J. W. ANDERSON.

VEHICLE WHEEL.

No. 182,048. Patented Sept. 12, 1876.

Fig. 4.

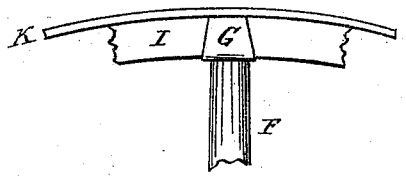


Fig. 5

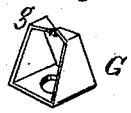


Fig. 2

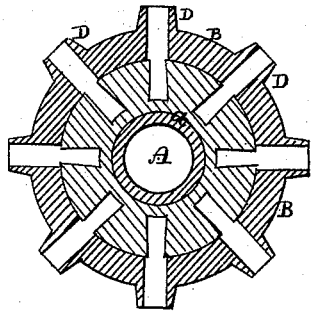
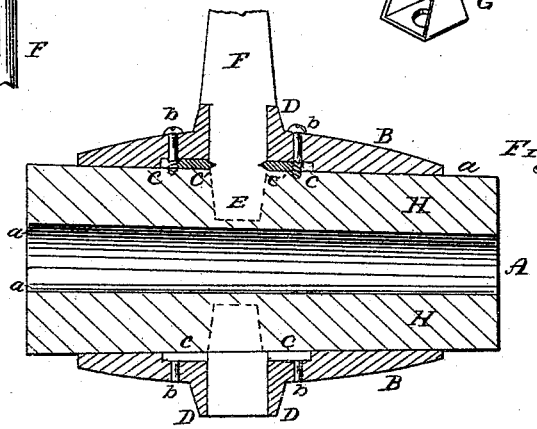


Fig. 1



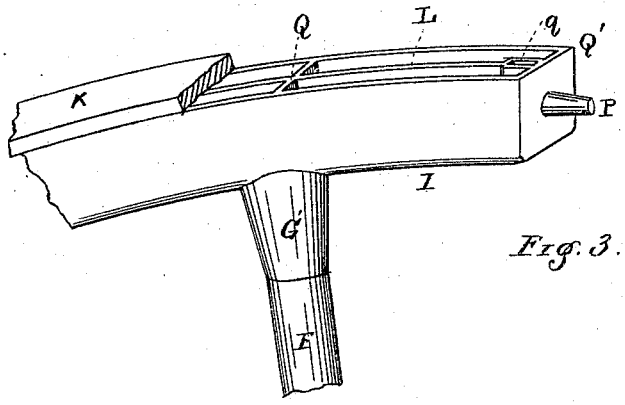
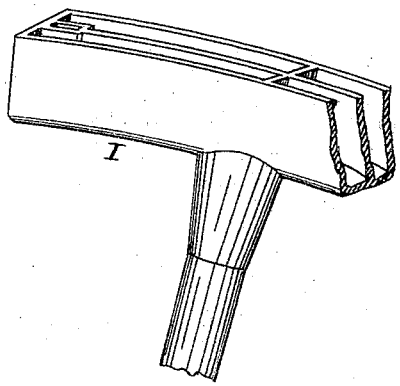


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. ANDERSON, OF DRUMORE TOWNSHIP, (NEAR GREEN P. O.,) LANCASTER COUNTY, PENNSYLVANIA.

IMPROVEMENT IN VEHICLE-WHEELS.

Specification forming part of Letters Patent No. **182,048**, dated September 12, 1876; application filed August 18, 1876.

To all whom it may concern:

Be it known that I, JOHN W. ANDERSON, of Drumore township, (near Green Post-Office,) Lancaster county, State of Pennsylvania, have invented certain Improvements in the Combination of Wheels for Vehicles, of which the following is a specification:

The object of this invention is to constitute a more durable wheel, and the more permanent union of the spokes with the hub and the rim of the wheels of vehicles.

The accompanying drawings, with the letters of reference marked thereon, and a brief explanation, will enable those skilled in the art to make and use the same, and in which—

Figure 1 is a longitudinal section through the center of the hub; Fig. 2, a cross-section made centrally of the same; Fig. 3, portions of sections of the socket-rim of a wheel and spokes; Fig. 4, illustrates a spoke and metallic cap and felly combined; Fig. 5 is a perspective view of said cap, detached.

