing position of 100

Claims:

1. An aroma cartridge (1) for a device (100) for dispensing aroma substances, the aroma cartridge (1) comprising at least one vessel (2) having at least one cavity (3) for receiving an aroma medium (4), the cavity (3) having at least one opening (5), the opening (5) being closed off by a metering device (7), it being provided in particular that the metering device (7) comprises a plunger (8), that the plunger (8) can be displaced through the opening (5) into two opposite limit positions (A, B), that the plunger (8), in the first limit position (A), is at least partially in an impregnation position (A) within the vessel (2), and that the plunger (8), in the second limit position (B), is at least partially in a aroma-dispensing position (B) outside the vessel (2).

2. The aroma cartridge as claimed in claim 1, wherein the plunger (8) is assigned at least one seal (11, 12).

3. The aroma cartridge as claimed in one of the preceding claims, wherein the plunger (8) is assigned two seals (11, 12).

4. The aroma cartridge as claimed in one of the preceding claims, wherein the first seal (11) seals off the cavity (3) with respect to the environment (6) in the impregnation position (A) of the plunger (8), and the second seal (12) seals off the cavity (3) with respect to the environment in the aroma position (B) of the plunger (8).

5. The aroma cartridge as claimed in one of the preceding claims, wherein the first seal (11) seals off the cavity (3) from the outside and the second seal (12) seals off the cavity (3) from the inside.

6. The aroma cartridge as claimed in one of the

preceding claims, wherein the plunger (8), at least in regions, has the ability to temporarily take up aroma medium (4).

7. The aroma cartridge as claimed in one of the preceding claims, wherein the plunger (8) is designed in regions as a cage (24) which contains a material (21) that is suitable for storing the aroma medium (4).

8. The aroma cartridge as claimed in one of the preceding claims, wherein at least one spring element (17) presses the plunger (8) into the first limit position (A).

9. The aroma cartridge as claimed in one of the preceding claims, wherein the metering device (7) comprises a closure cap (25) in which the plunger (8) is mounted.

10. The aroma cartridge as claimed in one of the preceding claims, wherein the closure cap (25) is screwed onto the vessel (2).

11. The aroma cartridge as claimed in one of the preceding claims, wherein the closure cap (25) has at least one guide element (39) at which the plunger (8) is guided.

12. The aroma cartridge as claimed in one of the preceding claims, wherein the guide element (39) is designed in particular as a rail or a bar.

13. The aroma cartridge as claimed in one of the preceding claims, wherein the vessel (2) is designed as a glass bottle.

14. The aroma cartridge as claimed in one of the preceding claims, which aroma cartridge (1) has at least one projection (38, 53) and/or recess in

particular at the vessel (2) and/or the metering apparatus (7).

15. The aroma cartridge as claimed in one of the preceding claims, wherein the plunger (8) is assembled from at least two partial plungers (44, 45).

16. The aroma cartridge as claimed in one of the preceding claims, wherein the seal (11, 12) is designed as a sealing disk (13).

17. The aroma cartridge as claimed in one of the preceding claims, wherein the seal (11, 12) is designed as a plunger ring seal (28).

18. The aroma cartridge as claimed in one of the preceding claims, wherein the seal (11, 12) is designed in gland form.

19. The aroma cartridge as claimed in one of the preceding claims, wherein the plunger (8) has at least one stop (14, 15).

20. A device (100) for dispensing aroma substances, having a aroma cartridge (1), in particular the aroma cartridge as claimed in one of the preceding claims, the device (100) having a holder (111) for releasably securing the aroma cartridge (1), wherein the plunger (8) of the aroma cartridge (1) can be moved into its limit positions (A, B) by first control means (S_1; 101; 134; 158) of the device (100).

21. The device as claimed in one of the preceding claims, wherein the aroma cartridge (1) can be pivoted by second control means (S_2; 103; 111, 129; 161) in order to be impregnated.

22. The device as claimed in one of the preceding claims, wherein the first control means (S_1; 101; 134;

158) and/or the second control means (S_2; 103; 111; 129; 161) are controlled by third control means (S_3; 132; 133, 134, 136, 139, 143, 144, 150; 160).

23. The device as claimed in one of the preceding claims, wherein the first and/or second and/or third control means (S_1; S_2; S_3) are designed as mechanical control means (101; 103; 111, 129; 132; 134; 133, 134, 136, 139, 143, 144, 150) and/or electromechanical control means (158; 163) and/or electronic control means (160).

24. The device as claimed in one of the preceding claims, wherein the first and/or second and/or third control means (S_1; S_2; S_3) are regulated by an electronic regulation system or an electronic regulation system (125, 126) is assigned to the control means.

25. The apparatus as claimed in one of the preceding claims, wherein the regulation system (125, 126) is assigned at least one sensor (124).

26. The device as claimed in one of the preceding claims, which device (100) has at least one fan (104), by which the plunger (8) or the impregnation body (21) can be exposed to a flow of air (110) in the aroma-dispensing position (B).

27. The device as claimed in one of the preceding claims, wherein the power of the fan (104) or its air flow (110) can be regulated.

28. A method for controlling or regulating the device (100) for dispensing aroma substances, comprising the following steps:

- rotating the aroma cartridge (1) out of an upright basic position (G) through approximately 90° to 180° into a loading position (T), in which the

plunger (8) is in the first limit position (A);

- holding in the loading position (T) in order to effect impregnation of the material (21) which is able to take up liquid;
- rotating the aroma cartridge (1) back into the basic position (G);
- raising the plunger (8) into the second limit position (B);
- directing an air flow onto the plunger (8) in order to dispense aroma substances;
- moving the plunger (8) back into the first limit position (A).

29. A method for controlling or regulating the device (100) for dispensing aroma substances, comprising the following steps:

- raising the plunger (8) out of a first limit position (A) into a second limit position (B);
- directing an air flow onto the plunger (8) in order to dispense aroma substances;
- moving the plunger (8) back into the first limit position (A).

