(No Model.)

J. B. HANNAY.

FURNACE FOR HEATING WHEEL TIRES.

No. 385,925. Patented July 10, 1888.

FIG. 4.

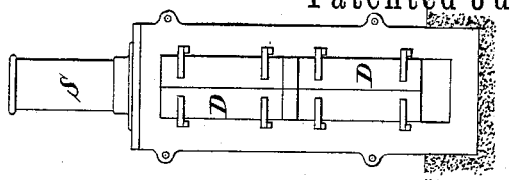


FIG. 3.

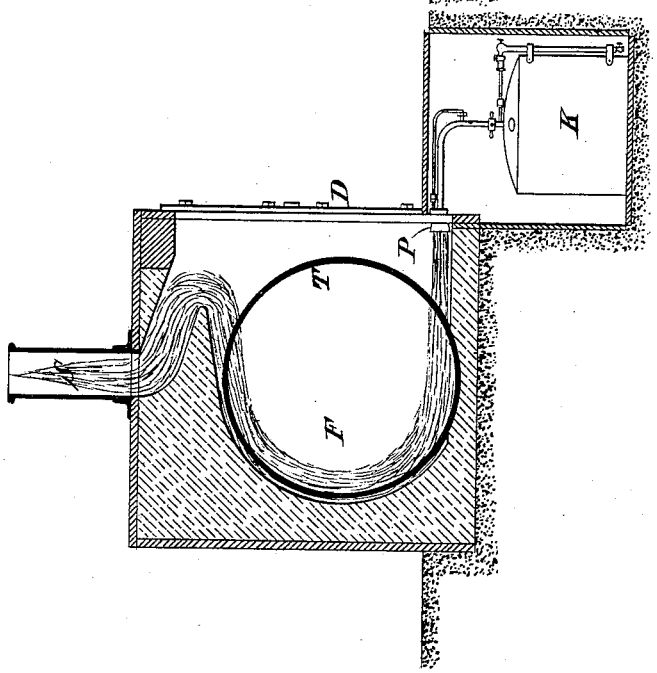


FIG. 1.

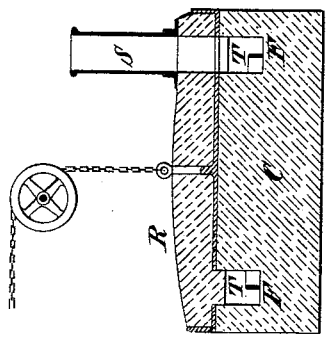
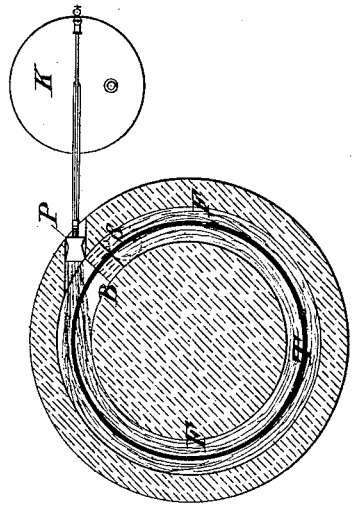


FIG. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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FURNACE FOR HEATING WHEEL-TIRES.

SPECIFICATION forming part of Letters Patent No. 385,925, dated July 10, 1888.

Application filed February 7, 1888. Serial No. 263,284. (No model.)

To all whom it may concern:

Be it known that I, JAMES BALLANTYNE HANNAY, a subject of the Queen of Great Britain and Ireland, resident at Glasgow, in the county of Lanark, Scotland, have invented an Improvement in Furnaces for Heating Wheel-Tires and other Similar Articles, of which the following is a specification.

The object of my invention is to provide a furnace combined with heating apparatus specially adapted for rapidly heating such articles as wheel-tires, and one which can be used intermittently and with great economy. For heating the furnace I employ what is known as a "Pyrigen" burner, which is a "spray-lamp" modified to adapt it for heating purposes. The construction of the Pyrigen burner constitutes no part of my present invention, as various modifications of spray-lamps or burners may be used; but I may here state that from the kind of burner indicated a very cheap oil is by air under pressure made to issue in a strong jet of fine spray which is ignited.

For the purposes of my present invention a considerable air-pressure is employed—say fifteen to twenty pounds per square inch—and the spray-jet is directed so as to impinge repeatedly on the internal surface of the furnace-chamber, such internal surface being of fire-brick. The fire-brick thus impinged on becomes intensely heated, and this condition, combined with the agitation and violent intermixing of the impinging spray, renders its combustion very complete, and results in the development of very great heat from a comparatively very small supply of the liquid fuel.

On the accompanying sheet of explanatory drawings, Figures 1 and 2 are vertical and horizontal sections of a horizontal arrangement of my furnace, and Figs. 3 and 4 are a vertical section and an end elevation of a vertical arrangement thereof.

The furnace shown in Figs. 1 and 2 is constructed for heating a wheel-tire, T, in a horizontal position. The furnace-chamber F is in a circular form corresponding to the tire. The center, C, is shown as built up, so that the furnace-chamber is really of an annular form; but this is immaterial, as the main current of the flames or fire gases would pass near the outer circumference even with the center part, C, not built up. When a tire, T, has been placed in the furnace-chamber F and is about to be heated, a roof-piece or cover, R, which consists of an iron frame with fire-brick slabs, is lowered down so as to close the furnace. This cover R is suspended by means of a chain passing over pulleys to a counter-weight, and is made with an opening at one part, over which a short chimney, S, is fixed for the escape of the used fire-gases. The Pyrigen burner P is inserted into a tangential or nearly tangential opening in the furnace-chamber F, and the ignited jet of spray issuing from it passes round the annular space, the current being repeatedly reflected or bent by impinging on the circumferential or concave surface of the chamber F. Between the inlet-opening for the jet and the outlet to the chimney S the passage is blocked by inserting pieces, B, of fire brick or any convenient refractory material.

In the vertical arrangement of furnace shown in Figs. 3 and 4 the circumferential or concave part of the furnace-chamber F does not form a complete circle, part being, as it were, cut away to allow space for introducing and removing the tire T, doors D being provided for closing the opening. The Pyrigen burner P is placed so as to direct the ignited jet of spray horizontally and tangentially, or nearly so, to the circular concave part of the furnace-chamber F. The current of flames or fire gases passes round the circular part, extending to about a semi-circle, and envelops the tire T in its passage, the gases finally passing off through a chimney, S. During the time that the tire is being heated it is frequently moved partly round by means of any convenient instrument introduced through the partly-opened doors D.

In Fig. 2 there is shown in plan the tank K to contain the oil for supplying the Pyrigen burner, and a similar tank, K, is shown in elevation in Fig. 3. The compressed air is led to the burner by a pipe from any suitable compressing apparatus.

What I claim as my invention is—

In combination, as a furnace for heating tires and the like articles, a furnace-chamber made with a concave inner side or surface of fire-

brick of a shape corresponding to that of the article to be heated, and an oil-spray burner worked with compressed air and placed to project the ignited spray-jet in a direction nearly tangential to the said concave surface, substantially as herein set forth.

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

J. B. HANNAY.

Witnesses:
EDMUND HUNT,
DAVID FERGUSON.