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Joseph SPITERI-SARGENT

Water Pump

<http://www.timesofmalta.com/business/view/20071220/news/water-pressure-energy-transfer>

Thursday, 20th December 2007

Water Pressure Energy Transfer by Malcolm Naudi



Joe Spiteri Sargent recounts how, on a lonely drive to Banff, in Canada, way back in 1989, he got a flash of inspiration that enabled him to go on to develop the Spiteri Water Pump.

The former Malta Drydocks apprentice, who spent 32 years in Canada and has residences in both countries, was missing a vital piece in his theoretical model, which he has since developed into a fully fledged prototype.

He is now seeking funding to develop a second-generation machine and obtain an international patent.

Mr Spiteri Sargent, 71, took an aeronautical draughtsman's course and in 1956 got a job in the Canadian Air Force as a navigator trainee. He completed his university education as a mechanical engineer and worked for 27 years as a tool and die, and single-purpose-machine designer.

He owes the original inspiration to his invention to former Prime Minister Dom Mintoff, who in 1980 said: "If only Malta had some sort of a waterfall, our electricity would be much cheaper." It is this principle of using water pressure to create a waterfall to power a turbine that is the nub of Mr Spiteri Sargent's invention.

In 1991, he started working on the project more intensely, performing experiments in Canada. Between 1991 and 1994, he wrote a force and energy analysis and then started building a working prototype in a four-metre high tank in Luqa.

Parts for the prototype were built at Malta Drydocks according to working drawings supplied by Mr Spiteri Sargent. The basic, fundamental formula has not changed but he has continued to improve components to make them more resistant.

By 2004, he was convinced that the prototype satisfied the force and energy analysis and last June he applied for an international patent, covering the US, China, Japan and Russia.

This is a two-and-a-half-year process, including a request in six months' time for a technical review, which takes two years to obtain. Development, however, can continue and it will be covered by the patent. Meanwhile, on December 6 the patent was published in Malta and the UK.

Mr Spiteri Sargent's work has been verified by two other engineers with master degrees in water technology. One of the engineers, Ing. Marco Cremona, told The Times Business that one of the fundamentals of physics is that you cannot create energy out of nothing.

"When you have a submerged body in water there is latent hydrostatic energy in place. The invention exploits this energy." He gave as an example an air-conditioner on heating mode. This device, he said, appears to produce three times more energy (as heat) than it consumes (in electricity). However, this does not go against the laws of physics.

"The reality is that the air-conditioner is taking advantage of latent (hidden) energy outside the room and transferring it into the room. It is not generating energy; it is transferring energy. The Spiteri Water Pump works on the same principle."

Twenty-two family members and friends have an investment in Sargent Enterprises Ltd (SEL), which has enabled him to develop the prototype up to the current stage.

He has already received interest from a UK water pump manufacturer, who visited Malta and saw the prototype. "I am looking for a joint development agreement, involving an investment of €900,000 into SEL," Mr Spiteri Sargent said. This will be used to build the second-generation prototype, which will be a larger scale version of the Luqa prototype with some improvements. The aim is to have a prototype that can be presented to large-sale investors like General Electric, Shell, BP and Siemens.

The Spiteri Water Pump will convert hydraulic energy into mechanical energy. This is then used to pump water into a reservoir, generating electricity through the hydroelectric power system from the reservoir's waterfall.

This machine is a low-tech prime mover suitable for various applications, such as electrical power, gas compression, pumping water and other-mechanical uses. His second-generation-prototype is the Spiteri Hydroelectric power station, consisting of six Spiteri water pumps with sufficient output to provide electricity for 120 households.

A bigger version of this model can generate an output of 250kW, and several of these modular units can generate enough power to meet as much as a quarter of Malta's electricity consumption.

Mr Spiteri Sargent has also been in touch with the local authorities, with a view to using Malta as a test bed.

He estimates that to replace this amount of Malta's fossil-fuel fired generating capacity, 11 sites are required, each having a footprint equivalent to a football pitch.

These small generating stations can be built on land, underground or in the sea.

<http://www.timesofmalta.com/articles/view/20080601/local/maltese-energy-invention-wins-international-award>

Sunday, 1st June 2008

Maltese Energy Invention Wins International Award

The Spiteri Water Pump, a fuel-free, electricity-generating machine, walked away with the national prize during an awards ceremony held at the European Parliament in Brussels.

Developed by Joe Spiteri Sargent, the machine operates under a water surface and harnesses latent hydrostatic energy naturally present in a body of water, transferring it to produce an artificial waterfall to produce electricity via a hydro-electric power system. Present for the 2007 Energy Globe Award ceremony were Mr Spiteri Sargent and hydrologist Marco Cremona, who was also involved in the project.

A total of 853 project submissions were made from 109 countries, falling under five categories: earth, fire, air, water and youth. The Malta project was submitted in the fire category. A working prototype has been constructed in Malta and worldwide patents have been filed.

According to Mr Spiteri Sargent, the main benefits of this innovative product are that it has very low running costs and operates without the use of consumables.

Furthermore, it can be placed in any water body in the world and produces energy 24 hours a day, seven days a week. There are no emissions from this energy transfer process.

The winners were selected by a panel including members from the UN Industrial Development Organisation, the World Bank and the European Renewable Energy Council. The awards were an initiative by engineer and environmentalist Wolfgang Newmann Wolfgang Newmann.

The awards have been dished out annually since 1999 to recognise projects that 'make careful and economical use of resources and employ sources'.

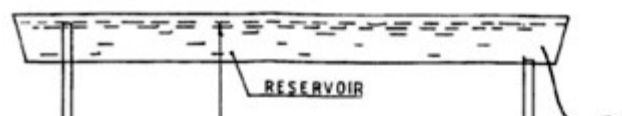
For the second year in a row, the ceremony was held at the Plenary Hall of the European Parliament in Brussels. A number of high-profile personalities were present including EP President Hans-Gert Pottering, European Commission President José Manuel Barroso, former UN Secretary General Kofi Annan as well as former Soviet President Mikhail Gorbachev as honorary guest.

