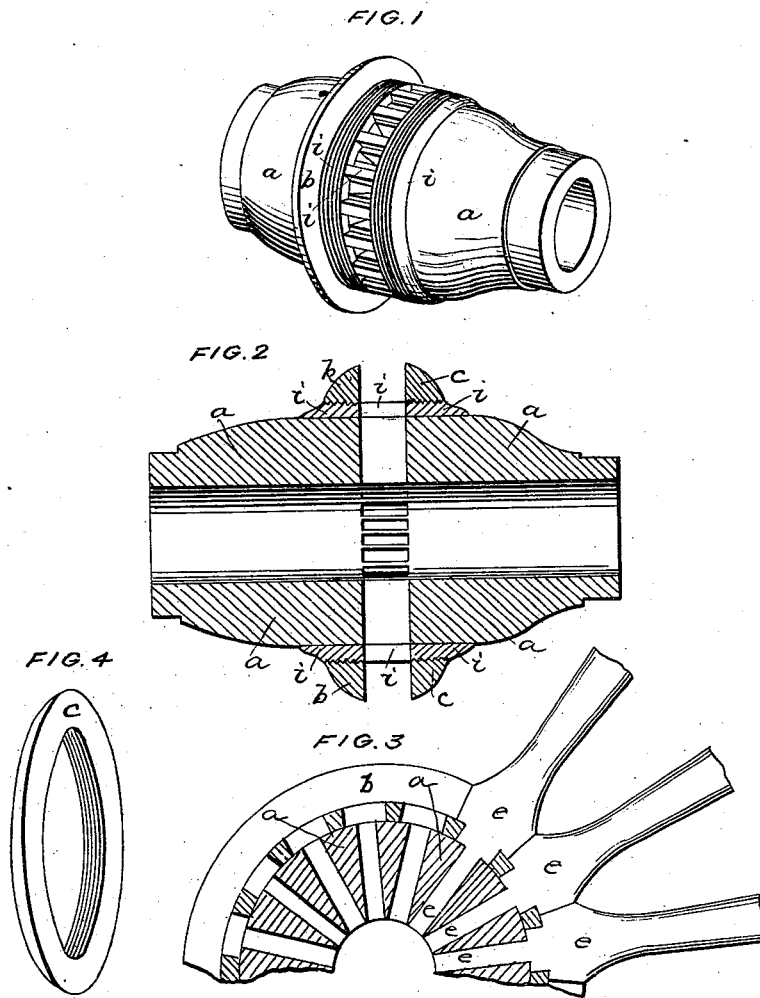


J. RIDGE.
Carriage-Wheel Hub.

No. 107,543.

Patented Sept. 20, 1870.



WITNESSES:
Edwin Crawley
Thos L. Baylis

INVENTOR:
Joseph Ridge

United States Patent Office.

JOSEPH RIDGE, OF WAYNE COUNTY, INDIANA, ASSIGNOR TO STEPHEN S. STRATTAN OF ONE-FOURTH HIS RIGHT.

Letters Patent No. 107,543, dated September 20, 1870.

IMPROVEMENT IN CARRIAGE-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOSEPH RIDGE, of the county of Wayne and State of Indiana, have invented a new and useful Improvement in Carriage-Wheels, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1. is a perspective view of the hub.

Figure 2 is a longitudinal section of the hub.

Figure 3 is a cross-section of the hub through the line of the spokes, with some of the latter inserted.

Figure 4 is a view of one of the clamping-collars.

The same letters in the different figures refer to corresponding parts.

My invention relates to an improvement in the construction of a certain class of carriage or wagon-wheels, in which metal sockets or flanges are employed as a means of connection between the spokes and hub, and for the purpose of securing the former to the latter in such a manner as to obviate or counteract the well-known detrimental effect of the weather upon the wooden parts of wheels.

To accomplish this desideratum, several methods of construction have heretofore been adopted. Experience has shown, however, that the metal sockets or flanged bands heretofore in use are defective and objectionable, either through the necessary use of bolts or rivets passing through the spokes or hub, or where the spokes are driven through cast-metal sockets into the hub, in the lack of any provision for adjusting, or to accommodate them to the shrinking or swelling of the wood, as it is affected by the weather.

The object of my invention is to remedy these defects in this class of wheels by so constructing and combining the spokes and hubs as that their relative positions may be adjusted to correspond with the shrinkage or expansion consequent on variations of weather, and this without impairing or destroying the strength of the spokes and hubs by the use of bolts, rivets, or screws, a method of fastening so objectionable, not only on this account, but also on account of their proving a serious obstacle to convenience and despatch in repairing the wheels.

These objections are obviated by my invention, which consists in providing a metal band, slotted or mortised, so as to correspond with the mortises of the hub. Screw-threads are cut on each side of its outer surface, extending inward to the mortise holes, or nearly so.

This band is driven around the middle of the hub, and, being made in one piece, it requires no other fastening than the insertion of the spokes, which pass through it and tenon around the inner periphery of the hub.

To form the adjustable sockets for the spokes, I provide two strong metal collars, constructed as hereinafter described, and which are screwed onto the mortised band on each side of the spokes until they

press against their sides, and thus securely clamp and hold them in the required position, no rivets, bolts, or screws being required, and, as is obvious, by tightening or relaxing the pressure of these collars on the spokes, the object of the invention is accomplished.

The manner of constructing my improved wheel is as follows:

The wooden hub *a* is made smaller than required in the ordinary wheel.

A cast-metal band, *I*, mortised centrally with a number of mortises equal to the number of spokes desired in the wheel is driven tightly on hub *a*, so that the mortises in the band correspond in position with mortises in the hub, which mortises are arranged in a single row.

The breadth of the mortises lengthwise of the hub is the same in the band and the hub.

The width of the mortises in the line around the hub is greater in the band than the corresponding width of the mortises in the hub. Shoulders are thus formed on the wood within the mortises of the band, as shown in fig. 3.

The spokes *e* are tenoned, so as to shoulder on the hub, and also on the metal between the mortises.

The solid parts of the band, extending a short distance each side of the spokes, are provided with screw-threads, upon which collars *b* and *c* are screwed, so as to clamp the spokes.

The screw of one collar is right-handed, and the other left-handed, by which greater uniformity of action in tightening said collars may be obtained, thus preventing the spokes from being forced out of position in the operation.

One plan of tightening the collars, which I propose to adopt, is to place the wheel on a mandrel, and, after running the collars on the threads up to the spokes, secure said collars, so as to prevent them from turning, by means of hooks or pins, made to engage with holes or shoulders in said collars; then, by taking hold of the rim and turning the wheel, the desired uniformity of action and necessary force are obtained.

The spokes are arched, or in contact one with another from where they shoulder on the metal to a distance equal to the width of the collars.

Having thus fully described my said invention,

What I claim, and desire to secure by Letters Patent, is—

The mortised band *i*, constructed substantially as described, in combination with the adjustable collars *b* and *c*, hub *a*, and spokes, constructed and arranged to operate in the manner substantially as and for the purpose set forth.

JOSEPH RIDGE.

Witnesses:

A. L. STUDY,
ROBT. U. BOWES.