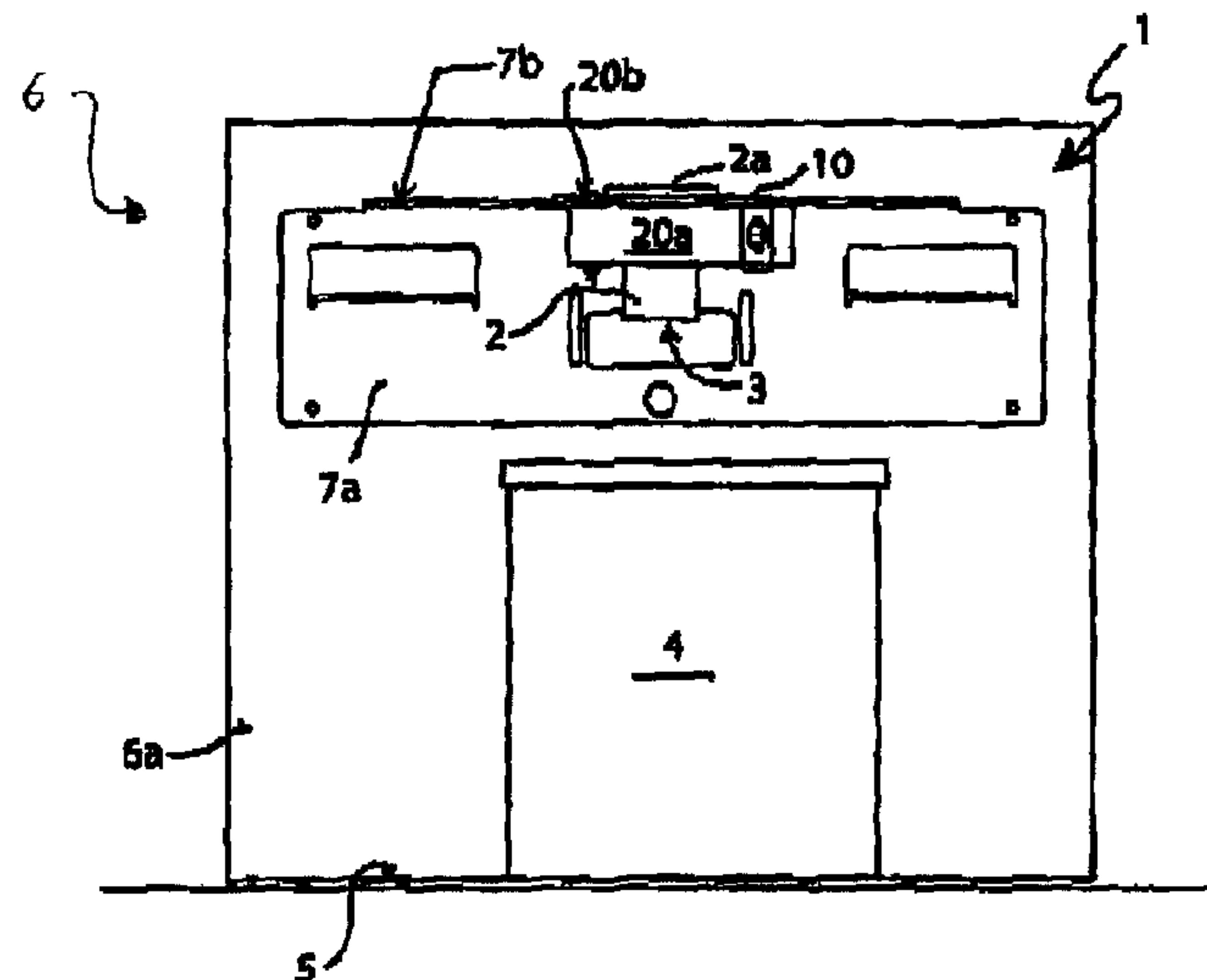




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(54) Titre : SYSTÈME DE DEVERROUILLAGE ET DE DEPLACEMENT D'UNE TÊTE DISTRIBUTRICE DE FLUIDES
(54) Title: SYSTEM FOR RELEASE OR MOVEMENT OF A FLUID-DISPENSING HEAD



