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(54) **Concentrate dosing device for fruit juice dispensers**

Konzentrat-Dosiervorrichtung für Obstsaft-Abgabevorrichtungen

Dispositif de dosage de concentré pour distributeur de jus de fruit

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(56) References cited:
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US-A- 5 000 352 **US-A- 5 033 649**

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Description

OBJECT OF THE INVENTION

The present invention relates to a concentrate dosing device according to the preambles of claims 1 and 4.

BACKGROUND OF THE INVENTION

There are currently available in the market fruit juice supplying machines of variable nature made up of a supporting base of a transparent recipient fitted with a cover, inside which is arranged the mixture of water and syrup in order to obtain, through their dilution, the desired fruit juice or cold drink.

The recipient consists of a transparent inverted dome that houses inside it a turning agitator that maintains the homogeneous suspension, the cover is removable and the mixture which constitution varies as a function of the final product is decanted through the resulting opening of the recipient. The capacity of the recipient varies, according to its manufacturer, between five and fifty litres which makes it advisable, for weight reasons, for the recipient to be continuously refilled by its attendant, dosing the mixtures of syrup with water, through the use of double pumps, piston driven or volumetric, of different flow rates, as well as solenoid valves used to control the flow rates of the different fluids and other mixture regulation means.

Let us mention, in respect of the latter, U.S.-A-4 884 720 and in respect of the former, U.S.-A-4 953 754, fitted with volumetric control dispenser.

U.S. patent 5000352, which describes devices according to the preambles of claims 1 and 4, held by Robert K. Cleland and the prior one also held by the same person, number 4544084, about Drink Dispensers, incorporate fruit juice dispensers as well as liquid level meters and starting and stopping means for mechanical water and concentrate feeding devices, consisting on a double circuit piston driven pump, independently fed from the respective tank to the drink dispenser or supplier, place where the mixture of both fluids takes place through their interaction and, also, through the action of the juice distribution paddles. These piston driven pumps, which do not effect any mixing, are not at all related with the Venturi object of this patent specification.

Indeed, apart from the elimination of mechanical means that require maintenance and that have a cost much greater than that of the Venturi device, the advantage of the latter is that, besides feeding the supplying mechanism, it simultaneously mixes and doses.

Whenever no upper tank is fitted, the means used to dispense drinks and similar ones, normally used for the "tap" issue of very well known cold drinks, present as a defect the detection of the empty condition of the concentrate supply tanks, being it common to observe that the serving waiters are the ones usually charged

with visually detecting the absence of concentrate in the glass served to the customer, disposing of the simple water contained therein and reloading the contents of the concentrate deposit.

Taking all of the above into consideration, the problems derived from the final cost of the doser, the added cost derived from the maintenance of the mechanical elements, of the better preparation of the mixture and prior dosage for the sale of the fruit juice, as well as the perfect regulation of the joint supply of water and concentrate, are solved by the invention as defined in the appended claims.

DESCRIPTION OF THE INVENTION

The purpose of the invention is to solve the above problems by fitting, to any of the fruit juice dispensers now existing in the market and of whatever make or brand, with means duly guaranteeing the accuracy of the mixture that will produce the fruit juice to be consumed, so as to produce the same aroma, flavour and, above all, degree of viscosity.

It is also the purpose of the invention to supply to the fruit juice dispenser water with homogeneous properties so that, irrespectively of where a fruit juice dispenser may be located, as long as it bears a brand name that guarantees the incorporation of the subject of this invention, the consumer will be reassured that the product quality is constant and fully reliable.

A further aim of the invention is to prevent manual refill of the recipient, avoiding the need to have a person supplying liquid and keeping product level within limits capable of being automatically regulated, so that the recipient remains full at all times, clearly suggesting to the potential consumer the presence of newly prepared product.

All of the above advantages are made possible due to the fact that the development of the object of the invention allows the achievement of the purposes herein pursued. To that end the invention starts off a conventional dispenser made of an inverted dome recipient resting upon a base which, besides the cold generating elements, does also incorporate a cooling expander that penetrates within the inverted dome and, as is already common, a rotational agitating device.

This specification shall not deal, given that it is not the purpose of the invention, with a description of the chill production source, with the temperature control means controlling it nor with the constitution of the dispenser itself, given that, as will be made clear further on, they do not affect the additional adaptation of the invention to a dispenser without the own features of the unit adapted being altered but, on the contrary, the maintenance of the liquid at a constant level allows its operation under very good refrigeration conditions. A further important factor to point out is that, by fitting to the cover an air inlet with a filter is not necessary to uncover the dome of the recipient for purposes other

than periodic cleaning operations, thus avoiding the possible contamination that may take place during the periodic refilling stages.