The cylindric metallic hub-band or casing B has externally-raised open sockets D, for the reception and support of the tenons E of the spokes F, in which I claim no special novelty. This casing B, however, has on its inner face, (which is made slightly tapering in order to slip it upon the wooden hub H, turned true for the purpose,) on each side of the socket-openings, and communicating with them, a flat circumferential groove, C, cut out by means of suitable machinery. This groove C has a continuous band, C′, laid flush into it, which band is narrower than the groove, so that at first it is out of the way, and admits of mortises being cut through the sockets the desired depth into the wooden hub, leaving a closed base of wood outside the axle-box *a*. I prefer the use of a diagonal wedge, inserted into a cut made in the butt-end of the tenon of the spokes, so that when driven down to its seat the wedge enters and splays the butt in a superior manner.

Thus dovetailed, as it were, and supported by the metal socket, I secure permanency against the shrinking of the wood, by the use of the wedging-bands C′, forced partially into the wood of the tenons, on one or both sides, depending whether they are made in a central line or staggered around the hub.

The wedging is performed through perforations on the sides of the socket in the case by means of a punch, or the wedge-pin, or screw *b*, which also holds the bands in place, and thus firmly gripes the tenons between the wood of the hub and base of the socket.

I may be allowed to mention my first device for connecting the outer ends of the spokes with the fellies, by means of a metallic cap, G, having beveled sides running to a point on each side of the felly, and its base centrally perforated for the tenon to pass through, the projecting pointed ends turned inward, and the tip downward, flush with the tread of the tire K, to bind them with the spokes, and secure a greater permanency, which I believe to be novel. However, I now have adopted a metallic rim of the entire wheel, made in two or more sections, of light casting. A portion of two such sections is shown by Fig. 3. The vertical sides have a rounded base, U-shaped, and provided with intermediate ribs or supports L, to give greater strength. I only show a single central rib, L, which may be sufficient for light vehicles.

This rim I is provided with sockets G′ at proper intervals, to receive the end of the spokes F, and also with cross-sections or braces Q over each socket, and an intermediate cross-section, Q′, having an oblong opening above, and tapering downward, for the tire-bolt and its adjustment, should resetting of the tire be required.

The abutting segments of the rim are closed at the ends, one of which is provided with a strong dowel-pin, P, or its equivalent, to enter a hole or boss made in the other end of each section, in order to secure a firm coupling. The outer edges of the sides and central rib or ribs of the rim are of equal height to form the true circle for receiving the ordinary tire K attached by the tire-bolts to the metallic rim or combined fellies, thus, the sockets G are secured with the spokes F of the wheel, and thereby firmly connect them with the rim.

It is confidently believed that such wheels

would be truly durable, and cheaper in the end than the ordinary wheels in use, such being the facility of machinery and skill of making light castings. No difficulty is in the way of making such a combination of the spokes with the hub and rim of wheels; so that if a little more expense is incurred at first it will be amply made up by the strength and durability of the same.

I am aware that metallic hub-cases, with mortised holes and sockets for the spokes, whether made in a line or staggered, are not new; but I am not aware that clamp side rings in a groove were ever before known or used for holding the tenon in the mortise, nor of metallic caps for binding the spokes to the fellies or rim of the wheel, which I do not claim in this case, in view of claiming my newly-invented metallic rim in combination with its sockets, spoke, and hub attachment.

What I claim as my invention in wheels for vehicles is—

1. The circumferential flat grooves C on each side of the openings of the sockets D, on the inner face of the hub-casing B, the continuous wedging-bands C′, held in place by screws or wedge-pins *b*, to clamp the tenons of the spokes F when in place, substantially as and for the purpose specified.

2. The metallic U-shaped rim I of a wheel, made in two or more sections, with intermediate rib or ribs L, cross-bracings Q Q′, the latter provided with oblong tapering perforations, the sockets G′ for the end of the spokes F, substantially as and for the purpose described.

JOHN W. ANDERSON.

Witnesses:

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JACOB STAUFFER.