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October 5, 2017

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To: John Doe, Individual
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Re: Bold: Patentability Search & Legal Opinion for: SYSTEM AND METHOD FOR A SUBMERSIBLE UNDERWATER CONTAINER

In summary, after searching all public databases for the United States Patent and Trademark Office (USPTO), as well as conducting a worldwide search for internationally filed patents, I discovered several references that are very relevant to the patentability of your invention, including [US 2,350,883](#), [US 2016/0273821](#), [US 6,014,833](#), and [US 2016/0381841](#). Further, I located an internationally (foreign) filed Korean patent application that may be relevant, which is provided below as patent application [KR20090096843](#). Finally, while conducting a search for any relevant non-patent product literature that may be useful to understand the state of the art, I uncovered a product which is included below under the heading "Floating Fish Cage." (underlined references are hyperlinked, click to read.)

A primary focus of the search was to determine whether any patents or publications, as well as any commercially available products, exist that "anticipate" your proposed invention. In other words, a prior art reference that would make your proposed invention not novel according to the criteria of what constitutes novelty at the USPTO. In a novelty based rejection, an assigned patent Examiner asserts that each and every element of one or more claims of your patent application is taught by the disclosure from a single reference. I am happy to share that none of the references cited in the search were found to be identical to your proposed invention, meaning that the claims of a patent application for your proposed invention are likely to be held to be novel over the existing prior art

There are, however, several references that at least partially describe your invention, and may be used in one or more obviousness based rejections. In an obviousness based rejection, an Examiner may assert that a combination of references that each partially describe your proposed

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invention make your patent application “obvious,” which means it is unpatentable. Due to the many differences between your proposed invention and the prior art, we are optimistic that it is possible to overcome such obviousness rejections.

After thoroughly reviewing each reference included below and the many references produced by the search, we feel that it is worthwhile to pursue filing your patent application. Notably, it is possible and likely that a patent would be granted for your invention if the claims of your patent application are drawn carefully and narrowly to avoid the prior art found in the search below.

The Search

The search was directed towards **SYSTEM AND METHOD FOR A SUBMERSIBLE UNDERWATER CONTAINER** with the key features of:

- 1) A specialized net that includes a container adapted for holding food, seafood, or other items that need cooling (container may be waterproof when storing food or drinks and may further include a tightly-sealed lid);
- 2) A container located within the specialized net;
- 3) The specialized net and container are submersible underwater and used in order to keep any food, seafood, drinks, or other items located in the container cool via the underwater cold temperatures;
- 4) The specialized net has metal hangers or clips attached to the net that can clip or attach to container to keep the net more compact and the container in place;
- 5) One or more suspension devices (e.g. ropes) to suspend the net and container from above;
- 6) Propellers extending from the container, whereby the propellers lower or raise the net and container to the correct depth to keep items in container cool when submerged underwater; and
- 7) Temperature sensors for sensing the temperature of the container that may indicate that the container needs to be lowered or lifted to maintain proper cooling temperature.

Search Methodology

I began the search broadly using the Google Patents and Google Advanced Patents databases. I used the above key features and natural language search terms to query the databases. I then used our third party patent research team to conduct a world-wide search on the key features above in the following databases for published granted patents and applications: US, European Union, German (both Utility and Models), WIPO, British, French, Chinese, Japanese, and Korean. This resulted in finding several patent documents of which I read through and then proceeded to review each of the “Patent Citations,” i.e. patents which are cited by a particular patent, and “Referenced By,” i.e. patents which cite the particular patent. This resulted in finding numerous patent documents including but not limited to: [US 2,350,883](#); [US 2016/0273821](#); [US 6,014,833](#); [US 2016/0381841](#), and [KR20090096843](#). Based on these results, which were in my opinion the most relevant documents uncovered during the broad searching, I compiled a list of the U.S. Classifications these documents have been placed in, and this list is shown directly below this paragraph. Some of these classifications were then used to conduct a narrower search for specific features of your invention.

Field of Cooperative Patent Classification Search (2017.05 version): [B65D 81/18](#), [B65D 81/22](#), and [F25D 1/00](#).

Class Descriptions (Hyperlinked, click to read): Class [B65D 81/00](#) represents “Containers, packaging elements, or packages, for contents presenting particular transport or storage problems, or adapted to be used for non-packaging purposes after removal of contents.” Of particular interest is subclasses: [81/18](#), which includes “Providing specific environment for contents, e.g. temperature above or below ambient,” and subclass [81/22](#), which includes “Containers providing specific environment for contents, e.g. temperature above or below ambient in moist conditions or immersed in liquids.”

Class [F25D](#) represents “Refrigerators; cold rooms; ice-boxes; cooling or freezing apparatus not covered by any other subclass.” Of particular interest is subclass: [1/00](#), which includes “Devices using naturally cold air or cold water.”

Legal Standard

To be patentable, an invention must be **directed to patentable subject matter (§ 101), useful (§ 101), novel (§ 102), and non-obvious (§ 103)** in light of existing technology and knowledge (referred to as “prior art”).

Patentable subject matter is defined in 35 U.S.C. § 101 which, in part, states:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvements thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Thus, four categories of patentable subject matter exist: (1) machine, (2) manufacture, (3) composition of matter, and (4) process. This may seem to cover “everything under the sun” but the Supreme Court has long held that several exceptions are innate to these classifications. Exactly what these exceptions cover and thus what is and what is not patentable subject matter is currently in flux.

First, natural products and natural phenomena are not patentable subject matter. Newly discovered plants and natural compounds cannot be patented. Previously, purified natural compounds, such as drugs, were patentable in their purified state. Recent Supreme Court decisions, however, have seemed to classify purified natural products as non-patentable subject matter. Mathematical equations such as $E=mc^2$ have also been deemed to be non-patentable subject matter as they claim natural phenomena.

The second and final judicial exception is by far the most complicated and the most in flux. Abstract ideas are not patentable. Unfortunately, when the Supreme Court says abstract idea they do not simply mean an idea that is general and lacking in specificity. It could be argued that the Supreme Court does not even know what they mean by “abstract idea” as they have declined to give a definition directing lower courts only to look at the things they have declared abstract ideas. In its December 2016 examiner guidance the patent office grouped 59 decisions by the Federal Circuit and the Supreme Court where the “abstract idea” exception was used to deny patentability into four categories: (1) Mathematical relationships and formulas, (2) Fundamental Economic Practices, (3) Certain Methods of Organizing Human Activity, and (4) an idea itself. This is of limited use as it is not precedential law and it is somewhat unclear exactly what is meant by an idea itself. It does however shed light on how the patent office views the legal situation.

Some inventions can be deemed however to likely lead to abstract idea rejections and others can be deemed potentially problematic. Inventions dealing with methods of playing games, or inventions that could be described as taking a well-known human activity and placing it on the internet are likely to lead to abstract idea rejections. The latter if combined with something that could be described as a fundamental economic activity is especially likely to receive such a rejection. If the invention could be described as a business method it is potentially problematic.