In accordance with the above, the invention is therefore applied to any dispenser available in the market and presenting the features described in the preambles of claims 1 and 4, the invention basically consisting on the placement of a "Venturi" type assembly between a sealed tank containing fruit syrup and a water supply source supplying water from the supply network or from a tank, so that the water may act as the syrup feeding means by way of a prior adjustment of the Venturi device with constant flow of one liquid or the other, taking the already mixed product or the fruit juice to the dome acting as the dispenser tank and which incorporates two adjustable level detectors.

The device used to detect the lack of fruit syrup or concentrate in its tank as it runs out is incorporated into the Venturi supply conduit and works in cooperation with a depression valve located at the entrance of concentrate to this Venturi device, so as to inhibit water supply feed.

The purpose of the depression valve is to incorporate air into the circuit, so that it may drag off the last few drops of the product through the short conduit section existing between the concentrate tank and the Venturi, quickly cleaning the pipe and aiding the action of the syrup presence detector, precisely fitted in this section, causing a breach or unbalance of internal pressure which, under other conditions, prevents or at least slows down the action of the detector, in respect of ordering the inhibition of the water feed command.

This instantaneous response becomes necessary whenever dispensing means are incorporated into the doser upper area, such as a pouring tap and other conventional modalities as a decanting pump and others to be invented in the future whether they are of the accumulation or direct delivery types in which the tap or its alternative, the push button, may or may not act as simultaneous mechanical and electrical switching elements.

The water may come from a treated liquid container tank, in which case the required flow rate is obtained either by gravity or using a pump. Direct water network supply is also appropriate, with the inter-placement of a continuous water treatment unit using osmotic, active coal or other type of filters, together with the inclusion of ion interchanging resins in order to finally obtain decaffeinated, odourless and soft water with the required pH level.

The processing circuit is a conventional one which may be selected from among those available in the market.

It is finally possible to combine the Venturi device with one or several solenoid operated valves, of the conventional product feeding type, for example, further drink components or, simply, carbonic gas coming from an additional tank, in the same way that it may also

include whichever conventional cooling or warming means that the product to be dispensed may require.

DESCRIPTION OF THE DRAWINGS

In order to complete the description being effected and with the purpose of aiding a better and easier understanding of the features of the invention, this patent specification is supported, as integral part thereof, by a set of drawings where, with an illustrative but never limitative character the following has been duly represented:

Figure 1 represents the doser object of the invention, being identified therein the components mentioned in this specification.

Figure 2 is an example of a tap dispenser, pursuant to that described in this patent specification.

Figure 3 represents an automatic dispensing machine, of the type normally called "vending machines", showing the frontal section of the product selection and coin slot mechanisms, as well as the opening where glasses or cups are introduced for the drinks to be dispensed.

DESCRIPTION OF A PREFERRED EXECUTION EXAMPLE

Example 1. Upon examining the previously mentioned figure 1, it may be observed how the invention herein advanced consists of a concentrate doser for fruit juice dispensing machines, of the type that include an inverted dome (1) resting upon a base (2) which, besides the means used to chill (3) the liquid within the dome (1), does also incorporate a rotating agitator (4), as well as liquid dispensing means such as an outlet pipe under which can be placed a glass to actuate the opening means, a frame (5) wheeled or not, characterized by the dosing device comprising a "Venturi" type assembly between a sealed syrup container, not shown and marked by the arrow (14) and a water supply source (7), either from the water supply network or from a tank, in such a way that the water acts as the syrup dragging mean through a prior adjustment of the Venturi device (6) with a constant flow rate of one liquid or the other, taking the mixed product or fruit juice to the dome (1) that acts as the dispensing tank and which incorporates two level detectors (8-9) which can be adjusted and which establish the maximum and minimum level thresholds (12).

It does furthermore incorporate, upstream the Venturi (6) device, and downstream the concentrate tank, a depression valve (21) that introduces into the circuit syrup sweeping air in the conduit portion located between the concentrate tank and the Venturi device (6) whenever the depression required for the instantaneous

actuation of the syrup presence level detector (20), incorporated into this portion, is reached, which detector commands through the processor (10) the inhibition of the water feeding command (11) and which acts advantageously upon lack of syrup warning devices.

The regulation of the concentrate and water mixture is effected either graduating the regulator (15) without touching the Venturi device (6) or else adjusting the own Venturi device (6), without operating the regulator (15) or, alternatively, both devices may also be simultaneously adjusted, in order to achieve syrup dosing and simultaneously mixing it with water in the Venturi device.

