Space Heater

FIELD OF THE INVENTION

The present invention relates generally to space or water heater. In particular, the present invention utilizes a piezo disk antenna agitating a reservoir of deuterium to create a fusion heat. A heat exchange coil is used to transport the heat from the deuterium.

BACKGROUND OF THE INVENTION

A water heating or space heating device using electrical power to run a heating element that consists of a piezo disk antenna stimulated by a MHz resonant wave in D2O that forms alphas and its fusion heat. This is done in a 20 gallon circulating H2O water system. It has the advantage of heat production free of CO2 pollution and radiation and is particularly suited to space exploration. Heat is supplied by the fusion of 2 D+ to produce an alpha.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a front view of the heat generator.

FIG. **2** is a side view thereof.

FIG. **3** is a perspective view of the present invention.

FIG. **4** is a detail view of the mechanism for engaging the piezo disk antenna and the target foil lattice.

FIG. **5** is a front detail view of the heat generator and the component chamber.

FIG. **6** is a perspective view of the heat generator.

DETAIL DESCRIPTIONS OF THE INVENTION

All illustrations of the drawings are for the purpose of describing selected versions of the present invention and are not intended to limit the scope of the present invention.

In reference to FIG. **1** and FIG. **2**, the present invention is a heating apparatus that utilizes a cavitation reactor. The preferred embodiment of the present invention comprises an outer housing, a heat generator, a component chamber, and a control panel. The outer housing is a box composed of Lexan and polycarbonate (PC) that is shielded against radio frequency interference (RFI). At least twenty gallons of water may also be contained therein as the preferred heat exchange medium. The heat generator disposed within the outer housing may comprise the cavitation chamber wherein fusion of deuterium may occur. A component chamber disposed below the heat generator may house an electromagnetic (EM) wave generator and a transmission line therein. A control panel may be integrally disposed on a user accessible area on the outer housing whereby an operator may control characteristics of the cavitation process.

In reference to FIG. **3**, the heat generator is a structure containing an antenna chamber, a cavitation chamber, and a heat exchange coil. The heat generator may be defined by polycarbonate (PC) outer walls. A PC control containment is preferably a cylindrical structure having an overhang disposed on the top surface whereon a plurality of threaded slots may be disposed. A PC base plate disk may be disposed on top of the PC control containment. Screws may be inserted into the threaded holes in order to fasten the PC control containment and the PC containment ring together. A first set of base gaskets may be disposed there between to create an airtight seal. The containment chamber comprising an antenna tuner, a linear amplifier, and a signal generator may occupy the interior of the PC control containment. A 12V direct current (DC) may be supplied to the antenna tuner, while the linear tuner may be supplied with DC power. The signal generator may accommodate resonance tuned inputs. A PC containment ring having a plurality of threaded holes and upper holes may be engaged to the PC base plate disk. A second set of base gaskets may be disposed there between.

The antenna chamber comprising a piezo disk antenna may occupy the lower portion of the PC containment ring. A slot propagating about the inner perimeter of the PC containing ring may house a PC sealing ring and spacing Teflon gaskets. The piezo disk antenna may be placed between the PC sealing ring and the spacing Teflon gaskets with neoprene gaskets acting as cushioning agent. The piezo disk antenna is preferably in electrical communication with the component chamber, whereby electrical pulses may create vibrations at a rate of 1.6 megahertz (MHz). A central channel may circulate monatomic argon gas into the antenna chamber to the component chamber. The piezo disk antenna may be coincident to the bottom surface of the cavitation chamber, thereby creating waves that propagate through the cavitation chamber.

In reference to FIG. **5**, the cavitation chamber may occupy the upper portion of the PC containment ring and contain a reservoir of deuterium in the form of D2O (Ar saturated D2O) stored in an Ar rich atmosphere. A PC cap disk having a plurality of central and distal holes may be used to seal the cavitation chamber. The distal holes may be positioned concentric to the upper holes, and may accept sealing compression bolts. Top gaskets may be disposed between the engaging components in order to create an air tight seal. Central holes may be utilized to insert the heat exchange coil and a differential thermometer into the cavitation chamber. The heat exchange coil comprises hollow copper coils arranged into an upper set and a lower set, and a pump disposed there between. The lower set may be submerged in the deuterium which acts as a hot reservoir and the upper set transfer heat may be placed in the cold water which acts as a cold reservoir. The pump circulates water as the heat exchange medium between the cold and the hot reservoir thereby transferring the heat generated by the heat generator to the outer housing.

