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(54) **Vending machine for cut flowers**

Verkaufsautomat für Blumensträuße

Distributeur automatique de bouquets de fleurs

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WO-A-93/15480 **FR-A- 1 151 210**
FR-A- 2 253 349 **US-A- 3 336 773**

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Description

The invention relates to a furnishing for retailing purposes, particularly for cut flowers, comprising a housing with closable removal openings, cooling means, holders sub-divided into compartments and means for placing a compartment at choice in a position behind one of the removal openings, and wherein at least some compartments contain a water reservoir.

Such a retailing means is known from FR-A-2 253 349.

Such retailing furnishings are often placed in petrol filling stations, shopping centres and the like.

The known retailing furnishing is suitable for pot plants. These plants must be placed upright in the associated compartment.

This retailing furnishing is not suitable for bunches of cut flowers which are placed lying in a compartment. When placed in the compartment of the known retailing furnishing, a bunch of cut flowers is largely submerged in the water.

The invention has for its object to obviate this drawback. This is achieved by the invention in that the water reservoir is formed by a bottom, at least a part of which is arranged slopingly, and side wall parts of the compartment connecting thereto.

According to the invention is achieved that only the bottom end of the stalks of a bunch of cut flowers lying on the bottom comes into contact with the water. The total available space in vertical direction is moreover used very efficiently since each compartment, as seen in the height, need hardly exceed the thickness of a bunch of cut flowers.

Further advantages and special features of the retail furnishing according to the invention will become apparent from the annexed drawings and accompanying description.

In the drawings:

Fig. 1 shows a perspective view of a retail furnishing according to the invention,

Fig. 2 is a top view of the embodiment according to fig. 1,

Fig. 3 shows a sectional view of the retail furnishing according to fig. 1,

Fig. 4 shows a perspective view of a holder in the retail furnishing according to the invention, and

Fig. 5 shows an alternative embodiment of the invention.

The retail furnishing 1 is of polygonal shape, in the present case hexagonal. According to the embodiment of fig. 1 the retail furnishing can travel on rollers 2, although a fixed arrangement is also possible (fig. 5). Of the side walls, side wall 3 is provided with removal openings 4, 5, 6 and 7. These removal openings can be closed and locked by means of a door, for instance 8. An access door 9 is arranged hinged on an adjacent

side wall. This door 9 serves for filling of the retail furnishing. The furnishing comprises a turret 10 formed by a hub rotatable round a shaft 11 and driven by means of the drive motor 62. Vertically standing holders 12 arranged in columns are placed on the hub 10 and are fixed releasably to the hub via a pin-hole connection 13, 14. The retail furnishing further contains cooling means consisting of a compressor 16 and a condenser 17. Using the cooling means a cooling curtain 18 (fig. 3) is generated along the wall part containing the access openings. The evaporator 19 also forms part of the cooling system. By means of the booster fan 20 cooled air is spread through the housing of the retail furnishing. Gas discharge tubes 21 are arranged for lighting. The holders each consist of a plurality of compartments 22, 23, 24, 25 placed one above another. A bunch of flowers is placed in each compartment. By rotating the turret the desired compartment can be carried behind one of the access openings 4, 5, 6 or 7. After unlocking of the relevant access door the bunch of flowers can be taken out. The selection mechanism is arranged on a panel 26 where control keys are arranged to bring about rotation of the turret to the left or the right and to unlock one of the, in the present embodiment, four access doors. The control mechanism can only be set into operation after insertion into the slot 47 of the appropriate number of coins or optionally a credit card or chip card.

In order to supply a sufficient quantity of water to the stalk ends of each bunch, the bottom of each compartment runs at a slope, for instance 27, 28, 29, 30. The bottom is bounded on the sides by side walls (fig. 4) for instance 31 and 32. Each compartment is thus formed by a closed unit tapering in a wedge shape toward the middle. By means of the water supply conduits 33, 34 water is fed to the top compartments. Apertures 35, 36, 37, 38 are arranged in the bottom of each compartment at a distance from the centre, which apertures function as an overflow for water. Due to this provision the amount of water in each compartment thus remains limited. The excess water runs into a water reservoir 39 placed in the bottom of the furnishing and, using the pump 40 which forms part of a recirculation system, is subsequently pumped up through the shaft 11 and at the top fed once again into the top compartment. A filter 41 is placed at the interface on the underside between the reservoir and the shaft 11. The water is cleaned using this filter 41.