The water, pursuant to the example, is supplied from the water supply network, through the inter-placement of a continuous water treatment unit (13) using osmotic, active carbon or other type of filters, together with the inclusion of ion interchanging resins to finally obtain unflavoured and odourless liquid, softening its calcium content with the appropriate pH level, arriving to the Venturi device through a flow rate regulator (15) that ensure dosing accuracy.

The syrup comes from a conventional container, of the type fitted with non rigid walls, that receives the product under vacuum and which is fitted with a membrane ready to receive a nozzle that interconnects the container, not shown, to the tank outlet (14) to the previously described circuit in order to dispense the already dosed mixture through the conduit and into the dome (1) fitted with a cover (16) that insulates the liquid (17) from outside.

The processor circuit incorporates a transformer-rectifier (18) to convert the alternating current supplied to continuous current and which is plug into the power supply network represented in the drawing by the arrow (19).

Example 2. Another execution variant, using a pouring tap (23) (Figure 2) or further conventional variations such as a decanting pump or others, incorporate conventional mechanisms that substitute the maximum (9) and minimum (8) liquid level detectors, by a lever (24) or manually operated push button (25) activated by a coin collection mechanism (26) (Figure 3) which operate, in either case, as power supply circuit breakers, also conventional.

Example 3. A further variant combines the Venturi device (6) with one or several solenoid valves (of the conventional type, not shown in the figures), to supply further drink or carbonic gas components.

This description is not extended any further on the understanding that any expert in the art would already have enough information to understand the scope of the invention and the advantages derived therefrom, as well as to enable him to reproduce it.

It is further understood that, as long as the essential features of the invention are not altered, both the variations in respect of the materials as the shape, size and arrangement of the elements may be varied within the same characteristics.

Claims

1. Concentrate dosing device for fruit juice dispensers incorporating an inverted dome (1) resting upon a base (2) and comprising refrigeration means for chilling the liquid in the dome, a rotating agitator (4), liquid dispensing means such as an outlet pipe under which a glass can be placed in order to actuate opening means and a frame (5), wheeled or not; said dome acting as a dispensing tank and said dispensing tank incorporating two level detectors (8, 9) capable of being adjusted in order to determine the maximum and the minimum level thresholds (12), said dosing device being characterized in that, it comprises a venturi type assembly between the outlet (14) of a sealed concentrate container and a water supply source (7), said source being either the water supply network or a tank, the water flowing through the venturi, sucking the syrup and mixing with it, the mixed product or fruit juice being fed to the dispensing tank, the device further comprises located upstream the venturi and downstream the concentrate container outlet, in order to detect presence of concentrate, a depression valve (21) responsive to vacuum in the concentrate line, said valve (21) allowing ingress of air for sweeping the portion of the concentrate line between the concentrate container and the venturi when a vacuum level is reached sufficient for the instantaneous actuation of a concentrate presence detector (20) incorporated in said portion of concentrate line, and said detector commanding through a processor the inhibition of water feed command (11) and acting upon concentrate shortage warning means.
2. Concentrate dosing device according to claim 1, characterized in that the water source is the main water network and a unit (13) is provided that treats the water continuously using conventional means, said treated water flows to the venturi device through a flow rate regulator (15) that ensures dosing accuracy, the concentrate or syrup flowing from a conventional container of the type having non rigid walls and which outlet is connected to the line upstream the venturi, the dosed mixture being fed to the dispensing tank (1) which is fitted with an insulating cover.
3. Concentrate dosing device according to claim 2, characterized in that the regulation of the concentrate and water mixture is effected either by graduating the water regulator (15) without touching the venturi or viceversa or by adjusting both the water regulator and the venturi.
4. Concentrate dosing device for fruit juice dispensers incorporating liquid dispensing means such as a pouring cap (23) or other dispensing or decanting

devices, such as the decanting pump or others, under which a glass can be placed, and a lever (24) that acts as a switch and which acts upon a conventional power supply circuit breaker, said dosing device being characterized in that, it comprises a venturi type assembly between the outlet (14) of a sealed concentrate container and a water supply source (7), said source being either the water supply network or a tank, the water flowing through the venturi, sucking the syrup and mixing with it, the mixed product or fruit juice being fed to the dispensing tank, the device further comprises located upstream the venturi and downstream the concentrate container outlet, in order to detect presence of concentrate, a depression valve (21) responsive to vacuum in the concentrate line, said valve (21) allowing ingress of air for sweeping the portion of the concentrate line between the concentrate container and the venturi when a vacuum level is reached sufficient for the instantaneous actuation of a concentrate presence detector (20) incorporated in said portion of concentrate line, and said detector commanding through a processor the inhibition of water feed command (11) and acting upon concentrate shortage warning means.

