

(No Model.)

T. J. REID.
VEHICLE HUB.

No. 416,073.

Patented Nov. 26, 1889.

Fig. 1.

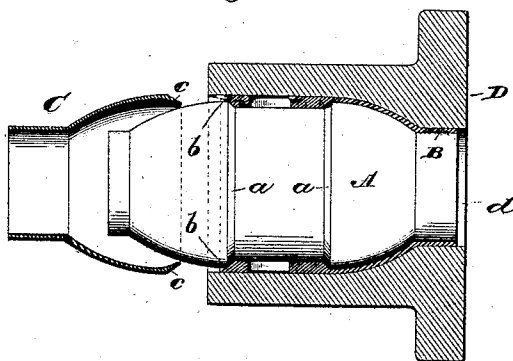


Fig. 2.

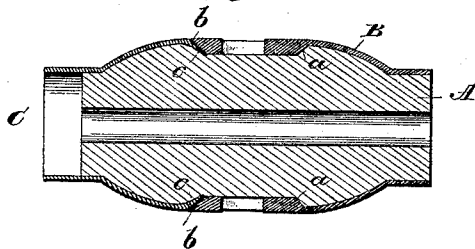


Fig. 3.

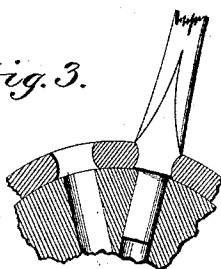


Fig. 4.



Thomas J. Reid

Inventor

Witnesses

L. S. Elliott
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By his Attorneys

[Signature]

UNITED STATES PATENT OFFICE.

THOMAS JOHN REID, OF GANANOQUE, ONTARIO, CANADA, ASSIGNOR OF
ONE-HALF TO GRANT H. BURROWS, OF CINCINNATI, OHIO.

VEHICLE-HUB.

SPECIFICATION forming part of Letters Patent No. 416,073, dated November 26, 1889.

Application filed June 22, 1889. Serial No. 315,285. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JOHN REID, a citizen of the United States of America, at present residing at Gananoque, in the county of Leeds and Province of Ontario, Canada, have invented certain new and useful Improvements in Vehicle-Wheel Hubs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to the manufacture of vehicle-hubs; and it consists in the improvements hereinafter described and set forth.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a vehicle-hub constructed in accordance with my invention. Fig. 2 is a view, partly in section, showing the manner of applying the shells to the hub; and Figs. 3 and 4 are detail views.

A refers to the wooden hub, the same being provided centrally with a peripheral groove the sides of which are beveled, as shown at *a*. This hub beyond the peripheral groove is of the ordinary configuration, so as to taper from the recesses to the ends. This tapering portion can be either formed by the combination of curved and straight lines or by a single straight line, the shape shown in the drawings being preferred as producing a symmetrical hub.

B refers to the inner metallic shell, which is of such size and shape that it may be placed over the inner end of the hub, and by being compressed thereon will be retained in place. This shell B is enlarged at its outer end and the sides of the enlarged portion are beveled, as shown at *b*, these beveled portions being substantially at the same angle. Through this interiorly-enlarged portion of the shell B are openings through which the ends of the spokes pass, and these openings are preferably provided with grooved sides, so that the fibers of the wood of the spokes will be compressed, but not broken, when the tenons of the spokes are driven into the mor-

tises cut into the hub. These openings in the shell-band B may be either on a line with each other or staggered, as may be desired.

C refers to the outer metallic shell, which is made of substantially the same thickness throughout and is of such a size that it will fit snugly upon the outer end of the hub. The inner peripheral edge of the shell-band C is beveled, as shown at *c*, and said beveled portion is adapted when driven upon the hub and contacts with the edge of the shell B to be bent inwardly toward the center of the hub, so as to lie beneath the beveled edge of the shell B, and not only lie over one side of the recess formed in the hub, but also enter the fibers of the wood of the hub, so that said shell-band will be retained upon the hub without further compression thereof.

In the accompanying drawings, D refers to a socketed block of rigid material, preferably steel or iron, the inner walls thereof being of substantially the same shape as the hub, and this hollow block or former D has an opening *d*, through which will pass the ends of the hub and shells when placed therein. Though I have shown this hollow block or former made of a single piece, it may, if desired, be made in two or more parts, which can be drawn together by either encircling bands having tightening means or simply by bolts passed through correspondingly-perforated lugs when the former D is made up of two or more parts.

