March 6, 1934. H. J. BLAKESLEE 1,949,856

FIRE ALARM

Filed May 22, 1933

Fig. 1.

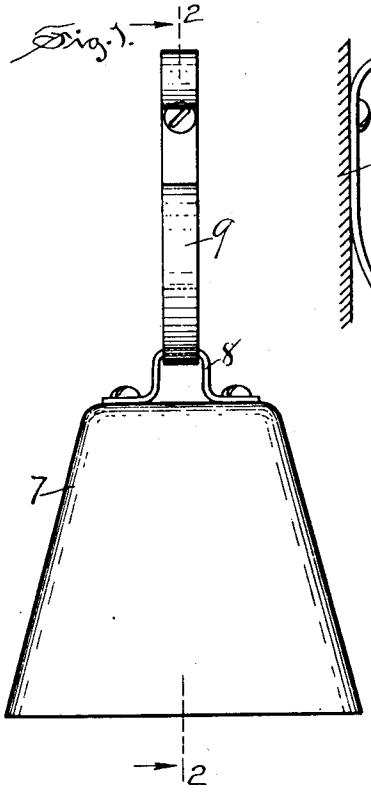



Fig. 2.

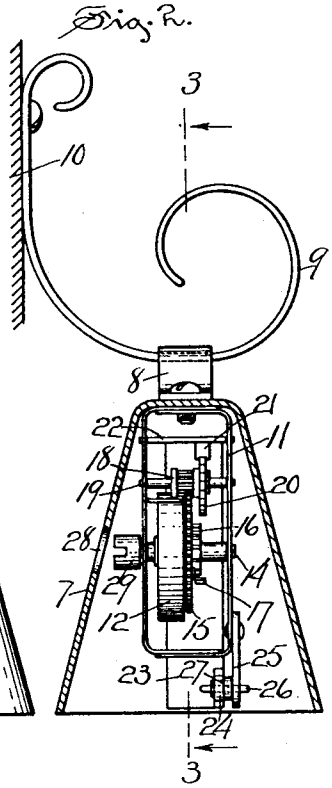



Fig. 3.

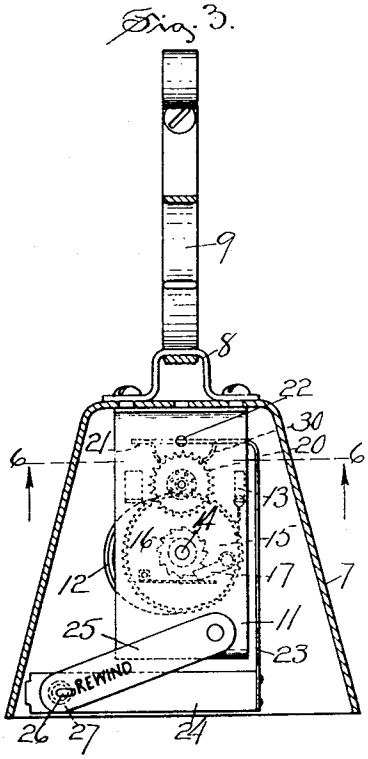



Fig. 4.

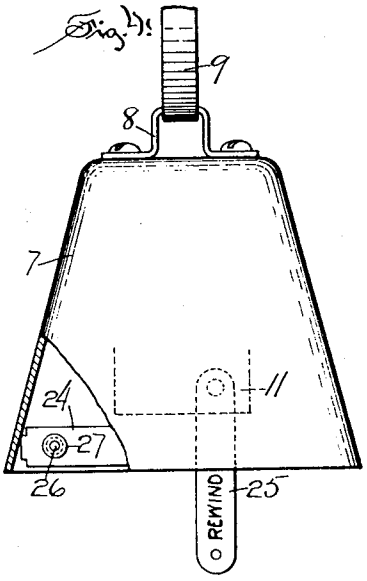



Fig. 5.

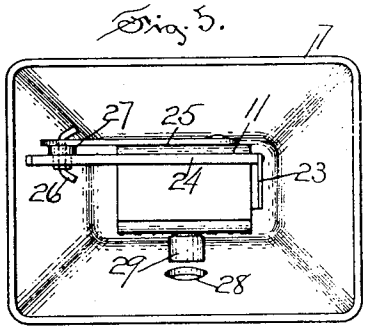
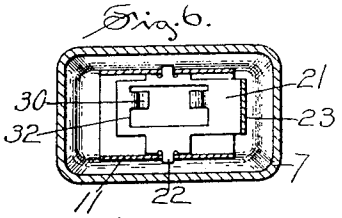



Fig. 6.




INVENTOR
Henry J. Blakeslee
By
Harry R. Williams
ATTORNEY

Patented Mar. 6, 1934 1,949,856

# UNITED STATES PATENT OFFICE

1,949,856

## FIRE ALARM

Henry J. Blakeslee, Marlboro, Conn., assignor to The States Company, Hartford, Conn., a corporation of Connecticut

Application May 22, 1933, Serial No. 672,104

6 Claims. (Cl. 116—106)

This invention relates to devices for audibly signaling abnormal temperature conditions in the vicinity of their location.

The object of the invention is to provide an inexpensive, efficient and ornamental self-contained unitary device, capable of being easily secured in exposed positions in homes, public buildings, hotels, hospitals, factories, etc., which will unfailingly act to warn the occupants in case a fire starts in its vicinity, and which will indicate its inoperative condition.

This object is attained by providing a sound emitting member, such as a bell, siren or horn, and mechanical means, for example a helical spring, tensioned to cause the said member to sound an alarm, which means is normally retained inactive but in operative condition by a link and thermal element that is fusible at the desired temperature.