In reference to FIG. **4**, in the case that the air pressure is deemed too high, an air pressure control may maintain Ar balance between chambers via channels leading into the component chamber. Vice versa, Ar may also be pumped into the cavitation chamber if the pressure is too low. D2O undergoes cavitation when disturbed by the waves produced by the piezo disk antenna. A target foil lattice composed of palladium (Pd), titanium (Ti), silver (Ag), copper (Cu), nickel (Ni), or carbon (C) may be disposed above the piezo disk antenna at a gap defined as quarter of the wavelength of the heat source.

Teflon spacing gaskets may be used to adjust the height of the target foil lattice thereby controlling the distance to the piezo disk antenna. Waves generated by the piezo disk antenna create cavitation bubbles that are implanted onto the target foil lattice.

The picosecond astrophysical compression of deuterium (D2O) cavitation bubbles produces an alpha particle. These events may be produced at a rate of 10^13 events per second or more. The deuteron (D+) produced by the cavitation dissociated D2O fuel recombines forming small steady state concentrations of DOOD and D2. The resulting heat is the non-toxic products.

In reference to FIG. **6**, the preferred control panel comprises an on and off button, signal generator controller, DC power supply, tuner, watts output readout, water flow rate indicator, and Ar pressure control switch. A plurality of wires may be utilized for electrical communication between the control panel and the components held in the heat generator. The signal generator may allow the tuning of resonant frequency and volt amplitude. The tuner may control the reactance and antenna power input and the standing wave ratio. Watts output indicator may show output Watts and temperature differential at steady state.

In regards to the materials utilized for the present invention, the preferred embodiment of the present invention is composed mainly of metallic and polymeric materials. However, it is easily conceivable that in possible alternate embodiments, each component may be made of a particular material specifically suited to withstand the structural loads and thermal conditions associated with normal and extraneous operating conditions. Additionally, it is easily conceivable to those having ordinary skills in the relevant arts, that metals, glass, and/or composite materials may also be utilized.

Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention.

