

No. 716,617.

Patented Dec. 23, 1902.

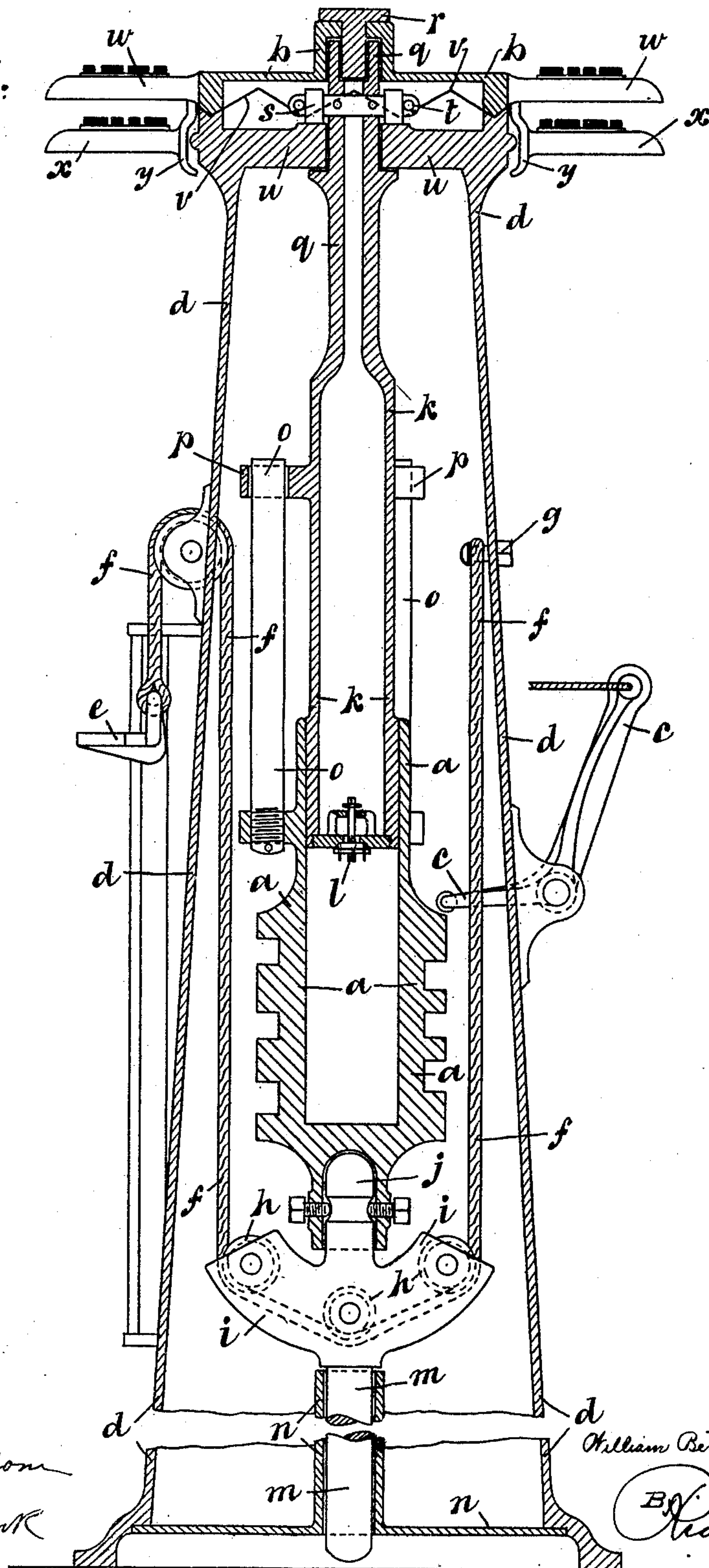
W. B. BARKER.  
MARINE SIGNALING APPARATUS.

(Application filed June 3, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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FIG. 2.

