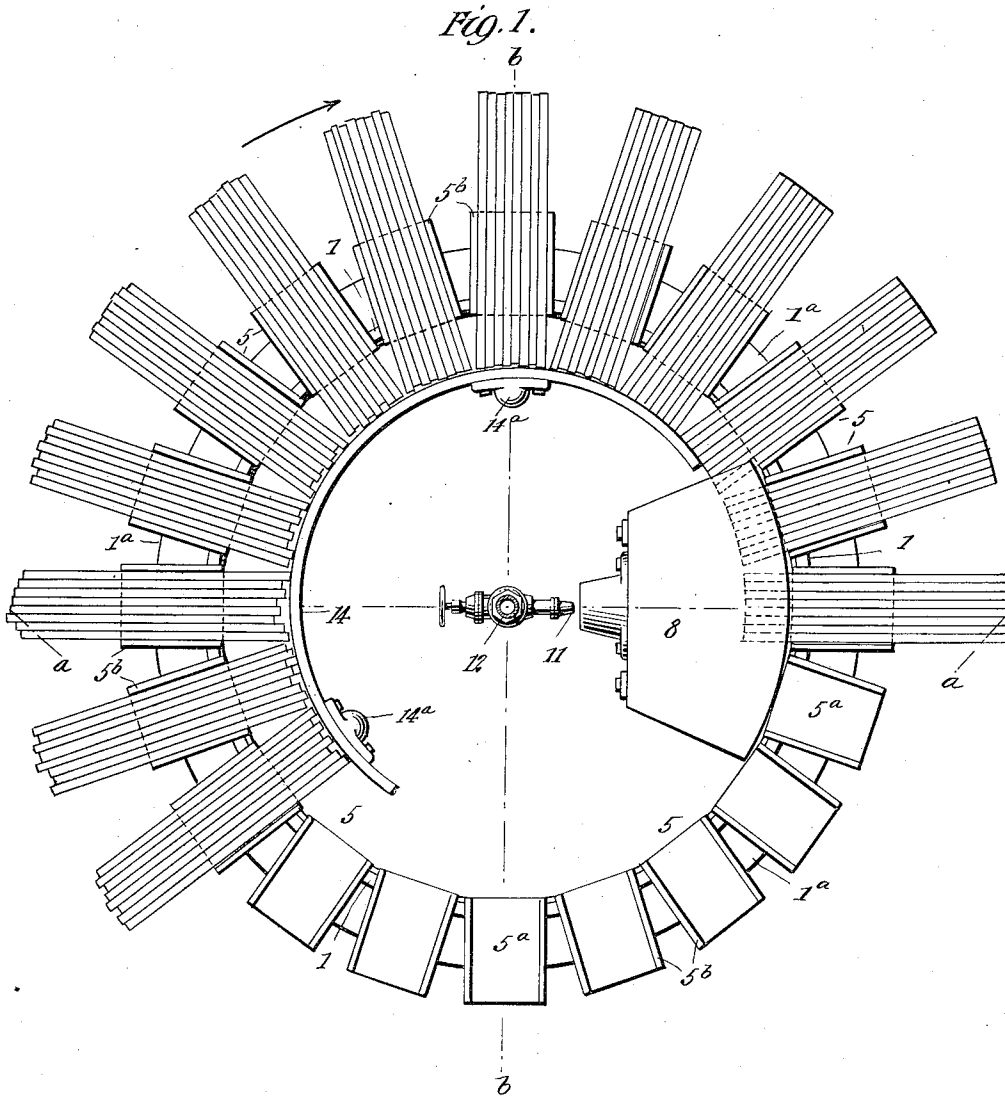


E. EINFELDT.
SPOKE HEATING FURNACE.
APPLICATION FILED NOV. 11, 1909.

1,064,823.

Patented June 17, 1913.

