

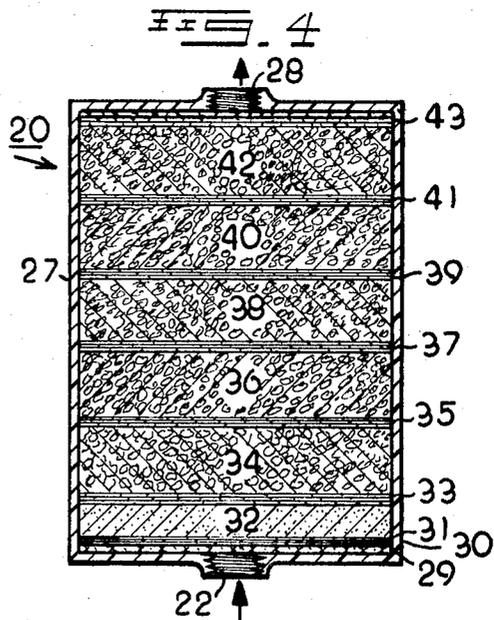
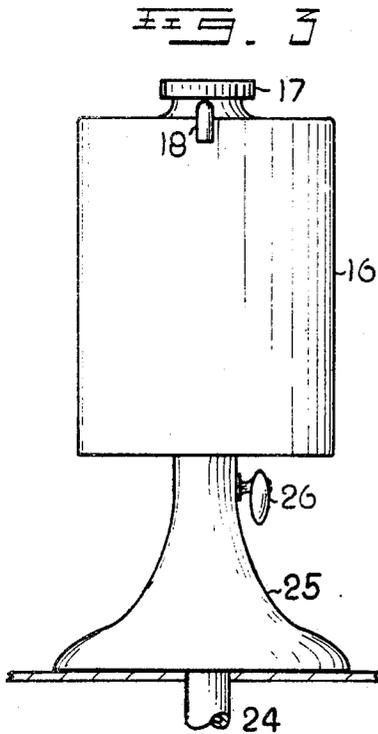
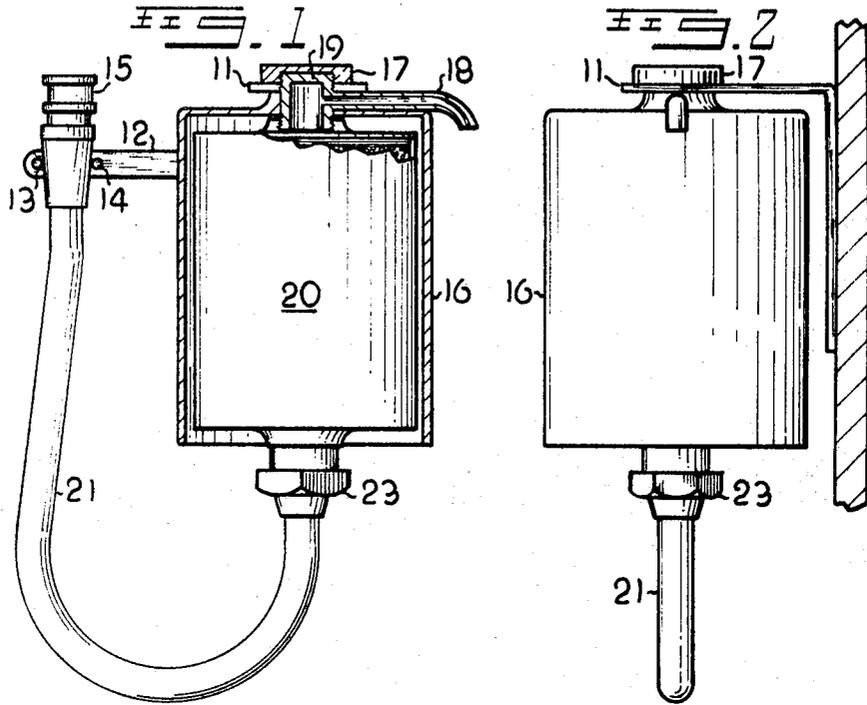
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WATER CLEANER

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WATER CLEANER

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3 Claims

ABSTRACT OF THE DISCLOSURE

A water cleaner that may be quickly and readily installed to an existing water system or may be installed with a new installation. The cleaner comprises a plurality of layers separated by screen means. One of the layers is white sand and the others are filter aid and coconut charcoal. The screen means consist of two plastic screens separated by a carbon wool screen.

The main object of this invention is to provide an effective water cleaner whereof the entire device may be easily installed by a novice without the expensive services of a plumber and whereof the cleaning cartridge is also quickly and easily replaced.

Another object of this invention is to provide a device that may be quickly and easily installed, that will effectively clean water and greatly improve the taste but that may be quickly unattached so that water for ordinary use is not directed through the unit, thereby increasing the life of the cleaning cartridge.

These together with other objects and advantages which will become apparent reside in the details of construction and operation as will be more fully described and claimed, reference being made to the accompanying drawings forming a part thereof, wherein like numerals refer to like parts throughout and in which:

FIG. 1 is a front elevational view of the preferred embodiment of the invention, with the outer protective housing and a portion of the upper cap and pouring spout in cross section.

FIG. 2 is a side elevational view of the preferred embodiment.

FIG. 3 is a front elevational view of a variant of the preferred embodiment.

FIG. 4 is a cross sectional view of the cartridge only.

Referring specifically to the drawing there is provided an angular shaped bracket 11 of suitable metal that is secured to the wall over the sink by screws, cement, or other suitable means and having an area 12, projecting out from this to hold the faucet attaching quick connector 15, FIG. 1.