Fetherstonhaugh
Ottawa, Canada
Patent Agents

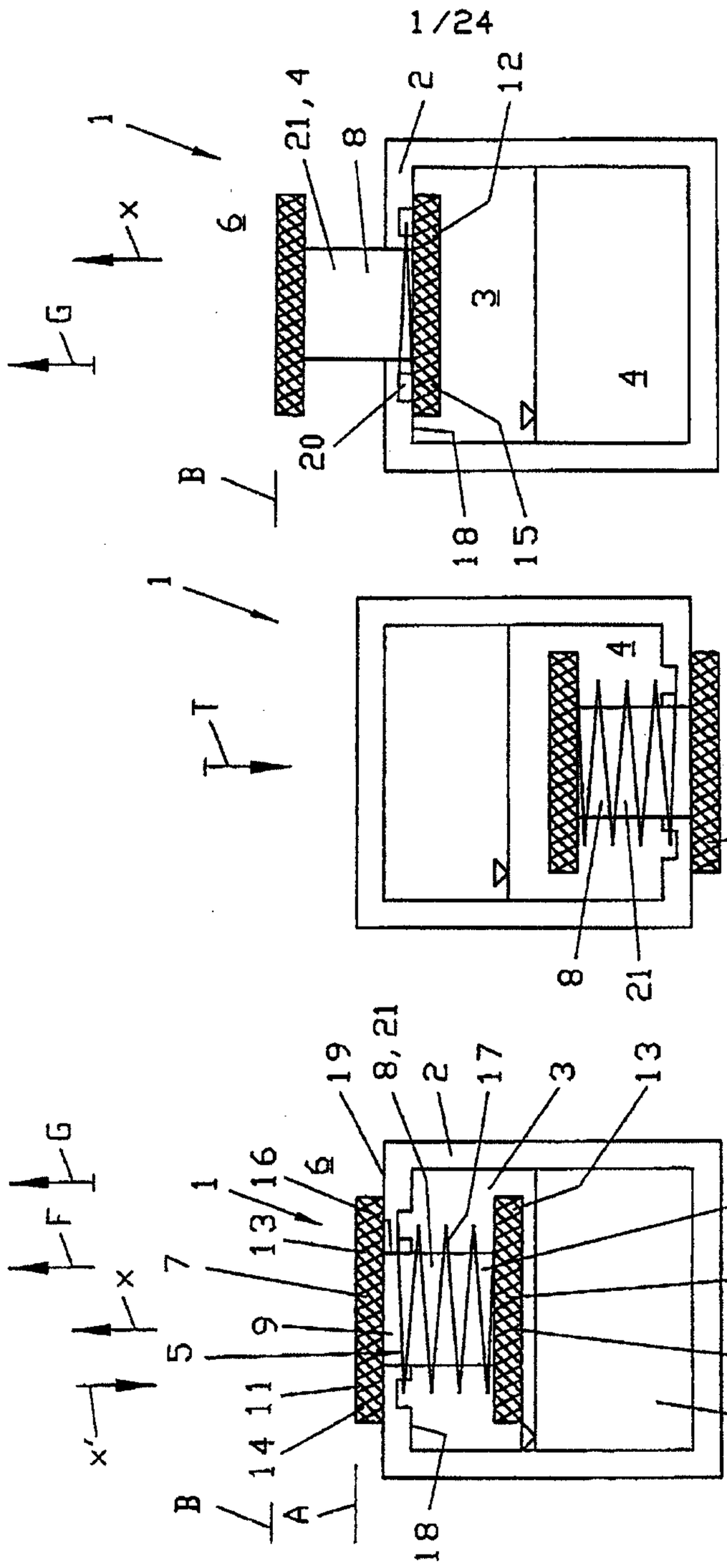


Fig. 1C

Fig. 1b

Fig. 1a

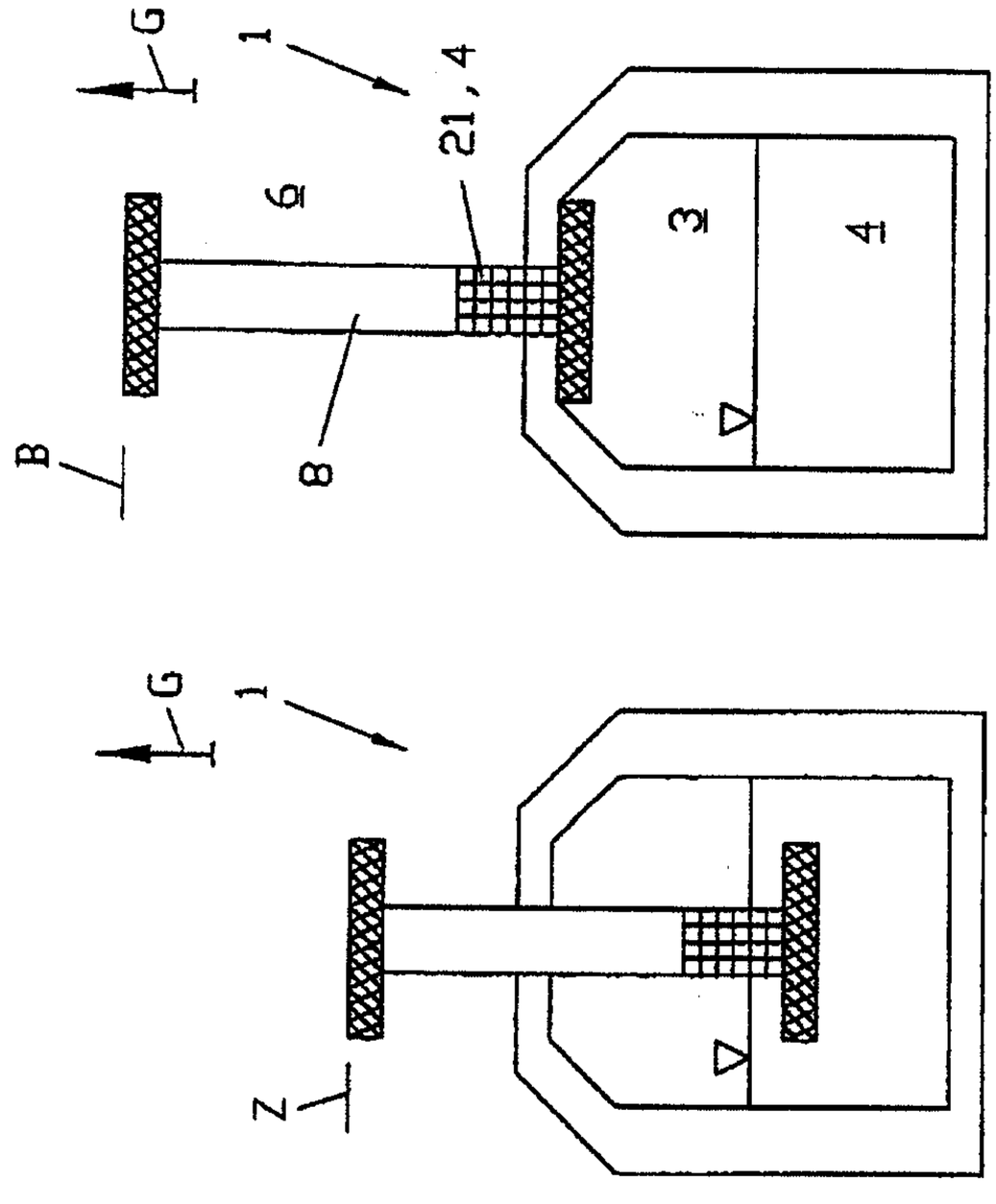


Fig. 2c

Fig. 2b

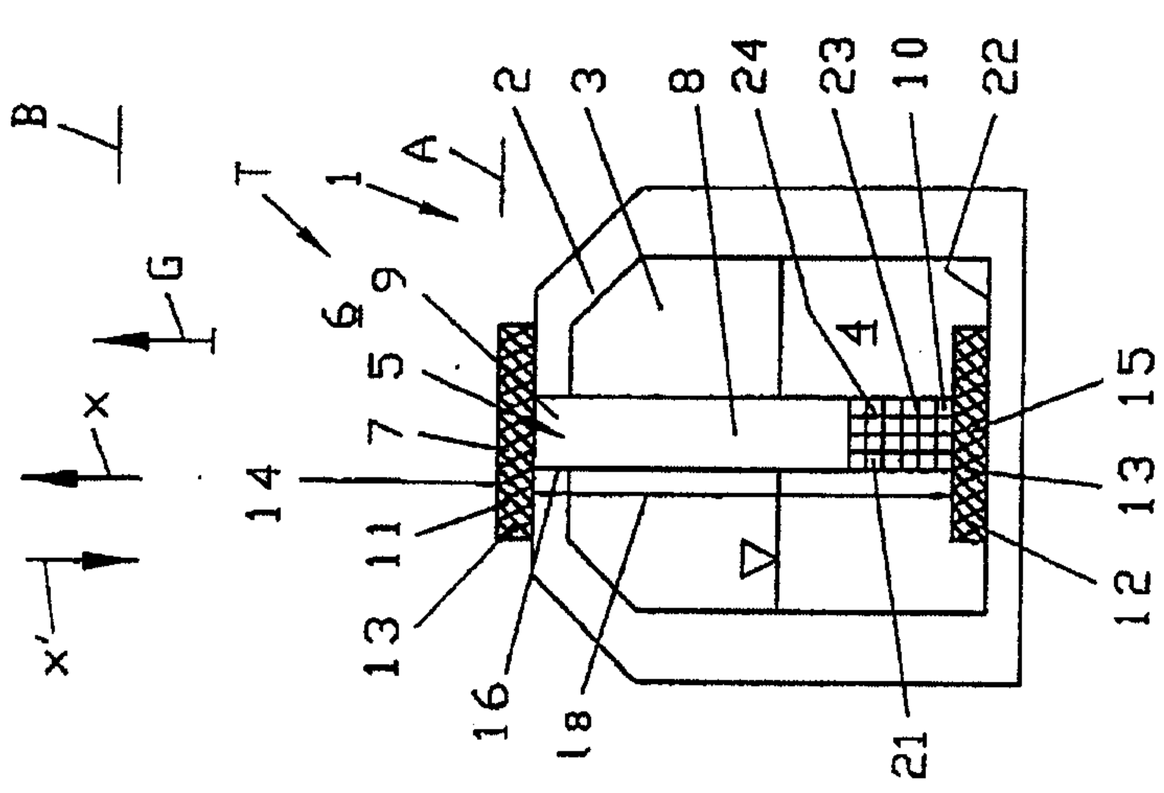


Fig. 2a

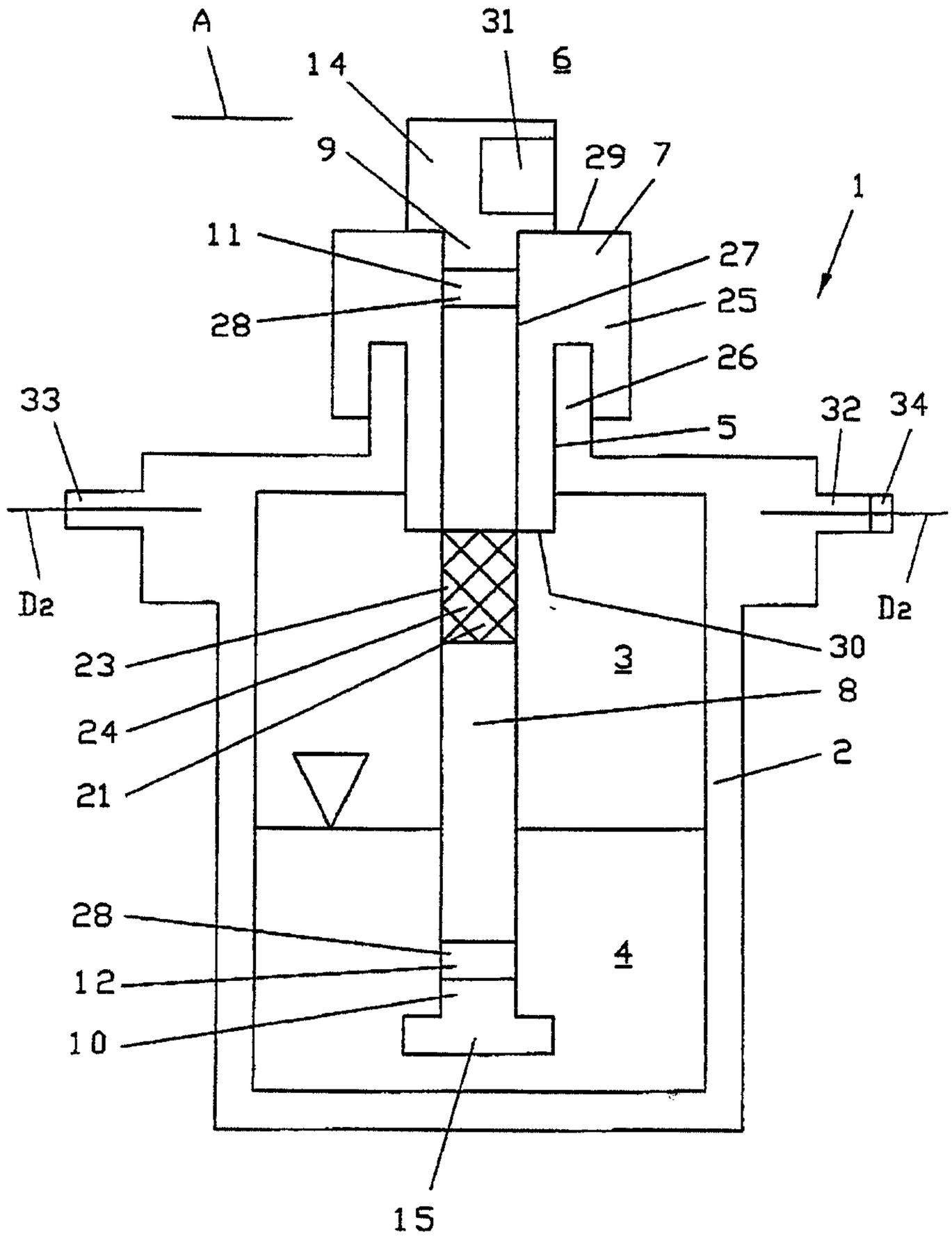

A
31
14
6
9
29
7
1
11
27
28
25
26
33
32
34
5
D2
D2
23
30
3
24
8
21
2
28
4
12
10
15

Fig. 3a

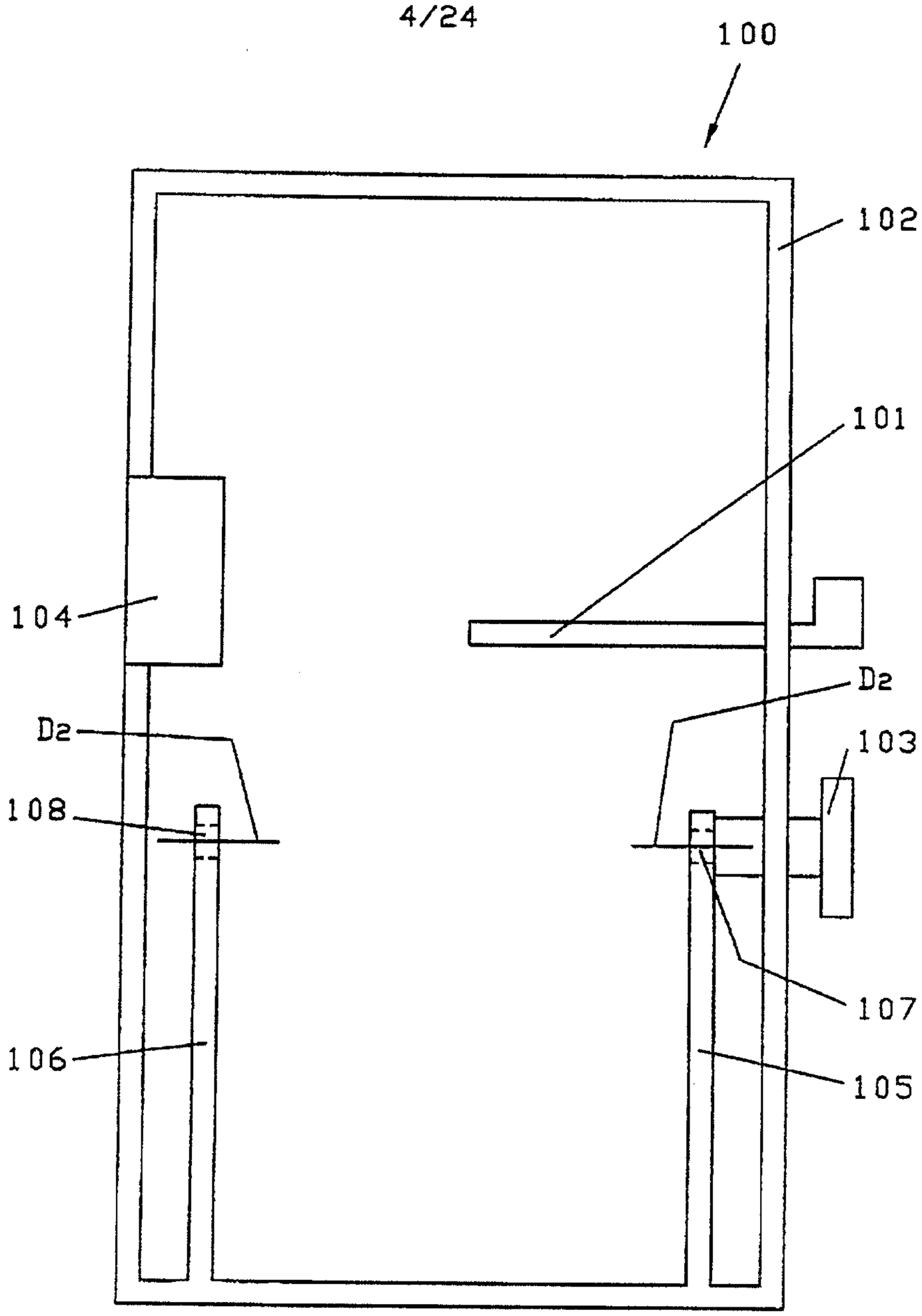


Fig. 3b

