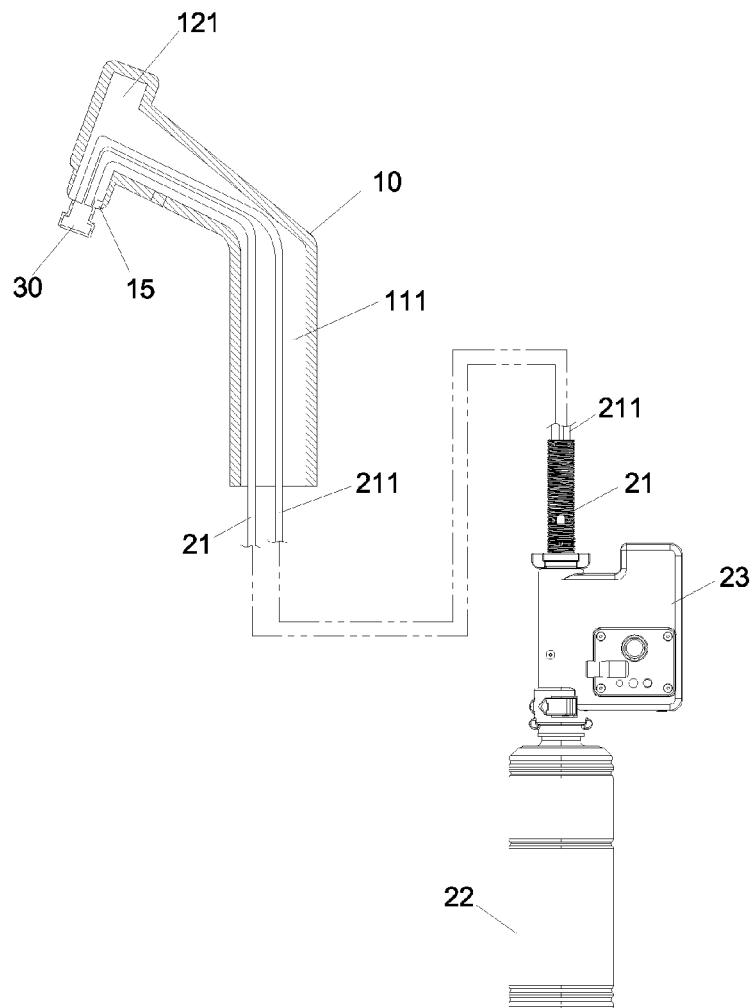




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(19) **United States**(12) **Patent Application Publication****Wang et al.**(10) **Pub. No.: US 2017/0218605 A1**(43) **Pub. Date: Aug. 3, 2017**(54) **INFRARED SOAP DISPENSING FAUCET STRUCTURE**(71) Applicants: **Hsiang-Hung Wang**, Changhua (TW);
Yu-Chang Lin, Changhua (TW)(72) Inventors: **Hsiang-Hung Wang**, Changhua (TW);
Yu-Chang Lin, Changhua (TW)(21) Appl. No.: **15/008,449**(22) Filed: **Jan. 28, 2016****Publication Classification**(51) **Int. Cl.**
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A47K 5/14 (2006.01)(52) **U.S. Cl.**CPC **E03C 1/046** (2013.01); **A47K 5/14**
(2013.01); **A47K 5/1217** (2013.01)(57) **ABSTRACT**

An infrared soap dispensing faucet structure comprises a shell and an automatic soap dispensing unit. The shell has a hollow vertical section with a first space and a hollow horizontal section with a second space. A water outlet and a soap outlet are arranged at an outer lower edge of the horizontal section. The water outlet has a first sensor and the soap outlet has a second sensor. The first sensor of the water outlet is provided for controlling the water outlet to be turned on and off. The shell and the automatic soap dispensing unit are integrated with each other so that a bathroom space is not in disarray and dirt remained on hands is not polluted a faucet or the automatic soap dispensing unit.