The outer protective housing 16 is secured to the bracket 11 by threaded fastener 17. It is preferred by the inventor, that the pouring spout 18 be cast or otherwise welded or soldered to the threaded adapter 19 as shown FIG. 1, so that the sealing of the water is more effective.

It will be noted that the upper area of adapter 19 is closed and the lower area is open to allow unrestricted flow of the water from the cartridge 20, FIGS. 1 and 4.

The quick connector 15 is secured to the hose 21 at the outer end and the hose is secured to the lower threaded portion 22 of cartridge 20 via adapter 23, FIGS. 1 and 2.

A variant of the preferred embodiment of the invention is illustrated in FIG. 3 and is used where a permanent type installation is desired. The water supply is provided via pipe 24 into base bracket 25. Flow controlled by faucet 26 and connected to the lower threaded portion 22 of the cartridge 20. The upper area is identical to that shown in FIGS. 1 and 2 except that the angular

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shaped bracket 11, for wall mounting, is not required.

Referring back to the faucet attaching quick connector 15, FIG. 1, this is of common use and is well known to those skilled in the art therefore no invention is claimed and no detail is shown for this connector.

Referring, now, to the water cleaner cartridge 20 illustrated in FIG. 1 and enlarged detail FIG. 4.

It is preferred that the generally cylindrical shaped housing 27, be of suitable plastic and sealed after assembly. It is provided with internally threaded areas 22 at the bottom and 28 at the top. The direction of flow is indicated by arrows.

At the bottom or inlet, there is provided 2 plastic screens 29, 2 fiberglass mats 30, and another plastic screen 31. Above this is a compartment 32, consisting of white sand, a separator 33 consisting of 1 plastic screen, 1 screen of carbon wool and another plastic screen.

A compartment 34, consisting of a compound known to the trade as "Filteraid" whose chemical and physical analysis is as follows:

Chemical and physical analysis

Silica dioxide	74.05
Ferrous oxide	1.67
Aluminum oxide	11.94
Calcium oxide	.89
Magnesium oxide	.11
Sodium and potassium oxide	4.98
Loss on ignition	6.36
Specific gravity	2.35

Then above this is a separator 35 that is identical to that of separator 33. A compartment 36 of the same "Filteraid" composition, then another separator again the same as separator 33. A compartment 38 above this of coconut charcoal approximately number 4 grade size. Above this is another separator 39, again the same as separator 33. Another compartment 42, of coconut charcoal identical to that of 38 and 40. At the extreme top, is provided a separator 43 that is identical to that at the extreme bottom 29-30-31.

In operation:

The operation of the invention will be clear to those skilled in the art. However, referring to the preferred embodiment as illustrated FIGS. 1 and 2, the use of which also employs the cartridge as illustrated, in cross sectional elevation FIG. 4.

The device is mounted in a water facility such as a kitchen sink or the like, on a wall by bracket 11 above the sink. The "Quick Connector" 15, is attached to the faucet valve is opened. The flow is directed via flexible hose 21 to the cartridge inlet indicated by arrow located at the bottom FIG. 4.

The water passes through and spread somewhat by the screens 29, 30, and 31. The mesh of these screens are such as to entrap the larger impure particles found in the water, yet will not impare the flow into the white sand. The white sand is a secondary entrapment area for impure particles.

The flow continues through screens 33 of plastic and carbon wool into compartment 34 consisting of the compound "Filteraid." This is a specially processed compound of the Harborlite Corporation. It is processed at 1800° F. that eliminates impurities and enhances the predominance of microscopic shade factors most desirable for good filtration. The compound maximizes flow rate and cycle length. Pressure build-up is slower due to an improved filter cake density.

The valuable use of coconut charcoal as an effective water filtering agent is well known and acceptable to those skilled in the art. The separation by effective screens is to prevent packing and the reverse flow system

used herewith aids in the prevention of packing as well as the elimination of the dribble that is characteristic of devices now found on the market that are a result of prior art. The water finally flows out spout 18 for use.

The housing 16, FIGS. 1, 2, and 3 is to provide protection to the cartridge and to enhance the beauty of the device. The cartridge may be easily and readily changed as necessary.

The variant as illustrated in FIG. 3, is portrayed as a more permanent installation. It requires that a hole be provided in the base of the sink or facility for water supply pipe 24 to connect to valve 26 and into the bottom internally threaded area 22. The threaded area 22 illustrated in FIG. 4.

It is to be clearly understood that the cartridge, as shown in cross section, FIG. 4, constitutes the main essence of this invention and that the cartridge may be used alone and in various sizes for the filtration of water. Such water intended primarily for internal human consumption.

Having illustrated and described a preferred embodiment as well as variants of this invention, it will be clear to those skilled in the art that modifications and changes will become apparent. Such modifications and changes are not to effect the essence of this instant concept.

What is claimed as new is as follows:

1. A water cleaner comprising a housing having an inlet and an outlet at opposite ends thereof, screen means adjacent said inlet and said outlet, separator means dividing the housing interior into a multiplicity of compartments, said separator means comprising thin plastic screens separated by a carbon wool screen, said compart-

ments containing from bottom to top respectively, a layer of white sand, at least one layer of filter aid and at least one layer of coconut charcoal, and means to flow water upwardly through the device to prevent packing of the filter material.

2. In a water cleaner as described in claim 1 and having a protective housing means open at the bottom area for quick changing of the filter cartridge and having a bracket means for attaching to a vertical wall and having projections extending from said bracket for temporarily holding a faucet "quick connector" and having a flexible hose to maintain and control the flow of water between said "quick connector" means and the bottom inlet of the said filter cartridge.

3. In a water cleaner as described in claim 1 and having a protective housing means open at the bottom area for quick changing of the filter cartridge and having a base for permanently attaching to a water facility and having a means of connecting the water supply through the said base to a valve control means and to the filter cartridge.

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