No. 802,876. PATENTED OCT. 24, 1905.

C. O'CONNOR & F. R. COVEY.

TIRE HEATER.

APPLICATION FILED MAY 17, 1905.

2 SHEETS—SHEET 1.

Fig 1.

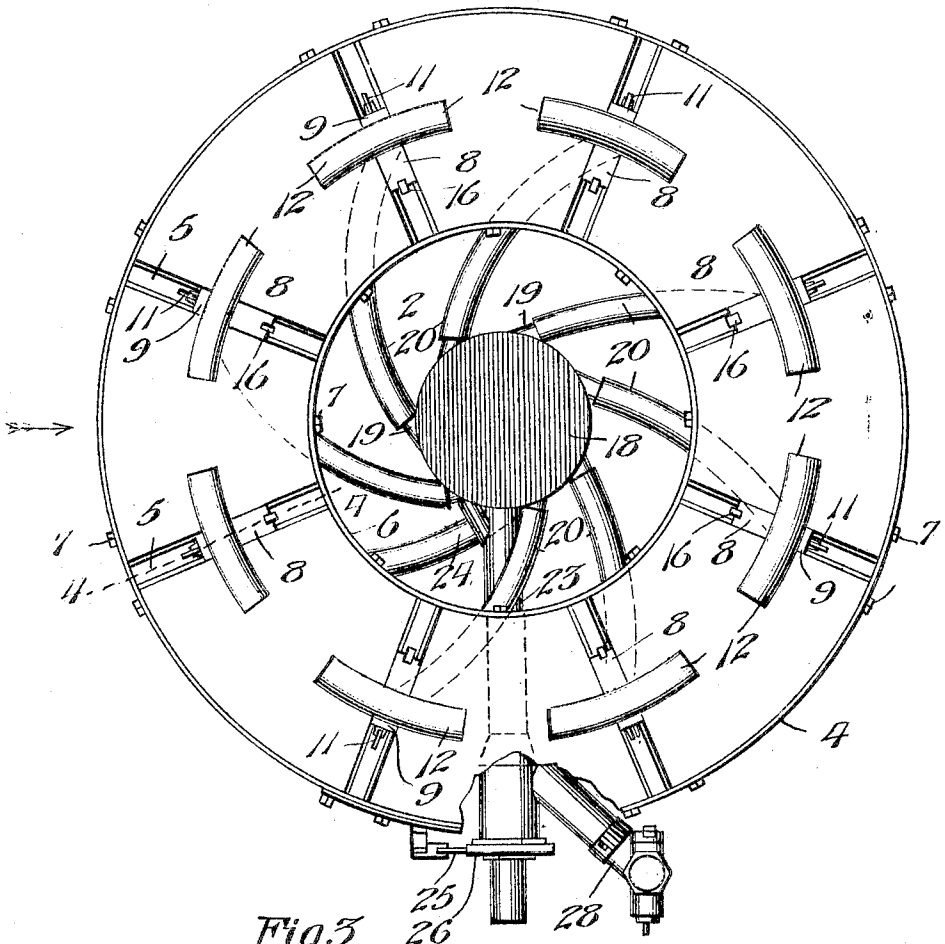
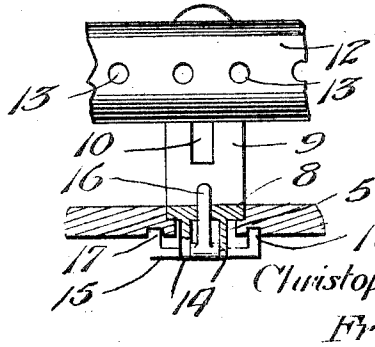


Fig 3



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2 SHEETS—SHEET 2.

