2 Sheets--Sheet 1.

E. B. LOWE.

Improvement in Hubs for Vehicles.

No. 132,091. Patented Oct. 8, 1872.

Fig. 1.

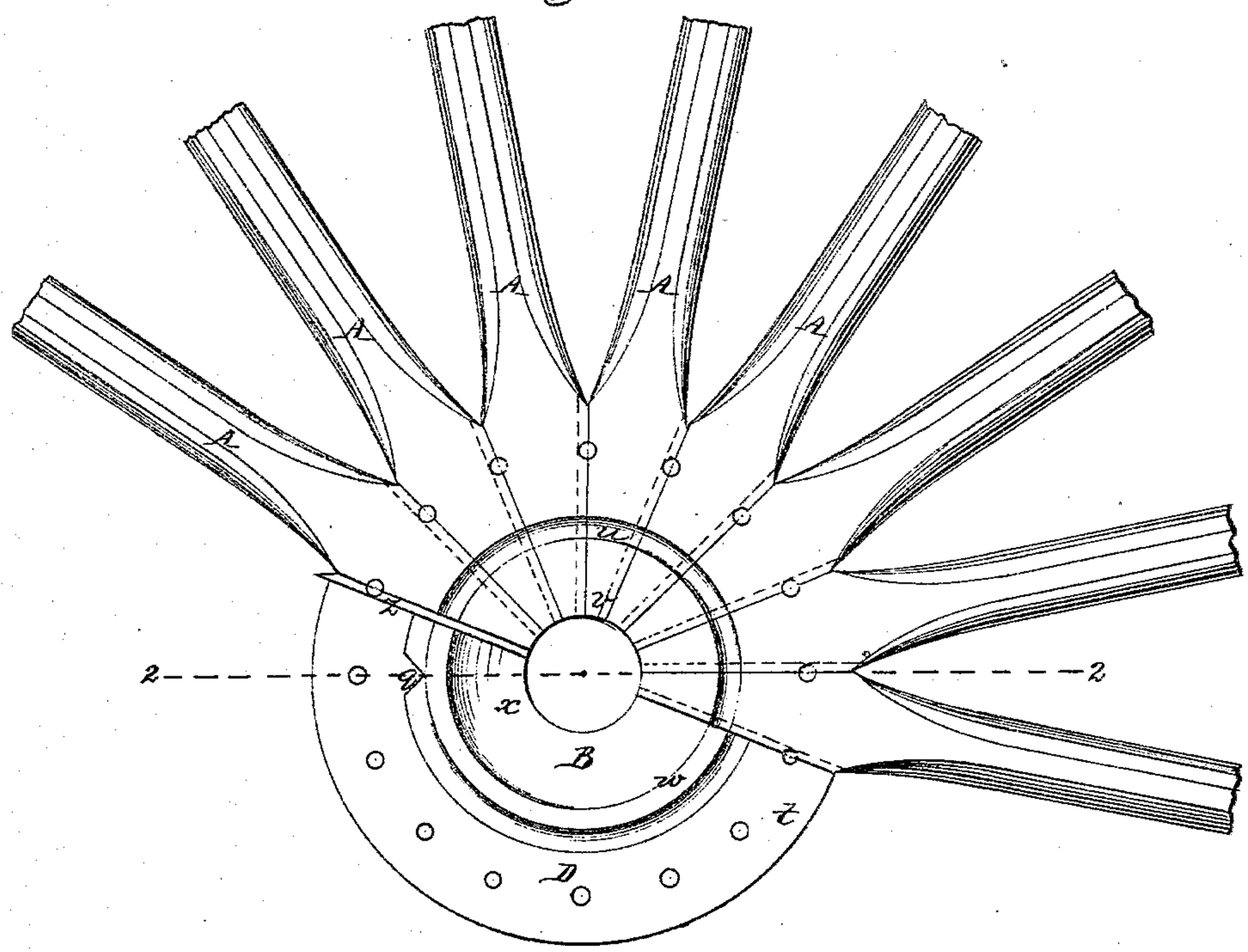
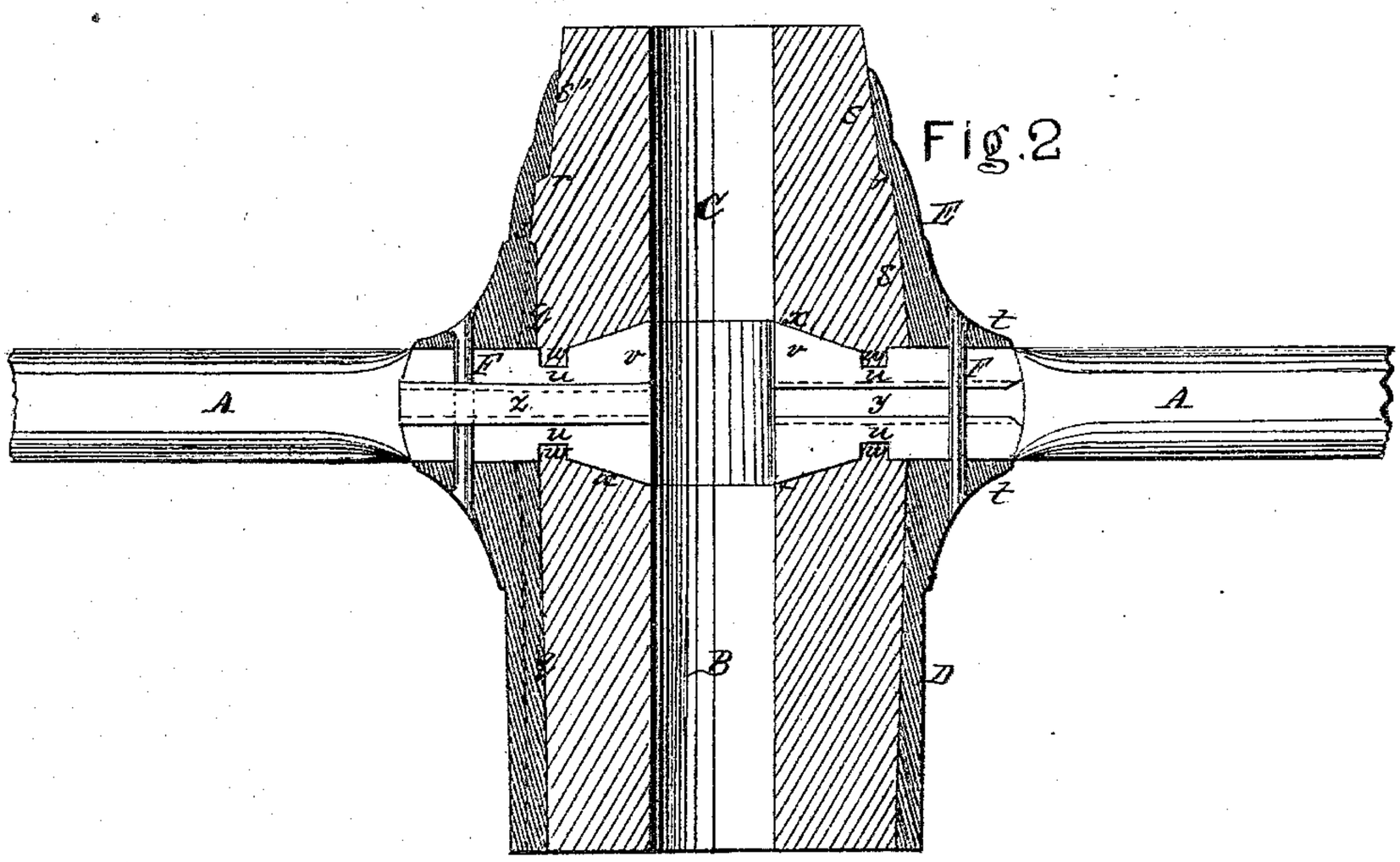