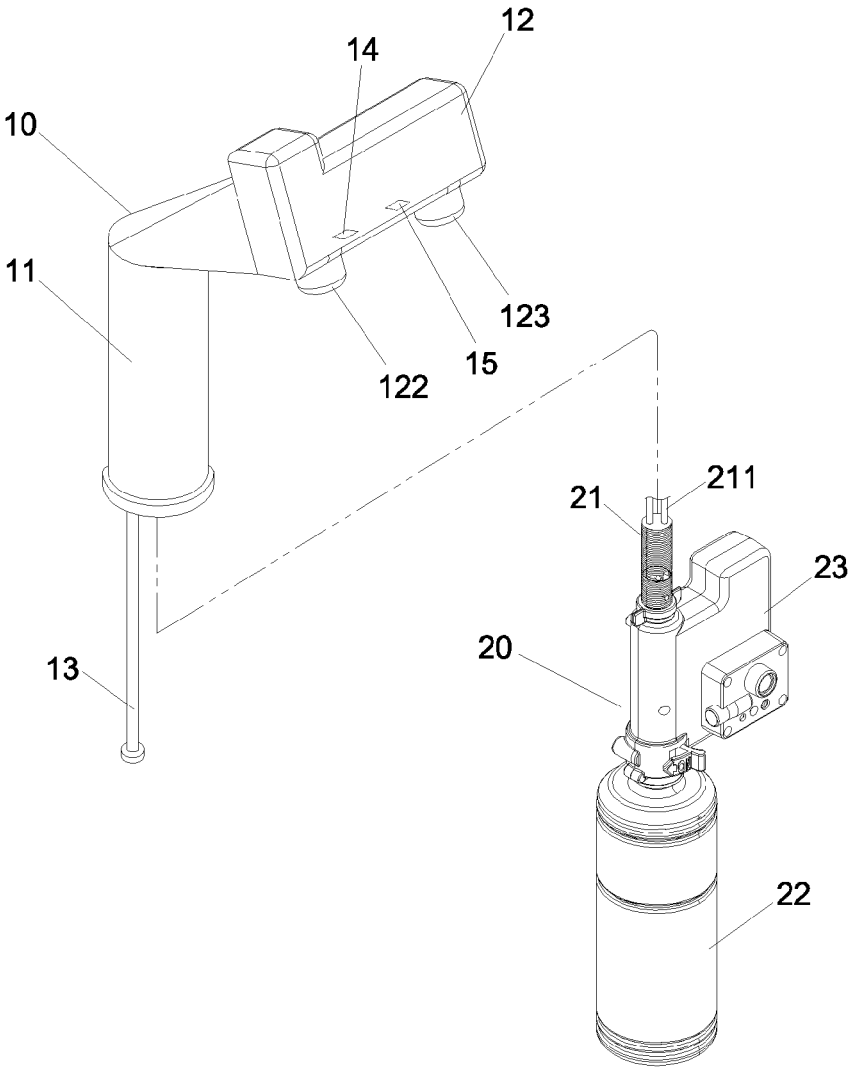


FIG. 1

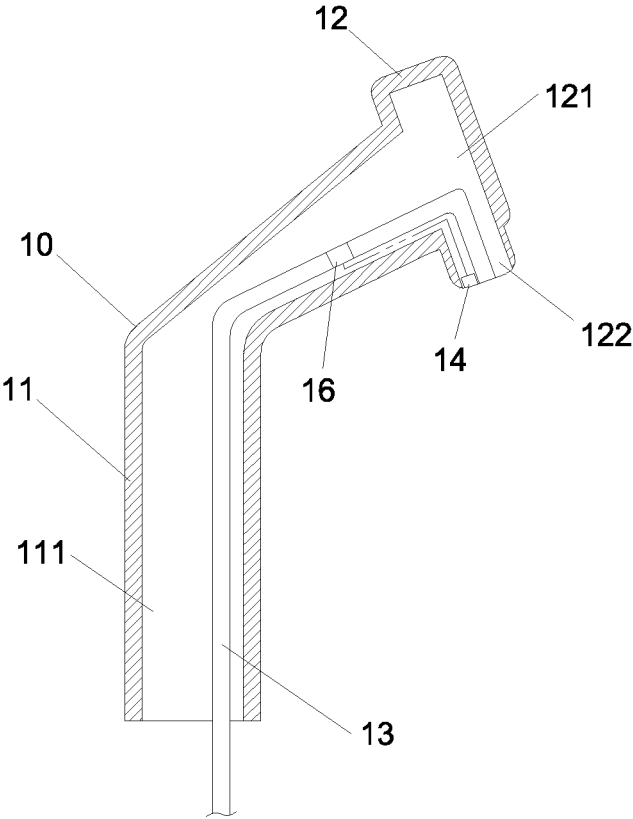


FIG. 2

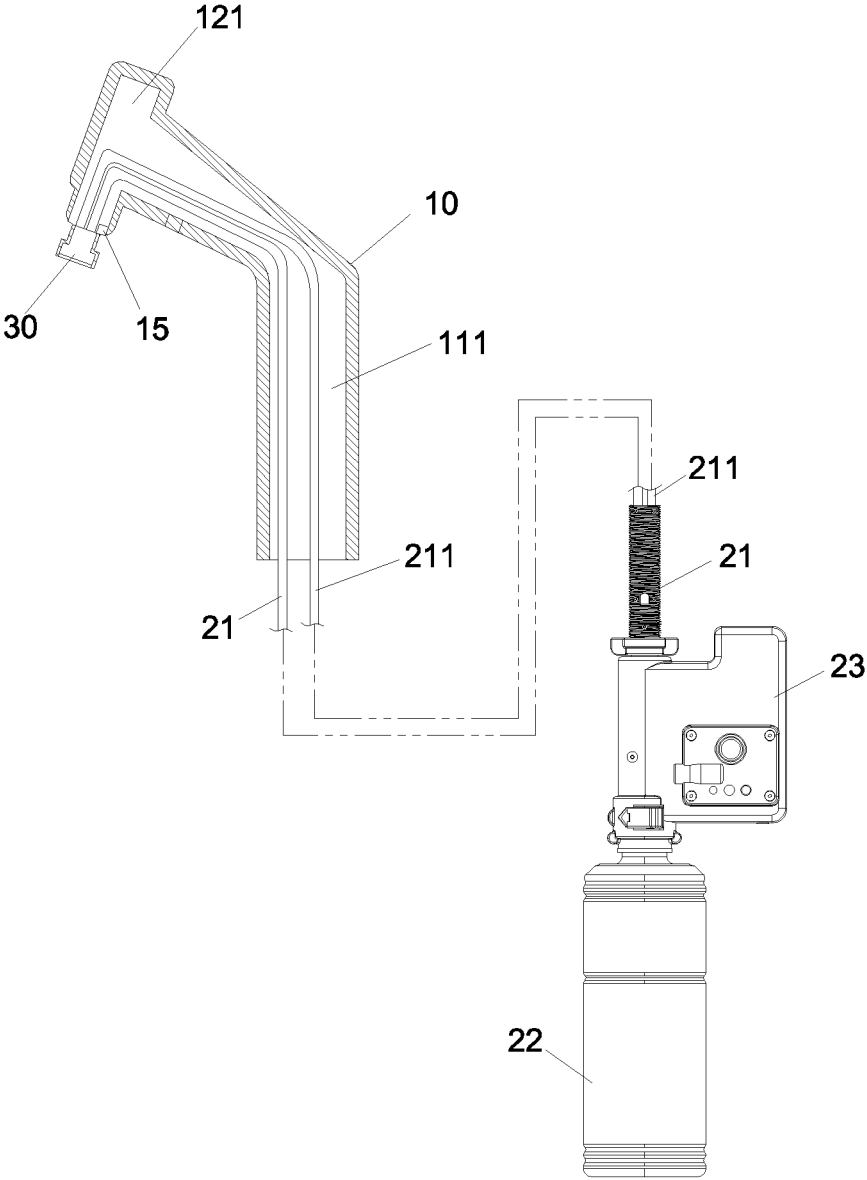


FIG. 3

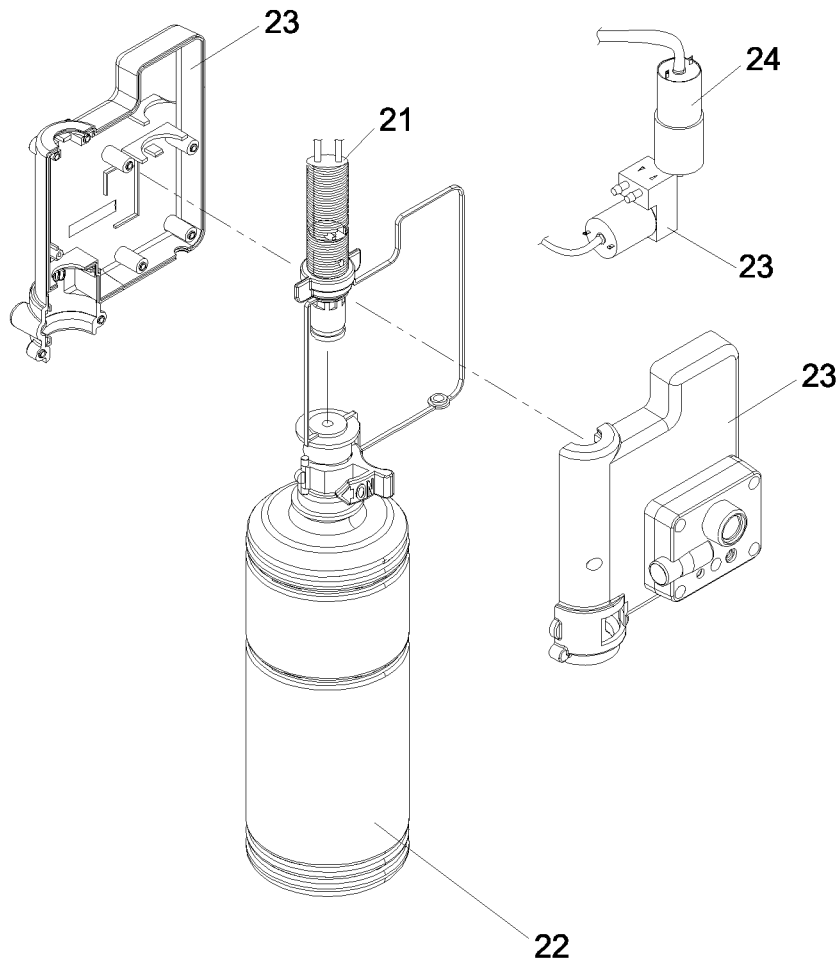


FIG. 4

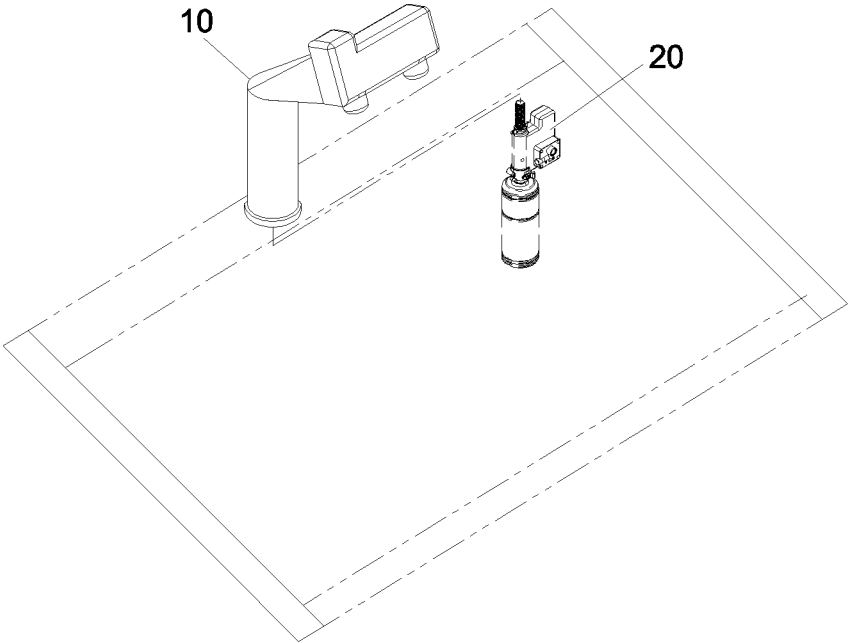


FIG. 5

INFRARED SOAP DISPENSING FAUCET STRUCTURE

FIELD OF THE INVENTION

[0001] The present invention relates to a faucet, and more particularly to an infrared soap dispensing faucet structure.

DESCRIPTION OF THE PRIOR ART

[0002] In the modern society, more and more people are emphasized on cleanness and sanitation. There are always various soap dispensers arranged near by the faucet in the bathroom to wash body (including hands) to prevent the germs from being hazardous to the health.

