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(54) Collector system for collecting impurities on the surface of a pond

(57) A collector system for removing impurities from the surface of a pond, which impurities are found both on and underneath the water surface of the pond. For this purpose, the collector system comprises a base plate (1) floating on the water surface, and preferably closed, box-like panels (5, 7) installed transversely to this base plate and connected to it, the box-like panels having a converging and possibly curved shape relative to each other and each being connectable to a water supply pipe (27). This system comprises a plurality of squirting pipes (13, 15) through which sloping water curtains (arrows 17, 19) can be squirted onto the water surface. The squirting pipes (13, 15) are coupled to the discharge of a pond pump (31) via the panels (5, 7) and a pipe system (26, 27, 29). The impurities moved along by the water curtains are collected in a net (21) attached to the collector system and the water is fed back to the pond.

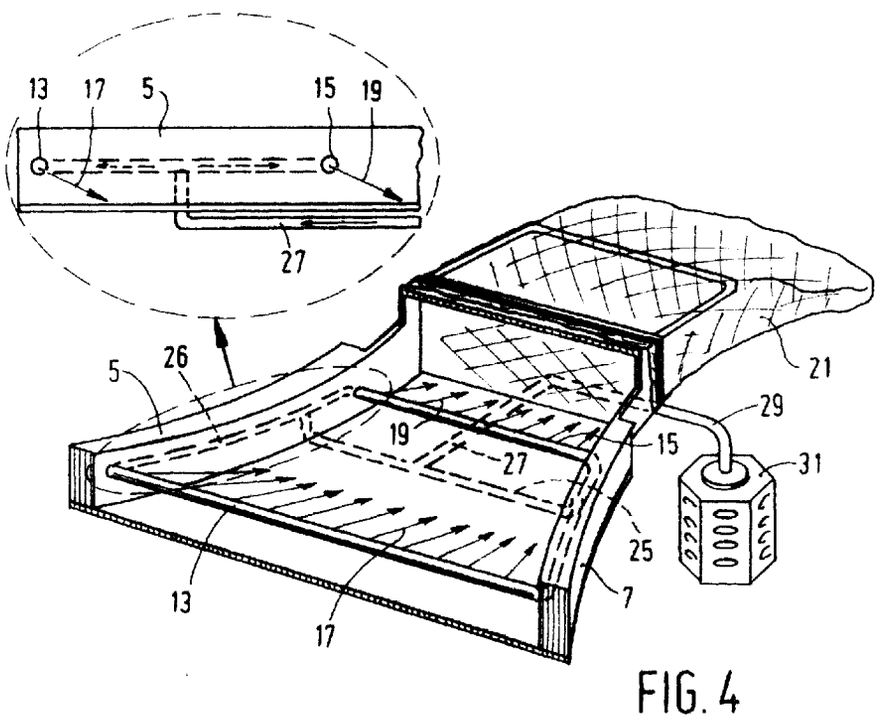

FIG. 4

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Description

For removing impurities from a garden pond, nearly always a suitable fishnet is used with which impurities, such as, for example, leaves, may be removed from the surface of the water at regular intervals. This method generally makes a good method for working on relatively small ponds. When implementing this manual method, which is time-consuming, it is hardly possible or impossible at all to remove impurities also from beneath the surface of the water.

Especially for larger ponds there has grown a need for installing a floating collector system with which the pond can continuously be freed from light impurities, such as fallen leaves, which are found both on and underneath the water surface of the pond.

It is an object of the present invention to provide a collector system for ponds which fulfils this need.

For this purpose, the collector system according to the invention is characterized in that the system comprises a base plate with which the collector system floats on the water surface to be cleaned, preferably closed, box-like panels serving as floating elements installed transversely to this base plate and connected to it, the box-like panels preferably having a converging shape relative to each other and each being connectable to a water supply pipe, and in that between these box-like panels a squirting arrangement is installed transversely to the direction of convergence of the panels, whose squirting holes are directed in sloping fashion to the base plate in the direction of convergence of the panels, the squirting arrangement being connected to a water supply system through pipes inside the panels, and, furthermore, a collecting net being positioned behind the base plate for collecting the impurities from the water surface of the pond.