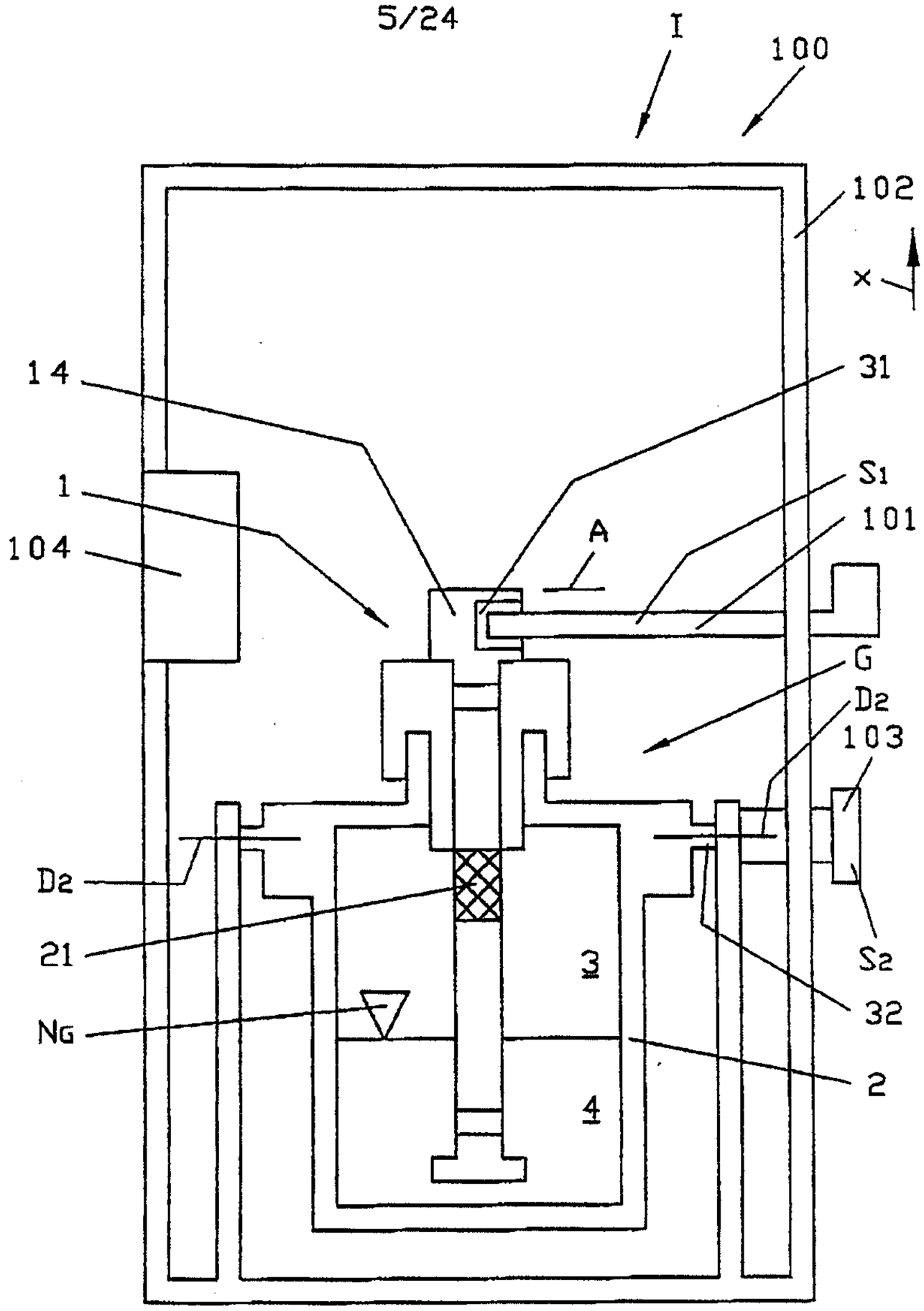


Fig. 3c

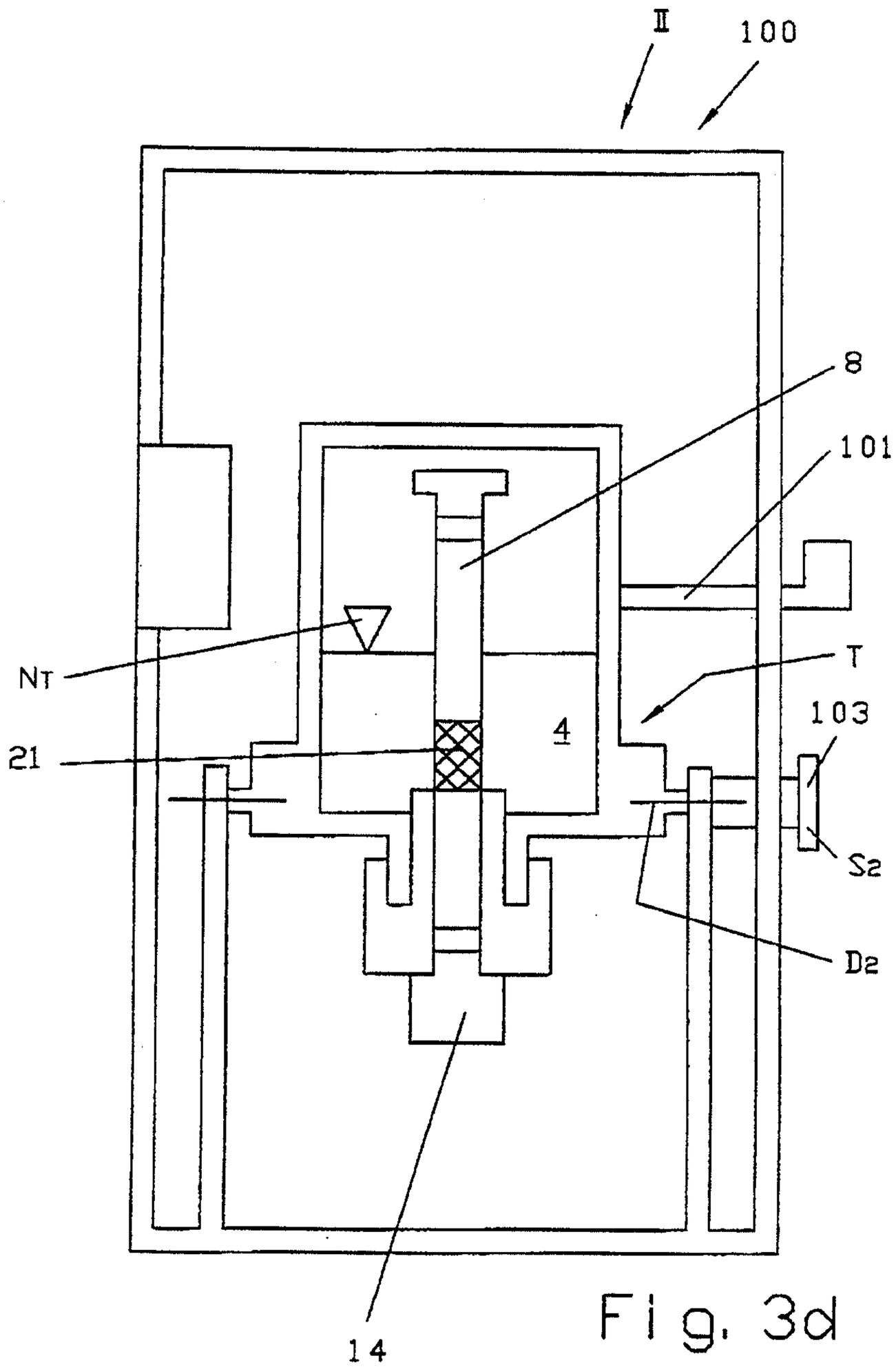


Fig. 3d

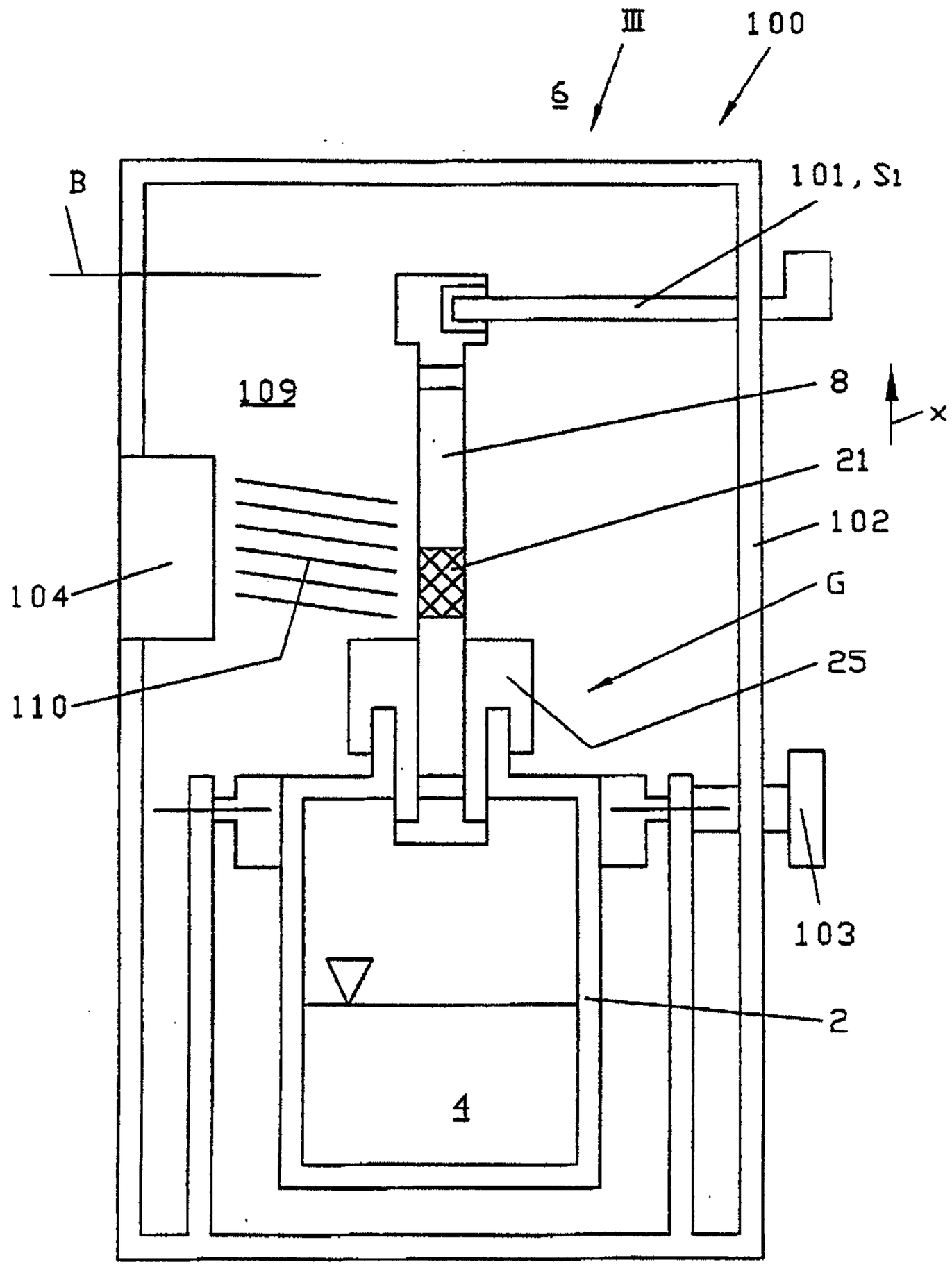


Fig. 3e

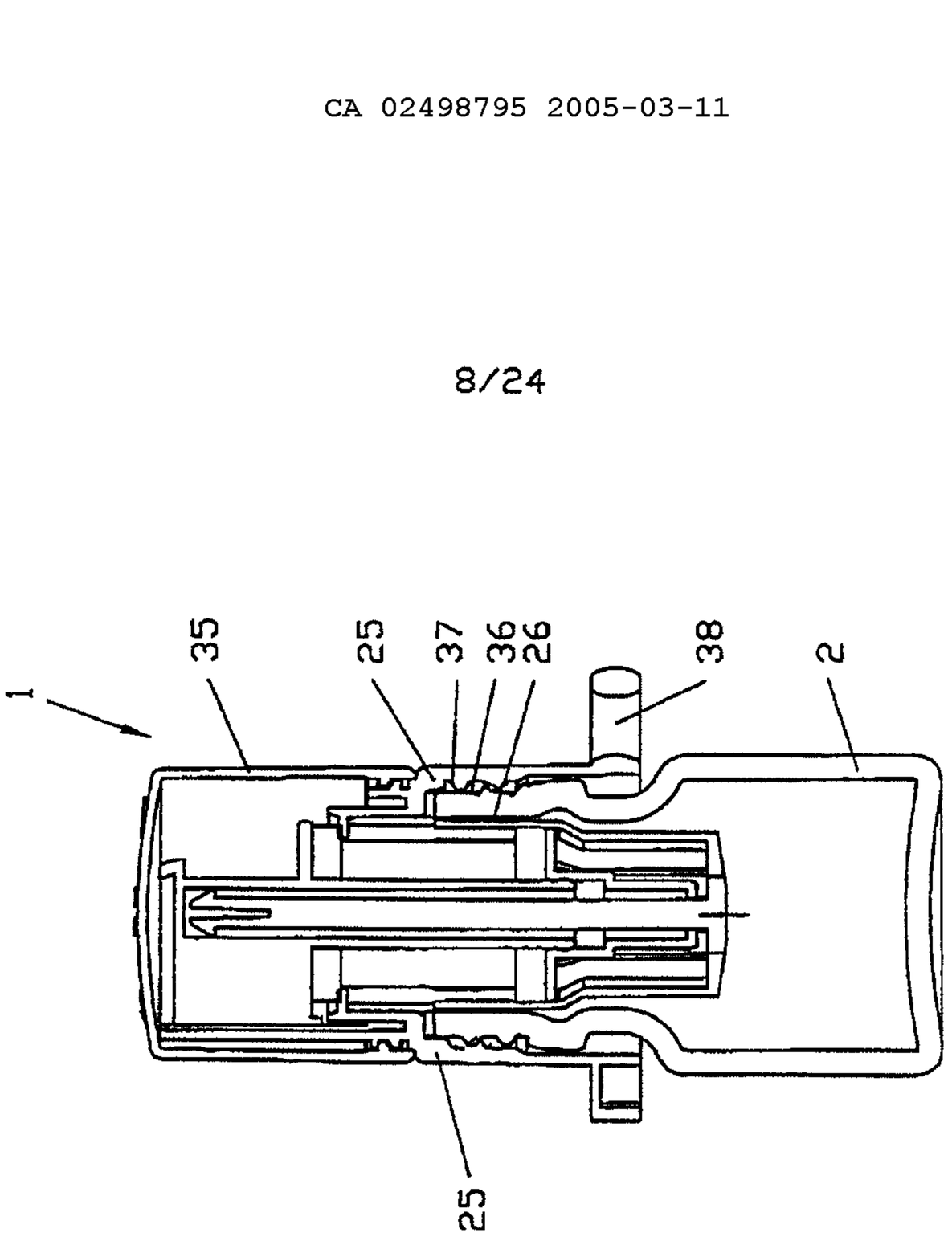


Fig. 4b

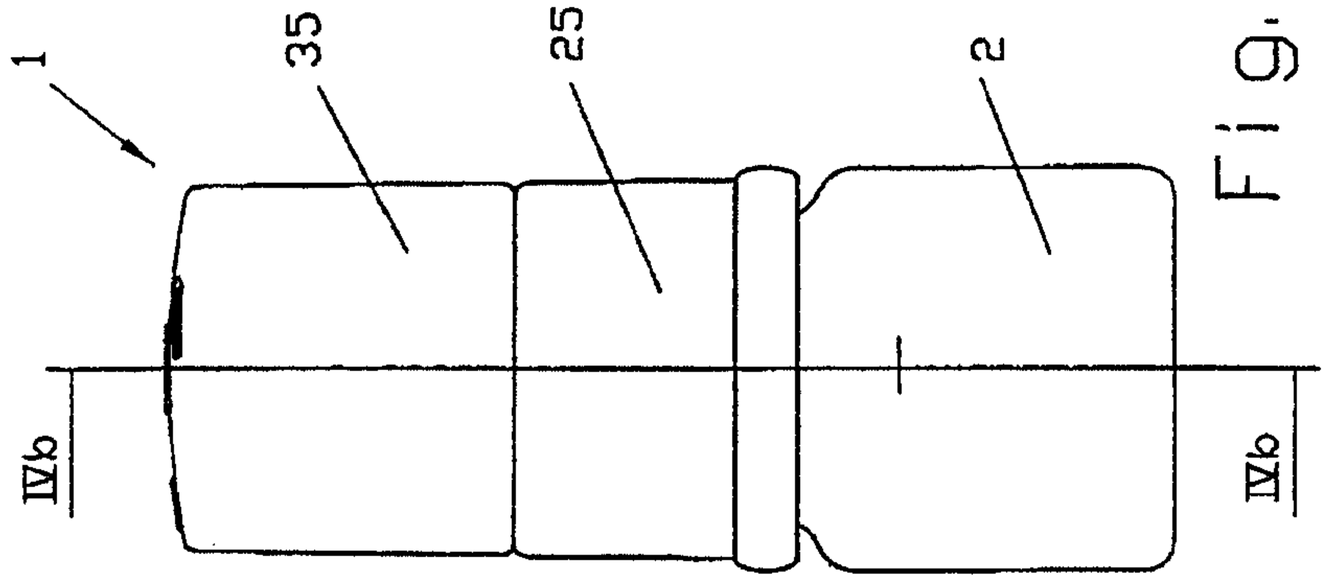


Fig. 4a

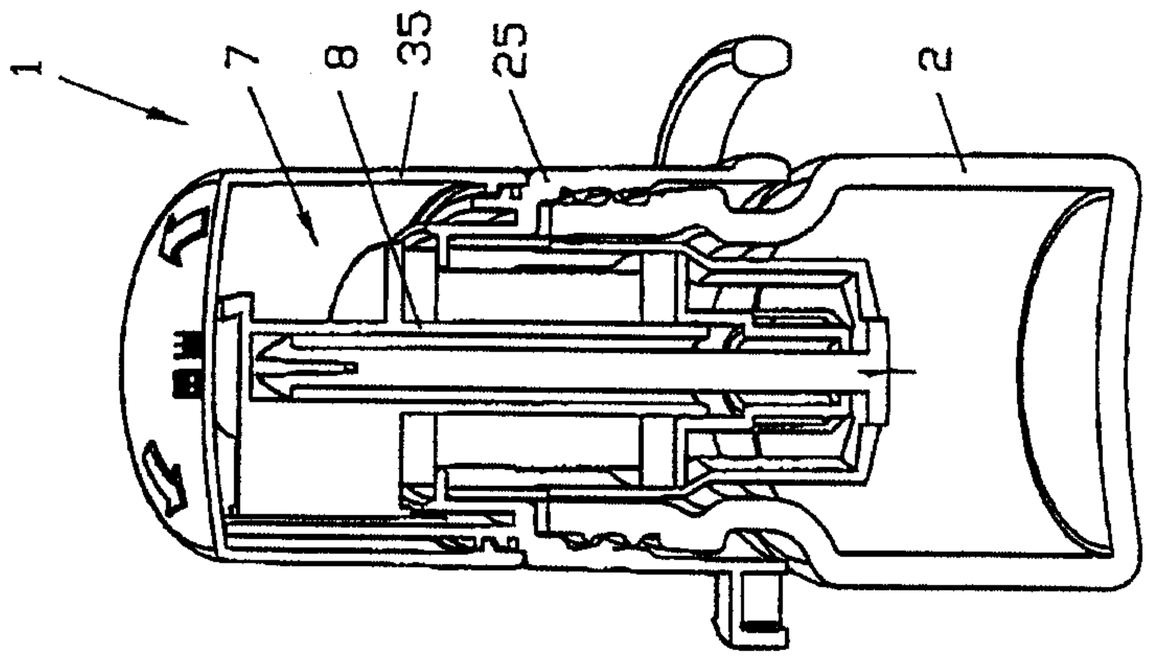


Fig. 4d

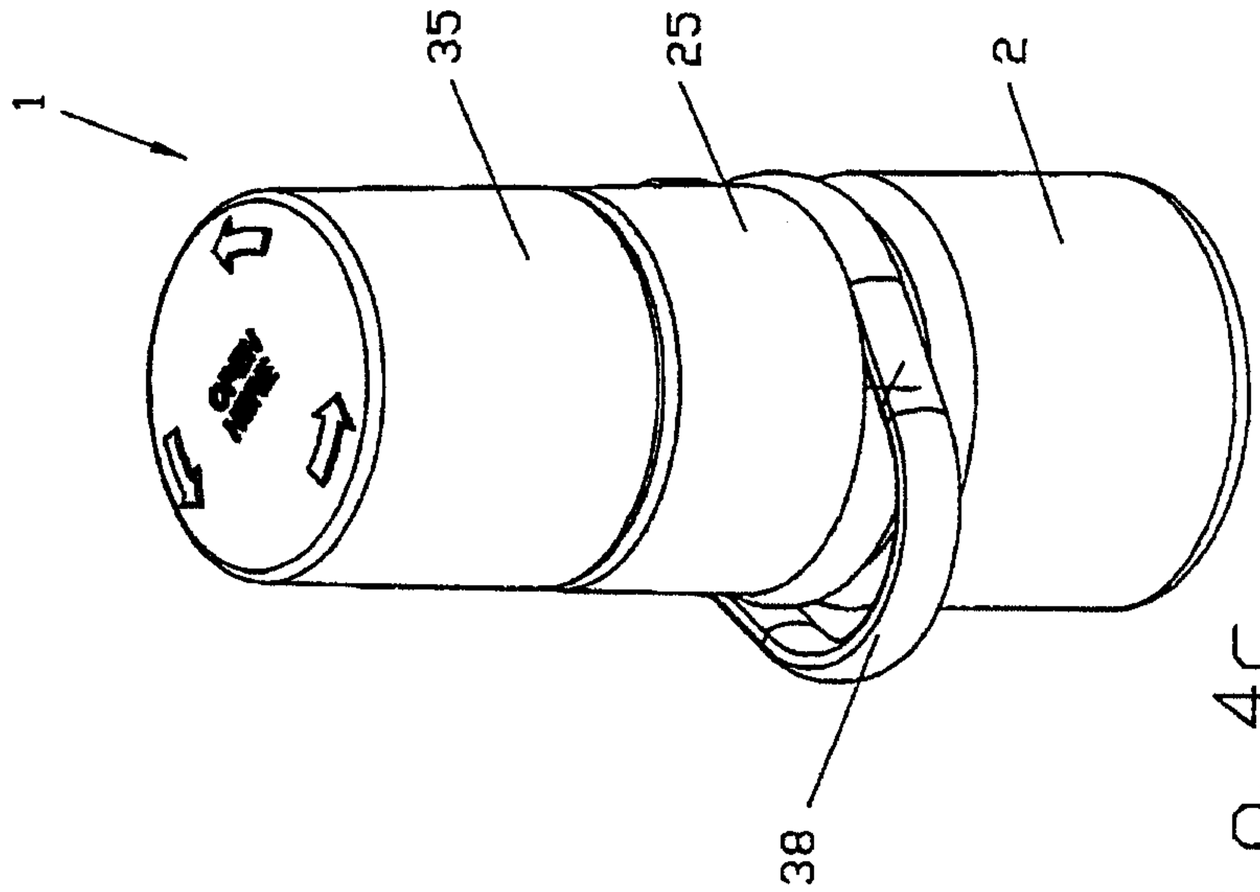


Fig. 4c

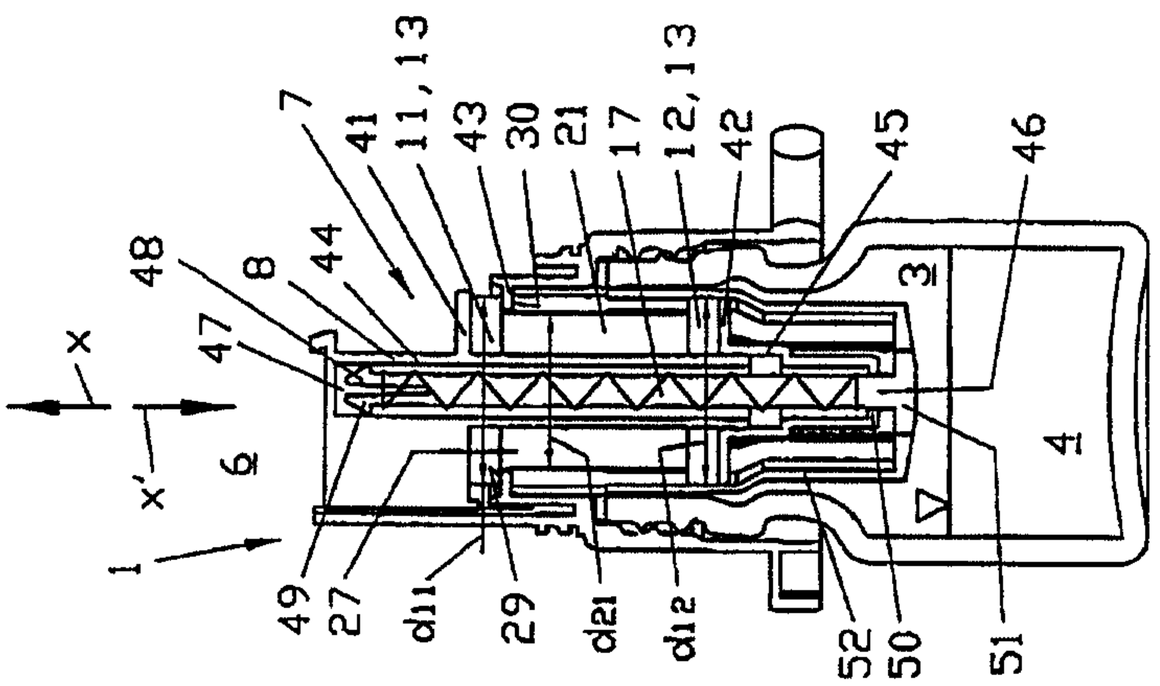


Fig. 4g

