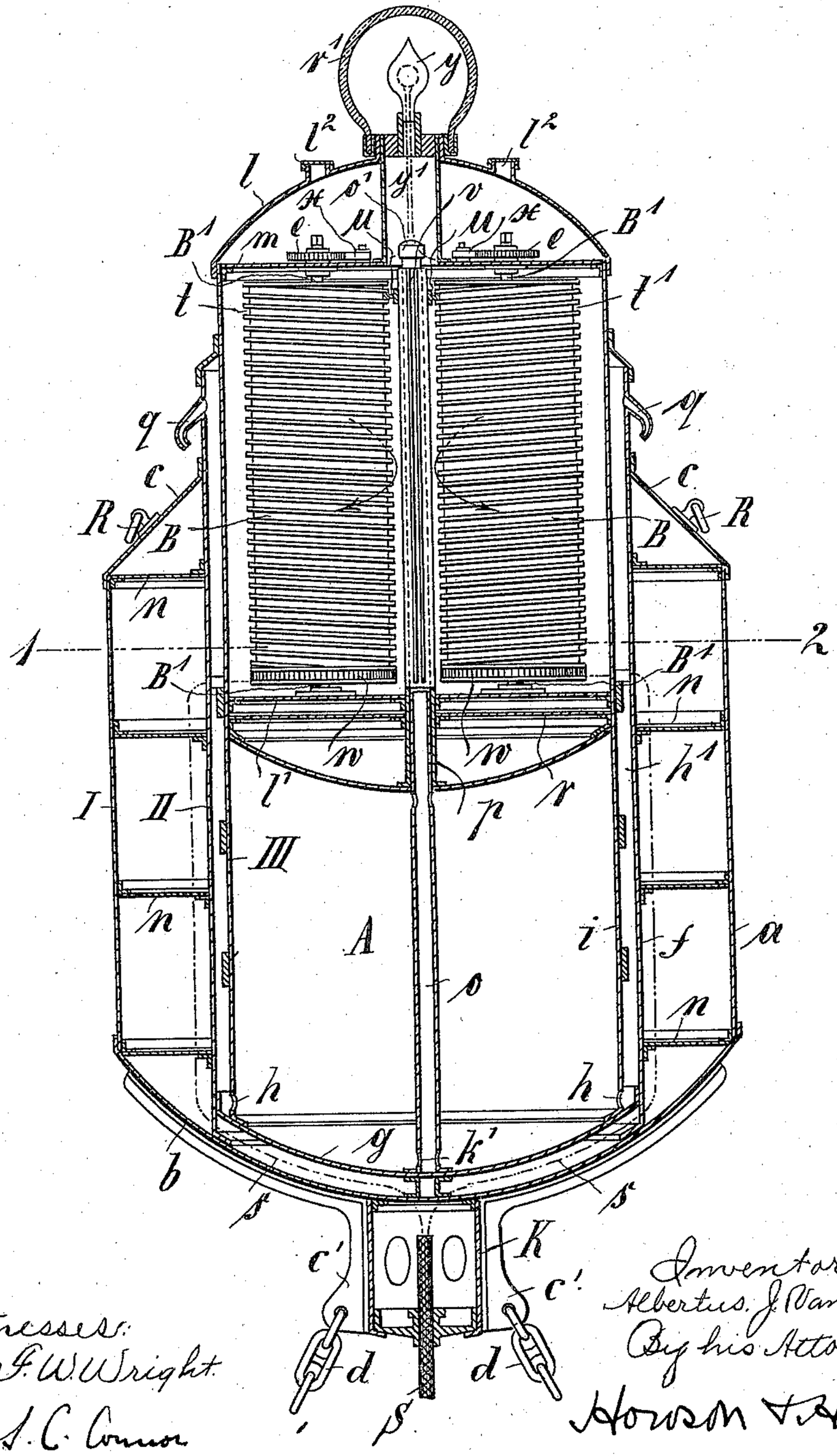
(No Model.) 2 Sheets—Sheet 1.

A. J. VAN BEEK.

APPARATUS FOR CALMING SEAS BY DISTRIBUTING OIL THEREON.

No. 575,203. Patented Jan. 12, 1897.

Fig. 1.



