G. L. ROUSE & M. W. STODDARD.

Hub for Vehicle Wheels.

No. 161,904. Patented April 13, 1875.

Fig. 1.

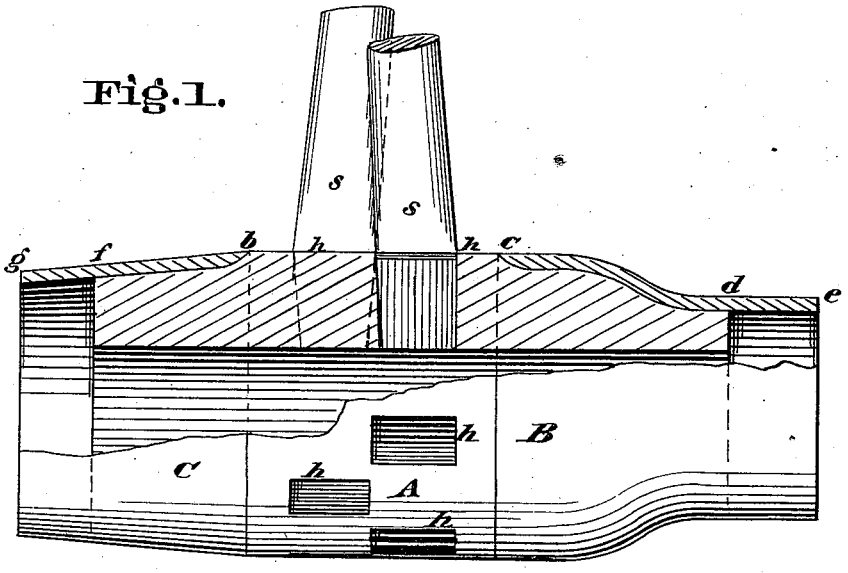
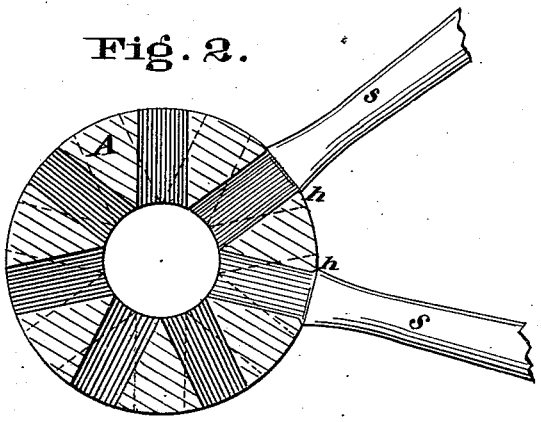


Fig. 2.



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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN HUBS FOR VEHICLE-WHEELS.

Specification forming part of Letters Patent No. **161,904**, dated April 13, 1875; application filed May 18, 1874.

To all whom it may concern:

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

Our invention relates to carriage-wheels, and more particularly to the hub of the wheel; and consists in the provision and arrangement of metallic bands, for the purpose of giving firmness to the hub without entirely depriving it of elasticity, and in beveling the shoulder of the spoke at the point where it enters the hub.

Figure 1 represents the hub, as seen from the side with a section extending lengthwise through the same, in such a manner as to exhibit the arrangement of the metallic bands. Fig. 2 represents a cross-section of the hub, taken through the middle line of intersection with the spokes of the wheel.

A represents the wooden hub; B and C, the metallic bands; *s*, the spoke; *h*, the point where the spoke enters the hub; *b* and *c*, the inside edges of the metallic bands; *f*, and *d*, the extremities of the wooden hub; *g*, the outer extremity of the sand-band; and *e*, the outer extremity of the point-band.

Wheels now in use, constructed with flanges extending to and pressing against the spokes, are sufficiently secured against the splitting of the hub, but are deprived of the elasticity which is extremely desirable in carriage-wheels, both as causing the carriage to ride with greater ease, and as exposing the spokes and other exterior portions of the wheel to less severe strains.

Wheels made with no metallic bands, or with narrow metallic bands extending only round the edges of the hub, possess sufficient elasticity, but the hubs are liable to split.

In wheels made according to our invention, broad metallic bands, so constructed as to be forced tightly upon the hub by hydraulic or other suitable pressure, are extended over the body part of the hub, almost, but not quite to the spokes. A narrow rim of the hub, between the edge of these bands and the spokes, is left exposed. This rim would vary somewhat with the size of the wheel, but would be, in an ordinary carriage-wheel, made as we prefer them, rather less than half an inch in width.

The exact width of the rim is not material to our invention, the essential requirement being that the bands be extended over the body of the hub, so as to secure it against any liability to split, instead of merely extending round the two extremities, as is the case in many wheels now in use, and that they be not extended so far as to press against the spokes, and thus prevent all spring in the hub. The exterior wood of the hub is cut away to receive these bands, and to bring them flush with the wood of the hub, which is left exposed.

The bands are held securely in place upon the hub by the pressure of the wood without extraneous support. Where the edge of the bands which comes against the wood of the hub, as seen at *b* and *c* in Fig. 1, is cut off squarely, the wood of the hub, as it expands and contracts with exposure to moisture and heat, is liable to withdraw somewhat from the bands, and leave a seam or crack, which not only affects unfavorably the appearance of the wheel, but greatly lessens the effectiveness of the bands, not giving security and firmness to the hub. This difficulty we obviate by beveling the inside edge of each band, as shown in the drawing at *b* and *c*, Fig. 1. The surface of the wood is also adapted to this bevel, as also appears in the drawing. This beveling of the edge of the bands, and adapting the wood to receive it, not only effectually prevents the parting between the wood and the metal already referred to, but enables the band to be pressed more readily and securely into its place upon the hub, and also prevents any splitting or cracking in that exposed rim of wood which lies between the edge of the bands and the spokes, and exterior to the inside surface of the bands. These bands are usually made of malleable iron, but may be made of any suitable metal. They may also be extended beyond the wood of the hub, so as to form sand-bands and point-bands, as shown in the drawing; but this we do not claim as an essential part of our invention.

That portion of our invention which relates to the spokes of the wheel consists in forming a beveled shoulder instead of the square shoulder at the point of intersection with the hub. By this means the spoke obtains a firmer sup-

port in the hub, and obtains the additional strength of the wood above the shoulder. It also is less likely to withdraw from the wood of the hub, leaving a seam or crack at the place of intersection.

What we claim as our invention, and ask to have secured to us by Letters Patent, is—

1. A wooden wheel-hub, combined with metallic bands extending over the body part of the hub, upon both sides of the spokes, and brought into close proximity with the spokes, but not impinging against the same, the wooden hub adapted to receive the metallic bands flush with the portion of its surface which is left exposed, and the metallic bands constructed to be driven securely into their place on the hub by pressure, and held there without extraneous fastening, substantially as set forth.

2. A wooden wheel-hub, combined with metallic bands, extending over the body part of the hub, upon both sides of the spokes, said bands constructed with beveled edges, and the wood of the hub adapted to receive said bands, substantially as and for the purposes set forth.

GEORGE L. ROUSE.
MARSHALL W. STODDARD.

Witnesses:
ALBERT G. CLARK,
WM S. BATES.