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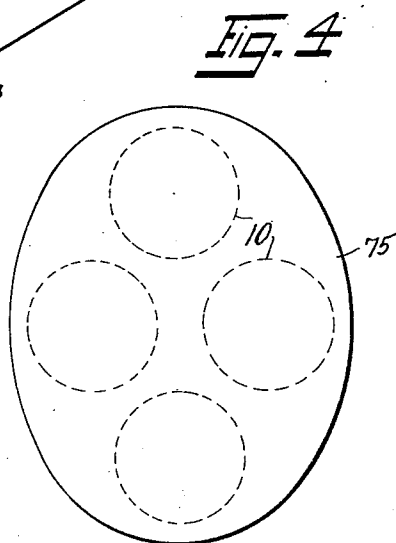
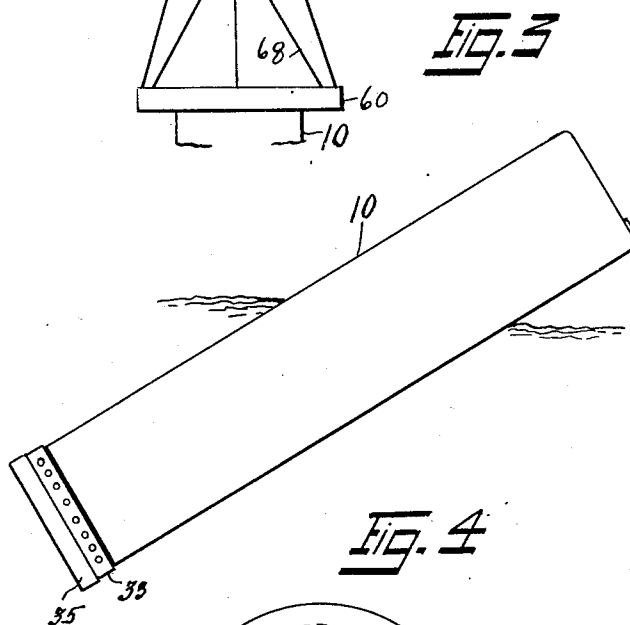
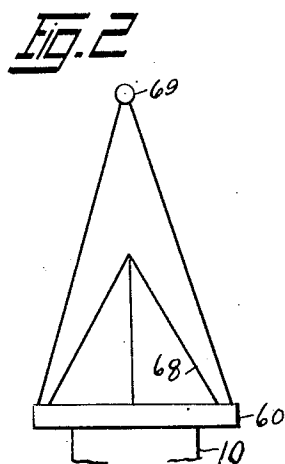
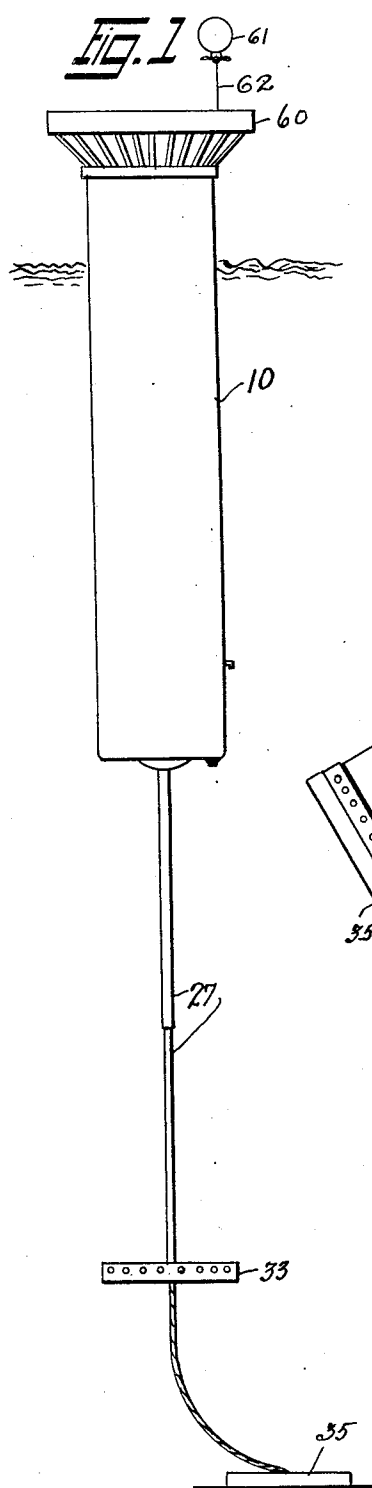
C. J. LINDQUIST

