H. J. TREGANZA.

CLOCK SWITCH.

APPLICATION FILED JUNE 17, 1913.

1,088,381.

Patented Feb. 24, 1914.

Fig. 1.

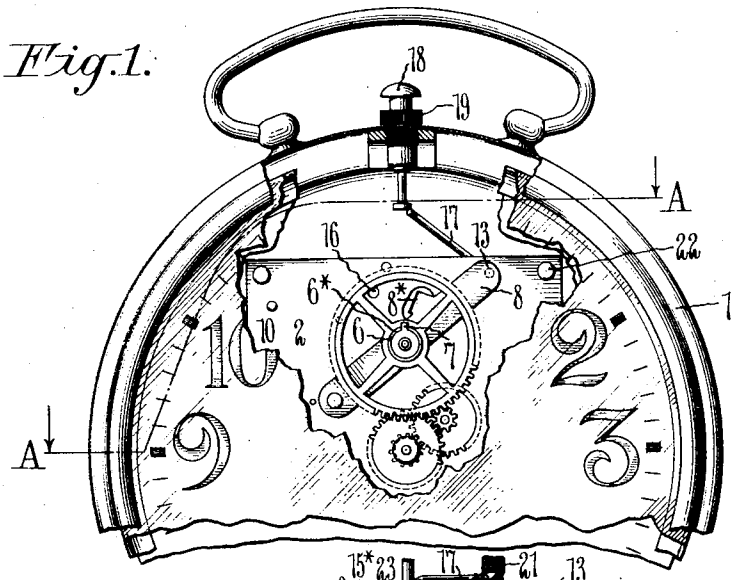


Fig. 6.

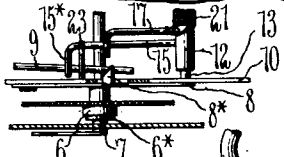


Fig. 2.

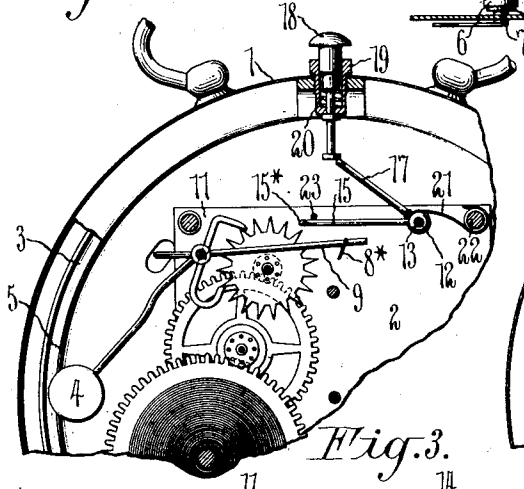


Fig. 3.

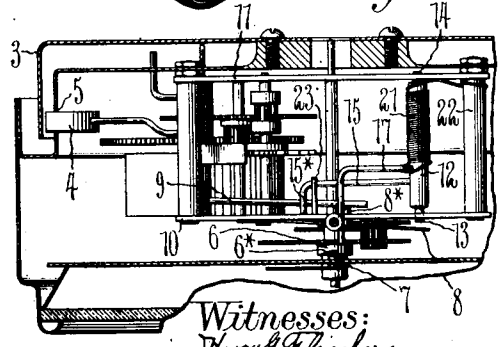


Fig. 4.

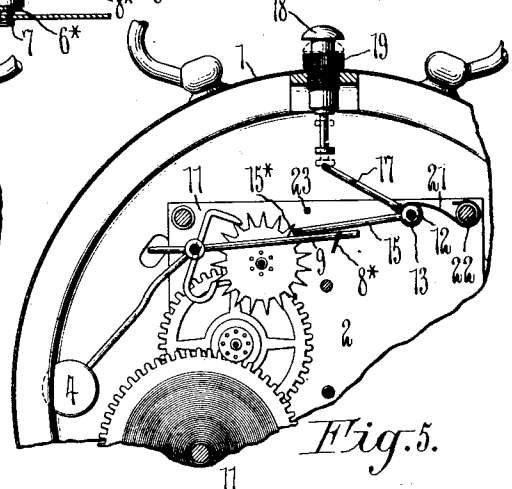
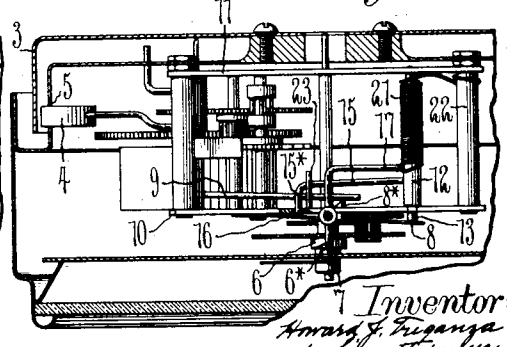


Fig. 5.



