

Multi-Functional Water Filter Apparatus

Field of Invention

5 The present invention relates to a multi-functional appliance, more particularly relates to a water filter apparatus having radio clock.

Background of the Invention

10

A water filter apparatus is usually placed at the kitchen area to filter water supply used for drinking, cooking, etc. Consumers may desire to have information to display the time and to have an entertainment device to play music or broadcast
15 news from radio or other source. There is no currently available water filter apparatus that provides radio alarm clock into which the user might have entertainment and time information at the place where the water filter apparatus is located. This apparatus is useful in the homes by bored
20 housewives while doing other things in the kitchen.

It is therefore an object of the present invention to provide a digital clock in the water filter apparatus to display real time.

25

Another object of the present invention is to provide such a device which is simple and inexpensive construction.

The novel features which are believed to be characteristics of the invention as to the system together with further objects and advantages thereof, will be better understood from the following description in connection with the accompanying drawings in which the presently preferred embodiment of the invention is illustrated by way of example. It is to be expressly understood, however, that the drawings are for purposes of illustration and description only, and are not intended as a definition of the limits of the invention.

Summary of the Invention

15

In the present invention, a water filter apparatus comprises a housing which includes an upper housing section detachably mounted to a lower housing section for accommodating at least one filter element therein, the lower housing section includes a recess area at the front surface of the housing, and an electronic controller mounted at the recess area of the housing including a radio means capable of receiving electromagnetic wave energy signals and converting the signals into digital data signals and outputting into audio signals information. A clock display is also interconnected to the

20
25

electronic controller for providing time information. The housing includes a controller cover fitted to the recess area thereby covering the electronic controller.

5 Preferably the controller comprises plurality of manually-operable control buttons to activate the components of the electronic controller and to set the clock which include not limited to a reset button for resetting the radio means, a scan button for selection of radio stations, a volume control
10 for controlling the sound level of the audio signals from the radio means and at least one clock push button for setting the clock.

Preferably the radio means is interconnected with plurality of
15 sockets includes a speaker jack, a power on/off jack and a direct current jack and a loud speaker.

Preferably the clock is kept active by a power supply of a 3-volt Lithium battery provided at the controller.

20

The novel features which are believed to be characteristics of the invention as to the system together with further objects and advantages thereof, will be better understood from the following description in connection with the accompanying
25 drawings in which the presently preferred embodiment of the

invention is illustrated by way of example. It is to be expressly understood, however, that the drawings are for purposes of illustration and description only, and are not intended as a definition of the limits of the invention.

5

Brief Description of the Drawings

This invention will now be further described by way of non-limitative examples, with reference to the accompanying
10 drawings, in which:

Figure 1 illustrates a front view of a multi-functional water filter apparatus in accordance to the present invention without the upper housing section and the controller cover;

15

Figure 2 depicts a front view of the multi-functional water filter apparatus of figure 1 with the upper housing section attached to the lower housing section and the controller cover attached thereon; and

20

Figure 3 shows a block diagram of the electronic controller for radio means and clock display panel for the multi-functional water filter apparatus.

Other features and advantages of the present invention will become apparent from the following more detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the principles of the
5 invention.

Detailed Description of the Preferred Embodiments

Referring to Figure 1, an illustration of a water filter
10 apparatus (10) having an integrated radio alarm clock (11) is shown. The water filter apparatus (10) may be of conventional water filter available in the market. The water filter apparatus (10) shown in figure 1 for illustration purposes comprises a plurality of filter elements (12) which are
15 interconnected to each other and contained in a housing (13) for filtering water for drinking etc. The housing (13) consists of an upper housing section (13a) and a lower housing section (13b) which are detachably mounted to each other as shown in figure 2. At the front surface of the lower housing
20 section (13b) of the water filter apparatus (10), there is provided with a recess area (38) for receiving the radio clock controller (14) thereon. The radio clock controller (14) is secured at the recess area (38) with fasteners (not shown).

The radio clock controller generally designated (14) which includes electronic circuitry. The controller (14) includes a clock display panel (15) which is preferably a digital clock display, a radio player (16) and several control buttons which
5 can be manually depressed to activate the components of the electronic controller (14) or to set the clock or timer as shown in figure 3. The water filter apparatus (10) also has an indicator (not shown) that lights when the integrated radio player (16) is switched on. The components of the radio player
10 (16) and the clock display panel (15) might utilize standard production technology. The clock display panel (15) is preferably provided at the upper portion of the controller (14) while the radio player (16) is provided at the lower portion of the controller (14). The integrated clock (15) may
15 also functions as a timer which is set using the plurality of control buttons.

The radio player (16) of the electronic controller (14) includes means for receiving electromagnetic wave energy
20 signals and means for converting the signals into digital data signals such as an AM or FM radio receiver with an audio signal to digital signal converting circuit. The radio player (16) includes the control buttons of a reset button (19) for resetting the radio player (16) and a scan button (20) for
25 selection of radio stations. These buttons are interconnected

with the electronic circuit for outputting audio information in accordance with the manual selections through the reset button (19) and scan button (20). These buttons are preferably provided at the bottom of the clock display panel (15). The
5 clock is kept active by a power supply which is a 3-volt Lithium battery (24), but in alternate embodiments other types of batteries may be used to keep the clock running.

Plurality of sockets may be made available such as a speaker
10 jack (21) for voice output, a power on/off jack (22) and a direct current jack (23) for external power supply to supply electricity to the components of the electronic controller (14). The radio player (16) may be configured to either use power supply from the battery or the direct current jack (23).
15 Ear phone or head phone could be plugged into the speaker jack (21) for transferring the audio output to one or both ears of the user so as to provide private listening and usage of the apparatus. The radio player (16) also includes at least one loud speaker (35) for transmitting the audio output directly
20 to the surroundings of the place where the water filter apparatus (10) is located.