1,840,324

AIRSHIP SEA BEACON AND SERVICE STATION

Filed Sept. 17, 1929

2 Sheets-Sheet 1



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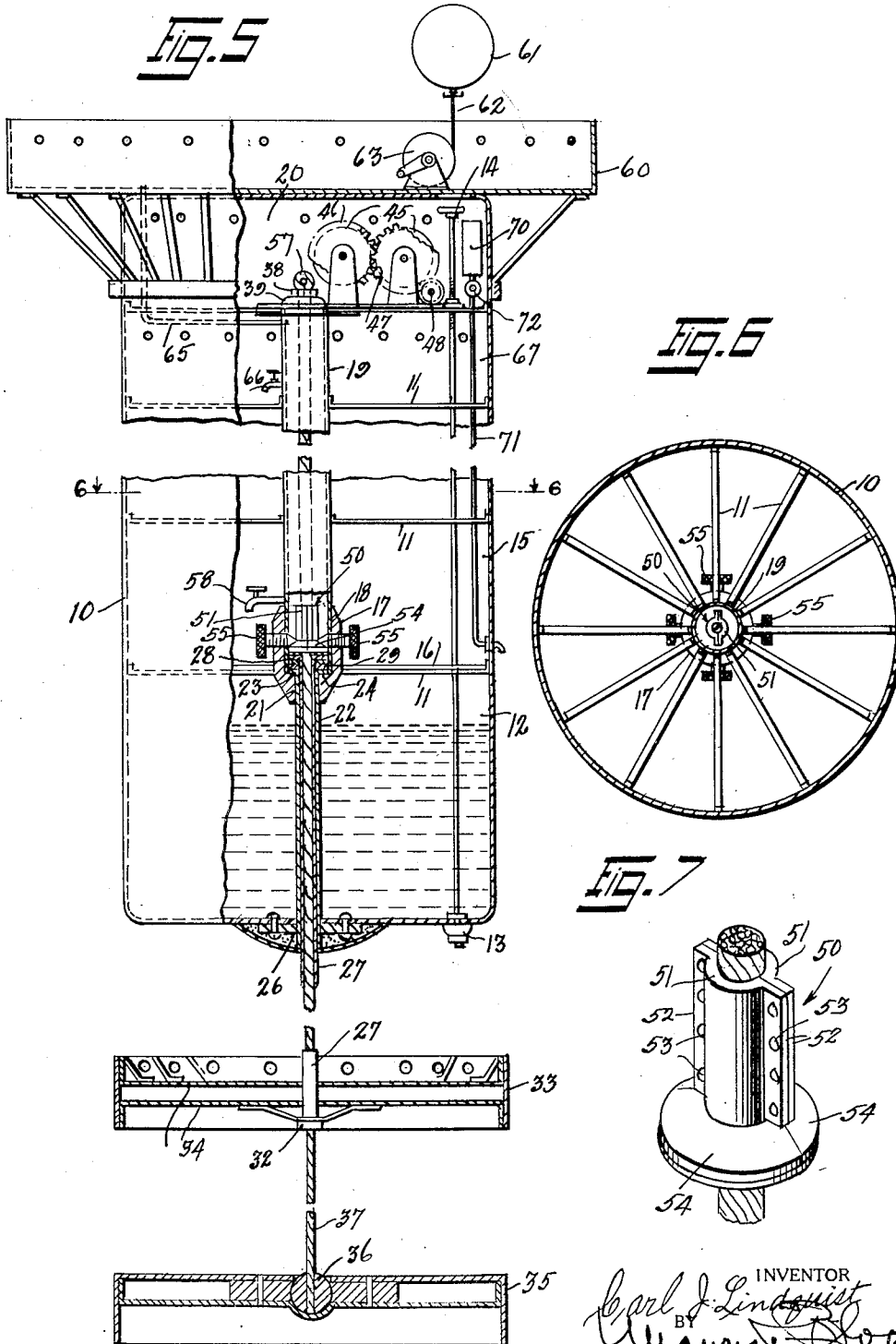
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AIRSHIP SEA BEACON AND SERVICE STATION

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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

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AIRSHIP SEA BEACON AND SERVICE STATION

Application filed September 17, 1929. Serial No. 393,145.

