

G. KERN.
ALARM CLOCK.
APPLICATION FILED SEPT. 27, 1909.

958,930.

Patented May 24, 1910.
2 SHEETS—SHEET 1.

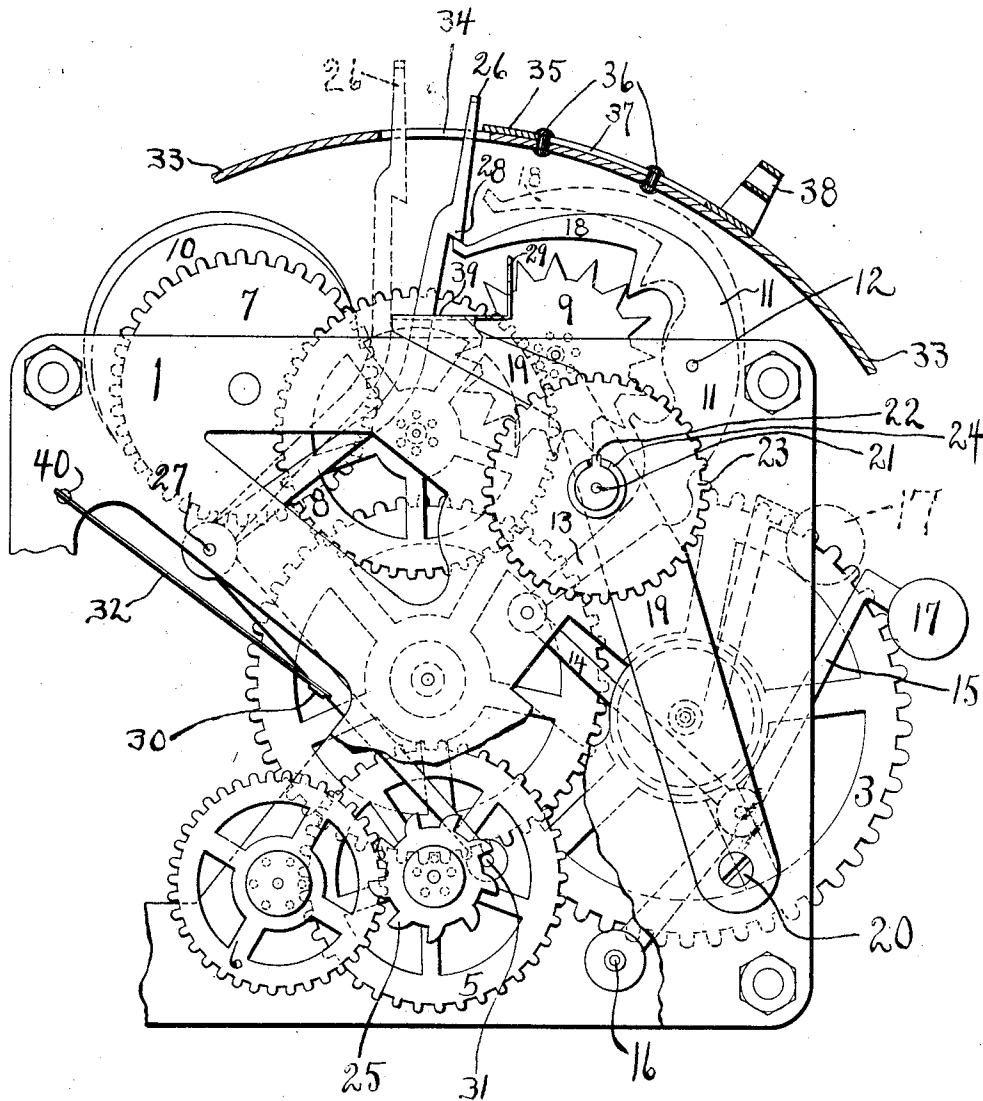


Fig. I.

WITNESSES:

William A. Radeke.
Paul Brauns.

