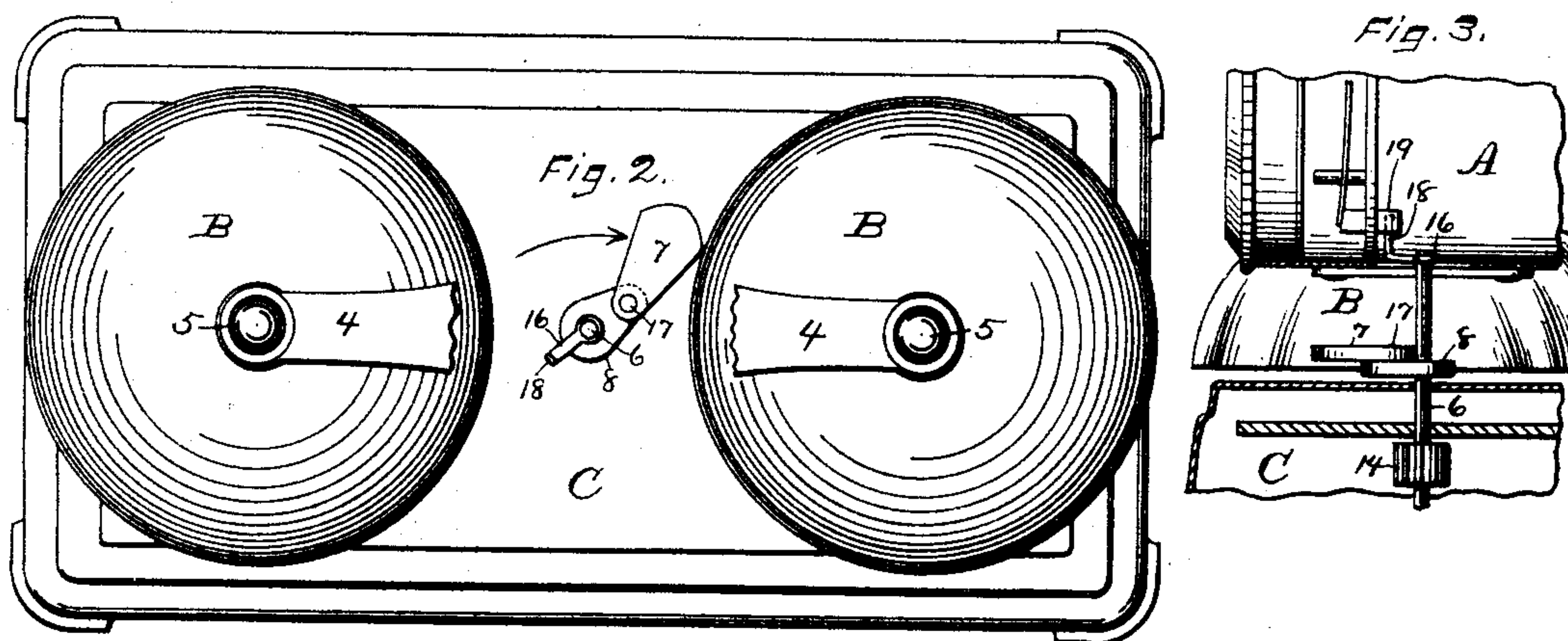
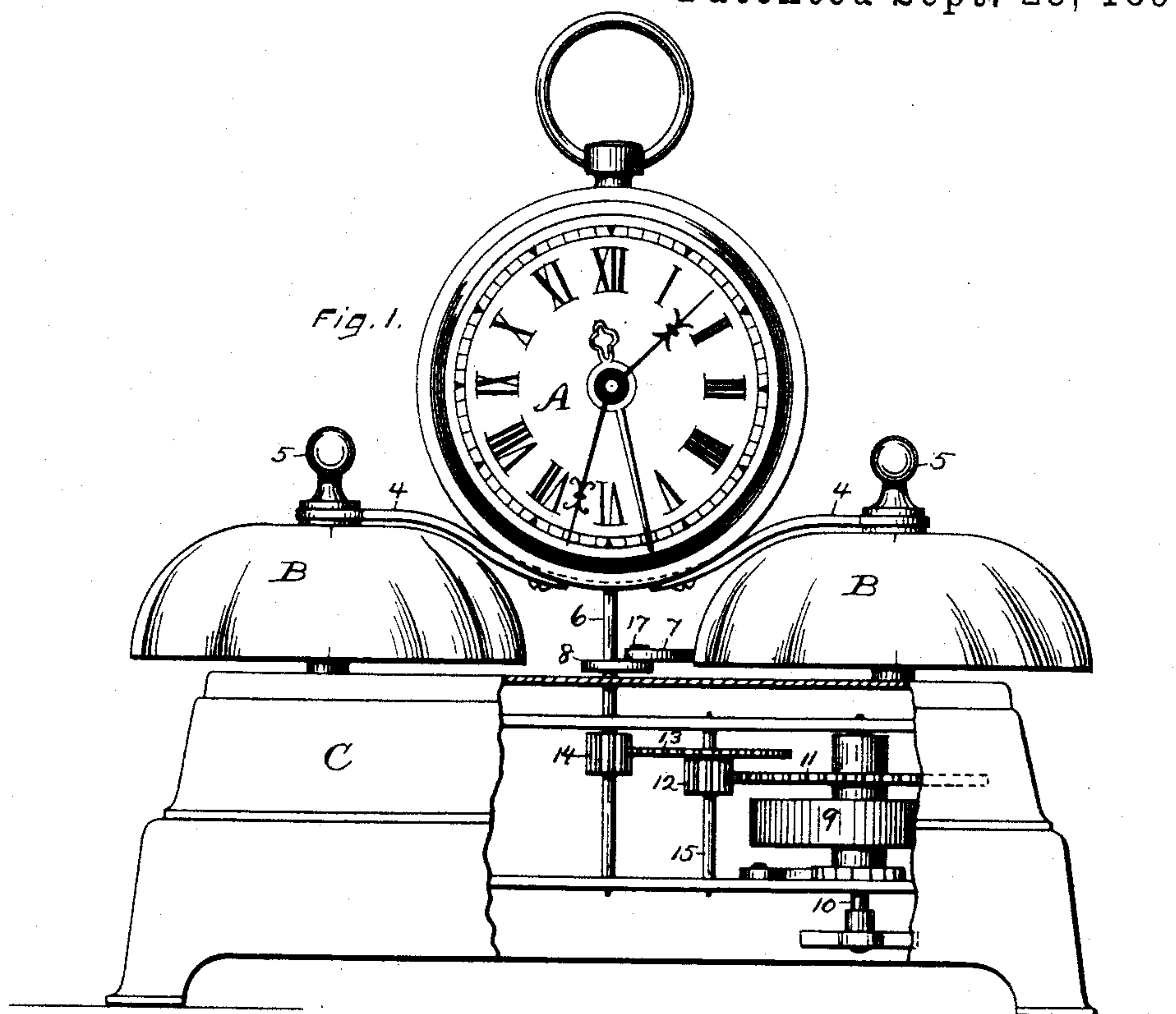