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by his attorneys

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UNITED STATES PATENT OFFICE.

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CLOCK-SWITCH.

1,088,381. Specification of Letters Patent. Patented Feb. 24, 1914.

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To all whom it may concern:

Be it known that I, HOWARD J. TREGANZA, a citizen of the United States, and resident of the borough of Brooklyn, in the city and State of New York, have invented a new and useful Improvement in Clock-Switches, of which the following is a specification.

My invention relates to an improvement in clock switches arranged to permit, prevent and advance the striking of the alarm bell, the switch being mounted on the clock case and projecting through and in communication with the alarm bell mechanism.

The object of this invention is to provide a clock switch which will, when tripped to stop the ringing of the alarm bell, automatically permit the alarm mechanism to again ring at the previously determined hour.

A further object is to provide a switch of the above character which will be novel in construction and operation; which will be very simple and inexpensive to manufacture; and which will be mounted on the case and only be operated to accomplish the desired result at the time set for the alarm to ring.

This device is to be used in alarm clocks known as eight day alarm and twenty-four hour alarm clocks.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents in detail a front elevation of an alarm clock with my invention applied thereto, a portion of the face and case being broken away to disclose a part of the alarm bell ringing mechanism, Fig. 2 represents a detail central section through the switch and the alarm bell ringing mechanism when in operation, Fig. 3 represents a section taken in the planes of the line A—A of Fig. 1, the parts shown in their position corresponding to that shown in Fig. 2, Fig. 4 represents a detail central section, the bell ringing mechanism shown tripped by the switch and the switch shown in the operating position in dotted lines, Fig. 5 represents a central section taken in the same planes as Fig. 3 with the parts shown in their position corresponding to that shown in Fig. 4, and Fig. 6 is a detail view showing the hammer tail held against movement by the nose on the spring releasing arm.

The clock case is denoted by 1, its frame by 2, its bell by 3 and its alarm hammer by 4.

The clock movement itself may be of any approved construction and will not, therefore, be illustrated or described further than called for by the immediate purposes of this present description.

The hammer 4 projects through an opening 5 in the case 1 and is operated to strike the bell by the usual mechanism.

The means for releasing the bell striking mechanism comprises the well known rotating cam 6 with its notch 6*, the alarm setting toe 7, the spring releasing arm 8 with its nose 8* and the hammer tail 9, all of which are of the usual form and arrangement and operated in the usual manner.

My invention consists in setting or locking the above mentioned mechanism so that it cannot operate again until twenty-four hours have elapsed or until a complete cycle of the rotating cam 6 has been made. To accomplish this result I mount, between the plates 10 and 11 of the frame 2 an arbor 12 provided with extended journals 13, 14, which permit the arbor to slide laterally in its bearings. The arbor 12 is also provided with an arm 15 bent to form a hook 15* which engages a hole 16 in the plate 10, and an upwardly extended bent arm 17. A plunger 18, mounted in a bearing 19, is screwed or otherwise secured to the case 1 and projects downwardly into the case so as to engage the bent arm 17. A spring 20 is housed in the bearing 19 and around the plunger 18 and serves to keep the plunger normally out of contact with the arm 17. A spring 21 is wound around the arbor 12, one end of which is secured to one of the posts 22 which spaces the plates 10 and 11, and the opposite end engaging the arm 17 tending to lift the arm. This spring 21 is wound around the arbor so that there will be a torsional as well as a longitudinal strain imparted to the arbor which will tend to force the arbor 12 toward the front plate 10 as well as lift the arms 15 and 17. The forcing of the arbor toward the front plate causes the extended journal 13 to project through the plate 10 and engage the spring arm 8. To limit the upward movement of the arms 15 and 17, I provide a stop pin 23 fixed to the plate 10 and in position to engage the arm 15.

