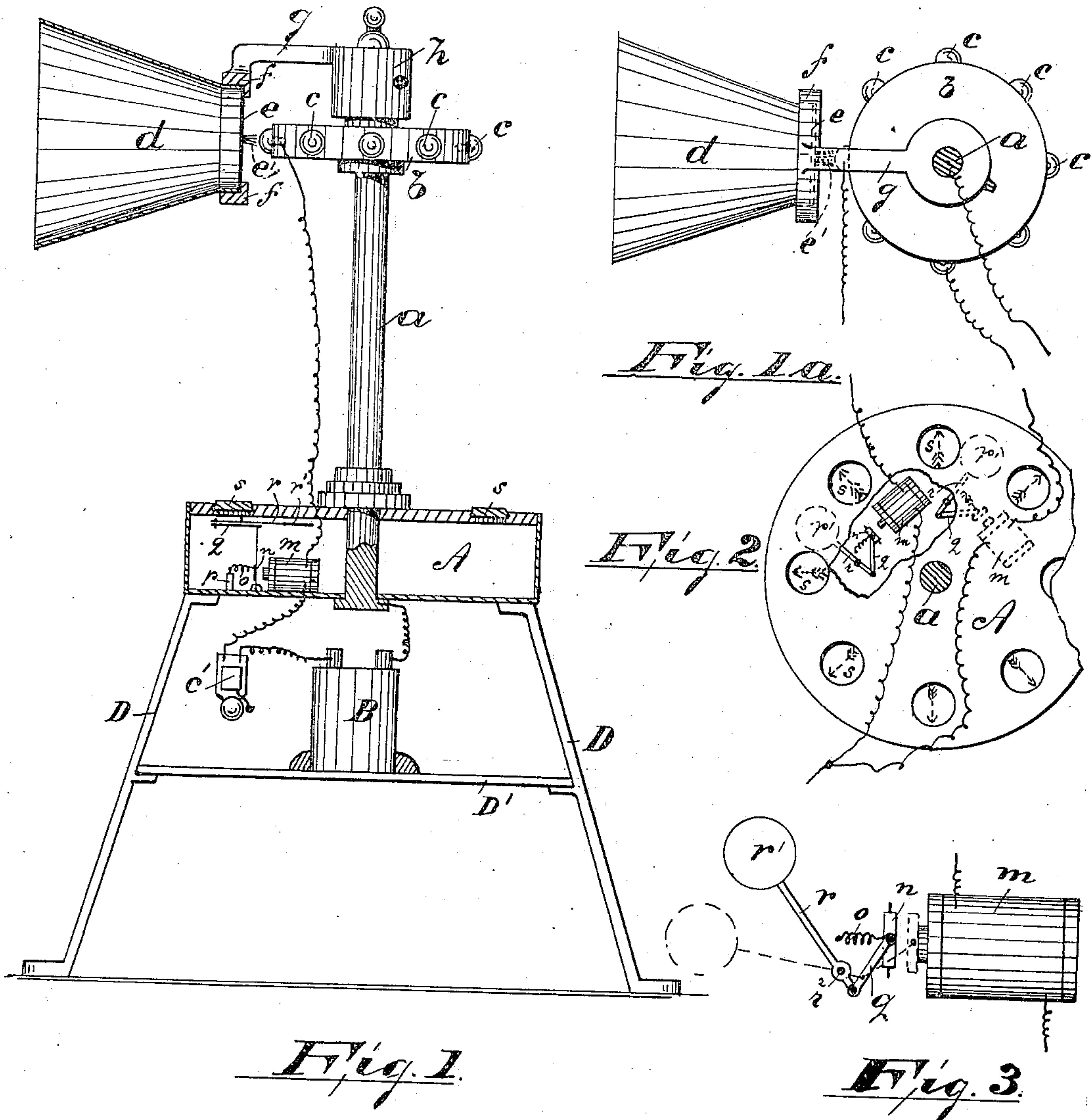


(No Model.)

W. THOMPSON & A. GARTNER.
OCEAN SIGNAL.

No. 420,217.

Patented Jan. 28, 1890.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WALTER THOMPSON AND ALFRED GARTNER, OF NEWARK, NEW JERSEY.

OCEAN-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 420,217, dated January 28, 1890.

Application filed August 24, 1889. Serial No. 321,835. (No model.)

To all whom it may concern:

Be it known that we, WALTER THOMPSON and ALFRED GARTNER, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Ocean-Signals; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to enable the commander of a steamship or vessel to ascertain the course or direction of an approaching ship in a fog or under such circumstances that the approaching vessel cannot be seen, thereby avoiding danger of collision at sea.

The invention consists in the improved electric alarm-signal herein shown and described, and the arrangement and combination of parts thereof, substantially as herein-after set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a front elevation of our improved alarm-signal, some of the parts being shown in section. Fig. 1^a is a top plan view of the funnel, showing its electrical connections. Fig. 2 is a plan view of the annunciator; and Fig. 3 is an enlarged plan view, partly broken away, showing the manner of working one of the annunciators.