According to the embodiment of fig. 5 the furnishing is built into a wall and the access door is placed on the one side and the access openings on the other side of the wall 42. In the embodiment of fig. 5 the upper compartments are further substituted by a horizontally disposed compartment 43, 44. Such horizontally disposed compartments are suitable for accommodating plant boxes, flower pots and the like.

According to the invention fraudulent actions are impossible since only a closed compartment is accessible to the purchaser. In addition an optimum spatial

arrangement is obtained since the dimensions of each compartment are limited to the size of a bunch of flowers. It is further ensured that while in a compartment the flowers are provided with sufficient water, while the temperature inside the retail furnishing can be optimized with a view to the shelf-life.

Claims

1. Furnishing for retailing purposes, particularly for cut flowers, comprising a housing with closable removal openings (4-7), cooling means (16, 17, 19, 20), holders (12) sub-divided into compartments (22-25) and means (26, 47, 62) for placing a compartment at choice in a position behind one of the removal openings, and wherein at least some compartments contain a water reservoir, **characterized in that** the water reservoir is formed by a bottom, at least a part of which (27-30) is arranged slopingly, and side wall parts of the compartment connecting thereto.
2. Furnishing for retailing purposes as claimed in claim 1, **characterized by** means (33, 34, 39-41) for supplying water to the water reservoirs.
3. Furnishing for retailing purposes as claimed in claim 2, **characterized in that** the holders (12) are disposed vertically in parallel columns, a plurality of compartments (22-25) are placed one above another in each of the holders, supply means for water (33, 34) are connected to the top compartment (22) and in the bottom of each compartment passage openings (35-38) are arranged at a distance from the lowest point of the sloping bottom (27-30).
4. Furnishing for retailing purposes as claimed in claims 1-3, **characterized in that** the holders (12) are arranged in a turret (10) driven by a motor (62).
5. Furnishing for retailing purposes as claimed in claim 4, **characterized in that** below the lowest compartment (25) is placed a water collecting reservoir (39) included in a recirculation circuit.
6. Furnishing for retailing purposes as claimed in claims 4 or 5, **characterized in that** the holders (12) are placed releasably (13, 14) in the turret.
7. Furnishing for retailing purposes as claimed in claims 1-6, **characterized in that** the closing door (8) of a removal opening (4-7) can be unlocked by means of a coin or credit card sales mechanism (26, 47).
8. Furnishing for retailing purposes as claimed in claims 1-7, **characterized in that** the housing is polygonal, one of the walls of the polygon has the re-

moval openings (4-7) and an opposite wall has an access door (9) for filling the compartments (22-25).

9. Furnishing for retailing purposes as claimed in claims 1-8, **characterized by** means (16, 17, 19, 20) for generating a cooling air flow (18) along the wall part containing the removal openings.

10 Patentansprüche

1. Verkaufsausrüstung, insbesondere für Schnittblumen, die folgendes aufweist:
ein Gehäuse mit schließbaren Entnahmeöffnungen (4-7), Kühlmittel (16, 17, 19, 10), Halter (12), die in Fächer (22-25) unterteilt sind, und Mittel um ein Fach der Wahl in einer Position hinter einer der Entnahmeöffnungen zu plazieren und wobei mindestens manche Fächer einen Wasserbehälter umfassen, dadurch gekennzeichnet, daß mindestens eines der Teile (27-30) geneigt angeordnet ist und daß Seitenwandabschnitte des Fachs daran angeschlossen sind.
2. Verkaufsausrüstung nach Anspruch 1, gekennzeichnet durch Mittel (33, 34, 39-41) zum Versorgen der Wasserbehälter mit Wasser.
3. Verkaufsausrüstung nach Anspruch 2, dadurch gekennzeichnet, daß die Halter (12) vertikal in parallelen Spalten ausgebildet sind, eine Mehrzahl von Fächern (22-25) in jedem der Halter übereinander angeordnet sind, Versorgungsmittel für Wasser (33, 34) an das oberste Fach (22) angeschlossen sind, und im Boden jedes Fachs Durchlaßöffnungen (35-38) mit Abstand zu dem untersten Punkt des geneigten Bodens (27-30) angeordnet sind.
4. Verkaufsausrüstung nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß die Halter (12) in einem Türmchen (10) angeordnet sind, der von einem Motor (62) angetrieben wird.
5. Verkaufsausrüstung nach Anspruch 4, dadurch gekennzeichnet, daß unter dem untersten Fach (25) ein Wassersammelbehälter (39) angeordnet ist, der in einen Rezirkulationskreislauf eingebunden ist.
6. Verkaufsausrüstung nach einem der Ansprüche 4 oder 5, dadurch gekennzeichnet, daß die Halter (12) lösbar (13,14) in dem Türmchen angeordnet sind.
7. Verkaufsausrüstung nach einem der Ansprüche 1 bis 6, dadurch gekennzeichnet, daß die Tür (8) einer Entnahmeöffnung (4-7) durch einen Münz- oder Kreditkartenverkaufsmechanismus (26,47) entriegelt werden kann.