[0003] However, the conventional faucet only has a single function of outputting water flow so that the soap dispenser must be placed at the wall or the shelves. But there are many bath products arranged in the bathroom, the space of the bathroom is seemed to be in disarray.

[0004] Although someone proposed that the soap dispenser and the faucet are combined to the sink, there are still some drawbacks described as follows.

[0005] If installing a sink structure with the soap dispenser, the faucet and the sink must be all replaced. It is wasting time and materials.

[0006] The head of the soap dispenser must be pressed to dispense the soap (such as cleaning lotion), the head of the soap dispenser may be polluted due to the dirt remained on the hand(s) of the user. It may be not sanitary.

[0007] Please reference to U.S. Pat. No. 7,458,523, it disclosed a foam-dispensing faucet for dispensing a quantity of foam soap and separately dispensing a flow of water. According to one embodiment of the present invention includes a faucet body having a dispensing opening, water supply means integrated into the faucet body for delivering water to the foam-dispensing faucet, liquid soap means integrated into the faucet body for delivering liquid soap to the foam-dispensing faucet, air supply means integrated into the faucet body for delivering air to the foam-dispensing faucet, the interior of the faucet body being configured for processing liquid soap from the liquid soap means and air from the air supply means into a foam soap, and control means for timing and sequencing the dispensing of water and foam soap from the foam-dispensing faucet.

[0008] Furthermore, please reference to US patent no. 20120006912, it disclosed a water faucet which includes a faucet spout having an open end, a flow-constricting device coupled to the open end of the faucet spout. The flow-constricting device includes a first water passage, and a liquid soap passage extending from a side of the flow-constricting device to the first water passage. A liquid soap delivering tube has an inlet end coupled to a liquid soap container and an outlet end coupled to the side of the flow-constricting device. When water runs through the first water passage, venture effect is produced causing a negative pressure that draws liquid soap out of the liquid soap container, through the liquid soap delivering tube and the liquid soap passage, and into the first water passage where the liquid soap mixes with the water and produces liquid soap foam after passing a screen. Dispensing-mode converters for converting the faucet from foam dispensing mode to water dispensing mode or water jet mode are also disclosed.

