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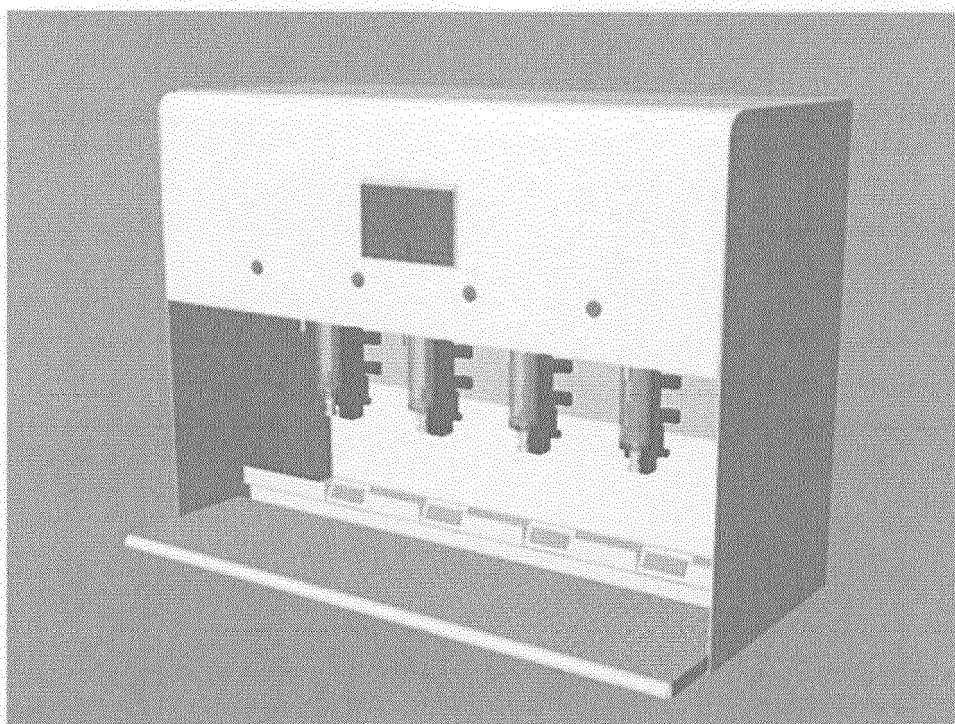
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(54) **Liquid dispenser**

(57) An automatic dispenser for the dispensing of liquid foods such as wine, tea, fruit juice, oil or for the dispensing of detergents for domestic use is disclosed. The dispenser includes a dosing system that uses a volumetric flow meter in order to deliver the exact amount of prod-

uct required by the user. The dispenser also provides real-time data on the quantities of product delivered and remaining. To this end, the dispenser is provided with an Ethernet port for data communication such that the dispenser can be controlled remotely.



Description

TECHNICAL FIELD

[0001] The present invention refers to the field of the technique relating to the distribution by means of dispensing liquid products not packaged for food use, mainly wine. The invention relates to the field of vending machines.

EXISTING STATE OF THE ART - PRIOR ART PORTION

[0002] Currently on the market there are vending machines for packaged products and bulk products. Not currently present an automatic dispenser of bulk wine that allows remote control of the residual quantities and the quantities dispensed. The machine, using multiple delivery ducts can provide different kinds of wine in bulk and allows you to control both the stock of any amount that the amount actually paid over to the consumer a press release of the supply.

EXPOSURE

[0003] The delivery system of wine is a measurement system for the automatic dispensing of liquids in general food (wine, tea, fruit juice-type aqueous, oil for food use) and for the dispensing of detergents for domestic use. The dosing system is based on a volumetric flow meter that can dispense the exact amount of product required by the user and provide in real time the actual availability of the required product.

[0004] The system is particularly suitable for dispensing of wine because the different channels of dosing and dispensing and reservoirs dedicated to the same capable of providing the machinery of different qualities of the same product.

[0005] The dispenser consists of a metal casing parallelepiped with a rectangular base (approximate dimensions 990 mm x 500 x 740), four modules delivery. Each delivery form is constructed from a membrane pump, meters, non-return valve product.

