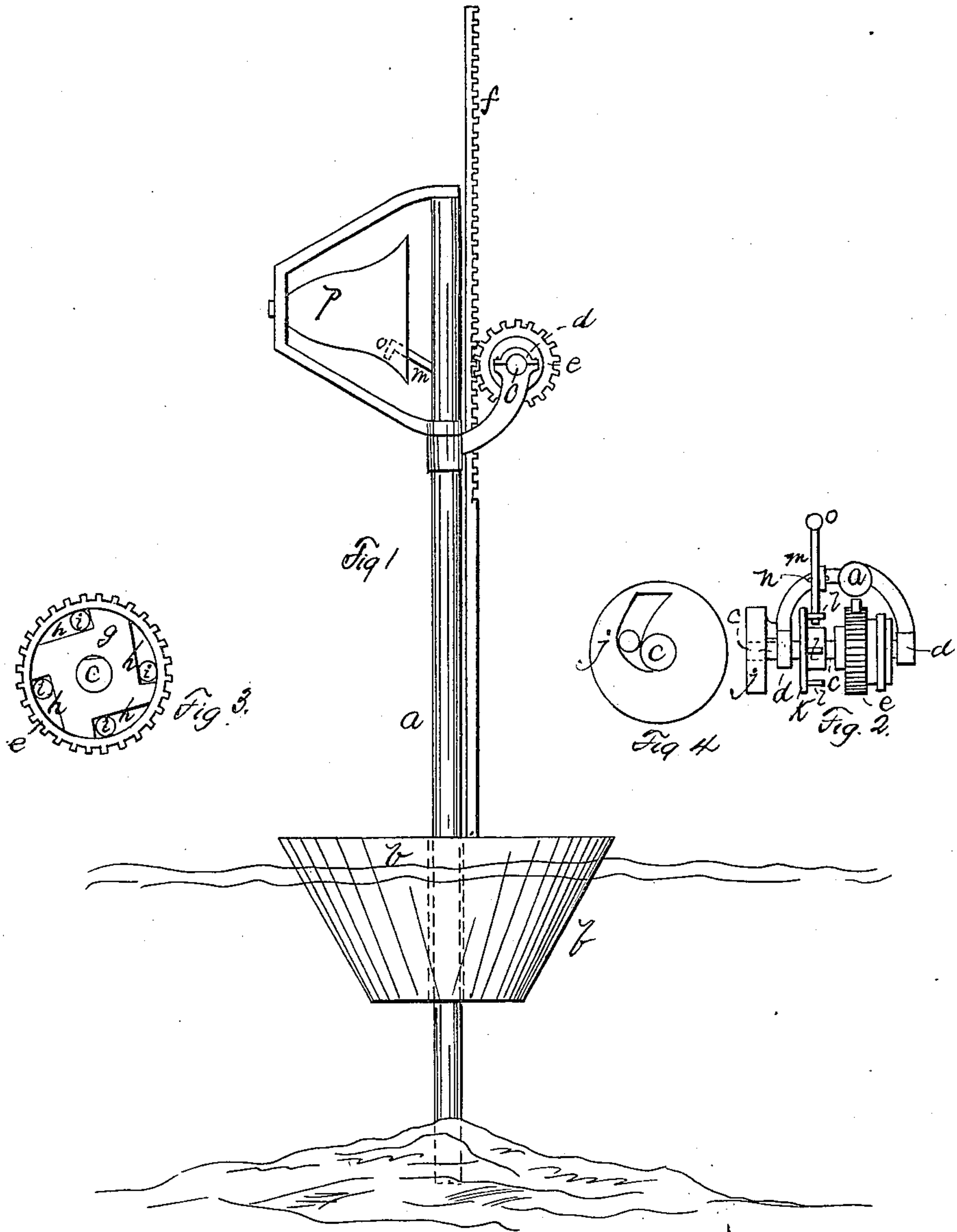


(No Model.)

W. R. CLOSE.  
Bell Tower for Fog Signals.

No. 238,573.

Patented March 8, 1881.