INVENTOR

George Kern

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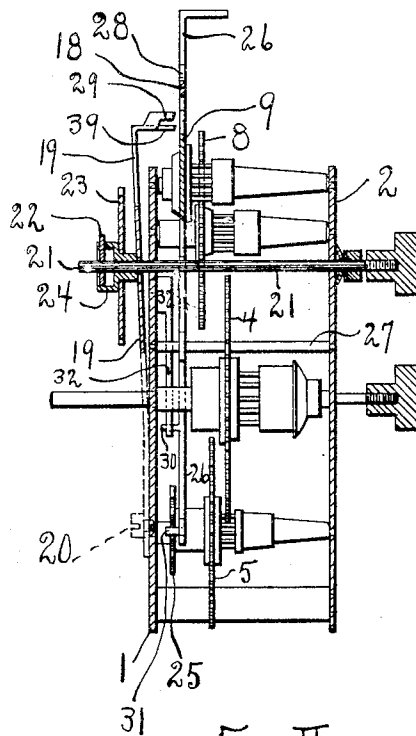
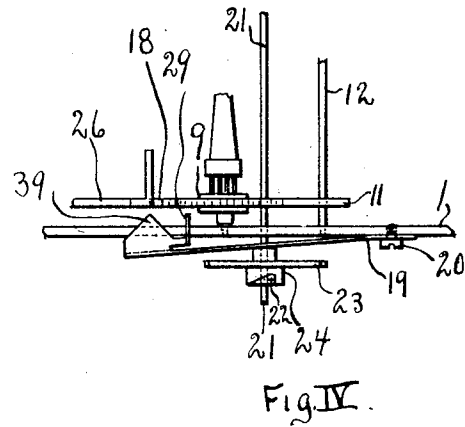
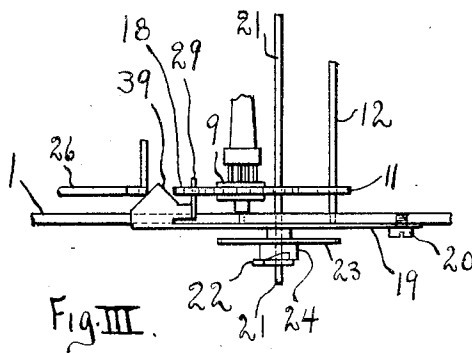
Andrew H. Neureuther.
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2 SHEETS—SHEET 2.



WITNESSES:

William A. Radtke,
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UNITED STATES PATENT OFFICE.

GEORGE KERN, OF PERU, ILLINOIS, ASSIGNOR TO THE WESTERN CLOCK MANUFACTURING COMPANY, OF LA SALLE, ILLINOIS, A CORPORATION OF ILLINOIS.

ALARM-CLOCK.

938,930.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed September 27, 1909. Serial No. 519,808.

To all whom it may concern:

Be it known that I, GEORGE KERN, a subject of the Emperor of Germany, residing at Peru, in the county of LaSalle, State of Illinois, in the United States, have invented certain new and useful Improvements in Alarm-Clocks, of which the following is a specification.

My invention relates to alarm clocks and is an improvement on my alarm clock, shown in Patent No. 904,333 granted to me on November 17th, 1908.

It further consists in certain details of construction and combination of parts, for removing the usual frictional drag of the repeating mechanism from the time train of the clock, and for locking and releasing the alarm escape wheel directly; and has for its object the production of an alarm mechanism having fewer parts, and which is extremely reliable, thereby producing an alarm clock of the class described which will keep accurate time and be very inexpensive to construct.

In the drawings—Figure 1. is an enlarged front view of a clock movement, partly cut away, showing my invention. Fig. 2. is a section at right angles to Fig. 1, along a line through the shaft 21. Fig. 3. is a top view of a clock movement with my invention showing the position of the repeating and manipulating lever when said lever is held out of engagement with the repeating wheel by the time movement. Fig. 4. is a top view of a clock movement with my invention, showing the position of the repeating and manipulating lever when it is in engagement with the repeating wheel.

In the drawings, 1 represents the front plate and 2 the back plate of a movement using my invention. Mounted between these plates on the shafts shown are the time main wheel 3, the center wheel 4, the third wheel 5, the fourth wheel 6, which form a part of the time train, and the alarm main wheel 7 with the alarm main spring indicated at 10, the intermediate wheel 8, and the alarm escape wheel 9, which comprises the alarm train of any ordinary alarm clock.