The **usefulness requirement** is rarely challenged by the USPTO, requiring only that the invention has an identifiable benefit and is capable of use. The purpose of this requirement is

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generally to prevent patenting of hypothetical or fantastic inventions, such as a perpetual motion machine.

The **novelty requirement** is set forth in 35 U.S.C. § 102 which, in part, states:

A person shall be entitled to a patent unless - the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.

The courts have held that a patent claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. In other words, if no differences are found between the claimed invention and the prior art, then the claimed invention lacks novelty and is to be rejected by USPTO personnel under 35 U.S.C. § 102 as being anticipated by the cited prior art reference.

The **non-obviousness requirement** is set forth in 35 U.S.C. § 103, which states:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

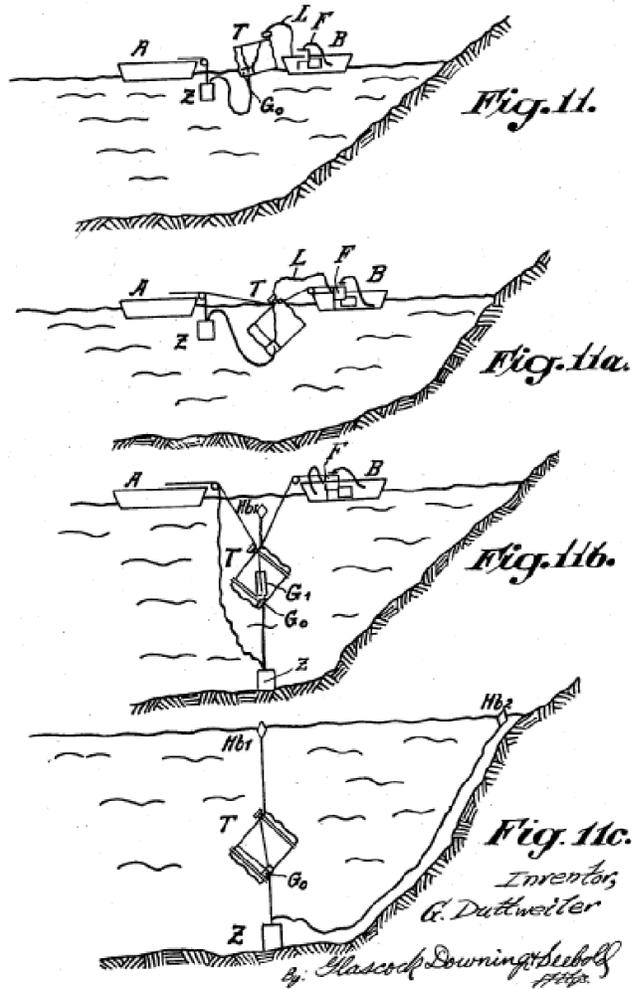
The U.S. Patent Office applies the following guidelines to determine if the non-obviousness requirement is met.

- (A) Combining prior art elements according to known methods to yield predictable results;
- (B) Simple substitution of one known element for another to obtain predictable results;
- (C) Use of known technique to improve similar devices (methods, or products) in the same way;
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (E) “Obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; and/or

(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Analysis
Patent Literature

A) [U.S Patent No. 2,350,883](#)



- a. **Title:** Method for the Storage of Goods
- b. **Inventor:** Gottlieb Duttweiler
- c. **Abstract:** N/A

- d. **Relevant Excerpts from Specification:** “The present invention has for its object to remove these disadvantages and according to the method forming a part of this invention this is effected by inserting the materials to be stored into containers or tanks which may have for instance a size of at least the capacity of tons and which, after they have been filled up, are at least partly sunk into natural waters such as rivers, lakes and the like. This sinking of the tanks allows to reduce the heat transition between the medium outside the tank and the material stored, which is preferably filled in a cooled condition, as the difference between the temperatures within and outside the tank is reduced. In carrying out this method at least one tank is provided for receiving the material to be stored, which tank is constructed in such a manner that it can be located at least in a partially sunk position in natural waters.”
See pg. 1, column 1, lines 23-41.

“The containers or tanks can be directly connected with cooling appliances whereupon the efficiency of these cooling appliances can be chosen relatively small especially when the tanks are brought to such a water depth where there is a temperature substantially constant at 39°-41°F so that an eventually necessary further cooling has to be effected only from these 39°-41°F. downwards. For lowering and raising the tanks into and out of the water, especial devices can be provided as well as such for the filling and emptying of the tanks. . . . Preferably the tanks are made with a circular or rectangular cross-section whereupon the dimensions and disposition of the side-walls permit an elastic deflection (vaulting) for compensating the outer water-pressure.”

“Figs. 11, 11a, 11b and 11c illustrate, by way of example, a device for sinking a tank and adjusting it in its floating position. In this figure, **A** represents a ship with lifting-apparatus, **B** a ship with lifting-apparatus and devices for supplying grain, **T** the underwater-tank with firmly attached auxiliary weight for stable floating position, **G₀** an auxiliary weight, **G₁** an additional weight for sinking the tank until it has been compressed, **Z** an additional weight for sinking the tank (anchor-weight) **Hb₁** an auxiliary buoy for marking the standing-place of the tank and **Hb₂** an auxiliary buoy for fastening the lifting rope for the additional weight for the re-lifting of the tank.”

Analysis: This prior art discloses a method for storing a container of grain or other materials within water. In particular, this reference discloses attaching an anchor to a container on one end, so that the container is suspended within a body of water for storing the container underwater for any period of time.

If an Examiner attempts to use this reference in a novelty based rejection, it is likely to be overcome, because although this patent discloses a container (underwater tank **T**) where the container is maintained in a position underwater having a desired temperature (see Fig. 11c) and a suspension device (lifting rope), this patent fails to disclose use of 1) a submersible net within which a storage container is located 2) propellers located on the container or net to propel the container to a desired depth 3) underwater, temperature sensors 4) or the submersible net adapted with clips, hangers, and other attachment means for suspending the container within the net, unlike your proposed invention. Further, the method for suspending the container in the water in this patent reference is completely different from the method of suspension of the net and container in your proposed invention.

Additionally, due to the many differences between the system and method of operation of your invention and this reference, it is also likely that your proposed invention should be able to overcome an obviousness based rejection if the claims are carefully and narrowly crafted to include the unique feature of your proposed invention. For the above reasons, as your invention is currently described, I do not believe an examiner will reject your application based solely on this prior art.

