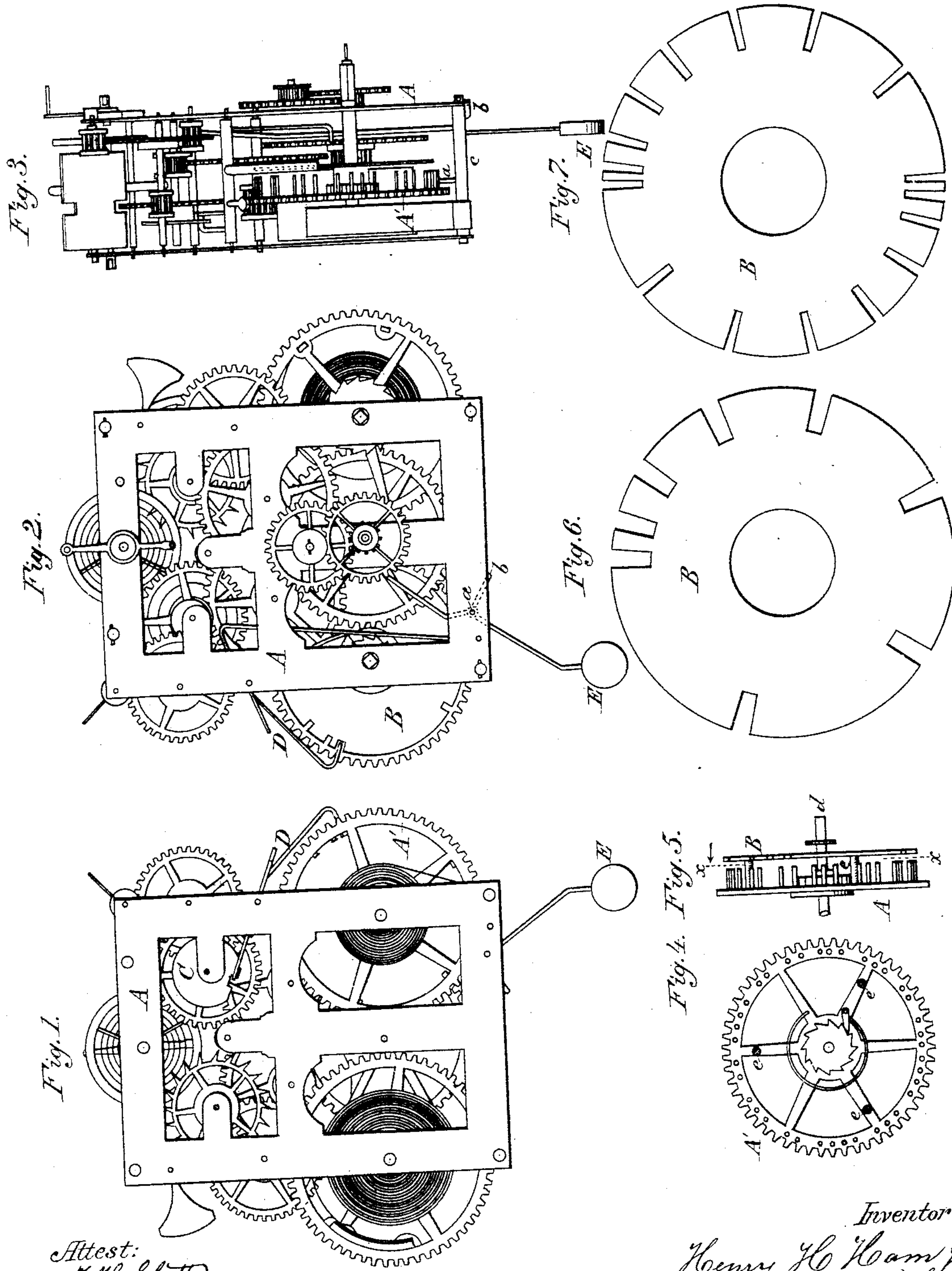
H. H. HAM, Jr.

Ships Bells' Indicating Clock.

No. 215,057. Patented May 6, 1879.



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UNITED STATES PATENT OFFICE.

HENRY H. HAM, JR., OF PORTSMOUTH, NEW HAMPSHIRE.

IMPROVEMENT IN SHIPS' BELLS-INDICATING CLOCKS.

Specification forming part of Letters Patent No. **215,057**, dated May 6, 1879; application filed October 2, 1878.

