

G. W. EDDY.

Car Wheel.

No. 4,330.

Patented Dec 26, 1845.

Fig. 3.

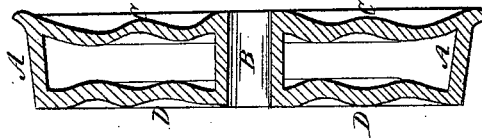


Fig. 2.

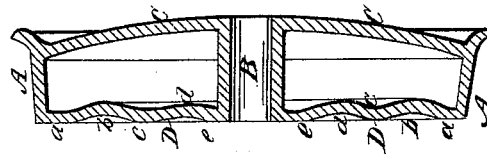
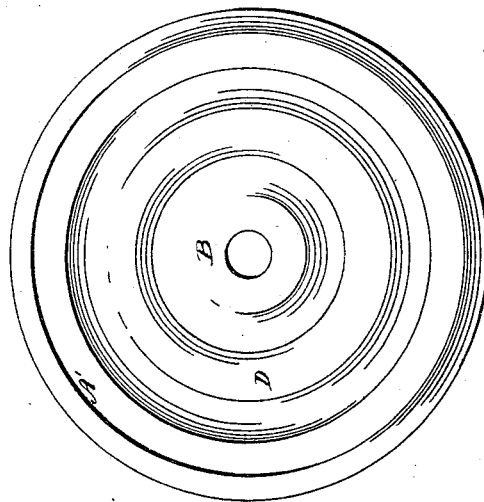


Fig. 1.



# UNITED STATES PATENT OFFICE.

GEORGE W. EDDY, OF WATERFORD, NEW YORK.

## CAR-WHEEL.

Specification of Letters Patent No. 4,330, dated December 26, 1845.

*To all whom it may concern:*

Be it known that I, GEORGE W. EDDY, of Waterford, in the county of Saratoga and State of New York, have invented a new and improved mode of constructing cast-iron wheels for railroads and other purposes, by which the said wheels may be founded or cast without breaking or cracking or being liable to afterward break or crack from strains generated within them while being made or during the act of cooling in the mold; and I do hereby declare that the nature of my invention is fully set forth in the following description, accompanying drawing or drawings, letters, figures, and references thereof.

My improvement is applicable to cast metal wheels alone.

Figure 1 of the said drawings, denotes an elevation of the inner side of my improved cast iron wheel. Fig. 2 is a transverse and central section of it, and Fig. 3 is another and similar section, of a wheel which will be hereinafter described.

The said wheel is composed of a cast iron rim A, and hub B, united together by two plates C, D, as seen in Figs. 1 and 2. In the above respects, the wheel does not differ from many now in common use.

My improvement is to be found, in the manner in which the plate D is made; the same having an undulating or serpentine shape, in cross section, as seen at *a b c d e* in Fig. 2.

The plate C, or outer plate of the wheel, is what is termed a convex plate, (in contradistinction to a concave plate, which is made dishing toward the center of the axis of the hub of the wheel), and when the plate D, has been made convex in the opposite direction, it has become necessary, in casting the wheel, to divide or separate the hub B, into two parts, (as will be seen by reference to certain Letters Patent, granted on the seventeenth day of March, of the year eighteen hundred and thirty eight, to Messieurs Bonney, Bush and Lobdell, of Wilmington, in the State of Delaware) otherwise, the strains upon the hub in opposite directions, caused by shrinkage of the rim in cooling (while being founded) would be so great as to break the hub or plates, or otherwise seriously injure the wheel, so as to render it generally unfit for safe usage.

By making either the outer or inner plates

of an undulating or irregular shape, as seen in section in Fig. 2, and the other plate concave or convex, the former will readily contact in opposite directions, as it cools, under the contractile force of the chilled rim, and, in so doing, will not oppose any counteracting force, to that which is generated in a lateral direction, by the contraction of the convex or concave plate. Therefore, no separation or division of the hub will become necessary. Consequently, I am enabled, by thus making the plates of a wheel, to render it very much stronger in its hub, than when made with two convex plates, whose convexities stand in opposite directions. In connection with the undulating plate D, the other plate C may be made undulating as seen in Fig. 3. Both plates, when so made, will readily yield to the contraction of the rim, and will cool without breaking themselves, or either of them, or the hub.

Although I obtain a great advantage, in being able to cast the hub solid, with the exception of the hole which receives the axle, yet I do not intend to confine my invention to the solid hub alone, as, by using the undulating plate or plates, even when a divided hub is used, I render the whole much less liable to being fractured or broken, when founded, than when made with concave plates, or concave and convex plates, or convex plates alone.

I do not claim the manner of constructing a cast iron or metal railway car wheel, by making it of two convex, or concave plates, or one convex and one concave plate, united to a solid, or a divided hub, and a circular rim and flanch as heretofore made; but

That which I do claim, is—

My improved manner of constructing a wheel, by which I am enabled to cast it with a solid hub and in other respects as I have above set forth, viz: by making it with an undulating plate, in combination with a concave or convex plate, or another undulating plate as herein described.

In testimony whereof I have hereto set my signature, this twenty third day of August A. D. 1845.

GEORGE W. EDDY.

Witnesses:

D. G. SMITH,  
D. B. KING.