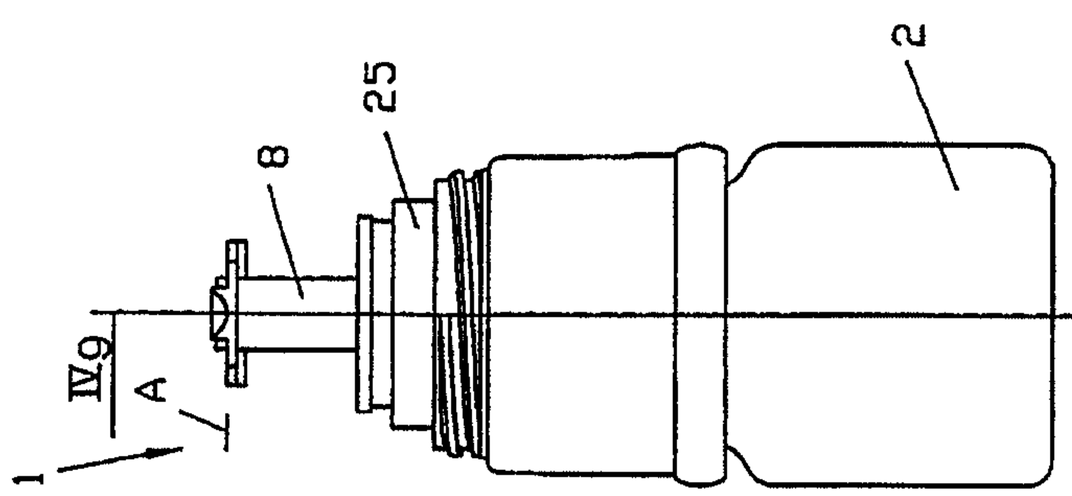


Fig. 4f

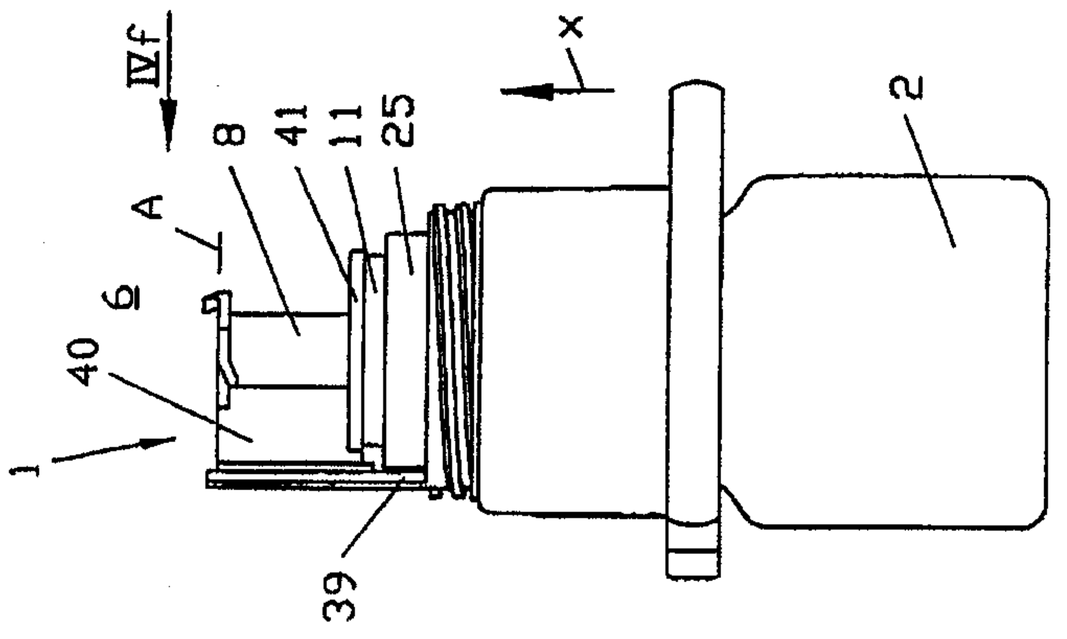


Fig. 4e

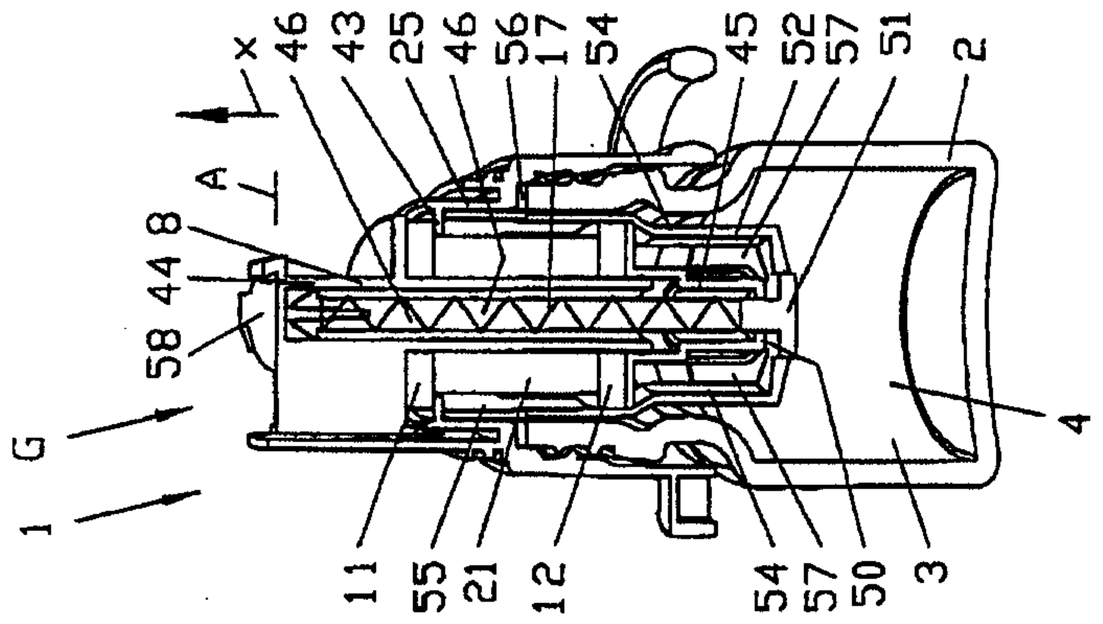


Fig. 4j

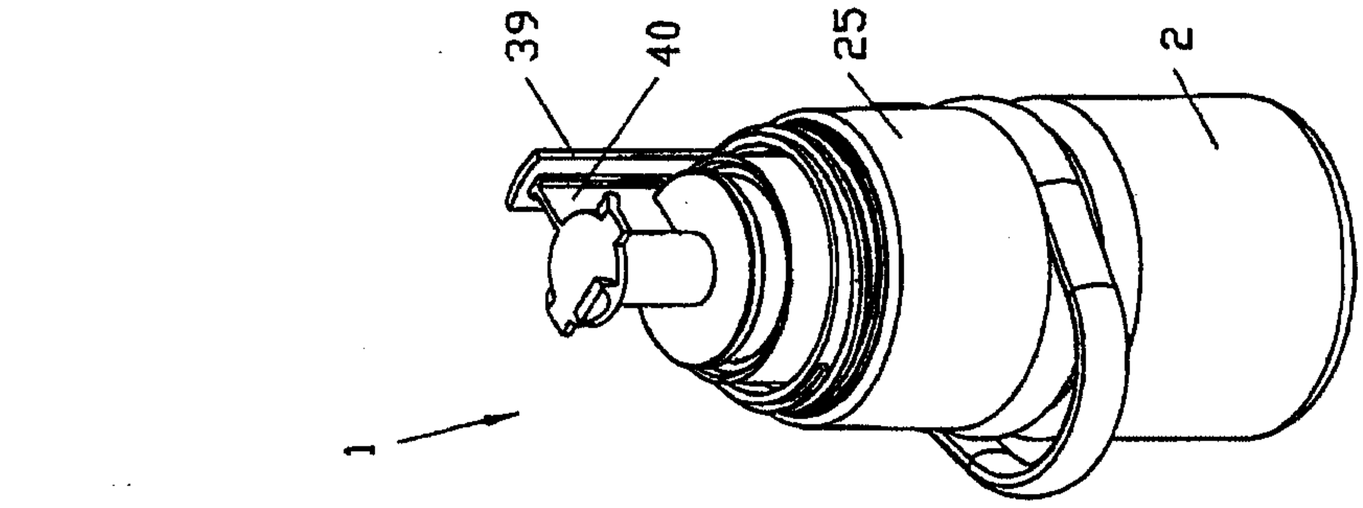


Fig. 4i

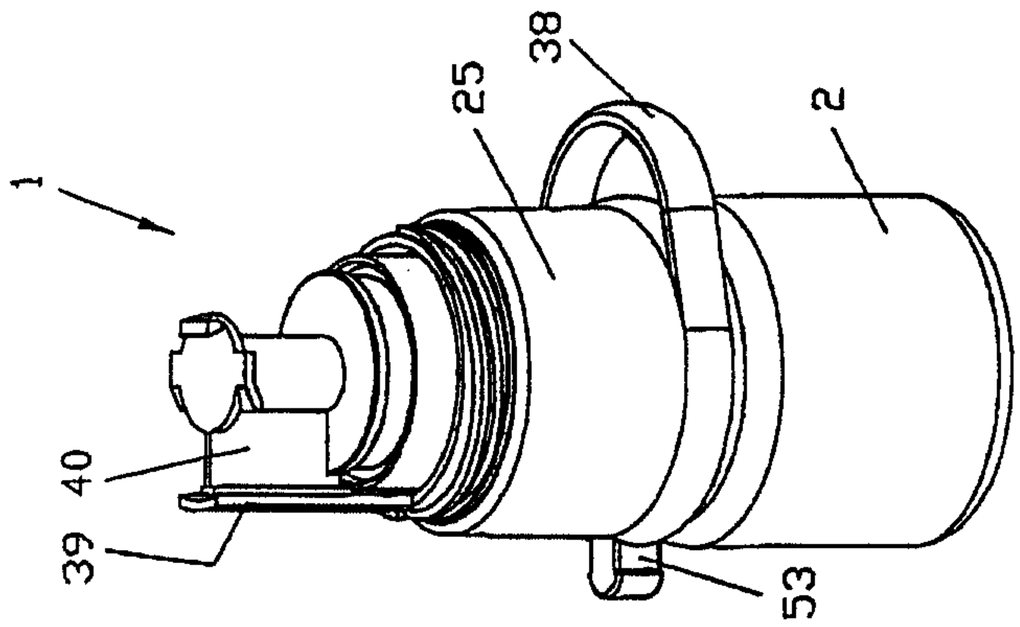


Fig. 4h

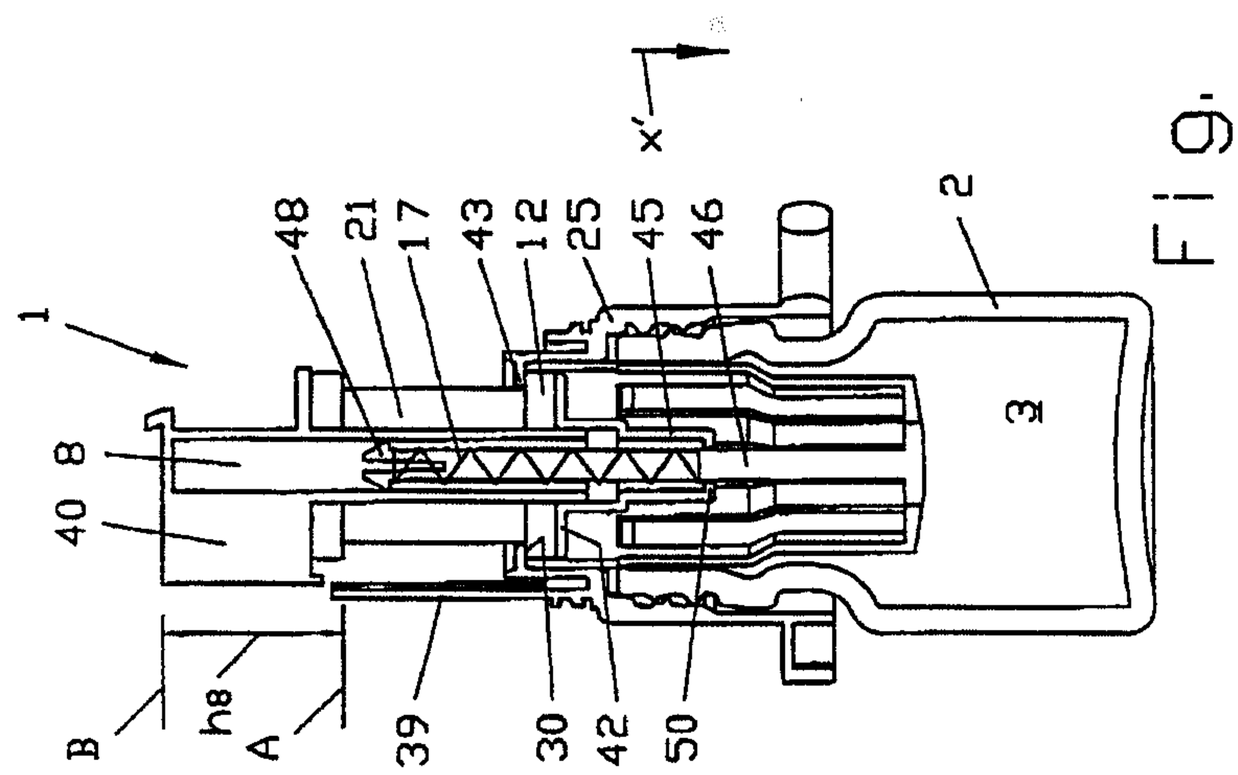


Fig. 4J

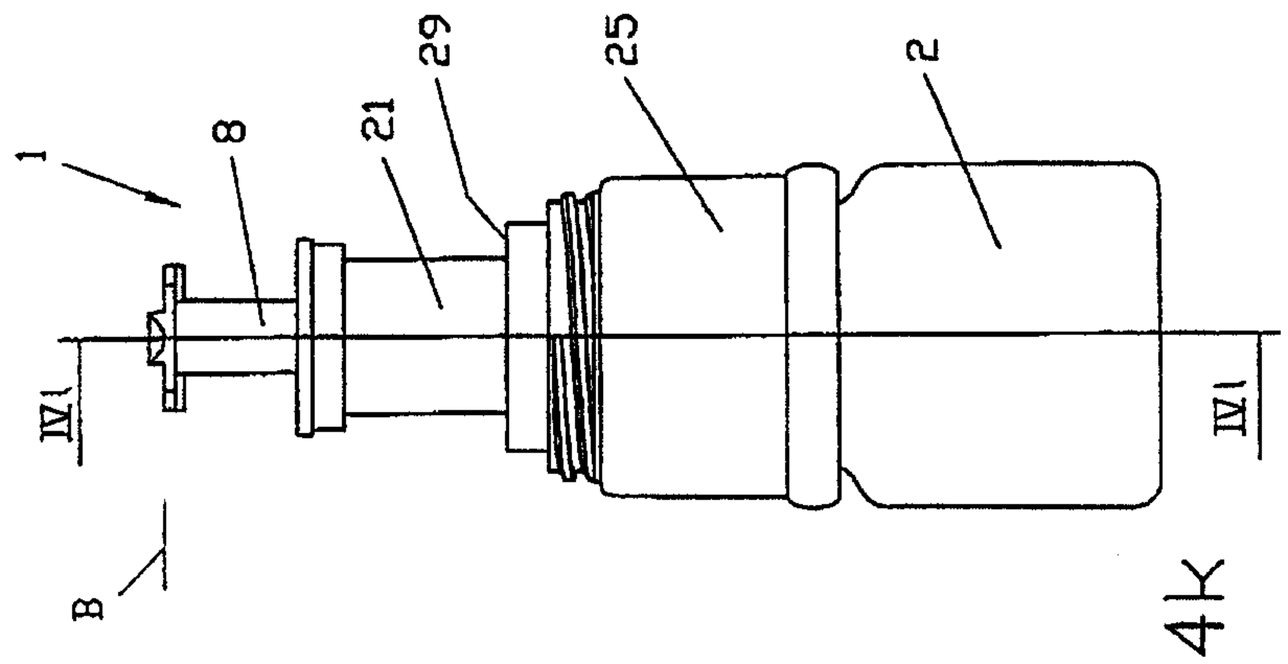


Fig. 4K

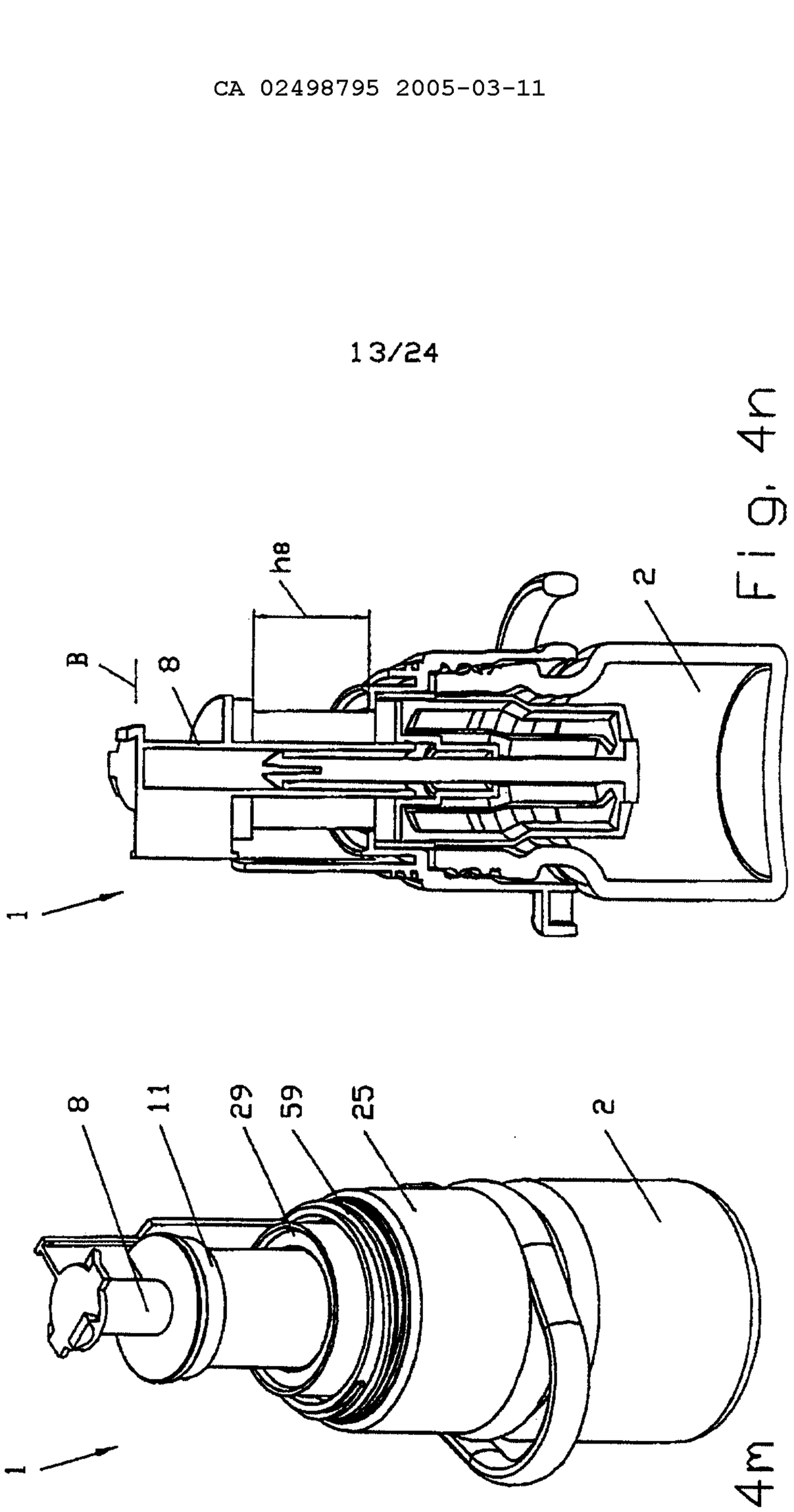


Fig. 4m

