Sept. 15, 1931. J. S. BIRTCIEL 1,823,722

FIRE ALARM

Filed April 15, 1930

Fig. 1.

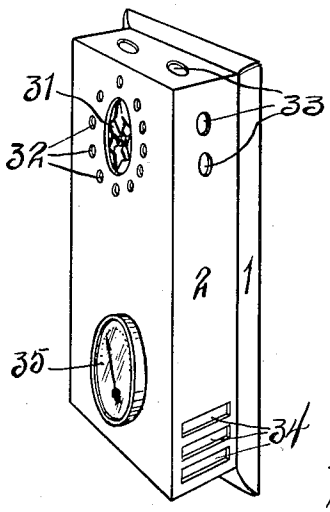


Fig. 4.

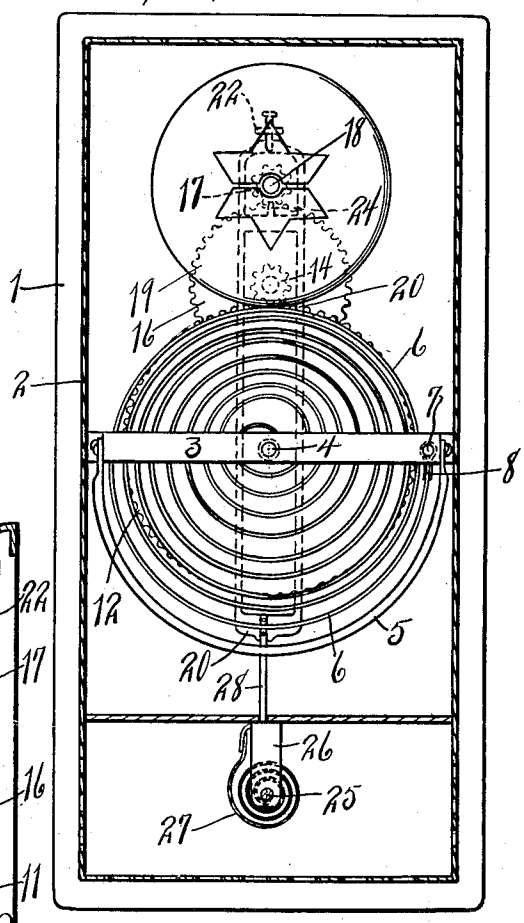


Fig. 3.

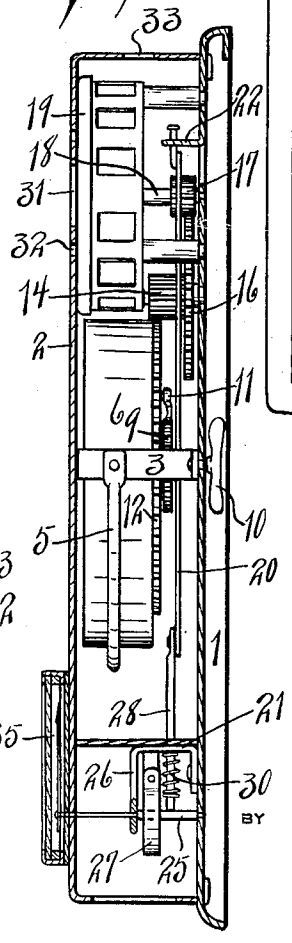
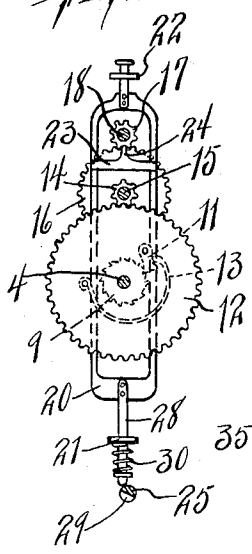


Fig. 2.



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Patented Sept. 15, 1931 1,823,722

UNITED STATES PATENT OFFICE

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FIRE ALARM

Application filed April 15, 1930. Serial No. 444,415.

My invention relates to fire alarms and more particularly to automatic fire alarms; and the object is to provide a simple apparatus which is simple in construction and operation and which will operate positively and give an alarm which will have sufficient volume and duration to give ample warning. Other objects and advantages will be fully explained in the following description and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings which form a part of this application.

Fig. 1 is a perspective view of a fire alarm box.

Fig. 2 is an inverted plan view of the gear mounting.

Fig. 3 is a side of the apparatus.

Fig. 4 is a plan view.

Similar characters of reference are used to indicate the same parts throughout the several views.