B) [U.S Patent Application No. 2016/0273821](#)

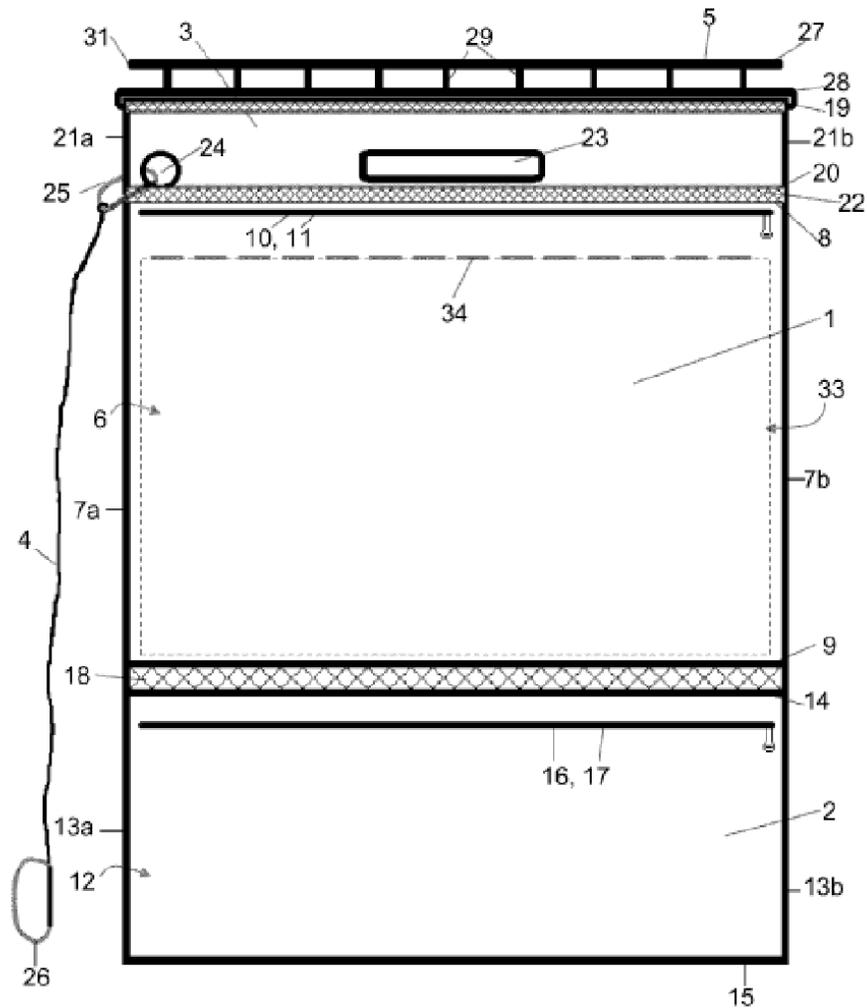


Fig 1

- a. **Title:** A Mobile Device for Storing and Cooling Food Objects
- b. **Inventor:** Joakim Schöllin
- c. **Abstract:** The present invention relates to a mobile device for storing and cooling food objects, comprising a first bag (1) defining a first cavity configured to store at least one food object, and a second bag (2) attached to the first bag and defining a

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second cavity configured to store at least one weight for sinking the device below a water level, and the device is designed to enable a line to be connected to the device for securing the device when it is below the water level.

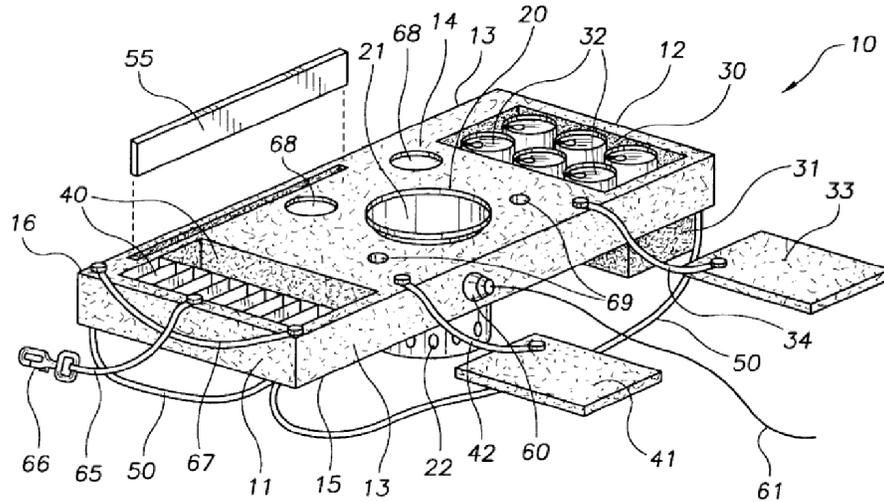
- d. **Relevant Excerpts from Specification:** “FIG. 1 shows the mobile storage device according to the present invention. The storage device comprises a first outer bag **1**, which is attached to a second outer bag **2** and a handle part **3**. A line **4** may be attached to the handle part **3**. A frame **5** may also be present. Alternatively, the handle part **3** comprises the frame **5**. The first outer bag **1** comprises a first cavity enclosed by a first front face **6** and a first back face (not shown).” *See* Paragraph [0042].

“The storage device is then submerged in the water of a lake or a sea at a depth between 0.01 and 25 meters. The second end of the line **4** is secured to a holding object such as a boat, a buoy or an object on shore. The depth can be varied by varying the length of the line **4**. The part of the line **4** that is not used for lowering the storage device into the water can be coiled on the frame **5** or on the holding object. Alternatively, the storage device can be towed in the water for example when the boat is moving. The water temperature decreases at increasing depth. The temperatures are different depending on the outer temperature and the depth of the lake or sea as well as the current in the water. Decreased temperatures are used for cooling the at least one food object comprised in the storage device.” *See* Paragraphs [0062-0063].

- e. **Analysis:** This prior art discloses a mobile storage device for storing and cooling food objects underwater. The method of operation described in this patent includes lowering the storage container and suspending a line from a boat, buoy, or other object. This patent reference describes that the water temperature decreases at increasing depth in a body of water, and that such as decreased temperature may be used to cool food and other objects located in the storage device. While this patent application will be considered relevant due to these similarities, it is likely that an Examiner will not be able to use this reference in a novelty based rejection to assert that your invention is not novel. This is because there are many features and elements that may be included in the claims of your patent that are not taught by this patent reference. For example, there is no disclosure whatsoever in this patent application regarding 1) using a submersible net that holds a waterproof container 2) temperature sensors or 3) propellers to lower the submersible net and container to a desired depth.

All of these elements are notable differences that may be used to overcome this rejection if it were to be used in an obviousness based rejection. It seems likely that this reference, on its own, is not likely to be successful in preventing your patent from receiving favorable examination.

C) [U.S Patent No. 6,014,833](#)



- a. **Title:** Floating Fisherman's Accessory
- b. **Inventor:** Gabriel M. Benavidez
- c. **Abstract:** A Floating Fisherman's Accessory which is fabricated of Styrofoam™ measuring approximately 3 feet in length, 4 inches in height and 18 inches in width which includes several openings which extend into the water including a large opening for placement of the 5 gallon bucket, two sealed storage areas, one for storing cold drinks, and one for storing fishing equipment and tackle, a pair of metal skids runs along a bottom length on each side of the device allowing the device to be pulled across terrain without damaging the live bait bucket, the device also includes accessory drink holders and fishing pole holders.
- d. **Relevant Excerpts from Specification:** “The fisherman would place live bait within a 5 gallon bait bucket located within a central portion of the device which allows the 5 gallon live bait bucket to extend into the water when the device is floating on the water. The user would then place beverages, i.e., a six pack of drinks into the beverage holding container. The user could then place ice over the drinks if desired. The device includes lids for the cooling location and the equipment storage location.” *See* col. 3, lines 9-15.