(57) Abrégé/Abstract:

A system (1) for release or movement of a fluid-dispensing head (2) positioned within a dispenser (6) of fluids; the system (1) houses the fluid-dispensing head (2), which has a plurality of nozzles (3) for the supply of fluids; the system (1) comprises means (7, 10, 20) for release and movement of the fluid-dispensing head (2) configured for enabling movement of the delivery head (2) between a first position of use, in which the nozzles (3) deliver the plurality of fluids into a container (4), and a cleaning position or second position of use (set facing the operator) or third position of use (facing upwards), distinct from the first position of use, in which they are accessible for being cleaned.



ABSTRACT

A system (1) for release or movement of a fluid-dispensing head (2) positioned within a dispenser (6) of fluids; the system (1) houses the fluid-dispensing head (2), which has a plurality of nozzles (3) for the supply of fluids; the system (1) comprises means (7, 10, 20) for release and movement of the fluid-dispensing head (2) configured for enabling movement of the delivery head (2) between a first position of use, in which the nozzles (3) deliver the plurality of fluids into a container (4), and a cleaning position or second position of use (set facing the operator) or third position of use (facing upwards), distinct from the first position of use, in which they are accessible for being cleaned.

System for release or movement of a fluid-dispensing head

The present invention relates to the field of devices for dispensing fluids and in particular regards a system for
5 release or movement of a fluid-dispensing head.

It is known that fluid-dispensing heads are typically mounted within a closed fluid-supply device. With said dispensing heads there is hence a simultaneous or sequential introduction or supply of a given amount of one or more
10 fluids in a container set underneath them, possibly on a resting surface.

The fluid-dispensing head typically comprises a plurality of supply terminals (or nozzles) distinct from one another, each of which supplies a given fluid, which could, for example, be
15 a colouring agent, a paint, a solvent, an additive, an essence or an aroma.

At the end of the supply cycle, in the case where the supply device is to be left inactive for a given period of time, it is expedient for the fluid-dispensing head to be cleaned from
20 fluid residue, which, by hardening in contact with the external environment over time, may cause clogging of the outlet holes of the nozzles.

Normally, the fluid-dispensing head is fixed, and the fluid-outlet holes are set facing downwards.

25 The cleaning operation is commonly performed manually by an operator, who is forced to bend down or crouch to bring a special cleaning tool up to the nozzles.

Consequently, the action of cleaning requires a plurality of movements by the user, who must clean the fluid-dispensing
30 head working from beneath upwards. The inconvenience of the operation of cleaning of a fluid-dispensing head is encountered in any case even in supply devices of an open type, in which the structure is not completely enclosed in a

casing.

US Patent No. 5,690,252 discloses a dispensing system which utilizes a nozzle assembly including a nozzle block defining a series of recesses for receiving dispense nozzles. A
5 resilient clamp is inserted between the nozzles and compressed so as to expand, clamping the nozzles in position.

US Patent No. 2,835,410 discloses a beverage dispensing apparatus having a nozzle unit for directing various liquid ingredients into a cup or other container.

10 The purpose of the present invention is to provide a system for release or movement of a fluid-dispensing head that will be free from the drawbacks described above.

According to the present invention, a system for release or movement of a fluid-dispensing head is provided as described
15 herein.

The invention will now be described with reference to the annexed drawings, which illustrate a non-limiting example of embodiment thereof and in which:

- Figure 1 illustrates a front view of a system for release
20 or movement of a fluid-dispensing head forming the subject of the present invention;

- Figure 2 and Figure 3 illustrate, respectively, a first perspective view and a second perspective view of the system of Figure 1;

25 - Figure 4 illustrates a side view of the system of Figure 1. With reference to Figure 1, designated as a whole by 1 is a system for release or movement of a fluid-dispensing head.