This invention is provided with a casing 1 and a cover 2 therefor. A power member is provided with a bearing yoke 3 which is riveted or bolted to the casing or platform 1. A power and winding shaft 4 is journaled in the platform 1 and in the yoke 3. A guard member 5 is rigidly attached to the yoke 3. A barrel spring 6 is rigidly connected to the yoke 3 by a post 7 which is projected through the yoke 3 and the base or platform 1. The spring 6 is bent about the post 7 and lapped upon itself and riveted at 8. The other end of the spring is connected to the power shaft 4 and made rigid therewith. A key 10 is rigidly connected to the shaft 4 for winding the same. A ratchet wheel 9 is rigidly mounted on the shaft 4 and a dog 11 is pivotally mounted on the main drive wheel 12 for locking the wheel 12 against backward turning. A spring 13 normally holds the dog 11 in engagement with the ratchet wheel 9. The dog 11 rides over the teeth of the cog wheel 12 in the forward turning for winding purposes. The wheel 12 remains, when the spring 6 has been wound, until the wheel performs its function in operating the sounding device.

The wheel 12 meshes with and drives a pinion 14 which is rigid with a shaft 15 and drives said shaft. A cog wheel 16 is rigid with shaft 15 and is driven by this shaft. The wheel 16 meshes with and drives the siren operating pinion 17 which is rigid with a shaft 18. The siren 19 is of ordinary type and the rotor of the siren 19 is rigid with the shaft 18. Provision is made for normally locking the siren against operation. A yoke 20 is slidably mounted in the machine. The yoke 20 slides on the hub of wheel 17 and in a guide 21 and in a guide 22. The yoke 20 has a cross bar 23 and a locking pin or lug 24 carried thereby. The lug 24 is adapted to project between two teeth of the pinion 17 to prevent the turning of this pinion prematurely. The siren 19 is put under tension and locked until the lug or pin 24 is withdrawn from the pinion 17. The siren will then commence the alarm.

The releasing of the siren is under thermostatic control. A shaft 25 is journaled in the base or casing 1 and in a yoke 26 which is attached to the base 1. A spiral or barrel spring 27 is attached to the shaft 25 and to the yoke 26. The yoke 20 has a rod 28 which is adapted to engage the shaft 25. The shaft 25 has a cut-out 29 adjacent to the rod 28. The siren is locked against operation normally by the rod 28. When the yoke 20 is moved in the direction of the siren 19, the lug 24 will engage the pinion 17 to prevent the same from turning. At the same time, the end of the rod 28 will come to the position shown in Fig. 3 and rest against the shaft 25. This locks the siren against operation. When the spring 27 is heated it will commence to expand and it will rotate the shaft 25 and continue to turn the shaft 25 until the flat side 29 is turned far enough to let the rod 28 pass the shaft 25. A spring 30 on the rod 28 will then project the end of rod 28 past the shaft 25 and at the same time release the siren by drawing the lug 24 out of engagement with the pinion 17. The siren will then commence to sound the alarm.

The cover 2 has an opening 31 to let air

pass into the siren or sounding device and has a plurality of small openings 32 for the escape of sound. The cover 2 has other openings 33 for escape of sound. The cover 2 has slots 34 in the end adjacent to the thermostatic control for circulation of heated air about the thermostat.

A thermometer 35 is mounted on the cover 2 for indicating the temperature of the room or inclosure.

The thermostatic control devices are graduated according to the thermometer 35, that is, the thermostat is set so that it will be operated at a predetermined temperature indicated by the thermometer.

Various changes in the sizes, construction, proportions, and arrangement of the several parts may be made without departing from my invention.

I claim:

1. A fire alarm comprising sounding devices, a train of gearing, means operatively connecting said gearing to said sounding devices, resilient operating means for driving said gearing, means for creating tension in said gearing ready for operating said sounding devices, a frame provided with a lug engaging one member of said gearing means for holding said gearing against operation until a predetermined temperature is reached, and thermostatic control devices for releasing said holding means.

2. A fire alarm comprising sounding devices, a train of gearing operatively connected to said sounding devices, a power spring for actuating said gearing, means for creating tension in said spring, a yoke provided with means locking said gearing against operation until a predetermined temperature is reached, and thermostatic control devices for releasing said locking means.

3. A fire alarm comprising sounding devices, a train of gearing operatively connected to said sounding devices, a power spring for actuating said gearing, means for creating tension in said spring, means for preventing backward turning of said gearing, a yoke provided with means for locking said gearing against operation until a predetermined temperature is reached, thermostatic control devices for releasing said locking means, and a casing for inclosing said operating parts provided with vent openings therein.

In testimony whereof, I set my hand, this 11th day of April, 1930.

JOSEPH S. BIRTCIEL.