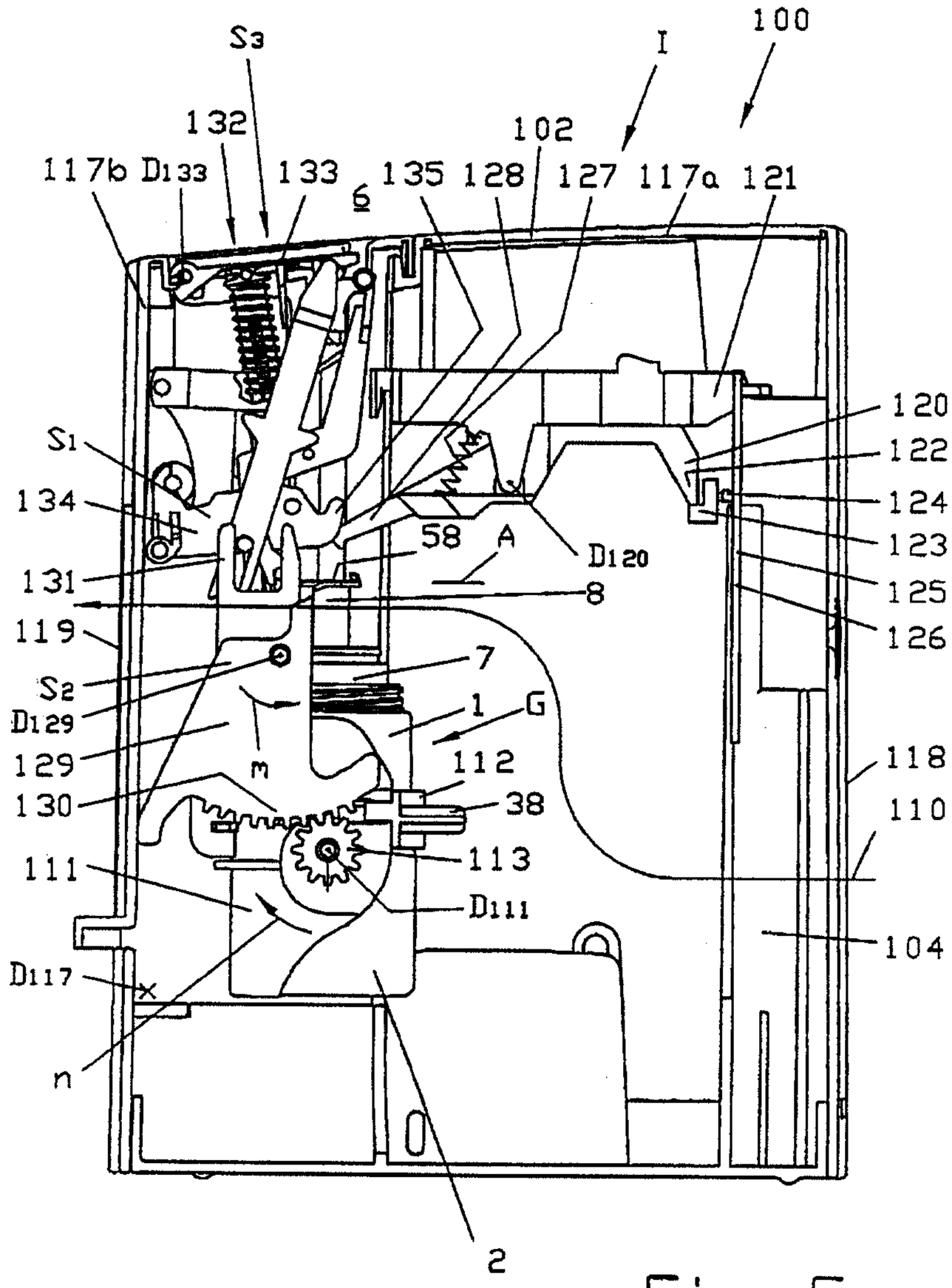

S3
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100
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124
123
125
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S1
134
131
58
A
D120
8
119
S2
D129
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113
D111
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118
D117
n
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2