By utilizing this collector system, the squirting arrangement present in the system provides that the motion of the volume of water in the pond can be set and adjusted, as appropriate, which squirting arrangement also moves impurities found beneath the surface of the water to the surface where they can be collected by means of the stationary water-permeable net.

Albeit the squirting arrangement may have various shapes, this arrangement is preferably characterized in that it contains a squirting pipe which is connected at either end to a respective box-like element serving as a floater. By making a suitable choice of the number of holes, an as it were curtain of water directed at an angle to the water surface may be formed between, for example, the converging panels, which causes the water surface to be cleaned to undergo an even stronger sucking effect towards the water-permeable collecting net, while the respective impurities are carried along.

It has appeared that the said sucking effect by the said squirting water curtain may be further influenced in an even more favourable manner, when, seen in the converging direction of the panels, the squirting arrangement comprises several parallel interspaced pipes whose ends are connected to pipes present in the box-like panels, the latter pipes being coupled to a common water supply pipe.

According to another embodiment, the preferably converging panels have each a curved shape running towards each other. This influences the water circulation in an extremely advantageous manner.

According to a further preferred embodiment, the water supply pipe for supplying water is arranged to be coupled to the discharge side of the pump in the pond.

The invention will be further explained with reference to the drawing, in which:

- Fig. 1 shows a perspective view of the collector system;
- Fig. 2 shows the device shown in fig. 1 in plan view;
- Fig. 3 shows a perspective view of the base of the collector system shown in figs. 1 and 2; and
- Fig. 4 shows how the collector system is connected to a pump in a pond.

In the drawings is shown a sole embodiment of the collector system according to the invention. This system comprises a base plate 1 with which the device floats on the water surface 3 of a pond and on whose sides are installed panels 5 and 7 used as floaters and arranged as box-like, closed elements whose side walls 9 and 11 converge relative to each other. In this embodiment, the walls preferably show a curved converging pattern, so that a highly effective collecting effect evolves therefrom. For certain applications, the walls 9 and 11 may also be arranged as converging straight walls.

Between the panels 5 and 7 in the example shown, two squirting pipes 13 and 15 are arranged whose ends open into the walls 9 and 11. These squirting pipes have each a series of squirting holes directed at a downward angle, so that the squirting arrangement of pipes connected to a water supply system operates in the direction of the arrows 17 and 19 and causes a sucking effect to be developed in the direction of convergence on the water found above the plate 1.

Furthermore, the collector system comprises a receiver arrangement intended for receiving impurities from the pond water. This receiver arrangement has a net 21 which is rectangular in this embodiment and can be installed by means of a suitable bracket 23 behind the plate 1 and the side walls 9 and 11, so that the sucked-in water passes through this net 21 and leaves the impurities 24 carried along with it in this net. Depending on the degree of suction to be produced, one, two or even more squirting pipes may be used.

Figs. 3 and 4 show how the panels 5 and 7 may be connected to a water supply pipe. Midway between the squirting pipes 13 and 15, either panel is connected at its bottom to a central water supply pipe 25, which is connected, on the one hand, midway to a central pipe

27, which in its -turn is coupled via a fixed water supply pipe 29 to the output referenced 31 of a pond pump 33. On the other hand, the central water supply pipe 25 is coupled via a connector pipe 26 shown in a dashed line and hidden inside each panel 5 and 7 serving as floaters, which connector pipe 26 itself has a direct connection to the ends of the squirting pipes 13 and 15.