This invention relates to buoyant pontoon-like marine apparatus which among other things is adaptable for use as an airship sea beacon and service station, and has for one of its objects the provision of an apparatus of the character referred to comprising a cylindrical pontoon-like structure having a water ballast chamber at the bottom thereof, an inlet valve for the admission of water into the chamber to force the structure to assume an upright position, and means for so anchoring the apparatus that it will be maintained in the said position in all weather conditions without undue swaying.

Another object of the invention is to provide an apparatus of the character referred to with an auxiliary anchoring device comprising a disk-like member supported from within the apparatus and adapted to be slid into spaced relation with the bottom of the pontoon-like cylinder to form a leverage therebetween so as to produce a stabilizing anchor to readily overcome the buffeting of the winds and sea.

Another object is to produce a device of the character described in which the maximum simplicity of construction and operation is secured.

Other objects and advantages will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel arrangement and correlation of parts herein fully described, and illustrated in the accompanying drawings, wherein similar reference characters are used to describe corresponding parts throughout the several views, and then finally pointed out and specifically defined and indicated in the appended claims.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter, therefore, is to be understood from an illustrative, rather than a restrictive standpoint.

The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which, for the purpose of illus-

tration, is shown in the accompanying drawings, in which—

Figure 1 is a view in side elevation of my apparatus with the beacon and radio aerial omitted therefrom;

Figure 2 is a fragmental portion of the top portion of the apparatus showing the beacon and radio aerial supported thereon;

Figure 3 is a view showing the position of the pontoon-like cylinder when it is being towed to a position to be erected;

Figure 4 is a top plan view of a number of such cylinders supporting an airplane landing platform;

Figure 5 is a view in elevation partly in section showing the interior of the apparatus;

Figure 6 is a top plan view thereof taken on line 6—6, Figure 5; and

Figure 7 is a detail view in perspective of the anchor stop collar.

Referring now to the drawings in detail 10 indicates a pontoon-like hollow cylinder provided in the interior thereof with nests of radially extending supporting braces 11. A series of such nests of braces may be spaced apart to form compartments and also provide means for supporting flooring thereon where and whenever desired. The compartments may vary in number and height depending upon their use. A compartment 12 (Fig. 5) is provided at the bottom of the cylinder, the said compartment being adapted to have water admitted thereto by means of a valve 13 having a valve stem 14 operable from the top of the cylinder.

Above the compartment 12 there is a compartment 15 having a floor 16 the center of which is provided with an opening in which is supported a hub 17 having a shouldered bore 18 in the enlarged upper portion of which there is supported an upright tubular member 19 extending upwardly to the uppermost compartment 20. The said hub 17 also supports in the reduced portion 21 of the bore 18 a tube 22 having a flange 23 resting upon the shoulder 24 of the bore 18, which tube is suitably supported at 26 in the bottom of the cylinder 10. Within the tube 22 there is provided a hollow tubular standard

27 having a flange 28 at the top thereof (Fig. 5) which fits into the interior of the member 19 and rests upon gaskets 29 interposed between the flanges 24 and 28. The said standard 27 is preferably of a larger diameter at the top than at the bottom thereof.

Secured to the standard 27 as at 32 there is a short perforated cylindrical member 33 to which there is suitably secured flanged plates 34 forming a recessed disk-like stabilizer or auxiliary anchor. A main anchor 35 similar in shape to the anchor 33 but preferably provided at the center thereof with a universal joint 36 to which there is secured one end of a cable 37 securely held at its opposite end by means of a clamping collar 38 resting on top of a cover 39 on the tube 19.