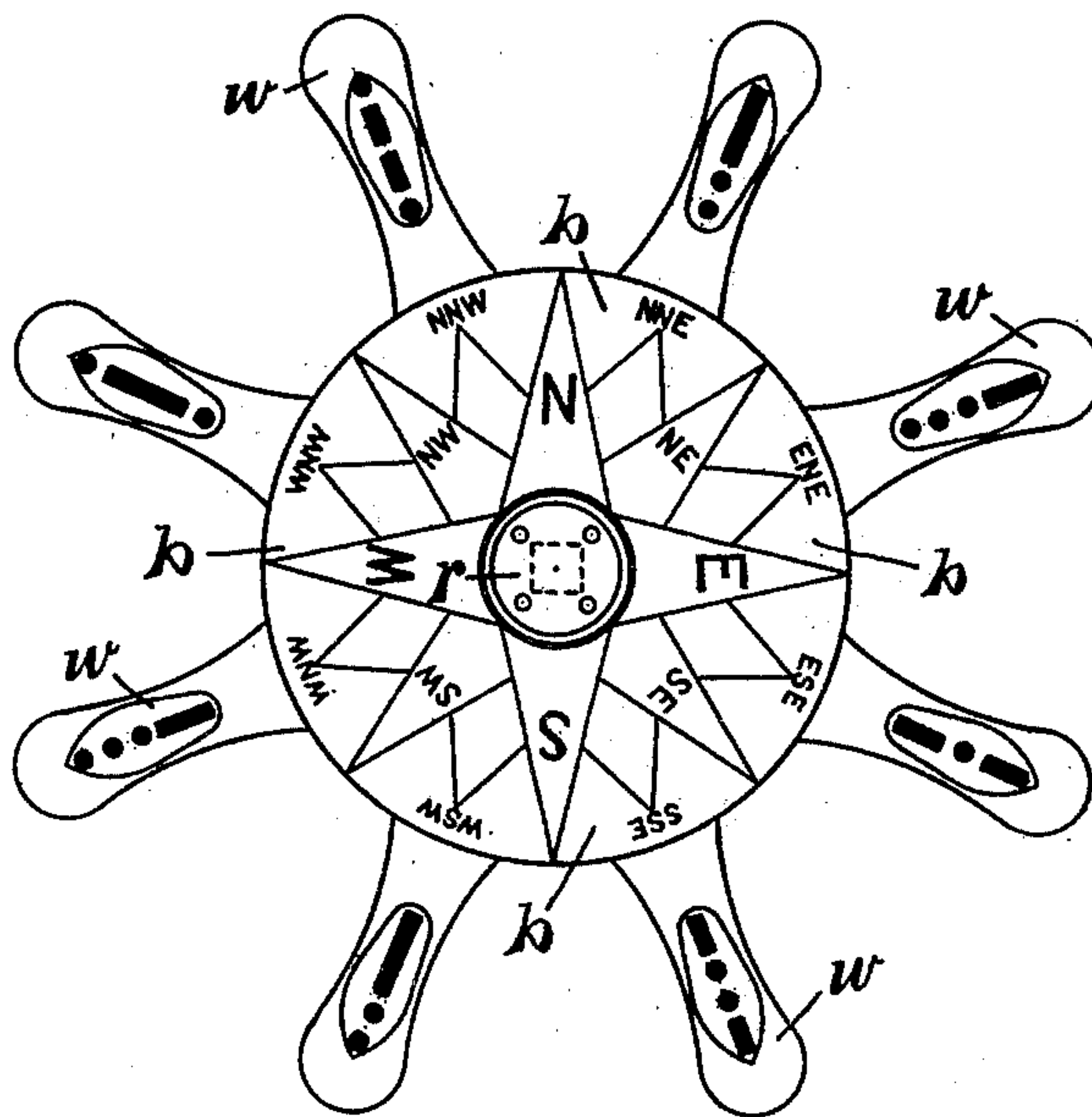