[0006] Every form of delivery may be used to provide:

- Beverages (tea, juice water)
- Oil for food
- Detergents for domestic use
- Different quality of these products (Wine)

[0007] The system is equipped with an Ethernet port network for data communication. Through the communication network can be remotely controlled dosing system, the reserve of product and the operation of the machine. The remote control monitors anomalies and provides the accurate counting of waste produced by each form of delivery. The system is equipped with metrology guaranteed by calculation and display of the volume of liquid

delivered and the total amount as a result of single delivery, with automatic printing of the quantity delivered. The electronic data acquisition system for measuring and processing of data for determining the liquid volume calculation unit is constituted by a PLC, the PLC input tray expansion, 2 PLC COM port and feed pumps the processor.

[0008] In addition to what is present in the dispenser, a display section setting of the measurement data and receipt printing unit, consisting of the display, on board fronts of derivation off, label printer, network filter, power supply, relays.

[0009] These features make the dispenser is particularly suitable for commercial use and the location in shopping centers. Currently, there are vending machines in supermarkets milk, cereal, detergents, but no wine nor any vending machine vending machine with remote control and quantity.

ABSTRACT

[0010] The accompanying drawings show the operation of the machine, based on a dosing system from the tank of the product to the dispenser by means of pumps to pressure and volumetric detection. The dispenser is equipped with four dispensers, four tanks and four related pumping systems.

[0011] The dispenser is equipped with a group of detection and print quantity for the issue of a receipt.

[0012] Each group is monitored and the monitoring system sends remotely over the Ethernet network operational data of operation, dispensing and consumption in order to favor the supplier in the activity of loading levels of the reservoir.

EXAMPLE

[0013] The dispenser is particularly suitable for dispensing wine as it allows to be loaded by means of bag in box directly connected to the pumping unit. Each tank can be loaded with different quality bulk wine (white, red, rosé) or quality of wine of varying quality.

[0014] The user can request through selection by touch screen panel the type and the quantity of wine, and after the positioning of the container (bottle glass or pet) under the spout have select the dispensing of product.

[0015] Once reached the level of the delivery request by the user closes the dispensing machine, transmits the delivery data to the network for printing the received and the transmission of data to the control center.

Claims

1. A vending machine for dispensing bulk wine **characterized by** the possibility to check remote the quantity delivered and the residue of product present in the distributor.

2. A vending machine for dispensing bulk wine as claimed in claim 1 that has the possibility of delivering different types of product
3. An automatic measuring system for liquids other than water 5
4. An Automated dispensing system for liquids other than water 10
5. A section for transferring hydraulic fluid from the reservoir of sample per meter consists of diaphragm pump, meter, non-return valve in the output product.
6. A section Electronic data capture for measurement and data processing for determining the liquid volume calculation unit consists of PLC, PLC input expansion drawer, 2 PLC COM port and processor power pumps 15 20
7. A section display and setting of the measurement data and receipt printing unit consists of the display, on-board shunt fronts off, label printer, line filter, power supply and relays. 25

