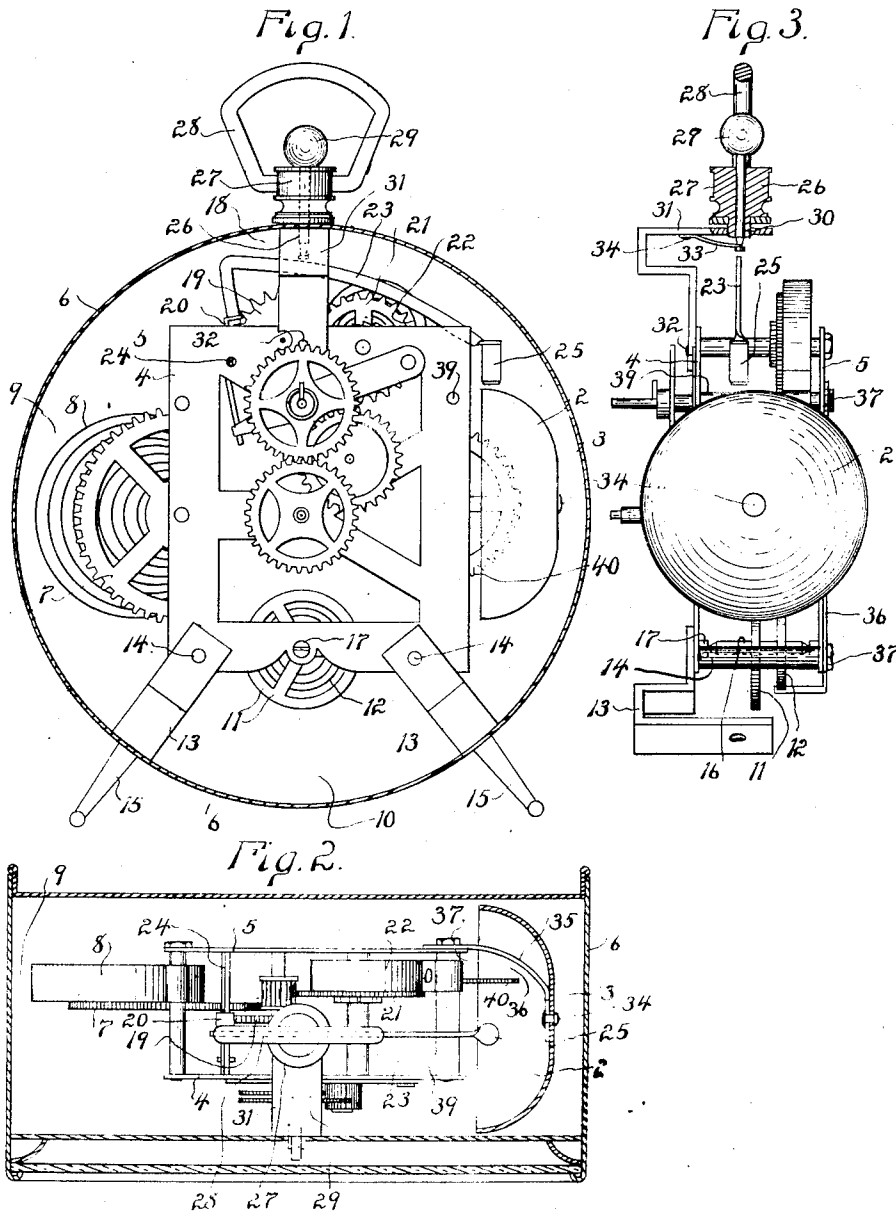


E. E. STOCKTON.
ALARM CLOCK.
APPLICATION FILED JULY 29, 1912.

1,061,023.

Patented May 6, 1913.

2 SHEETS-SHEET 1.



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Fig. 4.