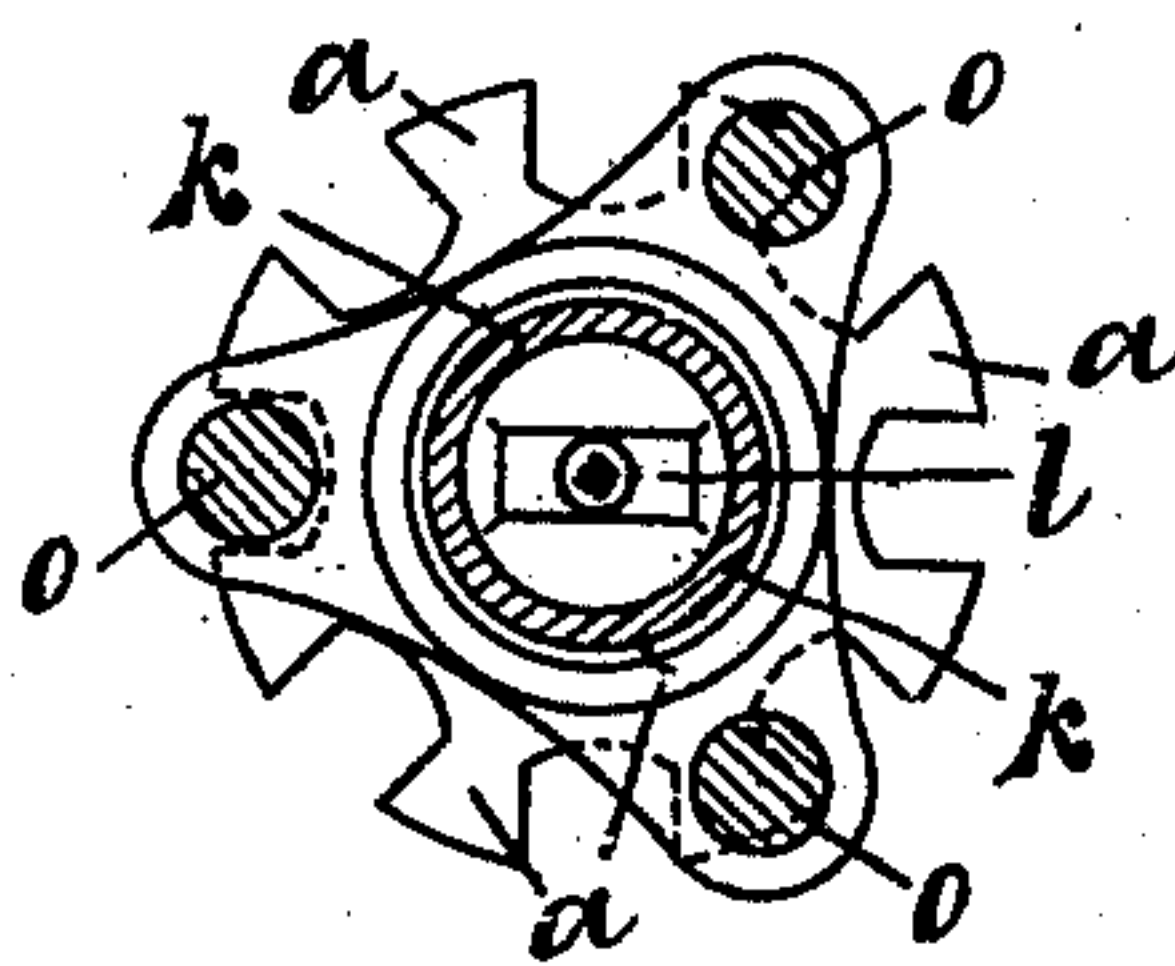


