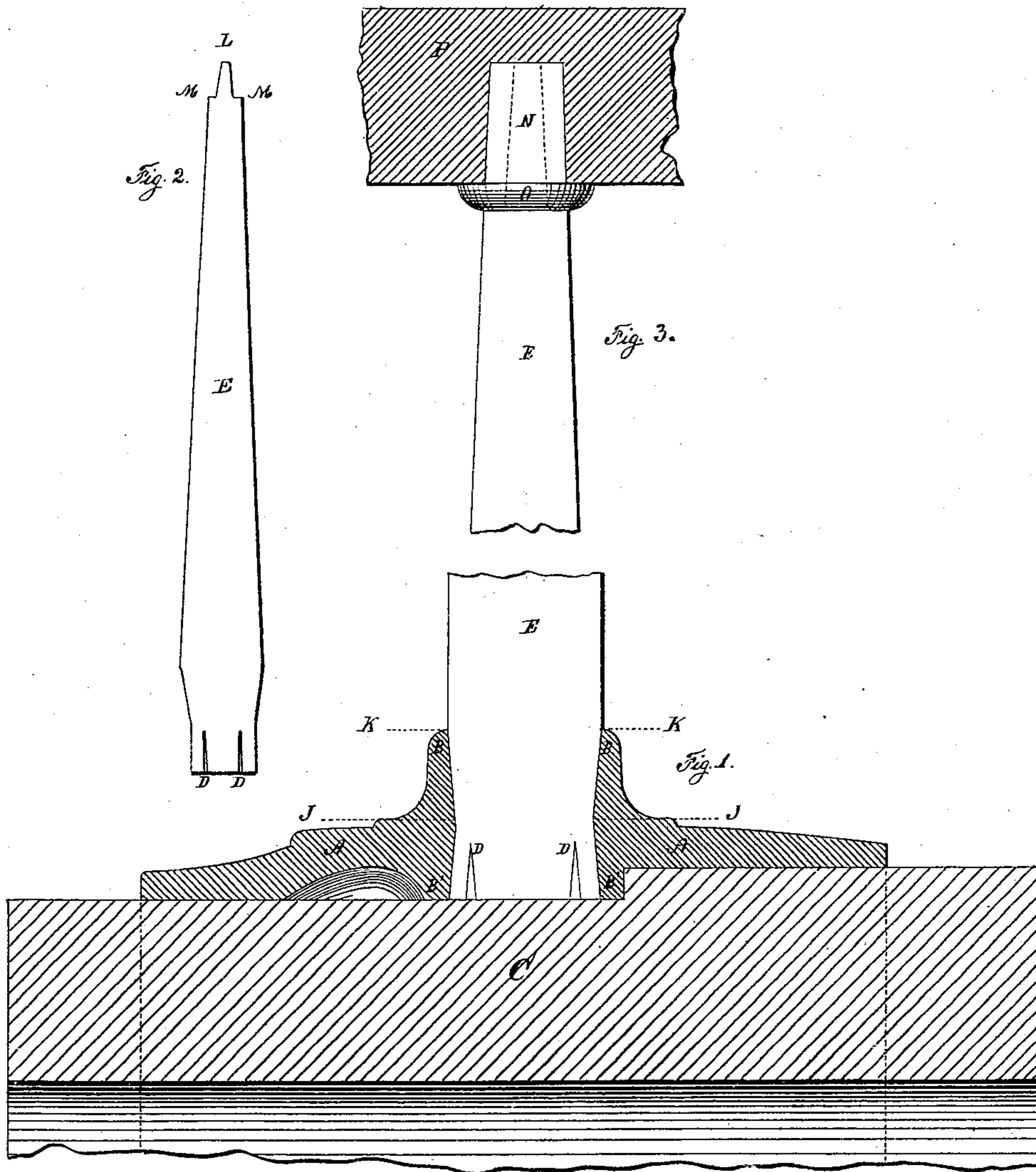


C. W. SALADEE.  
Vehicle Wheels.

No. 148,503.

Patented March 10, 1874.



WITNESSES:

Herm. Lauten.  
H. C. Elliott

INVENTOR:

Cyrus W. Saladee.

# UNITED STATES PATENT OFFICE.

CYRUS W. SALADEE, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN VEHICLE-WHEELS.

Specification forming part of Letters Patent No. **148,503**, dated March 10, 1874; application filed February 6, 1874.

### CASE B.

*To all whom it may concern:*

Be it known that I, CYRUS W. SALADEE, of Pittsburg, in the State of Pennsylvania, have invented a new and useful Improvement in Wheels for Vehicles, of which the following is a specification embodying my invention:

The nature of my invention consists in the employment of tempered spring-steel spokes, say one inch by three-sixteenths at the base, and five-eighths by three-sixteenths inch at the top, the same in combination with a mortised metallic annulus and central wooden nave; and has for its object the construction of a wheel superior in lightness and strength to those made of wooden spokes; and I will here state that the arrangement of the mortised metallic annulus and central wooden nave is exactly the same as shown and described in my application "A," filed herewith, but omitting the groove and tenon therein shown.

My present invention differs from Case A in this, that a flat steel spoke is substituted for wooden spokes; and the construction of this wheel is as follows, viz: The spokes will be cut from sheet-steel, or otherwise rolled expressly for the purpose, by means of punch and die, in the form seen in Fig. 2. In the base of the spokes slits D D are cut for the reception of the wedges seen in Fig. 1. Above one inch of the base and of the steel spoke is annealed, so as to admit of spreading the metal by the wedges D at that point. To spread the base of the spokes, which are not shouldered and tenoned, as in Case A, so that they will be firmly wedged between the lower converging flanges B' B', I insert the wedges D in the longitudinal slits cut in their base ends for that purpose. The bases of the wedges rest on a steel mandrel, temporarily passed through the annulus for this special purpose,

and as the spokes are being driven home, the wedges are forced into the slits which have been cut for their reception, and thereby spread the base ends of the spokes, so as to firmly wedge them between the lower converging flanges B', as already described. The steel mandrel is now withdrawn, and the wooden nave C is forced, by screw or hydraulic pressure, into the annulus A. The outer ends of the spokes E have a tenon, L, and shoulders M and M' cut thereon, and which tenon passes into a capped tube, N, and the shoulders M of the spoke resting firmly against the cap O of the tube N. The body of the tube N passes into the rim P of the wheel, as seen in Fig. 3, and rests on the face of the rim against the cap O of the tube N.

The advantage derived from this novel construction is, as already intimated, lightness and great strength, while, by aid of appropriate machinery, these wheels can be produced at the same if not less cost than wheels constructed of wooden spokes.

I am aware that curved flat steel spokes are not new, and my invention and claims are confined to thin flat steel spokes when made without curves, in combination with other parts.

I claim as my invention—

1. Wheels for vehicles constructed with flat spring-steel spokes E, in combination with a mortised metallic annulus, A, having diverging sides B B' and central wooden nave C, substantially as and for the purpose set forth.

2. The capped tube N, in combination with the end of the metallic spoke E and rim P of the wheel, substantially as and for the purpose set forth.

CYRUS W. SALADEE.

Witnesses:

CHARLES M. SALADEE,  
G. B. SALADEE.