[0009] Please also reference to US patent no. 20140053332, it disclosed a nozzle assembly for a tap, or

faucet, including a first nozzle and a second nozzle arranged side by side. The second nozzle has a flared discharge end which flares outwardly in front of the discharge end of the first nozzle so that the two discharge ends overlap. The nozzle assembly may be incorporated as a self-contained nozzle unit for fitting to a faucet. The nozzle assembly is particularly suitable for faucets designed to dispense water and foam soap separately over the basin of a sink.

[0010] However, the above mentioned structures have only one outlet for each and the soap and the water are flowed out through the outlet. Hence, the water and the soap are mixed while they are flowed out from the outlet. But not everyone needs to use soap but only water.

[0011] Therefore, the applicant is applying an infrared soap dispensing faucet structure. The faucet and the soap dispenser may be integrated with each other so that the dirt remained on the hand(s) of the user may be not polluted the faucet and the space of the bathroom may be kept much cleaner.

SUMMARY OF THE INVENTION

[0012] A main object of an infrared soap dispensing faucet structure in accordance with the present invention is provided. A faucet and a soap dispenser are integrated with each other for providing the user to use much better.

[0013] The infrared soap dispensing faucet structure mainly comprises a shell and an automatic soap dispensing unit; the shell has a hollow vertical section and a hollow horizontal section; a first space is defined in the vertical section and a second space is defined in the horizontal section; a water outlet and a soap outlet are arranged at an outer lower edge of the horizontal section; an inlet pipe is arranged in the first space and the second space for providing to output water flow and has an inlet valve; the water outlet has a first sensor and the soap outlet has a second sensor; the first sensor of the water outlet is provided for controlling the water outlet to be turned on and off; the automatic soap dispensing unit has an output set, a container, and an electric control set; the output set is connected with the container and the soap outlet; the electric control set is connected with the output set and the second sensor for providing soap to output to the soap outlet; further characterized in that: the shell and the automatic soap dispensing unit are integrated with each other so that a bathroom space is not in disarray and dirt remained on hands is not polluted a faucet or the automatic soap dispensing unit.

[0014] There are many effects of the present invention described as follows.

[0015] It is easy to be installed and directly installed to save the space of the bathroom and make it clean and not in disarray without changing the original sink or wash basin. It is environment friendly, too.

[0016] The faucet and the soap dispensing unit are integrated with each other so as to save space and make the environment clean and not in disarray.

[0017] In addition, it prevents the dirt remained on the hand(s) of the user from polluting the soap dispensing unit or the faucet. It has the advantage of sanitation.

[0018] Finally, the automatic soap dispensing unit has an air pump and a foaming unit is ranged at the soap outlet. The soap is dispensed in a manner of micro foam.

[0019] Further objectives and advantages of the present invention will become apparent from a careful reading of the

detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. 1 is a system diagram of an infrared soap dispensing faucet structure in accordance with the present invention;

[0021] FIG. 2 is a cross-sectional view of the infrared soap dispensing faucet structure in accordance with the present invention for illustrating an arrangement of an inlet pipe and an outlet pipe;

[0022] FIG. 3 is a cross-sectional view of the infrared soap dispensing faucet structure in accordance with the present invention for illustrating an arrangement of an automatic soap dispensing unit, a soap outlet, and a foaming unit;

[0023] FIG. 4 is a perspective view of the automatic soap dispensing unit of the infrared soap dispensing faucet structure in accordance with the present invention; and

[0024] FIG. 5 is an operational view of the infrared soap dispensing faucet structure in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] To describe clearly that the present invention achieves the foregoing objective and function, the technical features and desired function are described with reference to a preferred embodiment and accompanying drawings.