System for release or movement of a fluid-dispensing head 1 comprises a fluid-dispensing head 2, which is equipped with a
30 plurality of terminals or nozzles 3 adapted to supply a plurality of fluids of different colours in controlled quantities (in terms, for example, of volume or of delivery time) into a container 4 set underneath said head, on a

resting surface of a dispenser 6 of fluids.

Said dispenser 6 typically has a supporting structure 5, on which a user positions the aforesaid container 4.

In detail, nozzles 3 of fluid-dispensing head 2 are arranged
5 on a common surface adjacent to one another and are each connected to a respective duct for supply of the fluid to be dispensed. Substantially, they moreover deliver the respective fluid in a common direction.

Connected to fluid-dispensing head 2 are, on a top part 2a
10 thereof, is a plurality of ducts 2b for introduction of fluids, which are connected to means of their own for supply of the fluids themselves (not illustrated).

Dispenser 6 of fluids is designed in such a way as to get fluid-dispensing head 2 to carry out a pre-determined
15 delivery cycle to obtain a mixture of fluids that, combined together, will enable supply of a final fluid product, the colour of which is the one desired by the customer.

System 1 for movement or release of fluid-dispensing head 2 envisages manual extraction thereof and comprises an L-shaped
20 bracket 7 (head support). In detail, L-shaped bracket 7 is installed within said delivery device 6 in such a way that first surface 7a will be substantially set vertically, whilst, consequently, second surface 7b of L-shaped bracket 7 is set horizontally, parallel to the ground. Fluid-dispensing
25 head 2, which in this case has a cylindrical shape, is mounted in a removable way on second surface 7b of L-shaped bracket 7 through a plate 10 of a slotted type in such a way as to direct the nozzles downwards, i.e., towards the container underlying them.

30 Plate 10 is open on one side in such a way as to enable extraction of head 2 by a user and, in particular, the opening side of plate 10 is oriented towards the access of delivery device 6 in such a way that a user is able to

extract fluid-dispensing head 2 easily for carrying out a cleaning operation on its nozzles 3 to clear away fluid residue. In detail, the slot of plate 10 has a diameter corresponding to the body of fluid-dispensing head 2; top
5 part 2a of fluid-dispensing head 2, instead, has a substantially larger diameter, hence such as to prevent sliding downwards of the fluid-dispensing head itself. In detail, clamping of fluid-dispensing head 2 on L-shaped bracket 7 can be carried out either through a press-block
10 coupling, i.e., through insertion with contrast into the slot of the plate itself, or with the aid of means 20 for clamping fluid-dispensing head 2 in the slot of plate 10.

In detail, said clamping means 20 preferably comprise an element 20a for pressing fluid-dispensing head 2 into the
15 slot, and a pin 20b, to which the aforesaid element 20a is pivoted on an end thereof. Pin 20b has an axis parallel to the direction along which fluid-dispensing head 2 develops. Consequently, system 1 for release or movement of fluid-dispensing head 2 enables the latter to be kept:

- 20 - in a first position of use, in which it is constrained to aforesaid L-shaped bracket 7 and in which it is configured for delivering fluids into container 4; and
- a second position of use, in which it can be oriented manually or with some kind of mechanism in the direction of
25 the operator in such a way as to enable him to clean nozzles 3 at the front.

Alternatively, system 1 for release or movement of a fluid-dispensing head further comprises a servo mechanism for rotation of the aforesaid fluid-dispensing head 2 from the
30 first position of use towards a second position of use, in which nozzles 3 of fluid-dispensing head 2 are set facing the operator.

System 1 for release or movement of the fluid-dispensing

head, in this case, can moreover be configured in such a way as to enable said fluid-dispensing head 2 to access a third position of use, as an alternative to or in combination with the second position of use, in which nozzles 3 -remaining
5 substantially facing opening 6a of delivery device 6 - are oriented substantially upwards.

