

J. WOODBURN.
Wheels for Vehicles.

No. 139,697.

Patented June 10, 1873.

Fig. 1

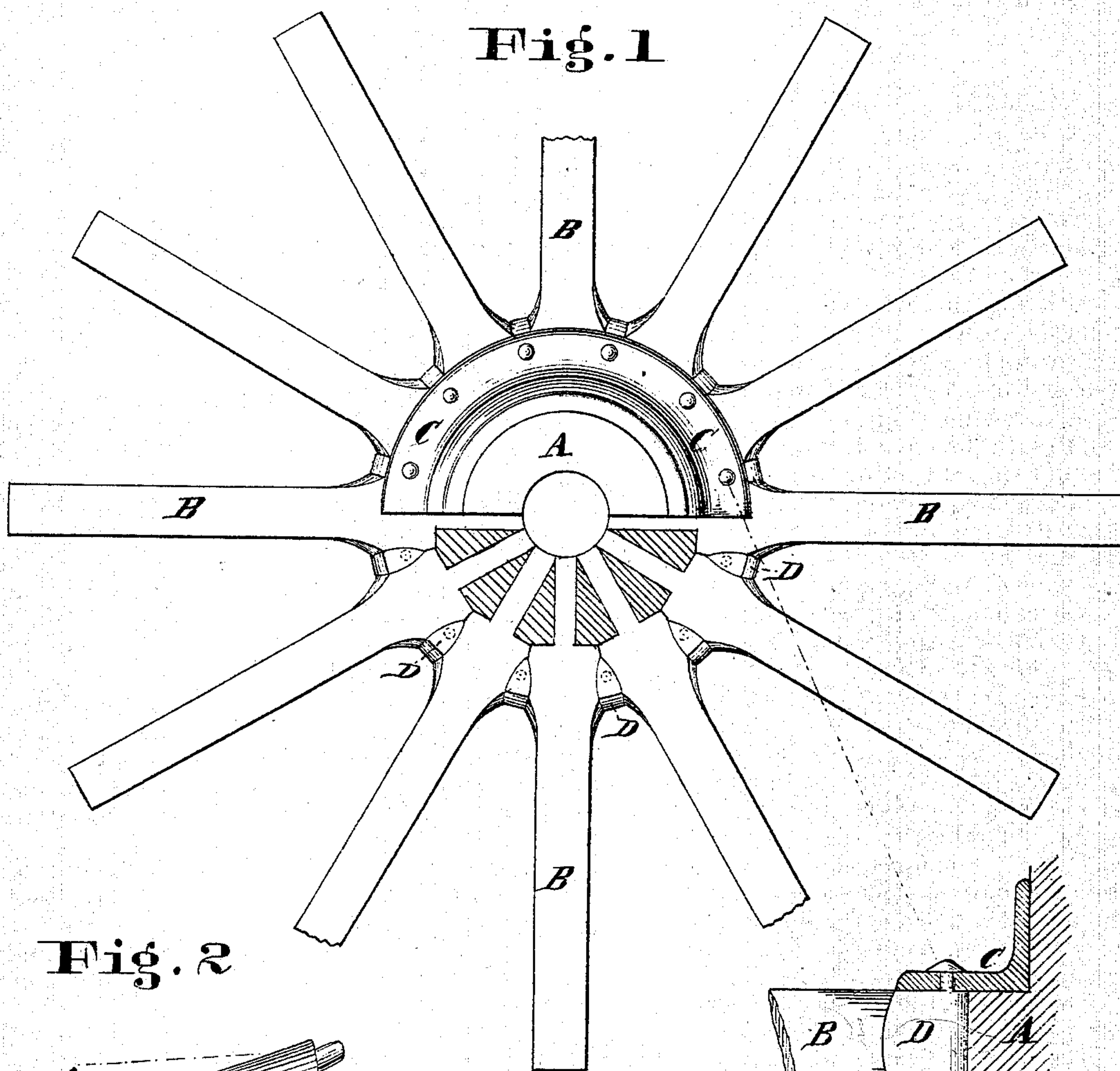
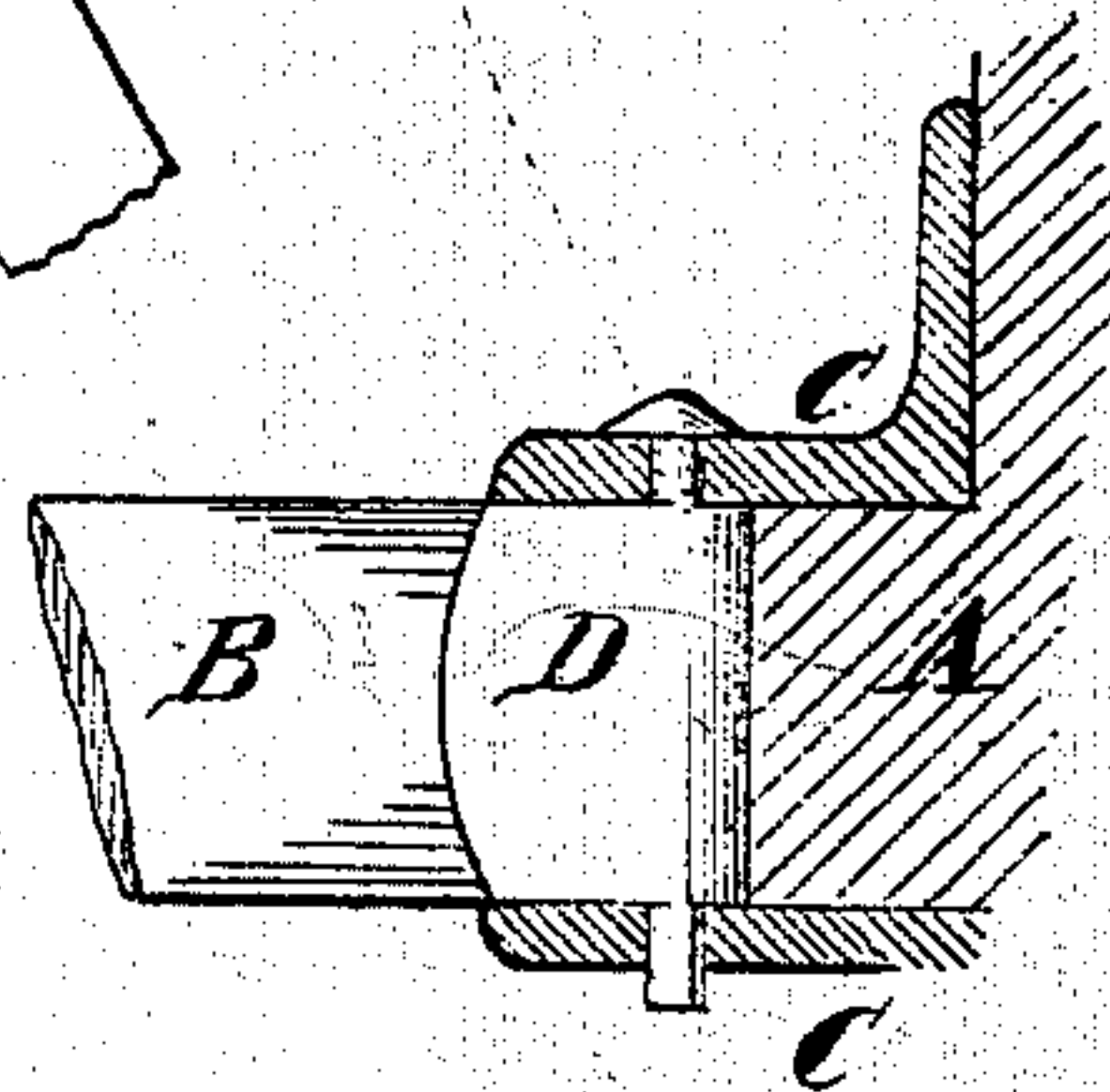
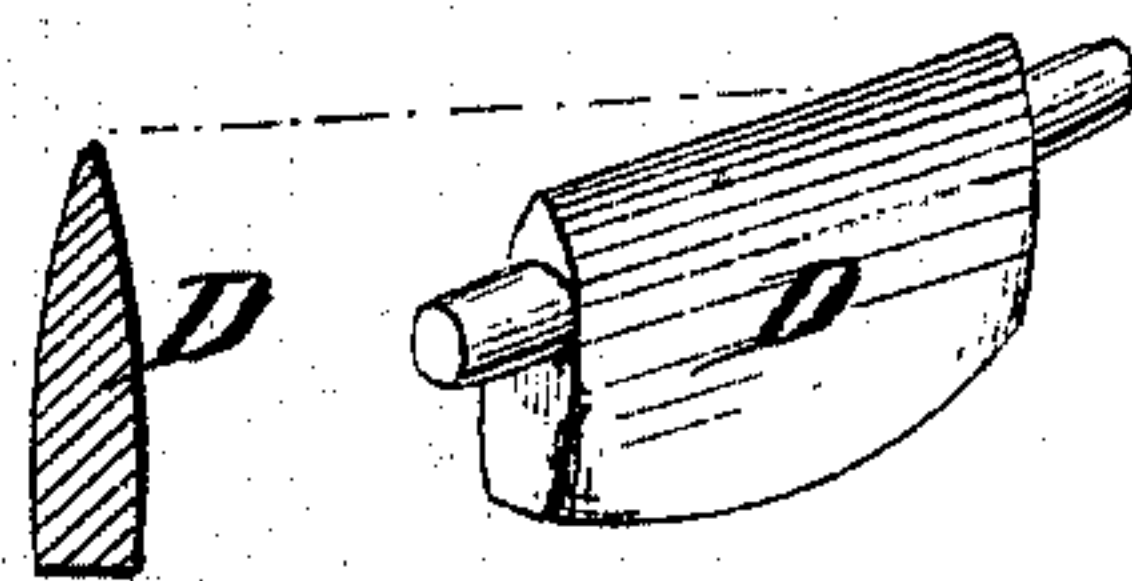