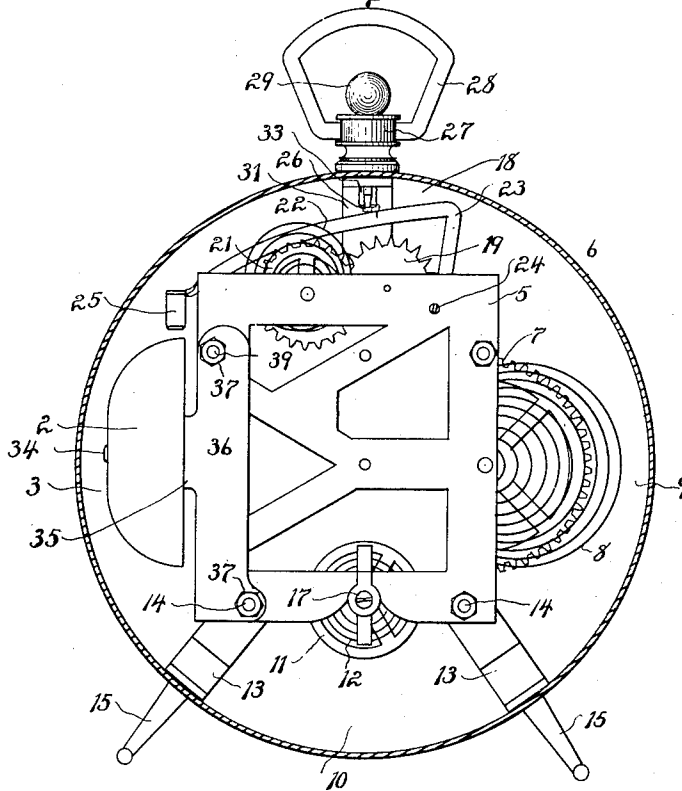
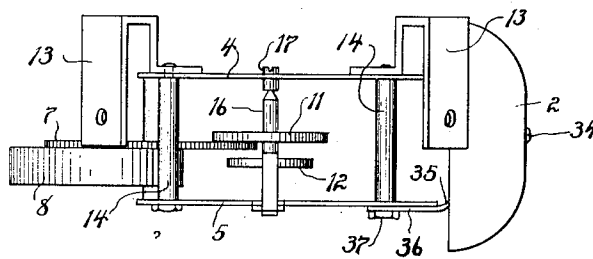


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ALARM-CLOCK.

1,061,023.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed July 29, 1912. Serial No. 712,115.

To all whom it may concern:

Be it known that I, ELMER E. STOCKTON, a citizen of the United States, residing at Bristol, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Alarm-Clocks; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1 a view in front elevation of an alarm-clock constructed in accordance with my invention, with its case in vertical section. Fig. 2 a corresponding plan view with the case and the bell in transverse section. Fig. 3 a detached view of the movement in side elevation. Fig. 4 a view of the clock in rear elevation, with the case shown in vertical section. Fig. 5 a reverse plan view of the movement as removed from the case.

My invention relates to an improvement in that class of small alarm-clocks known to the trade as "nickel alarms" from having been originally supplied to the trade in cylindrical nickeled cases. The bells of these clocks have been variously arranged. The early practice was to mount the bell upon a bell-post rising from the center of the top of the case, and to strike it by a hammer the tail of which vibrated in a slot formed in the top of the case; but clocks with their bells so located were objectionable for the reason that in this exposed position the bell was apt to be displaced with reference to the bell-hammer by the canting of the bell-post. Another objection to these clocks was, that the location of the bell in this position called for a large pasteboard packing box of special construction. Other clocks of the type had their bells arranged centrally below their cases, between their legs, or in a supplemental base. Nickel alarm-clocks with their bells arranged above and below their cases were succeeded by clocks having large bells arranged concentrically at the back of their cases, outside of the same and perforated for the passage of the winding and setting arbors of the clock. Clocks having these large bells, required the use of long winding and setting arbors and special packing boxes, all en-

tailoring extra expense. Furthermore the bells being exposed had to be finished to correspond to the exterior finish of the cases, involving extra expense. Clocks having large concentric bells at the back on the outside of their cases, were followed by clocks having concentric bells located within their cases, either in front or at the rear of their movements. These large concentrically arranged bells, whether placed inside or outside of the case, are expensive, and necessitate the making of cases of extra depth from front to rear.

The object of my present invention is to overcome the objections above recited and produce a nickel alarm-clock adapted by its construction and arrangement of parts to have its bell located within its case without, however, enlarging the same for the purpose, and in such position to secure the best results from the bell-hammer.

