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(54) **A dispenser for cleaning products in sheets**

Ausgabevorrichtung für Reinigungsmittel in Blattform

Distributeur pour produit de nettoyage en feuilles

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Description

[0001] The present invention relates to a dispenser for sheets treatable with a cleaning product e.g. a detergent suitable for various uses, such as for cleaning hands, or various types of surfaces.

[0002] The sector for dispensers of paper sheets for personal hygiene in bars, restaurants, offices, etc., workshops and car-washes, currently envisages the use of known devices which generally consist of a supporting body for a continuous roll of paper which is gradually unwound outside the body, through a horizontal slot in the latter, directly by the user, who manually tears off the desired unwound quantity of sheet along the serrated strip located parallel with the slot.

[0003] Alternatively, there are solutions which, by the repeated use of a lever outside the body, allow the unwinding of the desired length of continuous sheet: however, in all of the afore-mentioned solutions, the sheet is the final cleaning element only, that is to say, the drying means, since it is untreated.

[0004] This sector does not currently include devices which allow the easy use of both untreated sheets for various types of cleaning and sheets treated with specific products for a specific type of cleaning, e.g.: cleaning various parts of a motor vehicle, or simply faster hand cleaning.

[0005] It is also known, from document WO A 92 19141, a dispenser of humidified hygienic articles comprising a housing for a continuous roll of untreated paper and a refill consisting of a plurality of reservoirs previously fitted with respective vaporization pumps. The dispenser comprises electric means for actuating said pump outside the housing which forms with the refill an interchangeable assembly.

[0006] The object of the present invention is, therefore, to overcome the afore-mentioned disadvantages by creating a cleaning product selector-dispenser, for sheets which may be untreated or treated with special cleaning products, its structure and cost adapting to all requirements in the cleaning sector, being easy to use and hygienic.

[0007] The technical features of the present invention, in accordance with the aforesaid objects, are clearly illustrated in claim 1 herein, and the advantages of the said features are more clearly described in the detailed description below, with reference to the accompanying drawings, and in which:

- figure 1 is a perspective schematic view of a dispenser for cleaning products in sheets, with some parts cut away to better illustrate others;
- figure 2 is a side view from A in figure 1 of the dispenser shown in figure 1, with some parts cut away to better illustrate others;
- figure 3 is a schematic front view of a first embodiment of the dispenser according to the invention, with some parts cut away to better illustrate others;
- figures 4 and 5 respectively illustrate variations of a detail of a dispenser disclosed, in particular the means for the supply of detergents, both figures being schematic plan views from above, with some parts cut away to better illustrate others;

figure 6 is a schematic side view of another dispenser, with some parts cut away to better illustrate others;

Figure 7 is a schematic side view of a second embodiment of the dispenser according to the invention, with some parts cut away to better illustrate others;

Figure 8 is schematic side view of a scaled up detail from figure 7.

[0008] The dispensers according to Figures 1,2,4-6 do not form part of the invention, but are useful for understanting the invention.

[0009] With reference to the accompanying drawings, and especially figures 1 and 2, the apparatus disclosed is used to dispense products in sheets suitable both for directly cleaning the user and for surfaces to be cleaned with special products.

[0010] As shown in figures 1 and 2, which illustrate a first, simple dispenser, the apparatus basically consists of the following:

- a housing 1 for a container/feeder 2 for a detergent, the container 2 having means 3 for the supply of a dose of detergent;
- a continuous roll 4 of untreated cleaning paper, forming a portion 6 with an initial strip 4a, which extends inside the housing 1 to a slot 9 through which it reaches the exterior; the number 7 denotes unwinding means which act upon the roll 4 in such a way as to position the initial strip 4a at the dosing means 3, i.e.: where it receives the dose of product supplied, and
- means 5 for operating the product dosing means 3, which can be activated by selection outside the housing 1, so that a dose of the product can be supplied to a portion or sheet 6 of paper which is then extracted through the slot 9.

[0011] The afore-mentioned components constitute the basis of the apparatus disclosed, which in a more complex form may include a plurality of containers/feeders 2 within the housing 1, having respective product dosing means 3 (see figure 3). Selection means 8 are envisaged to control the said dosing means 3 by acting upon the latter (as illustrated in figures 3 and 4) in such a way that at least one of them is selected at the actuator means, or vice versa (see figure 5), that is to say, by acting upon the actuator means 5 so that they are brought to the dosing means 3 to be actuated. In both cases, the selection means 8 are controlled from outside the housing 1.

[0012] Returning to the components illustrated in fig-

ures 1 and 2, the dosing means 3 may consist of a mechanical pump 11 to which a mobile lever 12 is attached, defining a product dosing component. The pump 11 has a tube 13 which draws the product from the container/feeder 2 and is held at a given level by a first horizontal support bar 14.

[0013] To allow operation of the mobile lever 12, a vertical lever 15 is envisaged, integral with a second horizontal bar 16, which turns while connected to a lower foot-pedal 19, thus defining the actuator means 5. The second bar 16 may turn through a number of intermediate positions between two extremes: one being inoperative (illustrated by the continuous line in figure 2), where the lever 15 is distanced from the mobile lever 12, and one operative (illustrated by the dashed line in figure 2), where the lever 15 makes contact with and pushes against the product mobile lever 12, causing a dose of the product to be supplied.

[0014] The second bar 16 turns while connected to the wall 1a of the housing 1 and to a wheel 23 with a bearing 24 at the centre.

[0015] On the second bar 16 is a third bar 17, connected to and controlled by a vertical rod 18 which exits the bottom of the housing 1. At the bottom of the housing, the rod 18 is connected to a foot-pedal 19, defining the actuator means 5, designed in such a way that when operated by the user (see arrow F in figure 2), it allows the afore-mentioned rotation of the second bar 16 which supports the lever 15 in the operative position.

[0016] Flexible return means 20, constituting a spring, are inserted between the third bar 17 and the wall 1a, and act upon the third bar 17, allowing it to return to the afore-mentioned inoperative position.