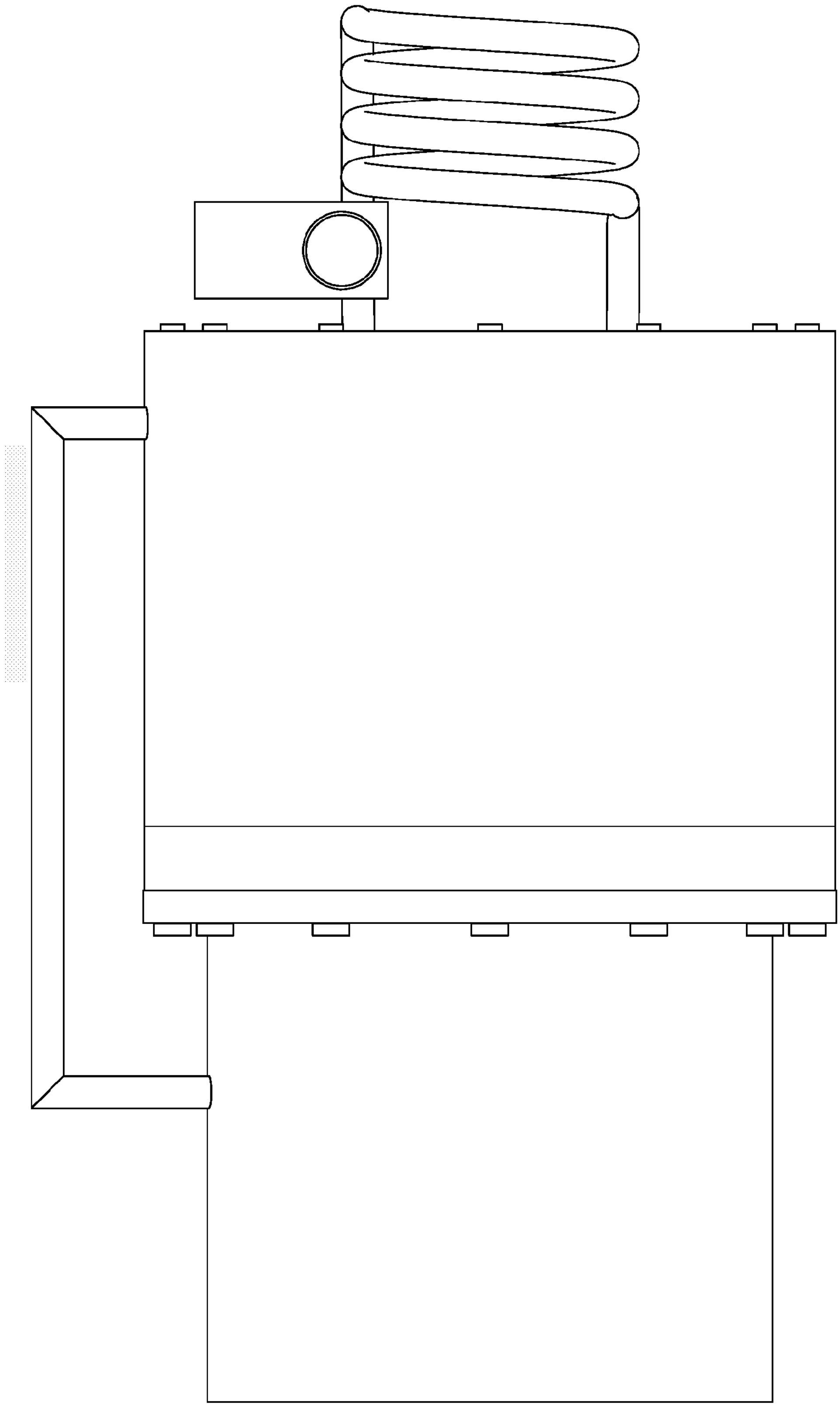

FIG. 1

