(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 556 948 A1**

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
23.10.2019 Bulletin 2019/43

(51) Int Cl.:
E03B 1/04 *(2006.01)* ***E03C 1/12*** *(2006.01)*

(21) Application number: **18168637.9**

(22) Date of filing: **22.04.2018**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(71) Applicant: **Greco, Andrea**
46020 Villa Poma Mantova (IT)

(72) Inventors:
- **Greco, Andrea**
  46020 Villa Poma Mantova (IT)
- **Greco, Enrico**
  46020 Villa Poma Mantova (IT)

Remarks:
A request for correction of the description, claims, abstract and drawings has been filed pursuant to Rule 139 EPC. A decision on the request will be taken during the proceedings before the Examination Division (Guidelines for Examination in the EPO, A-V, 3.).

(54) SELECTOR FOR SEPARATING THE LIQUIDS FROM DOMESTIC WASTE TO ALLOW THEM TO BE REUSABLE

(57) A selector device for domestic use, for separating easily water and oil from the main waste stream. It includes a rotating valve (7) positioned in a housing body (1) characterized by three functional positions, the valve control wheel (3) is actuated by wires (5) that can be moved by a lever or a knob remotely. Thus, the users can divert the flow of oil or water from the drain towards two separate tanks, so that the users can recycle them in an easy manner, thereby saving time and manual efforts.

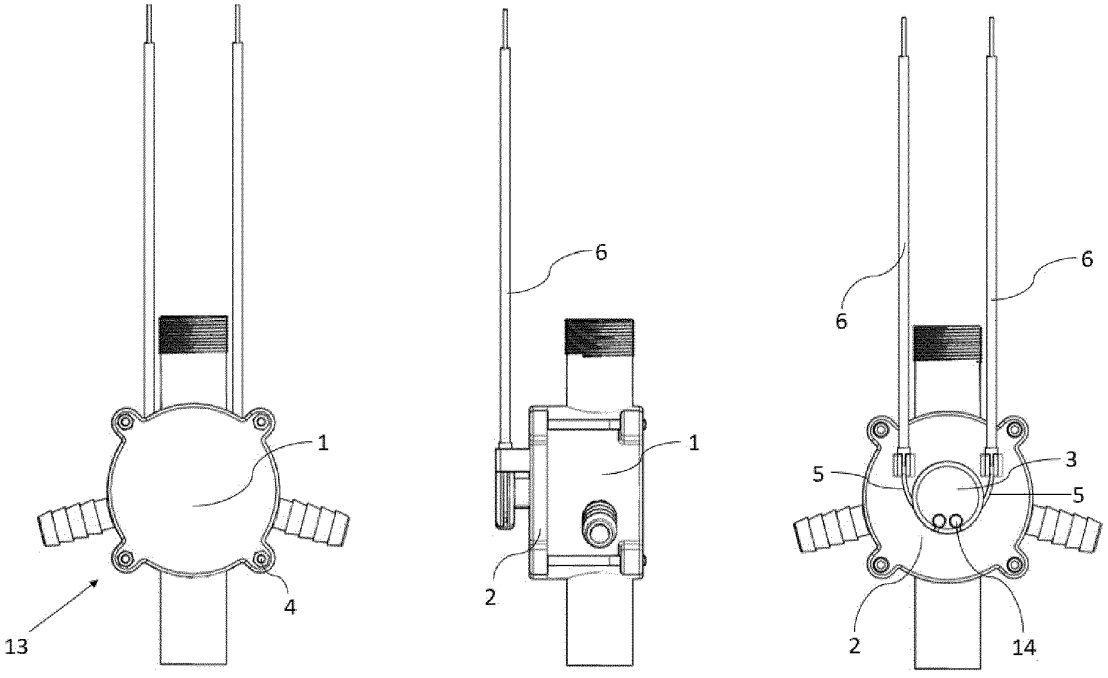

Fig.1

EP 3 556 948 A1

Description

Field of invention:

[0001] The invention concerns a device that can be installed in domestic kitchens to easily recuperate used water and oil by deviating them from the main waste stream to separate tanks.

Background of inventions:

[0002] People daily are used to washing vegetables and fruit and cooking pasta as well consuming water, that is drained in the sink once used.

