

No. 721,632.

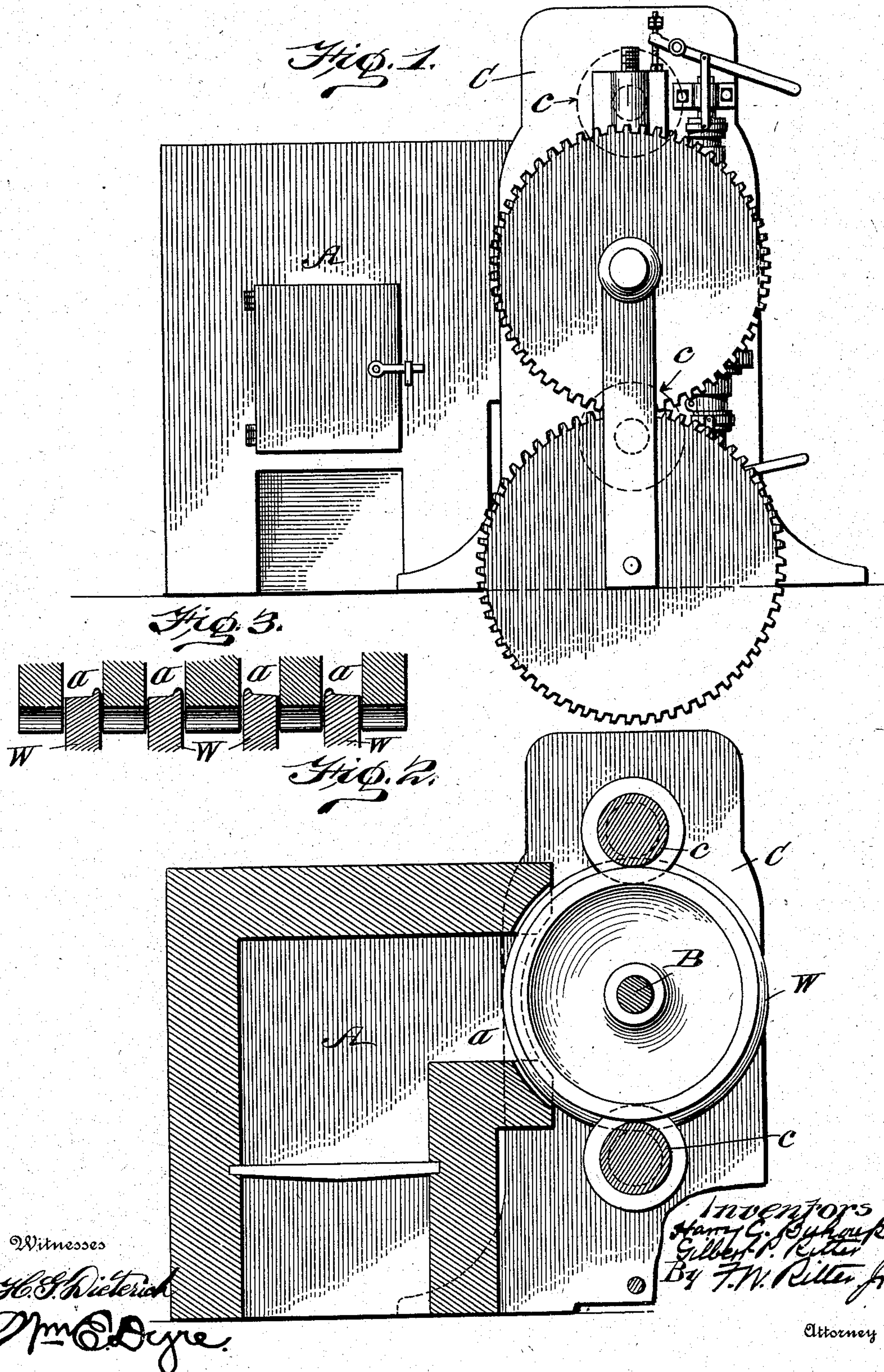
PATENTED FEB. 24, 1903.

