

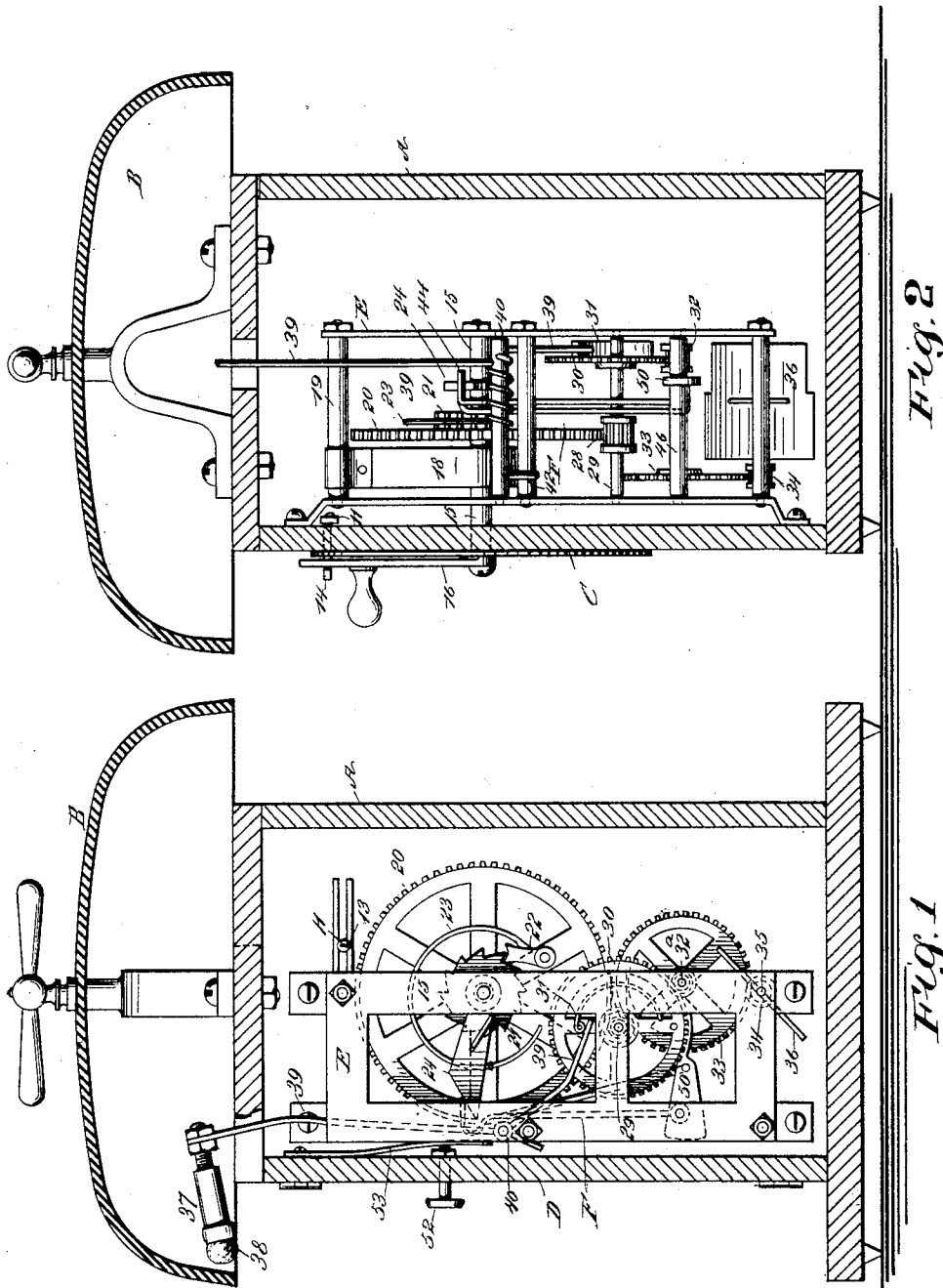
(No Model.)

