

(No Model.)

A. P. HARLAND.
OVEN THERMOMETER.

No. 555,697.

Patented Mar. 3, 1896.

Fig. 1.

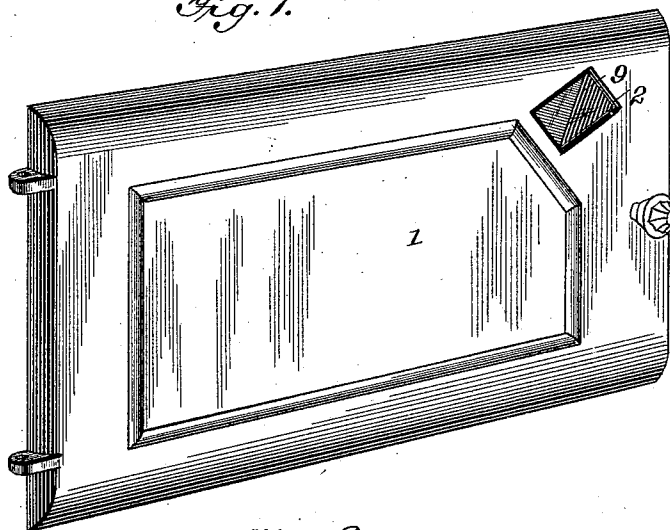


Fig. 2.

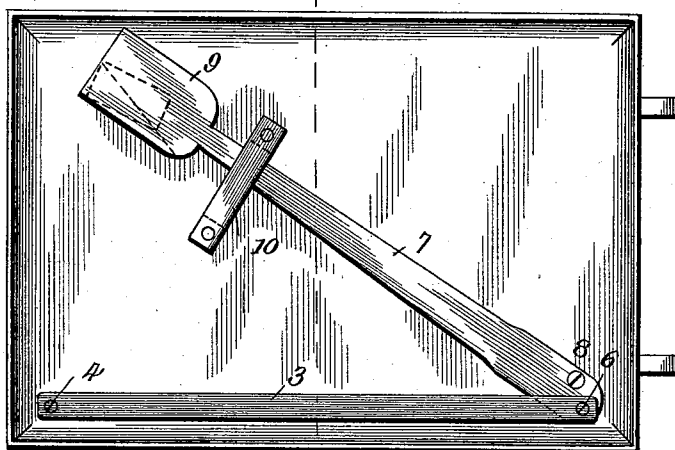


Fig. 4.

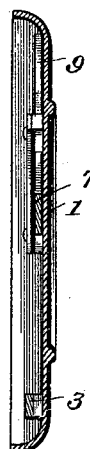


Fig. 3.

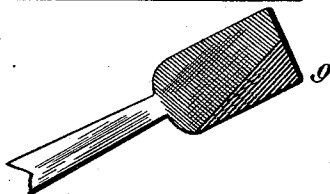


Fig. 5.

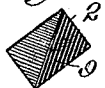


Fig. 6.

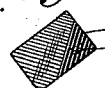


Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.



Inventor

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UNITED STATES PATENT OFFICE.

ALLEN P. HARLAND, OF FLORENCE, ALABAMA.

OVEN-THERMOMETER.

SPECIFICATION forming part of Letters Patent No. 555,697, dated March 3, 1896.

Application filed August 2, 1895. Serial No. 557,947. (No model.)

To all whom it may concern:

Be it known that I, ALLEN P. HARLAND, a citizen of the United States, residing in Florence, in the county of Lauderdale and State of Alabama, have invented certain new and useful Improvements in Oven-Thermometers, of which the following is a specification.

My invention relates to oven-thermometers, being particularly designed and adapted for use with domestic ovens.

Various devices have been provided and patented for indicating the internal temperature of ovens, but none of them, so far as I am aware, have come into use to any considerable extent. They have not recommended themselves either to the manufacturer or to the buyer, because in the first place they have been burdened with too great a multiplicity and complexity of parts, which not only renders them expensive to manufacture but also causes them to be viewed with disfavor by the ordinary housewife or servant. In the second place, devices hitherto constructed for this purpose have been provided with parts—such as dials, pointers, and the like—projecting beyond the surface of the stove or oven. This entails additional work to keep the stove bright and clean and the projecting parts are in the way and are liable to be broken off or injured.

My invention therefore has been devised for the purpose of providing an oven-thermometer in which the number of parts shall be reduced and simplified, and the cost of manufacture correspondingly lessened, and also one in which there shall be no parts projecting outside the surface of the oven.

My invention therefore consists in the construction, combination, and arrangement of the parts devised for the above ends, hereinafter fully specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a front view of an oven-door provided with my improved device. Fig. 2 is a rear view. Fig. 3 is a front view of the indicator. Fig. 4 is a section taken on the line 4 4 of Fig. 2, and Figs. 5 to 10 represent diagrammatically a series of signals or pictures presented at the opening in the stove-door by the indicator in

its very varying positions corresponding to changes of internal temperature.