Fig. 5a

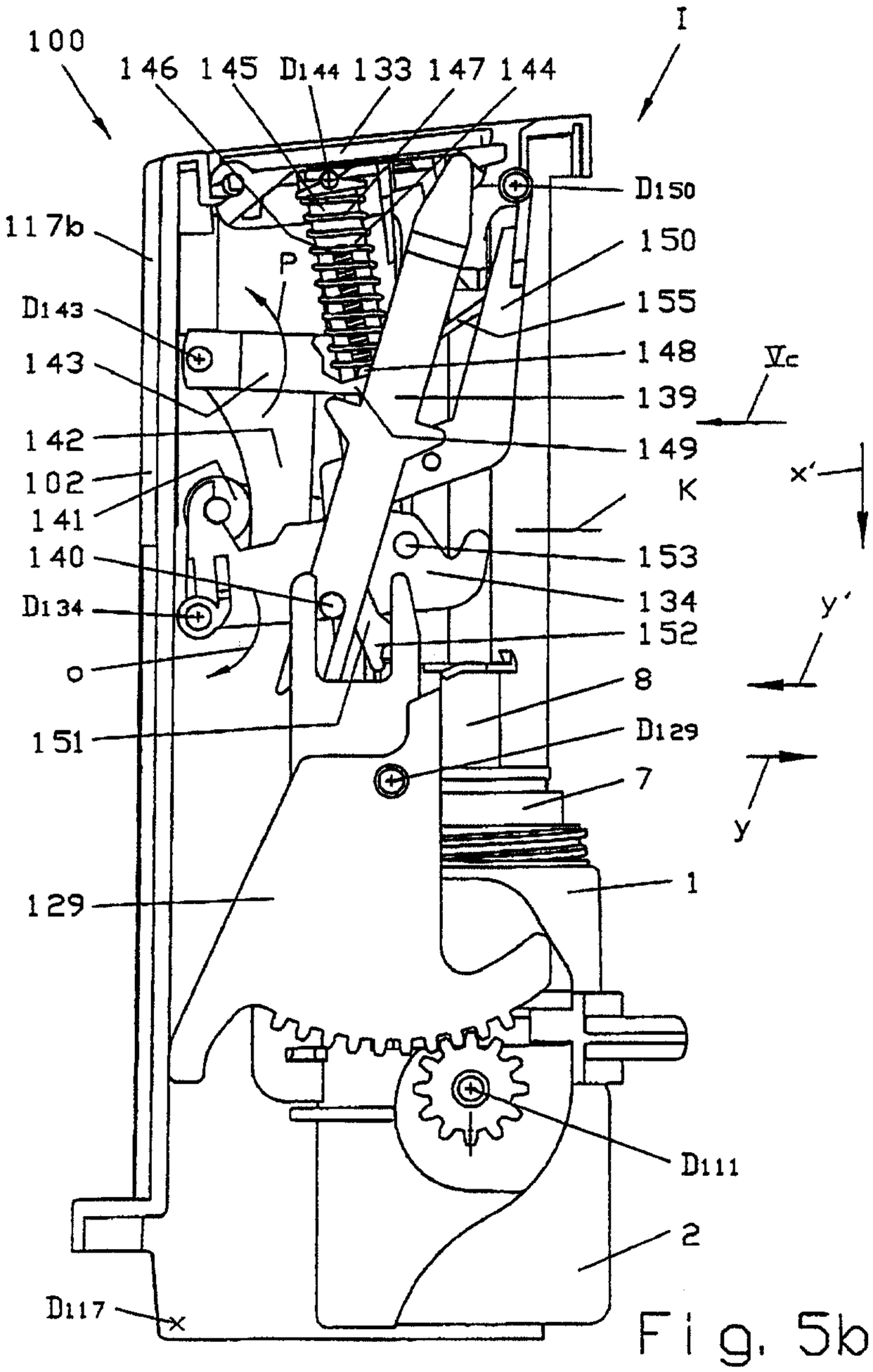

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x'
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K
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D134
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y'
o
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151
D129
7
y
129
1
D111
2
D117

Fig. 5b

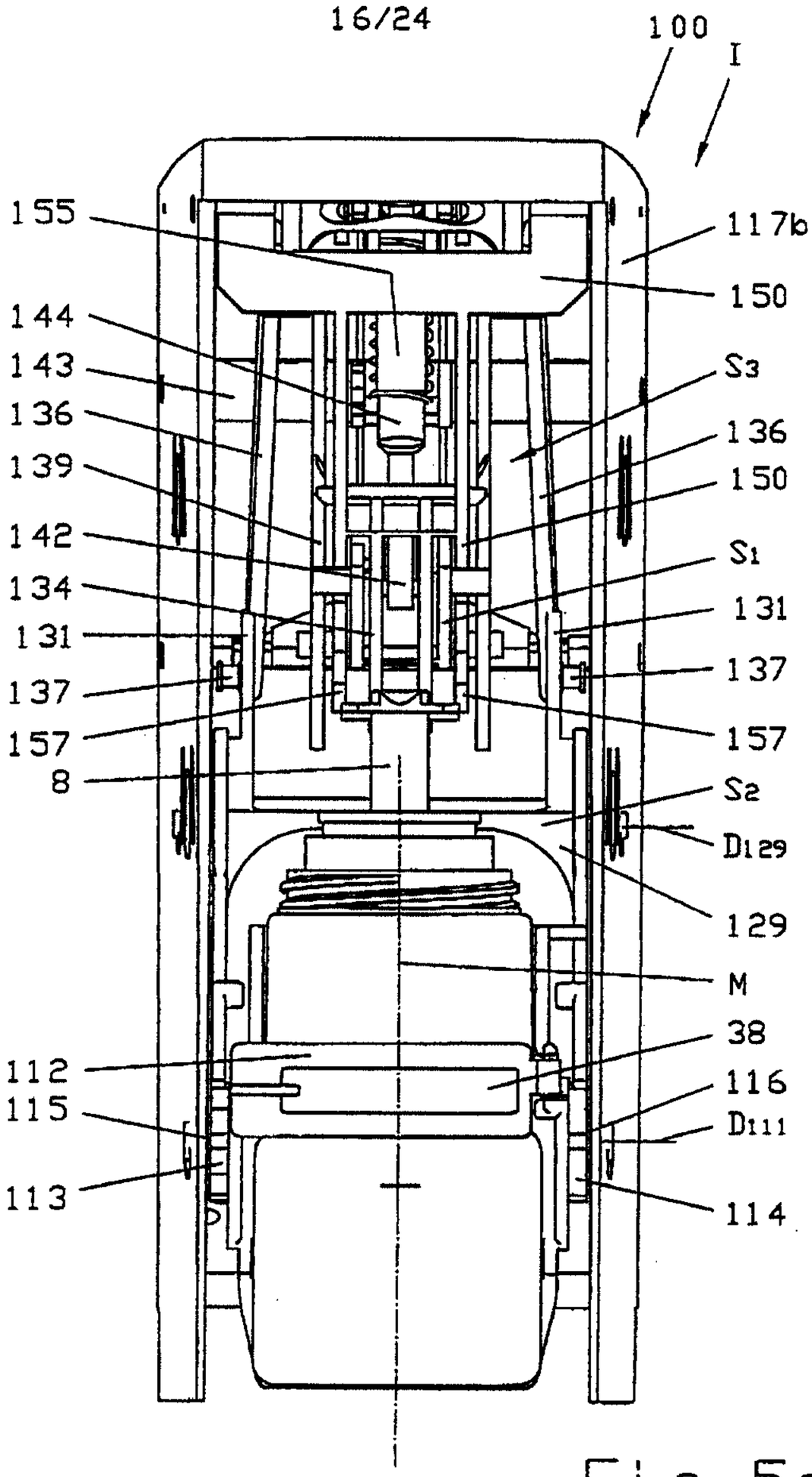

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117b
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S2
D129
129
M
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116
D111
114

Fig. 5c

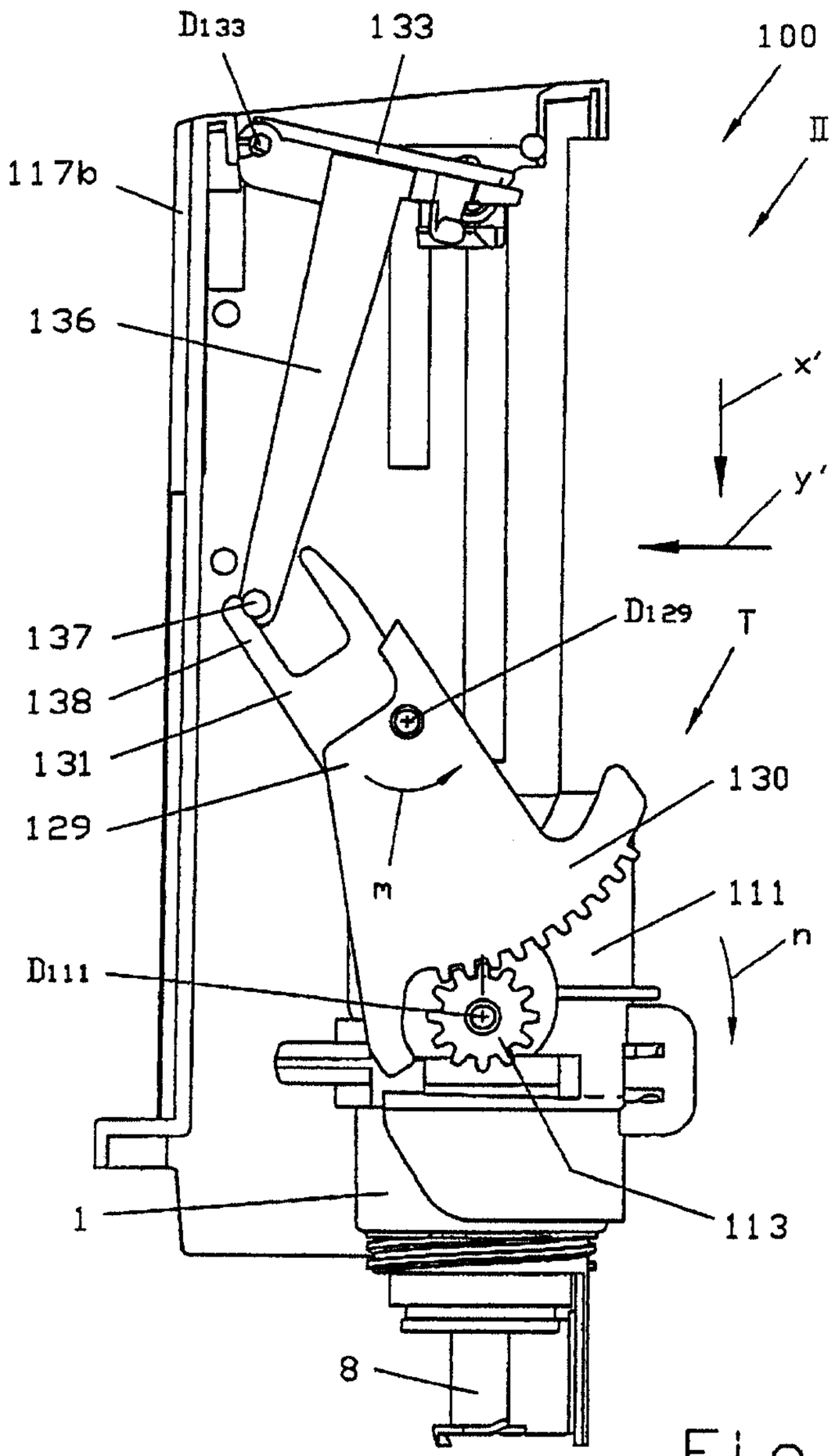

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129
m
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n
D111
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8

