July 22, 1924. 1,502,491

A. S. TREGER

ALARM CLOCK MECHANISM

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Fig. 1.

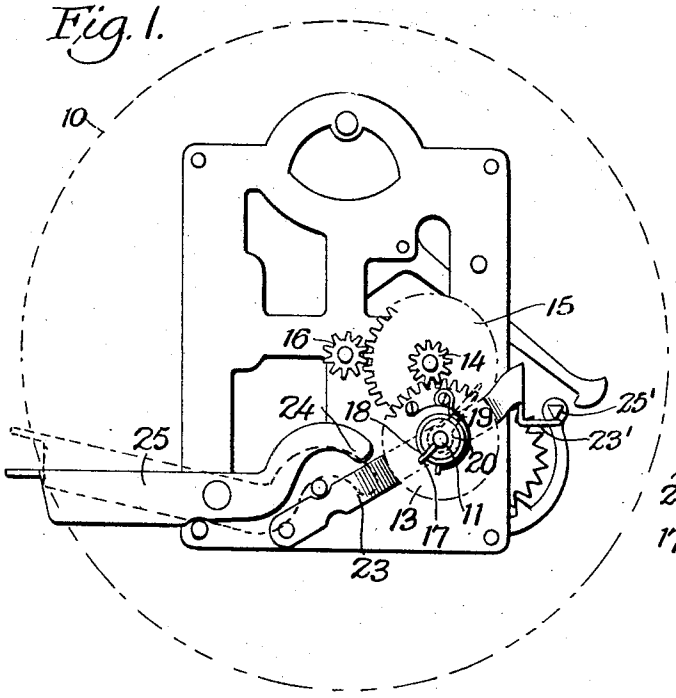



Fig. 2.

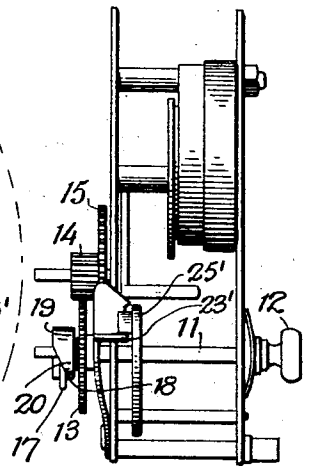



Fig. 3.

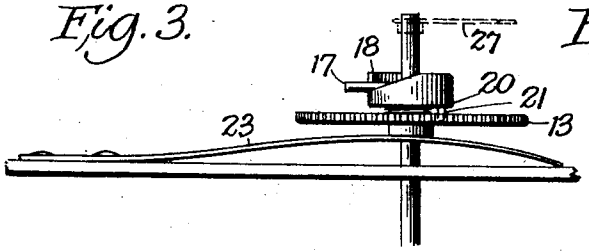



Fig. 4.

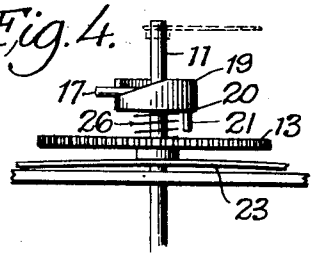
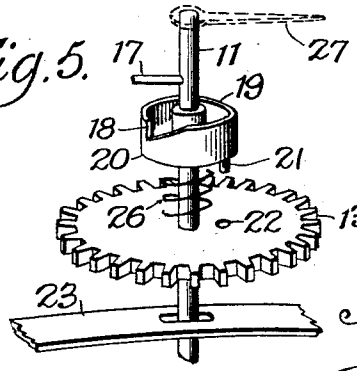



Fig. 5.




Inventor

A. S. Treger

By Wm. J. Moore.

Attorney

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A. S. TREGER

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Fig. 6.

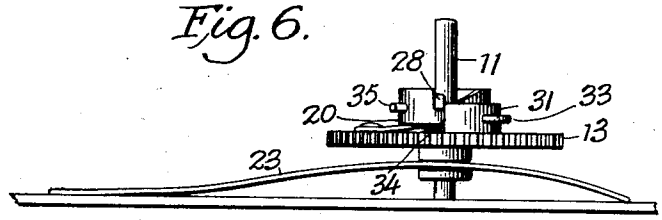



Fig. 7.

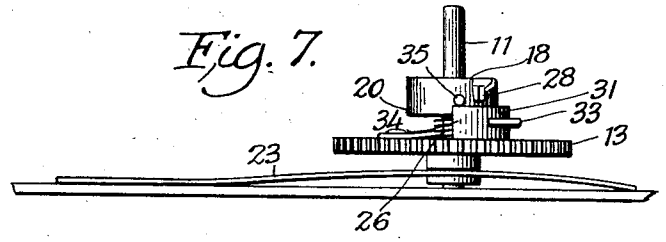



Fig. 8.