Fig. 2



Witnesses.

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2 Sheets--Sheet 2.

E. B. LOWE.

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Fig. 3.

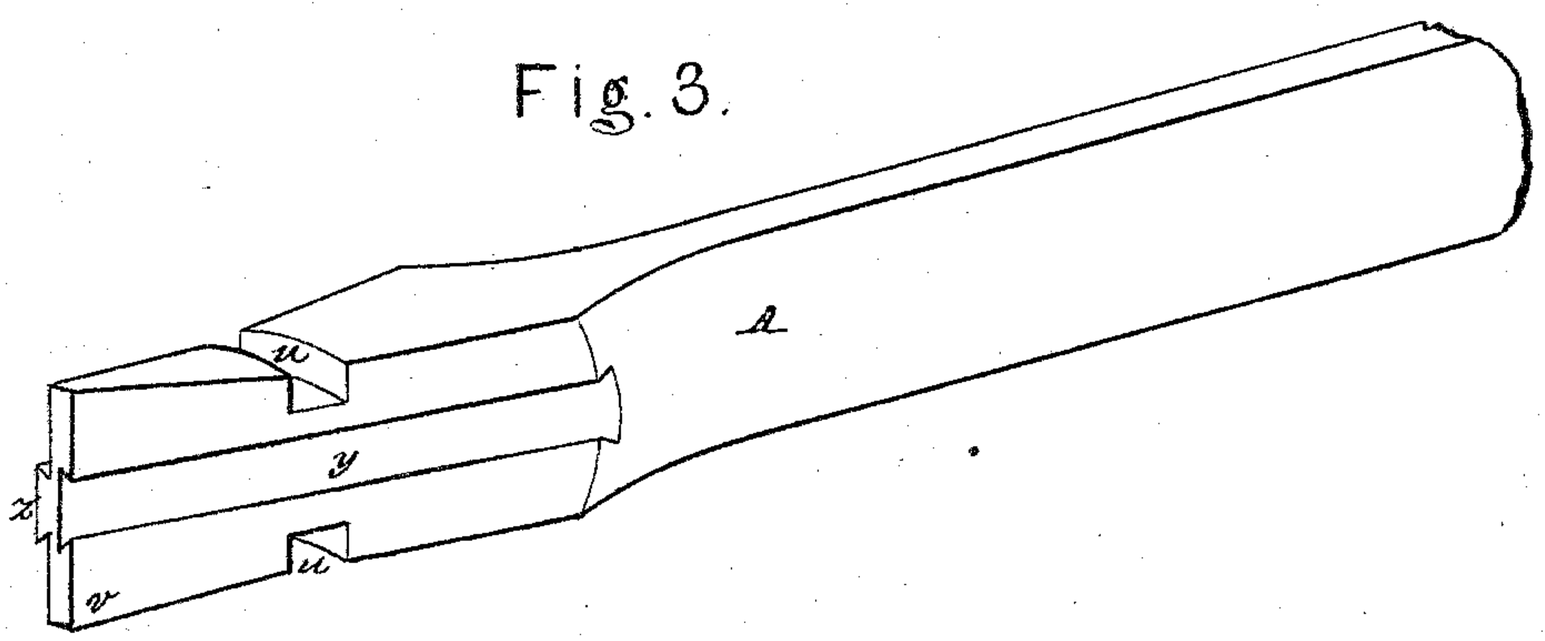
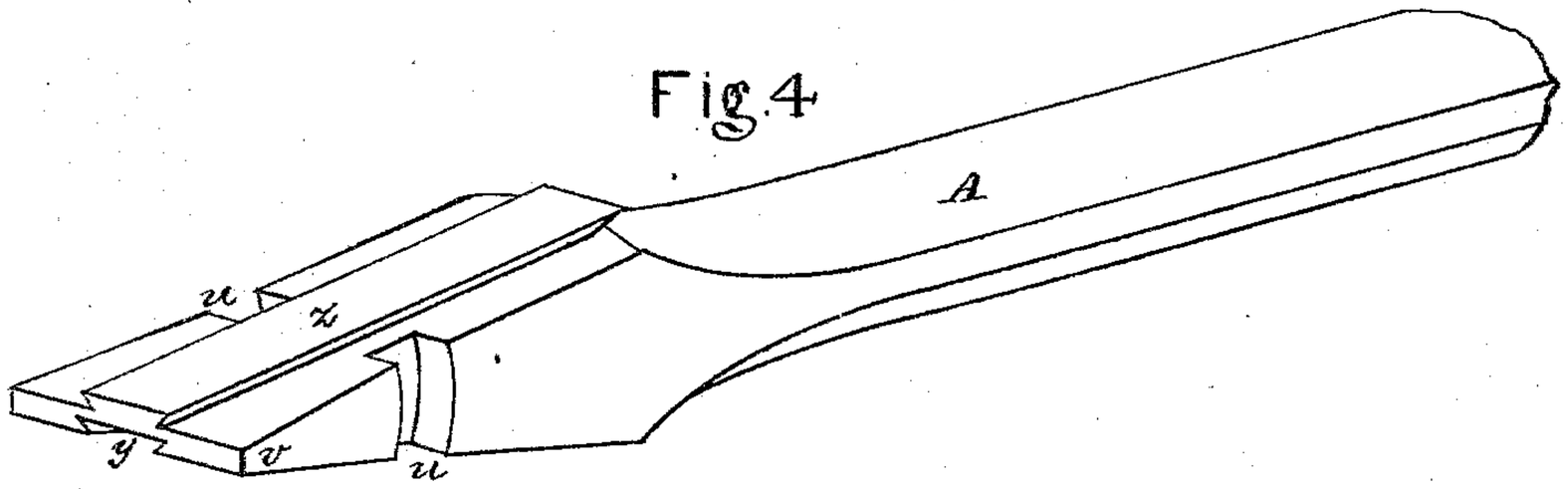


Fig. 4



Witnesses.

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Edmund B. Lowe

By Knight Bros

Attys.

UNITED STATES PATENT OFFICE.