FIG. 3.



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# UNITED STATES PATENT OFFICE.

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## MARINE SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 716,617, dated December 23, 1902.

Application filed June 3, 1902. Serial No. 110,046. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM BENJAMIN BARKER, a subject of the King of England, and a resident of Walton, Liverpool, in the county of Lancaster, England, have invented certain new and useful Improvements in Marine Signaling Apparatus, of which the following is a specification.

This invention has special reference to marine signaling apparatus for communicating between one ship and another by sounds in fogs or at other times, with the object of preventing collisions at sea, the code of signals used being of the kind wherein a combination of short and long blasts or sounds from a whistle or other marine sounding device is employed.

The present invention consists of certain improvements and apparatus, as hereinafter described, by which by adjusting the hand-operated part to the course a ship is sailing in or intends to sail in a cam device is operated or set in such a position that when the sounding operation takes place the required signal, comprised of long and short blasts or sounds, according to the course being steered or about to be steered, will automatically be given.

For convenience the invention will be further described with the aid of the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the apparatus. Fig. 2 is a plan viewed from the top, and Fig. 3 shows in plan view the cam device above referred to.

Referring to the drawings, the cam device is designated *a* and is adapted to be set by the hand-actuated wheel *b* by turning it axially, and this cam device operates on the end of the horizontal arm of the bell-crank lever *c*, supported on the pillar *d* of the apparatus, which is connected with the ship's steam-whistle or the sounding device. The cam device *a* has a plurality of vertically-disposed rows of projections, as shown, on its periphery, each row corresponding with one of the signals of the code, of which there are eight and which are represented on the eight handles of the wheel *b*. These handles, with the code-signals on them, correspond with the four cardinal and the four principal points of the compass.

To give a signal, when the cam device *a* has been set to the right signal by the hand-

wheel *b* it is raised up, this being effected in the construction shown by pressing down the pedal *e* by the foot, which pulls on the rope *f*, connected at the point *g* to the column *d* and passing over pulleys *h* in the pulley-carrier *i*, which carries the cam *a* upon its upwardly-projecting pivot *j*. When, therefore, the cam *a* is thus raised, the lever *c* will be operated by the successive projections in a vertical row in the cam corresponding with the signal to be given and will operate the sounding device a certain number of times, giving longer and shorter blasts, accordingly as the projections on the cam device are long and short. The lever *c* will be pulled down as it is released from the successive projections, so as to enter the spaces between these projections. To render the motion upward of the cam device *a* substantially uniform, a liquid escapement is employed in connection with it, so that a regulated escape of liquid has to be passed out by the foot on the pedal *e* in its downward action. This is effected by making the cam device *a* hollow and in the form of a cylinder and by providing a hollow piston *k* in it, over which the cam-cylinder slides when moved upward and downward, and the speed-regulating means is provided by having a small hole in the piston end or the valve *l* in the head, which opens downward, so as to allow a free flow of fluid from the hollow piston *k* down past the valve into the cam-cylinder *a* when the foot is removed from the pedal *e* in the return stroke of the cam, which is effected by the weight of the parts, while in the upstroke the fluid will have to be pressed through the hole of predetermined capacity, the valve *l* being closed on its seat by the liquid-pressure upward. This hollow piston acts as a reservoir to the oil or other liquid used on the controlling fluid of the apparatus.

The carrier or bracket *i* is supported from below by a rod *m*, which is guided by and slides in a tube *n*, fixed to the column *d*, and the upper end of the cylinder within the cam *a* has guide-rods *o* fixed on it, which slide through lugs *p* on the hollow piston-trunk *k*, by means of which the cam is turned when the hand-wheel *b* and piston *k* are turned. The upper end of the piston *k* has a tubular stem *q*, which passes up through the head-plate *u* of the column *d* and is guided therein,



and it is connected to the wheel *b* by a headed pin *r*, having a rectangular shank which fits in a rectangular hole in the upper end of the stem *q*. This pin is fixed in and revolves with the wheel *b*. The weight of the piston *k* is taken by rollers *s*, fixed onto the ends of a pin *t*, passed through stem *q*, and they run on the upper face of the end plate *u* of the column *d*. The upper edge of the column *d* has angular serrations *v*, and the wheel *b* has corresponding angular serrations working in connection with the serrations *v*. These serrations or angular parts are employed to hold the wheel *b* in the required position after each actuation.