2 Sheets—Sheet 1.

O. G. AHLSTROM.
CLOCK STRIKING MECHANISM.

No. 532,936.

Patented Jan. 22, 1895.



WITNESSES:

John A. Bengtson
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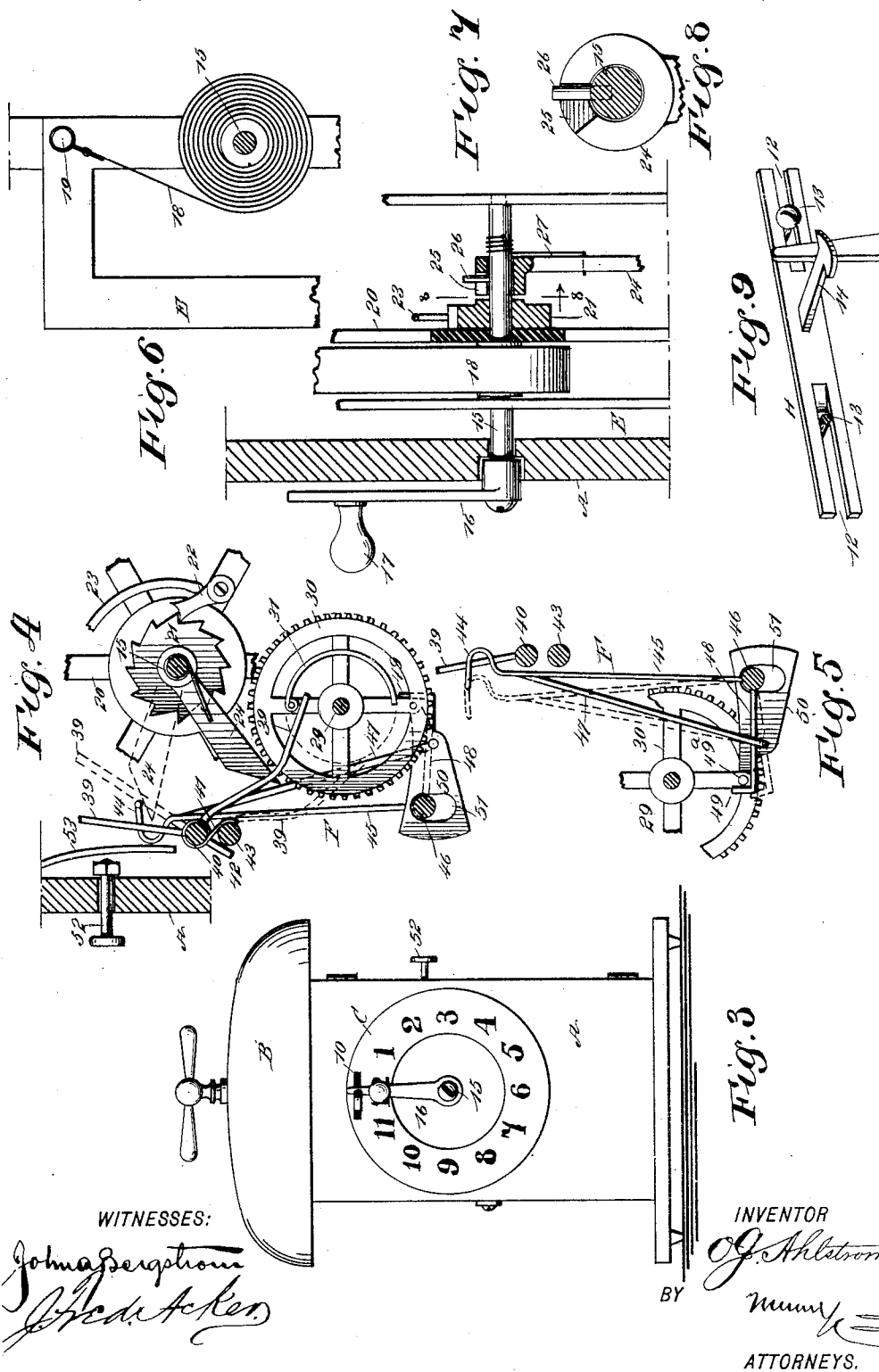
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UNITED STATES PATENT OFFICE.

