

No. 855,775.

PATENTED JUNE 4, 1907.

W. S. HAWTHORNE.
REPEATING ALARM CLOCK.

APPLICATION FILED MAY 21, 1906.

2 SHEETS—SHEET 1.

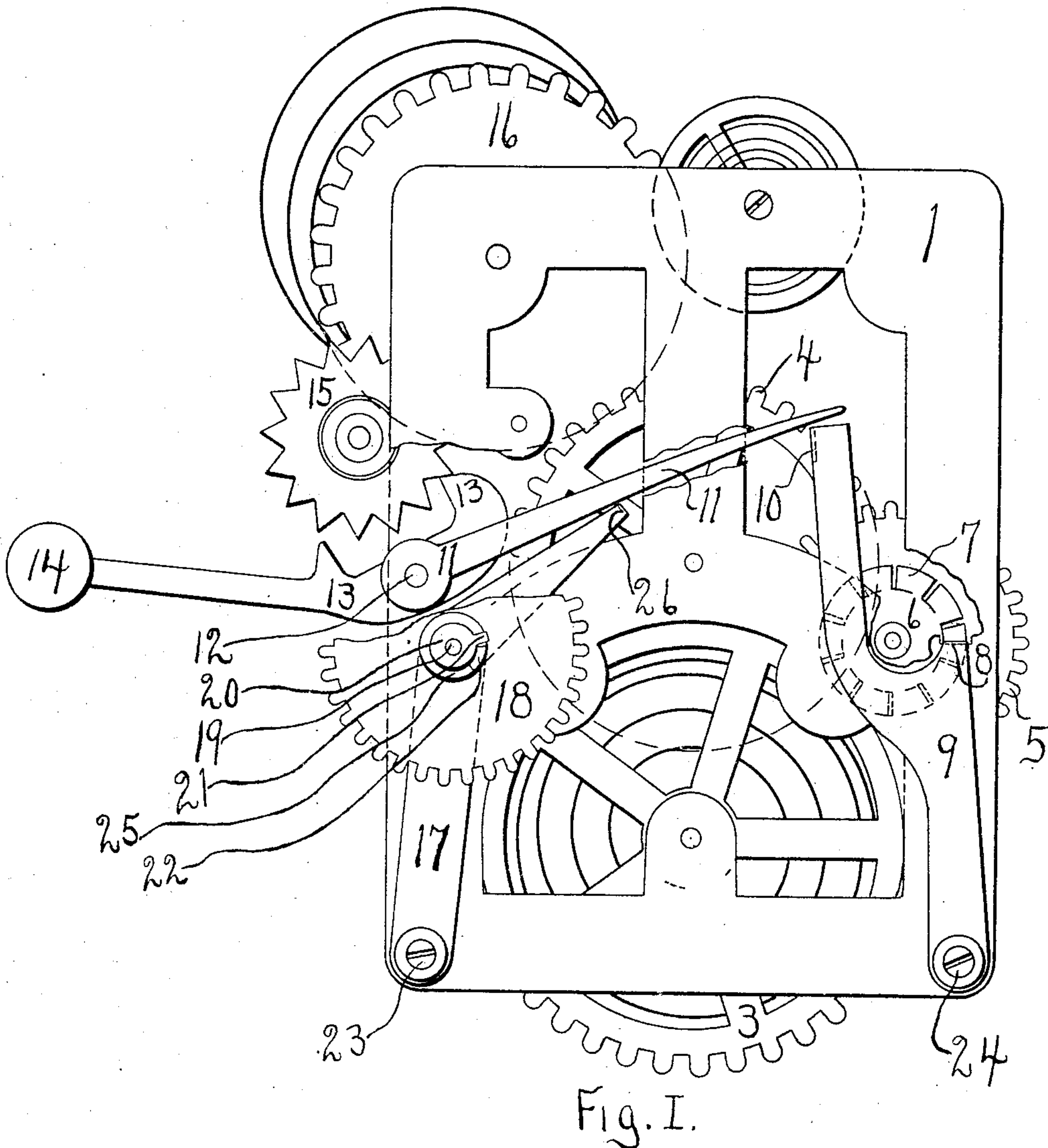


Fig. I.