“The device includes a central aperture **20** which extends through the device middle portion and which aperture **20** has a diameter dimensioned to allow a 5 gallon live bait bucket to be placed within the aperture while the bait bucket top rim catches the

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top surface **14** of the device thereby preventing the bait bucket from falling all the way through the aperture **20**. The bait bucket **21** preferably includes numerous small holes **22** for allowing water to flow through the bait bucket **21** when the device is floating in water, thereby providing a means for maintaining live bait. A beverage cooling container **30** is located on the rear end **12** of the device. The beverage container **30** is preferably rectangular in shape and dimensioned to allow a six pack of can drinks to be inserted into the container while an extending portion of the container **31** extends below the bottom surface **15** of the device. Can drinks **32** are inserted into the cooling container **30** while ice is added to the container after the drinks have been inserted into the container **30**. A cooling container lid **33** is attached to a top portion of the cooling container **30**. The cooling container lid **33** is tethered to the device with a tether line **34** which prevents the lid **33** from inadvertently blowing off and being misplaced.” See col. 3, lines 52-67; col. 4, lines 1-6.

- e. **Analysis:** This prior art discloses a floating fisherman’s accessory which extends into the water for storing cold drinks and fish bait. This prior art is not likely to be considered novelty-based prior art to your invention because, although it discloses a container (bait bucket **21**), a suspension device (tow line **65**) and metal hangars or attachments configured to clip onto the container (bait bucket top rim catches the top surface **14** of the device thereby preventing the bait bucket **21** from falling all the way through the aperture **20**), this prior art fails to disclose propellers and a temperature sensor. Further, and importantly, there is no disclosure regarding a submersible net that contains the container. Further, this container is not waterproof and would not be suitable for holding food for consumption.

Moreover, this prior art is not likely to be considered obviousness-based prior art to your invention because it would not have been obvious for a person of skill in the art to modify the fisherman’s container to include a submersible net having propellers and temperature sensors for storing the items underwater for a period of time.

Taken together, this means that the examiner will not likely consider this reference direct prior art for your invention because this prior art is not considered novelty-based or obviousness-based prior art for lack of many components of your invention. For the above reasons, as your invention is currently described, I do not believe an examiner will reject your application based solely on this prior art.

D) [U.S Patent Application No. 2016/0381841](#)

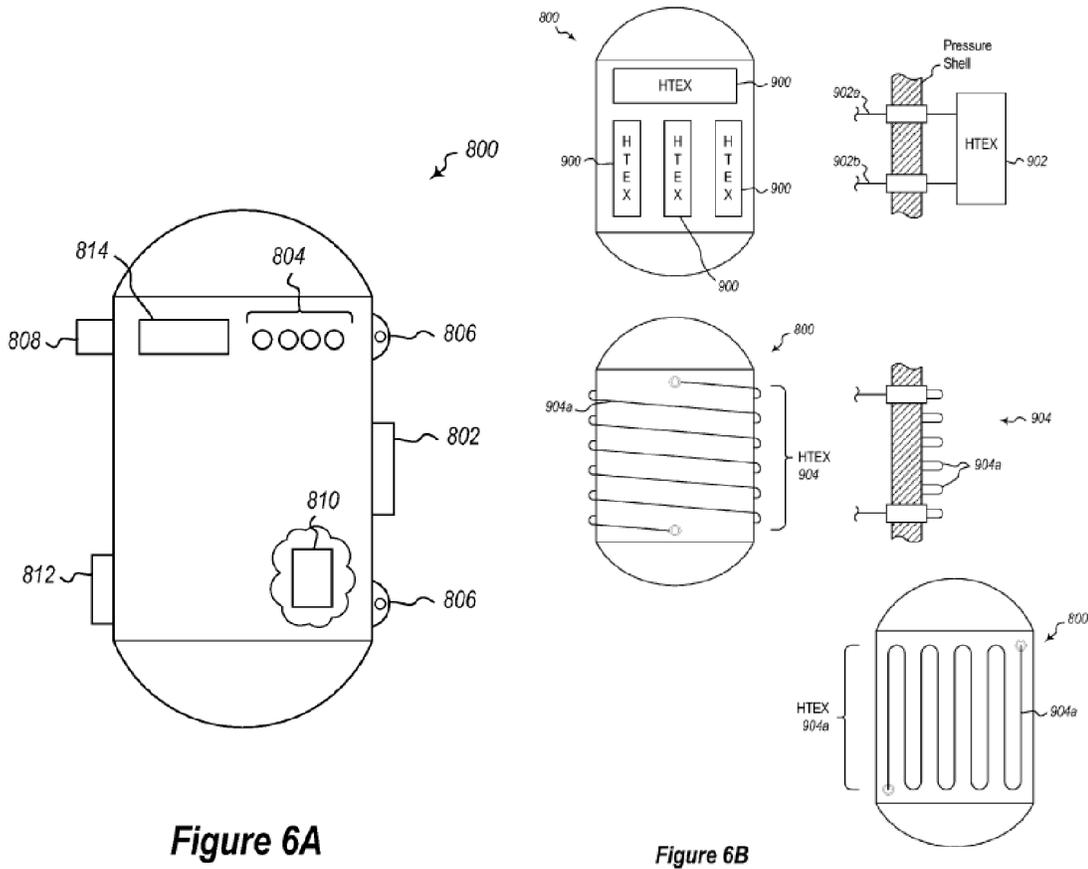


Figure 6A

Figure 6B

- a. **Title:** Underwater Container Cooling Via External Heat Exchanger
- b. **Inventors:** Eric C. Peterson, Benjamin F. Cutler, Thomas Foley, Peter Johnson, Alexander Jacques Fleming, David Bazeley Tuckerman
- c. **Abstract:** In one example, a shell includes walls that collectively define an interior space of the shell, the interior space sized and configured to receive heat generating equipment. An internal heat exchanger disposed within the interior space is arranged for thermal communication with heat generating equipment when heat generating equipment is located in the interior space. Additionally, an external heat exchanger is located outside of the shell and arranged for fluid communication with the internal heat exchanger. Finally, a prime mover is provided that is in fluid communication with the internal heat exchanger and the external heat exchanger, and the prime mover is operable to circulate a flow of coolant through the internal heat exchanger and the external heat exchanger.

d. **Relevant Excerpts from Specification:** “With attention now to FIGS. 6a and 6b, details are provided concerning some example external heat exchangers and pressure shells. In FIG. 6a, one example embodiment of the pressure shell is denoted at **800**. The example pressure shell **800** has a generally cylindrical shape with a domed top and bottom, although as noted herein, the pressure shell **800** can be any suitable size and shape and, accordingly, the embodiment of FIG. 6a is presented solely by way of example. The size and shape of the pressure shell **800** may also be determined at least in part based on the further considerations noted below. In one example embodiment, the pressure shell **800** is between about 7 feet and 9 feet in diameter, and one particular embodiment is about 8 feet in diameter. Larger, or smaller, lengths and/or diameters than those disclosed in the foregoing examples, as well as any other measurements, could also be employed, and the scope of the invention is not limited to any particular size or configuration of a pressure shell.” *See* Paragraph [0070].