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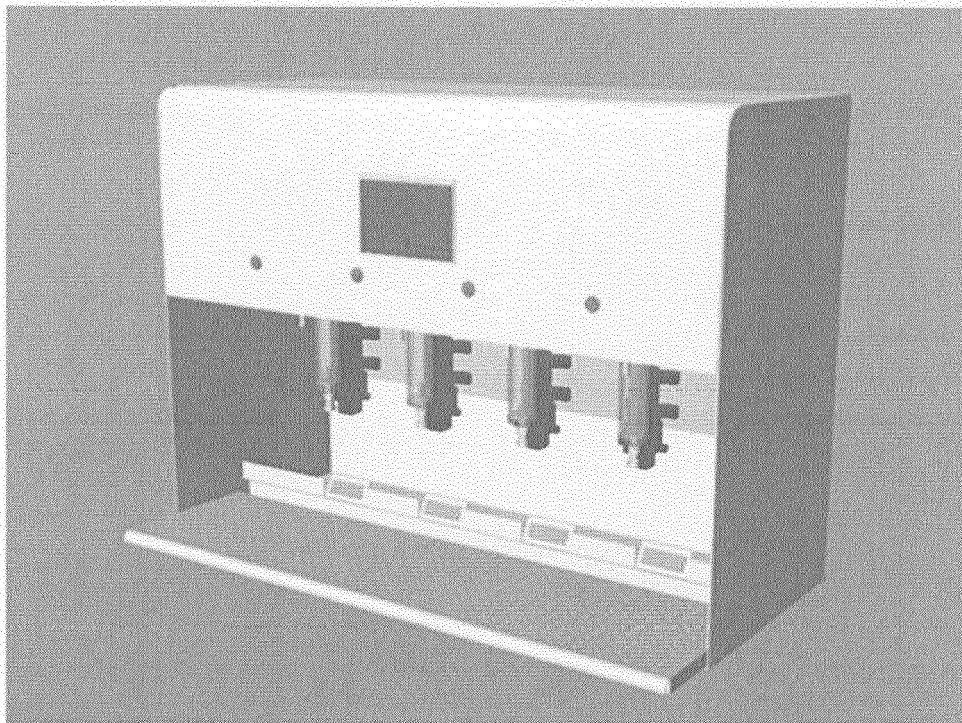
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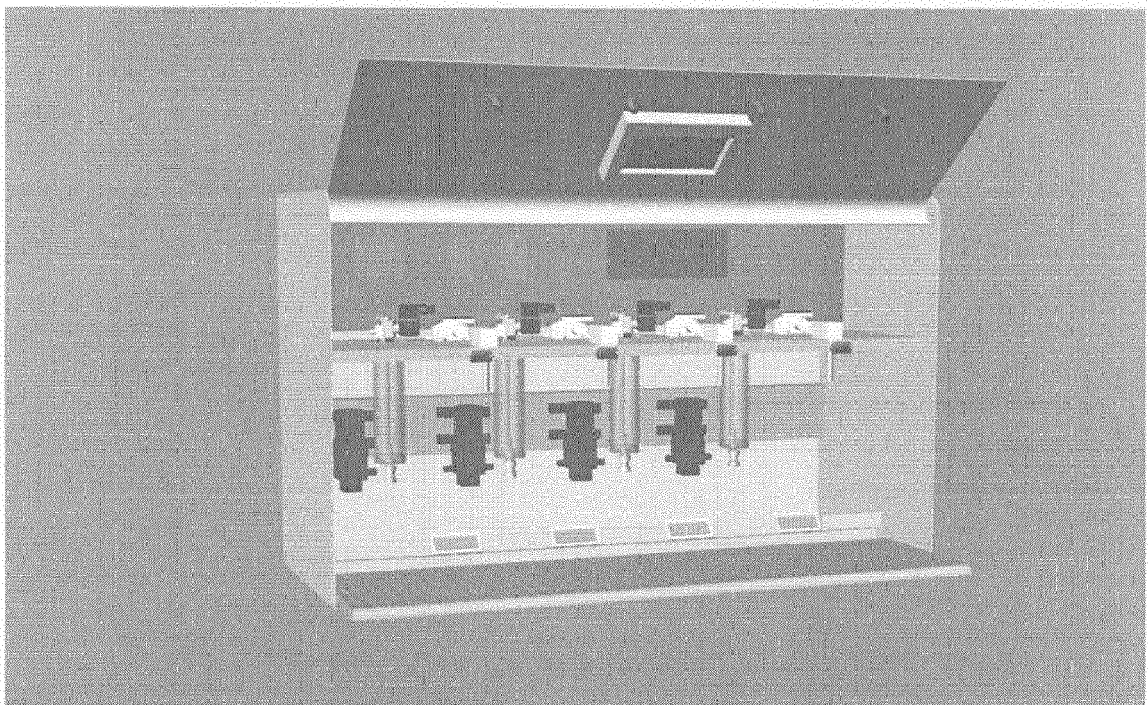
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