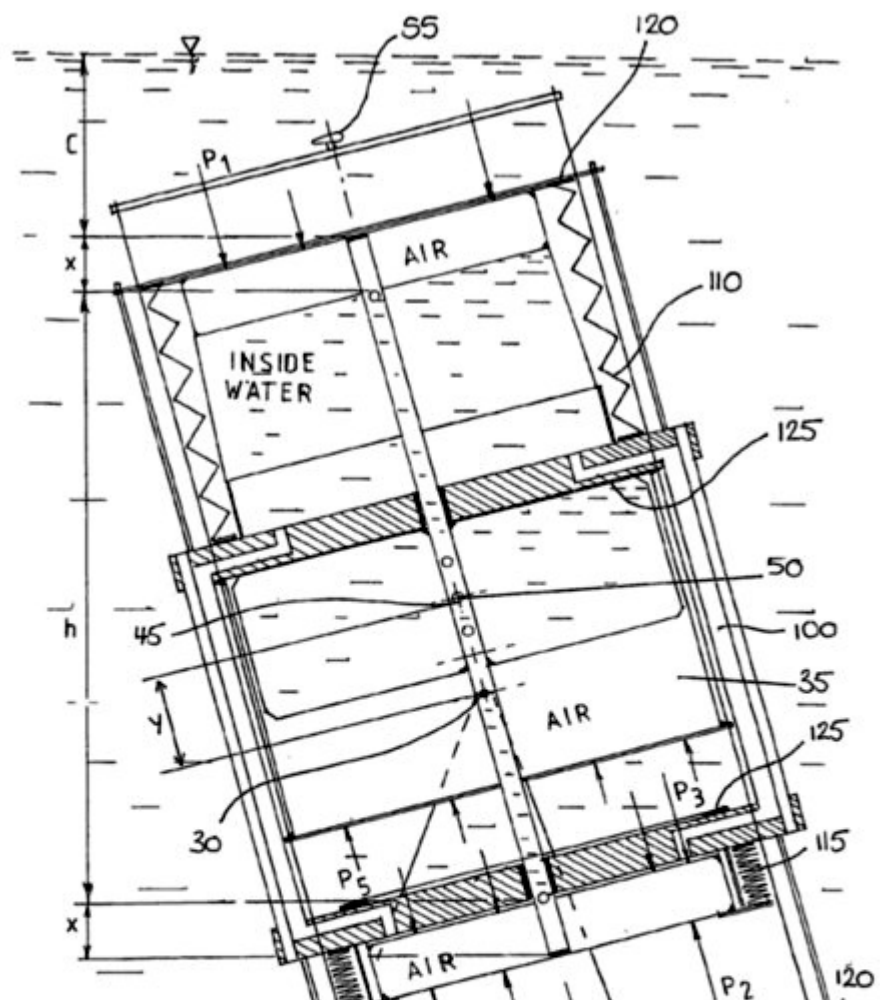
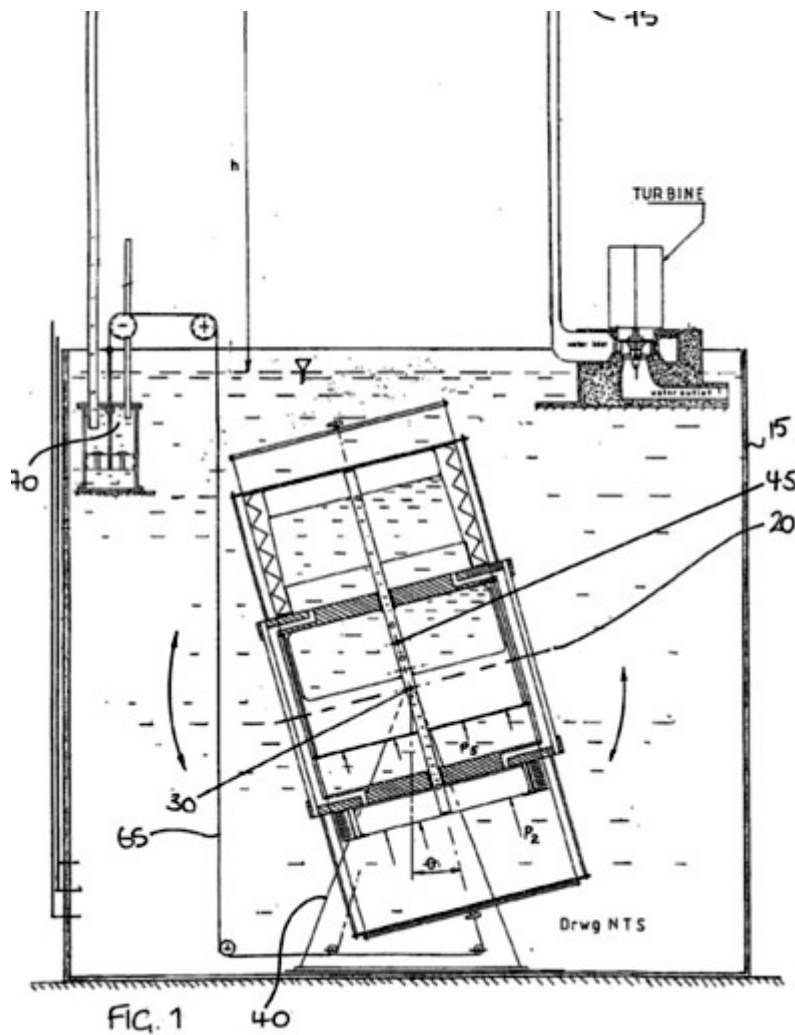
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WO 2007141653

Apparatus for Conversion of Energy

Abstract -- Apparatus for conversion of hydraulic energy into kinetic energy, the apparatus comprising: a housing (15) containing a fluid; a pump motor (20) submerged within the fluid, the pump motor pivotable within the housing about a fixed pivot point (30); a buoyant member (35) contained within the pump motor; a ballast member (50) contained within the pump motor, the ballast member containing a ballast tank (95); transfer means (55) coupled to the buoyant member to transfer the upward movement of the buoyant member within the pump motor; and a pressure differential means (25) operable to move the ballast tank upwards within the pump motor.





