

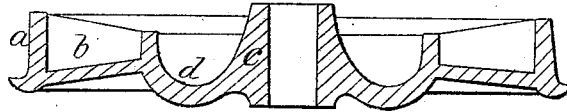
A. ATWOOD.

Car Wheel.

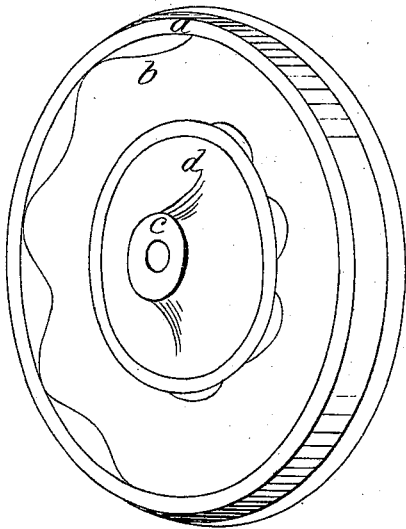
No. 5,112.

Patented May 15, 1847.

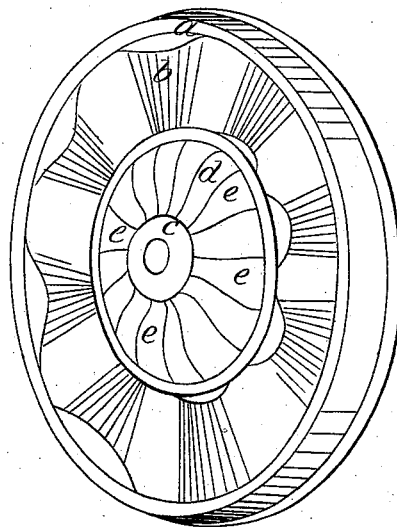
*Fig. 2.*



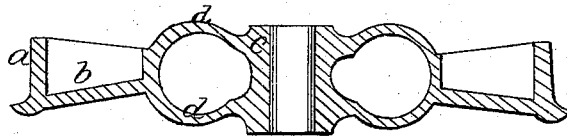
*Fig. 1.*



*Fig. 3.*



*Fig. 4.*



# UNITED STATES PATENT OFFICE.

ANSON ATWOOD, OF TROY, NEW YORK.

## CAST-IRON CAR-WHEEL.

Specification forming part of Letters Patent No. 5,112, dated May 15, 1847; Reissued September 22, 1857.

*To all whom it may concern:*

Be it known that I, ANSON ATWOOD, of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Cast-Iron Wheels for Railroad-Carriages, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective representation of a wheel on my improved plan, and Fig. 2, a section thereof through the axis.

The same letters indicate like parts in all the figures.

The object of my invention is to cast a wheel in one piece with a solid hub without subjecting the parts to the liability of breaking; and the nature of my improvement for this purpose consists in connecting the rim with a ring whose faces are made in radial waves passing around by a series of curves from one edge of the rim to the other entirely around to give a continuous support to the whole width of the rim, and chiefly to yield, without strain on the metal, to the contraction of the ring which cools after the rim; this mode of connecting the rim and ring being combined with a solid hub by means of a dished flanch or flanches which admit of yielding to the contraction of the metal in the direction of the radii.

In the accompanying drawings (*a*) represents the rim of the wheel of the usual form, and (*b*) a ring which is made in a succession of radial waves, passing entirely around by a series of curves from one edge to the other of the rim, so that after the

rim has been set by the chill, and the ring begins to cool and contract, the waved surface will yield in the direction of the circumference without producing an injurious strain on the metal. The inner periphery of this ring is connected with the solid hub (*c*) by a concave and convex flanch (*d*) the cross sections of which, taken in planes passing through the axis of the hub will present segments of circles extending from the hub to the waved ring (*b*) so as to yield to the contraction in the direction of the radii. This concave and convex flanch (*d*) is in fact a continuation of the solid hub which gradually curves to form the connection with the ring of radial waves.

Instead of one concave and convex flanch like projection or concave ring (*d*), such as above described, there may be two, one for each face of the wheel, as represented in Fig. 4. And if desired to afford facility for removing the said core after the wheel has been cast one or both of the flanches or concave and convex rings (*d*) may be made with radial openings (*e*), as shown in Fig. 3.

What I claim as my invention and desire to secure by Letters Patent is—

Connecting the rim of the wheel cast in one piece with a solid hub by the combination of a ring made of radial waves in combination with the dished flanch or flanches of the hub which form a rim concentric with the rim of the wheel, substantially as described, whereby the several parts can yield to the unequal contraction in all directions without serious strain of the metal, as described.

ANSON ATWOOD.

Witnesses:

C. W. M. KELLER,  
JORDAN L. MOTT.