March 10, 1931. M. D. S. RICCIO 1,795,507

WATCH OR CLOCK THERMOSTATIC FIRE ALARM

Filed March 6, 1930

Fig. 1

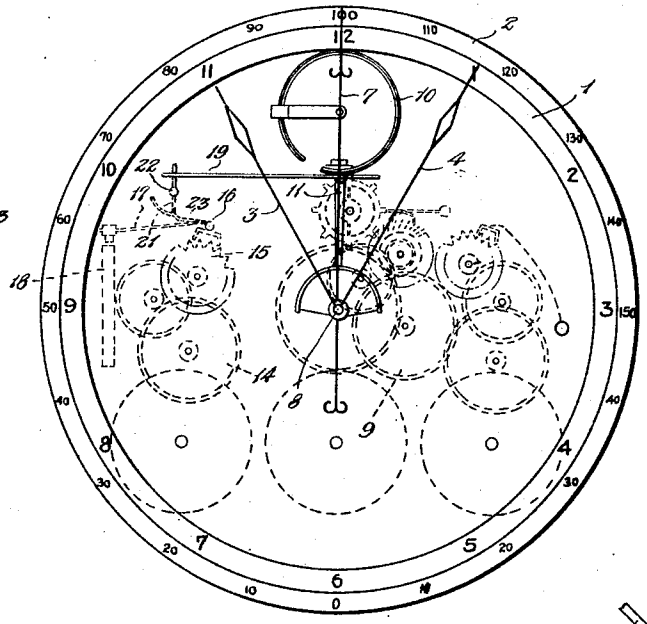


Fig. 7.

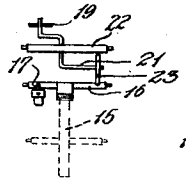


Fig. 4

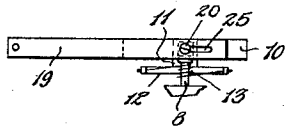


Fig. 8.

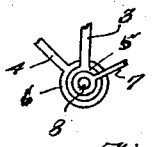


Fig. 5.

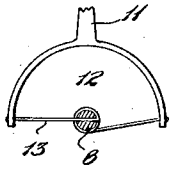


Fig. 2.

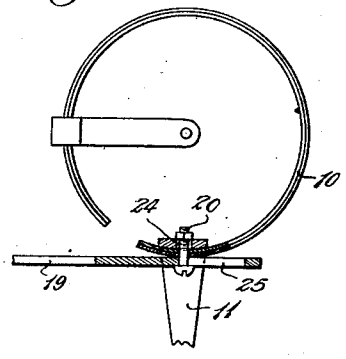


Fig. 6.

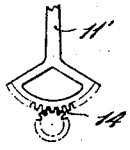
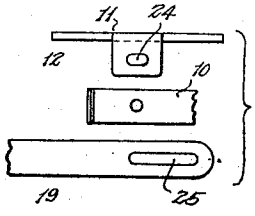


Fig. 3.



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UNITED STATES PATENT OFFICE

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WATCH OR CLOCK THERMOSTATIC FIRE ALARM

Application filed March 6, 1930. Serial No. 433,755.

The invention has relation to a combined thermometer, time-piece, and fire alarm, and also to a combined thermometer and time-piece, having for an object certain improvements therein.

The invention consists in the novel construction and combinations of parts as set forth in the appended claims.

In the accompanying drawings illustrating certain embodiments of the invention:

Figure 1 is a front view of an alarm clock having the invention applied thereto.

Figure 2 is a detail sectional view of the thermostat and parts connected thereto.

Figure 3 is an exploded view of the parts connected to the thermostat by the set screw.

Figure 4 is a detail bottom plan view of the arm connected to the thermostat by the set screw, and parts adjacent.

Figure 5 is a detail fragmentary front view of the means connecting the thermostatic hand shaft and the thermostat.

Figure 6 is a similar view of a modification.

Figure 7 is a detail side view of the trigger lever for setting off the alarm mechanism and parts operating said lever and operated thereby.

Figure 8 is a detail front view of the hour and minute and thermostatic hands.