In the accompanying drawing,

Fig. 1 is a front view of a preferred embodiment of the invention in operative condition, the sound producing element being in the shape of a bell supported by a hanger.

Fig. 2 is a vertical section through the bell on the plane indicated by the dotted line 2—2 on Fig. 1, and showing the alarm attached to a wall.

Fig. 3 is a vertical section on the plane indicated by the dotted line 3—3 on Fig. 2, with the parts in operative relation.

Fig. 4 is a front view with the bell partially broken away and the indicator in its released position, showing that the thermal element is disrupted and that the mechanism must be reset.

Fig. 5 is a bottom view of the device.

Fig. 6 is a horizontal section on the plane indicated by the dotted line 6—6 on Fig. 3.

In the preferred form illustrated the sound emitting element is a shell made in the shape of a conventional "cow bell" 7 with a loop 8 that is suspended from a hanger 9 which may be easily secured by a screw or nail to a wall 10.

A frame 11 is secured within the bell, preferably to the top thereof, and an actuating train is supported by this frame. This train comprises a coiled spring 12 that has one end secured to a stud 13 which projects from the frame, and the other end secured to the arbor 14 which is rotatably mounted in the frame and has a gear 15 loosely mounted thereon and a winding ratchet 16 secured thereto. The ratchet is engaged by a pawl 17 pivotally attached to the gear 15 and spring pressed into contact with the ratchet.

The gear 15 meshes with a lantern pinion 18 that is secured to a spindle 19, rotatably mounted in the frame 11, and that has a scape wheel 20. A pallet 21, secured to an arbor 22 mounted in the frame, has teeth 30 operatively engaged with the scape wheel. An arm 23 extends from the pallet down the side of the frame 11, and a hammer 24 that extends underneath the frame, is secured to the lower end of this arm.

A link 25, which is pivoted to the frame 11, in its free end has a hole adapted to register with a hole in the end of the hammer 24. A thermal connecting element 26 is passed through these holes so that the link will hold the hammer from movement as long as the thermal element is intact. The thermal element may be composed of a wire of metal which will fuse at a comparatively low temperature, and its ends may be bent over to prevent its dislocation.

In order to ensure the maximum sensitiveness of the thermal element 26 it is desirable to have the link 25 made of heat non-conducting material and to insert a non-conducting bushing 27 in the hole in the hammer 24, to obstruct conduction of heat from the thermal element to the hammer and connected parts.

A hole 28 is made through the back wall of the shell or bell 7 to facilitate a circulation of air from the open end of the shell through said opening and eliminate the existence of a dead air space within the shell. The free circulation of air into the mouth of the bell causes the full effect of the air temperature without the bell to be immediately communicated to the fusible element 26, and although concealed the fusible element is therefore fully exposed to the air conditions existing without the shell. The hole also provides for the insertion of a key into engagement with the head 29 of the arbor 14 for winding the motive spring.

The pallet 21 in the particular form shown herein is stamped from a comparatively thin plate of metal, with the teeth 30 pressed from opposite margins of a hole 32 cut in the plate, and the arbor 22 is formed by lugs that extend from opposite edges of the plate, as shown in Fig. 6.

When "set" for operation the spring 12 is wound and the parts occupy the relative positions shown in Fig. 3. Upon disruption of the fusible element 26 the hammer 24 is released and the striking train is permitted to act under the force of the spring, the hammer 24 vibrating and striking repeated blows against the inside of the bell 7. Upon disruption of the fusible element the link 25, which may be marked with any desired legend, swings downwardly to the position shown in Fig. 4, and signifies that the mechanism is inoperative and should be reset.

The link 25 may be composed of some readily inflammable material so that in the event that a connector should be replaced by a wire that would not readily fuse, the burning of the lever would release the hammer and permit the alarm to sound.

The invention claimed is:

1. An alarm which comprises a sound emitting member, mechanically operated means for causing said member to emit sound, a thermal element which normally retains said means under tension and that upon disruption allows said means to become active, and indicating means joined with said mechanically operated means by the thermal element and made visible upon disruption of the thermal element.

2. An alarm which comprises a sound emitting member, a spring, means adapted to be actuated by said spring, a hammer adapted to be vibrated by said means for causing said member to emit sound, a link bearing a legend, and a thermal element normally connecting said link and hammer and that upon disruption allows said hammer to become active and said link to become visually exposed.

3. An alarm which comprises a sound emitting member, a spring, means adapted to be actuated by said spring, a hammer adapted to be vibrated by said means for causing said member to emit sound, a combustible link, and a thermal element normally connecting said link and hammer and that upon disruption allows said hammer to become active and said link to become visually exposed.

4. An alarm which comprises a sound emitting shell, mechanically operated means encased by said shell, for causing said shell to emit sound, a thermal element which normally retains said means under tension and that upon disruption allows said means to become active, and an indicator normally within the shell, said indicator being attached to said mechanically operated means by the thermal element and released therefrom and becoming visible upon disruption of the thermal element.

5. An alarm which comprises a sound emitting member, a spring, means adapted to be actuated by said spring, a hammer adapted to be vibrated by said means for causing said member to emit sound, a link, a thermal element normally connecting the link and hammer and normally retaining said hammer with the spring under tension, and heat non-conducting means insulating said thermal element from the hammer.

6. An alarm which comprises a sound emitting shell that has an open bottom and a draft opening in the upper part thereof, mechanically operated means for causing said shell to emit sound, and a thermal element which normally retains said means under tension and that upon disruption allows said means to become active.

HENRY J. BLAKESLEE.