(No Model.)

H. McLAUGHLIN.

AUTOMATIC SIGNAL BUOY.

No. 337,971. Patented Mar. 16, 1886.

Fig. 1.

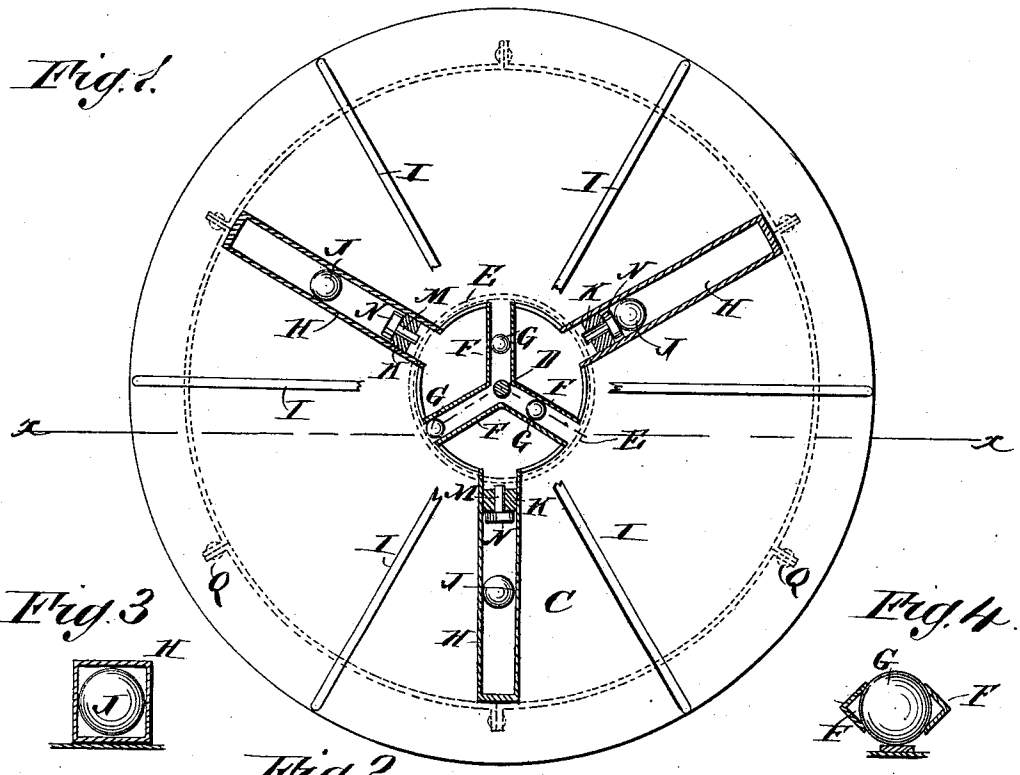
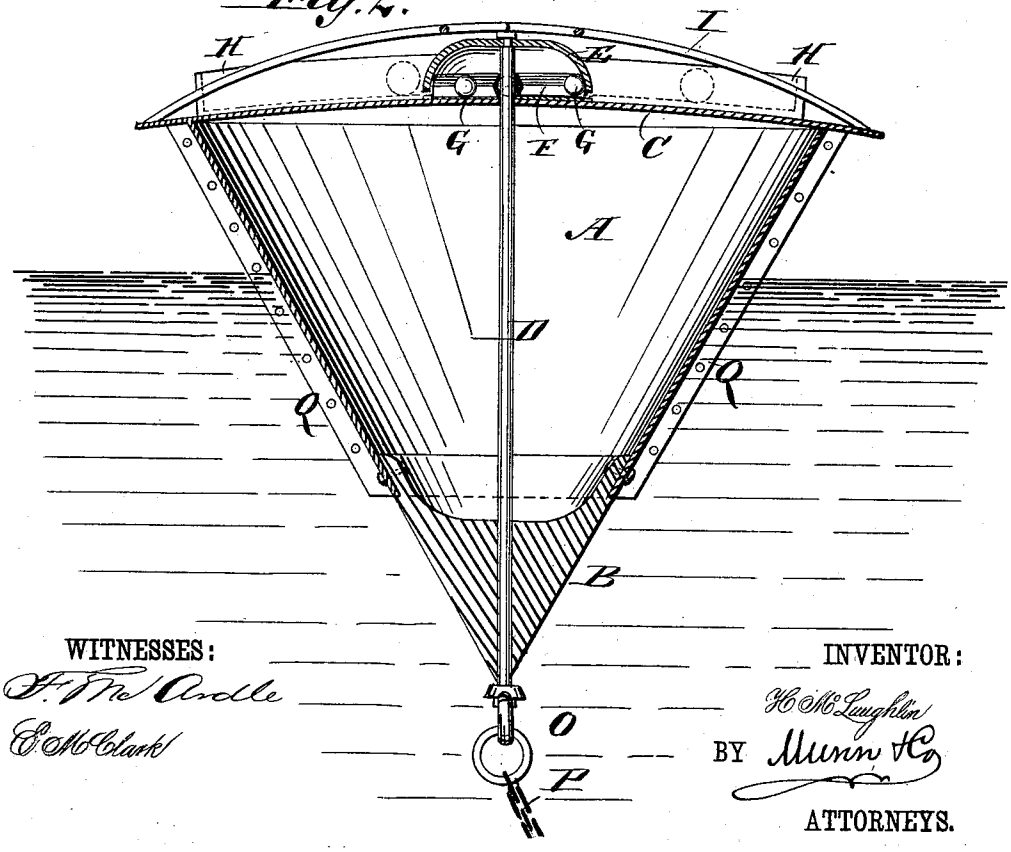


Fig. 3

Fig. 4.