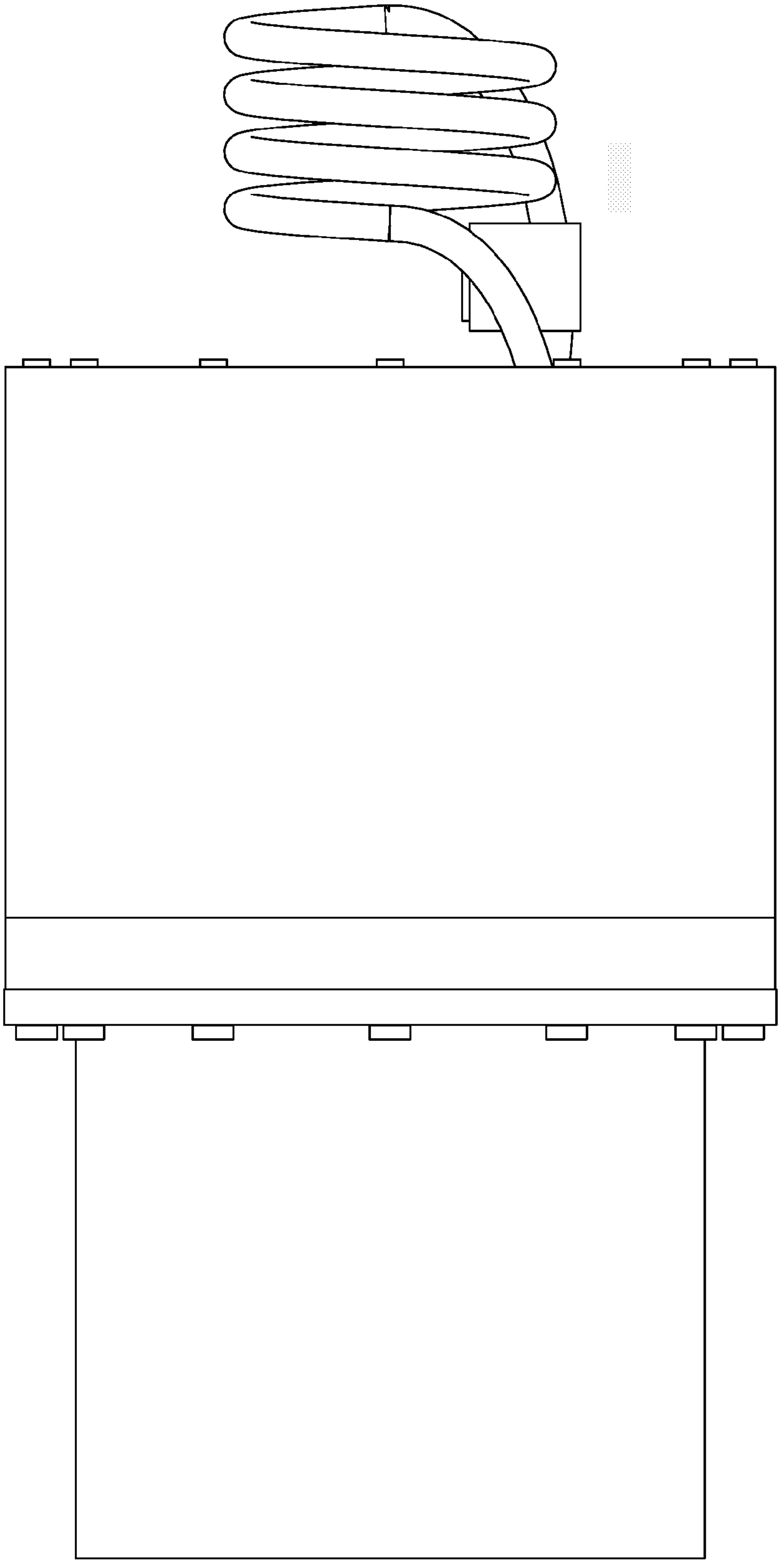

FIG. 2