Claims

1. A collector system for removing impurities from the surface of a pond, characterized in that the collector system comprises

   - ... a base plate (1) with which the collector system floats partly on the water surface to be cleaned,
   - ... preferably closed, box-like panels (5, 7) serving as floating elements installed transversely to this base plate and connected to it, preferably converging relative to each other and each being connectable to a water supply pipe (27), and
   - ... between these box-like panels a squirting arrangement is installed transversely to the direction of convergence of the panels, whose squirting holes are directed in sloping fashion to the base plate (1) in the direction of convergence of the panels, the squirting arrangement being connected to a water supply system (27, 29, 31) through pipes inside the panels,
   - ... and furthermore, a collecting net (21) being positioned behind the base plate (1) for collecting the impurities (24) from the water surface of the pond.

2. The collector system as claimed in claim 1, characterized in that the squirting arrangement comprises a squirting pipe (13, 15) connected at either end to a respective box-like element (5, 7) serving as a floater.

3. A collector system as claimed in one of the preceding claims, characterized in that, seen in the converging direction of the panels (5, 7), the squirting arrangement comprises several interspaced parallel squirting pipes (13, 15) installed in a row, whose ends are connected to the pipes present in the box-like panels (5, 7) which panel pipes are coupled each to a common water supply pipe (25).

4. A collector system as claimed in one of the preceding claims, characterized in that the preferably converging panels (5, 7) show each a curved converging shape.

5. A collector system as claimed in one of the preceding claims, characterized in that the water supply pipe (25) is arranged having pipes (27, 29) to be coupled to the discharge side of a pump (11) of a pond.

