J. M. ROBERTS.

MID-OCEAN STATION.

APPLICATION FILED JAN. 23, 1920.

1,341,677. **Patented June 1, 1920.**

2 SHEETS—SHEET 1.

FIG. 1.

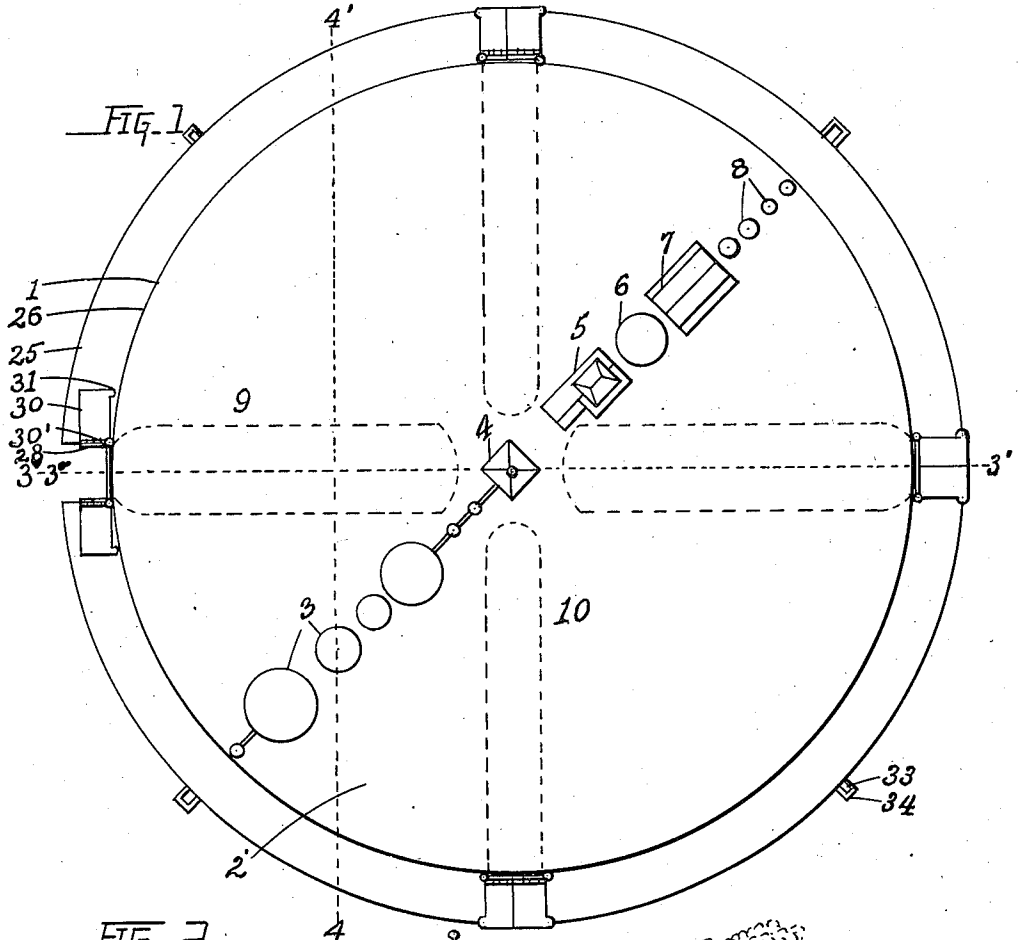
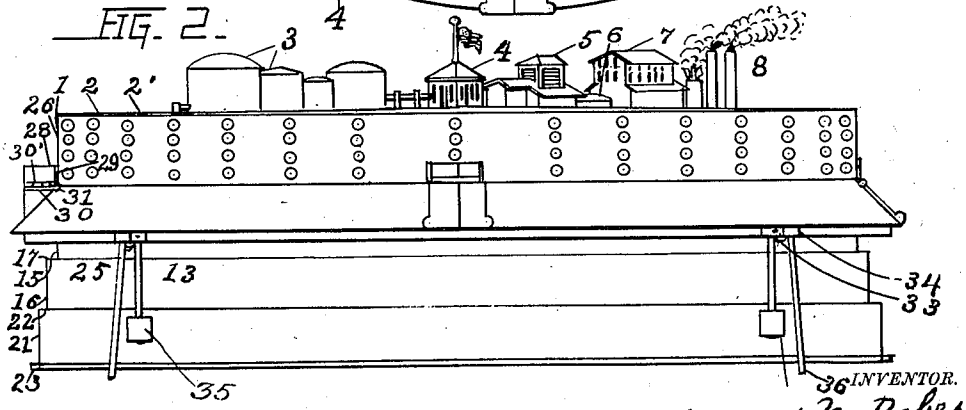


