3 Sheets—Sheet 1.

J. ROWE.

Carriage-Wheel.

No. 4,946. Patented Jan. 26, 1847.

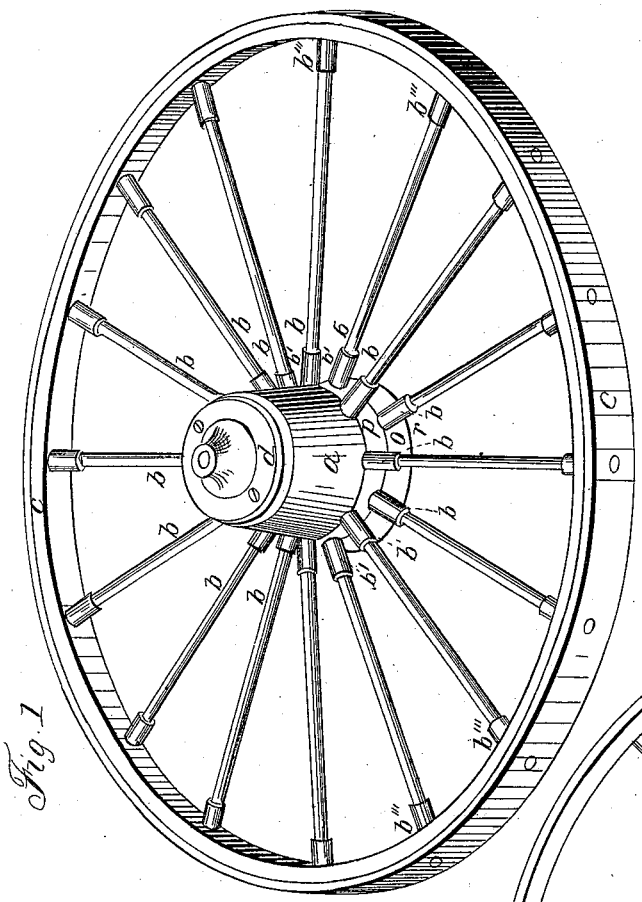

Fig. 1

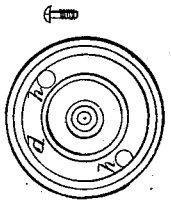

Fig. 3

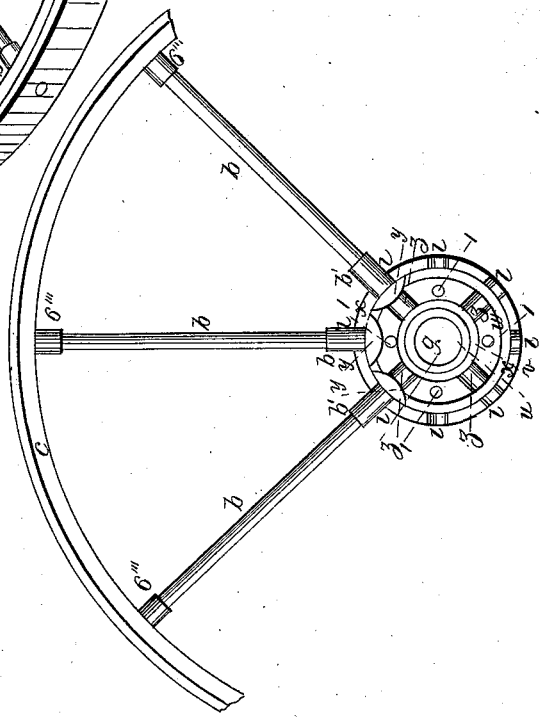

Fig. 4

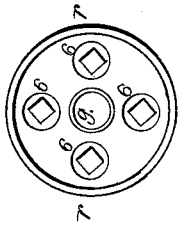

Fig. 11

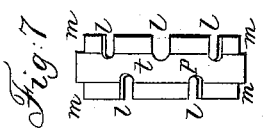

Fig. 7

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J. ROWE.

Carriage-Wheel.

No. 4,946. Patented Jan. 26, 1847.