[0017] The movement of the afore-said wheel 23 is synchronised with that of the third bar 17 and the wheel is, in turn, dynamically connected by a figure-of-eight belt 25 to a paper feed roller 26, thus defining the afore-said unwinding means 7. The roller 26 is positioned above the product supply zone and is directly connected to the wheel 23, with whose movement its own motion is synchronised during operation of the foot-pedal 19: in this way, the product is dosed onto the sheet 6 of paper and the sheet 6 is simultaneously fed towards the slot 9 which gives onto the exterior of the housing.

[0018] The bearing 24 is envisaged to allow the third bar 17 to return to the inoperative position without acting upon the wheel 23, which could generate an unwanted inversion in the direction of rotation of the roller 26.

[0019] For a more refined solution than that described above, the roll 4 of paper may be controlled directly by a second foot-pedal 27 located on the opposite side of the housing 1, to obtain the separate feed of sheets 6 of untreated paper.

[0020] An extension of the dispenser described above can be seen in the detail in figure 4, where the dosing means 3 (in this case shown by way of example only as mechanical pumps 11), are supported and fixed to an arched bar 10, the latter being located in the top of the housing and being mobile therein about an operative zone defined by the actuator means 5 (a vertical lever 28 supported by a relative horizontal bar 28b which may be operated directly or indirectly by the user), so that when the selection means 8 are activated (the latter also being defined by a rod 29), at least one of the pumps 11 is opposite the rod 28b.

[0021] Similarly, figure 5 shows a dispenser in which the pumps 11 are supported by a horizontal bar 14 and have an outlet 3a in a direction D, the angle increasing as the distance between the pumps 11 and the centre of the rod 14 increases, able to supply the product at the centre of the sheet 6 of paper: in this case, the actuator means 5 (the vertical lever 28) are activated by the selection means 8 (the rod 28b, which in this case moves horizontally), bringing it to the desired pump 11.

[0022] Figure 6 illustrates a further dispenser. In this case, N dosing means 3 and N actuator means 5 are envisaged, and the selection means 8 act, for example by means of respective electrical activators AE, upon each of the actuator means 5 which may be, for example, small pneumatic pistons 30.

[0023] As already described, the product may be supplied and the sheet 6 fed simultaneously, although the said operations can also be effected in successive stages: for example, figure 3 shows an apparatus which may be used, for example, to dispense sheets for cleaning motor vehicle parts in a car-wash.

[0024] In this case, according to the invention, the various afore-mentioned means are controlled by a single control box 21, in turn connected to a selector panel 31 on the outside of the housing and which can be activated using pushbuttons 32 (of the type which are pressed, or alternatively, the high-tech "NO TOUCH" type).

[0025] Figure 3 also shows the control box 21 which sequentially controls and activates the actuator means 5 for the movement of both the dosing means 3 and the unwinding means 7. In the dispenser illustrated, the dosing means 3 are supported by a horizontal bar 33 whose sliding motion is controlled by the coupling of a rod - rack 34 to a toothed wheel 35, power-driven and controlled by the box 21; the actuator means 5 consist of a vertical lever 37 supported by a bar 36 which is supported in such a way that it may rotate by the housing 1, and at one end has a power-driven wheel 38, so as to allow the afore-mentioned inoperative and operative positions to be reached. The roll 4 may also have a suitable motor 4m for unwinding the sheets 6 of paper.

[0026] The motors of the supply nozzles 3, the bar 36 and roll 4 (respectively denoted by 35m, 36m and 4m) are all controlled by the control box 21, which switches them On or Off depending on the commands given, i.e.: the selections made on the selector panel 31.

[0027] In figure 3, the number 22 denotes heating means located near the container/feeder 2. The said means may consist of one or more heating elements 39 powered by an independent battery 40: the use of such means may be required for some cleaning products

which must be kept at a given temperature, or when the apparatus is used outdoors and in particularly harsh weather conditions.

[0028] In this case, the control box 21 may be connected to both the battery 40 and the containers 2, in order to control the product temperature and level and act accordingly.

[0029] Figure 7 illustrates another embodiment of the dispenser according to the invention, in which the dispenser consists of the said housing 1, in the form of a casing element 100 which houses the reel 4 of cleaning paper which is unwound by a drive roller 101 (usually motor-driven), there being a contrasting idle roller 102 beside it, these components constituting the said unwinding means 7; both the roller 101 and roller 102 being supported by a framework 103.

[0030] On the lower section of the casing element 100, that is to say, on the base, is a plurality of the said detergent containers/feeders 2 containing respective delivery pumps 104. Corresponding tubes 105 leave each of the pumps 104 and supply respective dosing heads 106; the tubes 105 extend in such a way as to pass beyond the portion of paper 6 which stretches from beneath the said framework 103 to the dosing heads 106, the latter being opposite the portion of paper so that they can spray it with the detergent.

[0031] The portion of paper 6 is guided by a substantially vertical plate-chute 107, the top end of which is fixed to the framework 103, whilst the bottom end is slightly shaped so as to guide the portion of paper 6 towards an opening 108 in the casing element 100, from which it can be extracted by the user.

[0032] The framework 103 also supports means 109 for cutting the portion of paper 6, upstream of the said portion with respect to the paper unwinding movement (see arrow F1 in figure 7), and when it is sprayed with detergent.

[0033] The said cutting means 109 (more clearly visible in the detail in figure 8) consist of a power-driven cam 110 which moves a cutting unit horizontally, said unit comprising a plate 110p which supports a horizontal blade 111, both sides of which are covered by a pair of first mobile tappets 112, there being respective springs 114 positioned between the free end of the tappets 112 and the plate 110p. The action of the cam 110 allows the unit to move from a position in which it is distant from the portion of paper 6 (see figure 7), allowing the said portion to unwind downwards, to a closer, portion cutting position (see figure 8), in which the pair of first tappets 112 makes contact with a fixed second pair of tappets 113 positioned on the opposite side of the portion of paper 6 and so that the blade 111 can move forwards and cut the paper: basically, when the mobile tappets 112 make contact with the fixed tappets 113, they lock in position, whilst the springs 114, being compressed under the thrust of the plate 11p, allow the blade 111 to move forwards and cut the portion 6.