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

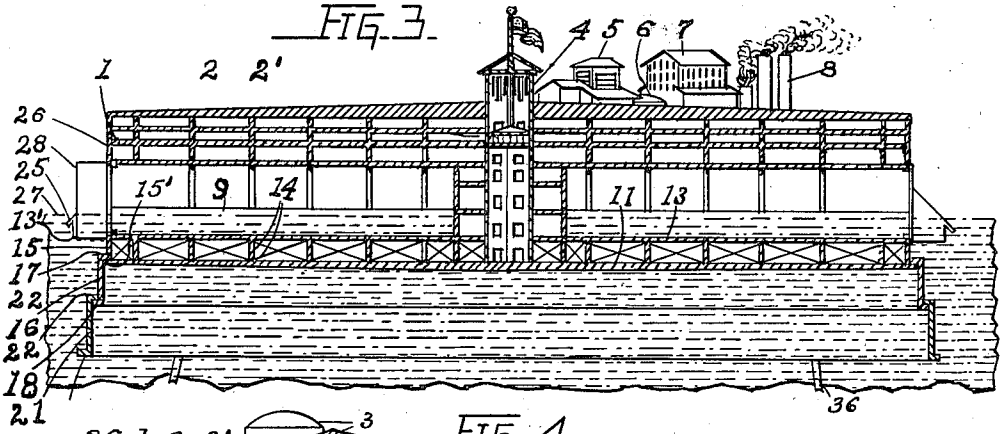


FIG. 4.

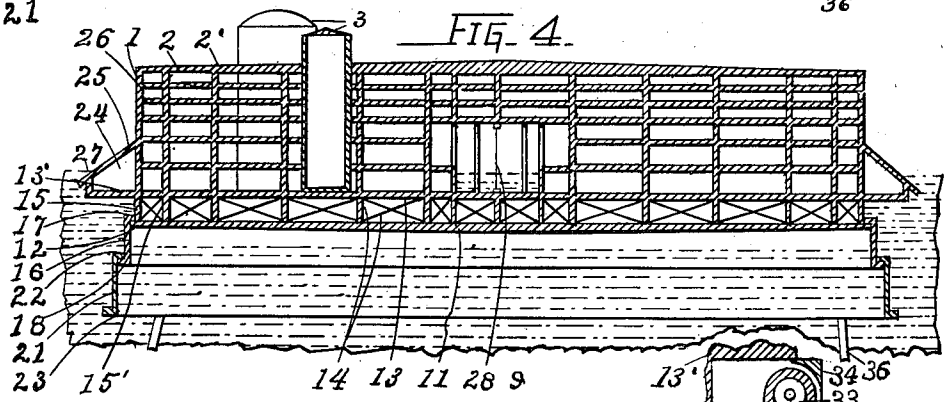


FIG. 5.

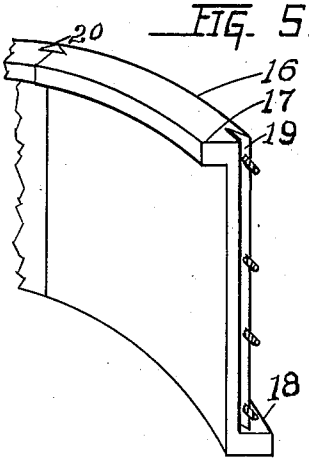


FIG. 6.

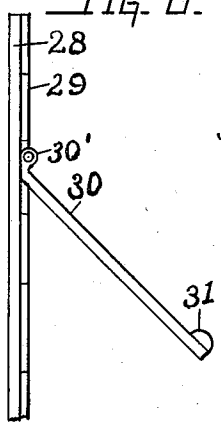
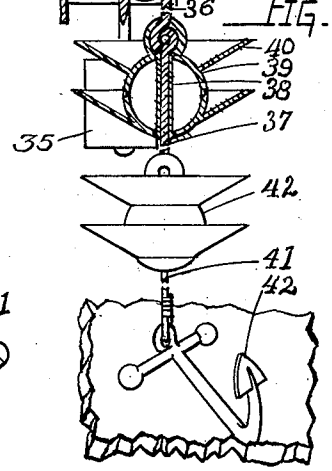


FIG. 7.



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MID-OCEAN STATION.

1,341,677. Specification of Letters Patent. Patented June 1, 1920.

Application filed January 23, 1920. Serial No. 353,388.