To erect my apparatus I tow the cylinder 10 which at this time (that is before erection) is provided in the chamber 20 with a pair of winches 45 upon which the cable 37 is wound. These winches are geared together by gears 46 and 47 and geared to a driving motor 48. It will be understood that the anchors 33 and 35 are close up to the cylinder 10 during the towing thereof since the cable is still wound on the winches 45. When the location for the apparatus has been decided upon, the valve 13 is opened which causes water to flow into the chamber 12 and act as a ballast to right the cylinder. When the cylinder has assumed an upright position the motor is started and the cable commences to unwind, carrying the anchors 33 and 35 downwardly. When the flange 28 of the standard 27 comes in contact with the flange 24 or with the gaskets 29, it will stop its downward movement, but the cable and anchor 35 will continue downwardly until the said anchor strikes bottom.

At this time a stop 50 is slightly secured to the cable and is let down through the tube 19 until it abuts the flange 28 of the standard 27 when all further downward movement of the cable and anchor will cease. The stop consists of two sections 51 having clamping flanges 52 at their sides provided with openings to admit clamping bolts 53 to pass there-through and these sections are also provided at the bottom with tapering disk portions 54. When in the position above referred to, screws 55 in the hub 17 are tightened against the tapering surfaces of the disk portions 54 which bear against the flange 28 of the standard with a gasket 55 interpassed between them to make a substantially watertight joint. After this is accomplished the cable is severed near the top of the tube 19 the cover 39 is placed upon the tube, a loop 57 is formed on the cable and the collar 39 is secured at the bottom thereof. The winches 45 may now be removed from the cylinder.

During the lowering of the anchors salt water will have entered into the tube 19 through the tube 22 since the standard is of

a lesser diameter at the bottom than the inside diameter of the tube 22. To drain the salt water from the tube 19 I provide a drain cock 58 as near the bottom thereof as practicable. The reason for making the standard of different diameters is that the cable is heavier at the top thereof than at the bottom and a substantially good fit is desirable between the walls of the standard and the cable.

After the cylinder 10 is anchored in its vertical position a deck 60 is suitably secured to the top of the said cylinder to provide floor space for the crew and for placing thereon a balloon 61 secured by a cable 62 to a winch 63. This balloon is used to ascertain weather conditions, wind directions and velocity thereof in the upper air strata.

A pipe line 65 leading from the floor of the deck 60 into the tube 19 provides means for filling same with fresh water and for collecting rain water to be used by the crew for drinking or other purposes. A cock or tap 66 provides means for tapping the said reservoir.

It will be understood that means of egress not shown may be provided between the different compartments in the cylinder, and the compartment 67 may be used for sleeping quarters for the crew and as a radio receiving and broadcasting station, the aerial 68 of which is shown in Fig. 2. A bacon 69 is also shown suitably supported from the deck 60. A mooring mast (not shown) may also be attached if desired.

An oil reservoir 70 (Fig. 5) provided with a pipe line 71 having a valve 72 therein and leading to the exterior of the cylinder provides means for supplying oil to the water in stormy weather.

In Fig. 4 I have shown a plurality of cylinders 10 supporting a platform 75 adapted to be used as a landing platform for aircraft for repair or refueling purposes.

The cylinders are preferably placed in a wedge-like or triangular formation, the purpose of this being to deflect the wind and waves and thereby creating a lee area in the ocean, in the shelter of which a seaplane may descend on the water and ride out stormy weather, after which it may be lifted onto the platform for repair or other servicing.

From the foregoing it will be seen that I have provided a buoyant pontoon-like marine apparatus adapted among other things to be used as an airship sea beacon and service station, to which also a mooring mast for dirigibles may be attached.

It will also be seen that I have provided efficient stabilizer and anchoring means that will prevent the device from unduly swaying due to weather conditions.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In an apparatus of the nature described, a submersible buoyant cylinder, adapted to assume a vertical partly submerged position, a tube centrally located in the lower portion thereof, a stem extending slidably through the tube, a disk-like member secured to the bottom of the stem, the stem and disk adapted to be lowered by gravity, and means on the tube and stem for limiting the said lowering movement.