[0003] Oil is used to fry food and other types of animal and vegetables' fats are not always disposed of properly.

[0004] In fact, although in several Countries it's forbidden to drain oil already used in the sink, some users keep doing it.

[0005] An additional drawback is that a vast amount of clean water is disposed in the general collection systems gathering water contaminated by soap, detergent and other substances: so, there's no means of distinguishing them and exploiting the reusable source.

[0006] Water used for washing veggies and cooking pasta can be effectively saved and reused in several ways, having a positive impact on the environment and cost-saving benefits.

[0007] Just take gardening and cleaning (doing housework).

[0008] Drinkable water is a precious resource and it is not largely available in several areas so preventing its depletion, for instance by watering plants instead of throwing it away, could be extremely beneficial for our society.

[0009] Used vegetables and animals'oils should not be disposed in the general collection systems but instead be gathered in closed containers and disposed of in specific ecological stations.

[0010] People who do not care about this separation and let any type of oil flow through the sink stir up a difficult and expensive activity towards the depurators of the municipality.

[0011] People with the awareness of the detrimental ecological impact of that action can collect the water already used in pots, instead of draining it into the sink.

[0012] This solution is also valuable for used oils, meaning the collection of them in sealed containers or tanks and bringing them to recycling stations.

[0013] Unfortunately, who follow these practices requiring care and time consist in a small minority.

Summary of the invention:

[0014] The invention is set forth and characterized in the main claim, while the dependent claims describe other characteristics of the invention.

[0015] The purpose of the invention is to achieve a device for separating water and oil easily from the main waste stream, in a practical, functional, compact way and can be used in a condition of absolute safety by the user.

[0016] Moreover, it also helps to reduce unpleasant odors from the sink outlet.

[0017] By a simple rotation of a knob or of a lever, the used water will be diverted in a port that can be connected to a close container.

[0018] By rotating the knob or the lever in another position, the used oil will be diverted in another port that can be connected to another close container.

[0019] When the knob or the lever is in the neutral position the sink outlet works as usual, like a straight pipe.

[0020] The knob or the lever can be located remotely from the device having cables to operate the valve in the device.

[0021] The device, according to the invention, comprises a rotating valve which is able to connect inlet and outlet ports and closing other ports.

[0022] The actuations of the valve are made by cables which are pulled or released by a knob or of a lever.

[0023] The housing of the valve can be easily connected to the existing piping system under the sink.

[0024] The housing consists of a chamber containing a rotating valve, four ports: one inlet, one main outlet and two secondary outlets, and an embodied separate closing cover.

[0025] When the rotating valve in the chamber is in the neutral position, there is a direct flow from the inlet to the main outlet port.

[0026] By a rotation of the valve, for instance of 70 degree, clock wise, the main outlet is closed and only the left secondary outlet is open for the flow.

[0027] By another rotation of the valve, for instance of another 70 degree, clock wise, the main outlet is closed again and only the right secondary port is open for the flow, the right one.

[0028] The assembled device is a leak-free unit once installed with all the ports connected to the piping of the sink and to the flexibles hoses of two containers.

[0029] The two cables end in a knob which can be in several positions, as for instance, on the top of the sink or in another piece of furniture.

[0030] The knob has three signs to indicate the corresponding positions of the valve: neutral for the main outlet, and the remaining others for secondary port outlet left and secondary port outlet right.

Brief description of the drawings

[0031] These and other characteristics of the invention will be clear from the following description of a preferential form of embodiment, given as a non-restrictive example, with reference to the attached drawings wherein:

Fig.1 shows the entire assembly front, side and rear views;

Fig.2 shows a section of the device;

Fig.3 shows the characteristic positions of the valve;

Detailed description of a preferential embodiment

[0032] With reference to the drawings, a device (13) to easily separate water and oil from the main waste stream, can be associated with existing piping under the sink.

[0033] The device (13) is a compact unit allowing one easy installation and comprises a main housing body (1), a cover (2), a valve control wheel (3), fasteners (4), wires (5), cable guides (6).

[0034] Inside the device, in the housing body (1), a rotating valve (7) works against a cylindrical surface (12) and can be turned to close and unclose the orifices that connect the ports.

[0035] In the neutral position (15) the flow goes from the inlet (11) to the main outlet (9) while the valve keeps closed the other two ports of the secondary outlets (8) and (10).