2 SHEETS—SHEET 1.



Witnesses:
Francis Ober
L. E. Harman

Inventor
Emil Einfeldt
By Two Attorneys
Rogers Kennedy

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2 SHEETS—SHEET 2.

Fig. 2.

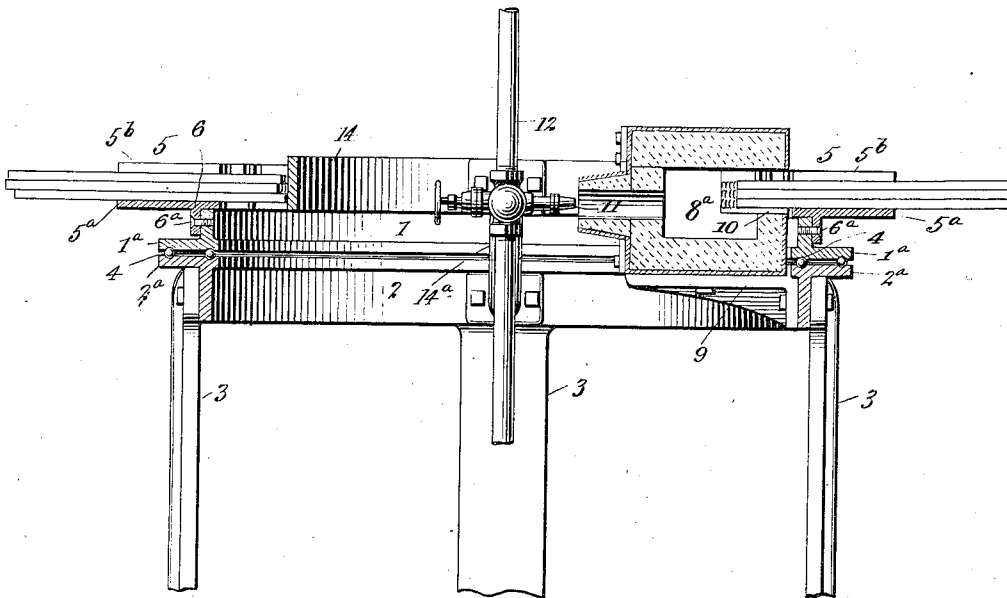
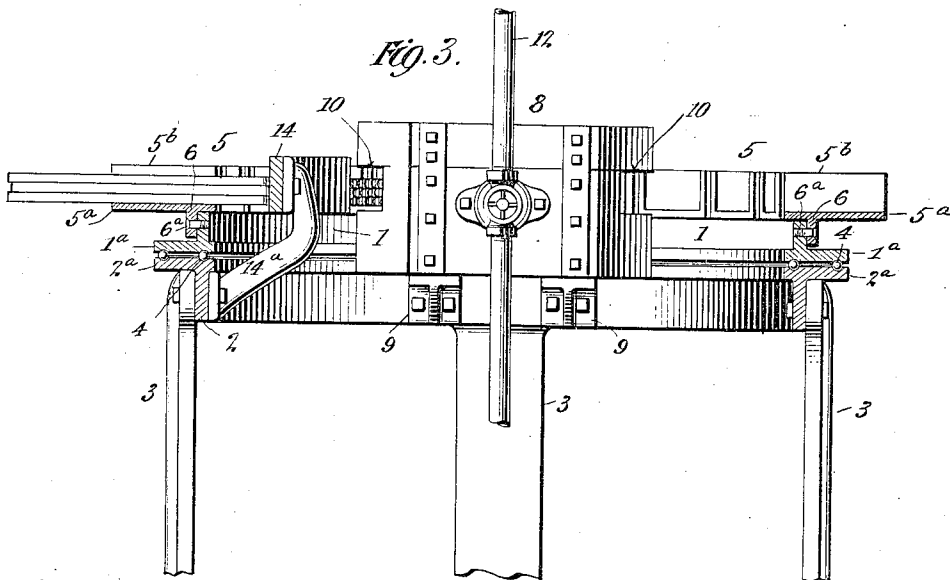


Fig. 3.