[0034] The afore-mentioned cutting means 109 are activated when the feed roller 101 has completed a number of rotations equal to the preset length of the portion of paper 6 to be unwound. For this purpose, the feed roller 101 may be fitted with means 115 for counting the rotations of the feed roller 101 and for activating the cutting means 109. In an initial, simplified embodiment not illustrated herein, the said counting means 115 may consist of a lever which turns together with the roller 101 and with each rotation of the latter makes contact with a switch which activates the cam 110, whilst in a more advanced embodiment, that is to say, where the portions of paper 6 must have a different length each time according to their use, the counting and activation means 115 may consist of an encoder 116, directly connected to the motor which drives the cutting means 109.

[0035] All of the afore-mentioned components are connected to a single electronic control box 117, which is controlled externally by the user to select the desired product with which to impregnate the portion of paper 6 and activate the process for the outfeed of the portion of paper 6.

[0036] Obviously, the dispenser disclosed may be created in various ways, depending on its intended use.

[0037] The basic operation of the dispenser is clear: the user can select the desired sheet by pressing a pushbutton on the control panel. Once the selection is made, the actuator means are activated (mechanically, pneumatically, etc.) and allow the selected supply nozzle to dose the desired product onto the sheet of paper (usually by spraying). The sheet is unwound after or simultaneous to this operation, until it arrives at the slot from which it is extracted by the user, for example, by tearing it off.

[0038] The said apparatus thus fulfils the objectives set, thanks to a simple or orderly configuration of the main parts in accordance with the sector for its application, i.e.: the places in which it will be used.

[0039] It is easy and convenient to'-use, thanks to the few specific automatic operations which allow a high degree of safety.

[0040] The hygiene of the apparatus is guaranteed by the external housing which encloses all of the equipment and the product containers.

Claims

1. A dispenser for sheets treatable with a cleaning product, e.g. a detergent, said dispenser including:

   - a housing (1) comprising a plurality of containers or feeders (2) each for a cleaning product, having respective dosing means (3, 106) for said cleaning product;
   - at least one continuous roll (4) of untreated cleaning paper, defining a portion (6) having an initial strip (4a) and extending inside the housing (1) to a slot (9, 108) giving onto the exterior

of the housing; said roll (4) having unwinding means (7) which act upon the roll in such a way that said portion (6) is positioned at the dosing means (3, 106), that is to say, where it receives the dose of cleaning product supplied;

- actuator means (5, 104) for the product dosing means (3), activated by selection outside the housing (1), allowing the product to be dosed onto the portion (6) of paper; and
- product selection means (8), positioned outside the housing, for selecting at least one dosing means (3, 106);

characterized, in that said selection means (8) control and activate a single control box (21, 117) which controls and activates simultaneously or sequentially the dosing means (3, 106), the actuator means (5, 104) and the unwinding means (7).

2. The dispenser as described in claim 1, **characterized in that** the single control box (21, 117) controls and activates, in such a way that they are synchronized, the dosing means (3, 106), the actuator means (5) and the unwinding means (7).

3. The dispenser as described in claim 1, **characterized in that** the single control box (21, 117) sequentially controls and activates the dosing means (3, 106), the actuator means (5) and the unwinding means (7).

4. The dispenser as described in claim 1, **characterised in that** it comprises heating means (22) located and acting near to at least one of the containers/feeders (2), so as to keep the detergent at a given temperature.

5. The dispenser as described in claim 1 **characterised in that** the actuator means (5, 104) for the dosing means (3, 106) consist of an electrically controlled pump (104) inserted inside the container/feeder (2) and directly connected, by the relative tube (105) to the dosing means (3, 106) said dosing means consisting of a corresponding dosing nozzle (106).

6. The dispenser as described in claim 1 **characterised in that** it comprises means (109) for cutting the portion of paper (6), which means are located close to the means for unwinding (7) the said portion of paper (6), the cutting means being upstream of the initial strip (4a) with respect to a direction of unwinding (F1); said cutting means (109) being synchronised with the unwinding means (7).

7. The dispenser as described in claim 6 **characterised in that** the unwinding means (7) consist of a power-driven roller (101) and **in that** the cutting means (109) are connected to and synchronised with the said roller by means means (115) for counting the roller (101) rotations and for the activation of the said cutting means.

Patentansprüche

1. Ausgabevorrichtung für mit einem Reinigungsmittel behandelbare Folien, zum Beispiel ein Detergens, wobei die genannte Ausgabevorrichtung wie folgt enthält:

- ein Gehäuse (1), enthaltend eine Anzahl von Behältern oder Speisern (2), jeder für ein Reinigungsmittel, welche jeweilige Dosiermittel (3, 106) für das genannte Reinigungsmittel beinhalten;
- wenigstens eine kontinuierliche Rolle (4) von unbehandeltem Reinigungspapier, beschreibend einen Abschnitt (6) mit einem Anfangsstreifen (4a) und sich in das Innere des Gehäuses (1) bis zu einem Schlitz (9, 108) erstrekkend, der nach ausserhalb des Gehäuses führt; wobei die genannte Rolle (4) mit Abwickelmitteln (7) versehen ist, welche auf die Rolle auf solche Weise wirken, dass der genannte Abschnitt (6) an den Dosiermitteln (3, 106) positioniert wird, das heisst dort, wo er die zugeführte Dosis von Reinigungsmittel erhält;
- Antriebsmittel (5, 104) für die Dosiermittel (3) des Produktes, aktiviert durch einen Schalter ausserhalb des Gehäuses (1), welche die Dosierung des Produktes auf dem Abschnitt (6) von Papier erlauben; und
- Produktwahlmittel (8), positioniert ausserhalb des Gehäuses, zur Wahl von wenigstens einem Dosiermittel (3, 106);

dadurch gekennzeichnet, dass die genannten Wahlmittel (8) einen einzigen Schaltkasten (21, 117) steuern und aktivieren, welcher die Dosiermittel (3, 106), die Antriebsmittel (5, 104) und die Abwickelmittel (7) steuert und aktiviert.