Referring to the drawings, 1 represents an oven-door provided with an opening 2.

3 denotes a bar which is pivoted at one end 4 to the inside of the oven-door, and which consists of a piece of metal very sensitive to changes in temperature. The other end of this bar is pivoted at 6 on the indicator-bar 7, pivoted on the oven-door at 8, and carrying at its end the plate or indicator 9, which normally covers the opening 2 in the oven-door.

In order to hold the plate or indicator 9 up against the opening 2, I provide a guide-strip 10, which is secured upon the side of the door so as to press upon the bar 7.

The plate or indicator 9 is made considerably larger than the opening 2, so that only a small portion of the indicator shows at the opening, and thus by observing the proportionate amounts disclosed of two or more contrasting colors upon the face of the indicator, the heat of the interior of the oven may be ascertained at a glance with sufficient accuracy for practical purposes.

I have found the arrangement of contrasting colors which is illustrated in the accompanying drawings to be very convenient in practice. In Fig. 3 the face of the indicator is shown as covered with two contrasting colors, as blue and red. In the normal position, as shown in Figs. 1 and 5, the line of demarcation between the two colors will extend diagonally across the opening in the oven-door. As the temperature increases, the bar 3 expands, moving on its pivot 8 the indicator-bar, and so carrying the indicator across the opening 2. Thus as the heat increases, more and more of one of the colors, as red, appears at the opening, indicating to the operator the heat of the oven as observed from previous experience.

It is desirable that the distinguishing marks upon the face of the indicator, as they are seen through the opening in the oven door, should be broad and large, so as to be easily recognizable at a glance without close inspection, and inasmuch as the device will often be used by ignorant and illiterate persons it will be found that a series of two or more

contrasting colors will be more satisfactory than a number of figures or words indicating the actual temperature of the oven. The selection of signs to be placed upon the face of the indicator is, however, purely arbitrary.

Should the heat become excessive, the indicator will be moved thereby to such an extent as to permit air to pass through the opening 2, if the latter is left unglazed as I have shown it, and the indicator will thus act as a valve to reduce the temperature within the desired limits.

The opening 2 may be formed in the oven-door at the time of casting the same, so that it will be seen that my improved device is extremely simple and inexpensive. Moreover there are no projecting parts liable to get in the way of the operator. There is no additional labor entailed in keeping the stove bright and clean, and the appearance of the contrasting colors at the opening 2 somewhat enhances the attractiveness of the stove.

While I have shown my device as applied to a door of the oven, which I have found in practice to be preferable, it is evident that the apparatus may also be applied to any other of the outer sides of the oven, as desired.

An important advantage which I have had in mind in devising a simple, economical, and commercially successful oven-thermometer has been so to construct the apparatus that it could be applied to all existing forms of stoves and ovens without changing the patterns of the oven-door or the part to which it is to be applied. Manufacturers will not regard favorably the introduction of a new device when it entails a complete change in their existing patterns and the large outlay of capital consequent thereupon. It is readily seen that my improved device meets this requirement of economy, the only change in the casting being the formation of the opening 2 in the oven-door. This is readily effected by placing a suitable core in the mold without any change of the pattern. In this respect I believe my invention to be superior to devices of a similar character hitherto provided, as all prior devices, so far as I am aware, entail a change

of the pattern of the oven-door or other part to which the thermometric apparatus is to be applied.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a side of an oven or other heated chamber, said side having an opening 2, of an indicator adapted to completely cover said opening moving across said opening and provided with a distinguishing mark appearing through said opening when covered by said indicator as aforesaid and serving by its position relatively to said opening to indicate the internal heat of the oven, and operative means whereby a change of temperature of the oven communicates said motion to said indicator.

2. The combination with a side of an oven or other heated chamber, said side having an opening 2, of an indicator adapted to completely cover said opening moving across said opening, provided with contrasting colors, the aspect of which at said opening when covered as aforesaid serves by their relative proportion to indicate the internal heat of the oven, and operative means whereby a change of temperature of the oven communicates said motion to said indicator.

3. The combination with a side of an oven or other heated chamber, said side having an aperture, of an indicator moving across said aperture and normally closing it against the admission of air, said indicator also acting as a valve or regulator to admit air in the extreme portion of its travel, said indicator being provided with a distinguishing mark appearing through said opening when closed as aforesaid, and serving by its position relatively to said aperture to indicate the internal heat of the oven, and operative means whereby a change of temperature of the oven communicates said motion to said indicator.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ALLEN P. HARLAND.

Witnesses:

FRANCIS M. WRIGHT,
O. F. JOHNSON.