The control buttons further include clock push buttons (17) for setting the clock or timer and volume control (18) for
25 controlling the sound level of the audio signals from the

radio player (16). The clock push buttons (17) and the volume control (18) are provided at the top of the radio clock controller (14) where the buttons (17) can be manually pressed and the volume control (18) can be manually adjusted when the upper housing section (13a) is detached from the lower housing section (13b) of the water filter apparatus (10). Additional control buttons may be added to the controller (14) to perform other radio related functions such as muting play, keeping the track of radio stations selection etc.

10

To shield the clock display panel (15), the speaker (35) and the control buttons from spilled water, a controller cover (24) is provided to cover the front surface of the electronic controller (14), thereby covering the entire recess area (38) of the water filter apparatus (10). The controller cover (24) includes pins (not shown) at each end of the back surface of the cover (24) that are received within the notches (not shown) provided at the recess area (38). The cover (24) can be fixed between a closed position covering the recess area (38) as shown in figure 2 and an open position providing access to the controller (14) as shown in figure 1. The pins cooperate with the corresponding notches at the recess area (38) to secure the cover (24) in its closed position. To permit viewing of the clock display panel (15) when the cover (24) is in the closed position, the cover (24) includes a transparent

25

window (33), that is aligned with the clock display panel (15) when the cover (24) is closed. Alternatively the entire cover (24) could be formed from a transparent material. The controller cover (24) also includes plurality of apertures (34) which are aligned with the loud speaker (35) when the cover (24) is closed to allow the audio output from the radio player (16). However, these apertures (34) could also be formed at a base (not shown) of the water filter apparatus (10).

10

The upper housing section (13a) of the water filter housing (13) comprises a unitary rim which is molded in a suitable shape to conform to the perimeter of the top of the lower housing section (13b). The wall of the rim at the front surface of the upper housing section (13a) conforms to the top wall of the recess area (38) of the lower housing section (13b) and the controller cover (24). It includes several outwardly-projecting tabs that cooperate with corresponding notches or recesses in the wall of the recess area (38) of the lower housing section (13b) and the controller cover (24) to secure the upper housing section (13a) to the lower housing section (13b).

As will be readily apparent to those skilled in the art, the present invention may easily be produced in other specific

forms without departing from its spirit or essential characteristics. The present embodiments is, therefore, to be considered as merely illustrative and not restrictive, the scope of the invention being indicated by the claims rather
5 than the foregoing description, and all changes which come within therefore intended to be embraced therein.

Claims:

1. A water filter apparatus comprising:
a housing which includes an upper housing section detachably
5 mounted to a lower housing section for accommodating at least
one filter element therein, said lower housing section
includes a recess area at the front surface of said housing;
and
an electronic controller mounted at said recess area of the
10 housing including a radio means capable of receiving
electromagnetic wave energy signals and converting the signals
into digital data signals and outputting into audio signals
information.
- 15 2. The water filter apparatus as claimed in claim 1, wherein
said water filter apparatus further includes a clock display
interconnected to said electronic controller for providing
time information.
- 20 3. The water filter apparatus as claimed in claim 2, wherein
said controller comprises plurality of manually-operable
control buttons to activate the components of said electronic
controller and to set the clock.

4. The water filter apparatus as claimed in claim 3, wherein said control buttons include not limited to a reset button for resetting said radio means, a scan button for selection of radio stations, a volume control for controlling the sound level of the audio signals from said radio means and at least one clock push button for setting said clock, whereby said control buttons are interconnected to said electronic controller.

10 5. The water filter apparatus as claimed in claim 4, wherein said volume control and clock push button are provided at the top of said controller.

15 6. The water filter apparatus as claimed in claim1, wherein said radio means is interconnected with plurality of sockets and a loud speaker.

20 7. The water filter apparatus as claimed in claim 6, wherein said sockets include a speaker jack for voice output, a power on/off jack and a direct current jack for external power supply to supply electricity to the components of said electronic controller.

8. The water filter apparatus as claimed in claim 2, wherein said clock is kept active by a power supply provided at said controller.

5 9. The water filter apparatus as claimed in claim 8, wherein said power supply is a 3-volt Lithium battery or the like.

10. The water filter apparatus as claimed in claim 3, wherein said controller has an indicator that lights when the
10 integrated radio means is switched on.

11. The water filter apparatus as claimed in claim 10, wherein said radio means could be powered by said power supply.

15 12. The water filter apparatus as claimed in claim 11, wherein said radio means includes a pair of stereo loudspeakers for transmitting the audio output directly to the surroundings.

13. The water filter apparatus as claimed in claim 8, wherein
20 said clock may also functions as a timer which is set using said plurality of control buttons.

14. The water filter apparatus as claimed in claim 1, wherein said housing includes a controller cover fitted to said recess
25 area thereby covering said electronic controller.

15. The water filter apparatus as claimed in claim 14, wherein
said cover has a transparent window which is aligned with said
clock display when said cover is attached to said lower
5 housing section.

16. The water filter apparatus as claimed in claim 15, wherein
said cover further includes plurality of apertures which are
aligned with said loud speaker when the cover is attached to
said lower housing section.

10

17. The water filter apparatus as claimed in claim 15, wherein
said cover further includes plurality of apertures which are
formed at a base of said water filter apparatus.