Witnesses:
Hans. Ober
L. E. Morrison

Emil Einfeldt
By his Attorneys
Rogers & Kennedy

UNITED STATES PATENT OFFICE.

EMIL EINFELDT, OF DAVENPORT, IOWA, ASSIGNOR TO G. WATSON FRENCH, NATHANIEL FRENCH, AND JOSEPH L. HECHT, OF DAVENPORT, IOWA, COMPOSING THE FIRM OF FRENCH AND HECHT, OF DAVENPORT, IOWA.

SPOKE-HEATING FURNACE.

1,064,823.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed November 11, 1909. Serial No. 527,499.

To all whom it may concern:

Be it known that I, EMIL EINFELDT, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Spoke-Heating Furnaces, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to means for heating the ends of elongated bodies or blanks, and is designed more particularly for heating the ends of metal wheel spokes to adapt them to be connected to the parts of the wheel.

The invention consists of improved mechanism embodying a rotary holder or carrier to support the spokes *en masse* to be heated, and a heating means mounted contiguous to the holder in position to act on and heat the ends of the spokes supported by the holder, the arrangement being such that the spokes may be conveniently presented in a continuous manner to the action of the heating means, and the heated spokes removed in succession.

In the accompanying drawings:—Figure 1 is a top plan view of my improved device, showing the spokes in position and certain of them in the process of being heated. Fig. 2 is a vertical transverse section through the same on the line *a—a* of the preceding figure, the spokes which are in process of heating being indicated by dotted lines. Fig. 3 is a perspective view of the device.

Referring to the drawings:—The spokes to be heated are supported on and carried by a holder or carrier 1 of circular ring-like form, which is mounted on and supported by an underlying ring-like fixed frame 2, suitably sustained by legs 3, the adjacent edges of these parts being provided respectively with annular flanges 1^a and 2^a containing ball grooves, in which are mounted friction balls 4, so that the holder is adapted to be freely rotated on the fixed supporting frame around a vertical central axis. The rotary holder is provided on its upper edge with a series of radially arranged trays 5, each consisting of a base or bottom 5^a, from which extends upwardly at their edges vertical walls 5^b, these trays being arranged side by side throughout the circumferential

extent of the holder. They are conveniently fixed to the holder by means of a depending foot or lug 6 on the underside of the tray, which is seated against the outer face of the holder 1 and firmly secured thereto by means of a bolt 6^a. As a result of this arrangement and construction, the spokes may be piled in the trays and will occupy therein radial positions, as shown in Fig. 1, with their inner ends in position to be acted on by the heating means, and their outer ends in position to be grasped by the operator after they have been heated, so that he may thus remove the heated spokes successively.

Any suitable form of heating means may be employed, but I prefer to adopt for this purpose a muffle-furnace 8, which is mounted fixedly within the holder and sustained by arms 9 connected with the muffle-furnace and with the inner side of the fixed supporting ring 2. This muffle-furnace is formed with suitable metal walls constituting a casing, which is lined with fire-brick, and forming a heating chamber 8^a, the front of which is open, as at 10, so that the spokes supported by the trays may, when the latter is rotated, be entered through the slot into the chamber and be subjected therein to a suitable heating flame projected through the inner side of the chamber through an opening or nozzle 11 from a gas or oil supply pipe 12. The outer face of the furnace chamber is curved to conform and extend closely to the inner side of the rotary carrier 1.

In the use of the device, the trays are filled with the spokes to be heated with their inner ends projecting inwardly beyond the edge of the holder, and the latter is moved in the direction indicated by the arrow in Fig. 1, and in this way the projecting ends of the spokes passed in the opening in the furnace chamber, in which they are acted on by the heating flame. As the spokes become heated, they are withdrawn by the operator to be connected to the parts of the wheel, and the holder rotated or advanced from time to time to present other spokes to the action of the heating flame, as those which have been heated are removed.

