

(No Model.)

W. BRIGHT.
OVEN THERMOMETER.

No. 586,329.

Patented July 13, 1897.

Fig. 1.

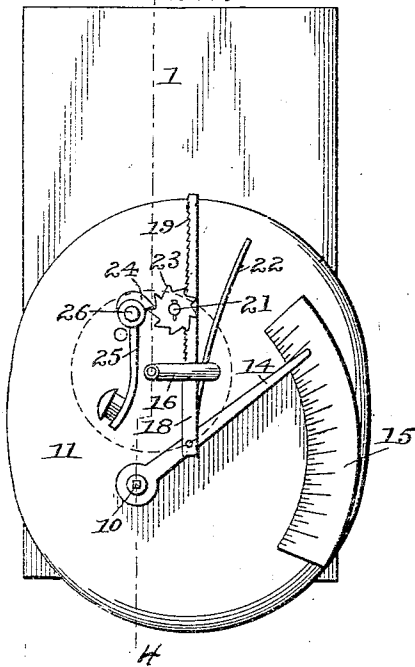


Fig. 2.

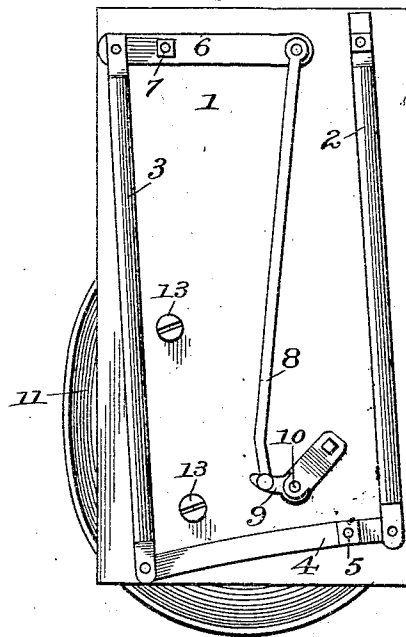


Fig. 3.

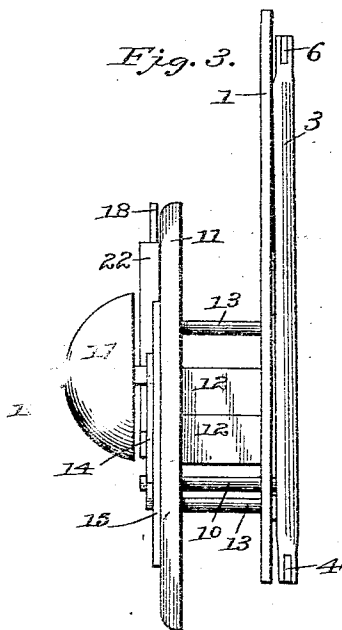
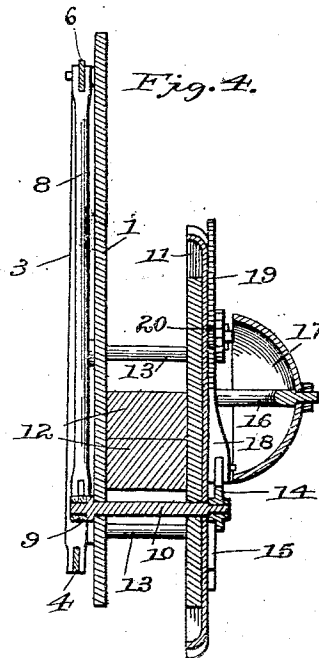


Fig. 4.



Witnesses
E. G. Cuckee
K. C. Hare.

Inventor,
William Bright,
by John Wedderburn
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM BRIGHT, OF PLATEAU, UTAH, ASSIGNOR OF ONE-HALF TO W. H. SCHOCK, OF SAME PLACE.

OVEN-THERMOMETER.

SPECIFICATION forming part of Letters Patent No. 586,329, dated July 13, 1897.

Application filed June 6, 1896. Serial No. 594,558. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BRIGHT, a citizen of the United States, residing at Plateau, in the county of Sevier and State of Utah, have invented certain new and useful Improvements in Thermostats; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in heat-indicators and alarms, the object of the same being to provide a simple and convenient device for indicating the rise of temperature in a stove and for ringing an alarm when a burning heat has been reached on the inside or oven of the stove and to continue the ringing of the alarm while the temperature continues to rise. The device depends for its action upon the difference in the expansion of different metals; and it consists of a plate of iron or other suitable metal adapted to be placed on the inside of the stove, and a pair of bars of aluminium or other metal having a higher coefficient of expansion than the iron, one of said bars being pivoted to the inside of said plate of iron and connected to the outer end of a lever fulcrumed in said plate and the other connected at one end to the other arm of the lever and at its other end to a second lever fulcrumed on the inner side of said plate, which second lever is connected through a rod or pitman with a laterally-extending arm on a shaft extending outwardly from said plate and carrying an index-finger or pointer moving in close relation to an indicating-dial on the face of the device. The said index-finger or pointer has connected to it a rod having a toothed or rack face, which is held in engagement by a spring with a toothed wheel loosely mounted on a shaft projecting outwardly from the dial-face, and has connected to it a ratchet-wheel which engages a lug or projection upon a gong-hammer, so that when said index-finger is operated by a rise of temperature said ratchet-wheel will be brought into contact with the gong-hammer and an alarm will be sounded.