[0026] Please refer to FIGS. 1 to 5, an infrared soap dispensing faucet structure may mainly comprise a shell 10 and an automatic soap dispensing unit 20. Please refer to FIGS. 1 to 3, the shell 10 has a hollow vertical section 11 and a hollow horizontal section 12. A first space 111 is defined in the vertical section 11 and a second space 121 is defined in the horizontal section 12. A water outlet 122 and a soap outlet 123 are arranged at an outer lower edge of the horizontal section 12. The water outlet 122 is fluidly communicated with an inlet pipe. The inlet pipe is arranged in the first space 111 and the second space 121 for providing to output water flow and has an inlet valve 16. The water outlet 122 has a first sensor 14 and the soap outlet 123 has a second sensor 15. The first sensor 14 of the water outlet 122 is provided for controlling the water outlet 122 to be turned on and off.

[0027] Please refer to FIGS. 1, 3, 4, and 5, the automatic soap dispensing unit 20 has an output set 21, a container 22, and an electric control set 23. The output set 21 is connected with the container 22 and the soap outlet 123. The electric control set 23 is connected with the output set 21 and the second sensor 15 for providing soap to output to the soap outlet 123.

[0028] The above mentioned structure may have following effects.

[0029] Please refer to FIGS. 1 to 5, an user ousts his/her hand(s) to close to the soap outlet 123 and the electric control set 23 is activated by the second sensor 15 so that the soap is sucked from the container 22 to flow to the output set 21 and provide the soap through the soap outlet 123. When the foam or dirt remained on the hand(s) of the user need to be washed, the hand(s) may be closed to the water outlet 122 and the inlet valve 16 is turned on by the first sensor 14 of the water outlet 122 so that the water is flowed out to wash the hand(s). The hands of the user may not touch the shell

10 (that is, the faucet) or the automatic soap dispensing unit 20 with the structure of the present invention. Therefore, the dirt may be not remained on the faucet or the automatic soap dispensing unit 20. It has the effects of dry and sanitation.

[0030] In the above embodiment, the infrared soap dispensing faucet structure may be directly installed to save the space of the bathroom and make it clean and not in disarray without changing the original sink or wash basin due to the integration of the faucet and the automatic soap dispensing unit 20.

[0031] Please refer to FIGS. 3 and 4, the automatic soap dispensing unit 20 has an air pump 24. The output set 21 includes an air inlet pipe 211. A foaming unit 30 is arranged at the soap outlet 123. When the hand(s) of the user is/are closed to activate the automatic soap dispensing unit 20, the soap is flowed from the output set 21 to the soap outlet 123 and the foaming unit 30. The air pump 24 is pumped air into the foaming unit 30 so that the air and the soap are mixed in the foaming unit 30 and the soap is flowed out in a manner of micro foam.

[0032] In conclusion, the faucet and the automatic soap dispensing unit 20 are integrated with each other so that the bathroom is clean but not in disarray. The dirt remained on the hand(s) may be not polluted the faucet or the automatic soap dispensing unit 20.

[0033] Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

1. An infrared soap dispensing faucet structure, comprising a shell and an automatic soap dispensing unit; the shell has a hollow vertical section and a hollow horizontal section; a first space is defined in the vertical section and a second space is defined in the horizontal section; a water outlet and a soap outlet are separately arranged at an outer lower edge of the horizontal section; an inlet pipe is arranged in the first space and the second space for providing to output water flow and has an inlet valve; the water outlet has a first sensor and the soap outlet has a second sensor; the first sensor of the water outlet is provided for controlling the water outlet to be turned on and off; the automatic soap dispensing unit has an output set, a container, and an electric control set; the output set is connected with the container and the soap outlet; the electric control set is connected with the output set and the second sensor for providing soap to output to the soap outlet; further characterized in that:

the shell and the automatic soap dispensing unit are integrated with each other so that a bathroom space is not in disarray and dirt remained on hands is not polluted a faucet or the automatic soap dispensing unit; and

the automatic soap dispensing unit has an air pump, the output set includes an air inlet pipe, a foaming unit is arranged at the soap outlet, the soap is flowed from the output set to the soap outlet and the foaming unit, the air pump is pumped air into the foaming unit, air and soap are mixed in the foaming unit, and soap is flowed out in a manner of micro foam.

2. (canceled)

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