In these drawings the numeral 1 designates the dial of a time-piece or clock, and 2 a concentric thermostatic dial, the hour and minute hands 3 and 4 being carried by concentric tubular shafts 5 and 6, and the thermostatic hand 7 being carried by a shaft 8, concentric with the shafts 5 and 6.

At the rear of one side portion of the dial there is provided the mechanism or gear train 9, of the time-piece.

The thermostat 10 is provided with a depending arm 11 the lower end of which has an operating connection 12 with the shaft 8 of the thermostatic hand 7, said connection in one form of the invention being a flexible wire or string 13 connecting the bifurcated ends of said arm and wound around the shaft 8, and in the other form of the invention as in Figure 6 being a gear connection 14.

The invention so far described will admit of the use of a thermostatic dial upon any time-piece, large or small, said dial being concentric with the ordinary dial for time.

The invention also contemplates the use of an alarm which is provided for by the alarm gear train 14 in rear of the other side portion of the dial as shown, although it may have other arrangement, said train including an escapement device 15, the pawl of which is mounted upon shaft 16, said shaft carrying a strike or hammer lever 17, which upon release of the alarm train will cause the hammer to repeatedly strike the bell or gong 18 and sound the alarm. Obviously a whistle or siren may be substituted for the bell alarm within the spirit of the invention.

The escapement device is controlled by an arm 19 of the thermostat extending at right angles to the depending arm 11 thereof and connected thereto by the same set screw 20, said arm 19 having a perforation thereof engaged by a trigger lever 21 upon a shaft 22, the tail arm of said trigger lever normally depressing a lever 23 fast to shaft 16 of the escapement pawl and causing engagement of said escapement pawl with the escapement wheel of the device 15 to hold the alarm gear train in check.

Upon operation of the thermostat under the influence of a sufficient degree of heat, the depending arm 11, thereof will adjust the thermostatic hand around the dial, and the horizontal arm 19, thereof will operate the trigger lever 21 to release lever 23 and shaft 16 of the escapement pawl, thereby setting off the alarm.

Correction of readings of the thermostatic hand can be made by loosening set screw 20, whereupon depending arm 11, the upper end of which has a slot 24 engaged by said set screw, may be adjusted to adjust the thermostatic hand relative to its dial, and the set screw tightened up again.

The alarm train may be set off at different temperatures by adjustment of the horizontal arm 19 of the thermostat to adjust the trigger lever, so that a longer throw of said lever is required, to set off the alarm, this adjustment being made also by loosening set screw 20 and adjusting said arm 19, which has a slot 25, en-

gaged by the stem of the screw 20, after which the set screw is tightened up again.

I claim:—

1. In a combined time-piece and thermometer, concentric shafts carrying index hands for hours and minutes, and a thermostatic index hand, mechanism having driving connection with the hour and minute hands, a thermostat having operating connection with the thermostatic hand, and a single dial having graduations for hours and minutes and concentric thermostatic graduations.

2. In a combined time-piece, thermometer and alarm, concentric shafts carrying index hands for hours and minutes and a thermostatic index hand, mechanism having driving connection with the hour and minute hands, a thermostat having operating connection with the thermostatic hand, a single dial having graduations for hours and minutes and concentric thermostatic graduations, an alarm train, the shaft of the escapement pawl of which is provided with a check lever and an alarm control lever, and a trigger lever engaging said check lever normally and having operating connection with said thermostat to release the check lever and the alarm train.

3. In a combined time-piece, thermometer and alarm, concentric shafts carrying index hands for hours and minutes and a thermostatic index hand, mechanism having driving connection with the hour and minute hands, a thermostat having operating connection with the thermostatic hand including a depending arm, a single dial having graduations for hours and minutes and concentric thermostatic graduations, an alarm train the shaft of the escapement pawl of which is provided with a check lever and an alarm control lever, and a trigger lever engaging said check lever normally and having operating connection with said thermostat including a horizontal arm to release the check lever and the alarm train, and means for adjusting the depending arm connection with the thermostat to adjust the thermostatic readings of the related index hand and for adjusting the horizontal arm connection with the thermostat to vary the temperature at which the alarm shall be set off including a single set screw.

In testimony whereof I affix my signature.

MICHAEL D. S. RICCIO.