(No Model.)

F. W. STARR.

RIM FOR WHEELS.

No. 598,329. Patented Feb. 1, 1898.

Fig. 2.

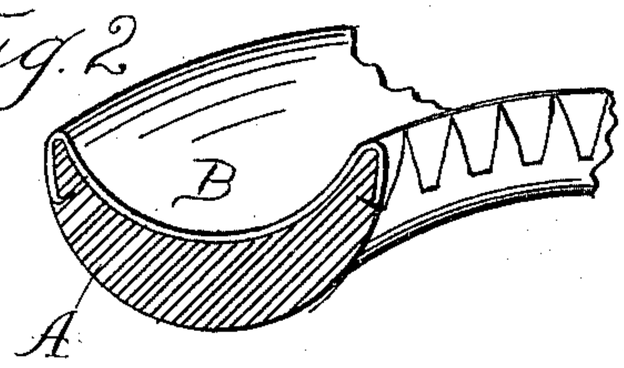


Fig. 1.

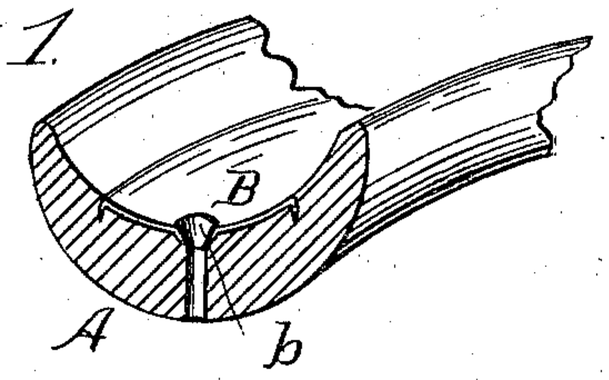


Fig. 3.

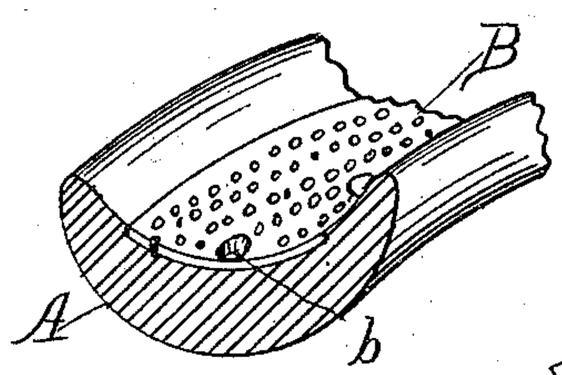
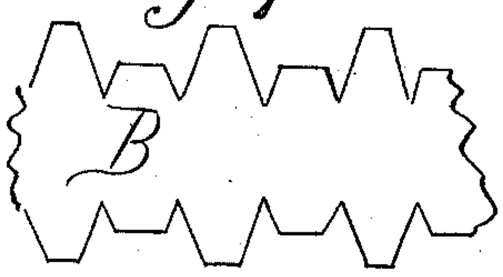


Fig. 7.



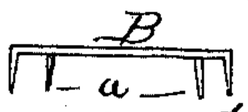


Fig. 8.

Fig. 9.

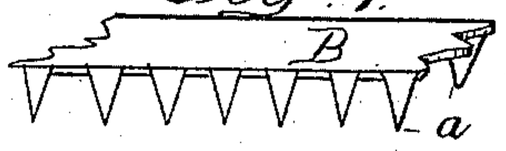


Fig. 10.

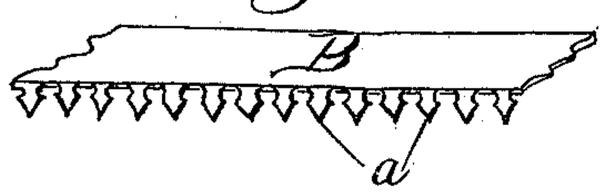


Fig. 4.

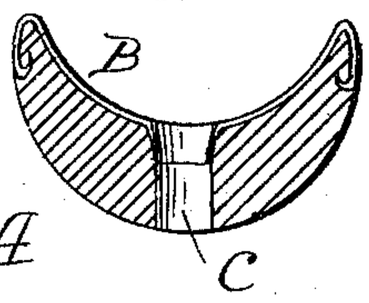


Fig. 5.

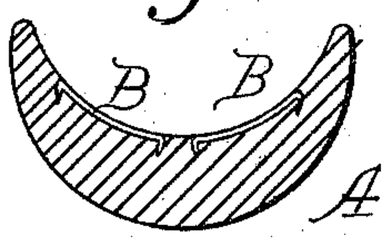
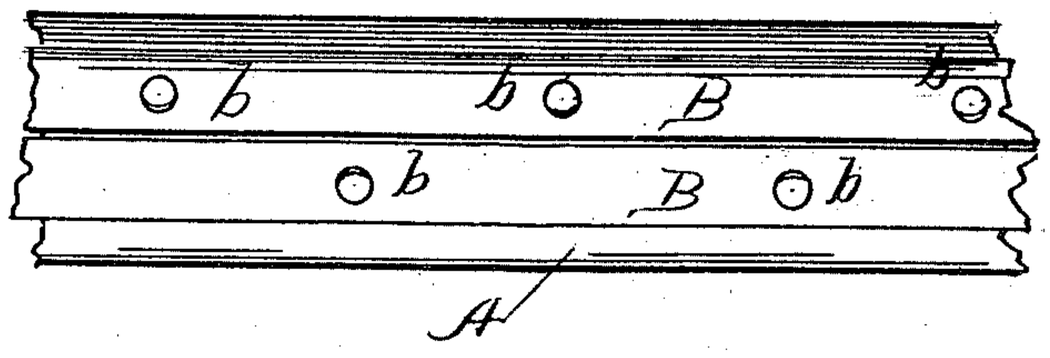


Fig. 6.