EDMUND B. LOWE, OF BELLEFONTAINE, ASSIGNOR TO HIMSELF AND ISAAC N. McBETH, OF SAME PLACE, AND FRANKLIN N. DRAPER AND AARON DENISON, OF WEST LIBERTY, OHIO.

IMPROVEMENT IN HUBS FOR VEHICLE-WHEELS.

Specification forming part of Letters Patent No. **132,091**, dated October 8, 1872.

To all whom it may concern:

Be it known that I, EDMUND B. LOWE, of Bellefontaine, in the county of Logan and State of Ohio, have invented an Improved Wheel for Vehicles, of which the following is a specification:

Nature and Objects of the Invention.

This invention relates to what are termed "sector wheels," for wagons and carriages and primarily to that class of these wheels which have hubs composed in part of wooden core-blocks, held by being introduced from the inner ends of metallic shells, tapering outwardly, or of equivalent shape.

The first part of the present invention consists in sector-spokes locked together in the process of setting up the wheel, and in the finished structure by means of dovetail or undercut radial tongues or keys. These serve not only to facilitate setting up the wheel, but also to afford lateral support and to form a reliable mechanical bond between the spokes, preventing their separation even by shrinkage, and enabling the gluing of the spokes together to be dispensed with wholly or in part. The second part of the invention relates to two-part compound hubs, and consists in central concavities in the inner faces of the wooden blocks, and concentric ribs or flanges thereon, either or both, in combination with correspondingly-constructed spokes to support the latter radially.

Description of the Drawing.

Figure 1 is a face view of the wheel, with one part of the hub and portion of the spokes removed. Fig. 2 is a section in the plane of the axis on the line 2 2, Fig. 1. Fig. 3 and Fig. 4 are perspective views on a larger scale of the sector end of an improved spoke.

General Description.

In carrying out the invention, each wheel is composed of sixteen, or more or less, wooden sector-spokes, A, a pair of cast-iron hub-shells, D E, wooden core-blocks B C, and connecting-rivets F, or their equivalent, to form the web and hub, with a felly, tire, and axle-skein or box of any approved pattern. The improved spokes A are constructed with a longitudinal dovetail or undercut tongue or key, *z*, on one edge of each sector, and a corresponding groove or seat, *y*, on the other edge to receive the tongue of the adjoining spoke. In an inferior modification of the feature the sectors may be grooved in each edge to receive loose keys, or the spokes may be furnished alternately with tongues and grooves; and these tongues or keys, and their grooves or seats, may be uniform or tapering from their outer ends inwardly. By these means the spokes may be attached one to the other by driving them, and the web of a wheel may thus be accurately set up, with or without the use of glue, as preferred, without the employment of the clamping devices heretofore necessary. The tongues or keys serve also to support the spokes laterally, and in their most important capacity to form a positive or unyielding mechanical bond between the spokes, preventing their separation even by shrinkage. Gluing may be employed to hold the spokes against accidental radial displacement in setting up the wheel. To support the spokes radially in the finished wheel, the inner faces of one or both of the wooden core-blocks B C have central concavities, *x*, of greater or less radius, and concentric ribs or flanges *w*, the latter having the longitudinal or perpendicular grain of the wood. To occupy and receive the said concavities and ribs, the sector ends of the spokes are correspondingly enlarged, as at *v*, and grooved transversely, as at *u*. Either or both provisions may be employed. The rear hub-shell D and its block B, or the outer shell and block, may be constructed of a continuous taper outwardly. I prefer to construct the outer hub-shell and block E C, or both the shells and blocks, with two or more sections, *s s'*, of diminishing diameter, tapering outwardly, and united by a beveled shoulder, *r*, as represented. This construction insures a tight fit and the positive support of the block or blocks against outward movement. The construction is more important as applied to the outer shell and block, owing to the strain on the latter in driving in the axle skein or box. The shells are constructed with the com-

mon longitudinal V-ribs *q* to prevent the rotation of the blocks; also the common perforated circumferential flanges *t* to receive the rivets F.

Claims.

The following is claimed as new:

1. The sector-spokes A, with the dovetail or undercut grooves or seats *y*, and keys *z* for locking the same together, substantially as shown and described.

2. The ribs or flanges *w*, for supporting the spokes against radial displacement, when the same are formed on the inner ends of wooden core-blocks B C, as herein shown and described.

3. The wooden blocks B C, constructed with concave inner faces *x*, and concentric ribs or flanges *w*, (either or both,) and with the taper sections *s* and *s'*, and beveled shoulder or shoulders *r*, in combination with the spokes A, with keys *z*, shells D E, and rivets F, substantially as herein shown and described.

EDMUND B. LOWE.

Witnesses:

OCTAVIUS KNIGHT,

WALTER ALLEN.