

W. GLAESER.
PYROMETER.
APPLICATION FILED FEB. 5, 1917.

1,339,952.

Patented May 11, 1920.

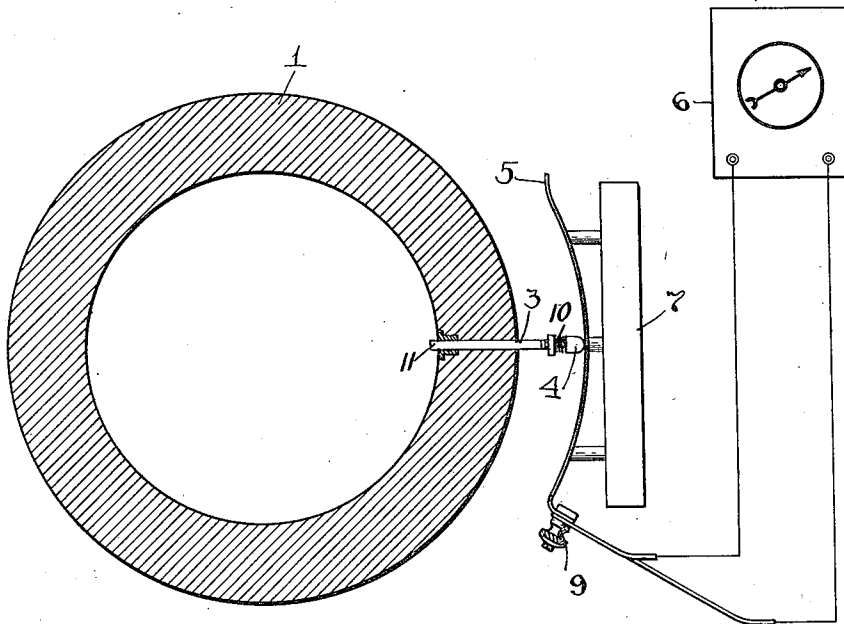


FIG. 1

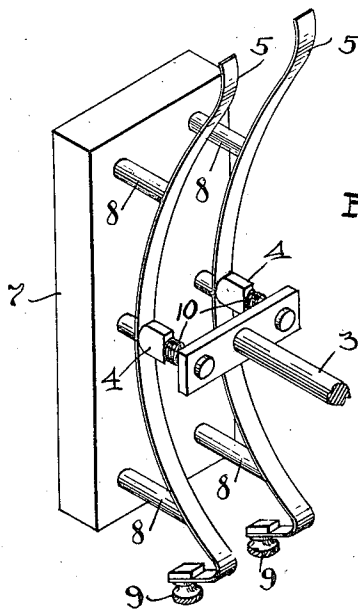


FIG. 2-

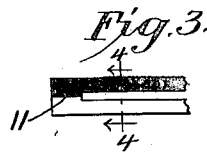


Fig. 4.



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PYROMETER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER GLAESER, a subject of the German Emperor, and a resident of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Pyrometers, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The present improvements, relating, as indicated, to pyrometers, have more particular regard to means adapted to be used in connection with an electric pyrometer for enabling the same to be read even when used in a rotating furnace chamber or other casing. As pyrometers are at present constructed, it is necessary, if they are used in rotating chambers, to stop the rotation whenever it is desired to read the pyrometer. This of course causes numerous delays and is exceedingly inconvenient, and the present invention has been designed with a view to avoiding these difficulties and making it possible to read a pyrometer at least once in every revolution irrespective of the speed of revolution or the size of the furnace chamber. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—

Figure 1 is a transverse section through a rotary furnace showing the present invention as applied thereto; Fig. 2 is a perspective view taken from a point adjacent to the outer wall of the furnace and directed at the contact bars mounted at the side of the furnace; Fig. 3 is a partial enlarged side elevation of the inner end of the pyrometer bar; and Fig. 4 is a section on the line 4—4, Fig. 3.

In Fig. 1 there is shown a rotary furnace or conduit 1, in the wall of which there is mounted a pyrometer bar 3 of the usual form, which will be provided at its end with

a thermo-electric couple 11, the temperature of which is designed to produce a thermo-electric current in the connections from the two sides of the couple and thus indicate in suitable mechanism the temperature prevailing in the furnace. The pyrometer in itself is of any standard construction and forms no part of the present invention except in connection with the mechanism which will presently be described. The pyrometer bar 3 is branched externally of the furnace wall, the two branches being provided with suitable contacts 4 actuated downwardly by springs 10 and these contacts are adapted upon rotation of the furnace to engage against curved contact bars 5 which are fixedly mounted adjacent to the furnace 1 and are curved to lie concentric with the outer surface of this furnace wall. The two bars 5 are connected by suitable wires with an indicating or registering instrument 6 of the usual type.

The bars 5 may be mounted in any suitable manner, one convenient form being shown in Fig. 2, and consisting of a bar or plate 7, from which the two bars 5 are supported by brackets 8 of insulating material. It may be desirable to form the ends of the bars 5 tangentially with respect to a circle concentric with the cylindrical wall of the furnace chamber, and passing through the bars 5 so that contact between the contact members 4 and the bars will begin gradually and there will be no blow or shock either to the pyrometer or to the bars. The connections extending from the bars to the recording instrument may be of any suitable type and will preferably be connected beneath binding posts 9 on the lower ends of the bars 5. By the use of this mechanism it is unnecessary to stop the furnace at any time for the purpose of reading the pyrometer, as has been the case in the past for almost all types of rotary furnaces where it is desired to closely follow the temperature that is maintained, and a considerable saving in time is thus effected.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. The combination of a rotary furnace chamber, a thermo-electric pyrometer bar
5 mounted therein and extending radially therefrom, said bar being provided with two branches on such extending portion, resilient means tending to press said branches
10 radially outward, indicating mechanism for said pyrometer normally disconnected from said bar, and spaced parallel contact bars
15 connected to said indicating mechanism and disposed concentrically with respect to the wall of said furnace and in the path of movement of such branches of said pyrometer bar, such branches being adapted to engage said contacts upon rotation of said furnace chamber and to thereupon indicate the
20 furnace temperature at said indicating mechanism.

2. The combination of a rotary furnace

chamber, a thermo-electric pyrometer bar mounted therein and extending radially therefrom, said bar being provided with two branches on such extending portion, indicating mechanism for said pyrometer normally disconnected from said bar, and spaced parallel contact bars electrically connected to said indicating mechanism to form
25 an open circuit therethrough, said contact bars being formed and disposed concentrically with respect to the walls of said furnace chamber and said bars having their ends extending away from such furnace
30 wall, such branches of said pyrometer bar being adapted to engage such contact bars upon rotation of said furnace chamber, and to thereby close the circuit through said indicating mechanism and said pyrometer bar.

Signed by me this 30th day of January, 40 1917.

WALTER GLAESER.