[0036] Another position (16), for instance by rotating the valve of 70 degree, clock wise, makes the flow to go from the inlet (11) to the secondary outlet to the left (10); the valve (7) keeps closed the other two ports, the main outlet (9) and the secondary outlet on the right (8).

[0037] Another position (17), for instance by rotating the valve (7) of another 70 degree, clock wise, makes the flow to go from the inlet (11) to the secondary outlet to the right (8); the valve (7) keeps closed the other two ports, the main outlet (9) and the secondary outlet on the left (10).

[0038] The valve control wheel (3), rotates when pulled by the wires (5) which have pins (14) at their ends.

[0039] The two wires are guided by the flexible sheaths (6).

[0040] According to a variant, the actuation of the valve (7) can be operated by a single wire providing the valve with a spring to make it return to neutral position.

[0041] It is obvious however that modifications and/or additions can be made to the device (13) as described heretofore, but these shall remain within the field and scope of the invention.

[0042] For example, the cover instead of being closed by four fasteners, i.e. bolts, could be designed with an integral thread to be engaged with the housing body (1). Another example is the shape of the housing body (1) and of the rotating valve (7) can be replaced by other function equivalent elements.

[0043] Another variant consists of an automatic actuation of the rotating valve (7) by means of an electrical motor piloted by signals from sensors which detect the type of fluids.

Claims

1. Device for separating water and oil from the main waste stream, thanks to a rotating valve (7) installed in a housing body (1) provided of four ports, two of which can be connected to separate tanks, **characterized in that** said valve (7) can be actuated remotely, allowing the end user to select where to divert the sink outflow.

2. Device as in claim 1, **characterized in that** it can be installed under the sink by means of typical connections (11) and (9) provided of conventional sealing components.

3. Device as in claim 1, **characterized in that** the rotating valve (7) can be actuated remotely by means of cables.

4. Device as in claim 1, **characterized in that** the rotating valve (7) can be actuated remotely by means of hydraulics lines.

5. Device as in claim 1, **characterized in that** the rotating valve (7) can be actuated electrically.

6. Device as in claim 1, **characterized in that** the rotating valve (7) can be actuated manually by operating directly on the wheel (3).

7. Device as in claim 1, **characterized in that** the rotating valve (7) can be actuated automatically by sensors installed which recognized the type of fluids.