Inclosing each set of signal-symbols on each of the handles *w* of the wheel *b* there is a line representing in diagram the outline plan view of a ship. In using the apparatus that signal will be sounded by a ship which for the time being is inclosed by the diagram-ship in the handle *w*, pointing to her bows, and this signal of course must agree and correspond with the course being sailed or about to be sailed by the ship. However, when a signal is heard from another ship the diagram-ship of the handle *w* bearing the symbol of that signal so heard will be pointing in an opposite direction to that being sailed by the ship which sent the signal. However, in order that the user of the apparatus may have it graphically illustrated to him as to what course the ship sending the signal is sailing a second set of handles *x*, with signals and signs or symbols on it, are provided below the handles *w*. These signals are directly opposite to those on the handles directly above them, and consequently the symbol-ship containing within it the code-signal heard from another ship will be directed in the exact course being sailed, as the symbols on the opposite handles of the wheel *b* are exactly opposite in their order of arrangement. Thus when the operator hears a signal from another ship when he finds that signal-symbol on the lower handles *x* that will show him at once by the direction of the ship's diagram surrounding it the exact course being sailed or about to be sailed by that ship. These extra handles *x* are attached to and carried by the upper wheel *b* by the connecting-brackets *y*.

The relative arrangement of the handles *w* of the wheel *b*, with the compass-points marked thereon, form no part of the present invention.

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

1. In a marine sound-signaling apparatus, a rotatable and vertically-movable cam device with a series of projections thereon, corresponding with the several code-symbols, arranged in vertical rows around the periphery thereof, and having a hollow cylinder internally; a piston fitting in said cam-cylinder and having a reservoir connected with same, and a regulated aperture therein for regulat-

ing the rate of movement thereof; and a rotatable hand-actuated means at the upper end of the apparatus connected with the cam; substantially as set forth.

2. In a marine sound-signaling apparatus, the combination of the rotatable cam device *a*, having at its center a hollow cylinder open at the upper end; a hollow piston *k* stationary vertically, and disposed within the cam-cylinder, with a regulated opening in the end of same; a hand-actuated wheel *b* connected with the piston *k*; and manual means for raising and lowering the said cam *c*, vertically up and down over the piston *k*, substantially as set forth.

3. In a marine sound-signaling apparatus, the combination of the rotatable cam device *a*, having at its center a hollow cylinder open at the upper end; a hollow piston *k*, stationary vertically, and disposed within the cam-cylinder, with a regulated opening in the end of same; a hand-actuated wheel *b* connected with the piston *k*; an actuated rope *f*, connected at one end above the cam, and adapted to be operated at the other manually; and a supporting-carrier *i* having pulleys *h*, over which said rope *f* passes, and carrying said cam; substantially as set forth.

4. In a marine sound-signaling apparatus, the combination of a rotatable and vertically-movable cam device *a*, the vertically-stationary piston *k*; the hand actuating-wheel *b* disposed above the cam, and connected with and adapted to operate said cam, and containing signal-code symbols on the upper surface thereof; and a supplemental parallel part below said wheel *b*, also carrying signal-code symbols, and connected with and revolving with the upper wheel *b*; substantially as set forth.

5. In a marine sound-signaling apparatus, the combination of a hollow pillar *d*; a hand-actuated wheel *b* on the upper end of same, with a serrated lower edge; a serrated edge *v* on the column meshing with the edge of the hand-actuated wheel; a rotatable and vertically-movable cam *a*; and piston *k* connected with the wheel *b*; substantially as described.

6. In a marine sound-signaling apparatus, the combination of a hollow pillar *d*; a hand actuating-wheel *b*; a piston *k*; a central stem *q*, carrying the piston *k*, and connected with the wheel *b*; a hollow cylindrical rotatable and vertically-movable cam *a*; a carrier-bracket *i* with pulleys *h* therein; rod *m* carrying said block *i*; tube *n* in which said rod *m* works; rope *f*; and pedal *e* connected to one end of said rope and vertically guided; substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WILLIAM B. BARKER.

Witnesses:

S. GOODALL,  
GEO. E. GODDING.