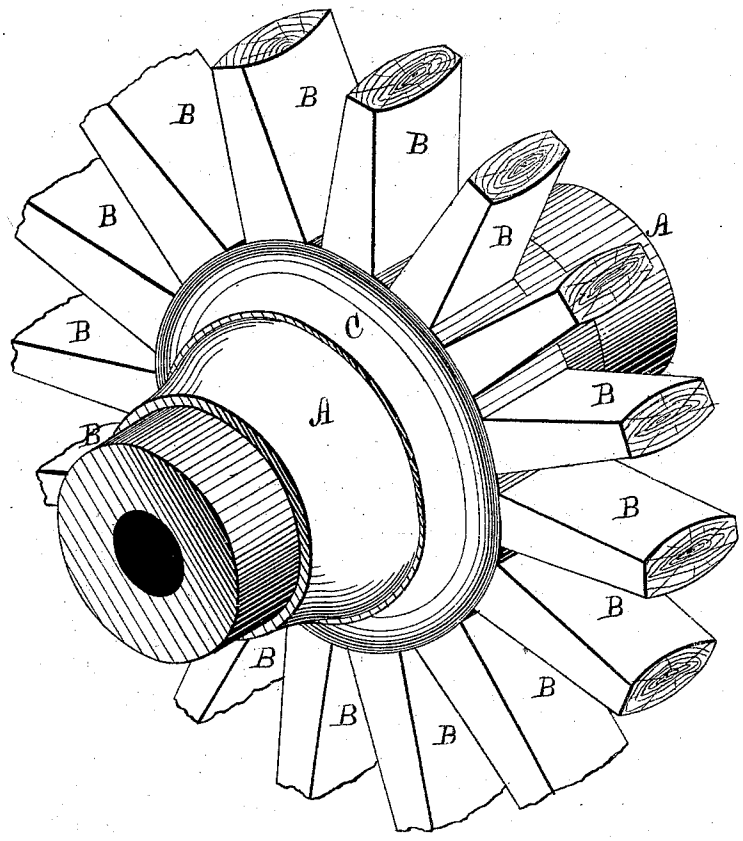
2 Sheets--Sheet 1.

W. F. MORTON.

Wheels for Vehicles.

No. 151,148. Patented May 19, 1874.

Fig. 1.



WITNESSES.

Jas. E. Hutchinson.

John R. Young

INVENTOR.

Wm. F. Morton, by

Prindle and Deane, his attys

2 Sheets--Sheet 2.

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No. 151,148. Patented May 19, 1874.

Fig. 2.

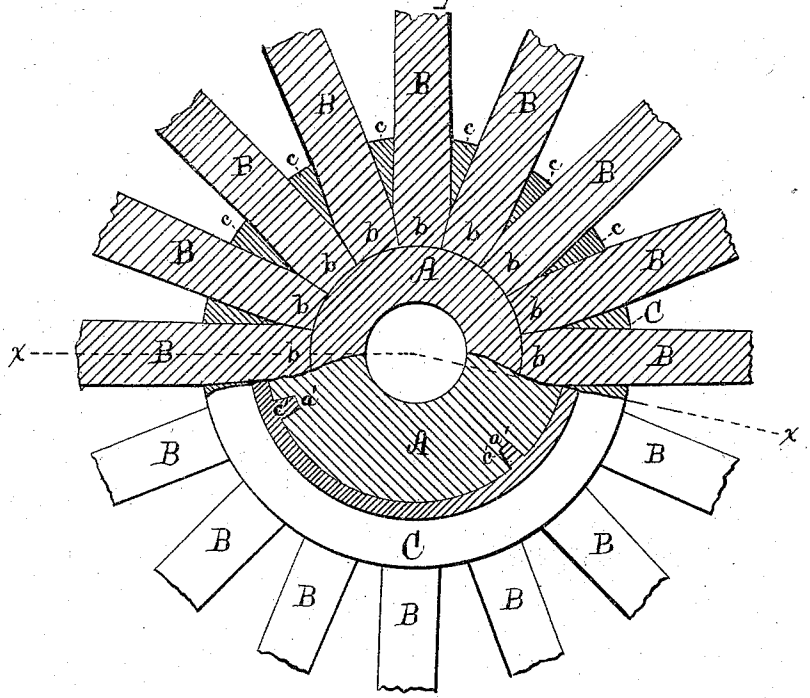
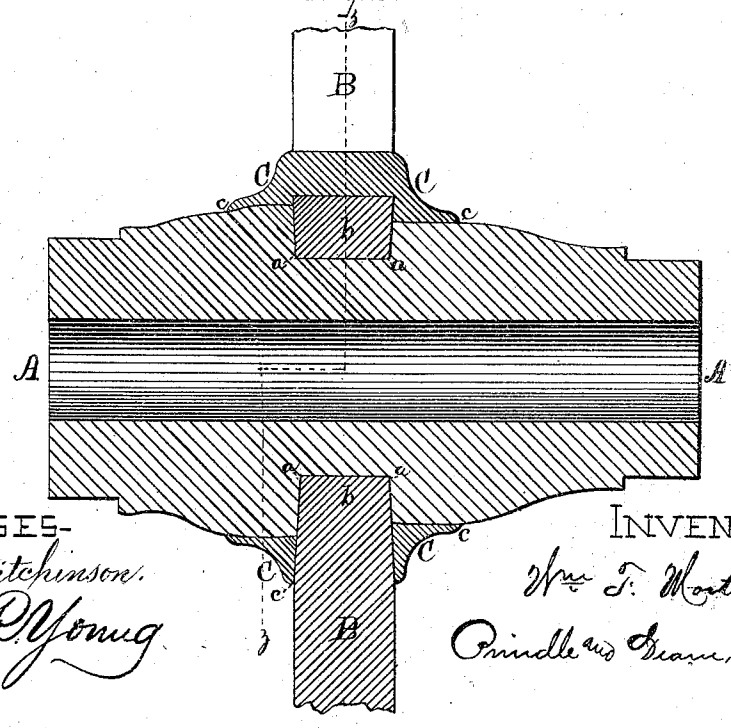