“Other elements of the example pressure shell **800** include one or more lift points **806**. In general, the lift points **806** include an eye or other structure that can accommodate a chain, cable, hook and/or other lifting devices. The lift points **806** can be used when immersing the pressure shell **800**, when retrieving the pressure shell **800**, and performing various other operations concerning the pressure shell **800** such as, but not limited to, manipulating the pressure shell **800** during assembly, shipping, mooring, service, or positioning on a seabed, foundation, or other underwater location. In some embodiments, lift points can be omitted and the pressure shell can include one or more hard points by way of which the pressure shell can be positioned and manipulated using straps, chains, or other devices.” *See* Paragraph [0071].

“As well, the pressure shell **800** may include environmental monitoring and control equipment **810** disposed within the pressure shell **800**. Such environmental monitoring and control equipment **810** can facilitate the monitoring and control of environmental parameters such as temperature, pressure, noise, shock, vibration, volatile organic compounds (VOC), and humidity of the interior environment of the pressure shell **800**. It should be noted that some humidity may be desirable to help reduce static. The temperature of the interior and exterior walls of the pressure shell **800** can also be monitored. The environmental monitoring and control equipment **810** can include, for example, one or more of cameras, sensors for any of the monitored parameters, as well as air heaters, dryers, air coolers, and desiccants. Where a relatively dry environment with low, or no, humidity is desired, equipment

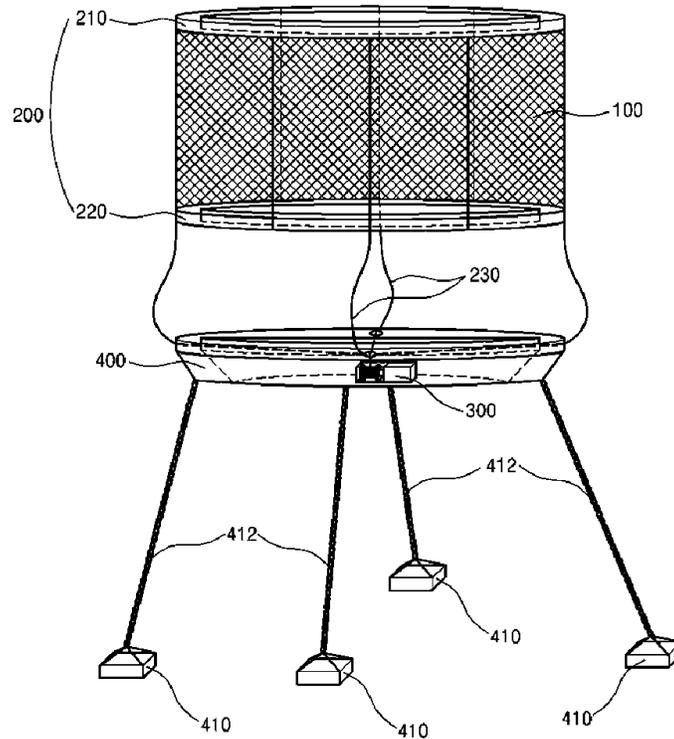
such as ionizers can be used to prevent buildup of static.” *See* Paragraph [0073].

- e. **Analysis:** This prior art discloses an underwater cooling container that has an exterior shell and an interior shell, with coolant flowing in between the exterior and interior shell to cool any items located within the interior shell. This prior art is not likely to be considered novelty-based prior art to your proposed invention. There are many differences between your proposed invention and this patent application, because, although it discloses a container (pressure shell **800**), a suspension device (chain, cable, hook and/or other lifting devices), metal hangars or attachments configured to clip onto the container (lift points **806**), and a temperature sensor (temperature sensors in the monitoring and control equipment **810**), this prior art fails to disclose 1) a submersible net that is adapted to contain a container as well as 2) propellers that can move the submersible net and container to a desired depth underwater.

It is possible that this patent application may be considered in an obviousness-based rejection, in which the Examiner would combine this reference with another reference that does include a net and a set of propellers. However, if such a reference is not located, then it is unlikely that an obviousness based rejection would be successful in the rejection of your patent application.

As stated above, any patent application that is filed should be drafted to include a submersible net having a container that includes propellers to overcome the prior art. It is also recommended to consider providing additional unique functions and features that may be used to distinguish your proposed invention from any prior art so as to increase the chances of favorable examination at the USPTO.

E) [KR20090096843](#)



a. **Title:** Movable Net-Cage Structure in Underwater Capable of Minimizing Damage of Natural Disasters Efficiently

b. **Assignee:** Korea Maritime University Industry Academic Cooperation Foundation

c. **Inventors:** Jin Oh, Yeon Ham, Jun Kwak

d. **Abstract:** A movable net-cage structure in underwater is provided to maximize stability in operation by removing danger possibility due to fluctuation of a wire by adjusting a location of the movable net-cage structure.

e. **Relevant Excerpts from Specification:** A movable net-cage structure in underwater includes a mesh net (100), a floating part (200), an underwater movement unit (300). The fish is raised in the mesh net. The floating part includes an upper rim (210) and a lower rim (220). The upper rim maintains a shape of the top of the mesh net. The lower

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rim maintains the shape of the bottom of the mesh net. The movable net-cage structure in underwater maintains a constant shape of the structure while floating the mesh net on the water surface or underwater. The underwater movement unit adjusts a location of the mesh net freely.

f. **Analysis:** The patent link provided is a translation of a Korean patent. This patent discloses a moveable net cage structure that is intended to contain fish that may be raised and fed in the net cage. Further, the patent describes that the movable net cage structure is environmentally friendly and is also designed to keep the structure in tact if there are any natural disasters, such as typhoons or storms. The movable net cage structure has a forward/reverse drive motor that is connected to the moveable net cage structure that allows the net cage to be moved underwater.

It is not likely that an Examiner would be successful in using this reference to reject your patent application under a 102 novelty based rejection. However, an Examiner may raise this prior art reference in a 103 obviousness rejection of one or more claims of your patent application, alleging that this reference discloses, at least partially, the elements of your proposed invention. There are some similarities between your proposed invention and the present patent. These similarities include the concept of having a submersible net located underwater to store fish, and that the submersible net may be moveable underwater using electromechanical means. However, it is likely that such a rejection may be overcome, because there are also notable differences between your proposed invention and this patent. For example, your proposed invention utilizes a submersible net that has a separate container having a rectangular or other polygonal shape that is then located within the net, whereas this above-identified patent solely describes a general cage structure, but does not have a separate container located within the general cage structure, and the net is located along the sides of the net cage structure to keep in the fish and allow enough water to flow through.