2. Ausgabevorrichtung nach Patentanspruch 1, **dadurch gekennzeichnet, dass** der einzige Schaltkasten (21, 117) die Dosiermittel (3, 106), die Antriebsmittel (5) und die Abwickelmittel (7) auf solche Weise steuert und aktiviert, dass diese synchronisiert sind.

3. Ausgabevorrichtung nach Patentanspruch 1, **dadurch gekennzeichnet, dass** der einzige Schaltkasten (21, 117) die Dosiermittel (3, 106), die Antriebsmittel (5) und die Abwickelmittel (7) aufeinanderfolgend steuert und aktiviert.

4. Ausgabevorrichtung nach Patentanspruch 1, **da-**

durch gekennzeichnet, dass sie Heizmittel (22) enthält, angeordnet und wirkend dicht an wenigstens einem der Behälter/Speiser (2), so dass das Reinigungsmittel auf einer bestimmten Temperatur gehalten wird.

5. Ausgabevorrichtung nach Patentanspruch 1, **dadurch gekennzeichnet, dass** die Antriebsmittel (5, 104) für die Dosiermittel (3, 106) aus einer elektrisch gesteuerten Pumpe (104) bestehen, die in den Behälter/Speiser (2) eingesetzt und durch das entsprechende Rohr (105) direkt an die Dosiermittel (3, 106) angeschlossen ist, wobei die genannten Dosiermittel aus einer entsprechenden Dosierdüse (106) bestehen.

6. Ausgabevorrichtung nach Patentanspruch 1, **dadurch gekennzeichnet, dass** sie Mittel (109) zum Abschneiden des Abschnittes (6) von Papier enthält, welche Mittel dicht an den Mitteln (7) zum Abwickeln des genannten Abschnittes (6) von Papier angeordnet sind, wobei sich die Schneidmittel im Verhältnis zu einer Abwickelrichtung (F1) stromaufwärts des Anfangsstreifens (4a) befinden; und wobei die genannten Schneidmittel (109) mit den Abwickelmitteln (7) synchronisiert sind.

7. Ausgabevorrichtung nach Patentanspruch 6, **dadurch gekennzeichnet, dass** die Abwickelmittel (7) aus einer angetriebenen Rolle (101) bestehen, und dadurch, dass die Schneidmittel (109) an die genannte Rolle angeschlossen und mit dieser synchronisiert sind, und zwar mit Hilfe von Mitteln (115) zum Zählen der Umdrehungen der Rolle (101) und zur Aktivierung der genannten Schneidmittel.

Revendications

1. Un distributeur de feuilles pouvant être traitées avec un produit de nettoyage, un détergent par exemple, ledit distributeur comprenant :

- un boîtier (1) contenant une pluralité de récipients ou alimentateurs (2) destinés chacun à un produit de nettoyage et pourvus de moyens respectifs (3, 106) de dosage du produit de nettoyage en question ;
- au moins un rouleau continu (4) de papier de nettoyage non traité, définissant une portion (6) ayant une extrémité initiale (4a) et se développant à l'intérieur du boîtier (1) jusqu'à une fente (9, 108) débouchant à l'extérieur de ce même boîtier ; ledit rouleau (4) étant pourvu de moyens de déroulement (7) qui agissent sur ce même rouleau de manière à positionner ladite portion (6) au niveau des moyens de dosage (3, 106), c'est-à-dire, là où elle reçoit la dose de produit de nettoyage alimenté ;
- des moyens (5, 104) d'actionnement des moyens (3) susmentionnés de dosage du produit, pouvant être activés par sélection à l'extérieur du boîtier (1) pour permettre la distribution de la dose de produit sur la portion (6) de papier ; et
- des moyens (8) de sélection du produit, placés à l'extérieur du boîtier et destinés à sélectionner au moins un des moyens de dosage (3, 106) susmentionnés ;

ledit distributeur étant **caractérisé en ce que** lesdits moyens de sélection (8) commandent et activent une unique unité de commande (21, 117) qui commande et active simultanément ou séquentiellement les moyens de dosage (3, 106), les moyens d'actionnement (5, 104) et les moyens de déroulement (7).

2. Le distributeur selon la revendication 1, **caractérisé en ce que** ladite unique unité de commande (21, 117) commande et active, de manière à ce qu'ils soient synchronisés, les moyens de dosage (3, 106), les moyens d'actionnement (5) et les moyens de déroulement (7).

3. Le distributeur selon la revendication 1, **caractérisé en ce que** ladite unique unité de commande (21, 117) commande et active séquentiellement les moyens de dosage (3, 106), les moyens d'actionnement (5) et les moyens de déroulement (7).

4. Le distributeur selon la revendication 1, **caractérisé en ce qu'**il comprend des moyens de chauffage (22) placés et agissant à proximité d'au moins un des récipients ou alimentateurs (2) de manière à maintenir le détergent à une température donnée.

5. Le distributeur selon la revendication 1, **caractérisé en ce que** lesdits moyens (5, 104) d'actionnement des moyens de dosage (3, 106) sont constitués par une pompe (104) à commande électrique, introduite à l'intérieur du récipient ou alimentateur (2) et directement reliée, par l'intermédiaire d'un tuyau (105) correspondant, à ces mêmes moyens de dosage (3, 106), lesdits moyens de dosage consistant en une buse de dosage (106) correspondante.

6. Le distributeur selon la revendication 1, **caractérisé en ce qu'**il comprend des moyens (109) destinés à couper la portion de papier (6), lesquels moyens de coupe sont situés à proximité des moyens (7) de déroulement de ladite portion de papier (6) en amont de l'extrémité initiale (4a) par rapport à une direction (F1) de déroulement ; lesdits moyens de coupe (109) étant synchronisés avec lesdits

moyens de déroulement (7).