OSCAR G. AHLSTROM, OF NEW YORK, N. Y.

CLOCK STRIKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 532,936, dated January 22, 1895.

Application filed November 16, 1894. Serial No. 528,962. (No model.)

To all whom it may concern:

Be it known that I, OSCAR G. AHLSTROM, of New York city, in the county and State of New York, have invented a new and Improved Gong, of which the following is a full, clear, and exact description.

My invention relates to an improvement in gongs, and especially to that class of gongs known as automatic gongs, to be used in lodge rooms, or other places where predetermined signals or a signal is to be sounded; and the object of the invention is to so construct the gong that the hand or pointer may be carried over the dial numbered to represent a predetermined number of alarms, and whereby when the hand for example is carried to the numeral "2," the spring of the driving shaft will have been wound by the movement of the arm, sufficiently to cause the striking mechanism to sound two alarms at certain intervals apart, and whereby also the alarm will not be sounded until the driving mechanism has been purposely set in motion, which may be accomplished from the outside of the casing containing the operating mechanism.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a rear elevation of the operative mechanism of the gong, the casing being shown in section. Fig. 2 is a section through the casing at right angles to that shown in Fig. 1, the operative mechanism being in side elevation. Fig. 3 is a front elevation of the casing, illustrating the dial. Fig. 4 is a detail sectional view of a portion of the operative mechanism of the gong, illustrating the relation of the starting arm to the stop finger employed. Fig. 5 is a detail view of the starting arm and its relation to the striking wheel. Fig. 6 is a sectional view of the driving shaft. Fig. 7 is a sectional view illustrating the relation of the hand or pointer to the main driving shaft, likewise illustrating the mechanism carried by said shaft. Fig. 8 is a section taken substantially on the line 8—8 of Fig. 7;

and Fig. 9 is a perspective view of the stop slide limiting the movement of the hand.

In carrying out the invention the casing A may be made of any desired shape, and the said casing is made to carry a gong B. Upon the front of the casing a dial C is produced or secured, usually numbered from "1" to "12" inclusive, and the casing is provided with a door D, by means of which access may be had to the interior of the casing. Within the casing a frame E is secured in any approved manner, in which the operative mechanism is supported.

At the top of the dial, or above the same, an opening 10 is made, and back of this opening within the casing a stop slide 11 is placed, the said slide being provided with slots 12 in its ends, receiving pins 13 secured in the casing, as shown in Fig. 9, and this slide has secured to it a stop plate or post 14, which extends outward through the opening 10 in the casing, and is free to slide therein. This stop plate or post is provided with a substantially T-head, and is adapted to limit the movement of the hand 16, which travels around the dial. This hand is provided with a handle 17 attached thereto, and the hand is firmly secured upon the main drive shaft 15. This shaft has attached firmly to it and coiled around it a spring 18, and one end of this spring is secured to a cross bar 19 located in the frame E, as shown in Fig. 6. A master wheel 20 is loosely mounted upon the said drive shaft, and a ratchet wheel 21 is secured on the shaft adjacent to one side of the master wheel, the teeth of the ratchet wheel being engaged by a pawl 22, pivotally attached to the master wheel and controlled by a spring 23, also carried by the said master wheel. The stop finger 24 is loosely mounted on the drive shaft preferably near the ratchet wheel, as shown in Figs. 7 and 8. The stop finger is provided with a hub through which the shaft extends, and in the hub a slot 25 is produced, receiving a pin 26 secured to the said shaft; and one wall of the opening 25 of the stop finger is normally held in engagement with this pin through the medium of a spring 27.