Other notable differences between your proposed patent application and this patent are the 1) use of a waterproof container and lid to keep items dry (e.g. food and drinks) 2) clips or other means of attaching the container to the submersible net 3) temperature sensors and 4) the propellers that extend from the container through the net on either side to move the container to a desired depth underwater.

Based on these unique features and functions provided by your proposed invention, it is likely that an obviousness based rejection that cites to this patent could be overcome.

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Non-Patent Product Literature

F) [Floating Fish Cage](#)



a. **Title:** Floating Fish Cage

b. **Company:** Underwater Warehouse

c. **Relevant Excerpts from Specification:** Instant isolation chamber for koi observation. The Floating Fish Cage sets up in seconds to create a protected area within your pond. Black polyester netting allows good water circulation and provides a sense of security to help reduce fish stress. Floating lid allows easy access. The Floating Fish Cage is useful for emergencies, but can also be used as a temporary holding pen to separate prized koi for shows or transport.

d. **Analysis:** The above-identified website that includes the above-pictured product is an example of non-patent product literature. Even though this website is not a patent, an Examiner may still conduct a search and locate this website to use in an obviousness rejection of your proposed invention. The above-identified product is described as a “floating fish cage” that may serve as an isolation chamber for isolating and observing koi and other live fish. While there are some general similarities, there are also noticeable and important differences between your proposed invention and the product described in this website. Notably, the Floating Fish Cage is a container having a lid. However, the Floating Fish Cage is 1) not located within a submersible net 2) does not include temperature sensors 3) is not water proof and in fact is designed to allow water to flow through 4) is not connectable to a submersible net via clips or other hangers and 5) does not include any propellers extending from the container through a submersible net. Due to all of these

notable differences between this reference and your proposed invention, it is likely that an obviousness based rejection that cites to this reference may be overcome. However, it will be necessary to narrowly craft the claims of your proposed invention to focus on the unique features of your proposed invention, including the unique system and method of use.

Limitations of Patentability Searches

Patentability Searches have limitations that should be considered when deciding whether or not to file a patent application. It is impossible to guarantee that a patent will issue on any specific invention because of these limitations. Some of these limitations include:

1. Most patentability searches only cover issued United States patents and published applications, unless indicated otherwise in the search report. Thus, foreign patents, U.S. patent applications that have not been published, periodical articles, and commercial activities are not developed during a patentability search.
2. A Patentability Search **is not** a Right-to-Use Search that is conducted with the purpose of determining whether making, using, or selling an invention would infringe an existing United States patent. A right-to-use search is much more comprehensive and, accordingly, much more expensive than a patentability search.
3. Any opinion provided is based on the current state of patent law regarding the patentability of your invention and the results obtained by the search. Patentability of an invention is a difficult legal question, and reasonable minds can differ on whether a particular invention is patentable in light of the same prior art. It is possible that an examiner, a judge, or a competitor may reach a different conclusion.
4. Non-patentable subject matter rejections are especially hard to predict for the reasons described above. The law is currently in a state of flux and a workable definition for abstract idea has arguably not yet been formulated by either the Supreme Court, the Federal Circuit, or the Patent and Trademark Office.

If you intend to file—or are unsure about filing—I strongly recommend that you file at least a provisional patent application before publicly disclosing your invention or beginning any commercial activities involving your invention. Such public disclosure or commercial activities can jeopardize your ability to obtain a patent in the United States and foreign countries. In some foreign countries, any public disclosure or commercial activity anywhere in the world can prevent you from obtaining a patent, regardless of whether a non-provisional patent application is filed within the one year grace period provided by some countries, .e.g. the United States.

Conclusion

As your invention is currently described, I recommend moving forward with a patent application. Your patent application is patent eligible. While we are cautiously optimistic that you should receive a favorable examination at the USPTO, even if we may still be able to achieve a patent, the scope of the patent may be narrower than what you had originally conceived it to be, and a careful wording of your claims to include additional detail of your invention may be required to achieve a patent.

The positive news is that none of the cited references are identical to your proposed invention, and do not include each element of your proposed invention. Nevertheless, it is possible that one or more references may be considered in an obviousness rejection. Your invention is at least partially described in U.S. Patent Nos. [US 2,350,883](#) and [US 6,014,833](#), and U.S. Patent Application No. [US 2016/0381841](#) and [US 2016/0273821](#). However, we should be able to overcome such rejections by pointing to the unique features and advantages offered by your proposed invention. For example, we will argue that it would not have been obvious for a person of skill in the art to modify the underwater container of [US 2016/0381841](#) to provide propellers providing upward and downward mobility to maintain a constant temperature in the container. This is a very unique feature not found in any of the searched references.

Therefore, I **would recommend** you move forward with a patent application. If you wish to proceed, Bold IP stands ready to skillfully draft the specification and claims in such a way to protect the novel aspects of your invention, keeping in mind the valuable information that we have learned from the search about your chosen field of innovation.

Filing a patent application assures that you will be the first to file and provides you with a priority date to reference back to, and provides you with a “patent pending” status. We will discuss with you in detail whether to file a provisional or a non-provisional patent application, and the benefits of filing either type of application.

Bold IP stands ready to help you with moving forward with your invention and will be in touch shortly after delivering this opinion to discuss in detail the next step.

Regards,



Wooshik Shim

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Managing Attorney Conclusion

As a managing attorney of Bold IP, I have had the privilege to work with a wide array of patent applications, across technology disciplines and complexities. I have taken a detailed review of the cited prior art references and analyses performed by Wooshik Shim and I concur heartily with their opinion throughout. A patent application is valuable type of intellectual property and is an asset that can be leveraged in many ways to establish your company as a leader in its industry.

I have the following specific observations: as Wooshik mentioned, we will need to be careful in drafting the specification to include specific tangible relationships with novel functionality. This will ensure favorable examination by claiming the most unique features of your proposed invention. Also, I would recommend adjusting the current disclosure to include alternative embodiments of your invention that cover possible changes and modifications to the structure and design of your submersible underwater container. This way, a patent application for your proposed invention will include all foreseeable versions of your invention, so that you can protect yourself from any third party infringer who tries to “design around” a single version of your invention. Also, such a patent application will be broad enough to accommodate your invention as it becomes commercially successful and will encompass different embodiments of your invention.

As for the next step, **I would also recommend moving ahead with a provisional patent application** in order to protect the priority date for your invention. This assures that you will be first to file and will be able to reference back to this “patent pending” date when filing for your Nonprovisional and Patent Cooperation Treaty (PCT) application up to one year after.

Regards,



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Preliminary Infringement Analysis

In an effort to apprise you of the most relevant prior art, the above report compiled references dating back to the 1800s to deliver the most accuracy to predict whether you could get a patent. However, the above analysis did not consider to whether the relevant prior art was still enforceable today which only considers those that have been issued in the past 20 or so years. In other words, this preliminary infringement section will discuss the relevant, enforceable United States patents that we were able to find with our prior art search.

This analysis is preliminary. The scope of the analysis goes only so far as the novelty search above provided. It is possible and in some cases, quite likely that many other granted patents exist within the broader technology space of your invention. For this reason, if you would like a definitive answer on market exposure, a “Freedom to Operate” or “Patent Landscape” Infringement Opinion is required. Please inquire as to the steps necessary to complete those more thorough and complete opinions.