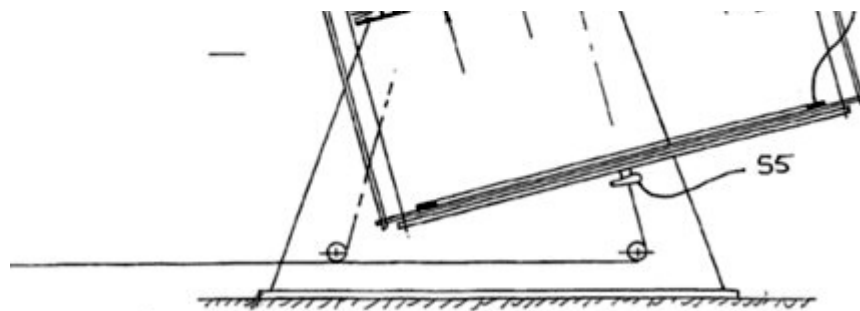


FIG. 1A

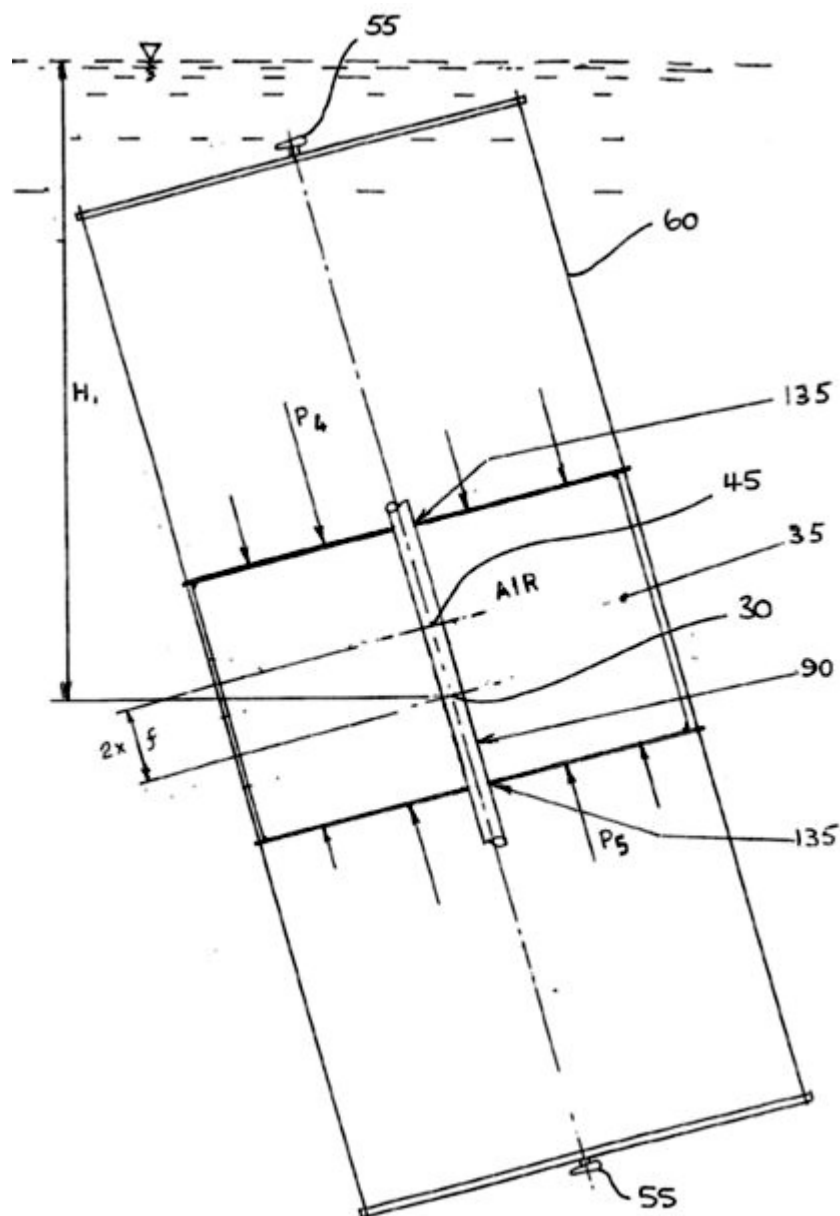
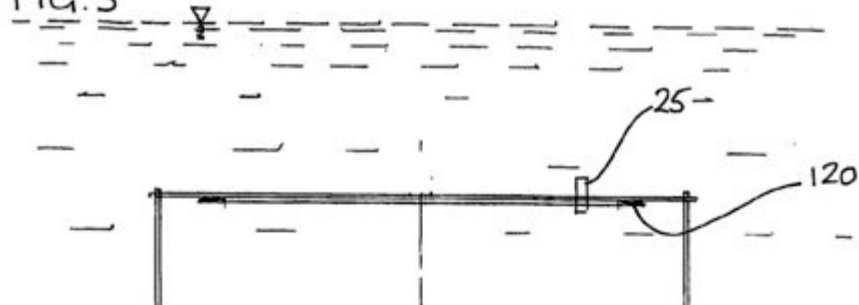