8. Device as in claim 1, **characterized in that** the connections for the pipes can vary.

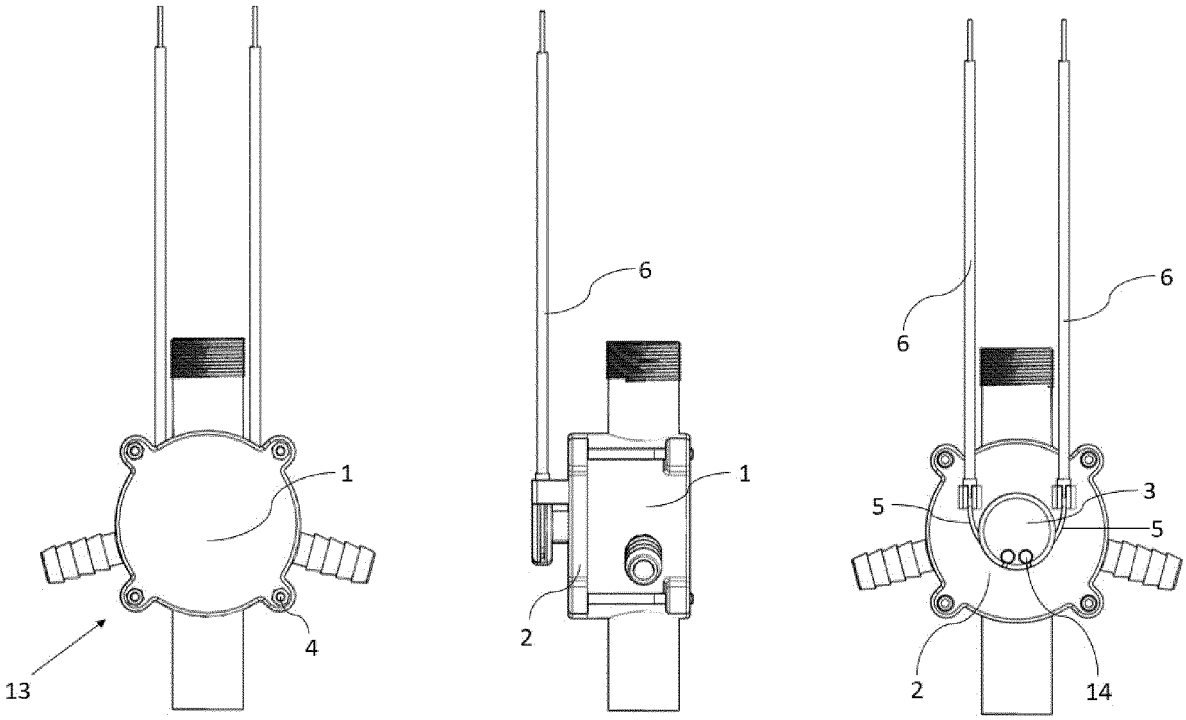

Fig.1

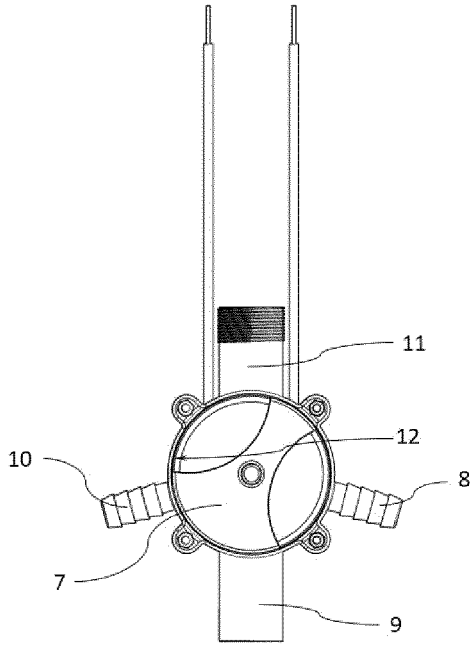

Fig.2

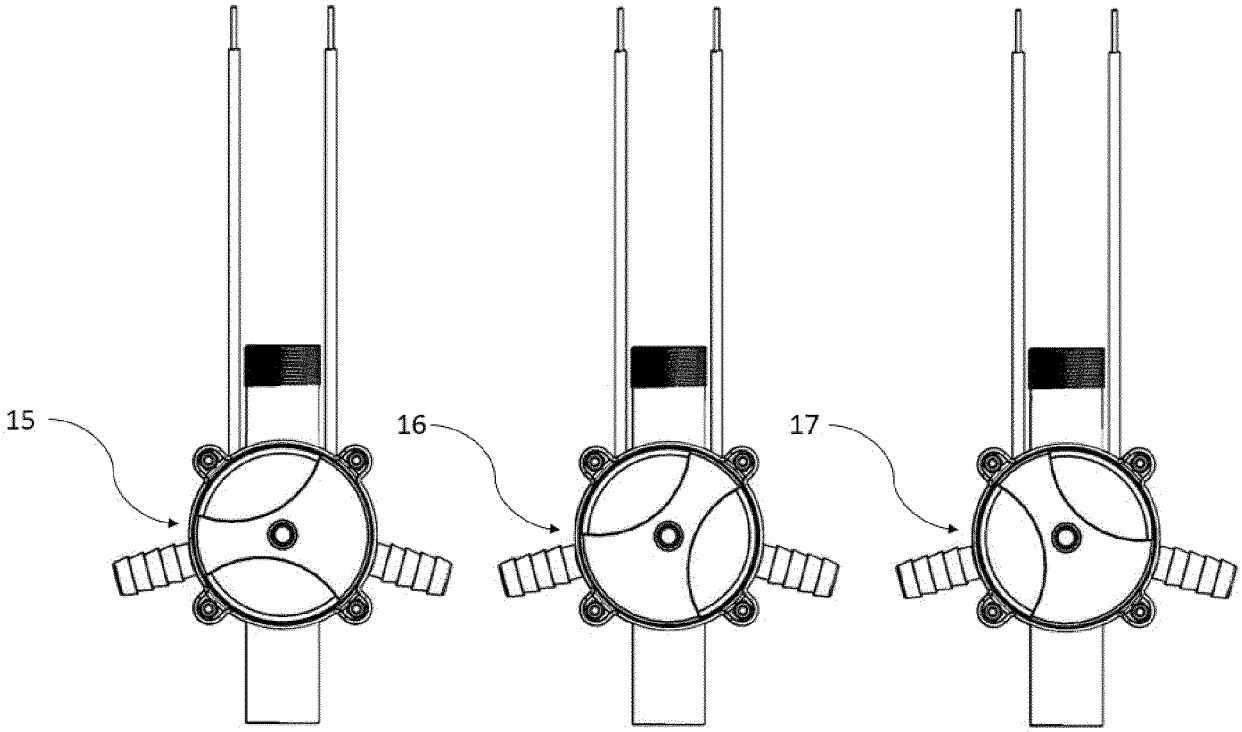

Fig.3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 18 16 8637

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	GB 2 430 444 A (GEORGE ROBERT [GB]) 28 March 2007 (2007-03-28) * page 1, line 2 - page 2, line 7 * * page 5, line 19 - page 8, line 8; figures 1-6 *	1-8	INV. E03B1/04 E03C1/12
X	GB 2 266 743 A (CANMAS PTY LTD [AU]) 10 November 1993 (1993-11-10) * page 3, line 33 - page 5, line 31; figures 1,2 *	1-8	
A	GB 2 386 392 A (SAUNDERS GARY JOHN [GB]) 17 September 2003 (2003-09-17) * page 1, line 5 - line 7 * * page 13, line 21 - line 36; figures 7A-8C *	1-5,8	
A	EP 2 333 389 A1 (AISIN SEIKI [JP]) 15 June 2011 (2011-06-15) * column 7, line 16 - line 36 * * column 12, line 9 - line 16 * * column 12, line 29 - line 32; figures 1,2 *	1,7,8	TECHNICAL FIELDS SEARCHED (IPC) E03B E03C F16K
A	US 2017/328483 A1 (VANDERHOFF CANDY [US] ET AL) 16 November 2017 (2017-11-16) * claims 8-14; figures 5a-5l *	1,8	
A	GB 2 441 788 A (STUDOR SA [LU]; UNIV HERIOT WATT [GB]) 19 March 2008 (2008-03-19) * page 5, line 7 - line 24; figures 3-7 *	1,8	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	22 November 2018	Stefanescu, Radu