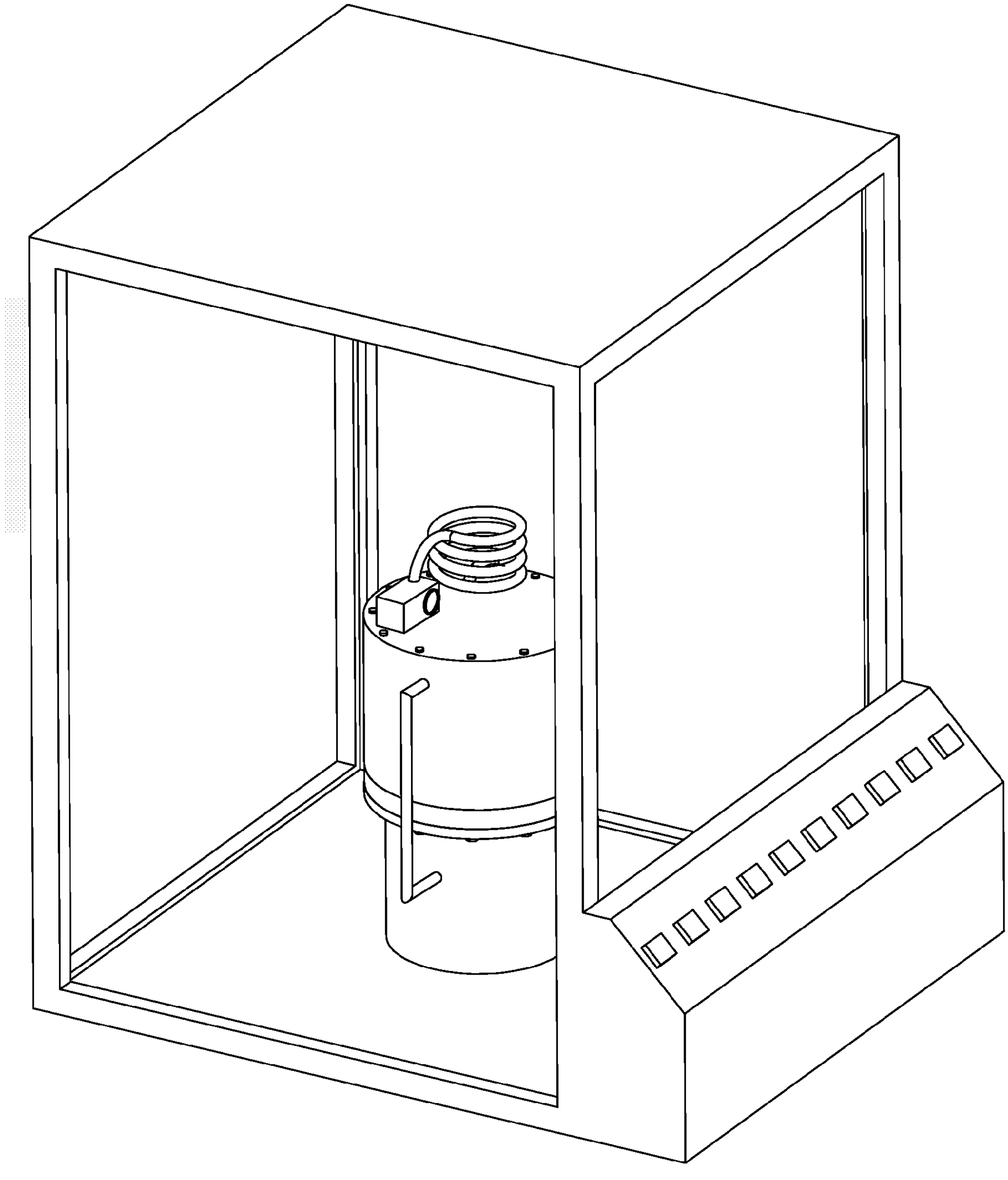

FIG. 3

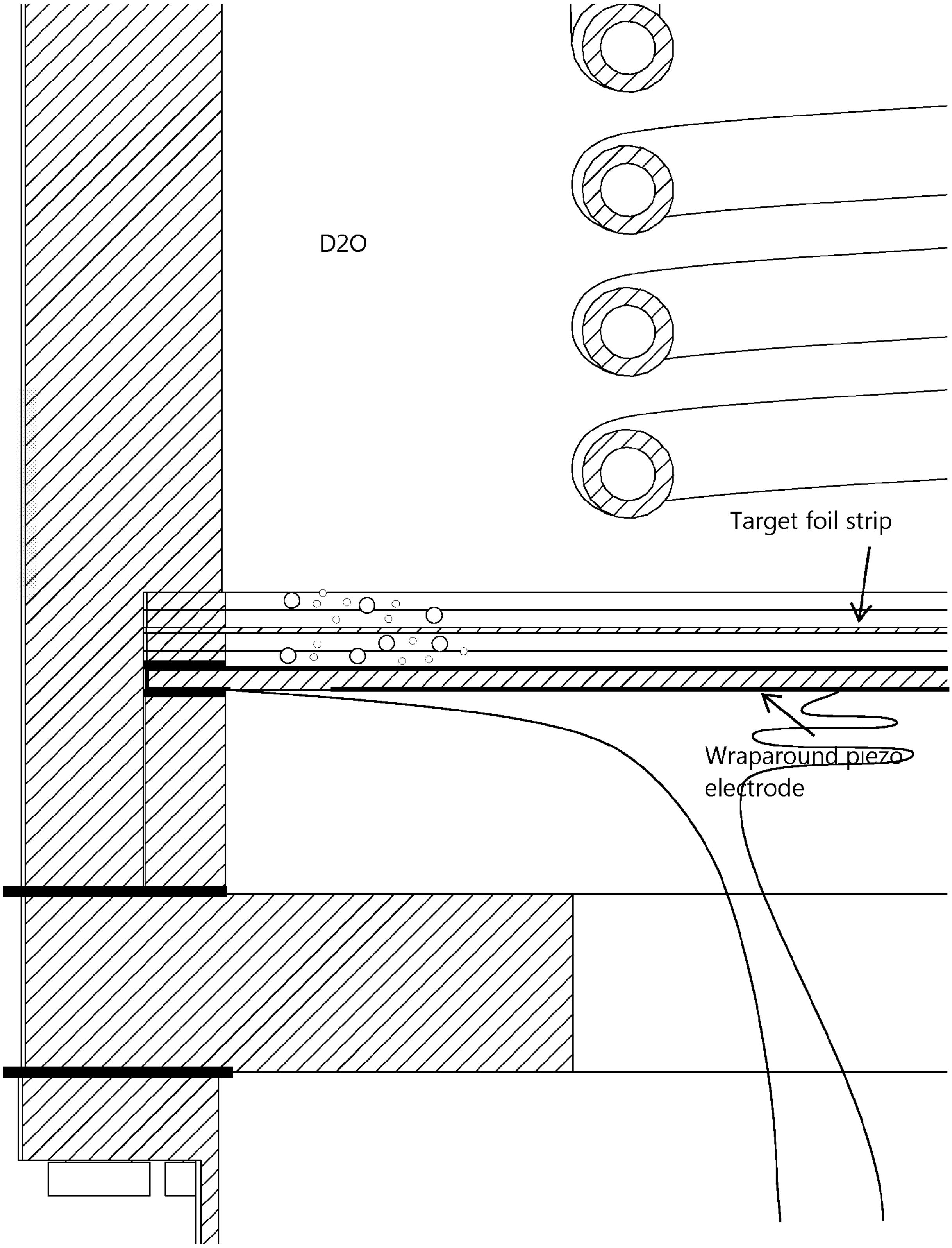