Fig. 2



Attest

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Jacob Woodburn
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UNITED STATES PATENT OFFICE.

JACOB WOODBURN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WOODBURN SARVEN WHEEL COMPANY, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. **139,697**, dated June 10, 1873; application filed December 14, 1872.

To all whom it may concern:

Be it known that I, JACOB WOODBURN, of St. Louis, in the county of St. Louis and State of Missouri, have invented an Improvement in Hubs of Carriage-Wheels, of which the following is a specification:

My invention relates to an improved mode of constructing the hubs of carriage-wheels; and consists in inserting between each spoke and those adjoining it bars or wedges constructed and inserted as hereinafter set forth.

In the drawings, Figure 1 is a view of a wheel-hub with the spokes attached, and shows the manner of connecting the bars, flanged rings, and spokes, and also exhibits the peculiar construction of the spoke. Fig. 2 represents the bar or wedge on a larger scale than is shown in Fig. 1, and is intended to show its peculiar formation.

A represents the hub, mortised in the usual manner. B B are spokes so constructed as to form a solid arch immediately outside of the hub. The spokes are made with the sides of the shoulders cut away at the upper part, as shown at *a*, Fig. 1, so that when the spokes are set in the hub a slight opening is left between the shoulders to receive the bar or wedge. C C are metallic flanged rings, surrounding the hub on each side of the spokes, and having rivet-holes corresponding to each space between the spokes. The flanges are connected together by the bars D D, Figs. 1 and 2, which are made of iron or other suitable material, having on each end a rivet-pin, which enters into a corresponding rivet-hole in the flange, and thus enables the flange to be drawn tight to the face of the spokes and securely fastened there.

One great advantage in making these transverse bars independent of the flanges is that the choicest wrought-iron can be used, which, of course, would not be the case when the bars are cast with the flange.

Another advantage arises from the fact that the wedges or bars are not inserted until after the spokes are driven into the hub. When the spokes have been placed in position the wedges are driven down radially between them, and as the wedge-shaped bars may, if desired, be made of such shape as slightly to compress the fiber of the wood, it is plain that a firmer and more solid structure can be produced than either where the spokes are driven

into a mortised ring, or the bars are cast in the form of lugs upon one of the flanges and inserted laterally between the spokes. Furthermore, there is no such liability to injure the fiber of the wood as exists where the spokes are driven down into a metallic socket, and, by reason of the wedge-shape that is given to the bars, the spokes are securely held against any radial displacement.

Still another advantage of inserting the bar between the spokes consists in the fact that by this means a large saving can be effected in the stock out of which the spoke is constructed, the amount of stock required not being more than two-thirds or three-fourths of what would be necessary if the contact between the spokes were preserved up to the outer corners of the shoulders, and this saving is effected without a corresponding diminution in the strength of the wheel.

I generally round the wedge or bar upon the outer edge, so as both to give it a neater appearance and to prevent the dust and dirt from lodging between the spokes; and I also prefer to make the faces of the wedge convex, as shown, with a corresponding conformation of the shoulders of the spokes.

I have shown my wedges as applied to a wheel having turned spokes and a mortised hub; but it is plain that they may also be used with advantage in wheels in which the spokes are inserted in a continuous groove or channel.

I am aware that before my invention flanged rings, placed on the opposite sides of the spokes of a wheel, had been held in place by means of metallic bars passing between the spokes and riveted into the flanges; but I am not aware that such bars had ever before been constructed so as to prevent the radial displacement of the spokes, or with view to effecting a saving of material in the formation of the spoke.

What I claim is—

The combination of the spokes, the flanged rings, and the transverse wedges, constructed independently of the flanges, substantially as and for the purpose described.

JACOB WOODBURN.

Witnesses:

S. N. TYLER,
J. W. WALD.