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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 18 16 8637

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

22-11-2018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2430444 A	28-03-2007	CN 101268235 A	17-09-2008
		EP 1931830 A1	18-06-2008
		GB 2430444 A	28-03-2007
		JP 2009510287 A	12-03-2009
		US 2010180966 A1	22-07-2010
		WO 2007036685 A1	05-04-2007
GB 2266743 A	10-11-1993	AU 3112093 A	11-11-1993
		CA 2095195 A1	06-11-1993
		GB 2266743 A	10-11-1993
		IL 105560 A	29-06-1995
		NZ 247508 A	26-03-1996
		US 5323810 A	28-06-1994
GB 2386392 A	17-09-2003	NONE	
EP 2333389 A1	15-06-2011	CN 102165236 A	24-08-2011
		EP 2333389 A1	15-06-2011
		JP 4761174 B2	31-08-2011
		JP WO2010073898 A1	14-06-2012
		US 2011180738 A1	28-07-2011
		WO 2010073898 A1	01-07-2010
US 2017328483 A1	16-11-2017	NONE	
GB 2441788 A	19-03-2008	AR 062761 A1	03-12-2008
		AU 2007297183 A1	20-03-2008
		CA 2663201 A1	20-03-2008
		CN 101553630 A	07-10-2009
		EP 2061935 A2	27-05-2009
		ES 2612953 T3	19-05-2017
		GB 2441788 A	19-03-2008
		HK 1111761 A1	06-07-2012
		JP 5185938 B2	17-04-2013
		JP 2010503851 A	04-02-2010
		KR 20090078800 A	20-07-2009
		RU 2009108561 A	20-10-2010
		TW 200827696 A	01-07-2008
		US 2010000298 A1	07-01-2010
		WO 2008032224 A2	20-03-2008

EPO FORM P0459

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