With these ends in view, my invention consists in an alarm-clock having certain details of construction and arrangements of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention as herein shown, I locate the bell 2 in the space 3 between the right hand edges of the front and rear movement plates 4 and 5, and the right hand portion of the circular sheet metal band 6 of the cylindrical clock-case. The bell 2 is located edgewise in the space 3 so as to extend, as it were, from front to rear at a right angle to the plane of the movement-plates and parallel with the band 6 of the clock-case. The bell is located entirely outside of the movement, and, as shown, opens inward so that its edge is adjacent to the movement, and therefore in the most advantageous position for coöperation with the striking mechanism thereof, as will be explained later on. As thus arranged, the said bell 2 is located directly opposite the main time-wheel 7 and main time-spring 8, these parts of the time-train of the clock-movement projecting into the space 9 between the left hand edges of the said front and rear movement-plates 4 and 5, and the left hand portion of the band 6. If desired, however, this arrangement might be reversed, and the bell 2 located at the left hand of the movement, and the wheel 7 and spring 8 located at the right hand of the movement. Under either arrangement it will be observed that

the spaces 3 and 9 respectively located between the vertical edges of the movement-plates 4 and 5 and the sides of the band 6 of the case, are measurably utilized. The corresponding space 10 between the bottom edges of the plates 4 and 5, and the bottom portion of the band 6, is reserved for the projecting portion of the balance-wheel 11 and its spring 12, the said wheel and spring being protected in this position by the heavy wrought metal brackets 13 riveted at their upper ends to the projecting front ends of the pillars 14 joining the lower ends of the front and rear movement plates 4 and 5. These brackets stiffen the band 6 and receive the threaded inner ends of the turned peg-like feet 15 which support the case and which are so close together as to make the base 6 relatively stiff between them, and therefore protective of the balance-wheel 11 and spring 12, the most delicate parts of the clock-structure. The balance-wheel staff 16 is pointed at its ends to form pivots which run in screw-studs 17 mounted in the lower edges of the plates 5 and 6 as clearly shown in Fig. 4.

The space 18 between the upper edges of the plates 4 and 5 and the upper portion or top of the band 6 is occupied by the projecting portions of the alarm crown wheel 19, the alarm verge 20, the alarm main wheel 21, the alarm main spring 22, and by the hammer tail 23 which extends horizontally over the movement from left to right, or from right to left according to the arrangement of the alarm bell 2 in the space 3 or in the space 9 as the case may be. As shown, the hammer-tail 23 extends from left to right, its left hand end being secured to the verge-arbor 24, and its right hand end being provided with a hammer 25 located close to the top of the bell 2. In this connection, I must point out that by arranging the bell in the vertical plane on one side or other of the movement, the bell-hammer is aided by gravity in striking it, whereby far better results are secured than when the bell-hammer must be operated in opposition to gravity.

The horizontal arrangement of the hammer-tail 23 as described, brings it into convenient position for its being operated upon directly for stopping the alarm by means of a vertically arranged plunger 26 the lower end of which engages directly with the upper edge of the hammer-tail 23 at a point toward the left hand end thereof. The said plunger 26 is mounted in a ring-head 27 provided, as shown, with an angular ring 28, the upper end of the plunger being provided with a push-button in the form of a ball 29 located within and protected by the said ring 28. At its lower end the ring-head 27 has a concentric threaded stem 30 adapting it to be mounted in the horizontally arranged forwardly projecting upper

arm of a wrought metal bracket 31 corresponding to the brackets 13 before mentioned, and having its lower end fastened to the upper reach of the front movement-plate 3 by a rivet 32. The horizontal upper arm of this bracket 31 fits snugly within the extreme upper portion of the band 5 and rigidly supports the same. The said plunger 26 is controlled in position by a leaf spring 33 the forward edge of which is notched to receive the lower end of the plunger and the rear end of which is secured by a rivet 34 to the lower face of the forwardly projecting arm of the bracket 31, as clearly shown in Fig. 3. It will thus be seen that the upper space 18, which is the space between the upper edges of the plates 4 and 5 and the upper portion of the band 5, is also utilized for the reception of the hammer-tail 23, the lower portion of the plunger 26, the spring 22, and portions of the bracket 31.

Under the described construction and arrangement of parts, I have so utilized the spaces between the edges of the movement plates of the clock-movement and the band 5 of the clock-case as to provide for the location of the bell 2 within the case without enlarging the case either as to diameter or as to depth, and at the same time to so locate the bell 2 as to utilize the action of gravity in the operation of the bell-hammer 25, and also to locate the hammer-tail 23 where it may be operated upon directly for stopping the alarm by means of a plunger 26 mounted in the ring-head 27.