Fig. 5d

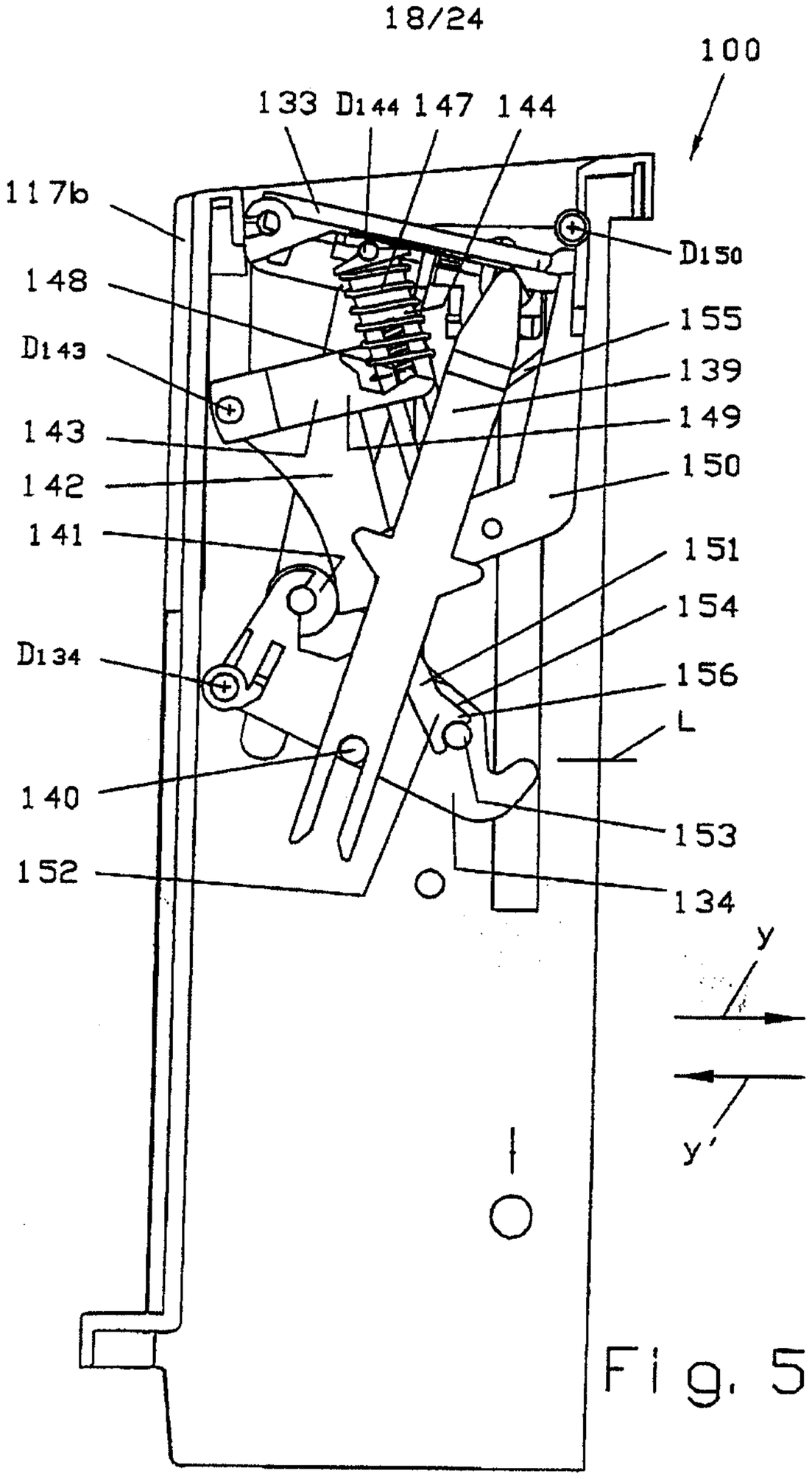

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D134
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152
134
y
y'