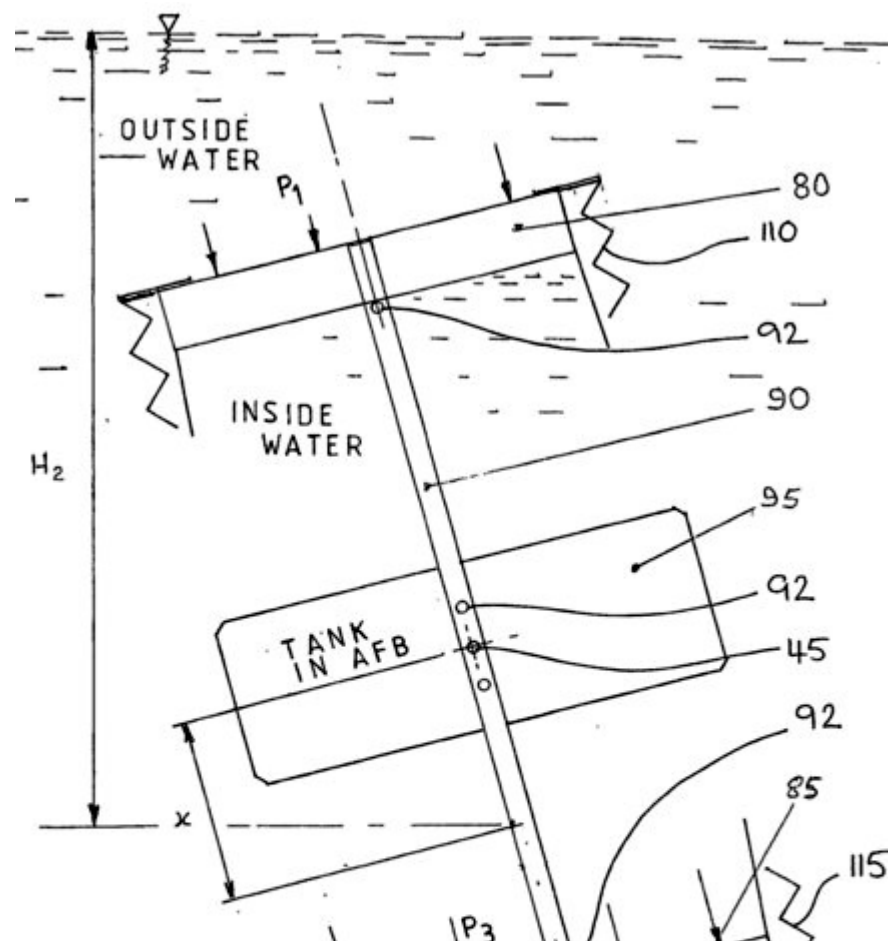
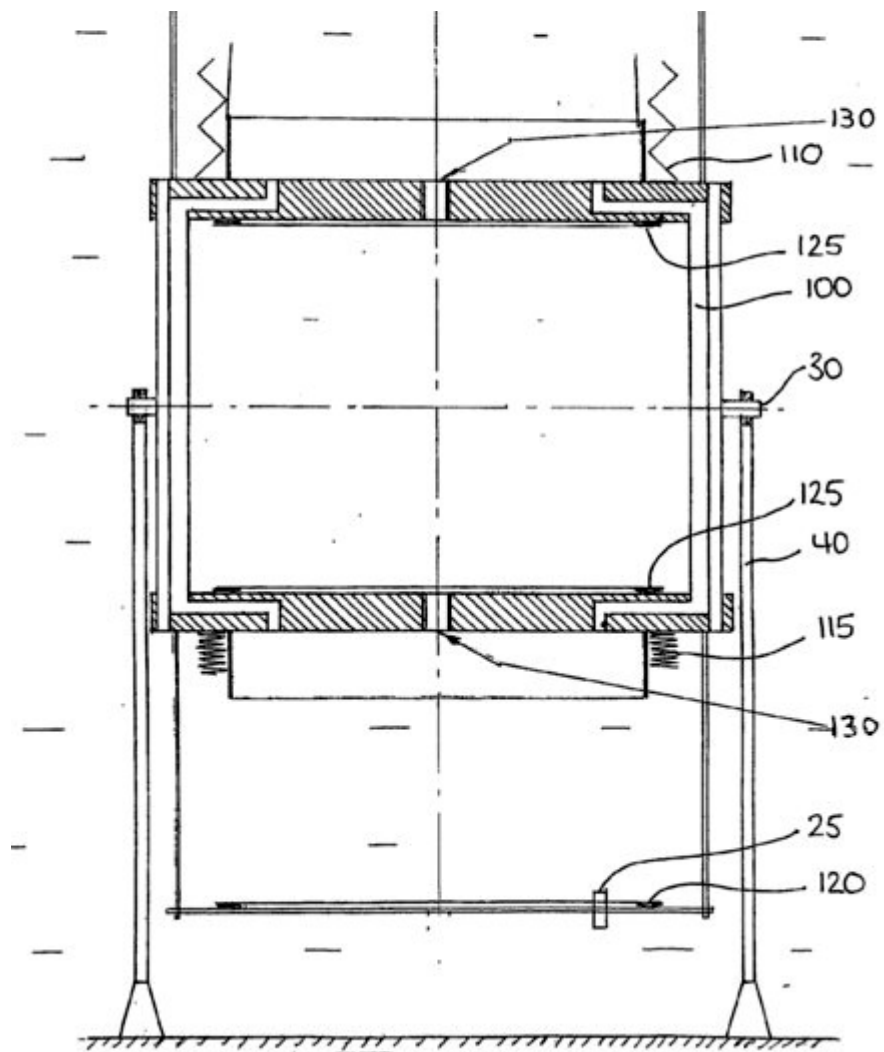
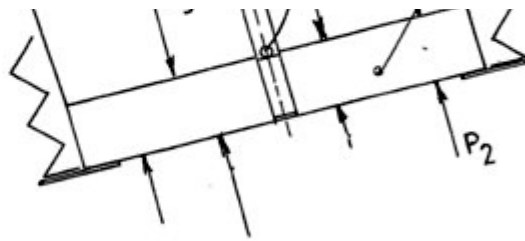