To all whom it may concern:

Be it known that I, HENRY H. HAM, Jr., of Portsmouth, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Ships' Bells-Indicating Clocks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 improve that class of marine clocks usually called "ships' watch-clocks," causing them to strike the bells indicating the hours and half-hours of each watch, with pauses between the blows, in the same manner as when struck by hand; and the invention consists in the novel construction and arrangement of the mechanism by which this is accomplished, as will be hereinafter fully described.

In the drawings, Figure 1 is a rear view of the mechanism by which the clock is operated, showing the relative position of the parts. Fig. 2 is a front view of the same. Fig. 3 presents a side view of the works, showing their relative positions in a direction opposite to that shown in Figs. 1 and 2. Fig. 4 presents a side view of the striking-wheel, with the studs to which the lock-plate is attached. Fig. 5 shows the striking-wheel and lock-plate attached. Fig. 6 represents my improved lock-plate, with sections increasing or decreasing irregularly. Fig. 7 shows the plate double, or with two sets of sections on its periphery.

This clock, besides indicating the hours and minutes of time as an ordinary clock does, also denotes, by its striking mechanism, the sounds and pauses usually made in striking what navigators term "bells." Each half hour of time is on board of a vessel represented by the striking of one blow on the bell, and an additional blow for every half hour during the watch, the twenty-four hours being divided into six equal periods of time, of four hours each, called "watches," each of these periods being indicated by eight of such strokes.

In striking the hours and half-hours of each period or watch, it is customary at the termination of the first half-hour to strike one bell; at that of the next, two bells; at that of the next, two bells, and to pause and strike one bell; at that of the next, two bells and to pause, and then two bells, there being a pause between every two bells, thus indicating the hours and halves, as seamen well understand.

Heretofore these clocks have struck the bells or indicated them in their order without denoting the pauses as given by a seaman while striking a ship's bell in the way commonly practiced. My improvement in the clock gives the sounds with the necessary pauses.

In the drawings, A denotes the frame which supports the clock-gear, and A′ the main striking gear or wheel, it being the first of a train, instead of the second, as in other clocks, there being fixed in or to one side of it, so as to project therefrom, as shown, a series of pins or studs arranged as follows: The circumference of the circle of these pins is to be divided into forty-eight equal arcs, and to contain thirty-six pins and twelve spaces, arranged as shown in Fig. 4. Upon the shaft *d* of the wheel A′ is placed the circular lock-plate B, which is fixed to the wheel A′ and held in position by the studs *e*, so that it revolves with it. This lock-plate may be supposed to have its circumference divided into forty-eight equal parts, arranged with one notch at the first, one at second, one at the fourth, one at the eighth, one at the thirteenth, one at the twentieth, one at the twenty-eighth, and one at the thirty-eighth of the said divisions.

The main striking-wheel A and lock-plate B are to revolve together once in every four hours. Between the locking-wheel B and the stop-wheel C the stop-lever D is arranged, as shown in Fig. 1.

The connection of the time-train with the striking-gear is maintained in the usual manner. The hammer is shown at E, its arbor *c* being provided with a pin or stud, *a*, working against the pins of the wheel A′, by which it is caused to strike the bell. A stop or check arm, *b*, is also attached to the shaft *c*, catching under the front plate of the frame A. The remaining part of the striking-gear is similar to that of a common striking clock.

The locking-plate B may have two sets of locking-notches upon its periphery, as shown in Fig. 6, care being taken to preserve the same relation between the notches as in the plate with a single set of notches, as heretofore described.

The wheels A′ and B being duly constructed and arranged, the clock, when in operation, will give from time to time, as may be required, the number of strokes and pauses that are needed to indicate the time during each watch as produced by a seaman on a ship's bell.

It is evident that a snail may be used in place of a lock-plate, care being taken to preserve the same irregularity in the sections as in those of the lock-plate.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. The striking-wheel A′, having pins arranged as shown for striking ships' bells, in combination with the locking-plate B, attached to and revolving with the same shaft as wheel A′, and having irregularly increasing or decreasing sections.

2. In a marine clock, striking the half-hours in the manner of ships' bells, above described, a lock-plate provided with sections increasing or decreasing irregularly, substantially as described.

3. The combination of the striking-wheel A′, having pins arranged as shown and described, studs *e*, and locking-plate B, connected for joint and simultaneous action, as specified.

4. The stop-wheel C, constructed and operating as described, in combination with the stop-lever D, lock-plate B, and attached striking-wheel A′, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

HENRY H. HAM, JR.

Witnesses:

A. F. HOWARD,

JAMES L. PARKER.