FIG. 4

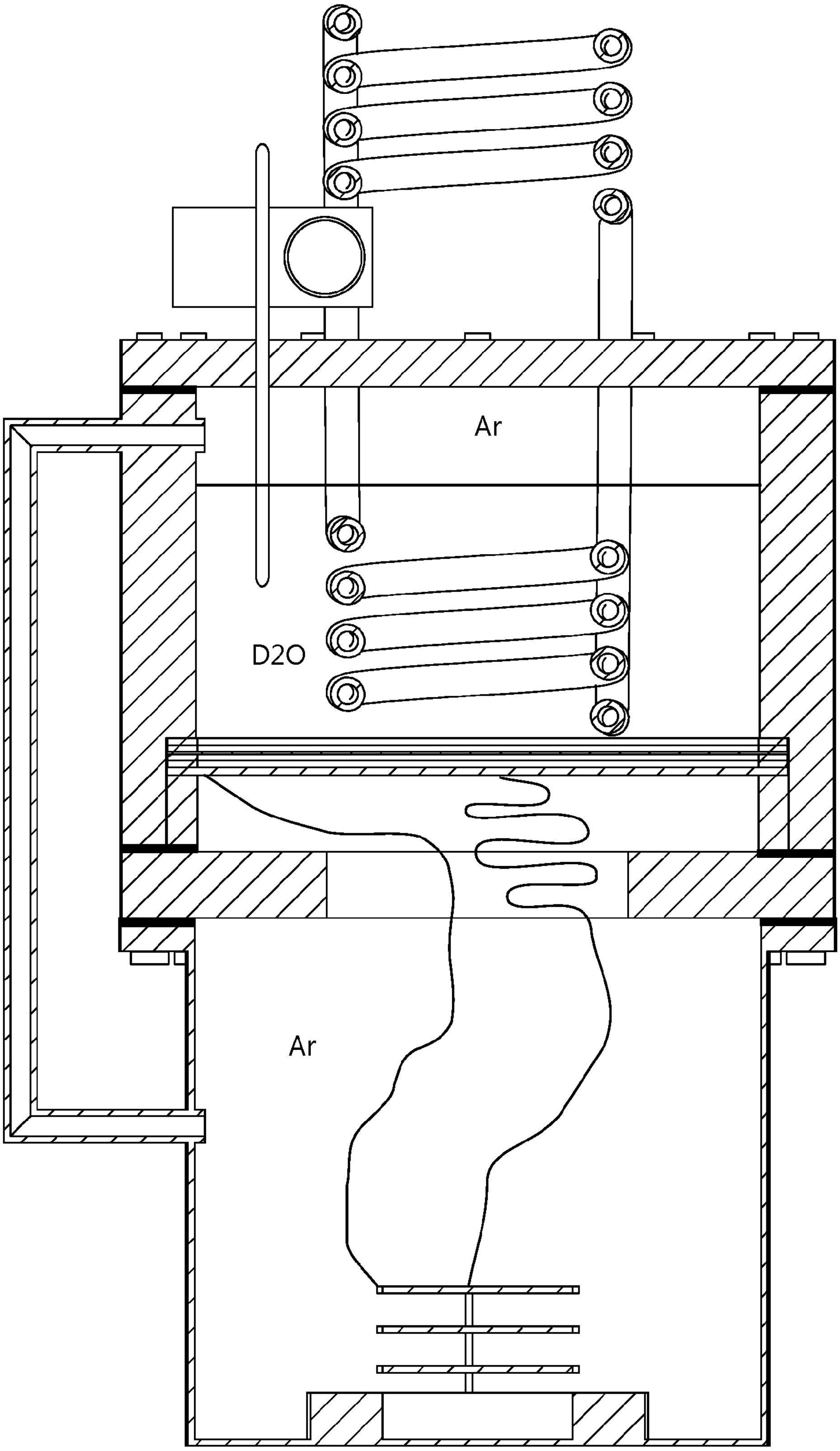