Witnesses:
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J. C. Connor

Inventor:
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Howson & Howson

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

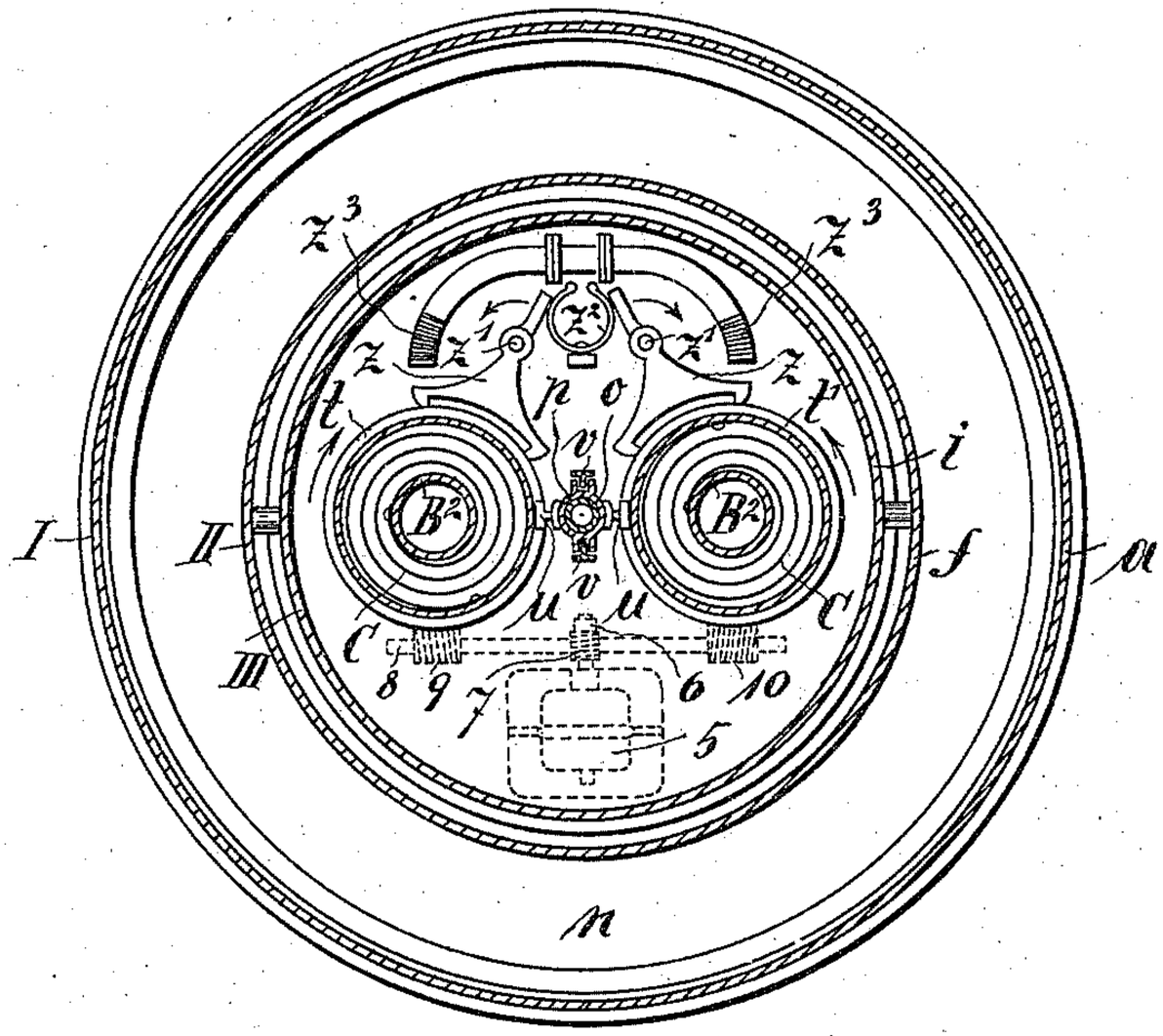
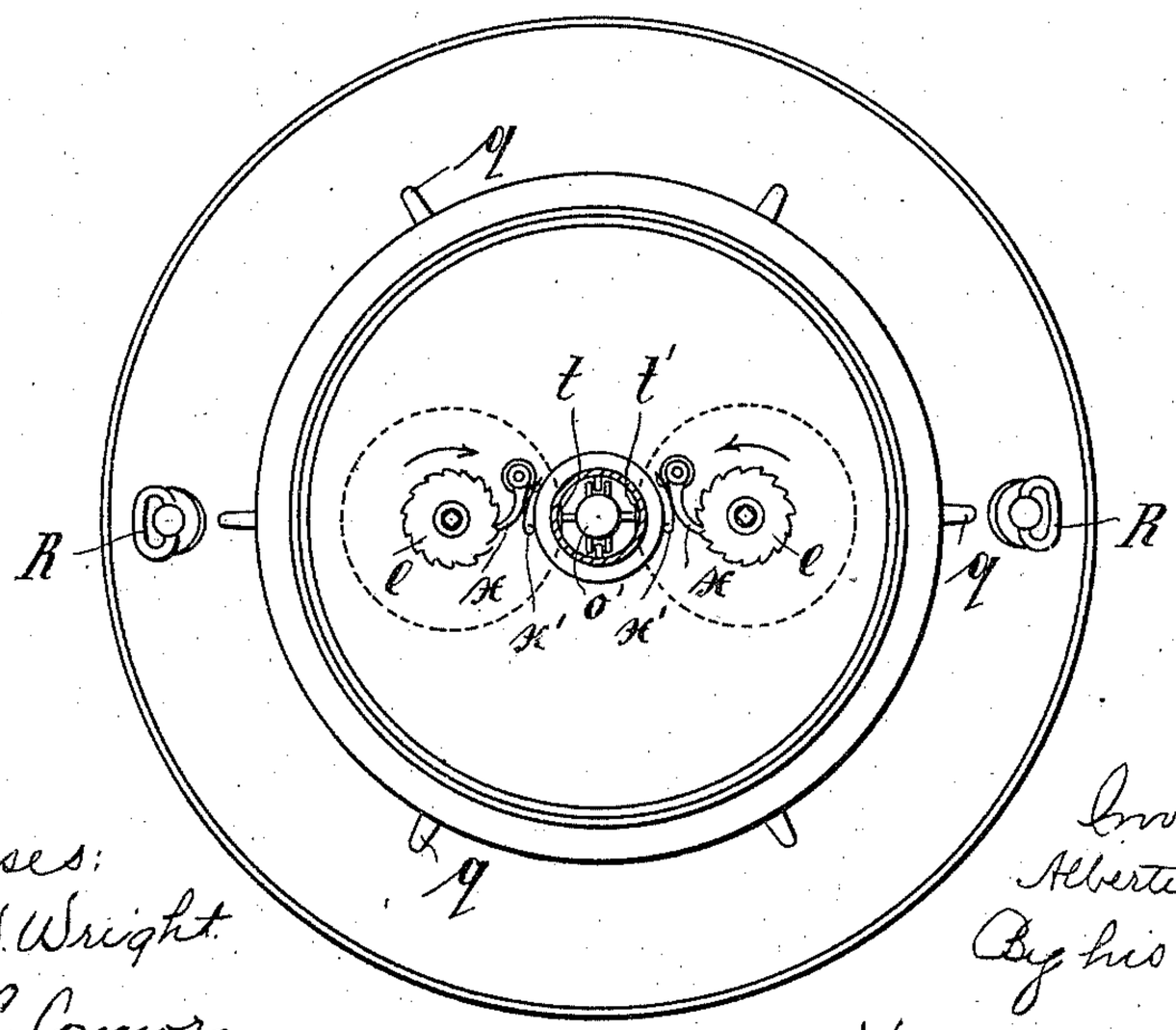