5. Concentrate dosing device according to claim 4, characterized in that the water source is the main water network and a unit (13) is provided that treats the water continuously using conventional means, said treated water flows to the venturi device through a flow rate regulator (15) that ensures dosing accuracy, the concentrate or syrup flowing from a conventional container of the type having non rigid walls and which outlet is connected to the line upstream the venturi, the dosed mixture being fed to the dispensing tank (1) which is fitted with an insulating cover.
6. Concentrate dosing device according to claim 4, characterized in that the regulation of the concentrate and water mixture is effected either by graduating the water regulator (15) without touching the venturi or viceversa or by adjusting both the water regulator and the venturi.
7. Concentrate dosing device according to the prior claims, characterized in that the Venturi device is combined with one or several solenoid valves used to introduce further components into the syrup drink or else carbonic gases.

Patentansprüche

1. Ein Dosierapparat für Konzentrate für Fruchtsaftausgabegeräte, das eine umgekehrte Kuppel (1) einschließt, die auf einer Basis (2) ruht, ferner ein Kühlgerät zur Kühlung der Flüssigkeit in der Kuppel,

einen rotierenden Rührer (4), ein Gerät zur Flüssigkeitsabgabe, wie ein Auslaßrohr, unter das ein Glas gestellt werden kann, um die Öffnungsvorrichtung zu bedienen, und ein Gestell (5), mit Rädern versehen oder nicht, die genannte Kuppel erfüllt den Zweck eines Ausgabetanks, und der genannte Ausgabetank enthält zwei Niveaudetektoren (8, 9), die so eingestellt werden können, daß sie die minimale und die maximale Niveauschwelle (12) bestimmen können, wobei der genannte Dosierapparat dadurch gekennzeichnet ist, daß er eine Konstruktion vom Venturi-Typ zwischen dem Auslaß (14) eines versiegelten Konzentratbehälters und einer Quelle zur Wasserversorgung (7) enthält, wobei die genannte Quelle entweder die Wasserleitung oder ein Tank ist, das Wasser durch den Venturi fließt, wobei es den Sirup ansaugt und sich mit ihm vermischt, und dieses gemischte Produkt oder der Fruchtsaft in den Ausgabetank geleitet wird; das Gerät verfügt ferner, vom Venturi aus stromabwärts und vom Konzentratbehälterauslaß aus stromaufwärts gelegen und zu dem Zweck, das Vorhandensein von Konzentrat aufzuspüren, über ein Unterdruckventil (21), das auf ein Vakuum im Konzentrationsschlauch anspricht, wobei das genannte Ventil (21) den Eintritt von Luft zur Entleerung desjenigen Stückes des Konzentratschlauches, das sich zwischen dem Konzentratbehälter und dem Venturi befindet, erlaubt, wenn ein Vakuumniveau erreicht ist, das ausreichend ist für die sofortige Betätigung des Detektors für die Anwesenheit von Konzentrat (20), der in dem genannten Stück des Konzentratschlauches eingebaut ist, wobei der genannte Detektor über einen Prozessor die Abstellung des Wassereinlaßkommandos (11) verfügt und auf Warngeräte für Konzentratknappheit wirkt.

2. Ein Dosierapparat für Konzentrate gemäß Anspruch 1, dadurch gekennzeichnet, daß die Wasserquelle die Wasserleitung ist und eine Einheit (13) vorgesehen ist, die das Wasser ununterbrochen mit konventionellen Mitteln behandelt, wobei das behandelte Wasser durch einen Regulierer für die Strömungsgeschwindigkeit (15), der die Genauigkeit der Dosierung sichert, zum Venturi-Gerät fließt, wobei das Konzentrat oder der Sirup aus einem konventionellen Behälter mit nicht starren Wänden, dessen Auslaß vom Venturi aus stromaufwärts angebracht ist, zufließt, wobei die dosierte Mischung in den Ausgabetank (1) gefüllt wird, der mit einer isolierenden Hülle versehen ist.
3. Dosierapparat für Konzentrate gemäß Anspruch 2, dadurch gekennzeichnet, daß die Regulierung des Konzentrat-Wasser-Gemischs entweder dadurch ausgeführt wird, daß der Wasserregulierer (15) eingestellt wird, ohne die Einstellung des Venturi zu

verändern, oder umgekehrt, oder daß sowohl der Wasserregulierer als auch der Venturi eingestellt werden.