8. Verkaufsausrüstung nach einem der Ansprüche 1 bis 7, dadurch gekennzeichnet, daß das Gehäuse polygonförmig ist, eine der Wände des Polygons die Entnahmeöffnungen (4-7) aufweist und eine gegenüberliegende Wand eine Zugangstür (9) zum Füllen der Fächer (22-25) aufweist.

9. Verkaufsausrüstung nach einem der Ansprüche 1 bis 8, gekennzeichnet durch Mittel (16, 17, 19, 20) zum Erzeugen eines kühlenden Luftstroms (18) entlang des Wandabschnitts, welcher die Entnahmeöffnungen aufweist.

Revendications

1. Meuble destiné à assurer une distribution au détail, notamment de fleurs coupées, comprenant une enceinte munie d'ouvertures de prélèvement (4-7) susceptibles d'être fermées, de moyens de refroidissement (16, 17, 19, 20), de supports (12) subdivisés en compartiments (22-25) et de moyens (26, 47, 62) permettant d'amener le compartiment de son choix en position derrière l'une des ouvertures de prélèvement, et dans lequel au moins certains compartiments comportent un réservoir d'eau, caractérisé en ce que le réservoir d'eau est constitué par un fond, dont au moins une partie (27-30) est disposée selon une configuration inclinée, avec des parties de la paroi latérale du compartiment se raccordant à celle-ci.

2. Meuble destiné à assurer une distribution au détail selon la revendication 1, caractérisé en ce qu'il comprend des moyens (33, 34, 39-41) pour alimenter en eau les réservoirs d'eau.

3. Meuble destiné à assurer une distribution au détail selon la revendication 2, caractérisé en ce que les supports (12) sont disposés de manière verticale en colonnes parallèles, une pluralité de compartiments (22-25) sont placés l'un au-dessus de l'autre dans chacun des supports, des moyens d'alimentation en eau (33, 34) sont reliés au compartiment supérieur (22) et dans le fond de chaque compartiment des ouvertures de passage (35-38) sont ménagées à une certaine distance du point le plus bas du fond en pente (27-30).

4. Meuble destiné à assurer une distribution au détail selon l'une des revendications 1-3, caractérisé en ce que les supports (12) sont disposés dans une tourelle (10) entraînée par un moteur (62).

5. Meuble destiné à assurer une distribution au détail selon la revendication 4, caractérisé en ce qu'en dessous du compartiment le plus bas (25) se trouve placé un réservoir collecteur d'eau (39) faisant par-

tie d'un circuit de recirculation.

6. Meuble destiné à assurer une distribution au détail selon la revendication 4 ou 5, caractérisé en ce que les supports (12) sont placés de manière à pouvoir être dégagés (13, 14) dans la tourelle.

7. Meuble destiné à assurer une distribution au détail selon l'une des revendications 1-6, caractérisé en ce que la porte de fermeture (8) d'une ouverture de prélèvement (4-7) peut être déverrouillée par l'intermédiaire d'un mécanisme de distribution actionné par des pièces de monnaie ou une carte de crédit.

8. Meuble destiné à assurer une distribution au détail selon l'une des revendications 1-7, caractérisé en ce que l'enceinte est polygonale, une des parois du polygone comporte des ouvertures de prélèvement (4-7) et la paroi opposée comporte une porte d'accès (9) destinée à permettre de regarnir les compartiments (22-25).