Fig 2

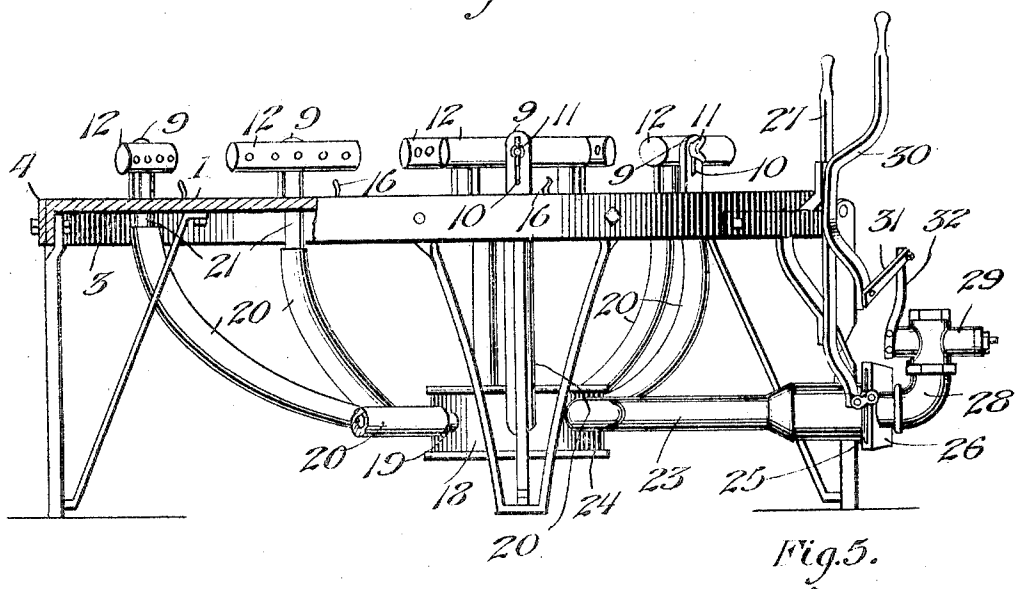


Fig. 5.

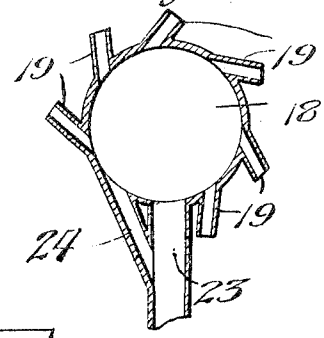
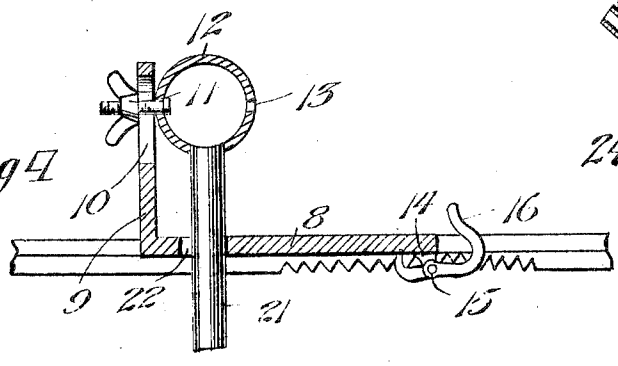


Fig 4



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UNITED STATES PATENT OFFICE.

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TIRE-HEATER.

No. 802,876. Specification of Letters Patent. Patented Oct. 24, 1905.

Application filed May 17, 1905. Serial No. 260,909.

To all whom it may concern:

Be it known that we, CHRISTOPHER O'CONNOR and FRANK R. COVEY, citizens of the United States of America, residing at Riverside, in the county of Riverside and State of California, have invented new and useful Improvements in Tire-Heaters, of which the following is a specification.

This invention relates to tire-heaters of the type employed for applying metal tires to wheel-fellies, and has for its objects to produce a simple inexpensive device of this character wherein the burners may be readily adjusted for wheels of varying sizes, one in which the burners may be fixed in their adjusted positions, and one wherein liability of burning or charring the wooden felly is obviated.

A further object of the invention is to provide a device of this type in which the burners may be adjusted vertically for tires of varying widths and one in which the air and gas will be thoroughly mixed in the commixing-chamber, thus insuring perfect combustion.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a top plan view of a tire-heater embodying the invention. Fig. 2 is a side elevation, partly in section, as viewed in the direction of the arrow in Fig. 1. Fig. 3 is a detail front elevation, partly in section, of one of the burners. Fig. 4 is a detail sectional elevation, the section being taken on the line 4 4 of Fig. 1. Fig. 5 is a detail horizontal section of the mixing drum or chamber.

Referring to the drawings, 1 designates a bed or table having an inner central opening 2 and an outer depending marginal flange 3, reinforced by a marginal ring or band 4, there being provided in said table a series of radiating guide openings or ways 5. It may be mentioned in said connection that the table is preferably composed of a plurality of segmental plates or sections spaced to produce the guides 5 and secured together in assembled relation by means of the outer band 4 and an inner band 6, to which the sections are attached by means of bolts 7.

Slidably disposed in each of the guideways 5 for movement radially of the table is a guide member or carrier 8, having a vertically-uprising portion or standard 9, provided with a guide-slot 10, there being attached to the standard 9, by means of an attaching member or thumb-screw 11, entered through the slot 10, a burner 12, provided at its inner face with jet-openings 13. Depending from the lower face of each of the carriers 8 through the adjacent guideway 5 is a pair of perforated bearing members or ears 14, having journaled therein a locking member 15, provided with an operating-handle 16 and with engaging portions or dogs 17, designed for engagement, respectively, with the teeth of suitable racks arranged upon opposite sides of and parallel with the adjacent guideway 5. It is to be noted in this connection that through movement of the carriers 8 in the guideways 5 the burners 12 may be adjusted radially of the table 1 to accord with the size of the wheel under treatment and may be fixed in their adjusted positions by means of the locking members 15, which, as will be readily understood, may be actuated through the medium of the handle 16 to effect engagement or non-engagement of the dogs 17 with the racks. It will be observed, further, that the burners may be adjusted vertically to accord with tires of varying widths through the medium of the fastening members 11, working in the guide-slots 10 of the standards 9, it being understood that after such adjustment the burners are fixed in position by means of the fastening members.