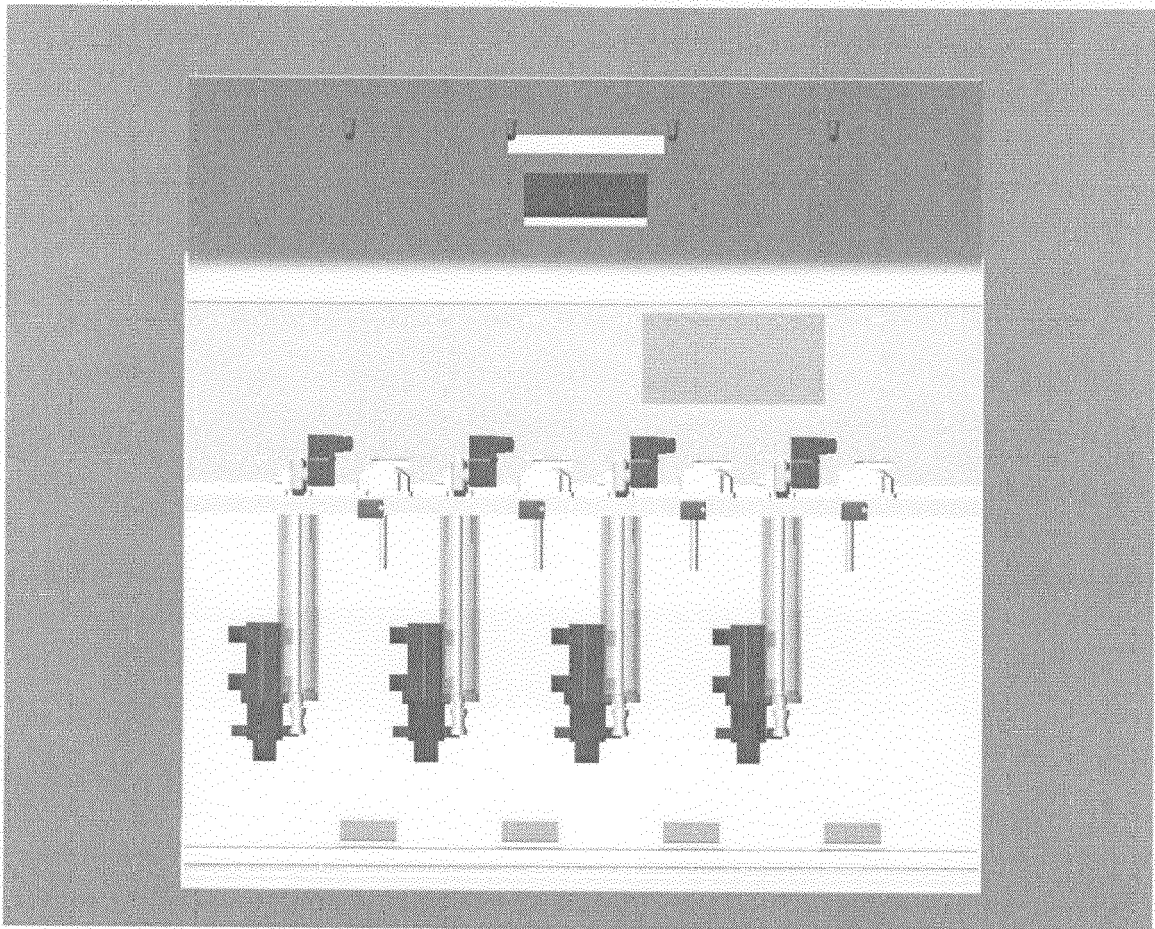
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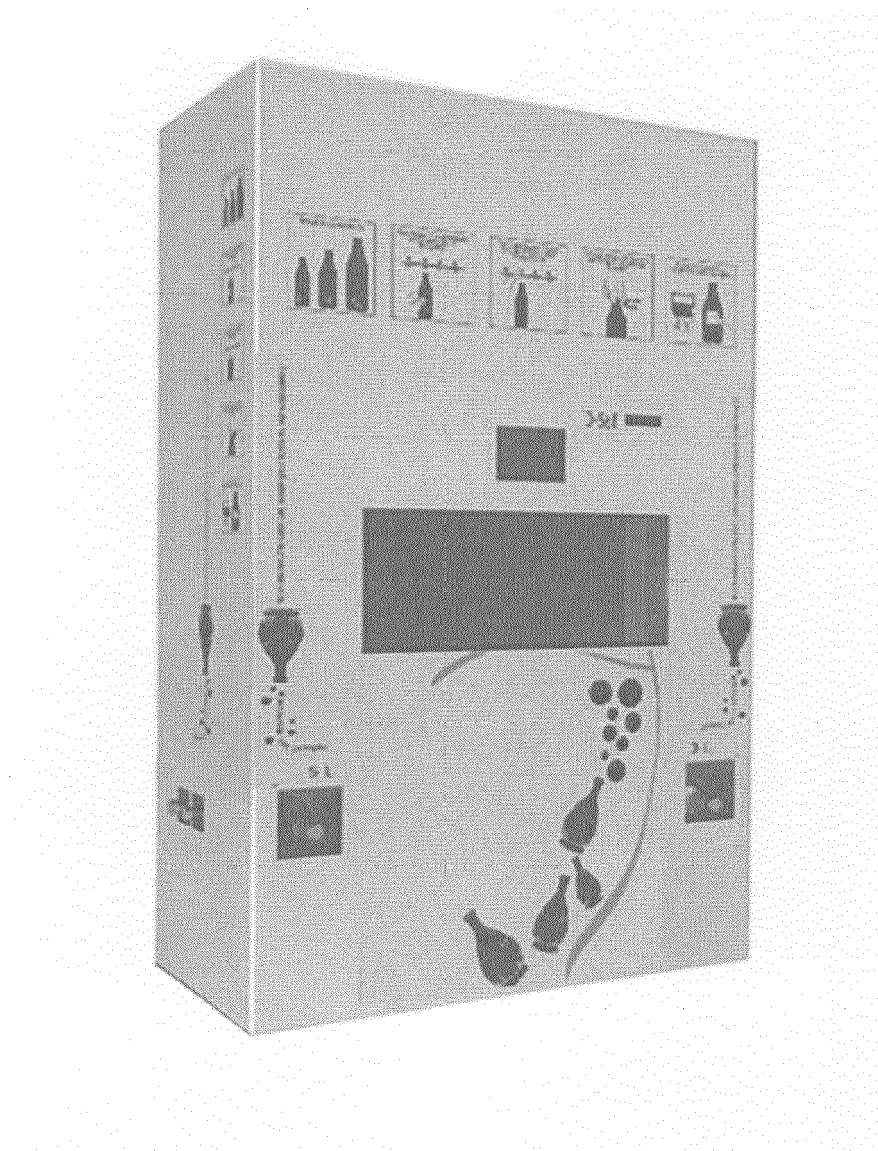
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EUROPEAN SEARCH REPORT