Mounted on a shaft 12 and engaging with the teeth of escape wheel 9 is the hammer verge 11. The hammer verge 11 has an arm 13 which is pivotally connected to one end of a link 14. The other end of link 14 is pivotally connected to the hammer lever 15,

one of whose ends is journaled on a pin 16 fastened in the plates. The other end of said lever 15 carries the hammer 17. Projecting from the hammer verge 11, is a stop lever 18 of the shape shown, whose function will be described below.

Engaging with the teeth of escape wheel 9 is a projection 29 from a spring 19, which projection 29, when it enters between the teeth of said alarm escape wheel, locks it against rotation, and when drawn out of the path of said teeth, permits the said wheel to rotate and hence to sound the alarm. Through apertures in said spring 19 and the movement plates 1 and 2, passes the handset arbor 21 having a cam with a projecting finger 22 fastened to it. Between said spring 19 and said cam with finger 22, is mounted the trip wheel 23 which carries the trip cam 24 on which said projecting finger 22 rides and causes said trip wheel 23 and spring 19 to move away from and toward the movement plate, and the end of said spring to move out of and into the path of teeth of said alarm escape wheel 9.

Mounted on the shaft of the third wheel 5 is a repeating wheel 25 whose teeth engage with the side projection or pin 31 of a repeating lever 26. Said lever 26 is fastened on a shaft 27 journaled in the plates 1 and 2. The end of said repeating lever 26 has a side projection or pin 31 which engages the teeth of the repeating wheel 25 and a projection 28 near its upper end which engages and locks the stop lever 18 against further motion when said lever 26 is in the position shown in solid lines in Fig. 1, having its lower projection 31 between the teeth of the repeating wheel 25. As repeating wheel 25 rotates, the projection 31 rides one of the teeth and the lever 26 moves toward (but does not reach) the dotted position shown in Fig. 1. and releases the stop lever 18 so it is free to vibrate toward its dotted position shown in Fig. 1. When the lever is in the position shown in solid lines and as just described, the clock is a repeating alarm clock. The alarm releasing spring 19 above mentioned also has another projection 39 which has an inclined face which engages said repeating lever 26 and forces its lower end projection out of engagement with the teeth of the repeating wheel 25 whenever said spring 19 is moved toward the front plate as above described (see Fig. 3). Said repeating lever

26 is again brought into its previous position of engagement with the teeth of repeating wheel 25 whenever the spring 19 is moved away from the front plate. The time movement accomplishes this of itself, for as the trip wheel 23 is rotated by the train of the said time movement, the finger 22 presses the trip cam 24 and spring toward the plate as above described, and the time train is free from the drag of repeating lever 26, which is held in engagement with the repeating wheel 25 by means of a spring 32 which is fastened to the plate 1 at 40 and to projection 30 on said lever. When the lever 26 is held in the position shown by the dotted lines in Fig. 1 by means which will be described below, the alarm will ring continuously or will be a "long alarm," as it is usually designated. The lever 26, when it is desired, can also be held in the dotted position shown in Fig. 1 by the following means, instead of those above described, which are actuated by the time mechanism.

The case 33 which incloses the movement described has an aperture 34 through which the repeating lever 26 projects. Concentrically to and slidably mounted over the aperture on said case is a member 35 having a handle 38, which member is fastened to said

case by means of rivets 36 passing through a slot 37 in member 35. When member 35 is in its extreme right position as shown in Fig. 1, the clock is a repeating alarm clock as above described, and when member 35 is in its extreme left position (bringing the lever 26 to the position shown in the dotted lines in Fig. 1) the clock is a long alarm clock.

From the above description it is evident that I have simplified the construction of my previous alarm clock by this improvement, as at least one of the parts has been eliminated, thus producing an alarm clock which is more easily constructed and less expensive to make.

I claim:—

In an alarm clock, the combination of a time movement and an alarm mechanism, an alarm escape wheel journaled in said alarm mechanism, means actuated by said time movement for locking said alarm escape wheel, said means comprising a spring, and projection on said spring which enters the path of the teeth of said alarm escape wheel.

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Witnesses:

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