Finally, system 1 for movement or release comprises means for blocking delivery of fluids from fluid-dispensing head 2; said means enable a greater safety during the operations of
10 cleaning of fluid-dispensing head 2, i.e., when it is in the aforesaid second and/or third position of use. More precisely, when fluid-dispensing head 2 is in the second or third position of use, the fluid cannot be supplied by nozzles 3; instead, only upon reaching the first position of
15 use can the nozzles resume supply of the fluid.

The means for blocking supply can be of a mechanical type (for example, valve means, or again means acting on a system for delivery of the fluid to the nozzles) or of an electrical/electronic type (such as switches, position
20 sensors, or equivalent devices, which then act on the data-processing unit of the supply device) and are typically associated to element 20a. Alternatively, there may be other mechanical blocking and safety devices connected to element 20a.

25 As yet a further alternative, in order to release the blocking means, the same blocking means can be of a push-button kind, positioned on the supply device itself. In this case, when the push-button is depressed, the supply of fluids from the fluid-dispensing head is blocked, and can be resumed
30 only upon release of the aforesaid push-button.

The advantages of the system for release or movement of a fluid-dispensing head so far described are clear in the light of the foregoing description. In particular, it enables in

the first place release or movement of fluid-dispensing head 2 either automatically or manually, providing a user with a greater convenience of the cleaning operation, which no longer requires any contortion on his part in order to get
5 underneath the aforesaid fluid-dispensing head 2.

In the second place, system 1 for release or movement of a fluid-dispensing head moreover prevents, during execution of the cleaning operation, any possible occurrence of movements or supplies of fluid that could be dangerous for the operator
10 himself.

Finally, it is clear that a number of variations, additions, and improvements, which will be obvious to a person skilled in the art, may be made to the device described herein, without thereby departing from the scope of protection of the
15 annexed claims.

In detail, it will be clear that even in the case where the fluid-supply device is not partially enclosed in a casing the effect of greater convenience of cleaning of fluid-dispensing head 2 is not diminished. In fact, even in the case where all
20 the structure is completely accessible, in order to clean fluid-dispensing head 2 it would be necessary to operate in an uncomfortable position. Consequently, the identification of a fluid-supply device of a closed type is not to be understood as in any way limiting for assessing the
25 convenience of use provided by the system forming the subject of the present invention.

CLAIMS

1. A system (1) positioned within an opening/access (6a) of a paint supply device (6); said system (1) housing a fluid-dispensing head (2), which has a plurality of nozzles (3) for the supply of a plurality of fluids of different colours in controlled quantities into a container (4) set underneath said fluid-dispensing head (2) on a resting surface (5) of the paint supply device (6) inside said opening/access (6a); wherein said system (1) comprises releasing/clamping means (7, 10, 20) of said fluid-dispensing head (2) configured for enabling movement of said supply head (2) between a first clamped position of use, wherein said nozzles (3) supply the plurality of fluids into a container (4) and a second extracted position, distinct from said first position of use, wherein said nozzles (3) are accessible for being cleaned; wherein said releasing/clamping means (7, 10, 20) comprises: an L-shaped bracket (7), fixed to said paint supply device (6), having a first surface (7a) set substantially vertically and a second surface (7b) set horizontally, parallel to the ground; a plate (10) housed on said second surface (7b) of said L-shaped bracket (7) and having a recess/slot opened on the side facing the opening/access (6a) of the paint supply device (6) in which the fluid dispensing head (2) is removably mounted in such a way as to direct the nozzles (3) downwards towards the container (4) and also as to enable the manual extraction of the fluid dispensing head (2); and further comprising clamping means (20) for clamping said fluid dispensing head (2) in said recess/slot of said plate (10).