As herein shown, the bell 2 is secured by a rivet 34 to the projecting outer end of a curved arm 35 formed upon the outer edge of a sheet-metal bracket 36 superimposed upon the rear movement-plate 5 and secured by nuts 37 to the threaded, projecting rear ends of the pillars 14 and 39 employed for holding the movement-plates 4 and 5 together. It will be noticed that the bell 2 receives the projecting portion of the third wheel 40 of the time-train which may be of any approved construction, and therefore not necessary to show or describe in detail in order to secure an understanding of my present invention. It will also be noticed that the bell 2 takes advantage of the depth of the case from front to rear, projecting considerably beyond the faces of the front and rear movement plates 4 and 5.

I claim:—

1. In an alarm-clock, the combination with a case having a circular sheet-metal band, of a time-alarm movement located within the said band in position to form an upper space, a lower space, and two side spaces, respectively situated between the said band and the edges of the movement-plates, and a bell located in one of the said side spaces at a point entirely outside of

the movement, with its open side inward and extending edgewise from front to rear across the planes of both of the said plates at a right angle thereto, the hammer-tail 5 of the said time alarm movement being arranged horizontally in the said upper space and terminating in a hammer located directly over the upper edge of the said inwardly opening bell.

10 2. In an alarm-clock, the combination with a case having a circular sheet-metal band, of a time-alarm movement located within the said band in position to form an upper space, a lower space, and two side 15 spaces, respectively situated between the band and the edges of the movement, and a bell located in one of the said side spaces at a point entirely outside of the said movement, with its open side inward and extending edgewise from front to rear across the 20 planes of both of the said plates at a right angle thereto, the other of the two side spaces being entered by the main time-wheel and the main time-spring of the said movement the third wheel of which is housed 25 by the said inwardly opening bell, and the said upper and lower spaces being respectively entered by projecting portions of the balance-wheel and balance-spring, and of 30 the alarm-train.

3. In an alarm-clock, the combination with a case having a circular sheet-metal band, of a time-alarm movement located within the said band in position to form 35 between the edges of its front and rear plates and the said band, two side spaces, and an upper and a lower space, a bell located in one of the said side spaces at a point entirely outside of the said movement, 40 with its open side inward and extending edgewise from front to rear across the planes of both of the said plates at a right angle thereto so as to project in front of the movement and back of the movement 45 parts of which extend into the said upper and lower and side spaces which are thus utilized in economizing space.

4. In an alarm clock, the combination with a case having a circular sheet metal 50 band, of an alarm movement located within the said case and comprising an alarm-mechanism having a hammer-tail arranged horizontally between the upper edges of the movement-plates and the upper portion of 55 the said band, and a plunger located above the said hammer-tail and co-acting directly therewith for stopping the alarm train.

5. In an alarm clock, the combination with a case having a circular sheet metal 60 band, of an alarm-movement located within the said case and having an alarm train,

the hammer-tail of which is arranged horizontally in the space between the upper edges of the movement plates and the upper portion of the said band, a ring-head located in 65 the center of the top of the case, and a plunger mounted in the said ring-head and having its lower end engaged directly with the hammer-tail for stopping the alarm-train.

6. In an alarm-clock, the combination 70 with a case having a circular sheet-metal band, of an alarm-movement located centrally within the said case and having front and rear movement-plates the top, bottom and side edges of which are respectively 75 separated from the said band by side and top and bottom spaces; of a bell arranged edgewise in one of the said side spaces at a right angle to the plane of the movement and with its open side facing the movement, 80 means secured to the movement for supporting the said bell, a balance-wheel extending into the bottom space referred to, a main time-wheel and a main time-spring extending into the other of the two side 85 spaces, an alarm-train portions of which extend into the top space, a hammer-tail actuated by the said train and arranged horizontally in the said top space and carrying a hammer arranged over the top of 90 the bell the edge of which is adjacent to the said movement, a ring-head located centrally above the case, and a plunger mounted in the said ring-head and adapted at its lower end to co-act directly with the ham- 95 mer-tail for stopping the alarm-train.

7. In an alarm-clock, the combination with a case having a circular sheet-metal band, of a time-alarm movement located within the said band in position to form an 100 upper space, a lower space and two side spaces between the band and the edges of the movement-plates, a vertically arranged bracket applied to one of the movement plates, secured to pillars of the movement 105 and having a lateral arm extending outward into one of the said side spaces, and a bell located in one of the said side spaces, receiving and supported by the said arm and extending from front to rear across the 110 planes of both of the said plates at a right angle thereto, the other spaces receiving portions of the movement and so economizing space within the said case.

In testimony whereof, I have signed this 115 specification in the presence of two subscribing witnesses.

ELMER E. STOCKTON.

Witnesses:

A. H. PORTER,
CHAS. B. SIMMONS.