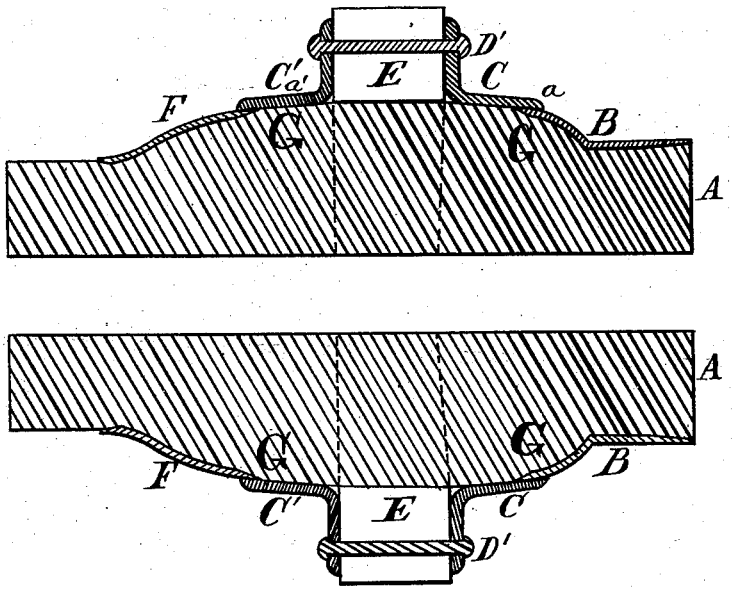
G. L. ROUSE & M. W. STODDARD.
Vehicle-Hub.

No. 207,210. Patented Aug. 20, 1878.



Attest:
C. H. Bosworth.
W. S. Christopher

Inventors:
George L. Rouse,
and
Marshall W. Stoddard
per Wm. Hubbell Fisher,
Atty.

UNITED STATES PATENT OFFICE.

GEORGE L. ROUSE AND MARSHALL W. STODDARD, OF CINCINNATI, OHIO.

IMPROVEMENT IN VEHICLE-HUBS.

Specification forming part of Letters Patent No. **207,210**, dated August 20, 1878; application filed October 18, 1877.

To all whom it may concern:

Be it known that we, GEORGE L. ROUSE and MARSHALL W. STODDARD, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Vehicle-Hubs, of which the following is a specification:

Our invention consists in the novel and highly useful combination of a number of important bands, and a wooden vehicle-hub, in such a manner that the hub itself is generally strengthened, and is thoroughly protected from all abrasion, indentation, and other injury by blows upon its exterior, and from the action of the weather, and the spokes also laterally supported as well as strengthened to resist a thrust in the direction of their length.

The accompanying drawing represents a section through the hub, taken midway between the spokes, where—

A represents an ordinary wooden hub; E, the spokes. The latter may be connected to the hub in any desired manner. F represents a band of metal, preferably cast and trued into shape, and so formed as to fit, as shown, closely the central belt of the front periphery of the hub. The outer portion of the periphery of this end of the hub is preferably left uncovered for the reception of the usual point-band added by the parties finishing said wheel. This point-band will abut against the front edge of band F. When preferred, the band F may be of a greater width, and so wide as to extend beyond the front end of the hub, and perform the office of and take the place of the point-band. Two-thirds of the periphery of the hub behind the spokes is covered by a band, B, which covers the extreme rear or straight portion of the hub and one-half of shoulder or enlarged portion G. The band B may be extended so as to project beyond the rear end of the hub and form a sand-band. These bands are preferably driven on the hub and into position.

A flanged band, C, of a width a trifle greater than the space, uncovered, of the hub between the spokes and the adjacent edge of the band B, is forced onto and over the rear part of the hub until the face of its vertical flange sits closely against the sides of the spokes. When in this position, the flange *a* of the band C will lap over and protect the inner edge of band B, and also tightly compress the latter against the hub.

A flanged band, C′, somewhat wider than the uncovered space of the hub between the spokes and the adjacent edge of band F, is forced onto and over the front half of the hub until the face of its vertical flange sets closely against the sides of the spokes. When in this position the flange *a′* of the band C′ will lap over and protect the inner edge of band F, and also tightly compress the latter against the hub.

The flanged bands C and C′ are here connected together by means of bolts or rivets D′, which pass across between or through the spokes from one flange to the other, and bind the bands together and hold them firmly in position. The method of uniting the two flanges is not material. When preferred, the flanged bands may be formed in one casting, and the spokes be introduced between the metal partitions connecting the flanges.

The joints between bands C′ F and C B are, preferably, made water-tight.

The effect of our invention is to produce a wheel of great strength and durability.

In the combination of bands there are certain advantages derivable from the employment of each band by itself, and also from the combination of the same. The advantages derived from the employment of the band F are as follows: First, it protects the front of the hub from injury by blows received from the hubs of passing vehicles and objects against which it may be forced through the carelessness of the driver; secondly, it protects a portion of the front half of the hub from the action of the weather, and combines with the point-band and flange C′ to keep the hub dry and firm. Where the band F is omitted the surface of the hub between the point-band and flange-band C′, being exposed to the action of the weather, becomes wet and swells. The wood being confined and kept dry under the point-band, and also under the flange-band C′, does not swell. As the wet wood between these bands must swell, it forces itself away from the dryer portions and splits off, particularly at the shoulder. In this way a fine hub is soon ruined.

Another advantage resulting from the use of the bands is, that the entire hub is rendered firmer and stronger, and better fitted to withstand the usual shocks received in the ordinary employment of the vehicle. Like advantages to the rear portion of the hub, from the joint employment of the bands C and B, result.

The flanged projections of the bands C and C′ support the spokes against lateral deflection, and also strengthen them to resist the end thrust or strut.

The attachment of the two flanges by means of rivets or other metallic connections increases these advantages, the flanges of both bands C C′ serving to hold the flaring bands B F closely to the hub, so that they cannot slip toward the ends.

The rear half of the band B is, preferably, beveled off on the inside from about the middle of the band to the rear edge, and the front portion of the band F is also beveled off on the inside to the front edge. This construction of the bands, in connection with the action of the flanges *a a′*, assists in the preventing of the bands from slipping off their respective ends of the hub. The reason for this is, that after being driven onto the hub the wood expands everywhere to meet the inner face of the band, and, pressing against the beveled portions, resists any attempt at compression, and therefore counteracts any tendency the bands might have to slip off the hub.

As before alluded to, the bands C and C′ compress and firmly hold the inner edge of their respective bands, B and F, and form a water-tight joint at their junction.

Our invention is valuable for the hub of a staggered wheel, and in such case the faces of the flanged bands C and C′ are to be shaped to conform to the zigzag position of the spokes.

We are aware that the flange of one of the clamping-bands of a wheel has been extended to lap over the usual rim at the edge; but such construction renders it necessary to draw up a band with a deep flange, which is expensive, while the construction above set forth enables us to use bands with narrow flanges and outer bands of cast metal. Moreover, by the flaring shapes of the bands B F, fitting at the edges within the flanges *a a′*, the bands B F are clamped firmly in place. The whole arrangement insures a perfect covering for the hub and absolute protection from the weather.

We claim—

The combination, with the wooden hub G, of flaring bands B F and the bands C C′, having flanges contracted at the outer edges, and extending over and clamping the bands B F to the hub, the whole constituting a complete metallic covering for the hub, as set forth.

GEO. L. ROUSE.
MARSHALL W. STODDARD.

Attest:
H. M. FRASER,
JOHN F. MCBRIDE.