(No Model.)

A. M. LANE.
ALARM CLOCK.

No. 436,922.

Patented Sept. 23, 1890.



WITNESSES,
John Edwards Jr.
D. W. H. Pierce

INVENTOR,
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ATTY.

UNITED STATES PATENT OFFICE.

ALMERON M. LANE, OF MERIDEN, CONNECTICUT.

ALARM-CLOCK.

SPECIFICATION forming part of Letters Patent No. 436,922, dated September 23, 1890.

Application filed April 21, 1890. Serial No. 348,848. (No model.)

To all whom it may concern:

Be it known that I, ALMERON M. LANE, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Alarm Striking Mechanisms, of which the following is a specification.

My invention relates to improvements in alarm striking mechanisms; and the objects of my improvement are economy in construction, to make a longer-running mechanism, and to produce a better sound by avoiding the rattle and noise incident to the ordinary escapement of a vibrating hammer, and by the employment of two bells in connection with a revolving hammer.

In the accompanying drawings, Figure 1 is a front elevation of a clock, two bells, and my bell striking mechanism, a portion of the clock-base being broken away in order to show the movement-train. Fig. 2 is a plan view of the bells, clock-base, and revolving hammer, the clock proper removed, and Fig. 3 is a partial vertical section of detached parts showing the connection of my revolving hammer with the holding and releasing arm of the clock.