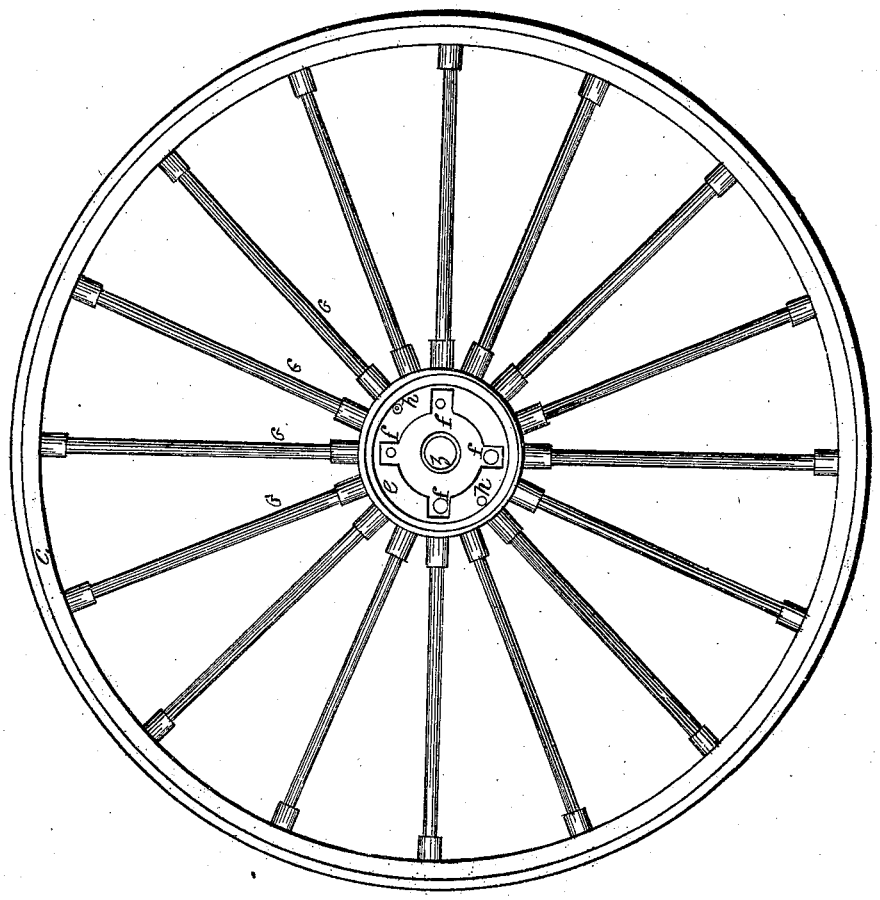

Fig: 2.

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Fig. 4.

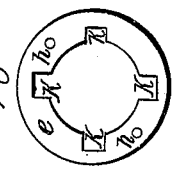


Fig. 9.

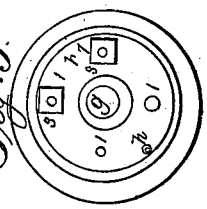


Fig. 5

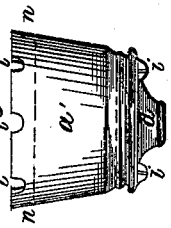


Fig. 10.

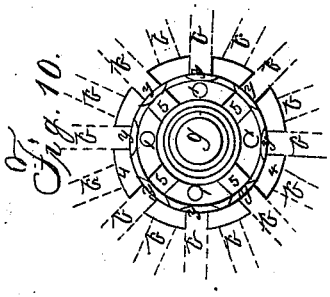
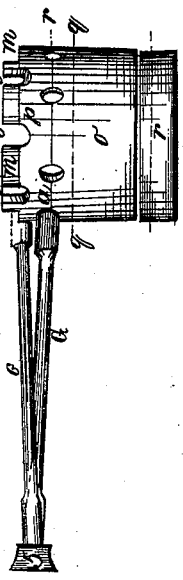


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES ROWE, OF HAMILTON COUNTY, OHIO.

IMPROVEMENT IN CARRIAGE-WHEELS.

Specification forming part of Letters Patent No. **4,946**, dated January 26, 1847.

To all whom it may concern:

Be it known that I, JAMES ROWE, of the county of Hamilton and State of Ohio, have invented an Improvement in the Mode of Constructing Metallic Tension-Wheels for Carriages, Wagons, &c.; and I do hereby declare the following to be a full and exact description, reference being had to the accompanying drawings, and making part of their presents.

Figure 1 is the wheel altogether finished and perfect in all its parts; Fig. 2, a view of the point end of the same wheel with the finishing-plate removed; Fig. 3, a finishing-plate and screw that holds it on; Fig. 4, a flat ring with spaces to go over the nuts and under the finishing-plate to prevent the nuts from coming loose; Fig. 5, a view of the point end of the hub with the finishing-plate on; Fig. 6, a shoulder-section of the hub with the center cylinder connected, the row of spoke-holes in each joint, and two spokes in their places; Fig. 7, a cylinder with the two lines of spoke-holes and the holes slotted out to the end of the lap-joint; Fig. 8, a view of the point-section of the hub connected with the center cylinder and part of the spokes in their places; Fig. 9, the end of the point-section of the hub with the finishing-plate and flat ring removed; Fig. 10, the cylinder with all the spokes in their places; Fig. 11, a view of the end of the shoulder-section of hub with the heads of the screw-bolts holding the parts together.

