

D. GRIM.  
 Wheel for Vehicles.

No. 159,818.

Patented Feb. 16, 1875.

Fig 1.

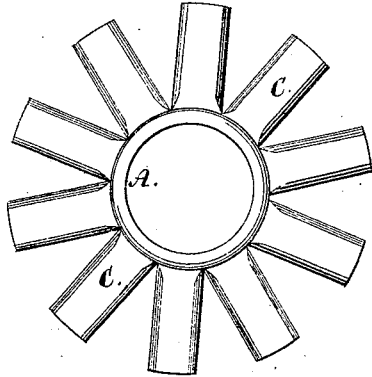


Fig 2.

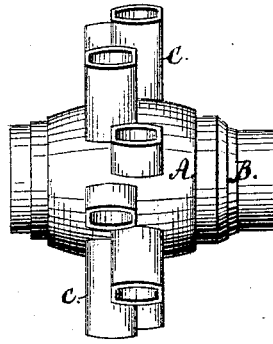


Fig 5.

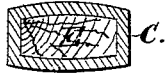


Fig 3.

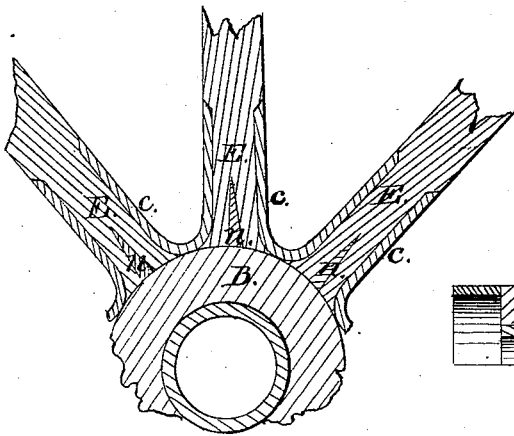
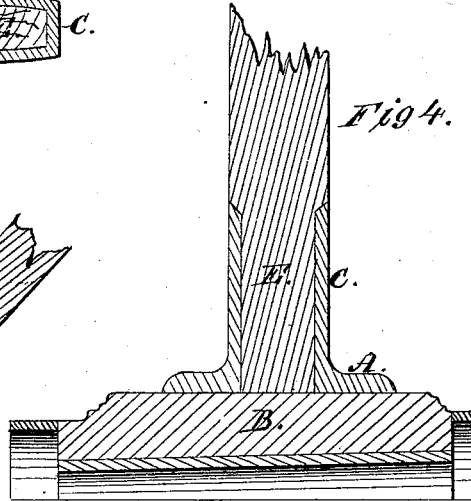


Fig 4.



Witnesses:

Edw M Johnston  
 George Hoens

Inventor:

David Grim  
 per his attorney  
 Josiah W. Ellis

# UNITED STATES PATENT OFFICE.

DAVID GRIM, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. 159,818, dated February 16, 1875; application filed July 6, 1871.

*To all whom it may concern:*

Be it known that I, DAVID GRIM, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Carriage-Wheels, of which the following is a specification:

This invention is designed as an improvement upon that for which a patent, numbered 87,926, was granted to me on the 16th day of March, 1869, and which consisted in combining with the wooden hub of a carriage-wheel a metallic band provided with sockets for the reception of the spoke-tenons, said sockets being cast solid with the band; and while a similar hub-band, having radial sockets for the reception of the spokes, is maintained, the object of this invention is to increase its simplicity, add to its facility for repairs, and improve its appearance and strength. To this end the radial sockets are not only made to extend quite through their supporting-band, but are enlarged inside at that part next the wooden hub, so that the spokes may be swelled at that point by means of a wedge to completely fill the enlargement, and are thereby dovetailed therein.

Another part of my invention consists in combining with the band and radial sockets a wooden hub without radial mortises, so that when the spokes are driven into their respective sockets the blunt end of each will rest upon a solid portion of the wooden hub, which arrangement allows the wooden hub to be driven out of the band for repairs, or otherwise, without interfering with the spokes or other portion of the wheel.

Another part of my invention consists in the use of wedges in the spokes, for the purpose of spreading the end of each spoke within its respective socket.

Figure 1 represents a front view of the hub-band, with its radial sockets. Fig. 2, a side view of the same, inclosing a wooden hub; Fig. 3, a transverse section of a portion of the hub, with its band and radial sockets and the spokes affixed therein; Fig. 4, longitudinal vertical section of the same; Fig. 5, transverse section of one of the sockets.

To construct a carriage-wheel, I make a broad metallic band, A, having as many projecting radial sockets C formed thereon as may be necessary to accommodate the spokes of the wheel. This band, with its several radial sockets C, is to be expanded by heat, and while in that condition driven onto a

properly prepared unmortised wooden hub, B, and allowed to shrink thereon. The tenons E of the spokes are to be shaped to conform somewhat to the peculiar structure of the sockets, and each to be provided with a short wedge, *n*, slightly entered, so that when the tenons are driven into the sockets the base of each wedge will strike first against the wooden hub B, and by which they will be forced into the tenons, so expanding them as to completely fill the enlarged part each of its respective socket, and allowing the blunt end of the tenons to abut against and rest upon the periphery of the inclosed wooden hub, and as the end pressure of said spokes is equally divided around the hub they materially assist in holding it within the band.

Yet such is the arrangement of parts that the wooden hub B may be driven out of the band A for repairs, or for the insertion of a new one, without disturbing the relative position of or in any way interfering with the other portions of the wheel.

Although the band A, shown in the drawing, Fig. 2, has its radial sockets "dodged"—that is, so arranged upon the band as that each alternate socket stands about half its depth in advance of the one with which it alternates—yet I do not wish to confine myself to any peculiar arrangement of sockets, as their position and number may be varied without departing from the spirit of my invention.

I claim—

1. A metallic band, A, provided with radial sockets C, each furnished with a wooden spoke, E, and combined with an unmortised wooden hub, B, so that the inner ends of the spokes will extend through the sockets and rest directly upon the surface of the wooden hub, as set forth.

2. A wooden hub, B, in combination with a metallic band, A, provided with radial sockets C enlarged at their inner ends, as set forth.

3. A wooden hub, B, provided with a metallic band, A, having radial sockets C, in combination with the spokes E, spread within the sockets by means of a wedge, *n*, as set forth.

DAVID GRIM.

Witnesses:

ED. M. JOHNSTON,  
GEORGE HOERR, Jr.