The invention also consists in other details of construction and combinations of parts,

which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 represents a face view of my improved indicator and alarm with the gong shown in dotted lines. Fig. 2 is a bottom plan view of the same. Fig. 3 is an edge view. Fig. 4 is a section on the line 4 4 of Fig. 1.

Like reference-numerals indicate like parts in the different views.

My improved indicator and alarm is made up of a plate of iron or other suitable metal 1 and a pair of bars 2 3 of aluminium or other metal having a higher coefficient of expansion. The bar 2 is pivoted at one end to the inner side of the plate 1 and is connected at its outer end to one arm of a lever 4, fulcrumed at 5 in the plate 1, and the bar 3 is connected at one end to the other arm of said lever 4 and at its other end to a lever 6, fulcrumed at 7 in the plate 1. The other arm of the lever 6 is connected through the rod or pitman 8 to a laterally-projecting arm 9 upon the inner end of a shaft 10, projecting outwardly from the plate 1 to the outer face of a dial-plate 11. The plate 1 and the dial-plate 11 are separated from one another by blocks 12 and are suitably connected together by bolts 13 13. The outer end of the shaft 10 has connected to it an index-finger or indicating-arm 14, which moves in close relation to a dial 15 on the plate 11.

Extending outwardly from the dial-plate 11 is a post 16, upon the upper end of which is secured a gong 17, and pivoted to the index-finger 14 is a bar 18, having teeth 19 upon one edge, which are adapted to engage a toothed wheel or pinion 20, Fig. 4, upon a shaft 21, extending outwardly from the dial-plate 11. The said rod 18 is held in close contact with the pinion 20 by a spring 22, which bears against the post 16, upon which the gong 17 is mounted. The pinion 20 has secured to it a ratchet-wheel 23, which is adapted to engage a lug or projection 24 upon the gong-hammer 25, which is pivoted to a shaft 26, extending outwardly from the dial-plate 11, and upon the rotation of said ratchet-wheel said hammer will be operated to strike the gong 17.

The operation of my device is as follows: The inner portion thereof—that is, the plate 1 and the bars 2 3—is inserted on the inside of the stove in which the temperature is to be regulated. Upon a rise of temperature in the stove an expansion of the plate 1 and the bars 2 3 will be effected. By reason, however, of the greater expansibility of the metal of which the bars 2 3 are composed the said bars will lengthen out to a greater degree than the plate 1. This action causes, through the levers 4 and 6 and the rod or pitman 8, a rotation of the shaft 10, carrying the index-finger or pointer. The number of degrees which the temperature rises will be thereby indicated by the pointer 14 on the dial 15. When the indicating-pointer 14 is turned, however, it carries with it the bar 18, and by the engagement of the latter with the pinion 20 the ratchet-wheel 23 is turned and trips the hammer 25, bringing it rapidly in contact with the gong 17 as long as the temperature continues to rise. The parts are so adjusted that the pointer will begin to move and the gong to ring only when a burning temperature has been reached on the inside of the stove. As soon as this occurs the alarm is given and the drafts of the stove can be regulated to shut off the heat.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a device of the character set forth, the combination with a plate of metal, of a pair of bars of a metal having a higher coefficient of expansion acting in engagement with said plate, one of said bars being pivoted to said plate at one end and connected at the other end to one arm of a lever fulcrumed in said plate, and the other bar pivoted to the other arm of said lever and to a second lever fulcrumed in said plate, a dial-plate secured to said main plate and separated slightly therefrom, a shaft mounted to rotate in said plates, an arm upon the lower end of said shaft, a rod or pitman connecting said arm and the arm of said second lever, an index-finger or pointer secured to the other end of said shaft, a gong secured to the upper side of said dial-plate, a hammer therefor, pivoted in said plate and having a lug upon its rear end, a ratchet-wheel adapted to engage said lug, a pinion to which said ratchet-wheel is secured, and a rod or bar having teeth along one edge adapted to engage said pinion and pivoted to said index-finger, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM BRIGHT.

Witnesses:

I. C. ANDERSEN,
L. G. LONG.