That said, this analysis will give you insight as to whether your product/service you will infringe on another’s active patent or not. It will also tell to what degree there is competition in this space and what inventor (or company) has the lion’s share of actively enforceable patent rights in the technology area (which could help you with respect to the monetization of those rights, should they vest – see “Monetization Strategy” below).

Of the prior art references cited above, the following patent is currently active and enforceable:

Full List of Claims of [2016/0381841](#): (based on most recent amendments filed on **June 29, 2017** after reviewing the patent application as filed using USPTO PAIR databases)

1. [Claim 1] A submersible pressure shell, comprising:
 - a plurality of walls that collectively define an interior space of the submersible pressure shell, the interior space sized and configured to receive heat generating equipment;
 - one or more lift points physically mounted to an outside portion of the submersible pressure shell;
 - an external fluid to fluid a heat exchanger physically mounted to the submersible pressure shell and located outside of the submersible pressure shell and arranged for thermal communication with a surrounding environment of the submersible pressure shell, the external heat exchanger being oriented relative to an identified flow of water in the surrounding environment such that a direction of

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fluid flow through the external heat exchanger is substantially opposite to a direction of the flow of water in the surrounding environment; and

a prime mover in fluid communication with the external heat exchanger, the prime mover operable to circulate a flow of a fluid coolant from a location in the interior space through the external heat exchanger so that heat from the coolant is transferred to the surrounding environment by the external heat exchanger, the prime mover being located in the interior space defined by the plurality of walls.

2. [Claim 2] The submersible pressure shell as recited in claim 1, wherein the external heat exchanger comprises a pair of plenums in fluid communication with a plurality of exposed tubes.

3. [Claim 3] The submersible pressure shell as recited in claim 1, wherein the external heat exchanger comprises one or more lengths of tubing located proximate an exterior surface of the shell.

4. [Claim 4] The submersible pressure shell as recited in claim 1, further comprising heat generating equipment disposed in the interior space and arranged for thermal communication with the coolant.

5. [Claim 5] The submersible pressure shell as recited in claim 1, further comprising one or more of a gas-liquid heat exchanger and solid-liquid heat exchanger disposed in the interior space and arranged for thermal communication with heat generating equipment when heat generating equipment is located in the interior space, and also arranged for fluid communication with the prime mover and the external heat exchanger.

6. [Claim 6] The submersible pressure shell as recited in claim 1, wherein the external heat exchanger is attached to an exterior surface of the submersible pressure shell.

7. [Claim 7] The submersible pressure shell as recited in claim 1, further comprising one or more sensors configured to communicate with a remote location by way of a communication line extending out of the interior space of the submersible pressure shell, one of the sensors configured to perform one of: monitor and report on the datacenter component; monitor and report on an atmosphere inside the interior space of the submersible pressure shell; monitor and report on an atmosphere external to the submersible pressure shell; or, enable control of an aspect of the operation of one of the internal heat exchanger, the external heat exchanger, or the prime mover.

8. [Claim 9] The submersible pressure shell as recited in claim 1, wherein the submersible pressure shell is substantially watertight over a range of immersion depths in which the submersible pressure shell is completely submerged within the range of immersion depths.

9. [Claim 10] The submersible pressure shell as recited in claim 1, further comprising one or more backflow preventers configured and arranged to prevent fluid in the surrounding environment from entering the interior space in the event of a break in coolant lines extending between the exterior heat exchanger and the interior space.

10. [Claim 11] The submersible pressure shell as recited in claim 1, wherein all

components in fluid communication, whether direct or indirect, with the external heat exchanger are pressure rated to the extent necessary to substantially prevent a breach in which those components would be exposed to the full pressure exerted by the surrounding environment, and wherein the external heat exchanger and its fluid connections through the shell are pressure rated to the extent necessary to substantially prevent a breach in which the external heat exchanger would be exposed to the full pressure of an interior environment of the submersible pressure shell.

11. [Claim 12] A submersible pressure shell, comprising:
 - a plurality of walls that collectively define an interior space of the submersible pressure shell, the interior space sized and configured to receive heat generating equipment;
 - one or more lift points physically mounted to an outside portion of the submersible pressure shell;
 - an internal heat exchanger disposed within the interior space and arranged for thermal communication with heat generating equipment in the interior space;
 - an external heat exchanger, comprising a fluid to fluid head exchanger, located outside of the submersible pressure shell and arranged for thermal communication with a surrounding environment of the submersible pressure shell, the external heat exchanger being in direct fluid communication with the internal heat exchanger, the external heat exchanger being oriented relative to an identified flow of water in the surrounding environment such that a direction of fluid flow through the external heat exchanger is substantially opposite to a direction of the flow of water in the surrounding environment; and
 - a prime mover located in the interior space of the submersible pressure shell and in fluid communication with the internal heat exchanger and with the external heat exchanger, and the prime mover operable to circulate a flow of coolant from a location in the interior space through the internal heat exchanger and the external heat exchanger so that heat from the coolant is transferred to the surrounding environment by the external heat exchanger.
12. [Claim 13] The submersible pressure shell as recited in claim 12, wherein the external heat exchanger comprises a pair of plenums in fluid communication with a plurality of exposed tubes, and wherein the exposed tubes are arranged in a generally vertical direction.
13. [Claim 14] The submersible pressure shell as recited in claim 12, wherein the external heat exchanger comprises one or more lengths of tubing located proximate an exterior surface of the pressure shell.
14. [Claim 15] The submersible pressure shell as recited in claim 12, wherein the prime mover is a pump, and the coolant is a liquid.
15. [Claim 16] The submersible pressure shell as recited in claim 12, further comprising heat generating equipment disposed in the interior space and arranged for thermal communication with the internal heat exchanger.
16. [Claim 17] The submersible pressure shell as recited in claim 12, wherein

the submersible pressure shell is substantially watertight over a range of immersion depths.

17. [Claim 18] The submersible pressure shell as recited in claim 12, further comprising one or more sensors configured to communicate with a remote location by way of a communication line extending out of the interior space of the submersible pressure shell, one of the sensors configured to perform one of: monitor and report on the datacenter component; monitor and report on an atmosphere inside the interior space of the submersible pressure shell; monitor and report on an atmosphere external to the submersible pressure shell; or, enable control of an aspect of the operation of one of the internal heat exchanger, the external heat exchanger, or the prime mover.

18. [Claim 19] The submersible pressure shell as recited in claim 12, wherein the internal heat exchanger is a gas-liquid heat exchanger.

19. [Claim 20] The submersible pressure shell as recited in claim 12, wherein the prime mover comprises one or more fans, and the coolant comprises one or more gases.

20. [Claim 21] The submersible pressure shell as recited in claim 12, further comprising one or more backflow preventers configured and arranged to prevent fluid in the surrounding environment from entering the interior space in the event of a break in coolant lines extending between the exterior heat exchanger and the interior space.