7. Le distributeur selon la revendication 6, **caractérisé en ce que** lesdits moyens de déroulement (7) sont constitués par un rouleau motorisé (101) et **en ce que** lesdits moyens de coupe (109) sont reliés à et synchronisés avec ce même rouleau par l'intermédiaire de moyens (115) destinés à compter les rotations du rouleau (101) en question et à activer ces mêmes moyens de coupe.

FIG1

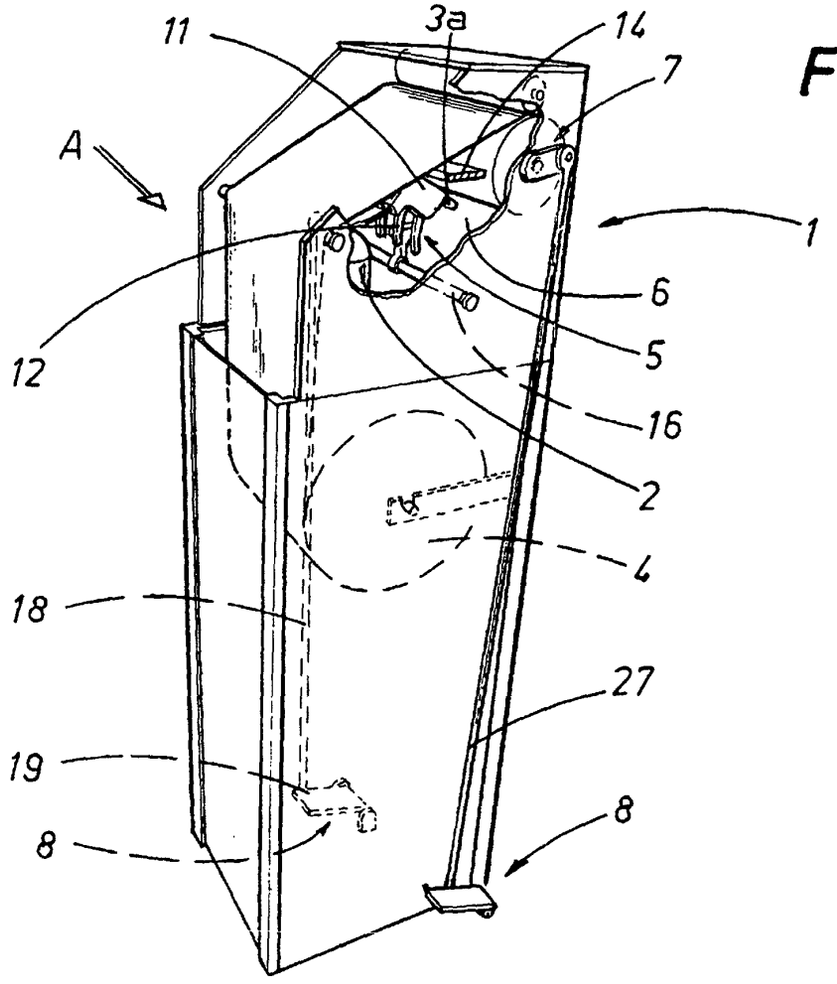


FIG 4

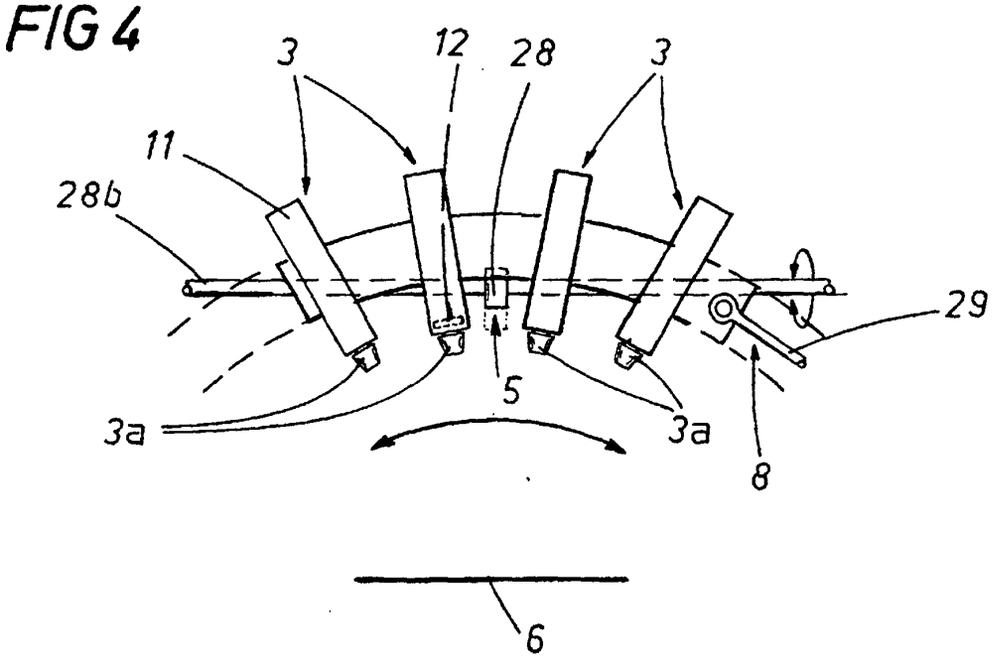
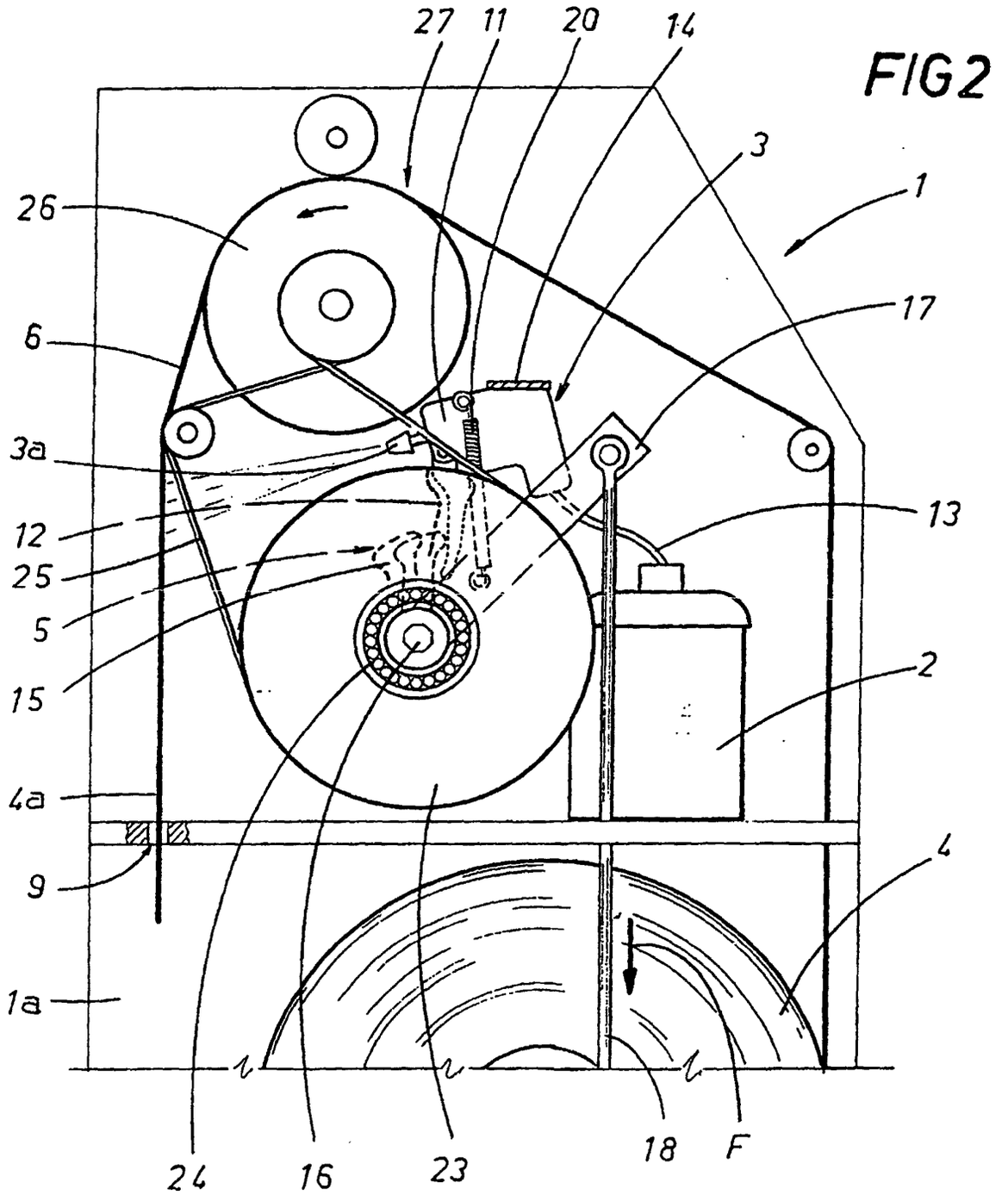