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM F. MORTON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. 151,148, dated May 19, 1874; application filed March 13, 1874.

To all whom it may concern:

Be it known that I, WILLIAM F. MORTON, of New Haven, in the county of New Haven and in the State of Connecticut, have invented certain new and useful Improvements in Carriage-Wheels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of the central portion of a wheel containing my improvements. Fig. 2 is a cross-section of the same upon line *x x* of Fig. 3, and Fig. 3 is a longitudinal section upon line *z z* of Fig. 2.

Letters of like name and kind refer to like parts in each of the figures.

In the use of combined metal and wood in hubs it has heretofore been found necessary to tenon the spokes and mortise the hub, in order that the relative circumferential positions of the former with relation to the latter might be preserved, the result being to weaken said spokes and decrease their durability.

Many attempts have been made to avoid such difficulty by grooving the hub and fitting into such groove the plain ends of the spokes, which latter were afterward confined by metal flanges that bore against their edges, but in use it was found that the spokes and bands would move around the hub, and that, consequently, such construction was not desirable. To obviate these objections, and to increase the durability of carriage-wheels, is the design of my invention, which consists in a carriage-wheel, in which are combined a grooved hub, tenonless spokes, and a mortised metal band provided interiorly with ribs or lugs, which are arranged lengthwise of the interior opening and engage with the periphery of said hub, substantially as and for the purpose hereinafter specified.

In the annexed drawings, A represents a wooden hub, having any desired exterior dimensions, within the periphery of which is provided an annular groove, *a*, that corresponds in width to the width of the inner ends *b* and *b* of the spokes B and B that are to be employed, and is preferably made slightly tapering radially. Upon and around the hub A is placed a metal band, C, which is provided with a series of radial mortises, *c* and *c*, that coincide with the groove *a* and correspond to the inner and slightly-tapering ends *b* and *b* of the spokes B and B, said spokes being driven inward in the usual manner, and caused to fill, laterally, said mortises and groove, while circumferentially the contiguous faces of said spoke ends are formed upon radial lines, so as to constitute a perfect continuous arch. Interiorly, the band C is considerably larger from its inner end to the outer sides of the mortises *c* and *c* than from the latter point to its outer end, and within said smaller part is provided with a number of ribs, *c'*, that are arranged longitudinally, and extend radially inward to points nearly upon a line with the smaller outer portion of said band. The exterior of the hub being made to correspond to the shape of the interior of the band C, the latter is pressed on from the outer end, when its ribs *c'* and *c'* will pass over the outer portion of said hub and embed themselves within the inner or larger portion of the same, and effectually lock said parts in position, circumferentially.

In order that the longitudinal position of the band C upon the hub A may be insured, the ribs *c'* and *c'* do not extend to the inner edge of the former, and said edge is, by suitable means, turned inward over and caused to closely embrace a rounded shoulder, *a'*, that is formed by reducing the size of said hub A at such point.

By means of the construction, shown, the union of the hub and metal band is so close as to prevent any independent motion of either and render it impracticable that they should be separated without breakage, while the bearings afforded for the spokes are such as to preserve to the latter full size and consequent strength.

I am aware that, separately, the several features shown in my invention are not new, and, therefore, do not claim such, broadly.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

A carriage-wheel, in which are combined a groved hub, tenonless spokes, and a mortised metal band that is provided interiorly with longitudinal radial ribs, which engage with the periphery of said hub, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of March, 1874.

WILLIAM F. MORTON.

Witnesses:
JULIUS TWISS,
THOS. F. HARGETT.