The master wheel 20 meshes with a lantern wheel 28 secured upon a striking shaft 29 journaled in the said frame E, and upon this shaft the striking wheel 30, which is a toothed wheel,

is firmly secured; and upon one face of the striking wheel a cam 31 is formed, as shown in Figs. 2 and 4, the said cam being preferably of semi-circular form.

5 The striking wheel 30 meshes with a lantern wheel 32 located upon a shaft 32^a likewise journaled in the frame E and below the striking shaft. A shaft 32^a has a gear wheel 33 fast thereon, and this gear wheel meshes with a
10 lantern wheel 34, secured upon the governor shaft 35, located preferably upon the bottom of the frame, the governor 36 secured to the shaft being usually of the fan type as illustrated.

15 The hammer 37 adapted to strike the gong is provided with a striking head 38 of chamois or leather, so as to give somewhat of a muffled tone to the bell. The hammer is secured to an arm 39, and the said arm is attached to a
20 shaft 40, pivoted at one side of the frame E as shown in Fig. 2. This shaft is controlled by a spring 41, and is provided with a pin 42, which normally engages with a stop bar 43, forming a brace for the said frame E, as is
25 likewise shown in Fig. 2, and the action of the spring is to normally hold the hammer in position to strike the gong, or close thereto.

The arm of the hammer is curved downwardly and inwardly from the rock shaft 40
30 to a point in the path of the cam 31 of the striking wheel, as shown best in Fig. 4; and as this wheel revolves in proper direction the cam forces the curved lower end of the hammer arm downward and outward, carrying the
35 hammer from the gong; and when the hammer arm is released from the cam of the striking wheel, the spring 41 acts to force the hammer against the gong to sound an alarm.

The striking mechanism is controlled by
40 what I term a starting arm F. This arm, as shown in Figs. 4 and 5, consists of a hook-shaped head 44, the hook being made to face the driving shaft, a bar 45, which extends vertically downward from the hook and is attached to a rock shaft 46 located below the
45 rock shaft of the hammer arm, and a bar 47, which likewise is carried downward from the head 44, and connects at its lower end with a stop arm 48, extending horizontally from the
50 lower rock shaft 46, as shown in Fig. 1, and is provided at its free end with an extension 49, adapted to be normally located at one side of a pin 49^a, formed upon the striking wheel, the extension of the stop arm being in the
55 path of the pin should the striking wheel be revolved; but when the rock shaft 46 is moved by reason of an inward movement of the head of the starting arm, this stop arm 48 will be carried out of the path of the pin 49^a, and
60 the striking wheel is then free to revolve, being actuated by the spring 18 of the driving shaft.

A counter stop arm 50, is pivoted upon the rod or bar 47 of the starting arm, and is provided with an elongated slot 51, receiving the
65 lower rock shaft 46; and that portion of the counter stop arm located at the rock shaft is

of sufficient weight to cause the opposite end to normally stand at an opposite side of the pin 49^a of the striking wheel to that of the
70 main stop arm 48, as is also shown in the said Fig. 5.

The starting arm is thrown out of locking engagement with the striking wheel from the outside of the casing through the medium of a push button 52 located therein, having bearing
75 against a spring plate 53 located upon the inner face of the casing and adapted to strike the head of the starting arm, as shown in Fig. 1.