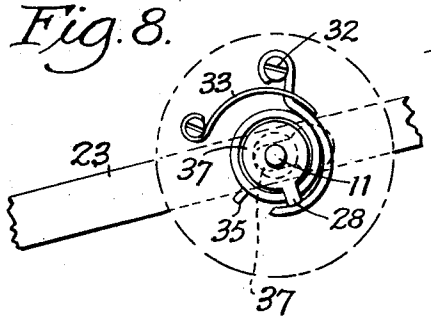
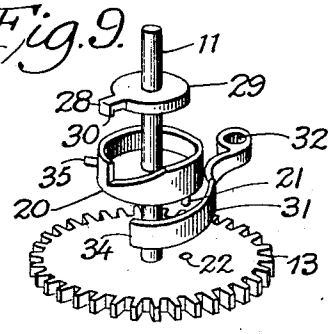



Fig. 9.




Inventor

A. S. Treger.

By Thos. J. Moore

Attorney

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# UNITED STATES PATENT OFFICE.

ARON S. TREGER, OF INDEPENDENCE, KANSAS.

## ALARM-CLOCK MECHANISM.

Application filed December 20, 1923. Serial No. 681,724.

*To all whom it may concern:*

Be it known that I, ARON S. TREGER, a resident of Independence, in the county of Montgomery and State of Kansas, a citizen of the United States, have invented certain new and useful Improvements in Alarm-Clock Mechanism, of which the following is a specification.

This invention relates to clocks and more especially to the alarm mechanism where the works are set to release the hammer for the bell at a certain time.

The object of the invention is to provide means to advance the time for which the release is provided so that if the setting in the original instance is unsatisfactory the period may be extended by separating the parts of the mechanism and advancing the release mechanism without allowing the alarm to be rung.

These and other objects and details of the invention are more fully described in the following specification, set forth in the appended claims and illustrated in the accompanying drawings, wherein:

Figure 1 is a view of part of the clock works with the dial removed and showing the invention applied to the alarm mechanism,

Fig. 2 is a side view of the same,

Fig. 3 is an enlarged side view of part of the alarm mechanism,

Fig. 4 is a similar view with the mechanism adapted for re-setting,

Fig. 5 is a perspective view of the parts separated.

Figs. 6, 7, 8 and 9 are views of a modification.

When an alarm clock is set for a certain hour and it is desired to re-set the same to cover a period of twelve hours or greater in advance, as clocks have heretofore been made, it will be necessary to wait for from one to two hours from the time the clock is to be set, before alarm can be set for the desired hour. For instance, if at 3:00 p. m. it is desired to set alarm for 6:00 a. m., it will be necessary to wait until 7:00, and possibly until 8:00 p. m. before it can be set to make the alarm go off at 6:00 a. m. This entails a loss of time in the waiting for the time when it becomes possible that alarm can be set, which is obviated in the present invention by simply disconnecting certain parts and advancing the hand and the parts immediately connected therewith.

In the drawings the dial 10 is shown as dotted and through the same, at a suitable point, passes the arbor 11 that carries the hand to indicate the hour for which the alarm is set and at the outside of said dial while at the inner end is a knob 12 by which it is manipulated.

The hand carrying arbor 11 has near its outer end a gear wheel 13 rotating every twelve hours and that is driven by the minute hand of the clock and geared down by the gear wheels 14, 15 and 16 and said wheel 13 is connected with the arbor by means of a pin 17 that engages the shoulder 18 of an indent in the flange 19 of a disc 20 and a pin 21 that plays in a hole 22 of the wheel 13.

The wheel 13 is loose on the arbor 11 as is the disc 20 but the wheel and disc are normally secured together by the pin 21 but at times it is necessary to check the disc while the wheel moves. The pin 21 is held in connection by a flat spring 23 that normally elevates the wheel 13 so that the pin 21 is located in the hole 22 as best shown in Fig. 3, but when it is desired to permit of the independent movement of the parts the spring 23 is depressed by the lip 24 of lever 25 and the wheel is forced away from the disc 20 by a week coil spring 26, that encircles the arbor, and disengages the pin 21.

When thus disengaged the arbor may be turned by its knob 12 to set the head 27 to any other hour on the alarm dial that is desired, the pin 17 carrying the disc 20 and pin 21 to a new location around the wheel 13 until the new period is reached and as the hole 22 reaches the pin 21, into which it then drops, connecting the parts and operating the alarm in the usual way.

In operation suppose at noon the alarm mechanism is set for 7 p. m. and before this time it is desired to reset the alarm for 6 a. m. The lever 25 is thrown to the dotted position shown in Fig. 1 and spring 23 is depressed to release pin 21 so that the arbor 11 and hand 27 may be set forward the twelve hours or so that is necessary and the pin 21 carried that circular distance from the hole 22; when the spring 23 is released the wheel 13 is raised to its normal position but hole 22 is free to move around until pin 21 is reached and the parts connected so that the alarm may be shortly sounded.

While Figs. 1 to 5 show that the device as applied to an alarm clock to advance the

time for ringing the alarm to about twenty-two hours in all with the additional elements shown in Figs. 6 to 9 the period may be further advanced to about twenty-four hours.