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UNITED STATES PATENT OFFICE.

FERDINAND W. STARR, OF SPRINGFIELD, OHIO.

RIM FOR WHEELS.

SPECIFICATION forming part of Letters Patent No. 598,329, dated February 1, 1898.

Application filed July 6, 1897. Serial No. 643,642. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND W. STARR, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Rims for Wheels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates, primarily, to concavo-convex wooden rims, such as are commonly used for bicycles, though its scope is not intended to be limited thereto; and it has for its object the application to the concavity of the rim of one or more encircling metal bands, which serve the double purpose of reinforcing the wooden rim and affording seats or bearings for suspension-spokes or for the outer ends of thrust-spokes where nipples are not used.

The novelty of my invention will be hereinafter set forth, and specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a portion of a rim embodying my invention under one form. Fig. 2 is a corresponding view showing another form. Fig. 3 is a corresponding view showing a modification of the means for uniting the metal band and wooden rim. Figs. 4 and 5 are transverse sections of the rim, showing further modifications in the manner of applying the band. Fig. 6 is a plan view of the construction shown in Fig. 5. Figs. 7, 8, 9, and 10 are details of portions of the different bands before the same are applied to the rims.

The same letters of reference are used to indicate identical parts in all the figures.

The great desideratum in the manufacture of rims of the class heretofore particularly referred to is to combine extreme lightness with great strength, and particularly to prevent the splitting of the rim longitudinally and prevent the separation of its joint or joints, and I propose to accomplish these results in the following manner:

In all the figures, A represents the usual concavo-convex wooden rim, preferably in one piece, though not necessarily so, without laminations. Into the concaved periphery of this rim I press down snugly, so as to firmly adhere to the surface of the wood at all points, a metal strip or band, which entirely encircles the rim and may have its meeting edges brazed or otherwise suitably firmly united. The edges of this band on both sides are bent substantially at right angles and are serrated to form teeth, which when the band is pressed down on the wood enter the same and become clenched therein.

Referring to Fig. 1, B represents the metal strip, portions of which are shown in Figs. 9 and 10, where *a* represents the teeth or serrations, the teeth of Fig. 10 being arrow-head shaped. Under this form of construction the band does not fill the entire surface concavity of the rim; but even under this form the rim is very strongly reinforced against splitting and against separating the joint, and to further reinforce it and to afford bearings for the outer ends of the spokes or for spoke-nipples, where the latter are used, I make perforations *b* through the band and rim in such manner that the metal is spun or swaged down partially in the perforations through the rim, as clearly shown in Fig. 1. The band is thus not only held and securely locked to the wood in close contact by its serrated edges, but also by the spun-down portions at the spoke-holes and by a further spun-down portion at the perforations *c*, Fig. 4, for the tire-inflating tube.

As another embodiment of my invention, as seen in Fig. 2, the band may be made wider so as to fill the entire surface concavity of the rim with the serrations turned down over its outer edges and then bent inward to enter and clench in the wood; or again as a slight modification of this form, as seen in Fig. 4, the metal in the band overlapping the outer edges need only be serrated, as at *d*, where it enters and clenches in the wood. Again, as shown in Fig. 5, two serrated bands side by side may be employed, nearly filling the entire surface concavity of the rim, and with the spun-down-spoke perforations in them set staggering, as shown in Fig. 6. Again, where the band does not fill the entire concavity, as seen in Figs. 7 and 8, or even when it reaches over the edge of the wooden rim, the serrations may be formed so as to alternately enter the wood in four circumferential rows out of alinement.

As still another method of uniting the band to the rim reference is made to Fig. 3, where the lateral serrations are dispensed with and the band is punctured, as by a center punch, to cause small teeth or projections on its under surface to enter the wood all around and in close proximity to each other, as seen at *e*. The lateral teeth are, however, preferred in conjunction with said punctures.

As seen in Figs. 1 and 3, where the bands do not fill the entire concavity of the rim the latter may be gained or mortised out to let the band in flush, so that the ordinary pneumatic tires used with these rims may have a firm and uniform bearing in the concavity, or the band or bands may be bodily pressed in flush with the surface of the rim.

The teeth of the serrations have chisel-shaped or sharpened edges, as shown, so as to easily penetrate the wood without splitting it and become clenched therein.

A rim constructed as above described will be found to contain great lightness and strength, and it is easily and cheaply constructed.

Having thus fully described my invention, I claim—

1. A wheel-rim composed of a wooden portion having an exterior concave periphery, and a metal band seated in said periphery and secured to the wood by integral indentations, substantially as described.

2. A wheel-rim composed of a wooden portion having an exterior concave periphery, and a metal band seated in said periphery with perforations therethrough spun into the wood, substantially as described.

3. A wheel-rim composed of a wooden portion having an exterior concave periphery, and a metal band with serrated edges seated therein, substantially as described.

4. A wheel-rim composed of a wooden portion having an exterior concave periphery, and a metal band with serrated edges seated therein with the serrations embedded in the wood and with perforations through said band spun or swaged into the wood, substantially as and for the purpose specified.

5. A wheel-rim composed of a wooden portion having an exterior concave wooden periphery, and a metal band with arrow-head serrated edges seated therein with the serrations embedded in the wood and with perforations through said band spun or swaged into the wood, substantially as described.

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D. O. MYERS.