To all whom it may concern:

Be it known that I, JAMES M. ROBERTS, a citizen of the United States, residing near St. Joseph, in the county of Andrew and State of Missouri, have invented certain new and useful Improvements in Mid-Ocean Stations, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in floating stations, which are used in mid ocean as stations for all kinds of water and air craft, such as ships, hydroaeroplanes and the like, and the objects of my improvements are, first; to provide a station of this class which shall be so shaped and arranged, that all kinds of craft which navigate the air, can land thereon, and all kinds of supplies and repair be procured therefor, second; to so construct and arrange the parts of a floating station, that all kinds of vessels which navigate the water can find harbor and dry-dock accommodations therein, and they and their cargoes, including freight and passengers, can be served in any manner that may be needed, third; to so construct a station of this class that it shall inclose a large volume of water, thereby adding greatly to the inertia of the station, rendering the same practically immovable by the action of the wind and waves, thus reducing the strain on the anchoring means to the minimum, fourth; to so construct the anchoring means for the station, that the anchors shall be firmly held by engagement with the bottom of the ocean, and that the cables whereby the anchors are secured to the station shall not be parted by reason of their weight, regardless of their length, fifth; to so construct and arrange the parts of a floating station, that a certain portion of the same can be constructed in a harbor or near the shore of the ocean, be towed therefrom to its destination, and thereafter have the remaining portions of said station added thereto.

I attain these objects by the devices illustrated in the accompanying drawings, in which:

Figure 1 is a top plan of the station. Fig. 2 is a side view of the parts seen in Fig. 1. Fig. 3 is a vertical section on the line 3′ 3′, seen in Fig. 1. Fig. 4 is a similar section, on the line 4′ 4′, seen in Fig. 1, looking toward the left.

Fig. 5 is a view in perspective, of one of the sections of the water inclosure and a portion of an adjacent section.

Fig. 6 is a similar view of one of the harbor doors, showing its shield in detail, a portion of the door being broken away.

Fig. 7 is a perspective view of one set of the anchoring devices, certain parts being broken away.

Referring to Fig. 1, the station 1 is preferably constructed of reinforced concrete, annular in form. It is designed to be of such large proportions, that the top 2 of the station, forms two landing fields 2′, for all kinds of air craft. Said fields are separated by the upper portions of a row of structures, such as oil tanks 3, passenger and freight elevator 4, cold storage building 5, tank 6, grain elevator 7, and the smoke stacks 8, which indicate some of the various industrial plants which are built in the station. Two harbors 9 and two dry-docks 10 are formed radially in the station, as indicated by dotted lines in Fig. 1.

Referring to Fig. 3, the bottom 11 of the station, is formed on suitable supports, (not shown,) which are removably placed in a harbor. The bracket 12 is formed with and around the edge of said bottom. The floor 13 is constructed at a predetermined distance above said bottom, and is rigidly connected therewith, both laterally and longitudinally, by truss work similar to bridge construction. The vertical wall 15 and the bulkhead 15′ are put in place, inclosing the space between said floor and bottom in a water tight structure which is preferably formed of reinforced concrete.

The previously mentioned supports are removed from beneath said structure, which is floated and towed to the place where it is to be used. This portion of the station is thereafter used as a floating platform, which is held in place by anchored boats and barges secured thereto.

Said platform is used as a barge, on which material is placed and work is conducted in the construction thereon, of the hereinafter described parts of the station.

The following described water inclosure is composed of a plurality of sections 16, seen in Fig. 5. Since all of said sections are alike in construction and operation, but one is described.

The inwardly exending flange 17 and the

outwardly extending bracket 18, are formed on the upper and lower edges respectively, of said section 16. A dovetailed rabbet 19 is formed in each one of the outer vertical corners of said section which, together with the rabbet similarly formed in the adjacent section, forms a dovetailed space, in which the concrete block 20 is formed, for covering portions of metal parts.

A plurality of said sections are thus secured together, forming an endless, annular inclosure, which is lowered from the previously described platform, to the position shown in Fig. 3, with the flange 17 resting on the bracket 12, for supporting the thus depended sections.

The lower extension 21, of the inclosure is formed in the previously described manner, except that said extension is of such greater diameter, that its flange 22 rests upon the bracket 18, for supporting said extension. The bracket 23 is formed on the lower edge of said extension, for supporting a still lower extension should such be desired.

The thus formed inclosure incloses a body of water, beneath the station, for adding to the inertia and immovability thereof.

After said inclosure is thus placed, the floor 13 is extended outward, beyond the vertical wall 15, forming the floor 13′ of the four chambers 24, which are of segmental form. Said chambers are alike in their construction and operation, for which reason but one is described.

Chamber 24 is covered by the roof 25, which inclines outward and downward, from the wall 26 of the superstructure of the station. The eaves of said roof extend below the surface of the water 27, forming an inclined surface for upwardly deflecting the waves which move against it, thereby reducing the concussion, arising from the impact of said waves against said superstructure.

The previously mentioned harbors 9 and dry-docks 10 are provided with doors 28, and since said doors are alike in their construction and operation, but one is described.