In the latter case the pin 28 is part of a disc 29 secured to the arbor 11 and has a downwardly extending lip 30 that passes over a semi-circular lever 31 that is pivoted at 32 on the wheel 13 when the lever 25 depresses the spring 23. This lever 31 is forced against disc 20 by a spring 33 under pin 28 just after shoulder 18 fell onto pin 28, by pushing lip 24 on spring 23, and when spring 23 is allowed to elevate wheel 13, lever 31 is carried up with it, its upper flange moving in the path of and under pin 28, thus preventing pin 21 from going back into hole 22 and notch of flange 19 to pin 28, when lip 24 of lever 25 is immediately removed from spring 23; the pin 21 remaining stationary and without contact with the wheel 13 until after lever 31 has passed out from under pin 28, at which time hole 22 will have passed away from pin 21 and outer end 34 having moved upper notch of disc 20 out from under pin 28 as it met pin 25 of disc 20; same lever 31 being pushed aside by pins 28 and 25 after once coming out from under pin 28, permitting the shoulder 18 to drop onto pin 28, thereby elevating the detent at the end of lever 23 and releasing the escapement dog.

The object of lever 31 is therefore, to keep alarm arrested while pin 28 is above notch of flange 19, without which alarm would be released, and to hold pin 28 out of notch of flange 19 from which it cannot escape by itself, and to permit the separation and connection automatically, of disc 20 and wheel 13, thereby permitting two complete revolutions of wheel 13 before alarm is released (24 hrs.) by means of pin 21 and hole 22, the automatic disconnection of which is assured by pin 35, that engages the end 34 of said lever.

The end 23′ of lever 23 arrests the movement of the escapement dog 25′ (Figs. 1 and 2) until the shoulder 18 drops off pin 17 or 28 to permit of the further upward movement of spring 23 and lifting of the detent 23′.

In order to afford positive action on the wheel 13 by the spring 23 the hub 36 of the wheel has a circumferential groove and the spring has a slot for the passage of the arbor that is shaped as a key hole 37 so that when the circular part fits over the hub the elongated slot receives the grooved part of the hub.

This mechanism is adaptable to any type of alarm clock and it is obvious that the necessary alterations or modifications may be adopted for such application without departing from the essential features above explained or from the scope of the appended claims.

What I claim as new is:

1. In alarm clock mechanism, the combination of a hand carrying arbor having a lateral pin, a disc loosely carried by the arbor and engaged by the pin, a gear wheel connected with the clock mechanism, a spring adapted to hold the gear wheel and disc in engagement, and a lever adapted to nullify the action of the spring.

2. In alarm clock mechanism, the combination of an arbor having a knob and an indicating hand and a lateral pin, a gear wheel connected with the clock mechanism, a disc having a notched flange to be engaged by said lateral pin on the arbor, means connecting the gear wheel to the disc, and means for releasing the gear wheel from the disc.

3. In an alarm clock mechanism, the combination of an arbor carrying an indicating hand, a disc loosely carried on the arbor, means for connecting and releasing the disc from the arbor, a wheel geared with the clock mechanism and connected with the disc, and means for disconnecting the wheel from the disc.

4. In an alarm clock mechanism, the combination of an arbor carrying an alarm dial hand, a disc having an indent and loose on the arbor, a pin carried by the arbor and engaging the indent, a gear wheel driven by the clock mechanism and adapted to be coupled with the disc, and a lever adapted to permit the disconnection of the gear wheel and disc.

5. In an alarm clock mechanism, the combination of an arbor for the dial hand and having a lateral pin, a disc loose on the arbor and engaged by the pin, a wheel geared with the clock mechanism, a pin coupling the disc with the wheel, a spring holding the disc and wheel in engagement, and a lever adapted to depress the spring and uncouple the disc and wheel.

6. In an alarm clock mechanism, the combination of a hand carrying arbor, a loose disc on the arbor, a pin on the arbor and adapted to engage the disc, a gear wheel loose on the arbor and having a perforation, a pin on one side of the disc and normally located in the perforation, a light spring adapted to separate the disc and wheel when the latter is released, a flat spring forcing the wheel and disc into contact, and a lever adapted to depress the latter spring and remove it from the wheel.

7. In an alarm clock mechanism, the combination of an arbor for the dial hand, a lateral pin, a disc having an indented flange to be engaged by the said pin, a pin on the lower side of the disc, a gear wheel driven by the clock mechanism and having a hole

for the entrance of the latter pin, a coil spring between the disc and wheel, a flat spring bearing against the wheel to cause it to engage the pin of the disc, and a lever having a lip to depress the flat spring to release the gear wheel.

8. In an alarm clock mechanism, the combination of an arbor for an indicator, a lateral pin on the arbor, a disc loose on the arbor and having an indent into which the pin is received, a spring pressed lever to prevent the entrance of the pin in the indent, a gear wheel carrying the lever and having a perforation, a pin beneath the disc adapted to fit the perforation, a spring adapted to separate the disc and gear wheel, a spring having a detent to engage the escapement dog, and a lever adapted to depress the latter spring.

In testimony whereof I hereunto affix my signature.

ARON S. TREGER.