FIG. 2

FIG. 3







Ballast member 50

FIG. 4

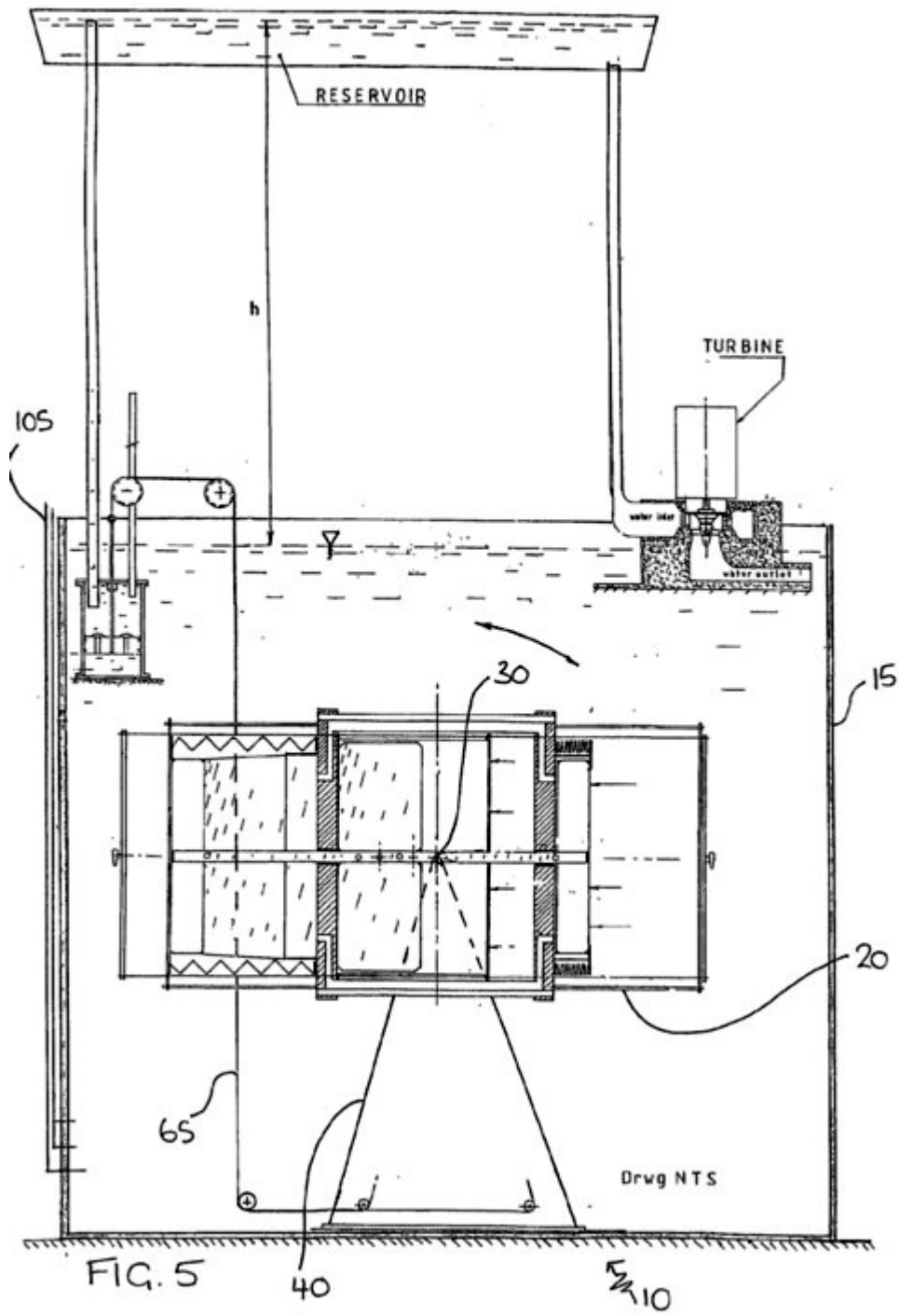
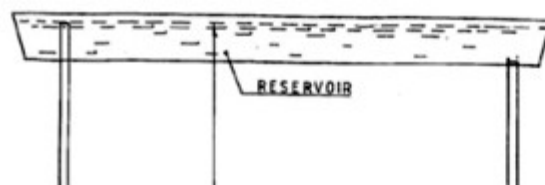
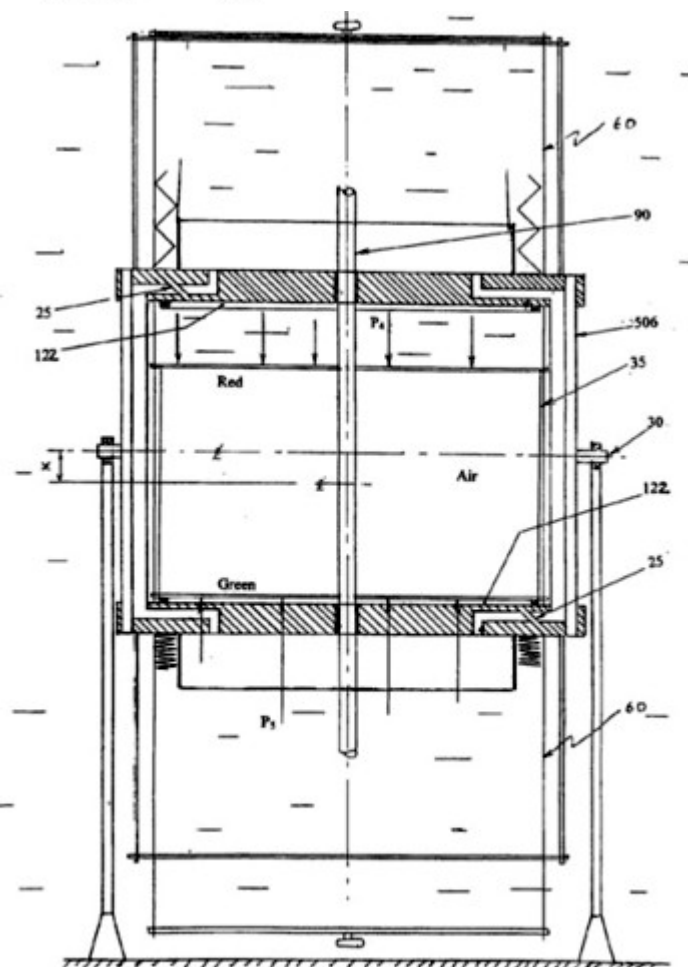
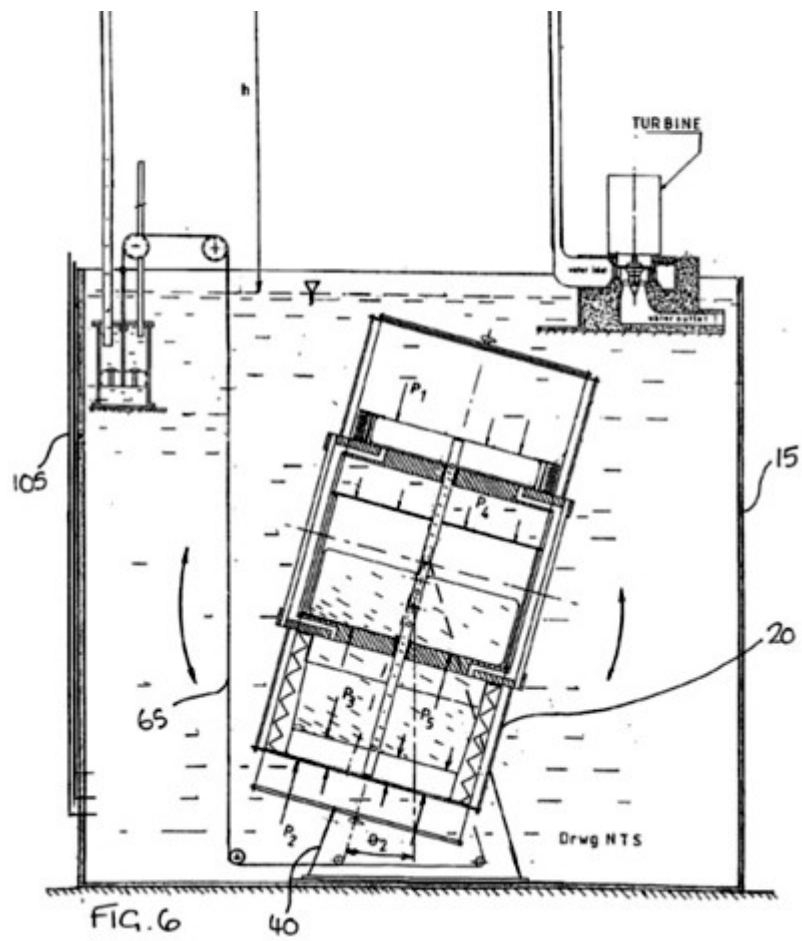