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALBERTUS JOHANNES VAN BEEK, OF BUDA-PESTH, AUSTRIA-HUNGARY.

APPARATUS FOR CALMING SEAS BY DISTRIBUTING OIL THEREON.

SPECIFICATION forming part of Letters Patent No. 575,203, dated January 12, 1897.

Application filed June 20, 1896. Serial No. 596,339. (No model.) Patented in Germany June 2, 1895, No. 85,402; in France October 4, 1895, No. 250,732, and in Belgium February 10, 1896, No. 119,770.

To all whom it may concern:

Be it known that I, ALBERTUS JOHANNES VAN BEEK, architect, a subject of the Queen of the Netherlands, and a resident of Javor Uteza 3, Buda-Pesth, Austria-Hungary, have invented certain Improvements in Apparatus for the Calming of Seas by the Distribution of Oil Thereon, (for which I have obtained Letters Patent in Belgium, No. 119,770, dated February 10, 1896; in Germany, No. 85,402, dated June 2, 1895, and in France, No. 250,732, dated October 4, 1895,) of which the following is a specification.

My invention relates to means for calming the seas by the distribution of oil; and it consists of an apparatus in which the oil is slowly distributed in drops from a receptacle resembling a buoy onto the water at short regulated intervals just as it is required by electrically-operated devices. As these buoys are anchored at suitable distances from one another off the coast or at the entrance to the harbor, the coast can be protected at the frequented places with surety during the highest seas or waves. This apparatus can also be applied to ships for the same purpose.

In the accompanying drawings, Figure 1 shows the apparatus in vertical section. Fig. 2 is a section on the line 1 2, Fig. 1; and Fig. 3 is a view from above with the upper cap removed.

Although I have shown in the drawings the distributer in the form of a floating buoy, it will be understood that the apparatus may be built in or carried by a ship.

The improved apparatus in the form shown in the drawings comprises three cylinders or chambers I, II, and III, of different sizes, arranged one within another and built into one another, as hereinafter described. The outer cylinder or chamber I is formed with a casing *a*, having a curved bottom piece *b* and a conical annular cap or top *c*. In this cylinder or chamber is inserted the cylinder or chamber II, the wall *f* of which extends upwardly beyond the conical cap *c*, while at the bottom it is riveted to the bottom piece *b*. At a short distance from the bottom piece *b* is a similar curved false bottom *g*, so that an air-chamber is formed between these two bottom pieces. Between the walls *a* and *f* are also provided air-chambers which are separated from one another by a number of stiffening-partitions *n*, extending around between the said walls *a* and *f*. In the cylinder or chamber II is inserted the cylinder or chamber III, the wall *i* of which is riveted at the bottom to the false bottom *g*, while at the top it extends outward beyond the cylinder II and is closed by a curved cap or top *l*. Between the cylinder-walls *f* and *i* is also formed an intermediate space or annular chamber *h'*, which is in communication at the bottom with the interior of the cylinder III through an annular series of holes *h*.

The cylinder III is divided about the middle of its height by a partition *l'*. The lower space A beneath this partition forms the oil-receptacle, while in the upper space B are arranged the necessary parts for actuating the apparatus. In the vertical axis of the cylinder III is arranged a tube *o*, which is secured at its lower end to the false bottom *g* by a flange. Over this tube *o* is placed another tube *p*, which is movable thereon and is in rigid connection at its lower end with a piston *r*, movable in the lower space A of the said cylinder. As this piston moves downward the oil rises in the intermediate space *h'*, which space, as stated above, is in communication with the lower space A through the series of holes *h*. In the part of the wall *f*, extending above the cylinder I, are provided the openings *q*, through which the oil flows out. These openings are to be made so small that they always remain filled with oil by capillary attraction and no sea-water can enter. The necessity of using check-valves or the like is thus obviated.

The movement of the piston and of the tube *p*, attached thereto, takes place as follows, viz: In the upper space or chamber B are two drums or barrels *t t'*, which are journaled or stepped at the bottom on the plate *l'* and at the top in another plate or flange *m*. The said drums are provided externally with flat or square screw-threads, one of the drums being provided with a left-handed screw-thread and the other drum *t'* with a right-handed screw-thread. On the tube *p* is mounted a segmental or other suitable nut *u*, which engages at its right and left hand sides in the grooves between the screw-threads of the

drums. If the two drums be now turned, the said nut and with it the tube p and piston r are moved downward. The nut u, moreover, slides by means of two shoulders or suitably-shaped shoes on guide-bars v, fastened on opposite sides thereof in the chamber III. These guide-bars v extend downward only so far that the nut can be disengaged from the screw-threads when in its lowermost position by slightly turning the tube p with its piston so as to be able to draw up the tube p with the piston when in the said lowest position. The drums $t\,t'$ receive their rotary motion by means of spiral springs C, provided in their interior.

The inner end of each spring C is connected to the cylinder B^2, forming part of a shaft b', around which the drum t can be turned by the action of the spring, the outer end of which is connected in the inner periphery of the drum. Each shaft B′ carries above the plate m a ratchet-wheel e, into which engages a ratchet x, acted upon by a spring x', as shown in Fig. 3.