In applying the shells to the hub the shell B is first placed over the hub so that its interiorly-enlarged portion will lie within the recess formed in the hub-body. The hub, with the band C, is then placed in the former, and by driving upon the outer end of the hub the shell B will be compressed upon the hub to be retained thereon. Of course, when the former or compression-block D is made up of two or more parts, it is only necessary to draw these parts together to accomplish the compression of the shell upon the wooden hub. After the shell B has been sufficiently compressed the shell or band C is driven over the hub while it is still within the block D, and the beveled edge thereof, contacting with the oppositely-beveled edge of the shell or band B,

will be forced beneath said beveled edge into the recess and embedded into the wood. This upset end of the shell or band C will retain the shell securely upon the outer end of the hub, and when said edge is upset the metal will be compressed, so that crimps or a roughened edge will be provided, which will take a better and more secure hold upon the wood. The shell C, after being secured to the hub, as just described, may be compressed upon the hub by reversing in the block or inserting it in another somewhat similarly-constructed block when the configuration of the outer end of the hub is different from the inner end thereof. As the edges of the shells B and C are beveled and lie one over the other, the joint of the two shells will not be perceptible, especially after the hub has been finished by being smoothed down and varnished.

Though I have shown the hub provided with a circumferential recess and the end of the inner shell enlarged, a hub can be constructed by dispensing with these two elements without departing from the spirit of my invention, one of the essential features of which is the incasing of the wooden hub within a metallic shell, which is made, preferably, in two pieces, one of said pieces or shells being locked to the hub by causing the edge thereof to enter the wood of the hub.

The device illustrated in the accompanying drawings may be used with hub-blocks that are checked or split, and which can be utilized by compressing them in a tapered socket attached to a hydraulic press of ordinary construction. Such hub-blocks may have a wedge-shaped section cut therefrom adjacent to the crack or split, and a wedge-shaped piece such as described in my application filed April 17, 1889, Serial No. 307,580, may be used.

In manufacturing a hub, whether from checked or solid hub-blocks, the same is first forced into the inner shell, the shell being first placed in the former. The outer shell is then forced down over the hub, and the former will prevent the back shell expanding and will hold the same solid, so that the edge of the outer shell, contacting with the underside of the inner shell, will be turned so as to enter either the recesses in the hub-block or be embedded in the wood thereof. The former or socket is of the same configuration interiorly as the back shell, and the hub-block is compressed into the back shell by suitable

means, and it afterward expands in the back shell, and the former will prevent the expansion or breaking of the shell by the internal pressure. It will be understood that the hub and back shell are both placed in the former or socket, while the front shell is compressed in place and the beveled or wedge-shaped opposing edges on the inner ends of the shells contact with each other, the edge of the front shell passing under the back shell, and is turned down into the hub by contacting with each other as they are forced together, the thickened portion of the back shell being much stronger and more rigid than the beveled edge of the front shell, thus causing the weaker peripheral edge of the outer shell to give way or bend when the outer shell is forced in place.

By the term "solid" applied herein with reference to the hub block or core wherever it may be used an unsplit or unchecked block is meant, as contradistinguished from a core or block longitudinally split or checked, as set forth in United States Letters Patent No. 406,770, granted to me July 9, 1889.

I claim—

1. In the manufacture of vehicle-hubs, a hub section or block, a metal shell partially incasing the hub, a former within which the hub-block and inner shell are placed, and an outer shell adapted to be driven upon the hub-block beneath the periphery of the inner shell, substantially as shown, and for the purpose set forth.

2. In the manufacture of vehicle-hubs, a former having an internal configuration substantially the same as the exterior configuration of the hub, substantially as shown, and for the purpose set forth.

3. In the manufacture of vehicle-hubs, a rigid former in which one of the external shells and a hub-block are adapted to be placed and held, and an outer band adapted to be held upon the hub-block by forcing the same over the hub-block and against the edge of the adjacent shell, said shell being held from expansion by the former, substantially as shown, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS JOHN REID.

Witnesses:

B. O. BRITTON,
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