4. Dosierapparat für Konzentrate für Fruchtsaftausgabegeräte, der Geräte zur Ausgabe von Flüssigkeiten einschließt, wie einen Schankhahn (23) oder andere Ausgabe- oder Ausschankgeräte wie eine Ausschankpumpe oder andere, unter die ein Glas gestellt werden kann, sowie einen Hebel (24), der als Schalter arbeitet und der einen konventionellen Stromkreisunterbrecher bedient, wobei der genannte Dosierapparat dadurch gekennzeichnet ist, daß er eine Konstruktion vom Venturi-Typ zwischen dem Auslaß (14) eines versiegelten Konzentratsbehälters und einer Quelle zur Wasserversorgung (7) enthält, wobei die genannte Quelle entweder die Wasserleitung oder ein Tank ist, das Wasser durch den Venturi fließt, wobei es den Sirup ansaugt und sich mit ihm vermischt, und dieses gemischte Produkt oder der Fruchtsaft in den Ausgabetank geleitet wird; das Gerät verfügt ferner, vom Venturi aus stromabwärts und vom Konzentratsbehälterauslaß aus stromaufwärts gelegen und zu dem Zweck, das Vorhandensein von Konzentrat aufzuspüren, ein Unterdruckventil (21), das auf ein Vakuum im Konzentrationsschlauch anspricht, wobei das genannte Ventil (21) den Eintritt von Luft zur Entleerung desjenigen Stückes des Konzentratschlauches, das sich zwischen dem Konzentratsbehälter und dem Venturi befindet, erlaubt, wenn ein Vakuumniveau erreicht ist, das ausreichend ist für die sofortige Betätigung des Detektors für die Anwesenheit von Konzentrat (20), der in dem genannten Stück des Konzentratschlauches eingebaut ist, wobei der genannte Detektor über einen Prozessor die Abstellung des Wassereinlaßkommandos (11) verfügt und auf Warngeräte für Konzentratknappheit wirkt.
5. Ein Dosierapparat gemäß Anspruch 4, dadurch gekennzeichnet, daß die Wasserquelle die Wasserleitung ist und eine Einheit (13) vorgesehen ist, die das Wasser ununterbrochen mit konventionellen Mitteln behandelt, wobei das behandelte Wasser durch einen Regulierer für die Strömungsgeschwindigkeit (15), der die Genauigkeit der Dosierung sichert, zum Venturi-Gerät fließt, wobei das Konzentrat oder der Sirup aus einem konventionellen Behälter mit nicht starren Wänden, dessen Auslaß vom Venturi aus stromaufwärts angebracht ist, zufließt, wobei die dosierte Mischung in den Ausgabetank (1) gefüllt wird, der mit einer isolierenden Hülle versehen ist.
6. Dosierapparat für Konzentrate gemäß Anspruch 4, dadurch gekennzeichnet, daß die Regulierung des Konzentrat-Wasser-Gemischs entweder dadurch

ausgeführt wird, daß der Wasserregulierer (15) eingestellt wird, ohne die Einstellung des Venturi zu verändern, oder umgekehrt, oder daß sowohl der Wasserregulierer als auch der Venturi eingestellt werden.

7. Dosierapparat für Konzentrate gemäß der vorstehenden Ansprüche, dadurch gekennzeichnet, daß das Venturi-Gerät mit einem oder mehreren Soleinoid-Ventilen kombiniert ist, die dazu dienen, weitere Komponenten oder auch Kohlensäuren dem Sirupgetränk hinzuzufügen.