In operation, if two alarms are to be sounded, or two strokes of the bell produced, the hand 16 is carried from a vertical position over the numeral "12" which it normally occupies, to the numeral "2." The spring of
85 the driving shaft will then have been properly wound to produce two strokes on the gong, and the stop finger on the drive shaft will have been carried away from the head of the starting arm for example, to the position
90 shown in Fig. 4. An alarm will not now be sounded until the starting arm has been pushed inward. When the alarm is required, the push button is manipulated, and the head of the starting arm is thrown inward, causing
95 its stop attachments to release the striking wheel, whereupon all the gearing will be set in motion, and the striking wheel will make two revolutions, at each revolution causing the hammer to strike the gong once, and when
100 the action of the drive shaft shall have brought the hand 16 to its normal position against the stop of the slide 11, as shown in Fig. 3, the stop finger 24 will have struck the head of the starting arm and carried it to its
105 normal position, bringing its stop arm in the path of the pin 49^a of the striking wheel, stopping the revolution thereof. This position of the stop finger is shown in dotted lines in Fig. 4. In the event twelve alarms are necessary, or twelve strokes of the gong, the hand
110 is carried around the dial to the opposite side of the slide stop 14; and when this is done the stop finger will have made another revolution and will have struck the head of the
115 starting arm. Therefore this finger is made yielding in the direction it is not operated, in order that the drive shaft may be turned even when its stop finger is in engagement with the starting arm, since the stop finger does
120 not act on the starting arm until it strikes the same from a reverse direction. The slide 11 prevents the hand 16 from being carried beyond a predetermined point at either side of the top portion of the dial.

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

1. In an automatic gong, the combination, with a gong, the striking wheel of a clock
130 mechanism, a hammer, and an arm carrying the hammer and acted upon by the striking wheel, of a starting arm comprising a pivoted body, a head and a stop arm projected from

the pivot support of the body, serving to normally check the movement of the striking wheel, means, substantially as described, for moving the starting arm in a direction to disengage its stop member from the striking wheel, and a stop carried by the drive shaft of the clock mechanism, acting at a predetermined time to restore the starting arm to a locking position with the striking wheel, as and for the purpose set forth.

2. In an automatic gong, the combination, with a casing, a clock mechanism located within the casing, a gong, a hammer adapted to strike the gong, and a pivoted arm supporting said hammer, of a striking wheel having a cam adapted for engagement with the hammer-supporting arm, and a projection from one of its sides, a starting arm comprising a body having pivotal support, a head located at the top of the body, and a brake or stop arm projected from the pivoted support and adapted to extend in the direction or path of the projection from the striking wheel, a dial located upon the casing, a hand adapted to travel over the dial and operating the drive shaft which is spring controlled, a trip mechanism operated from the exterior of the casing and operating upon the starting arm, throwing it out of engagement with the striking wheel, and a stop finger operated by the drive shaft and adapted to restore the starting arm to its normal position, substantially as described.

3. The combination, with a casing, a gong carried thereby, a clock work located within the casing, the drive shaft of which is spring-controlled, the spring being wound by the turning of the shaft, and a striking wheel forming a portion of the clock work, of a hammer, a pivoted arm supporting the hammer and acted upon by the striking wheel, a starting arm having pivotal support and comprising a body, a head and a stop extension

adapted as a brake upon the striking wheel, a trip device, substantially as described, whereby the starting arm is carried out of brake engagement with the striking wheel, a stop finger carried by the driving shaft and operating to restore the starting arm to its normal position, and a hand adapted to travel around the dial and secured to the driving shaft, whereby when said hand is moved the spring of the driving shaft is wound, as and for the purpose set forth.

4. The combination, with a casing, a gong carried thereby, a clock-work located within the casing, the drive shaft of which is spring-controlled, the spring being wound by the turning of the shaft, and a striking wheel forming a portion of the clock-work, of a hammer, a pivoted arm supporting the hammer and acted upon by the striking wheel, a starting arm having pivotal support and comprising a body, a head and a stop extension adapted as a brake upon the striking wheel, a trip device, substantially as described, whereby the starting arm is carried out of brake engagement with the striking wheel, a stop finger carried by the driving shaft and operating to restore the starting arm to its normal position, a hand adapted to travel around the dial and secured to the driving shaft, whereby when said hand is moved the spring of the said driving shaft is wound, an auxiliary gravity brake having pivotal connection with the stop extension of the starting arm and adapted to act in conjunction with the said stop arm, a slide carried by the casing, and a guide post connected with the said slide, adapted to limit the movement of the hand in two extreme directions, as and for the purpose set forth.

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Witnesses:

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