H. C. BUHOUP & G. P. RITTER.
METHOD OF MANUFACTURING CAR WHEELS.

APPLICATION FILED SEPT. 20, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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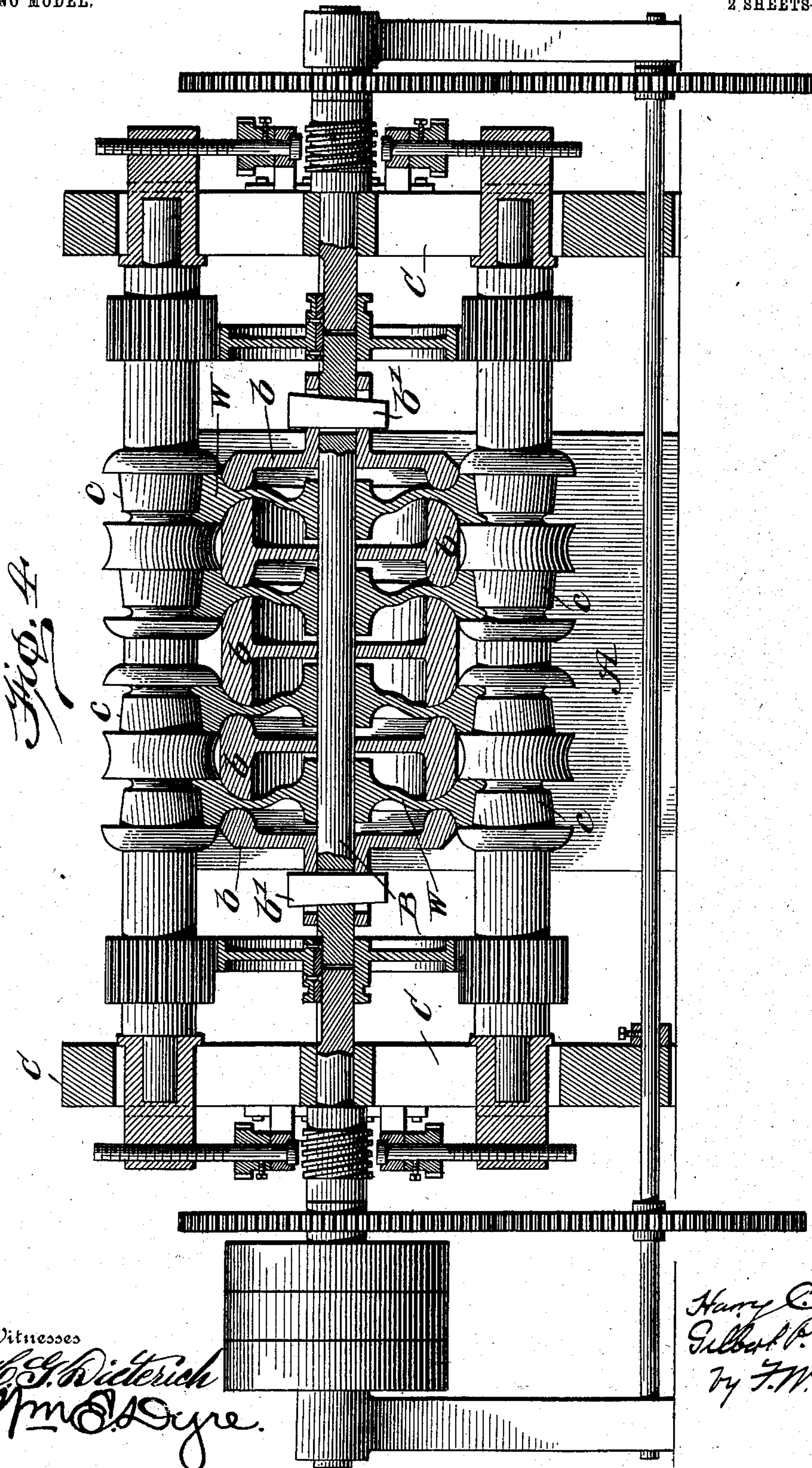
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UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP AND GILBERT P. RITTER, OF CHICAGO, ILLINOIS.

METHOD OF MANUFACTURING CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 721,632, dated February 24, 1903.