FIG. 5





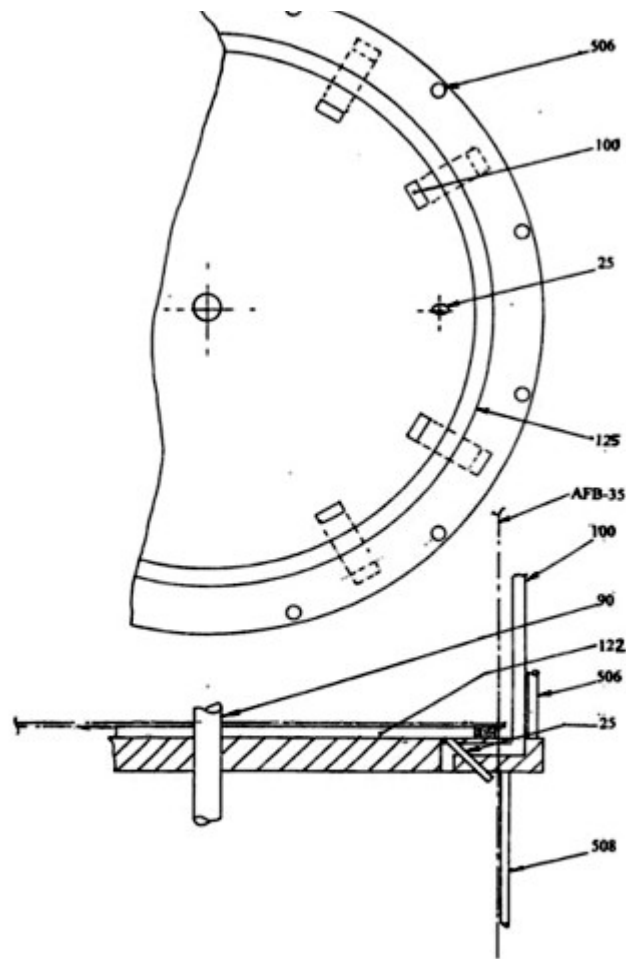
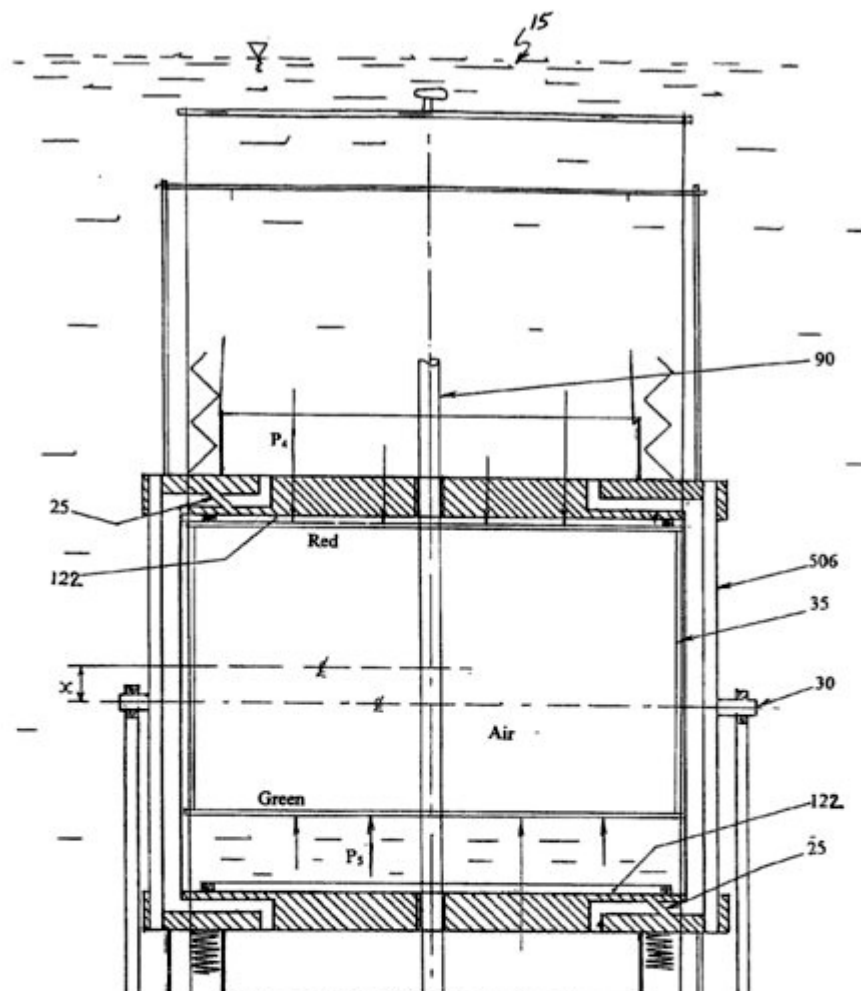