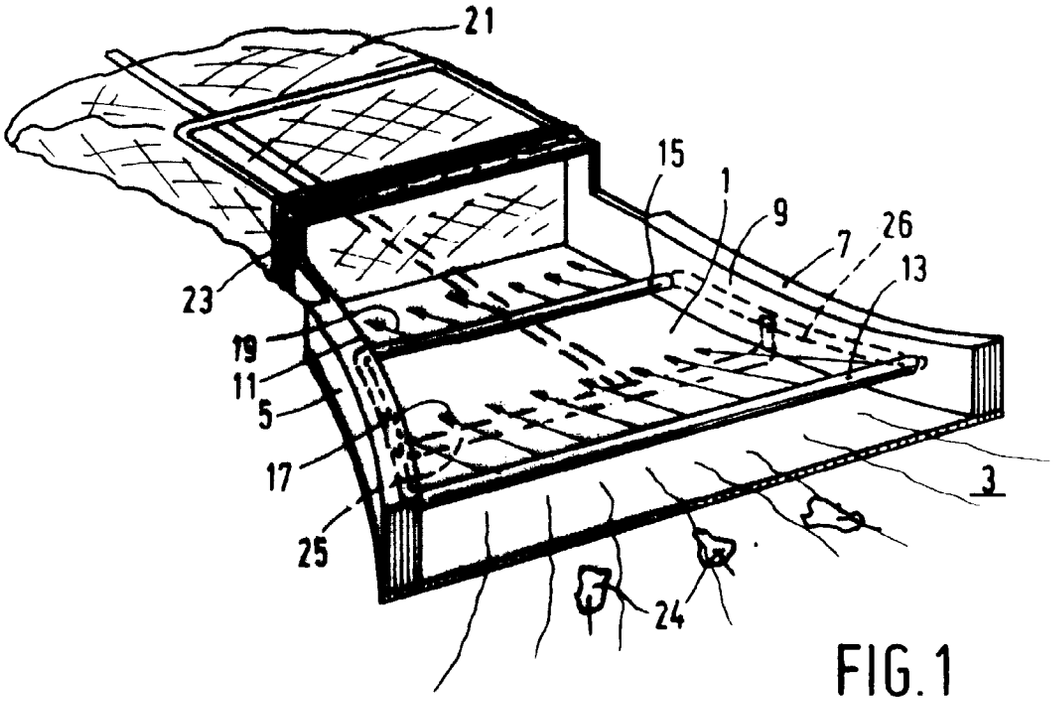

FIG. 1

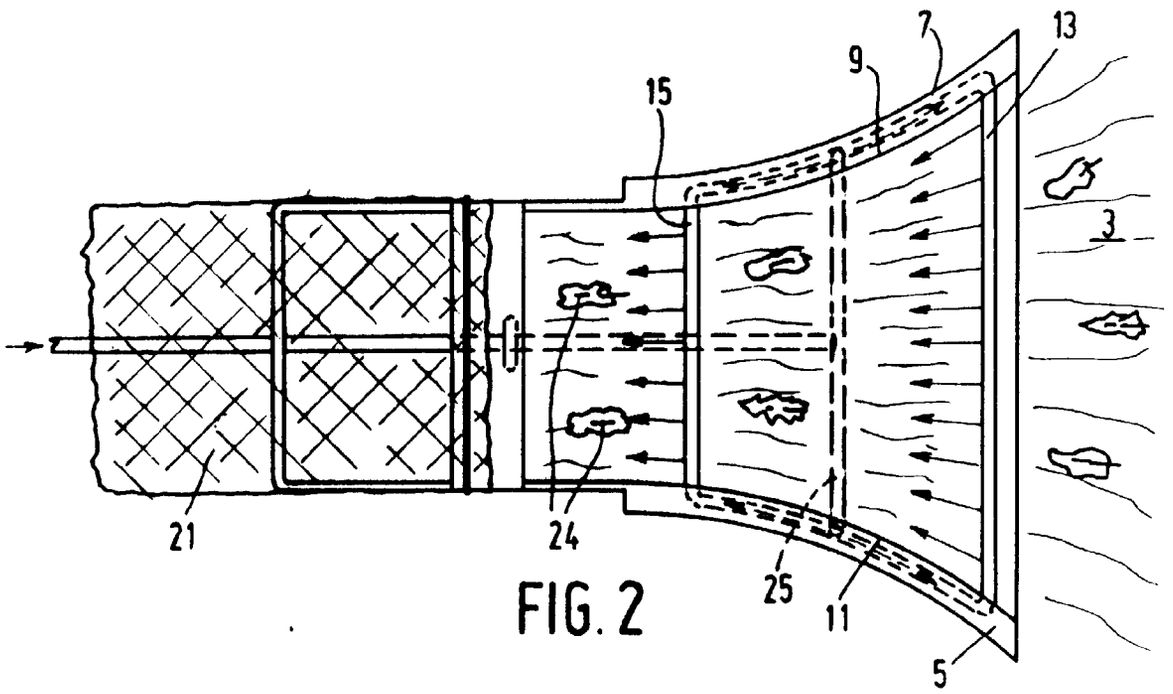

FIG. 2