FIG2



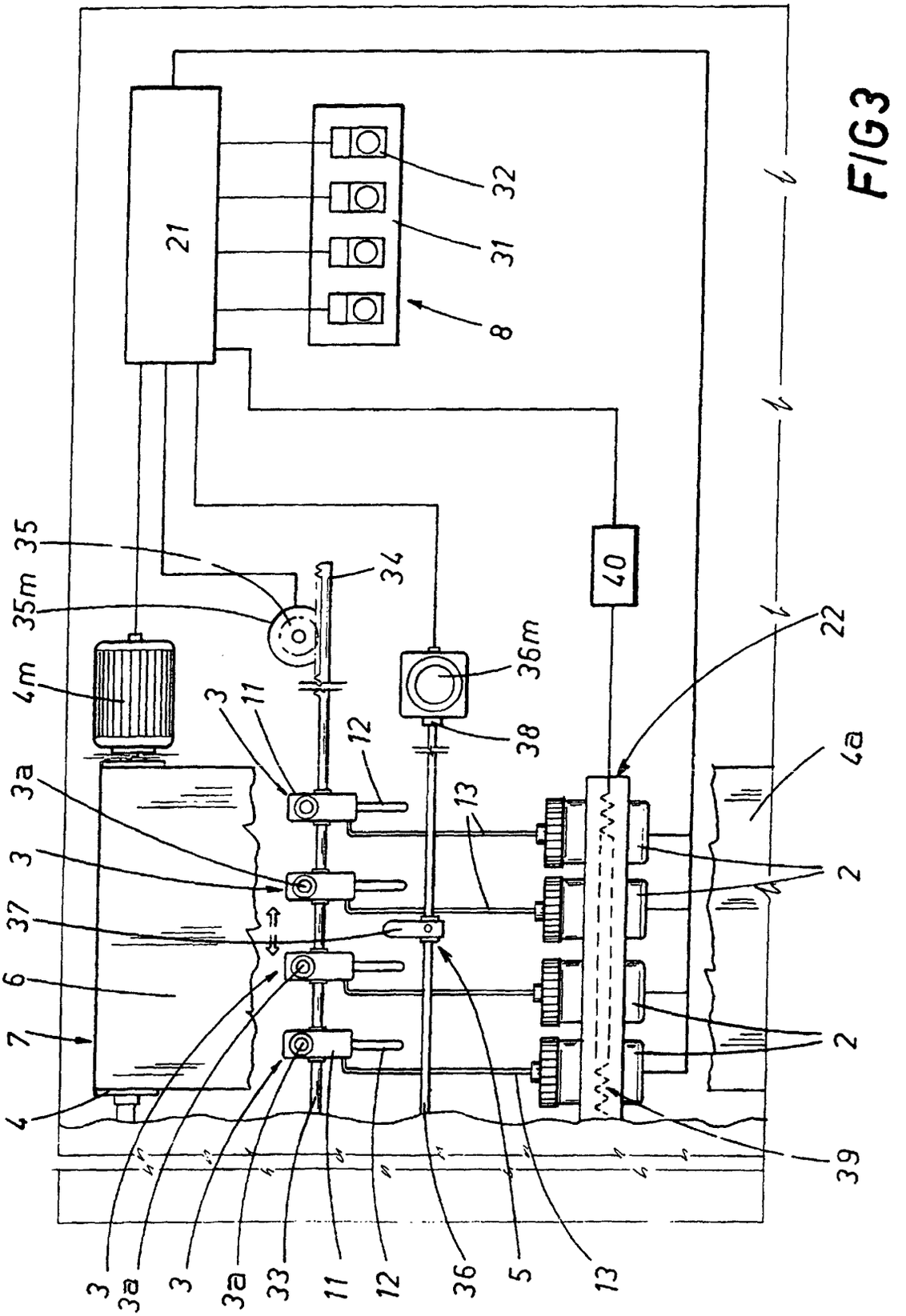


FIG3

FIG 6

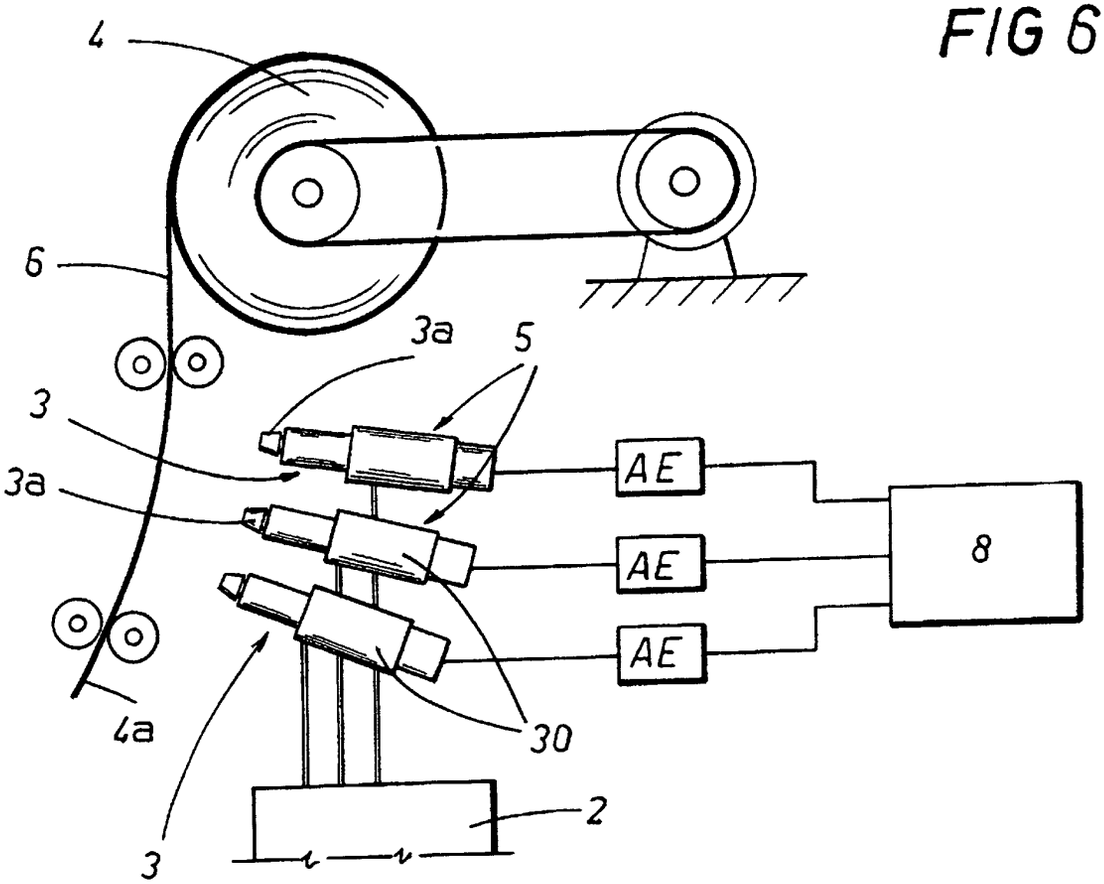


FIG 5

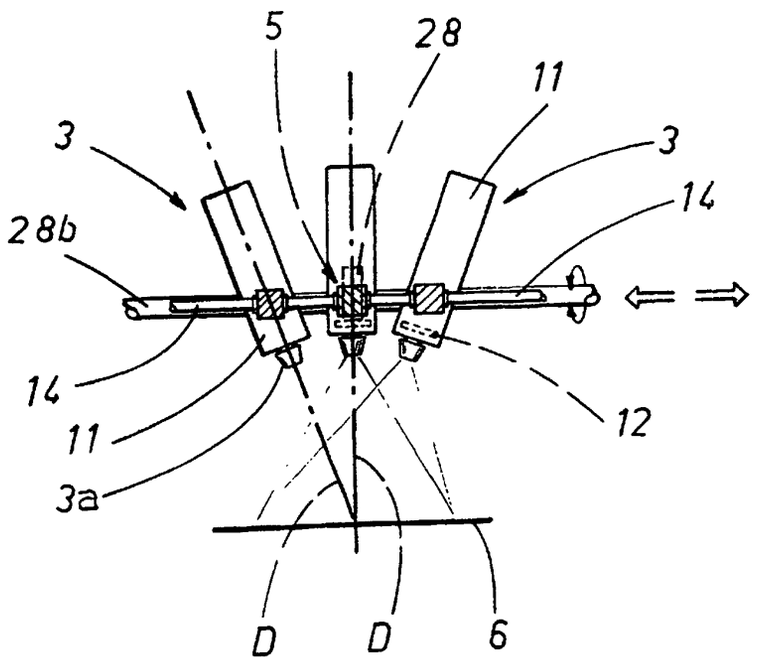
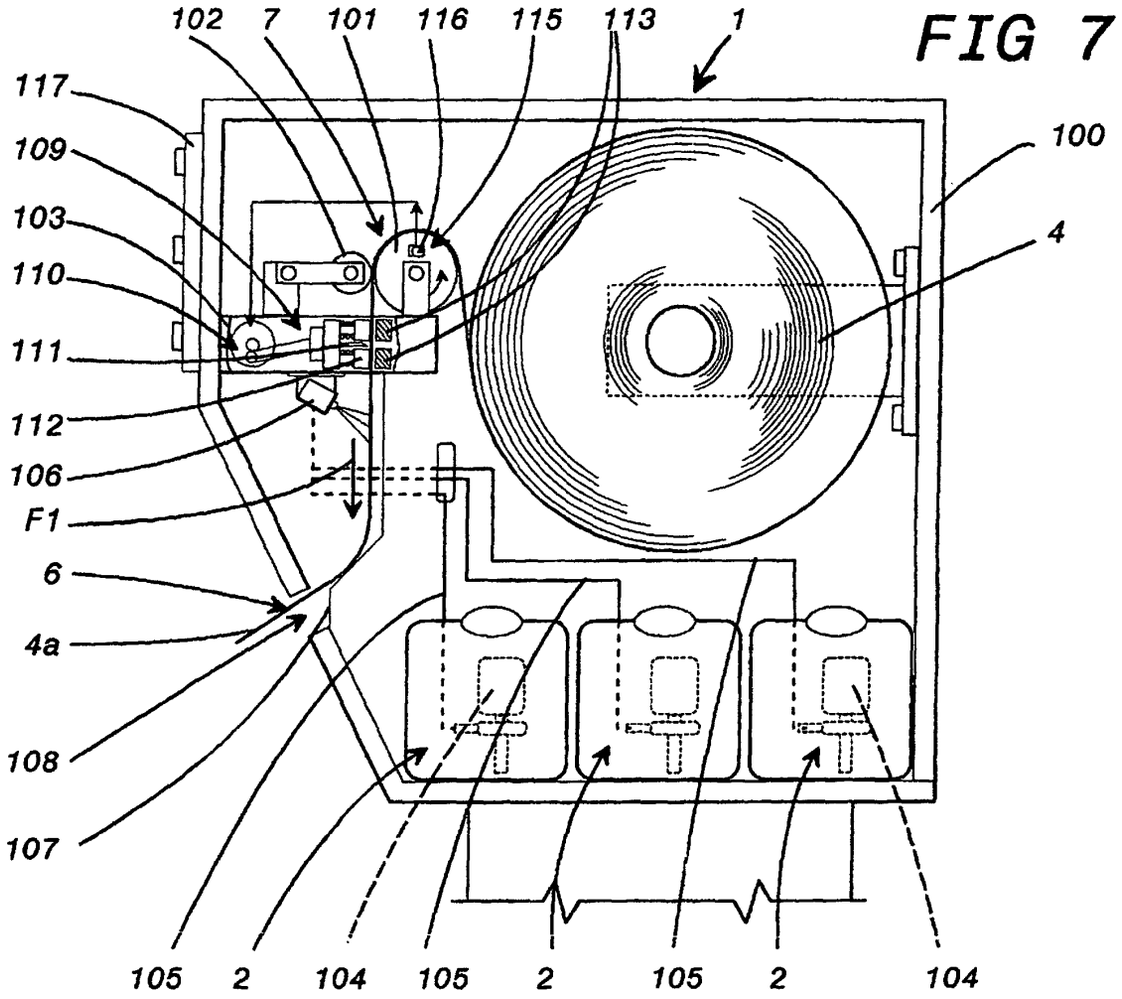


FIG 7


102
7
101
116
115
113
1
117
109
103
110
111
112
106
F1
6
4a
108
107
