

P. DORSCH.

Car Wheel.

No. 9,017.

Patented June, 15 1852.

Fig. 1.

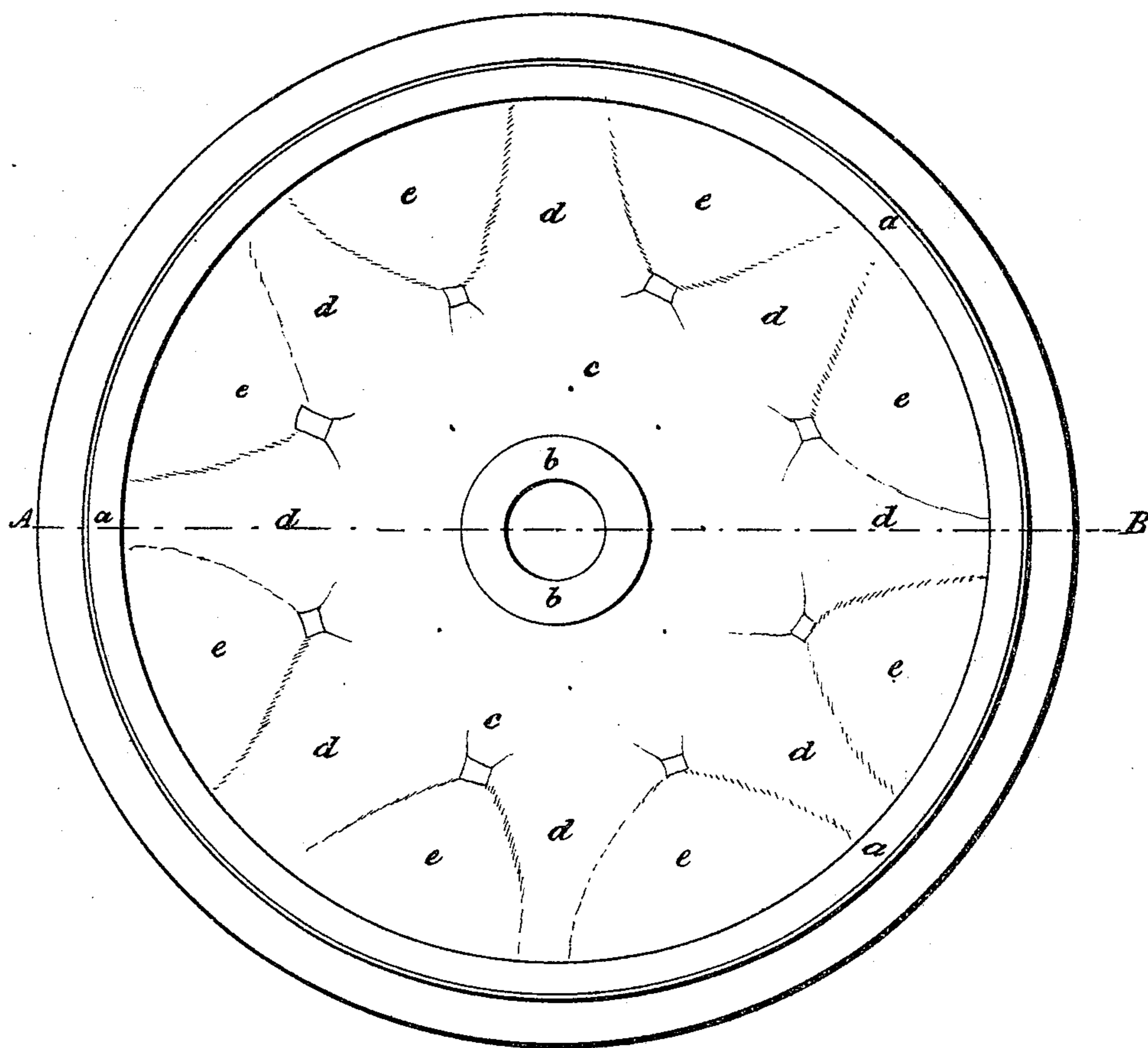
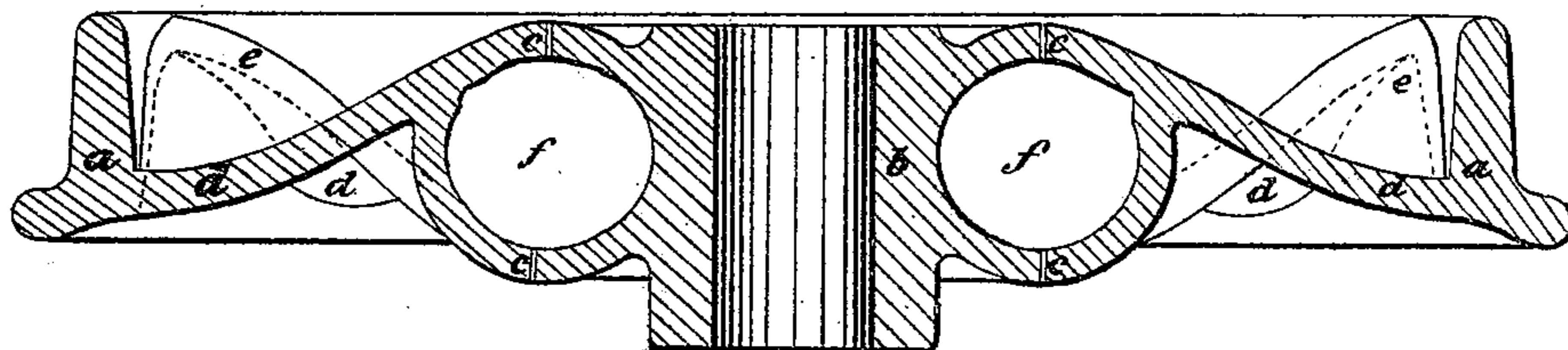


Fig. 2.