WITNESSES:

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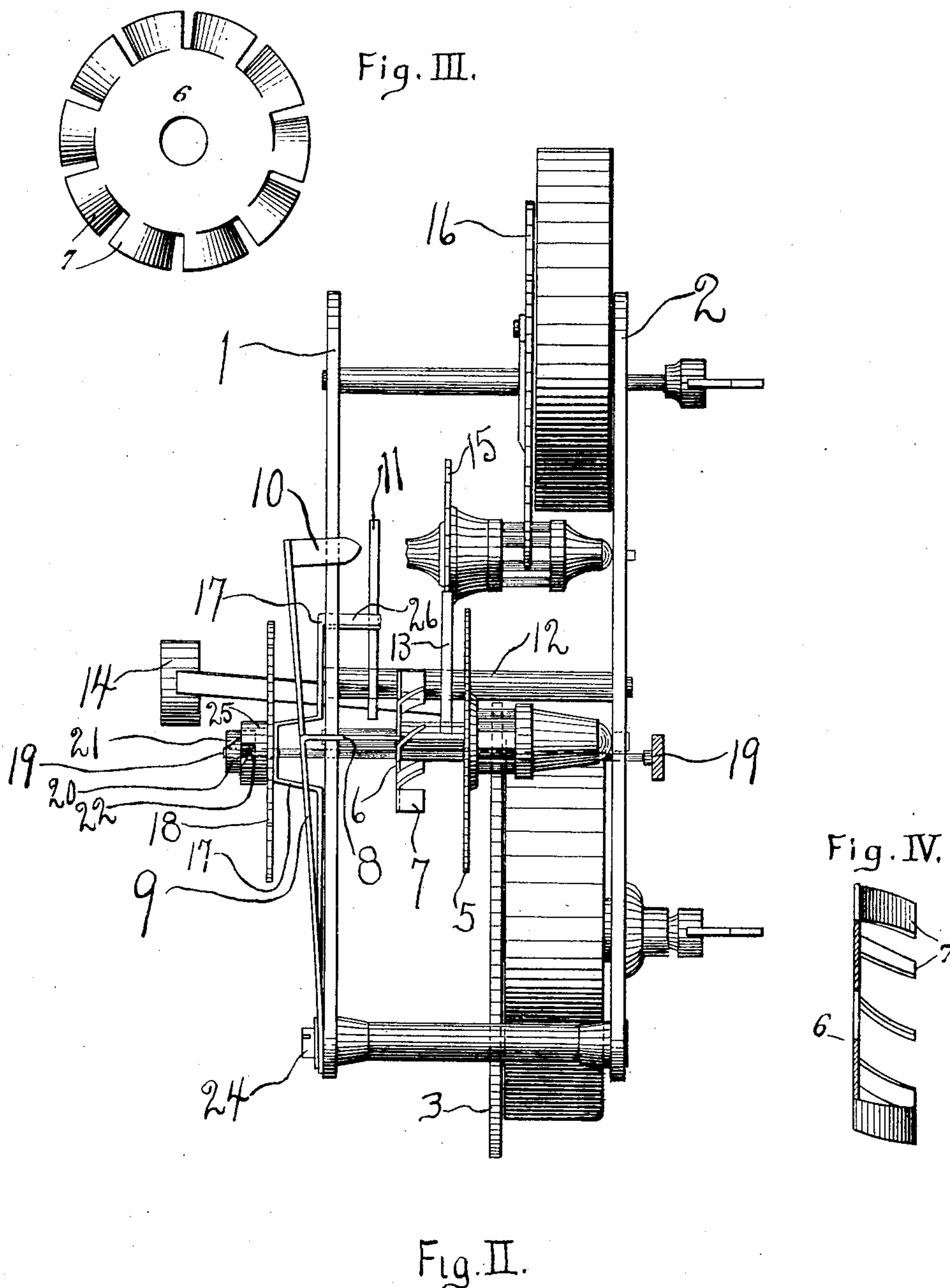
ATTORNEY

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UNITED STATES PATENT OFFICE.

WILLIAM S. HAWTHORNE, OF PERU, ILLINOIS, ASSIGNOR TO THE WESTERN
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REPEATING ALARM-CLOCK.

No. 855,775.

Specification of Letters Patent.

Patented June 4, 1907.

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To all whom it may concern:

Be it known that I, WILLIAM S. HAWTHORNE, a citizen of the United States, residing at Peru, in the county of Lasalle and State of Illinois, have invented a certain new and useful Improvement in Repeating Alarm-Clocks, of which the following is a specification.

