CLAIMS

We claim:

1. A hydrodynamic pump, comprising:

an upper hull enclosure adapted to float at a surface of a body of liquid;

a liquid collecting chamber at least partially housed within the upper hull enclosure, the liquid collecting chamber adapted to confine liquid and gas at elevated pressure;

a liquid pressurizing columnar conduit extending below the upper hull enclosure, the liquid pressurizing columnar conduit comprising an ingress orifice disposed outside the upper hull enclosure, an injection orifice opening into the liquid collecting chamber, and an interior wall defining a liquid pressurizing surface adapted to pressurize liquid in the liquid pressurizing columnar conduit when the hydrodynamic pump oscillates vertically in the body of liquid to inject liquid into the liquid collecting chamber;

a first effluent conduit configured to drain liquid from the liquid collecting chamber and having an external effluent port for discharging liquid from the first effluent conduit; and

a first flow governor adapted to maintain a liquid pressure differential across the external effluent port.

2. The hydrodynamic pump of Claim 1, wherein the first flow governor comprises a filter adapted to remove and sequester one of a substance dissolved in liquid and a substance suspended in liquid.

3. The hydrodynamic pump of Claim 2, wherein the filter comprises a lithium adsorbent material adapted to remove one of lithium, lithium salts, and lithium ions from seawater.

4. The hydrodynamic pump of Claim 2, wherein the filter is confined in an interior of the liquid collecting chamber and comprises one of an adsorbent material and an absorbent material.

5. The hydrodynamic pump of Claim 1, wherein the injection orifice of the liquid pressurizing columnar conduit is spaced from a floor of the liquid collecting chamber to reduce backflow of liquid from the liquid collecting chamber to the liquid pressurizing columnar conduit.

6. The hydrodynamic pump of Claim 1, wherein the liquid collecting chamber is configured to accrue a liquid ballast having greater volume than an internal volume of the liquid pressurizing columnar conduit to augment a momentum of the hydrodynamic pump.

7. The hydrodynamic pump of Claim 1, further comprising a light configured to illuminate one of an interior of the liquid collecting chamber and an interior of the liquid pressurizing columnar conduit, said light powered by an energy of liquid exiting the liquid collecting chamber.

8. The hydrodynamic pump of Claim 1, further comprising a second effluent conduit configured to drain liquid from the liquid collecting chamber and further configured to yaw the hydrodynamic pump when a rate of liquid discharge from the second effluent conduit exceeds a rate of liquid discharge from the first effluent conduit.