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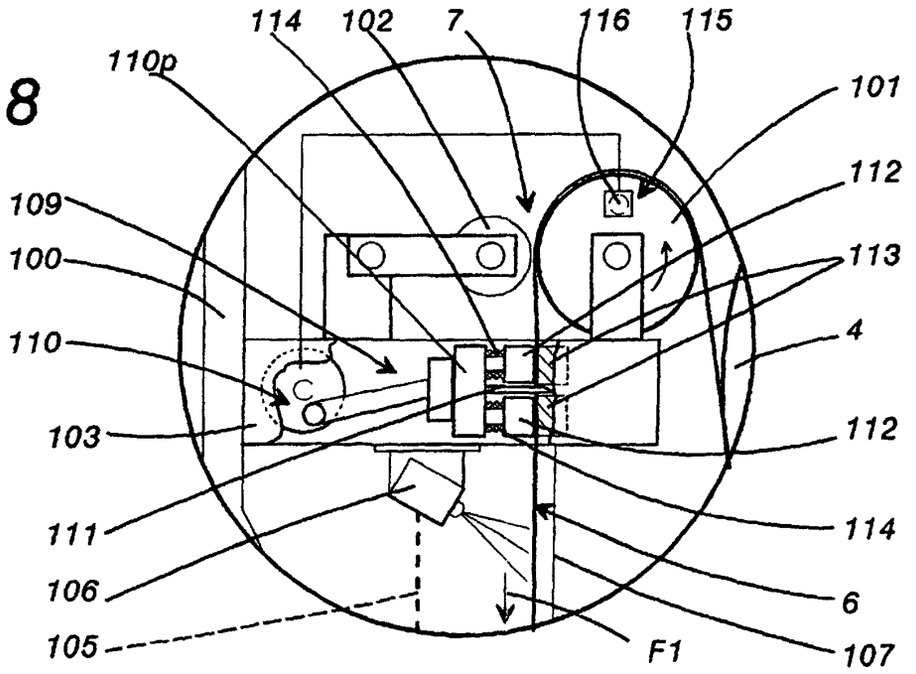
4
105
2
104
105
2
105
2
104

FIG 8


114
102
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116
115
110p
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109
112
100
113
110
4
103
112
111
114
106
6
105
F1
107