In said drawings, D represents the frame which supports the instrument, and adapted to be secured to any portion of the vessel, as may be desired. Within the frame are lugs, upon which rests or is secured a plate D' for supporting a battery B. Upon the top of the frame D is secured an annunciator-box A. Firmly secured to the frame D, and extending through the annunciator, is a metallic post *a*. Near the top of said post, and resting upon a shoulder, is secured an insulated drum *b*, provided on its outside periphery with carbon or metallic projections or lugs *c* at regular distances apart. Above this in-

ulated drum, and resting upon a shoulder formed on said post *a*, is a hollow drum *h*, adapted to revolve on the post *a*. From the upper side of the drum *h* extends an arm *g*, connected with a ring *f*, within which is inclosed diaphragm *e* and the inner neck of a funnel *d*, and to which they are secured. Attached to the diaphragm *e* is a wire brush *e'* for transmitting current to the carbon projections on the insulated drum. Within the drum *h* is arranged an ordinary clock-movement, whereby a continuous and slow rotary movement is imparted to the drum, and carrying with it the funnel *d*. Within the annunciator-box A are secured electric magnets *m m*, having armatures *n n*, controlled by springs *o o*, secured to studs *p p*. To the armatures *n n* are secured bell-crank levers *q q*, carrying upon their outer ends disks *r'*, upon which are prominently marked arrows showing the direction of the approaching ship, and are arranged to pass under openings *s* in the upper plate of the annunciator, as shown in Fig. 2.

An alarm-bell *c'* is placed in any convenient place in the instrument in connection with the battery. The wire-connections are as follows: One wire leads directly from the battery to the post *a*, through drum *h*, arm *g*, ring *f*, diaphragm *e*, to brush *e'*. The other wire passes from the battery through the bell, thence to the magnet, and through it to the carbon projection *c* on the insulator *b*. The circuit, therefore, would be completed when the brush *e'* came in contact with one of the carbon projections *c c*, as will be hereinafter explained.

In the normal condition of the machine the wire brush *e'* should be so adjusted that in its revolution by the clock-work in the drum *h* it should not come in contact with the carbon *c* on the insulator *b*. The funnel and the diaphragm are continually revolved at a slow speed by means of the clock-work in the drum *h*, or any other driving-power may be employed, as desired.

The operation of the machine is as follows: The funnel with the diaphragm being continually in revolution, as soon as a sound-wave from any direction strikes in or nearly on a normal position with the diaphragm, it is caused to undulate, thereby bringing the

wire brush into contact with one of the carbon projections on the insulator. This closes the circuit, and the armature n is brought up in contact with the magnet, and by means of the bell-crank lever connected therewith causes the disk r' to pass under its opening in the top plate of the annunciator, and according to the arrow or sign on the disk the direction of the approaching vessel is at once indicated. Notice of this action is given by this bell inside of the frame which is connected with the circuit. As the funnel continues to revolve the circuit will be broken as soon as the wire brush has passed over the carbon, the armature will be released, and the disk returned to its normal position. Should the sound-wave continue in the same direction, the brush will come in contact with the same carbon on the completion of the revolution of the funnel, and the operation will be repeated. Should the direction of the sound-wave be changed, the brush will come in contact with another carbon and another disk exposed to view, thus showing the change of course of the vessel at a glance.

We do not intend to limit ourselves to the construction specified, as changes can be made without changing the scope of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The electric ocean danger-signal herein described, consisting of a metallic rotating drum carrying a funnel provided with a diaphragm and metallic brush, an insulator-drum provided on its outer periphery with carbon or metallic projections, a post supporting said rotating and insulating drums and adapted to serve as a conductor from a battery, and a frame supporting said parts and an electric battery, all said parts being so arranged that when the metallic brush and the carbon projection come in contact the electric circuit will be closed, as described, and for the purposes set forth.

2. The electric ocean danger-signal herein described, consisting of a frame carrying an annunciator, a conducting-post supported in said frame, an insulated drum on said post provided with carbon projections on its outer periphery, a metallic drum adapted to rotate on said post provided with an arm carrying a diaphragm and metallic brush, a funnel connected with said diaphragm, an annunciator provided with openings in its face, and indicating-disks adapted to reciprocate within the annunciator by magnetic action, all said parts being so arranged and combined that when the metallic brush is in contact with a carbon projection the electric circuit is closed, as described, and for the purpose set forth.

3. In an electric ocean danger-signal or metallic revolving drum, an arm connected with said drum, a diaphragm connected to said arm, a metallic brush secured to said diaphragm, a funnel secured to said arm, and means for revolving said drum, as described, and for the purpose set forth.

4. In an electric ocean danger-signal, in combination with a suitable supporting-frame of a metallic drum, an arm connected with said drum, a diaphragm connected to said arm, a metallic brush secured to said diaphragm, a funnel secured to said arm, means for revolving said drum, an insulated drum on said frame provided with carbon or metallic projections on its outer periphery, and electric connections with an annunciator, as described, and for the purpose set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 23d day of August, 1889.

WALTER THOMPSON.
ALFRED GARTNER.

Witnesses:

ALFRED SOMMER,
J. H. SCHMIDT.