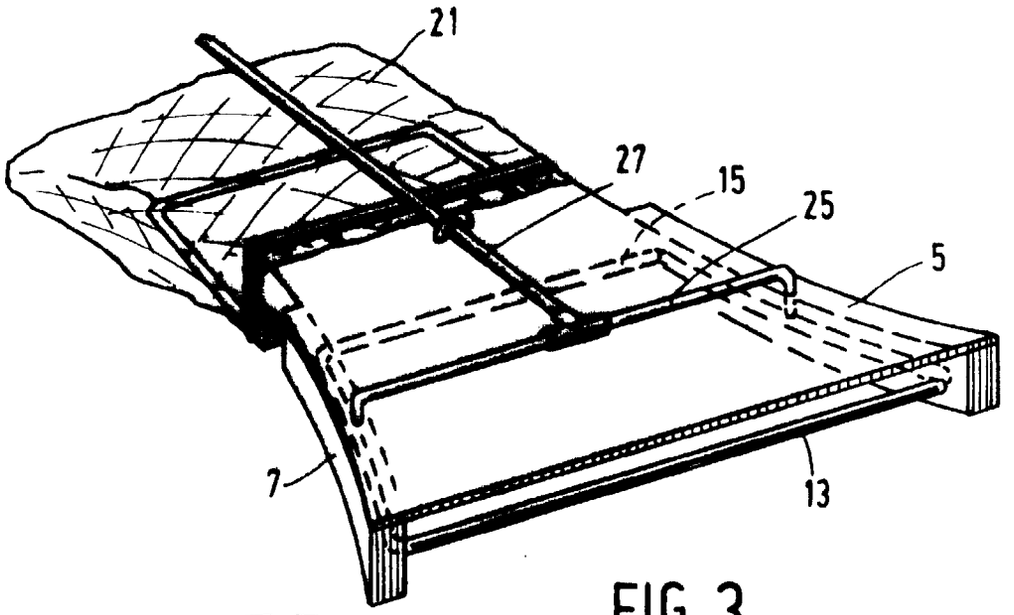

FIG. 3

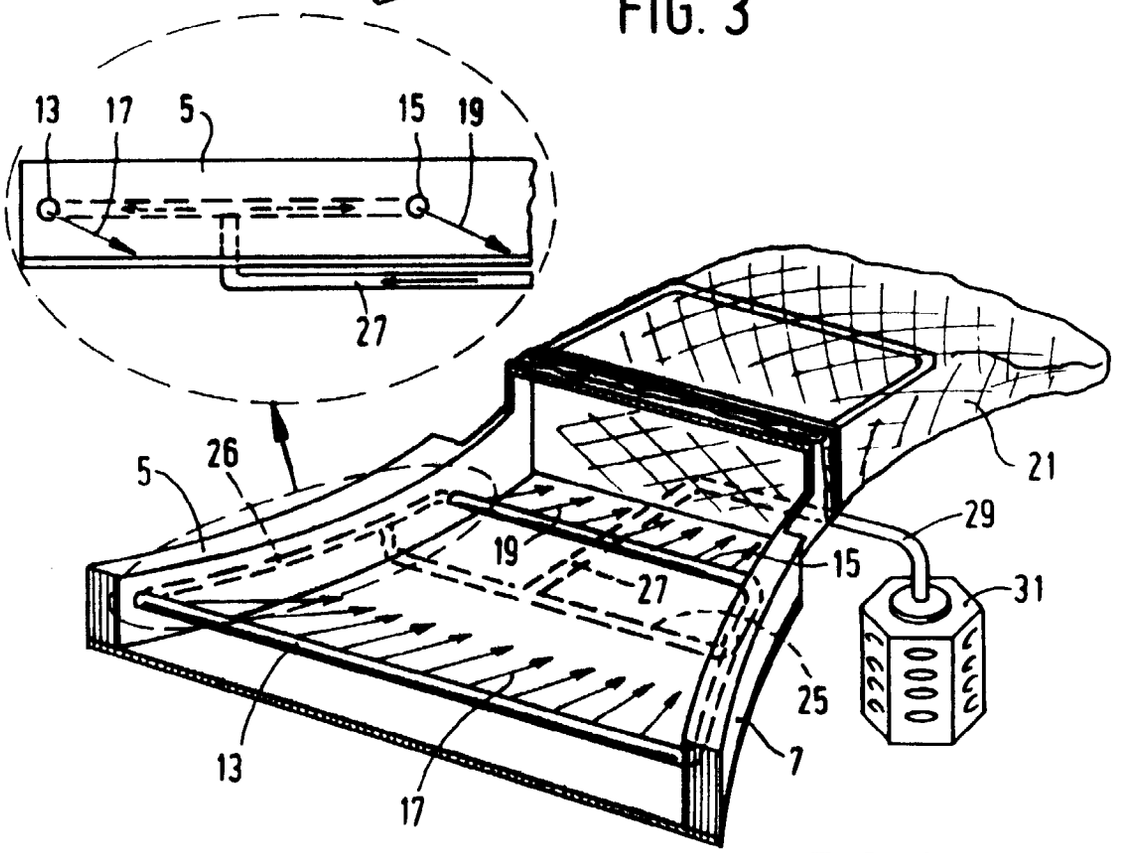

FIG. 4