Revendications

1. Dispositif doseur de concentré pour distributeur de jus de fruit incorporant un dôme renversé (1) qui repose sur une base (2) et qui comprend des moyens de refroidissement pour refroidir le liquide à l'intérieur du dôme, un agitateur rotatif (4), des moyens de distribution de liquide tels qu'un conduit de sortie sous lequel on peut placé un verre afin d'actionner des moyens d'ouverture et un bâti (5), avec ou sans roues; ledit dôme agit comme un réservoir de distribution et ledit réservoir de distribution incorpore deux capteurs de niveau (8,9) susceptibles d'être ajustés afin de déterminer les seuils de niveau maximal et de niveau minimal (12), ledit dispositif doseur est caractérisé en ce que, il comprend un ensemble du type venturi entre la sortie (14) de conteneur de concentré fermé et un source d'alimentation en eau (7), ledit source étant soit le réseau d'alimentation en eau soit un réservoir, l'eau s'écoulant à travers le venturi, en aspirant le sirop et en le mélangeant à l'eau, le produit mélangé ou le jus de fruit étant conduit au réservoir de distribution, le dispositif comprend également le venturi situé en amont et la sortie du conteneur de concentré située en aval, afin de détecter la présence de concentré, une valve de dépression (21) répondant au vide dans la ligne de concentré, ladite soupape (21) permettant l'entrée d'air pour balayer la portion de la ligne de concentré entre le conteneur de concentré et le venturi lorsque l'on atteint un niveau de vide suffisant pour l'action instantanée d'un capteur de présence de concentré (20) incorporé à cette portion de ligne de concentré, et ledit capteur commandant à travers un processeur l'inhibition de la commande d'alimentation en eau (11) et qui agit sur les moyens d'avertissement de manque de concentré.
2. Dispositif doseur de concentré selon la revendication 1, caractérisé en ce que la source d'eau est le réseau d'eau principal et on prévoit une unité (1) pour traiter l'eau en continu en utilisant des moyens conventionnels, ladite eau traitée s'écoulant vers le dispositif venturi à travers un régulateur de vitesse

de débit (15) qui assure la précision de dosage, le concentré et le sirop s'écoulant depuis un conteneur conventionnel du type ayant des parois non rigides et dont la sortie est reliée à la ligne en amont du venturi, le mélange dosé étant conduit au réservoir de distribution (1) qui est monté avec un couvercle d'isolation.

3. Dispositif doseur de concentré selon la revendication 2, caractérisé en ce que la régulation du mélange de concentré et d'eau est effectuée soit par gradation du régulateur d'eau (15) sans toucher le enturi ou viceversa ou en ajustant aussi bien le régulateur d'eau que le venturi.

4. Dispositif doseur de concentré pour distributeur de jus de fruit qui incorpore des moyens de distribution de liquide tels qu'un robinet de versement (23) ou d'autres dispositifs de distribution ou de décantation, tels que la pompe de décantation ou d'autres, sous lequel on peut placé un verre, et un levier (24) qui agit comme un commutateur et qui agit sur un disjoncteur de circuit d'alimentation d'énergie conventionnel, ledit dispositif doseur étant caractérisé en ce que, il comprend un ensemble du type venturi entre la sortie (14) d'un conteneur de concentré fermé et une source d'alimentation en eau (7), ledit source étant soit le réseau d'alimentation en eau soit un réservoir, l'eau s'écoulant à travers le venturi, en aspirant le sirop et le mélange avec l'eau, le produit mélangé ou le jus de fruit étant conduit au réservoir de distribution, le dispositif comprend également le venturi situé en amont et la sortie du conteneur de concentré située en aval, afin de détecter la présence de concentré, une valve de dépression (21) répondant au vide dans la ligne de concentré, ladite valve (21) permettant l'entrée d'air pour balayer la portion de la ligne de concentré entre le conteneur de concentré et le venturi lorsque l'on atteint un niveau de vide suffisant pour l'action instantanée d'un capteur de présence de concentré (20) incorporé à cette portion de ligne de concentré, et ledit capteur commandant à travers un processeur l'inhibition de la commande d'alimentation en eau (11) et agissant sur les moyens d'avertissement de manque de concentré.

5. Dispositif doseur de concentré selon la revendication 4, caractérisé en ce que la source d'eau est le réseau d'eau principal et on prévoit une unité (1) pour traiter l'eau en continu en utilisant des moyens conventionnels, ledit eau traitée s'écoulant vers le dispositif venturi à travers un régulateur de vitesse de débit (15) qui assure la précision de dosage, le concentré et le sirop s'écoulant depuis un conteneur conventionnel du type ayant des parois non rigides et dont la sortie est reliée à la ligne en amont du venturi, le mélange dosé étant conduit au

réservoir de distribution (1) qui est monté avec un couvercle d'isolation.

6. Dispositif doseur de concentré selon la revendication 4, caractérisé en ce que la régulation du mélange de concentré et d'eau est effectuée soit par gradation du régulateur d'eau (15) sans toucher le venturi ou viceversa soit en ajustant aussi bien le régulateur d'eau que le venturi.
7. Dispositif doseur de concentré, selon les revendications précédentes, caractérisé en ce que le dispositif venturi est combiné avec une ou plusieurs électrovannes utilisées pour introduire d'autres composants dans la boisson au sirop ou des gaz carboniques.