Sustained beneath the table 1 and centrally beneath the opening 2 is a mixing-chamber 18 in the form of a hollow sheet-metal drum having a plurality of tangentially-arranged tubular nozzles 19 communicating therewith, there being attached to each of said nozzles the inner end of a flexible tube or duct 20, the outer end of which is connected with a vertical tube or nozzle 21, depending from one of the burners 12, through an opening 22 in the carrier 8. It will be understood that the flexible tubes 20 correspond in number to the number of burners and are employed to permit radial adjustment of the latter, as heretofore explained.

Sustained beneath the table and communicating at its inner end with the drum 18 is an air pipe or duct 23, the outer end of which may be connected with any suitable source of

supply, there being provided at the inner end of said duct a branch 24, constituting a connection which enters the drum tangentially for causing a circulation of the fluid therein, while adjacent the outer end of said duct there is provided a sliding or gate valve 25, working in a guide 26 and operable by a lever 27 for cutting off or regulating the supply of air. Entering the pipe 23 at a point inside of the valve 25 is a gas pipe or duct 28, connected with a source of supply and equipped with a cut-off valve 29, designed for rotation through the medium of an operating-lever 30, connected by a link 31 with an arm 32, fixed upon the valve. It will be observed in this connection that the gas enters the pipe 23 at a point within the path of the incoming air and is thus carried into the mixing-chamber 18, wherein the fluids are thoroughly commingled, and, further, that owing to a portion of the fluid entering the chamber tangentially through the branch duct or connection 24 a circulation of fluid is created within the chamber, thereby insuring the ready entrance of the mixed air and gas to the ducts 20 and an equal distribution of the fluid to the latter.

In practice a wheel to be acted upon is placed in position upon the table between the burners and the latter adjusted to accord with the size of the wheel. The air and gas are next admitted in appropriately-regulated quantities to the chamber 18, in which it is mixed and from which it passes through the flexible tubes 20 to the burners and is directed by the openings 13 onto the metal tire, it being apparent that owing to the openings 13 being disposed centrally of the burners and the fact that the latter may be adjusted to a position centrally of the tire liability of the wooden felly becoming burned during the heating operation is wholly obviated.

From the foregoing it is apparent that there is produced a simple inexpensive device admirably adapted for the attainment of the ends in view and one wherein owing to the thorough mixing of the air and gas prior to reaching the burners and the fact that the jets of flame are directed by the latter directly onto the tire the fuel consumed will be reduced to a minimum, it being understood that in attaining these ends minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus described our invention, what we claim is—

1. In a device of the class described, a table, a plurality of radially-adjustable burners carried thereby, means for adjusting the burners vertically, and means for fixing the burners in their adjusted positions.

2. In a device of the class described, a table, a plurality of carriers connected with and for adjustment radially of the table, vertically-adjustable burners movable with the carriers, and means for fixing the burners in their adjusted positions.

3. In a device of the class described, a table, a plurality of burners connected with and for adjustment radially of the table, said burners being vertically adjustable, and means for fixing the burners in adjusted positions.

4. In a device of the class described, a table provided with radial guides, carriers adjustable longitudinally of said guides, vertically-movable burners on the carriers, and means for fixing the burners and carriers in adjusted positions.

5. In a device of the class described, a table provided with radial guides, carriers adjustable longitudinally of said guides and provided with vertical portions, and burners mounted on and movable longitudinally of said vertical portions, said burners being movable radially with the carriers.

6. In a device of the class described, a table, a plurality of burners connected therewith, a mixing-chamber, ducts connecting the burners with the mixing-chamber, said ducts being connected tangentially with the chamber, and a supply-duct having tangential connection with the chamber.

7. In a device of the class described, a table, a plurality of radially-adjustable burners connected therewith, a mixing-chamber provided with tangentially-arranged nozzles, flexible ducts engaging the nozzles and connected with the burners, and a supply-duct having tangential connection with the chamber for creating a circulation of fluid therein.

In testimony whereof we affix our signatures in presence of two witnesses.

CHRISTOPHER O'CONNOR.
FRANK R. COVEY.

Witnesses:
O. P. STIDGER,
ARTHUR M. ALLEN.