C. K. WILCOX.
Vehicle-Wheel Hub.

No. 199,244. Patented Jan. 15, 1878.

Fig. 1.

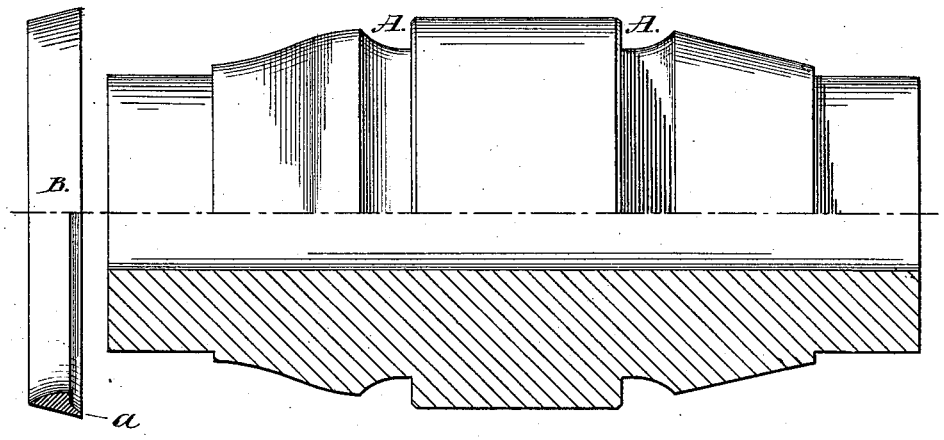
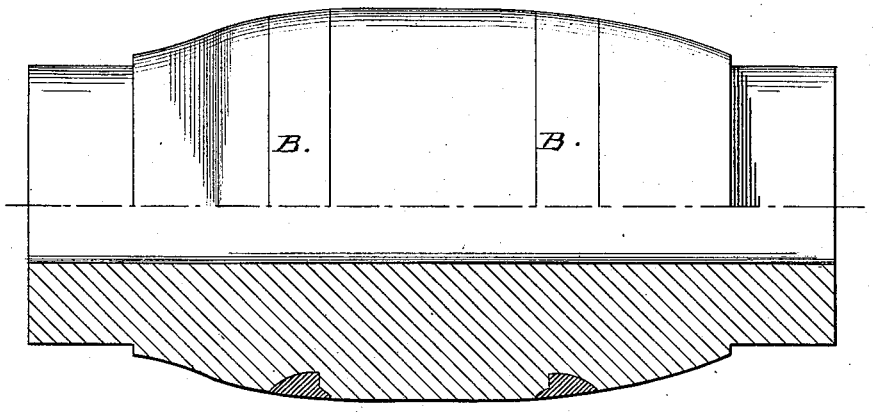


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES K. WILCOX, OF LIMA, OHIO.

IMPROVEMENT IN VEHICLE-WHEEL HUBS.

Specification forming part of Letters Patent No. **199,244**, dated January 15, 1878; application filed November 19, 1875.

To all whom it may concern:

Be it known that I, CHARLES K. WILCOX, of Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Wooden Carriage-Hubs, of which the following is a specification:

My invention relates to a wooden hub having its waist or middle portion compressed and solidified, and provided with surrounding bands of metal; and the invention consists in constructing the hub, in the first instance, with finished ends, an enlarged belt or zone at the middle, and annular grooves adjacent to said belt, and subsequently compressing said belt to its finished size, and at the same time compressing into the grooves metal bands, which engage over and hold the ends of the compressed belt, as hereinafter described; and also in a peculiar form of the metal band.

Figure 1 is a view, half in section and half in elevation, illustrating the hub as constructed in the first instance, previous to the compression and the application of the bands. Fig. 2 is a similar view, showing the finished hub.

As shown in Fig. 1, the hub is first made with its ends finished complete in the usual form, and with an enlarged belt around the middle, and also with two circumferential grooves, A, around the ends contiguous to the enlarged belt.

After constructing the hub as above, I provide two bands, B, of wrought iron or other malleable metal, such as shown detached in Fig. 1. The bands are made of a sectional form, corresponding to that of the grooves A, and are each provided on the inner side with an overhanging lip, *a*, adapted to fit upon and encircle the enlarged belt of wood on the hub, and with an internal vertical shoulder or face at the inner edge of the overhanging lip.

After placing the bands upon the ends of the hub, with their lips engaging over the ends of the enlarged belt, I then force the hub and bands into a tapering die of such size and form that it compresses the wooden belt and the bands, and reduces them to a diameter corresponding with the ends of the hub, thereby giving the hub the finished appearance represented in Fig. 2, and seating the bands in the grooves, with their lips seated over and into the ends of the compressed central belt in such manner as to prevent it from expanding.

In this way I produce cheaply, and with a comparatively small expenditure of power, a hub which has the portion in which the spokes bear solidified and condensed to a great degree of hardness, and this, too, without the employment of the heavy machinery or heavy bands which would be required in case the entire body of the hub were to be condensed.

I am aware that bands have been heretofore made with thin edges, and with a central thickened portion of a rounding form in cross-section; and I make no claim to either of said features, my improvement consisting in making the band with the overhanging lip on the inner edge, and combining with said lip the flat vertical shoulder at its inner or rear edge, in the peculiar manner shown in the drawing.

The advantage of my peculiar construction is, that the overhanging lip, engaging upon the outside of the central wooden band, acting in conjunction with the square or vertical shoulder bearing directly against the end of the grain of the wood in said band or zone, effectually prevents the wood from being split and chipped off when the spokes are driven into the hub.

I am aware that it has been proposed to condense wooden hubs by means of dies, and that metallic bands have been shrunk, compressed, and otherwise secured upon grooved hubs, and also that it has been proposed to compress metal bands upon grooved hubs with such force as to condense the wood adjacent to the bands; and I make no claim thereto; but

What I do claim is—

1. A wooden hub having the wood left in its natural condition at its ends, and having at the middle a highly-condensed zone or belt provided with metal confining-bands, substantially as described.

2. The herein-described method of constructing a wooden hub, consisting in first constructing the hub with finished ends and an enlarged central belt, and then applying metal bands to the ends of said belt, and subsequently reducing the belt and the bands by

compression to a size corresponding with the previously-finished ends.

3. A metal hub-band having the overhanging lip at its inner side and the internal vertical, or substantially vertical, shoulder at the inside of said lip, substantially as shown and described, the lip being adapted to confine the spoke-receiving portion of the hub, and the shoulder to abut squarely against the grain of said portion, to prevent its displacement.

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