9. Meuble destiné à assurer une distribution au détail selon l'une des revendications 1-8, caractérisé en ce qu'il comprend des moyens (16, 17, 19, 20) destinés à générer un flux d'air de refroidissement (18) le long de la partie des parois comportant les ouvertures de prélèvement.

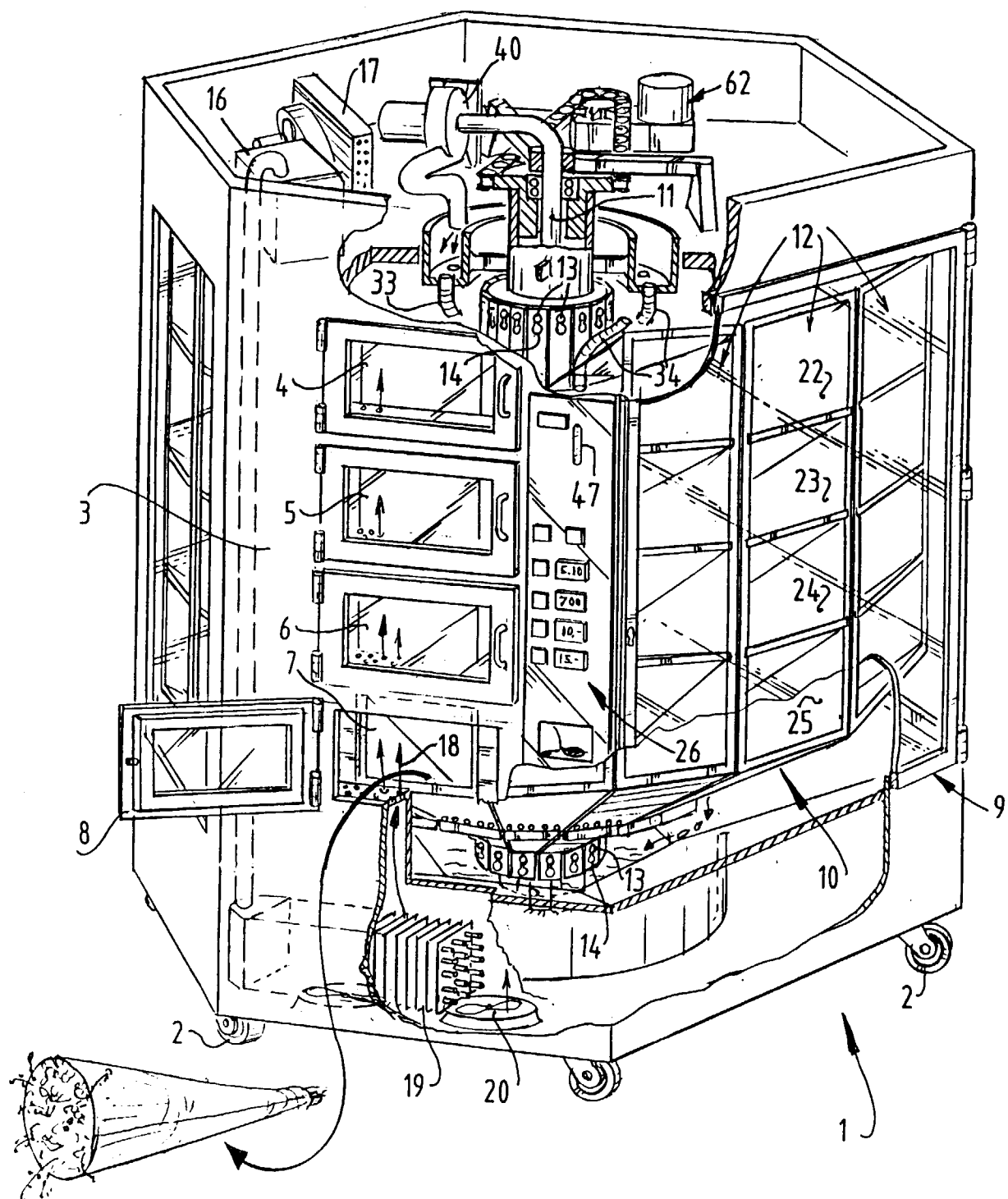


FIG. 1

FIG.2

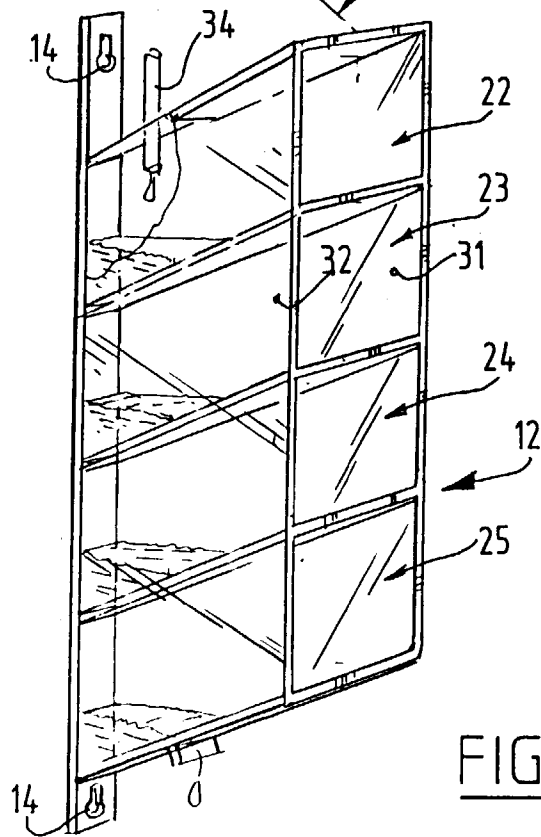
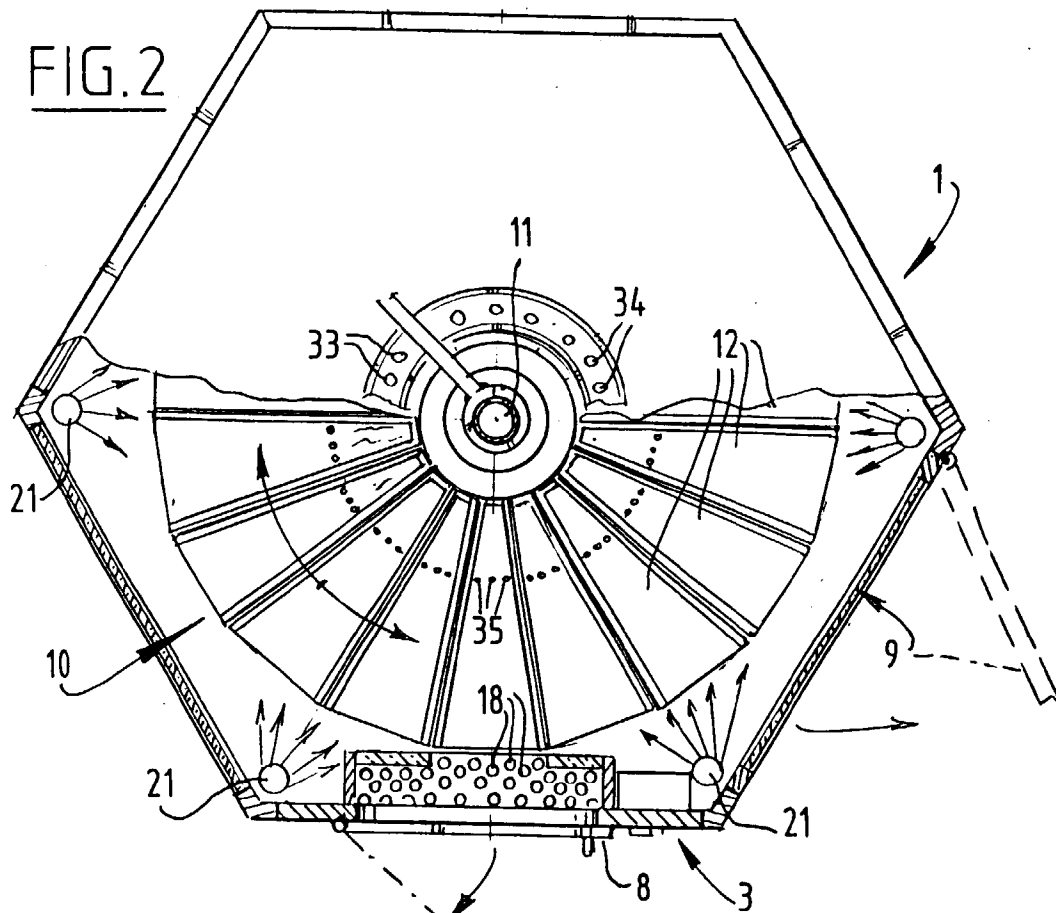