The door 28 is hinge connected with the wall 26, by the hinge 29, at one of its vertical edges, for closing one half of the outer end of its respective harbor.

Referring to Fig. 6, the upper edge of the shield 30 is hinged on the outer surface of said door, at such height that one edge of said shield rests upon the roof 25, while said door is closed as seen at the right, in Fig. 2.

The rounded shield guide 31 is secured on the lower end of said supported edge, and is forced upward by the inclined surface of said roof, when it is moved thereover, in opening the door, as seen at the left, in Figs. 1 and 2.

Referring to Figs. 3 and 4; the superstructure 32 extends from the floor 13, to the top 2 of the station. Said superstructure is formed of truss work, parallel with the sides of the harbors 9 and transversely thereto, between which rooms, housing various industries, articles and occupants are constructed.

Since said rooms are not of novel or new construction and are not claimed as original elements, they are neither shown nor described in detail.

Referring to Figs. 1 and 7, a plurality of grooved pulleys 33 are rotatably mounted in the brackets 34 respectively, which latter are secured to the floor 13′.

Since said pulleys and the therewith connected anchoring devices are alike in construction and operation, but one pulley and one set of said devices, as shown in Fig. 7, are described in detail.

The counterbalance weight 35 is secured on the upper end of the upper and larger section 36 of the anchoring cable.

Said cable section is passed over said pulley and its lower end is securely connected with the upper end of the smaller cable section 37. The thus connected cable section is passed through the tube 38, which extends through the center of the float 39, which float is of globular form. It will be understood that said tube and the two halves of which said float is formed, are secured together by welding or brazing, for rendering said float air tight.

The inclined flanges 40 are formed on the outer surface of said float, for retarding its movement through the water.

The lower end of the cable section 37 is connected with the upper end of the lowest and smallest section 41 of the cable. The last mentioned cable section is in like manner passed through the float 42, which is the same in construction as the float 39. The lower end of section 41 is securely connected with the anchor 43, one fluke of which is engaged with the bottom of the ocean, for preventing lateral movement of the described station.

It will be understood from the foregoing description of the station, that I have provided apartments therein, in which all of the functions, enumerated in the objects, are performed. Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A mid-ocean station comprising; a station; a top for said station said top being diametrically divided through its center forming two fields adapted to have air craft alight thereon; a bottom for said station; a floor placed at a predetermined distance above said bottom; a vertical wall connecting the annular edges of said bottom and floor; an annular bulkhead connecting said floor and bottom at a predetermined distance from said vertical wall; stiffening structure in the space between said bottom and floor

for stiffening them; a plurality of harbors and drydocks formed radially on and extending above said floor; a stiff superstructure formed on said floor between and above said harbors and drydocks said superstructure connecting said floor with the top of said station; and a plurality of apartments formed in said superstructure for housing a variety of industries, articles and occupants.

2. In a mid-ocean station; harbors arranged radially in said station with a floor for said harbors; a pair of doors for closing the outer open ends of said harbors respectively; a plurality of chambers of segmental form around the edge of said station the spaces between said chambers being passages in which said doors are swung; inclined roofs on said chambers for deflecting waves upward; shields on said doors; hinging means whereby the upper edges of said shields are hinge connected with said doors at such height that the outer longitudinal edges of said shields rest upon the adjacent edges of said roofs; and rounded shield guides connected with the lower ends of the supported edges of said shields.

3. A floating station; a bracket formed on and extending outward from the lower corner of said station; an annular inclosure; and an inwardly projecting flange formed on the upper edge of said inclosure; said inclosure depending from said station supported in place by said flange resting upon said bracket.

4. A station; an outwardly extending bracket formed on the lower corner of said station; an inclosure formed of sections secured together; an inwardly projecting flange formed on the upper edge of said inclosure whereby the latter is depended from said bracket; an inclosure bracket formed on and extending outward from said inclosure at its lower edge; another inclosure of the same construction as the first mentioned inclosure said other inclosure being similarly depended from the inclosure bracket, the bracket at the lower edge of said other inclosure being adapted to have still other inclosures depended therefrom; for inclosing therein a body of water beneath said station.

5. The combination with a floating station; of a cable supporting bracket connected with said station; a grooved pulley rotatably mounted in said bracket; an upper cable section of greater diameter passed over said pulley; a counterbalance weight connected with the upper end of said upper cable section; an intermediate cable section of lesser diameter; a lower cable section of least diameter; all of said cable sections being connected forming one cable; an anchor connected with the lower end of said cable; and buoying means for said lower and intermediate cable sections whereby said sections are individually supported.

In testimony whereof I affix my signature.

JAMES M. ROBERTS.