Witness  
Arthur M. Mason  
John B. Mason

Inventor  
Walter R. Close  
By Wm Franklin Jeany, Atty

# UNITED STATES PATENT OFFICE.

WALTER R. CLOSE, OF BANGOR, MAINE, ASSIGNOR OF ONE-HALF TO THOMAS N. EGERY, OF SAME PLACE.

## BELL-TOWER FOR FOG-SIGNALS.

SPECIFICATION forming part of Letters Patent No. 238,573, dated March 8, 1881.

Application filed December 2, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER R. CLOSE, of Bangor, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Bell-Towers for Fog-Signals; and I do hereby declare that the following is a full, clear, and exact description of the invention, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 shows a side elevation; Fig. 2, plan of operating mechanism; Figs. 3, 4, details of clutch mechanism.

The same letters indicate like parts.

My invention consists of an improved bell-tower apparatus for fog-signals, in which the bell is rung by power derived from the waves and from the rise and fall of the tide.

Reference to the accompanying drawings will render my invention plain.

At *a* is a standard, properly braced and located off the rocks or shoals in water of sufficient depth at all stages of the tide to support an annular float, *b*, surrounding the standard. Near the upper end of the standard, which may be of any proper height, is a horizontal shaft, *c*, revolving in journals *d* and carrying a pinion, *e*, thereon. This pinion is not keyed to the shaft, but acts upon it through a clutch mechanism revolving it in one direction only. The pinion is rotated by a rack, *f*, attached to a rod, the lower end of which is jointed to the float *b*. The teeth of this rack meshing into those of the pinion, the rise and fall of the float, as moved by the waves, is communicated to the gear upon the shaft *c*.

A proper clutch mechanism for connecting the pinion and shaft is shown in Fig. 3, though I do not limit myself to this device for controlling the direction of revolution of the shaft.

*e* is the pinion formed upon the face of a band or cylinder, and surrounding but not secured to a block, *g*, keyed to the shaft *c*, and provided with quasi-triangular cavities *h h*, one side being formed by the interior surface of the gear-band. In these cavities are loose balls or trucks *i*, just fitting the wide part of the cavities and revolving freely upon their own axes therein. As the gear revolves from right to left, as the drawings indicate, the friction against the inner surface of the gear-band forces the balls or trucks into the nar-

row part of the cavities, binding upon the interior surface of the band, and causing it to carry the block and attached shaft with it in its revolution. As the motion is reversed the balls drop into the wide part of the cavities and revolve therein, producing no effect on the shaft. A similar device—such, for instance, as is shown in Fig. 4—may be attached to one of the journal-boxes of the shaft, operating to securely clutch the shaft and prevent any tendency to revolve in the undesired direction. This is lettered *j* in Fig. 2.

Having now described my shaft and the means for operating it in one direction, my devices for utilizing this revolution are as follows: Upon the shaft *c* is secured a disk, *k*, provided with projecting pins *l* of any convenient number. This disk, as the shaft revolves, turns with it, and the pins are in turn brought in contact with and press down the end of a lever, *m*, pivoted at *n*, and carrying upon its opposite end a striker, *o*, which is, of course, raised by the action of the pins, and, as the disk continues to revolve, released, dropping upon and ringing a bell, *p*, secured to the standard *a*. The rapidity of stroke may be approximately regulated by varying the number of pins.

This device may be secured upon any description of bottom by the employment of proper engineering skill.

I do not claim in this application the subject-matter of my application for Letters Patent for bell-boats, filed December 2, 1880, this application referring to stationary bell-towers only.

What I claim, and desire to secure by Letters Patent, is—

In combination with the standard *a*, properly braced and secured and located as described, and supporting a bell, *p*, striker *m*, and operating mechanism, substantially as set forth, the float *b* and rack-rod *f*, receiving motion from the waves and tide, and communicating the same to the striker, substantially as and for the purposes specified.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of November, 1880.

WALTER R. CLOSE.

Witnesses:

JOHN R. MASON,  
WM. FRANKLIN SEAVEY.