The nature of my invention consists in the manner of making and constructing metallic tension-wheels for wagons, carriages, &c., and to enable others to make and construct the same the following exact description is given.

The hub is constructed of three equal parts, more or less. (See the accompanying drawings, Figs. 5, 6, and 7.) This hub has a shoulder and point-box each one-third the whole length of the hub, more or less, the center section comprising one-third of the length also, and is a separate ring cylinder or shell cast or of wrought metal. The two end sections of the hub unite to each end of the cylinder by means of male and female joints fitted by lathe and ground so as to make oil-tight joints. The parts are held together by bolts and nuts, as shown in the drawings. When the spoke-holes are moved inward from the connecting-joints, the right and left screws may connect the parts and hold them together. The spoke-holes are drilled through the center shell (for the largest class of wheels) in the two joints where the parts unite, as shown in the drawings. The two lines of spoke-holes are moved inside these joints, approaching the center of the cylinder, accommodating the brace to the diameter of the wheel for all smaller sizes.

In putting the wheel together the spokes are first headed with a small, strong head (or nuts, if preferred.) The spokes are all next passed through the separate cylinder in their holes, with leather washers on each head to secure the holes oil-tight when drawn and headed. (See Fig. 10.) The rim of flat square or triangular iron being ready with holes for the spokes, the wheel is tightened and trained from the rim, which when done the two ends of the hub, as aforedescribed, are put on and secured by bolts and nuts, as shown in the drawings, (or by right and left screws when the spoke-holes are made inward from the connecting-joints.) In securing the spokes at the rim they are headed in slightly-tapered countersinks on the sole or tread.

I make my spokes of round rods of iron. For light buggies one-fourth and for family-carriages I use five-sixteenths. I enlarge the end that connects with the hub about as large again as the rod one inch from the head. I enlarge the end that connects with the rim one-third larger than the rod, more or less. This enlargement embraces two inches of the end of the spoke. (See drawings, Fig. 2.) The advantages of these swells are, first, it gives increased substance to the heads (or nuts and screws) and compensates for the ravages of rust most subject at these points; second, in passing the spokes through the center cylinder they have to pass on an angle, and by having this swell on the rim end smaller than the other swell on the hub end the spoke is easily passed through the holes in the cylinder, and when the head of the spoke passes into the cavity of the cylinder the spoke is turned fair and the enlarged swell on the end fills the hole in the shell, and by means of a leather washer on the head of the spoke makes the holes oil-tight; third, the swell

forms a shoulder about one inch under the rim which holds the clamp of the purchase by which the wheels are tightened, this shoulder being essential both in making and keeping these wheels in use; fourth, by having these swells on the ends of the spokes they can be made one-third lighter and the swells give the strength at the points where it is most needed.

The advantages of this hub over all others, as believed by me, are, first, the two rows of spoke-holes which give brace to the wheel can be regulated to suit every size wheel, and they can be moved asunder as far as the joints where the parts unite, as seen in the drawings, or moved inward from the joints approaching the center of the cylinder; second, this places the spoke-rods under the protection of the rim from obstacles when moving, which is not true of wheels which necessarily brace whole length of the hub; third, by heading the spokes and passing them through the holes in the center cylinder the hub can be reduced much smaller than those using nuts and drawing by a wrench at each end of the hub; fourth, my wheel can be made and used much tighter without springing the rim than those bracing whole length of the hub, and by tightening the wide-brace-spoke wheel the rim will spring right and left opposite each spoke; fifth, my wheel shows better proportions and looks better and will pass into deep mud and ruts with less danger to the spokes and much less friction than those wide brace-spokes.

The main object in the construction of metallic tension-wheels is, first, to be able to head the spoke-rods instead of using screws or nuts and screws; second, to be able to give the wheel brace in proportion to its size by moving the two lines of spoke-holes on the center shell wider or closer, &c.; third, to stretch and train the wheel at the rim by a purchase for that purpose, heading the spokes in countersinks.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. The center cylinder comprising one-third of the whole length of the hub, more or less, in combination with the end pieces and the heads on the inner ends of the spokes.

2. The swells at each end of the spoke-rods, for the purposes and ends herein described.

JAMES ROWE.

Witnesses:
T. C. DONN,
JOHN W. DEXTER.