Fig. 2.



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UNITED STATES PATENT OFFICE.

HENRY McLAUGHLIN, OF BANGOR, MAINE.

AUTOMATIC SIGNAL-BUOY.

SPECIFICATION forming part of Letters Patent No. 337,971, dated March 16, 1886.

Application filed December 24, 1884. Serial No. 151,111. (No model.)

To all whom it may concern:

Be it known that I, HENRY McLAUGHLIN, of Bangor, in the county of Penobscot and State of Maine, have invented a new and Improved Automatic Signal-Buoy, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved automatic fog-signal which is so constructed that it sounds a gong under the action of the waves or the current.

The invention consists of the combinations of parts, including their construction, substantially as hereinafter fully set forth and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional plan view of my improved signal-buoy. Fig. 2 is a cross-sectional elevation of the same on the line *x x*, Fig. 1. Figs. 3 and 4 show cross-sections of the guides for the balls.

The cone-shaped or other buoy, A, is provided with the ballast or balancing block B in its lower part, the sides of the buoy being secured to the said block B. The buoy is provided with a deck, C, which may be straight or slightly curved. A rod, D, extends from the bottom of the buoy up to and through the deck, and projects a short distance from the top of the same, and on the upper end of the rod a gong, E, is secured, the diameter of which is equal to about one-fifth of the diameter of the deck. A series of radial guides, F, or hollow tracks, are arranged beneath the gong, each containing a ball, G, adapted to slide from the rod D to the gong and in the inverse direction.

The guides F are preferably formed of two strips having a V-shaped cross-section, the openings facing each other; or the guides can be constructed in any other suitable manner, providing they permit the balls to roll freely and prevent the balls being thrown out from between them by a sudden movement of the buoy.

On the deck C a series of conductors or guides, H, are arranged radially, the inner open ends of the conductors being adjacent to the outside of the gong, and their outer ends being closed. The guides H are preferably made square in cross-section, and each contains a ball, J, which slides in it. A rubber spring, K, or a spiral or other spring, is held in the inner end of each guide H, and through each spring a pin, M, is passed, provided on its outer end with a head, N, which is struck by a ball, J, whereby the pin is driven against the gong, which is sounded.

The edges of the deck C project over the sides of the buoy and form a guard or fender to prevent floating objects, &c., from injuring the sides of the buoy, and curved or other rods, I, form a cage on the deck and protect the gong. A ring, O, is swiveled on the lower end of the rod D, and to the said ring the chain P is secured which holds the buoy in place.

If desired, the buoy may be provided with longitudinal ribs Q, which may be formed of the flanges of the plates or sections of the buoy, or may be formed in any other suitable manner.

The balls J may be made hollow, if desired.

I have shown three ball-guides inside and three ball-guides outside of the gong; but more or less may be provided.

The waves rock the buoy or move it up and down, causing the balls G to run in the guides F to the gong, which they strike, and then run back to the rod D, and so on, the balls J running to the inner ends of the guides H and striking the hammers or pins M, which in turn strike the gong. If desired, the hammers or pins M may be dispensed with and the balls J arranged to strike the gong.

When the buoy is rocked by the waves, the gong is sounded quite regularly; but in rivers and like channels where there are no waves, but a current, the buoy is slightly inclined by the current and turned on its longitudinal axis by the action of the current on the ribs. As the top of the buoy is inclined and the buoy is revolved, the balls are caused to roll between their guides toward and from the middle of the deck, and thus strike and sound the gong.

The buoy may be made hollow or solid, and the gong and ball-guides may be arranged on a platform a greater or less distance above the deck.

If desired, the rod D may be dispensed with and the gong secured on the deck or platform in any other suitable manner.

In place of a buoy arranged and constructed

in the manner described any other floating object—such as a small raft, boat, ball, &c.—can be used and provided with the above-described mechanism for sounding the gong.

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

1. The combination, with a buoy, of a gong on the same, and guides containing balls and conducting the balls directly in contact with the gong, substantially as and for the purpose set forth.

2. The combination, with a buoy, of a gong, guides arranged beneath said gong, and guides arranged outside the gong, said guides containing balls and conducting the latter directly in contact with the gong, substantially as and for the purpose set forth.

3. The combination, with a buoy, of a rod extending from the bottom of the same up through the top, a gong on the upper end of the rod, and guides for conducting balls to and from the gong, substantially as herein shown and described.

4. The combination, with a buoy, of the guides H, the springs K, the pins M, and the balls J in the guides, substantially as herein shown and described.

5. A buoy provided with external ribs extending from top to bottom and carrying a gong, and guides for balls adapted to strike the gong, substantially as herein shown and described.

HENRY McLAUGHLIN.

Witnesses:
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