FIG.4

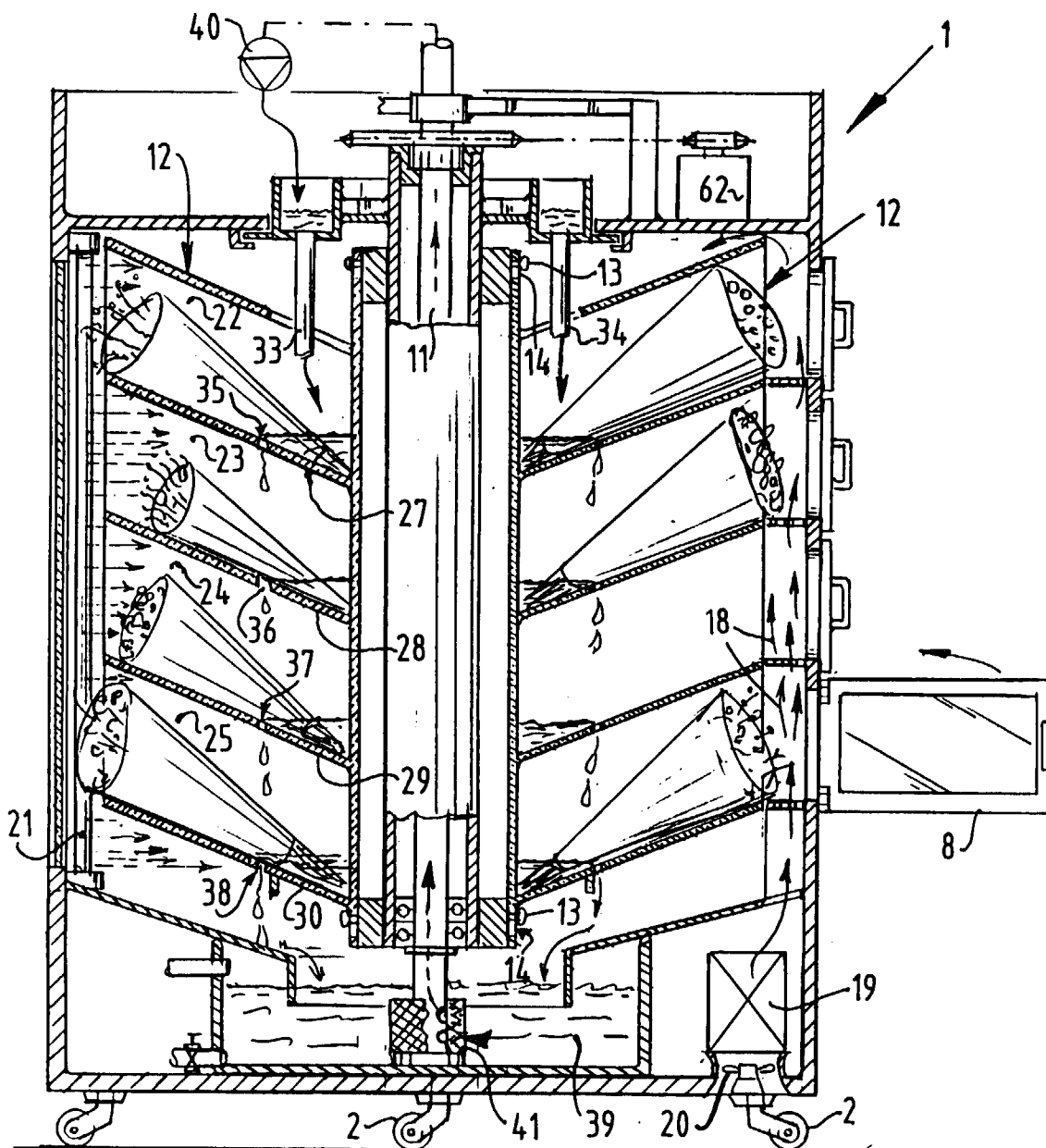


FIG.3

