The invention refers to filtering and decanting apparatus of the kind having a filter of textile material arranged within a cylindrical container, the textile fabric being positioned in immediate proximity to the container wall and extending over a certain height thereof.

According to the present invention the apparatus for filtering and decantation consists in a textile fabric detachably suspended from the top, within and in the immediate proximity to the wall of a container, said container having a discharge opening for the purified liquid, the textile fabric extending over said opening and being secured to the wall of the container above said opening, a permeable element being provided also detachably suspended from the top of the container and positioned between the textile fabric and the container wall, so as to provide a minimum distance, that cannot be decreased, between the fabric and the wall of the container.

An advantage of this particular arrangement of the textile fabric in the apparatus is that the fabric can be applied and taken off in a very quick manner by simple means and this without requiring any exact dimensioning of the fabric employed.

By the special arrangement of this filter, nearly the total contents of the receptacle is utilized as decantation space and if the filter is employed for a chemical reaction the receptacle space serves as a reaction space.

With the filter arrangement according to the invention there is further obtained the advantage that nearly the total section of the water column is open towards the top, so that the gas freed during the reaction in the receptacle can take its way without obstacle towards the top to reach the surface of the liquid and to escape towards the outside.

The vertical disposition of the textile fabric further permits an easy detachment of the mud adhering to the fabric, this detachment being promoted by the oscillation caused by the variation in the circulation of the water and further can be obtained by a washing effect through a counter-current by opening the discharge cock on the conical bottom of the receptacle.

A further advantage attained by the invention is that by this arrangement of the filter it is not necessary to provide on the receptacle a space for the filtrated water reserve, as the discharge opening for the pure water can be arranged at any height along the filter, so that the water contained in the space above the water discharge opening is only filtered at the time of the requirement and thus no dirtying takes place of the reserve water.

The accompanying drawings show an apparatus constructed in accordance with the invention.

In the drawings:

Figures 1 and 2 show two different forms of the apparatus in a vertical middle sectional view.

Figure 3 is a plan of Figures 1 and 2.

Figure 4 is a detail in vertical sectional view through the wall of an apparatus supplied with the filter according to the invention to an enlarged scale in order to clearly indicate the application of the filter.

In these figures, 1 is the cylindrical shell of the receptacle, 2 the conical bottom, 3 the discharge cock at the apex of the cone, 4 the central descending tube, across which the fresh water is introduced into the receptacle. 5 is an angle iron fastened along the upper edge of the receptacle. 6 is a U iron secured at any convenient height within the shell, divided by an annular piece 7 soldered to it forming the annular spaces 8 and 9. The textile fabric 10, which does not require definite dimensions, as the large dimensioning will be simply equalized by bending or overhanging, is now simply attached by its upper edge to the angle iron 5 and by means of nails 11. The lower edge of the textile fabric is laid against the inner wall of the annular space 9 of the U iron and this space is then filled with sand, so that a good tightness is secured between the filter fabric and the U iron. Between the textile fabric 10 and the shell of the receptacle is arranged a wire gauze 12 made from spirally formed metal wire in such a manner that same bears at the bottom in the
A combined decanting and filtering apparatus of the kind specified comprising a textile fabric detachably suspended from the top, within and in the immediate proximity of the wall of a container, an angle iron secured along the upper edge of said container, said fabric having its upper edge secured by nails which pass through said angle iron, an annular U-shaped iron forming a channel fastened upon the lower wall of said container, the lower edge of said fabric being sealed in said channel by means of sand, said container having a discharge opening for the purified liquid, said textile fabric extending over said opening and being secured to said angle iron above said opening, a permeable element detachably suspended from the top of the container and positioned between said textile fabric and the container wall, a second channel member secured to said container wall adjacent and surrounding said first mentioned channel and the lower end of said permeable element extending into said second channel.

A combined decanting and filtering apparatus of the kind specified comprising a textile fabric detachably suspended from the top, within and in the immediate proximity of the wall of a container, an angle iron secured along the upper edge of said container, said fabric having its upper edge secured by nails which pass through said angle iron, an annular U-shaped iron forming a channel fastened upon the lower wall of said container and the lower edge of said fabric being sealed in said channel by means of sand, said container having a discharge opening for the purified water, said textile fabric extending over said opening and being secured to said angle iron above said opening, a metal gauze made from spirally shaped wires detachably suspended from the top of the container and positioned between said textile fabric and the container wall, a second channel member mounted within said container upon the wall thereof and the lower end of said metal gauze extending into said second channel.

In testimony whereof I have signed my name to this specification.

CESARE PICCARDO.