In operation, to set the alarm bell ringing the cam 6 is rotated to a position, as shown

in Figs. 2 and 3, the spring releasing arm 8 having forced the arbor 12 with its arms 15 and 17 toward the back plate by pressing on the journal 13, compressing the spring 21 and releasing the hook 15* from its hole 16 in the front plate; the spring at the same time lifting the arm 15 and hook 15* out of alinement with the hole.

When the notch 6* in the cam 6 reaches the toe 7 it will be forced outwardly by the spring releasing arm 8 which will draw the nose 8* from the hammer tail 9 thereby setting the alarm mechanism in motion.

The mechanism for setting the alarm bell ringing thus far explained is of a well known type and not claimed in this invention but I will now proceed to describe the means employed for switching the alarm off and permitting the resetting of the alarm to again ring at a previously determined hour. While the alarm hammer is still vibrating, the plunger is forced down until it engages the bent arm 17 which will, in the further movement of the plunger, rock the arbor 12 and cause the arm 15 and hook 15* to come in contact with the hammer tail 9 and immediately stop the ringing of the bell. The hook 15* in its course downward, while in contact with the hammer tail 9 will come into register with its hole 16, and be forced thereinto by the spring 21; thereby locking the alarm bell ringing mechanism until the spring releasing arm 8 again forces the arbor back and the hook 15* out of the hole 16 in the front plate.

The plunger, when released by the operator, will return to its normal position and the parts remain in the position as shown in Figs. 4 and 5, until again released by the cam toe and spring arm in its cycle of operation.

It will be understood that while I have shown and described a mechanism whereby the alarm will ring every twenty-four hours, it is evident that it may be arranged to ring at any predetermined interval.

What I claim is:—

1. In an alarm clock, a case, a frame secured thereto, an alarm bell ringing mechanism carried by the frame, means slidably mounted in said frame and adapted to engage said bell ringing mechanism for stopping the alarm mechanism and resetting it to again ring at a previously determined time, and a spring actuated plunger secured to the case in position to operate said means when the alarm is liberated.

2. In an alarm clock, a case, a frame secured thereto, an alarm bell ringing mechanism carried by the frame, a laterally slidable arbor mounted in said frame and provided with an arm adapted to engage the alarm mechanism to stop said mechanism and reset it to again ring at a previously determined time and a spring-actuated plunger secured to the case in position to rock said arbor when the alarm is liberated.

3. In an alarm clock, a case, a frame provided with a hole therein, an alarm bell ringing mechanism carried by the frame, an arbor slidably mounted in said frame and provided with an arm adapted to engage said hole in the frame and the alarm mechanism to stop said mechanism and reset it to again ring at a previously determined time, and a spring actuated plunger secured to the case in position to rock the said arbor when the alarm is liberated.

4. In an alarm clock, a case, a frame provided with a hole therein, an alarm bell ringing mechanism carried by the frame, a spring-actuated arbor mounted in said frame and provided with an arm adapted to engage said hole in the frame and the alarm mechanism to stop the said mechanism to reset it to again ring at a previously determined time, and a spring-actuated plunger secured to the case in position to rock the said arbor when the alarm is liberated.

5. In an alarm clock, a case, a frame provided with a hole therein, an alarm bell ringing mechanism carried by the frame, a spring-pressed plunger secured to said case, a spring-actuated arbor slidably mounted in said frame and provided with a pair of arms, one arm in position to be rocked by the spring plunger and the other arm adapted to engage said hole in the frame and the alarm mechanism to stop the said mechanism and reset it to again ring at a previously determined time.

6. In an alarm clock, a case, a frame provided with a hole therein, an alarm bell ringing mechanism carried by the frame, a spring-pressed plunger secured to the case, a spring-actuated arbor having journals slidably mounted in and extending beyond the frame, one journal in position to be engaged by the said alarm mechanism, said arbor provided with a pair of arms, one arm in position to be rocked by the plunger, the other arm adapted to engage said hole in the frame and the alarm mechanism to stop the said mechanism and reset it to again ring at a previously determined time, and a stop pin fixed in the frame to arrest the upward movement of the arbor.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this sixteenth day of June, 1913.

HOWARD J. TREGANZA.

Witnesses:
JOSEPH SCHWEIZER,
JOHN G. KEALE.