Application Number
EP 12 00 7900

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2006/131431 A1 (BALDIN MASSIMO [IT]; CORNOLO' LUCA [IT]; GASPARONI MICHELE [IT]) 14 December 2006 (2006-12-14) * page 3, lines 1-11 * * page 4, lines 23-25 * * page 6, line 19 - page 8, line 8; figures *	1-7	INV. B67D1/08
X	US 2010/200609 A1 (CADIGAN DANIEL J [US]) 12 August 2010 (2010-08-12) * paragraphs [0007], [0009], [0063], [0064]; figures *	5	
X	US 2008/004973 A1 (ROTHSCHILD LEIGH M [US]) 3 January 2008 (2008-01-03) * paragraphs [0016], [0026]; figures *	1-4	
X	WO 2011/000021 A1 (IPOUR PTY LTD [AU]; LAYTON KIMWELL RENSHAW [AU]; ROCKALL WAYNE [AU]) 6 January 2011 (2011-01-06) * abstract; figures *	1-4	
X	WO 02/072468 A2 (VITALLINK BUSINESS SYSTEMS INC [US]) 19 September 2002 (2002-09-19) * abstract; figures *	1-4	TECHNICAL FIELDS SEARCHED (IPC) B67D
X	US 6 751 525 B1 (CRISP III HARRY LEE [US]) 15 June 2004 (2004-06-15) * column 9, lines 8-13 *	1-4	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 26 June 2013	Examiner Müller, Claus
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.82 (P04C01)



Application Number

EP 12 00 7900

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☒ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 12 00 7900

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1, 2

A vending machine suitable for dispensing wine from a bulk reservoir

2. claim: 3

An automatic measuring system

3. claim: 4

An automatic dispensing system

4. claim: 5

A system for transferring hydraulic fluid from a reservoir

5. claim: 6

An electronic unit for data capture

6. claim: 7

A user interface, e.g. display and printer

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 00 7900

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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26-06-2013

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82