30

2. The system (1) according to claim 1, wherein said clamping means (20) comprise a lever for releasing/clamping

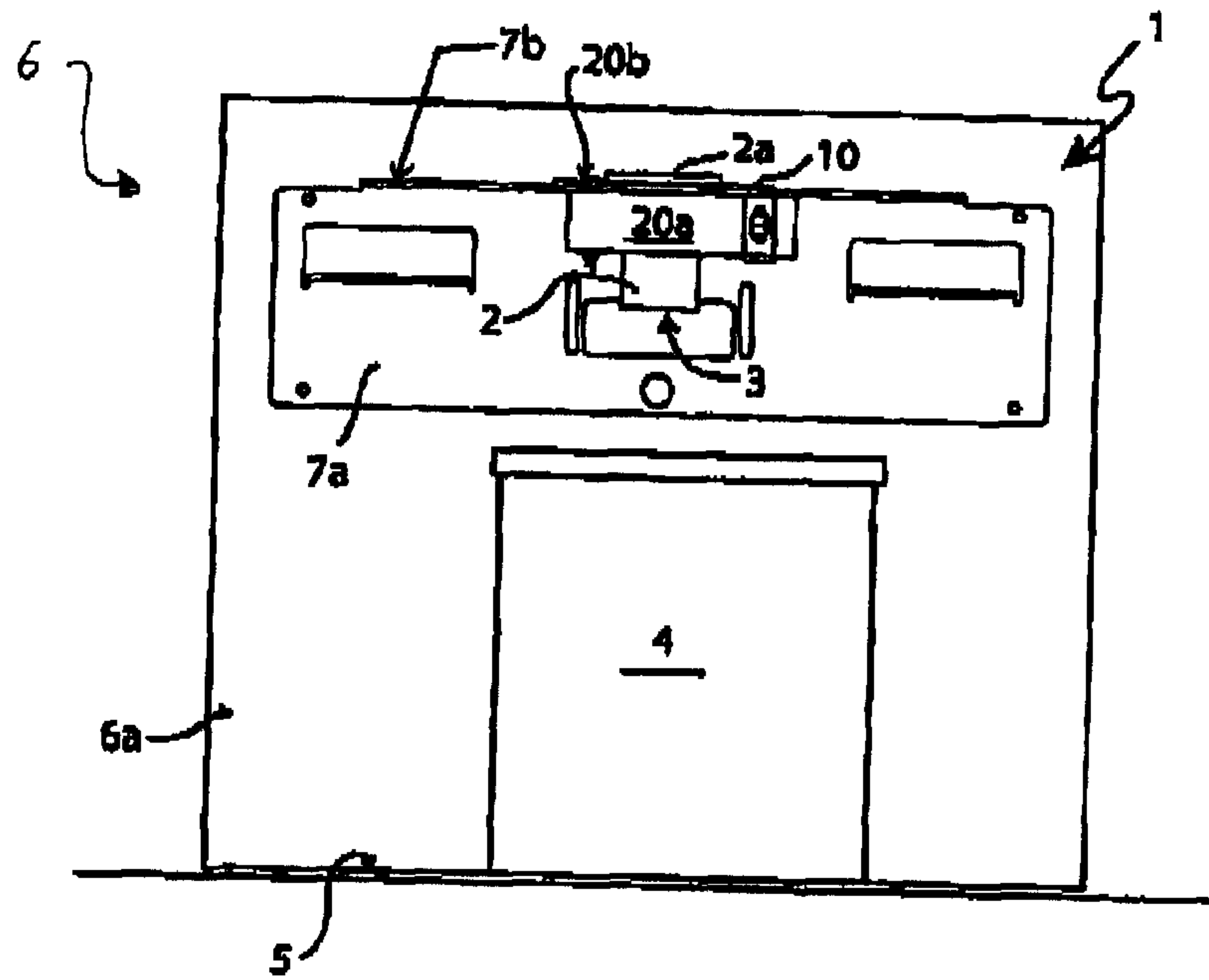
said fluid-dispensing head (2).

3. The system (1) according to claim 1 or 2, further comprising means for blocking delivery of said plurality of
5 fluids by said nozzles (3) when said fluid-dispensing head is in said second extracted position.

4. The system (1) according to claim 1, wherein said clamping means (20) are carried out through a press-block
10 coupling, i.e., through insertion with contrast into the recess/slot of the plate (10) itself.