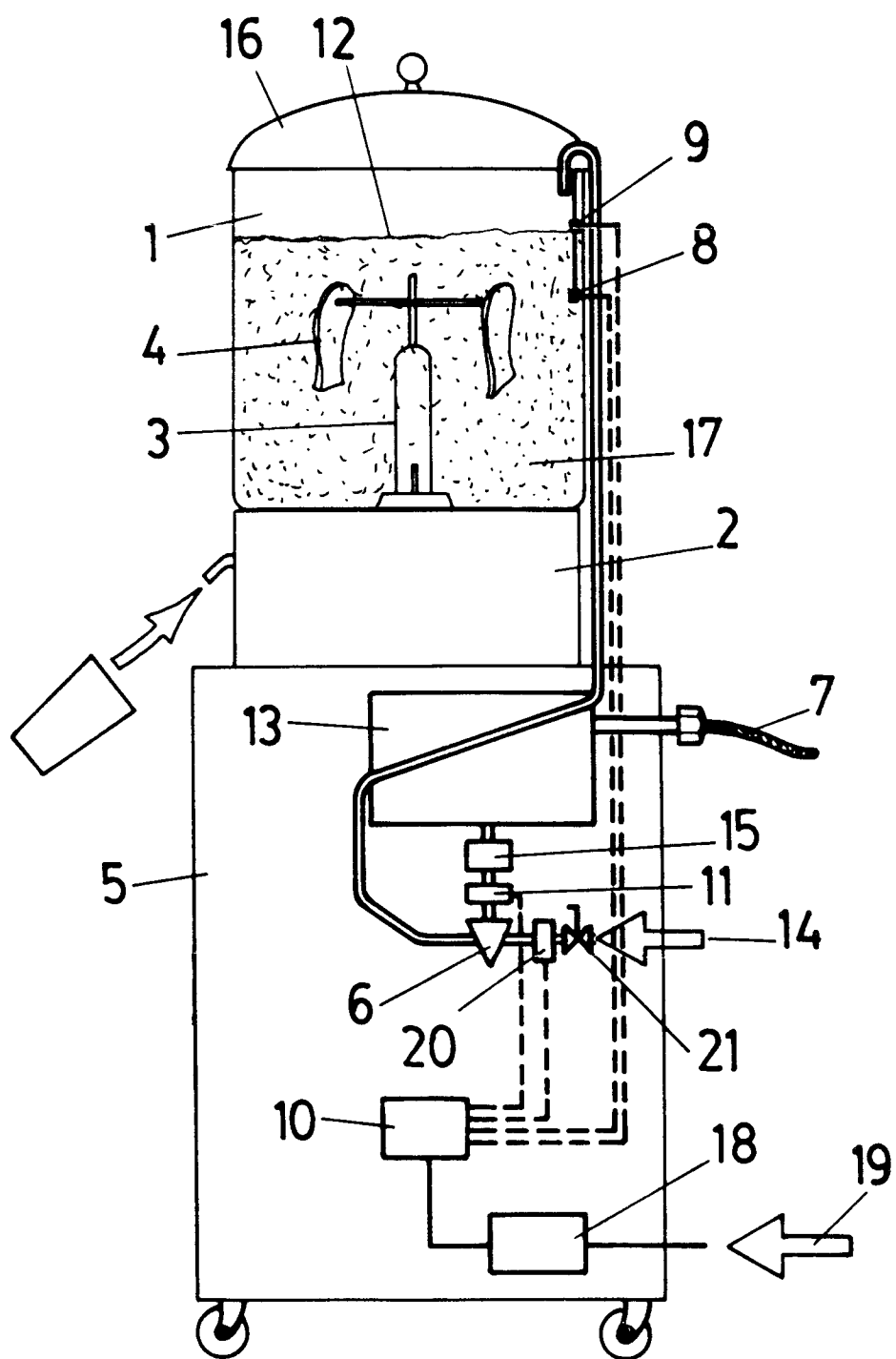
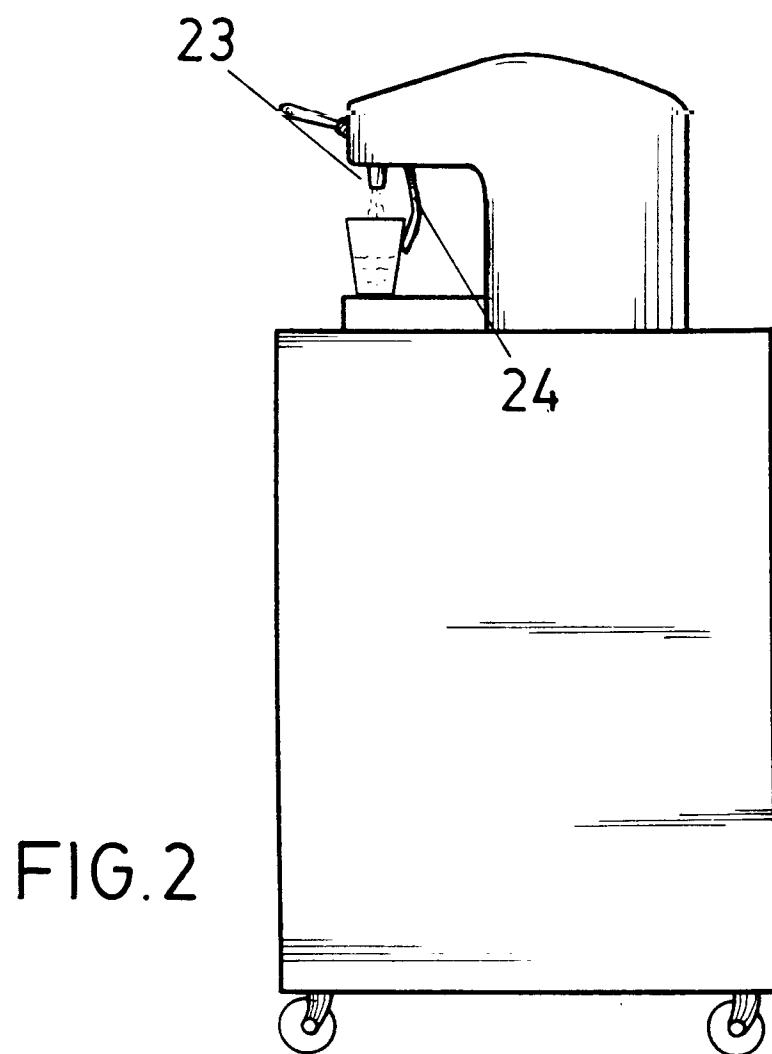