Fig. 5e

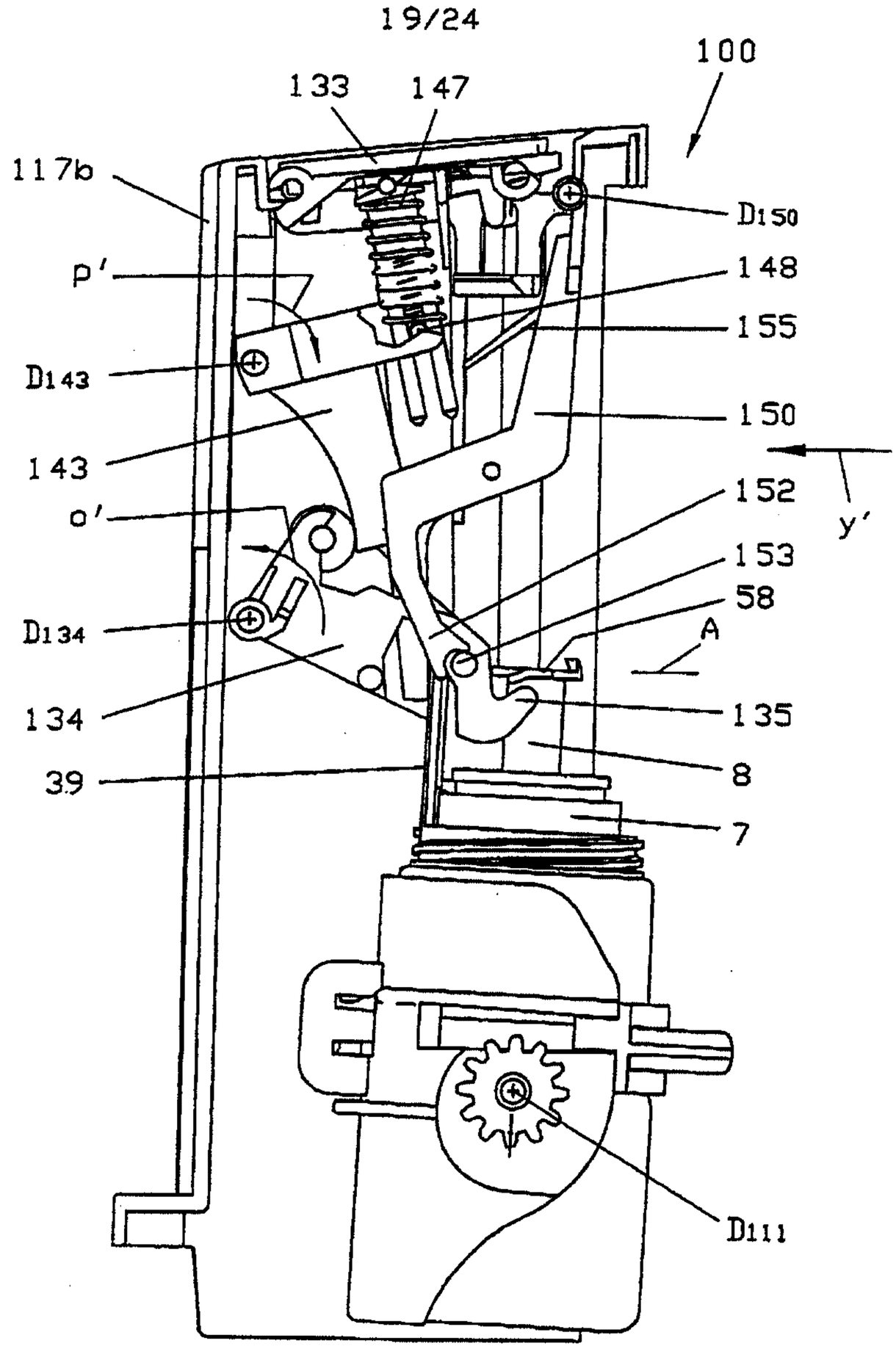

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Fig. 5f

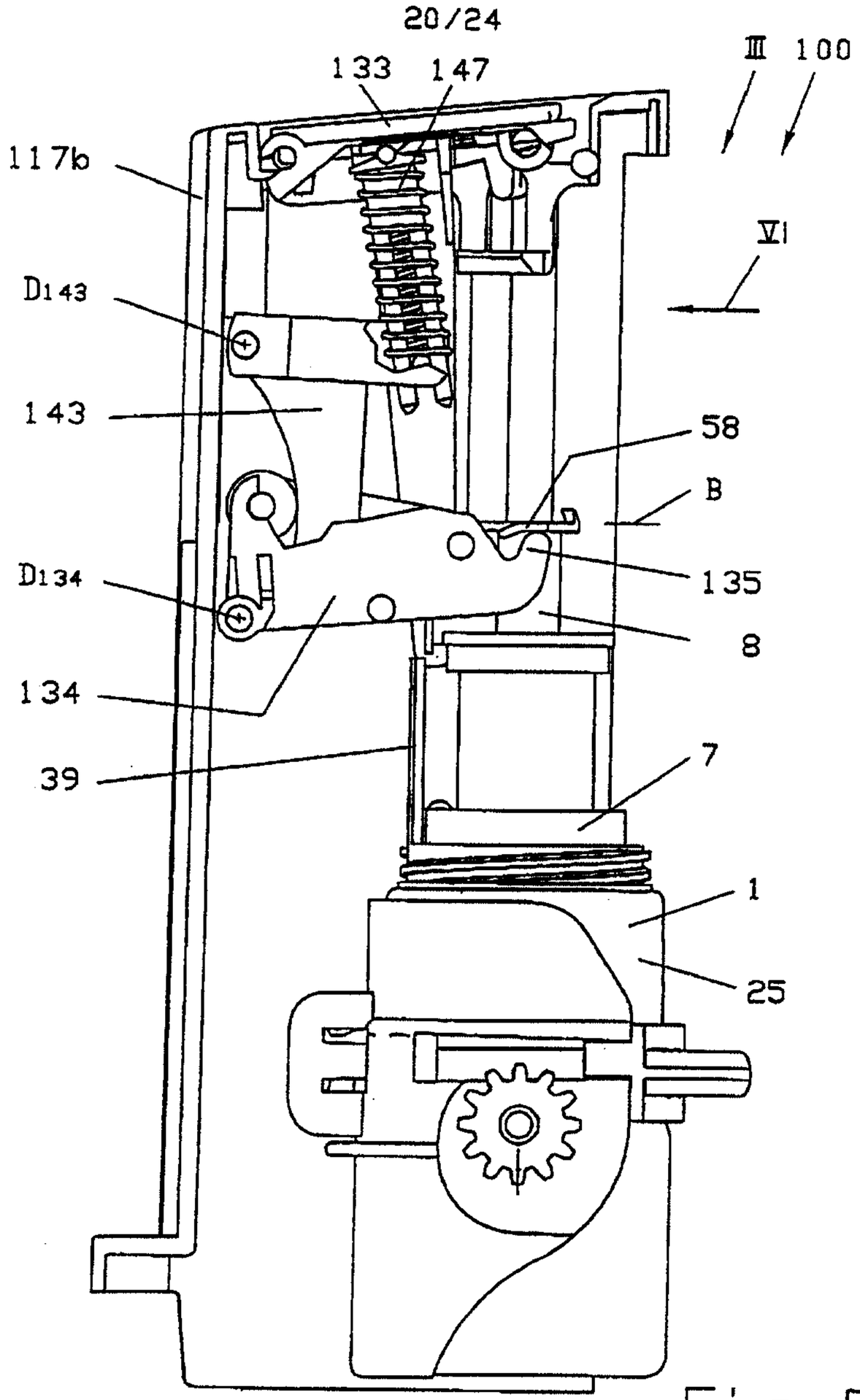


Fig. 5g

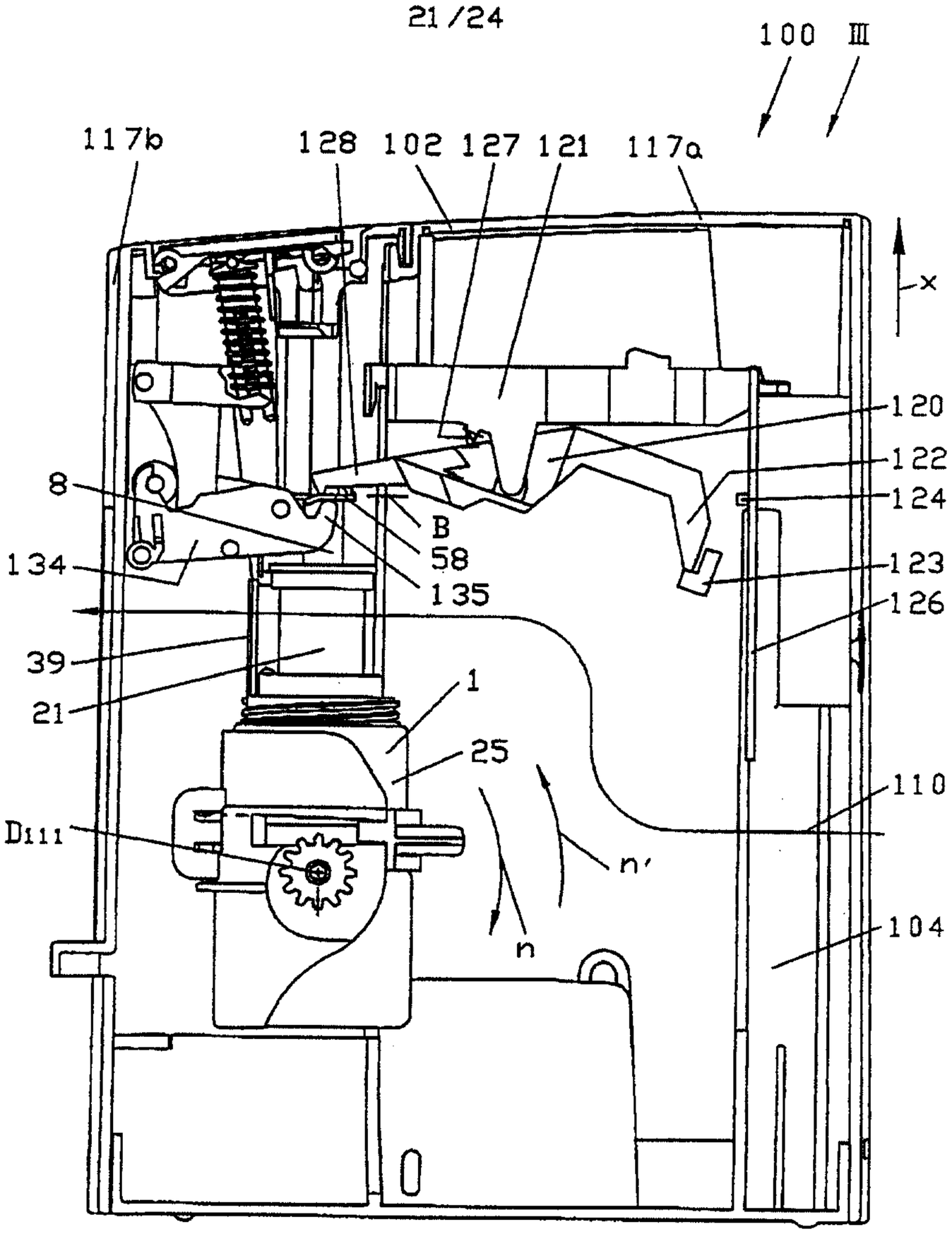

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Fig. 5h

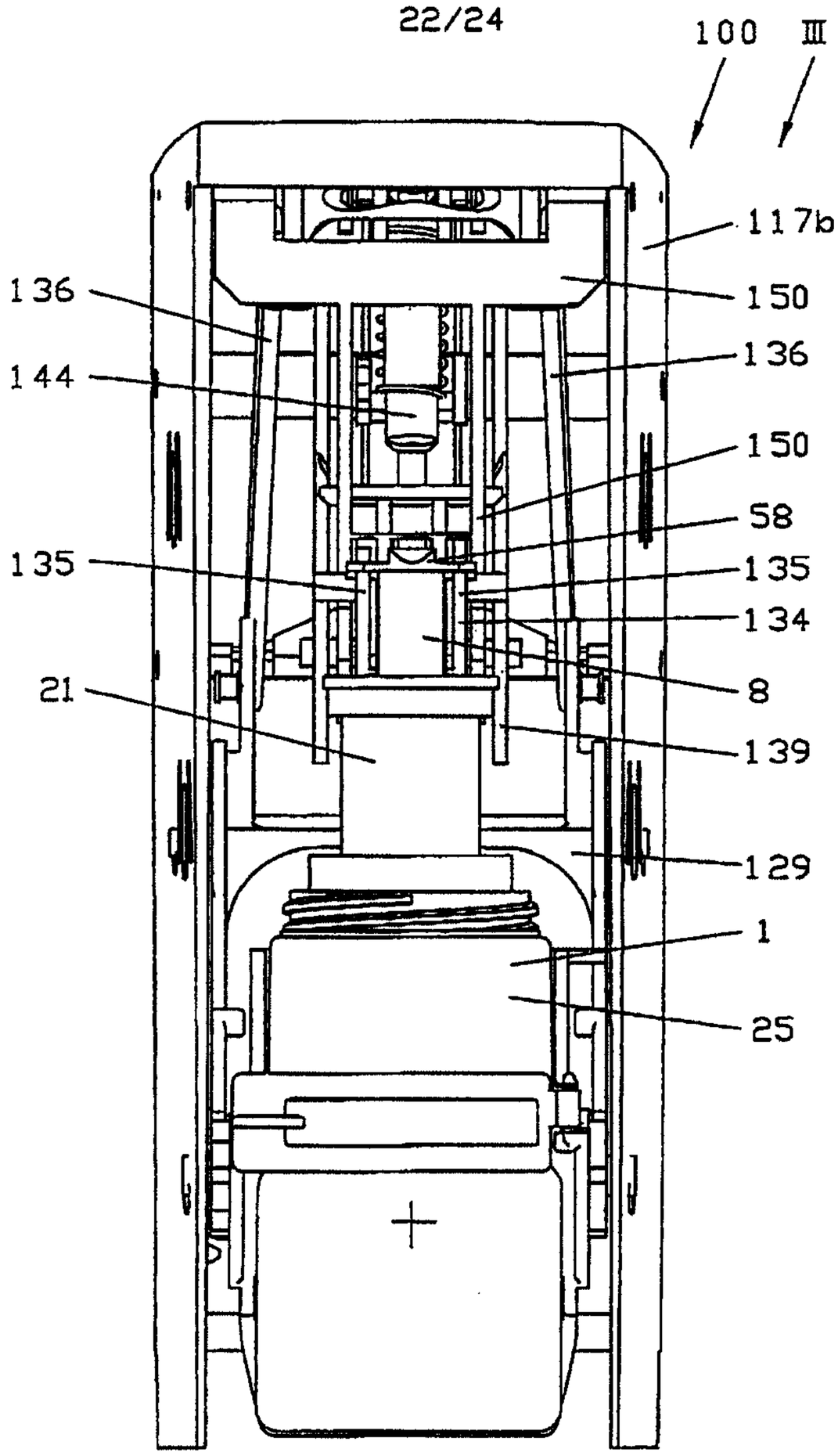


Fig. 5i

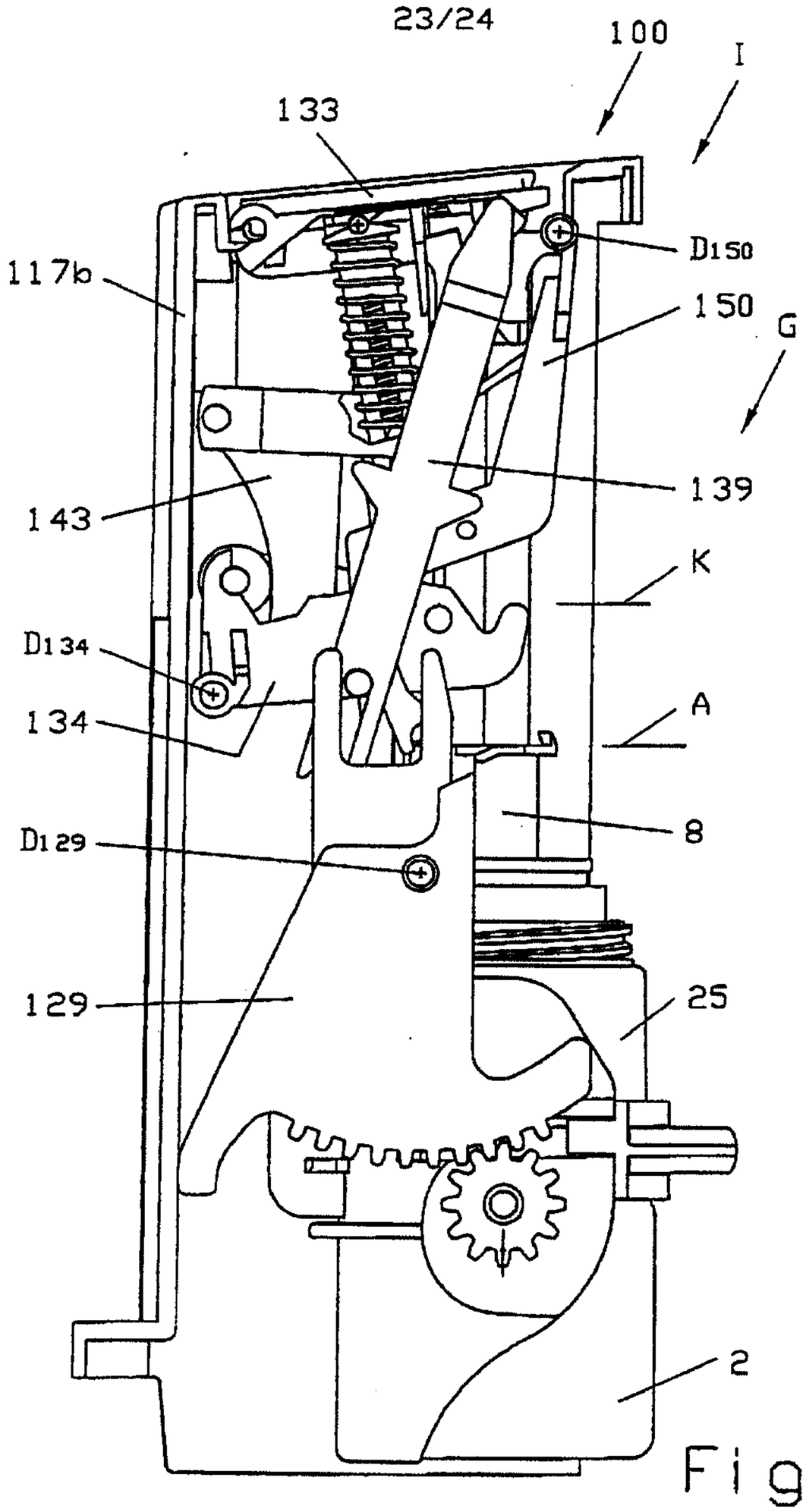


Fig. 5j

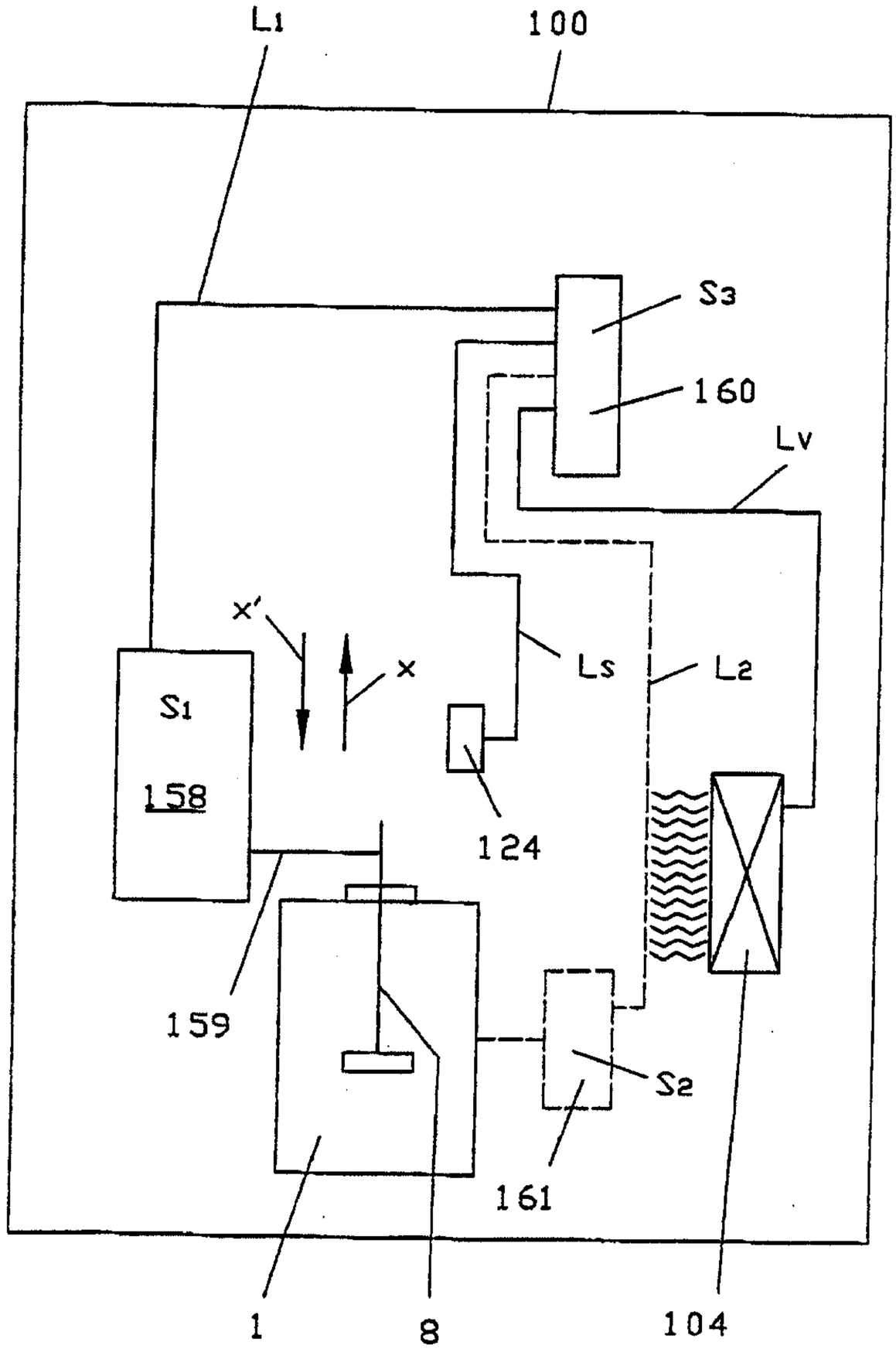
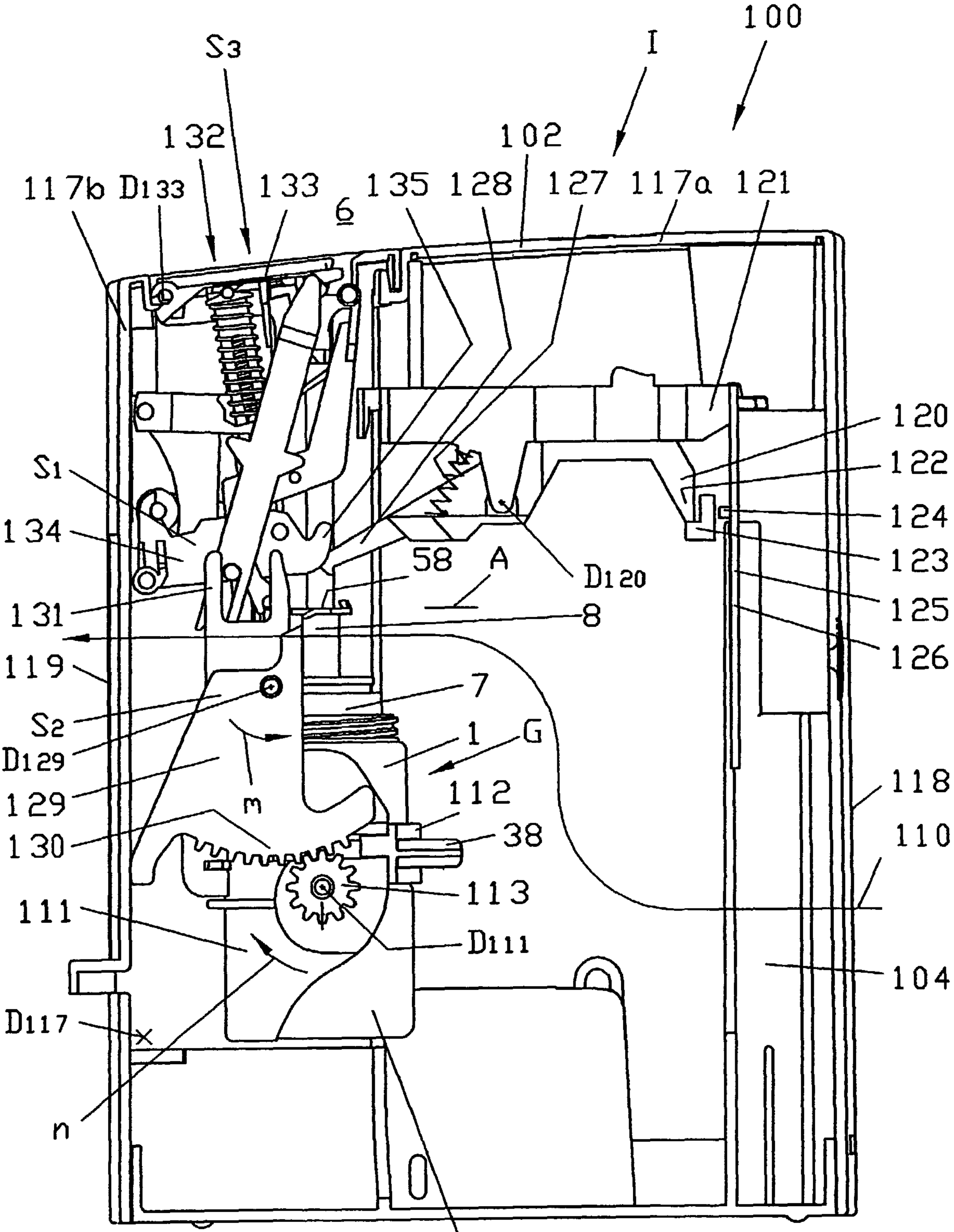


Fig. 6


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