5. The system (1) according to claim 1, wherein said clamping means comprises an element (20a) for pressing the
15 fluid-dispensing head (2) into the recess/slot, and a pin (20b) on which said element (20a) is pivoted at one end thereof.

1/4

**Fig.1**

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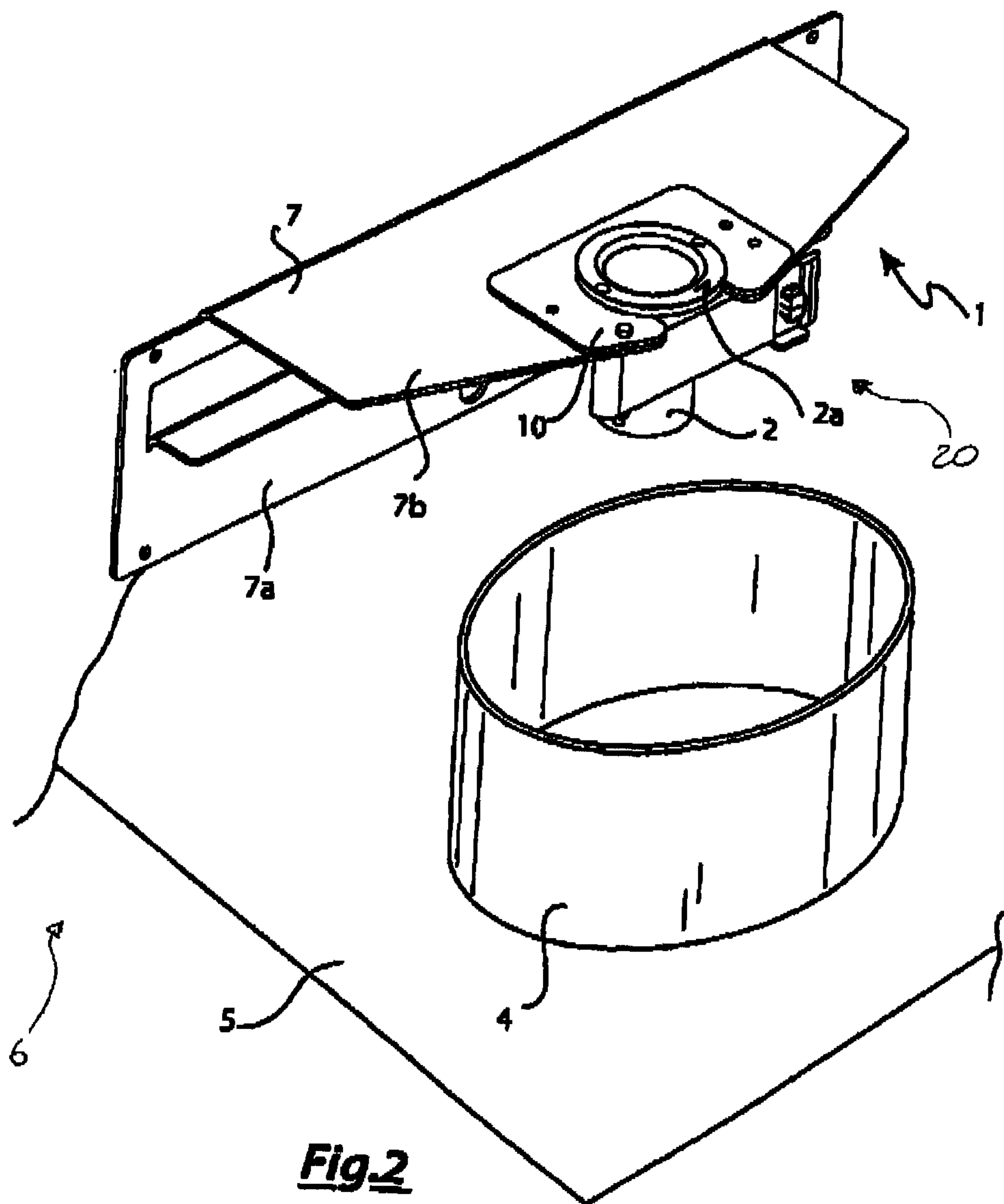