My invention relates to an improvement in "repeating alarm clocks," wherein, after the alarm is tripped in the usual manner employed in ordinary alarm clocks, the alarm is sounded intermittently and thus made more effective, as it is shown by experience that it is the starting of the alarm and not the continuous ringing which awakens the sleeper.

With this end in view, the object of my invention is to produce an extremely simple and reliable mechanism for producing this repeating alarm in an ordinary alarm clock, by the use of certain novel devices which are very inexpensive to make but very effective in operation.

In the drawings, Figure I represents a front view of an alarm movement, with parts of the front plate removed, showing the alarm mechanism, the sheet metal cam and spring I employ in my invention and also the usual mechanism employed in ordinary alarm clocks to trip or start the alarm. Fig. II is a side view of the movement showing my invention. Fig. III is a front view of the sheet metal cam. Fig. IV is a side view of the sheet metal cam.

Like figures represent similar parts in all the drawings:

In the drawings, 1 is the front plate of an alarm clock movement, 2 is the rear plate of same, 3 is the main wheel, 4 is the second or center wheel, 5 is the third wheel of the time train. All these wheels are suitably mounted on shafts, which in turn are pivoted in the plates 1 and 2. On the shaft of third wheel 5 is fastened a cam 6, which has a series of tripping points 7 pressed out of the side of its periphery as shown in Figs. III and IV. These tripping points 7 engage with a projection 8 of a spring 9, one end of which is fastened to the front movement plate 1 by means of the pillar screw 24. The other end 10 of spring 9 is formed into a projection from said spring 9 which moves into the path of the hammer

lock 11 and locks same whenever the projection 8 from said spring 9 passes between the tripping points 7 of the cam 6. Said projection 10 of spring 9 is out of the path of the hammer lock 11, leaving the hammer 14 free to vibrate whenever projection 8 of said spring 9 is riding on the tripping points, or the part of the cam lobes 7 which lie in the plane of the cam 6.

Hammer lock 11 is fastened to the hammer shaft 12, as is also the hammer 14, whose verge 13 engages with an escape wheel 15 which is driven by means of alarm main wheel 16, as is usually done in ordinary alarm clocks.

What I have described thus far constitutes the repeating alarm mechanism of my invention. This can only operate when the mechanism usually used in alarm clocks to lock the hammer verge, releases the verge. As aforesaid, I have shown the one generally used in alarm clocks.

20 is the fingered collar which is fastened to the alarm set arbor 19, which alarm set arbor can only be turned by a person to "set" the alarm. The finger 21 of collar 20 rides on the trip cam 25, which is fastened to trip cam wheel 18 and is journaled on the alarm set arbor 19. Trip cam 25 has a depression 22, into which the finger 21 of collar 20 drops. Cam spring 17, one end of which is fastened on the front plate at 23, also has an aperture through which the alarm set arbor passes and which spring, by means of its tension, forces the trip cam against the fingered collar 20. Wheel 18 being connected with the dial train works of the clock, rotates and causes an outward movement of the trip spring 17 when the depression 22 of the trip cam 25 comes directly under finger 21 of collar 20, and an inward movement when the finger 21 of collar 20 rides on the high part or "dwell" of trip cam 25. The upper end of trip spring 17 has a projection 26, which, when the finger 21 of collar 20 rides on the dwell or trip cam 25, crosses the path of hammer lock 11 and locks the verge. When the finger 21 of collar 20 is in the depression 22 of trip cam 25, the projection 26 on trip spring 17 is out of the path of hammer lock 11 and the hammer is free to vibrate and subject to the repeating mechanism above described.

It is evident from the above description of my invention that it is very simple and inexpensive to construct.

I claim:

- 5 1. In a repeating alarm clock, a cam wheel fastened to a shaft of the time train; a spring, one end of which is fastened to the movement plate, said spring having one projection which engages the tripping points of
10 said cam on a shaft of the time train, and an end projection which reciprocates in and out of the path of the hammer lock, thereby respectively locking and releasing the hammer.
- 15 2. In a repeating alarm clock, a sheet

metal cam wheel fastened to a shaft of the time train, said cam wheel having tripping points pressed from its side; a spring, one end of which is fastened to the movement plate, having one projection which engages
20 the tripping points of said cam and an end projection which reciprocates in and out of the path of the hammer lock, thereby respectively locking and releasing said hammer lock.

WILLIAM S. HAWTHORNE.

Witnesses:

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