FIG. 8



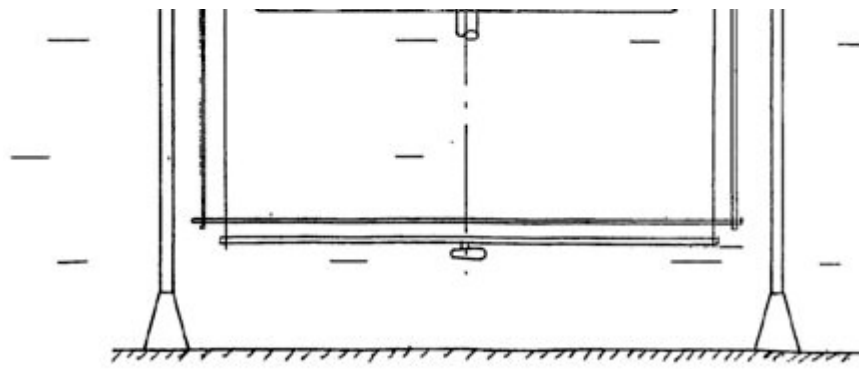


FIG. 9

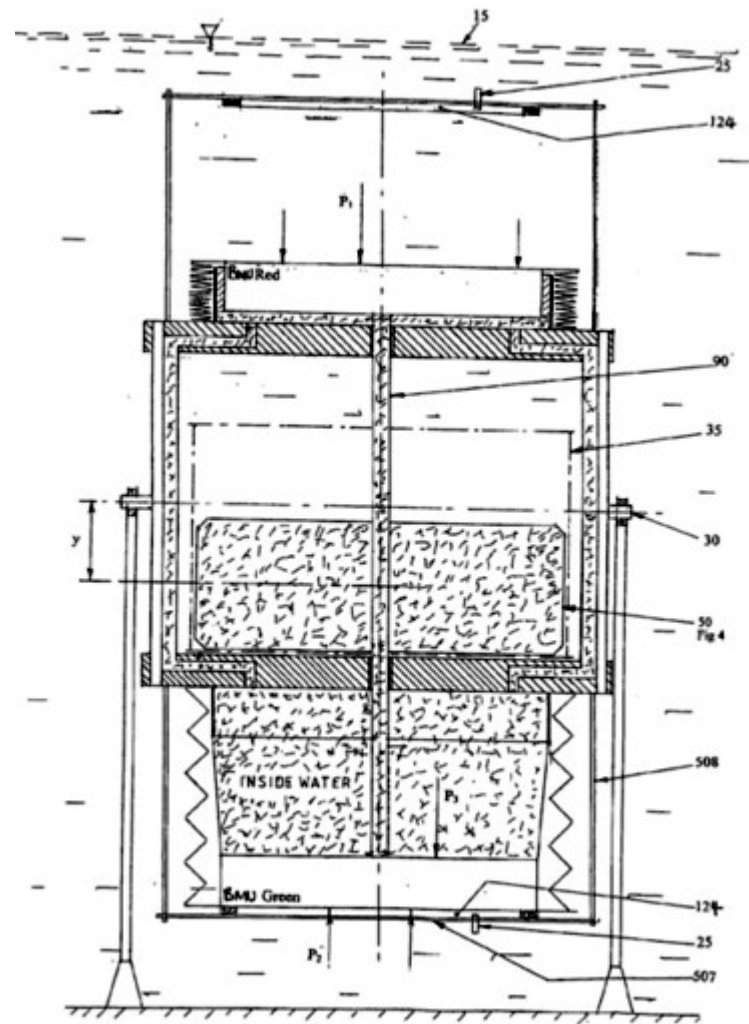
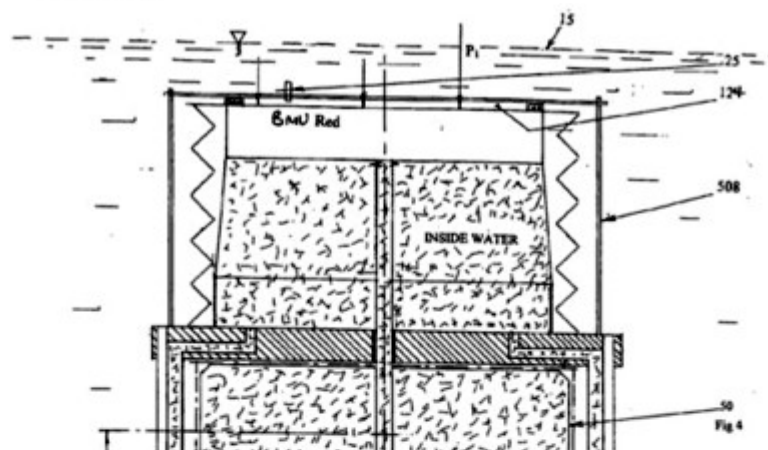