The winding up of the springs C is effected by means of a key which is placed over the extended end of the spring-shaft B′. The rotation of the drums is controlled by pawls or anchors z, pivoted at z' and each acted upon by a spring z^2 and an electromagnet z^3, which pawls z engage in ratchet or escapement wheels w on the drums or barrels.

The anchors z are turned by means of the springs z^2 in the direction of the arrows, Fig. 2, and by means of the electromagnets z^3 in the opposite direction. The current is conducted to the latter through a cable S, entering from below the bottom chamber K of the apparatus, and its pole-wires s passing farther through the interior of the apparatus to the coils of the electromagnets z^3. Now when a current excites the electromagnets z^3 they attract the one arm of the anchors z, and as soon as the current ceases the springs z^2 throw back again the anchors, and each time the two drums z are turned a tooth farther by means of the tensions of the springs C, one arm of the anchors releasing a tooth of the escapement-wheels w, the other arm stopping each time another tooth of said wheels in a well-known manner. Thus the drums are turned by their springs simultaneously in opposite directions, as indicated by the arrows. When the piston r reaches its lowermost position, the nut u, as above mentioned, is released from the guide-bars v, and the tube p, with the piston, then drawn upward. The stopper o' at the upper end of the tube o is then unscrewed and fresh oil is poured into the apparatus through the tube o. The said tube o has a number of holes k' at its lower end, through which the oil passes into the innermost cylinder A.

In order to make the whole apparatus readily accessible, the cap l is made so that it can be unscrewed. On this cap is, moreover, provided an electric lamp y, which may be also unscrewed and is protected by a glass globe r'. The current is conducted to this lamp through wires y' of the cable S.

To the bottom piece b of the apparatus is secured a chamber K, through which passes the cable required for conducting the current for the electric driving-gear. The chains d, serving for anchoring the whole apparatus or buoy, are secured to crown-shaped angle-pieces c', which also serve for stiffening the bottom piece b and the chamber K beneath the same.

In the top 1 holes are provided, through which the keys for winding up the springs C can be passed. These holes are closed tightly by means of small screw-caps l^2. The top 1 is unscrewed in case the piston with its tube has to be lifted and new oil has to be filled in.

To enable the whole apparatus to be held fast while it is being filled or being drawn out of the water, a number of rings R are provided on the conical annular cap c.

By means of the above-described apparatus it is possible to suitably control the discharge of the oil, from the shore, by regulating the current-impulses operating the electromagnets.

Instead of the above-described arrangement for operating the drums, an electromotor can be used to control the operation of the drums, as shown in dotted lines, Fig. 2.

The shaft 6 of the motor 5 actuates the shaft 8 through suitable gearing 7, and the shaft 8 transmits motion through worm-gears 9 and 10 to worm-wheels on the cylinders, thus rotating the latter without the use of springs.

I claim as my invention—

1. An apparatus for the calming of seas by distributing oil, comprising an oil-reservoir having an outlet and means for forcibly discharging the oil, with electromagnetic mechanism controlling the operation of the forcing means, substantially as set forth.

2. A floating buoy provided with an oil-reservoir having an outlet and means for forcibly discharging the oil, with electromagnetic mechanism controlling the operation of the forcing means, and an electric circuit from said electromagnetic mechanism to the shore or other distant point, substantially as described.

3. An oil-reservoir provided with a piston and a screw to move the piston to force the oil from the reservoir and means for operating the screw, in combination with electromagnetic mechanism for releasing the said screw, substantially as set forth.

4. A buoy provided with an oil-reservoir, an outlet for the oil therefrom, and a piston in the reservoir, in combination with electromagnetic means controlling the operation of the piston, and an electric cable connecting the electromagnetic mechanism with the shore or other distant point, all substantially as set forth.

5. A buoy provided with an oil-reservoir, an outlet for the oil therefrom, and a piston

in the reservoir, the said piston being connected with a tube having a nut, in combination with two cylinders provided with right and left handed screws, respectively, to engage with the said nut, spiral springs in the cylinders and electric escapement-gear controlling the action of the springs, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERTUS JOHANNES VAN BEEK.

Witnesses:
WILLONER SANDOR,
EMERICH KATONA.