2. In an apparatus of the nature described, a submersible buoyant cylinder, adapted to assume a vertical partly submerged position, a tube centrally located in the lower portion thereof, a stem extending slidably through the tube, a disk-like member secured to the bottom of the stem, the stem and disk adapted to be lowered by gravity, a collar in the cylinder in which the tube is maintained, a second tube in the collar extending upwardly therefrom, a flange on the stem having a sliding fit in the last mentioned tube forming guiding means for lowering the disk, and means on the lower tube against which the flange on the stem abuts to limit the said lowering movement.

3. In an apparatus of the nature described, a submersible buoyant cylinder, adapted to assume a vertical partly submerged position, a tube centrally located in the lower portion thereof, a stem extending slidably through the tube, a disk-like member secured to the bottom of the stem, the stem and disk adapted to be lowered by gravity, a collar in the cylinder in which the tube is maintained, a second tube in the collar extending upwardly therefrom, a flange on the stem having a sliding fit in the last mentioned tube forming guiding means for lowering the disk, means on the lower tube against which the flange on the stem abuts to limit the said lowering movement, a cable passing through the stem and upper tube, an anchor secured to the lower end of the cable, and a stop secured to the cable adapted to abut the flange of the stem when the anchor is in its lowermost position.

4. In combination, a partly submersible cylinder, a support in the cylinder, an upwardly extending tube in the support, a downwardly extending tube in the support, a stem adapted to slide within the said tubes, and to extend a considerable distance beyond the lower end of the cylinder, a disk-like member at the lower end of the stem, a cable passing through the stem, an anchor at the lower end of the cable, means to limit the distance of the extension of the stem, and means on the cable in operative engagement with the stem to maintain the anchor in its lowered position.

5. In an apparatus of the nature described, a submersible cylindrical tube, a valve at the bottom thereof, and a stabilizing anchor supported from within the tube and provided

with openings in the peripheral wall thereof to admit water into the cylinder when the valve is opened.

6. In combination, a partly submersible cylinder, a support in the cylinder, an upwardly extending tube in the support, a downwardly extending tube in the support, a stem adapted to slide within the said tubes, and to extend a considerable distance beyond the lower end of the cylinder, a disk-like member at the lower end of the stem, a cable passing through the stem, an anchor at the lower end of the cable, means to limit the distance of the extension of the stem, and means on the cable in operative engagement with the stem to maintain the anchor in its lowered position, the said means comprising a pair of members clampingly secured to the cable.

7. In combination, a partly submersible cylinder, a support in the cylinder, an upwardly extending tube in the support, a downwardly extending tube in the support, a stem adapted to slide within the said tubes, and to extend a considerable distance beyond the lower end of the cylinder, a disk-like member at the lower end of the stem, a cable passing through the stem, an anchor at the lower end of the cable, means to limit the distance of the extension of the stem, means on the cable to form a watertight joint between the stem and lower tube comprising a pair of sections secured to the cable, a disk portion on each of the sections, a tapered upper surface on each of the disk sections, a gasket interposed between the bottom of the disk sections and the upper end of the stem, gaskets between the upper ends of the stem and the lower tube, and screws in the support co-acting with the tapered surfaces on the disk-like sections to force the same against the gaskets.

8. In an apparatus of the nature described, a buoyant submersible body, a stabilizing anchor, a cable for securing the anchor to the submersible body and a slidable tube through which the said cable passes.

9. The method of mooring a vessel by utilizing the principle of leverage, consisting in projecting from the vessel a slidable hollow stem, leading an anchor cable through it and thus reduce the strain on said cable.

10. The method of creating a lee area in the ocean, consisting in stationing one or more elongated buoyant submersible chambers in a vertical position, projecting from the chambers to a point below wave action, one or more hollow stems having at their lower ends a rigidly secured disk like member of such area, that its inertia is sufficient to counteract undue heaving and swaying of the chambers when exposed to wind and waves.

11. The method of mooring a vessel by utilizing the principle of leverage, consisting

in projecting from the vessel a stem carrying a submerged disc thereon, leading an anchor cable therefrom to provide a leverage system providing for a minimum strain on
5 said cable.

12. In an apparatus of the nature described, a buoyant submergible float, a disc attached thereto and arranged considerably therebeneath for providing a stabilizing medium for said float, an anchoring cable secured to said float assembly below said disc.
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In testimony whereof I hereunto affix my signature.

CARL J. LINDQUIST.

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