In order that the spokes in the trays may occupy the same relative position to the heating chamber, that is, that they may all be projected to a uniform distance

therein, I provide a gage 14, in the form of a circumferentially arranged plate extending within the rotary holder and firmly fixed to the underlying supporting frame 2 by means of radial arms 14^a, bolted to the gage plate and to the frame. This plate extends for a portion only of the rotary holder and is in such position that when the spokes are placed in the holder, their inner ends may be abutted against the gage plate. The gage plate is preferably set eccentrically with respect to the axis of the holder; in other words, the end of the plate nearest the point where the spokes enter the furnace chamber is farther from the axis of rotation than its opposite end, as clearly shown in Fig. 1. As a result of this arrangement, the spokes as the holder is rotated to advance them, will be pushed back on the trays and their ends evened up to the same point.

In the operation of the device, those trays which are opposite the gage plate are filled with the spokes, and as far as possible, they are pushed inwardly so that their inner ends will abut against the plate. The holder is then rotated in the direction of the arrow in Fig. 1, and as the loaded trays successively pass the end of the gage plate, the latter acts to even them up, as described, and in this position they are moved around and entered into the opening in the heating chamber, the empty trays as they leave the chamber, and from which the heated spokes have been taken by the operator, being filled with a new supply of spokes as the trays move opposite the gage plate at that point. In this manner, the spokes may be presented continuously to the furnace chamber, and when they have been sufficiently heated, they may be withdrawn therefrom by the operator.

In the accompanying drawings, I have shown my invention in the form which I prefer to adopt, and which in practice answers satisfactorily the results and ends to be attained. I wish to be understood, however, that the invention is not limited to any particular details of construction, except in so far as the same are specified in the claims.

Having thus described my invention, what I claim is:—

1. In combination with a heating chamber provided with a horizontal opening for the passage of blanks to be heated, a horizontally arranged rotary blank holder surrounding said chamber and having a horizontal sustaining surface adapted to support the blanks in a pile in radial positions, so that by the rotation of the holder,

the inner ends of the blanks may be introduced into the heating chamber.

2. In combination with a heating chamber provided with a horizontal side opening for the passage of blanks to be heated, a carrier adapted to support the blanks in a pile and provided with means for separating the piles into groups, said carrier being movable in proximity to the heating chamber to cause the ends of the blanks to pass horizontally into the opening in the chamber.

3. In combination with a heating chamber formed with a horizontal side opening for the passage of the blanks to be heated, a carrier for the blanks provided with a series of trays for dividing the blanks into horizontal radial groups and adapted to be rotated in proximity to the heating chamber to cause the groups of blanks to pass horizontally into the side opening in said chamber.

4. In combination with a heating means, a blank carrier movable relatively thereto and adapted to support the blanks loosely thereon so that one of their ends may be presented to the action of the heating means, and means acting automatically on said ends during the movement of the carrier, for evening the ends up, so that they will be presented to the heating means in predetermined uniform positions.

5. In combination with a heating chamber having a horizontal opening to receive the ends of blanks to be heated, a circular blank carrier surrounding said heating chamber and movable about a vertical axis, said carrier being adapted to support the blanks loosely with their inner ends in position to be entered into the opening in the chamber, and a horizontal circumferentially arranged fixed gage, extending from the entrance-side of the opening in the heating chamber some distance circumferentially and being arranged in position to engage and act on the inner ends of the blanks as they are advanced by the carrier toward the heating chamber.

6. In combination with a horizontal spoke holder movable around a vertical axis, a circumferential gage mounted eccentrically with respect to the holder, and a heating chamber in position to receive the ends of the spokes supported by the holder.

In testimony whereof I have affixed my signature in presence of two witnesses.

EMIL EINFELDT.

Witnesses:

ANDREW NEILSON,
MAY L. DODGE.