Application filed September 20, 1902. Serial No. 124,246. (No model.)

To all whom it may concern:

Be it known that we, HARRY C. BUHOUP and GILBERT P. RITTER, citizens of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Methods of Manufacturing Car-Wheels; and we hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to practice the invention.

Our invention relates to the manufacture of car-wheels in general, but especially to that class of wheels where the wheel-blank is first cast from steel or like metal and the diameters subsequently reduced to condense and finish the tread; and, broadly stated, it consists in maintaining the heat of the periphery or tread and flange of the blank during the condensing and finishing of the tread.

In carrying out our invention any suitable means of applying the necessary heat to the tread and flange of the wheel—such, for instance, as a furnace through which the periphery of the rotating blank is passed or a blast-flame projected against the periphery of the rotating blank—and for reducing the blank and condensing and finishing the tread and flange traveling dies or rolls may be employed at the will or convenience of the operator. Preferably we employ in conjunction a furnace provided with a suitable opening or openings to receive segments of the periphery of a blank or blanks and in juxtaposition thereto a mill comprising vertically-alined reducing and finishing rolls and an intermediate rotating mandrel or blank-carrier arranged in the plane of the blank-openings of the heating-furnace and for the purposes of this specification have shown such devices in the accompanying drawings, in which—

Figure 1 is an end elevation of a furnace and mill adapted for carrying out our invention. Fig. 2 is a transverse vertical section of said furnace and mill, a wheel-blank being shown in position on the mandrel and a segment of the blank projecting into the furnace, as in the process of condensing and finishing the wheel-tread. Fig. 3 is a partial horizontal section of the wheel-blanks and furnace-openings; and Fig. 4 is a longitudi-

nal central section, partly in elevation, of the mill.

In the drawings, A indicates the fire-chamber of the furnace, having in its side wall one or more vertical slots or openings *a* of width and height sufficient to receive the segment of a wheel-blank W and so shaped as to permit the rotation of the wheel-blank on its axis, the axis of the wheel-blank being in vertical alinement with the rolls of the mill which reduces the diameter of the blank.

C indicates the housings of a mill, arranged in juxtaposition to the furnace on that side having the blank openings or slots *a*, said mill provided with rolls *c c*, properly geared to be driven from a power-shaft and provided with housing-screws, whereby the work-rolls, one or more of which corresponds to the finished tread and flange of a wheel, may be either manually or automatically fed toward the wheel blank or blanks carried by the mandrel B.

B indicates a mandrel for carrying the wheel-blank, and *b b* clamp-disks by means of which and the keys *b'*, that pass through slots in the mandrel, the wheel-blanks may be centered with and confined to the mandrel B.

The mandrel B, which constitutes the journals for the blank, occupies a position in the machine coincident with the intersection of the plane of the rolls and the furnace-slot *a*, and said mandrel may be rotated by suitable gearing, if desired.

The wheel-blank W, which may be a cast blank, will be of greater diameter than the finished wheel and preferably also with an excess of metal in the flange. It may be taken when first cast or reheated to the rolling temperature and in such condition placed on the mandrel B and secured by the clamps *b b* and keys *b'* and inserted in the machine between the rolls and with a portion of its periphery projecting into the furnace, or the cold blank may be secured to the mandrel, arranged in the machine, and rotated so that its periphery passes through the furnace until such time as the tread and flange portion of the blank have been raised to a rolling heat. Under either condition, the blank being at a rolling heat and in position in the

machine, the rolls are brought up to their work, and the continuous heating and rolling of the blank is proceeded with until the diameter of the wheel has been reduced to the
5 required gage, the tread and flange being condensed and reduced the required amount.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

10 The method herein described of manufacturing car-wheels which consists in maintaining the temperature of the tread and flange or periphery of the wheel-blank at a rolling

heat and simultaneously reducing the diameter of the blank so as to condense and finish 15 the tread-section thereof, substantially as and for the purposes specified.

In testimony whereof we affix our signatures, in presence of two witnesses, this 13th day of September, 1902.

HARRY C. BUHOUP.
GILBERT P. RITTER.

Witnesses:

EDWIN S. CLARKSON,
JNO. R. ADAMS.