Fig. 2

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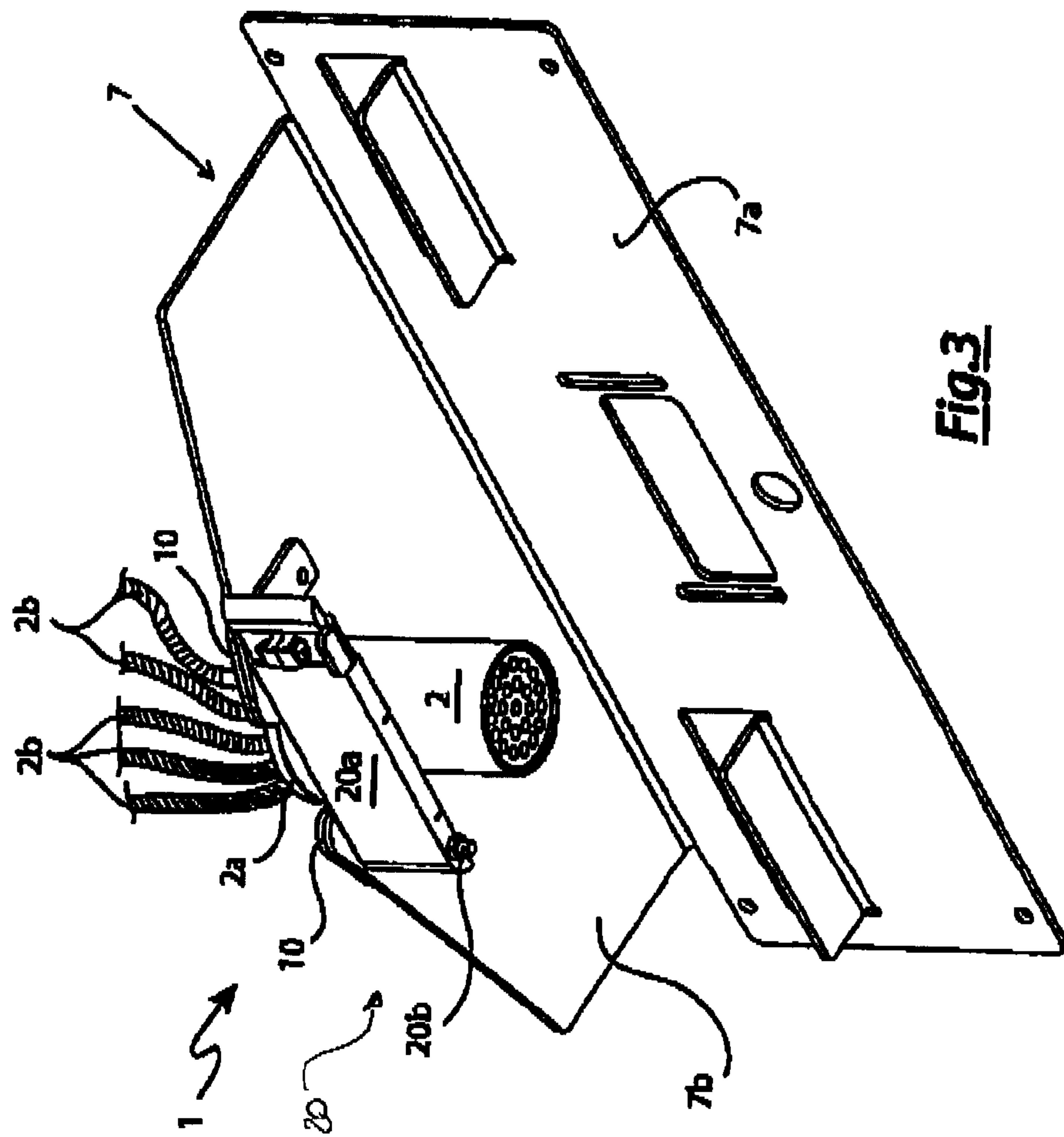