21. [Claim 22] The submersible pressure shell as recited in claim 12, further comprising means for performing anti-fouling and/or de-fouling.

22. [Claim 23] The submersible pressure shell as recited in claim 12, wherein all components in fluid communication, whether direct or indirect, with the external heat exchanger are pressure rated to the extent necessary to substantially prevent a breach in which those components would be exposed to the full pressure exerted by the surrounding environment, and wherein the external heat exchanger and its fluid connections through the submersible pressure shell are pressure rated to the extent necessary to substantially prevent a breach in which the external heat exchanger would be exposed to the full pressure of an interior environment of the submersible pressure shell.

23. [Claim 24] The submersible pressure shell as recited in claim 12, wherein the internal heat exchanger is a solid-liquid heat exchanger.

24. [Claim 25] The submersible pressure shell as recited in claim 1, wherein the submersible pressure shell also includes one or more ultrasonic agitation equipment for anti-fouling and/or de-fouling.

25. [Claim 26] The submersible pressure shell as recited in claim 1, wherein the fluid coolant includes one or more anti-corrosive additives.

26. [Claim 27] The submersible pressure shell of claim 1, wherein the submersible pressure shell further includes one or more jets that are also positioned on the outside portion of the submersible pressure shell, the one or more jets employed to impart additional fluid flow through the external heat exchanger.

27. [Claim 28] The submersible pressure shell of claim 1, the one or more lift points each including an eye for connecting to a lifting device.

a. **Analysis:** The claims of this patent application were allowed on August 29, 2017. A utility patent term is 20 years from the date of filing. Therefore, based on the filing date of this patent application, it will be enforceable until June 26, 2035.

After reviewing the claims of this patent application, it is not likely that your proposed invention will be held to infringe on the claims of this patent application. The most relevant claims are independent claims 1 and 12. While there are some similarities, there are many differences between your proposed invention and the independent claims of this patent application. Each of these independent claims require an internal plurality of walls that are configured to receive heat generating equipment, one or more lift points physically mounted to an outside portion of the submersible pressure shell, an external fluid to fluid a heat exchanger physically mounted to the submersible pressure shell and located outside of the submersible pressure shell and arranged for thermal communication with a surrounding environment of the submersible pressure shell, the external heat exchanger being oriented relative to an identified flow of water in the surrounding environment such that a direction of fluid flow through the external heat exchanger is substantially opposite to a direction of the flow of water in the surrounding environment; and a prime mover in fluid communication with the external heat exchanger, the prime mover operable to circulate a flow of a fluid coolant from a location in the interior space through the external heat exchanger so that heat from the coolant is transferred to the surrounding environment by the external heat exchanger, the prime mover being located in the interior space defined by the plurality of walls.

Your proposed invention functions in a very different manner and does not include each and every element of independent claims 1 and 12 (or of the dependent claims). Your proposed invention has a submersible net with a container that may be lowered or raised to a desired depth using propellers attached to the container, and that may be lowered or raised to a desired depth based on feedback from integrated temperature sensors. Based on the above, even though both your invention and this patent are directed to an underwater cooling container, your proposed invention does not infringe on this patent due to the many differences in structure and method of operation. Thus, there is not any occasion where your proposed invention is held to infringe this granted patent.

Monetization Strategy

Patent monetization, while it has its complexities at the transactional level, is very simple at the high-level. Simply put, *it's about making money!*

Seeing a real revenue stream from the creation and enforcement of a patent asset can be attained in only two ways. The first, by **going into business** by personally exploiting the exclusive rights bestowed, to prevent the manufacture, use, sale, or importation by any other party. The second is by **divesting patent rights** to one or more third parties who will then in turn exploit those rights in the marketplace of the jurisdiction for which the rights are vested.

Below are customized strategies for your specific invention, **SYSTEM AND METHOD FOR AN UNDERWATER SUBMERSIBLE CONTAINER**

I. Building a Business

- a. Business Planning: Advisable if you intend to pursue marketing and distribution of your product in any industry. A system and associated method for an underwater submersible container may fit into either the commercial refrigeration equipment, the survival industry, or both. Entry barriers into the commercial refrigeration industry are medium and players in this industry increase competitiveness through large economies of scale. Entry barriers for the survival industry are not well defined, and are likely to be medium to high given the specialized nature of some products and specialized market niche. Business planning must include specific strategies and entry points into selected industries to ensure highly targeted approach, this will increase the likelihood that your product will be selected over other comparable products.
- b. Market Analysis: The first thing to do will be to identify the gaps in current markets where your product will be of interest, for example under-water food storage has previously been observed to better preserve food than currently available terrestrial options. Once you identify these problems, describe in words how your product uniquely solves these problems or creates a novel solution with greater benefit to similar products, or products which provide one or more of the benefits offered by your technology.
- c. Target Market: After identifying your target market and defining current gaps or problems your product will solve, you will define your target market avatar(s). Your avatar(s) represents your perfect client(s), the one(s) in need of your product. Depending on your key market of interest you may wish to spend more time defining a primary market avatar than a secondary market avatar, but both are recommended in order to maximize early adoption of your product which will likely increase its appeal in both markets over time.
- d. Market-Ready Product/Service: In your target industries there is higher probability of new technology adoption, including your proposed underwater submersible container, when Market-Ready products are available at time of launch. Having a Market-Ready product available for demonstration and testing will also increase opportunities licensing as well as further development through research partnerships.

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- e. Pricing: For your product, you will want to carefully consider pricing to ensure competitive and cost supportive and potentially low- to mid-level cost considering barriers of entry. It will be critical to monitor markets for competitive products and review pace of adoption for this technology, particularly given the specialized nature of what may prove to be your key market, the survival industry. This industry has been proposed to include nearly 4 million Americans and trend towards the more affluent of our population.
- f. Team: While many entrepreneurs and inventors are solo – having a team of those credentialed and experienced in the area of technology can bolster the potential success of the venture. Having even counselors, mentors

II. Licensing or Selling

- a. Market Analysis: Much like market analysis for business marketing, here you will identify the market, or markets, of food storage containers as well as competitor underwater submersible containers or other novel container types offering novel food storage, cooling, and extended preservation. Further, you should consider those larger entities that may be looking to or able to expand into this more specialized space. Bold IP stands ready with their partner Bold Ventures to help you conduct this market research preparing for licensing/sale through brokers or direct with companies.
- b. Brokers/Dealers: Bold Ventures has associations with national and international brokers who deal in IP transactions daily. These brokers know the market and can help with connecting potential buyers and licensees. Bold IP works with you to present your invention in the most positive light to these brokers and acts as a sub-broker on your behalf.
- c. Term Sheet: Bold Ventures, as part of negotiations with buyers and licensees provides term sheets (non-binding negotiation instruments) to direct companies/individuals/investors and is experienced in using them to successfully craft a binding license or sale agreement.
- d. Contingency Partnership: Bold Ventures works with you, once your patent asset is filed to attempt to sell or license your invention/application to the free market on a contingency basis. The percentage amount depends on the complexity of your invention as filed but typically is between 15-30%.