FIG. 10



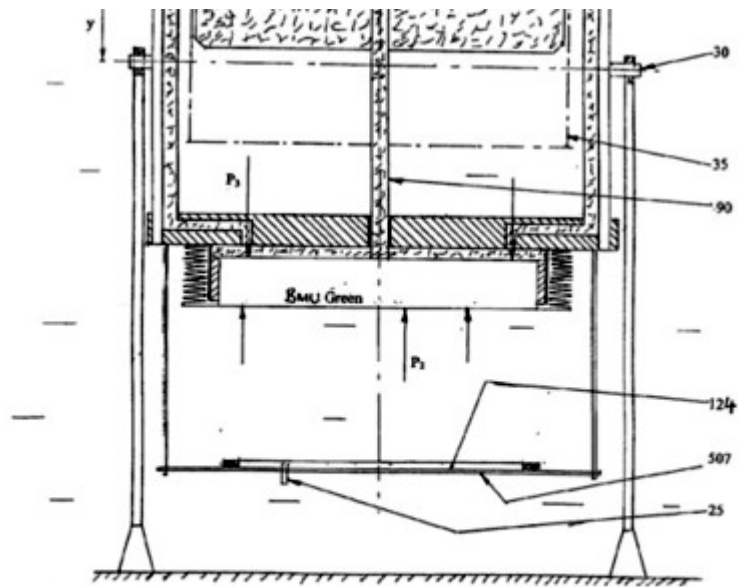


FIG. 11

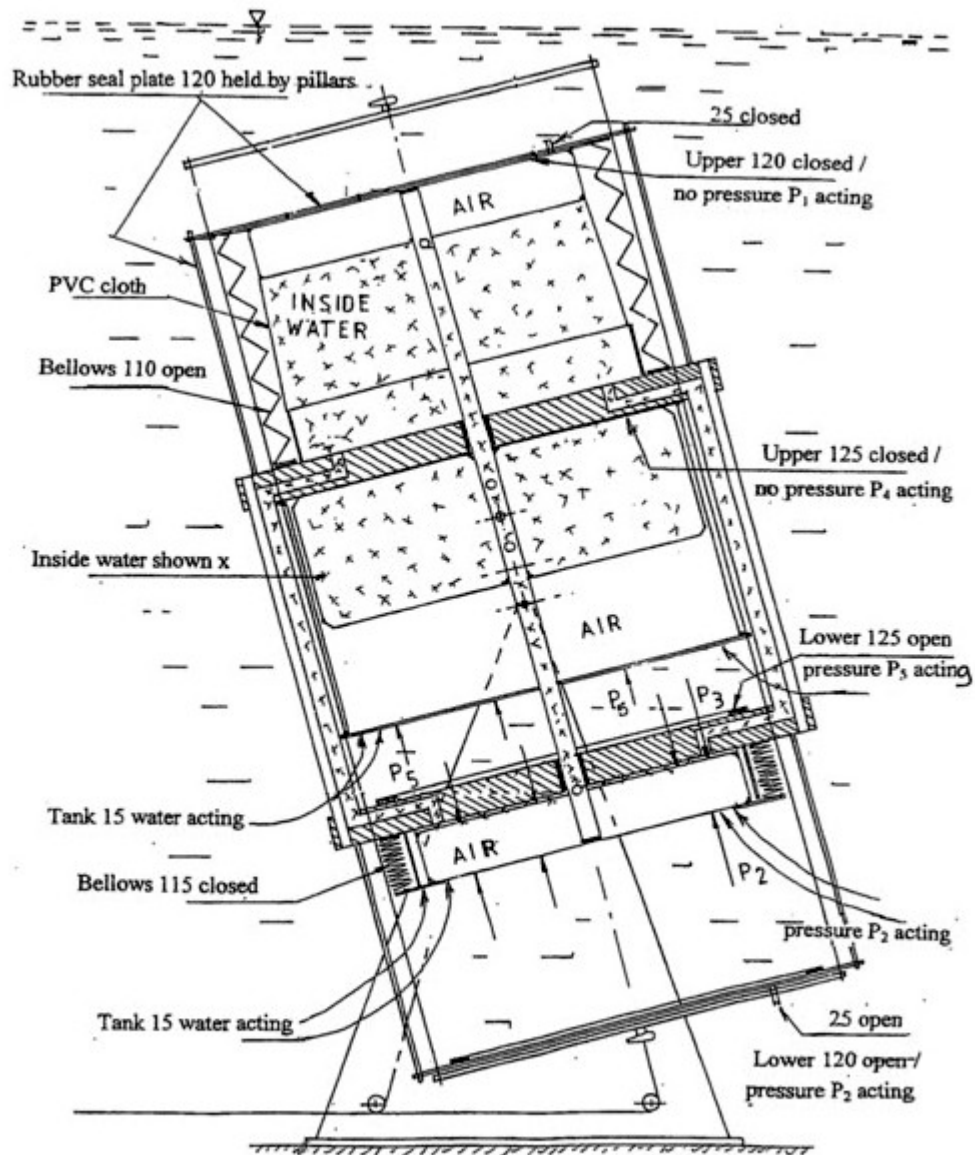


FIG. 12





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