Fig. 3

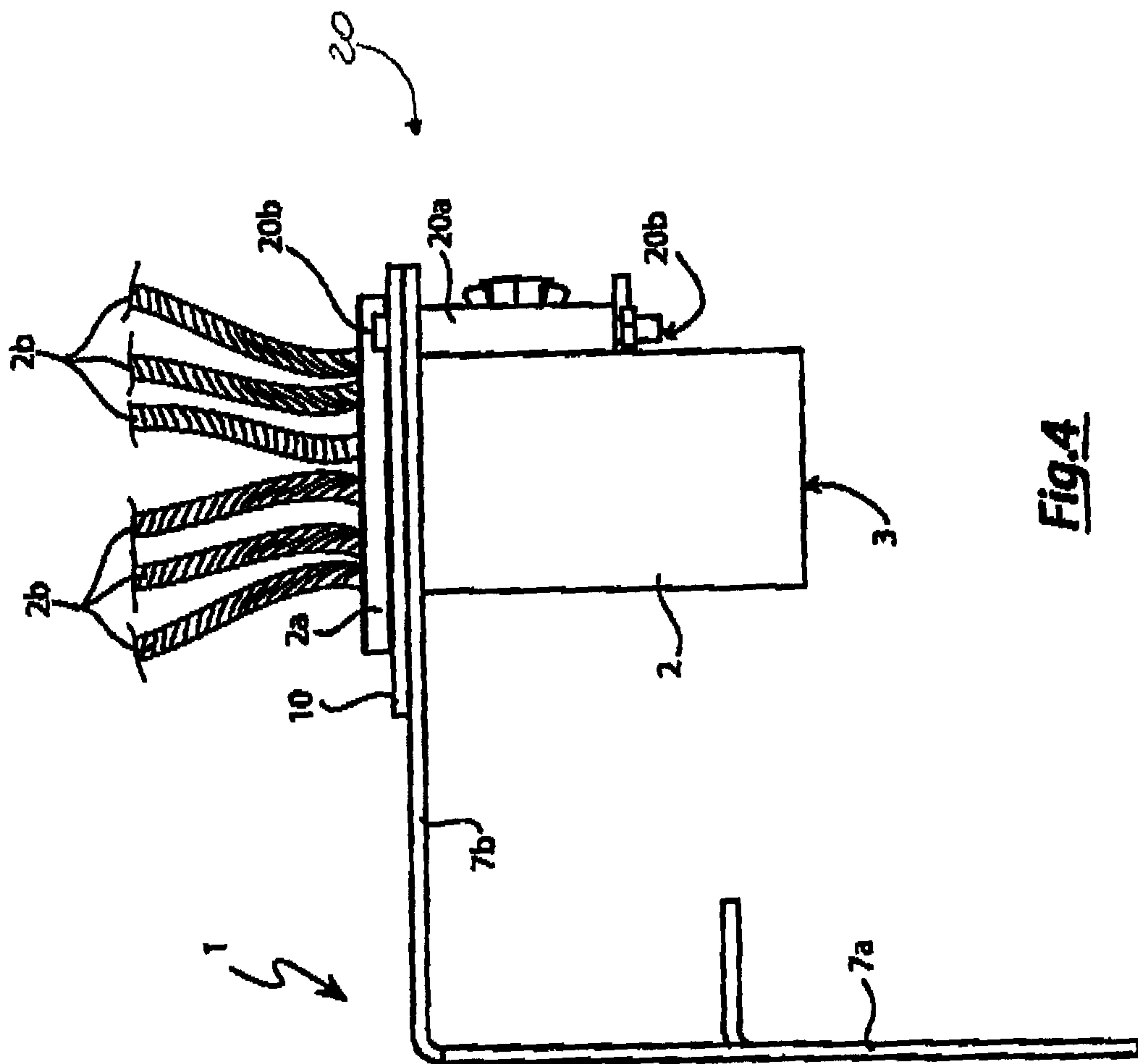


Fig. 4