FIG. 5

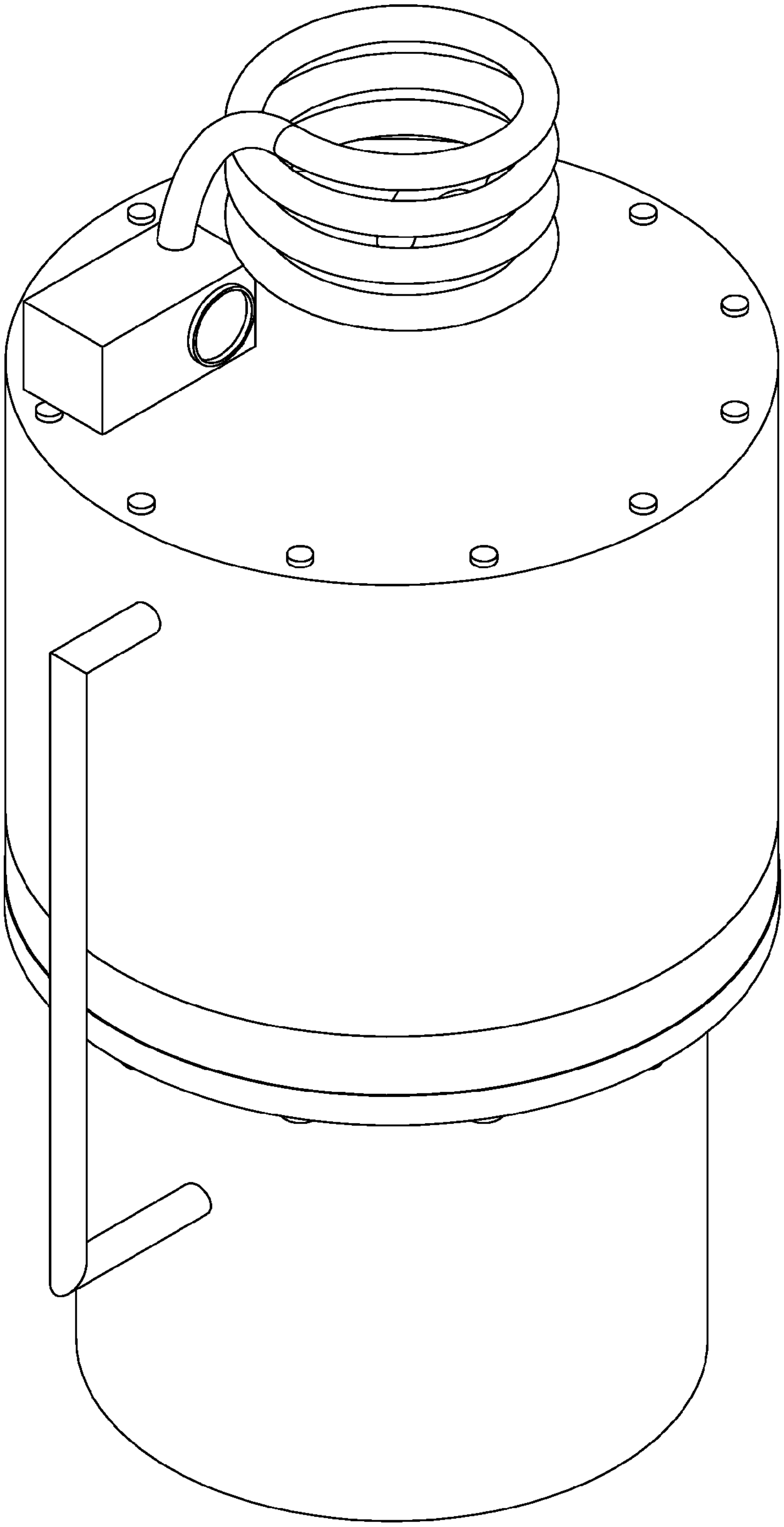

FIG. 6