A designates a clock mounted upon brackets 4, which brackets are connected by their outer ends to the central posts 5 that support the bells B on the base C. Midway between these two bells is the hammer-shaft 6 and revolving hammer 7 mounted thereon. This hammer 7 is loosely pivoted to the crank-pin 17 of a hub or plate 8, which is rigidly mounted on the shaft 6, so as to revolve therewith. Thus the hammer 7 necessarily revolves about said shaft and is at the same time free to yield in case it strikes any object within its path. This hammer-shaft 6 may be rotated by means of any suitable spring and movement-train—as, for instance, by means of the spring 9 on the main-shaft 10 and the wheels and pinions 11, 12, 13, and 14 on the shafts 10, 15, and 6, all substantially as in well-known movement-trains for a like purpose. In order to control said bell ringing mechanism and revolving hammer, or, rather, to hold it from operation until some predetermined time, I provide the upper end of the shaft 6 with a cross-arm 16 and vertical arm 18, the two forming a crank.

These parts project through a suitable opening in the bottom of the clock-case, where the crank may revolve when free or be held against rotation by the vertical arm 18 engaging the holding and releasing arm 19 of the clock. This holding and releasing arm may be operated by any ordinary means for moving it toward the front at the proper time to release the arm 18, the particular holding and releasing mechanism being no part of my present invention.

A suitable holding and releasing arm and mechanism for operating it in an alarm-clock is shown and described in my patent, No. 403,274, May 14, 1889.

Instead of having the vertical arm 18 revolve at the end of the cross-arm 16, said arm might, if desired, be formed as a downward extension of the holding and releasing arm 19 and rigidly secured thereto, so that its lower end would engage the cross-arm 16 and hold the latter from revolution until the holding and releasing arm is moved forwardly in precisely the same way, as far as the mode of operation is concerned, as in the construction first described.

Whenever the holding cross-arm at the upper end of the shaft 6 is released by the withdrawal of the holding-arm, the spring 9 acts to revolve the shaft 6 and with it the parts mounted thereon. The hammer 7 being loosely pivoted to the crank-pin 17 will swing outwardly from the axis of the shaft by centrifugal force until its forward outer corner strikes one of the bells that lie in its path, when said hammer will yield, swinging back slightly on its crank-pin, but recover itself immediately after passing the bell, so as to be free to strike the second bell, and so on, striking each bell repeatedly as it is brought in contact therewith. The mechanism runs easily and without the noise incident to the ordinary hammer-escapement. The bell or bells lying within the path of the hammer constitute an obstruction or obstructions which on being struck by said hammer retard the movement of the train and thereby prolong the time that the hammer will revolve at each winding of the spring, the revolving hammer thus serving as the escapement of the spring-actuated train. I prefer to employ two bells, as with them a pleasanter sound is

produced and the hammer does not remain
straightened out so long by centrifugal force
as when a single bell only is employed, used
in connection with either one or a greater
5 number of bells.

While I have shown a spring and movement-
train for actuating the hammer-shaft, I do not
wish to confine myself to this particular train,
as any ordinary spring-actuated train for re-
volving the hammer-shaft may be employed.
10 I have also represented the holding cross-arm
as upon the same shaft with the revolving
hammer, which is a matter of convenience;
but in some locations of the bell and the clock
15 it may be desirable to arrange said arm on a
separate shaft from that of the hammer; but
such a change will make no difference in the
operation of the latter, it being only neces-
sary that the shaft carrying the holding cross-
20 arm and the shaft carrying the hammer shall
both of them be revolved by connected mech-
anism, so that when the shaft bearing the
holding cross-arm is permitted to revolve the
hammer-shaft will revolve also.

25 I claim as my invention—

1. The combination of the revolving ham-
mer, rotary cross-arm, and the holding and re-
leasing devices with an alarm-clock, substan-
tially as described, and for the purpose speci-
fied.

2. The combination of a spring-actuated
train, holding and releasing devices, the ro-
tary hammer-shaft, the revolving hammer
yieldingly mounted thereon, and an obstruc-
tion lying within the path of said hammer,
35 substantially as described, and for the pur-
pose specified.

3. The combination of two bells, a spring-
actuated train, holding and releasing devices,
the rotary hammer-shaft actuated by said
train and located intermediate said bells, and
the revolving hammer, yieldingly mounted on
said shaft, for striking both bells, substan-
tially as described, and for the purpose speci-
fied.

ALMERON M. LANE.

Witnesses:

JAMES SHEPARD,
JOHN EDWARDS, Jr.