FIG. 1



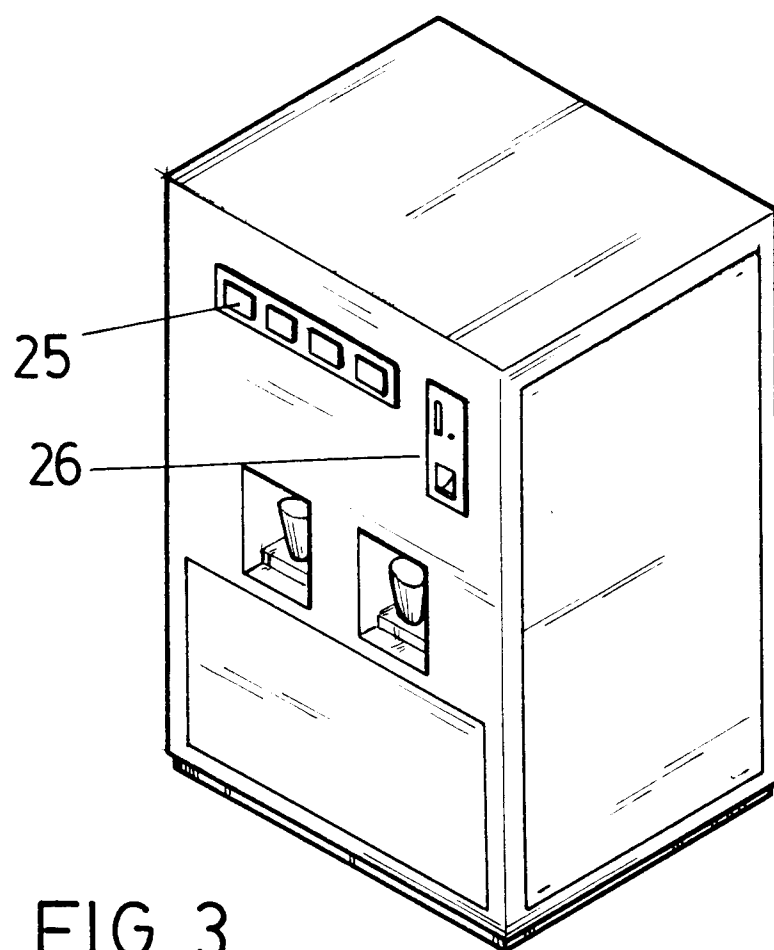


FIG. 3