Witnesses:

W. Smith
H. Hibbard

Inventor:

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UNITED STATES PATENT OFFICE.

PETER DORSCH, OF SCHENECTADY, NEW YORK.

CAST-IRON CAR-WHEEL.

Specification of Letters Patent No. 9,017, dated June 15, 1852.

To all whom it may concern:

Be it known that I, PETER DORSCH, of the city and county of Schenectady, in the State of New York, have invented, made, and applied to use certain new and useful Improvements in the Form or Construction of the Parts that Connect the Rim and the Hub in Railroad Car-Wheels, which improvements are intended to form wheels from cast-iron in such a manner that the shrinkage in cooling of the thicker parts that cool the latest shall not distress or injure the thinner parts that cool the soonest, besides which these improvements furnish a continuous support within the rim to the parts of the rim that come successively in contact with the rail of the road that render the rim less liable to be injured by accidental shock, while the wheel is in motion under a load, and that the form or construction, operation, and effect of the said improvements are fully and substantially set forth and shown in the following description and the drawing annexed to and making part of this specification, wherein—

Figure 1, is an elevation of one side of a wheel, made with my improvements. Fig. 2, is a section of the same, as if cut through at the line A, B, and the like.

Letters as marks of reference, denote the same parts in each figure.

a , is the rim and flanch of the wheel, which is to be formed in casting by a chill, as usual; b is the hub and c, c , are the parts of an annular cylinder cast on a core f , in such a manner that the cylinder c , surrounds and forms an extension of the hub. Between the annular cylinder c , and the inner side of the rim a , are a series of corrugations, shown in the drawing as sixteen in all, but may be either more or less in numbers. In these, the corrugations d , spring in a slightly convex line from the inner side of the cylinder c , passing outward, so as to terminate at the inside of the rim a , near its outer edge, in a concave line, toward the inside of the wheel; and the corrugations e , commence in a slightly convex line, from the outer side of the cylinder c , terminating as a slightly concave curve, near the inner face of the wheel rim, a , these compound curves being radial to the center of the wheel, of the sectional form described, and crossing, alternately, from one side to the other; the material forming the wheel being cast like a plate bent to these sections, forms

curves, which are concentric in an inverted order of form; those of the curve d , on the inside of the wheel near to the center are convex laterally, as well as radially, but terminate next the rim, concave laterally, as well as radially, the parts formed by the curves e being placed between those formed by the curves d , so that the parts meeting or falling into each other, form a succession of alternate convexities and concavities, in reverse of each other, that increase in size, as they approach the rim of the wheel, in the manner shown in the drawing. The first advantage of this form in casting is that though the chill of the rim causes the next corrugations to cool rapidly, the quantity of metal, in the annular circle c , retains its heat, until the mass of metal in the hub begins to shrink in cooling, and as the hub shrinks, the heat in the annular circle permits the outsides to flatten, in an almost imperceptible degree, but sufficient to relieve the corrugations from any concentric strain, or centripetal draft caused, while the hub shrinks in cooling; and as this is an effect, that I do not know to have been produced before, in any manner, so I believe this mode of forming such wheels, will prevent the well known, and frequent occurrence of wheels breaking between the hub and the rim, without any other known or assigned cause, than that the hub, shrinking as it cools after the other parts have cooled, strains or distresses the parts of the metal near it, so as to cause breakage in use. The core of the annular circle is to be supported in the sand mold, by core feet, or pins, that will effect this purpose, and leave small holes, by which the core can be washed out when cold. The effect of the forward course of the corrugations, where they intersect the inner face of the rim, is, that the rim cannot break, except by a concussion, that will displace a portion of the corrugations with the fractured part of the rim; and the concavo-convexity of both the radial and concentric lines, in the corrugations, takes the weight, successively, on different portions of the inner face of the rim, and distributes the strain around the hub, and lengthwise of the hub instead of the weight being supported in one vertical line or place stationary and at right angles to the axis.

What I desire to secure by Letters Patent is,—

I claim the double reversed corrugations

d, and *e*, connecting the rim and hub formed and acting as described and shown; and the combination of these corrugated parts with the annular cylinder *c*, between them and
5 the hub as described and shown.

In witness whereof I have hereunto signed my name in the city of Schenectady

this fourteenth day of February, one thousand eight hundred and fifty-two.

PETER DORSCH.

Witnesses:

D. C. SMITH,
C. VIBBARD.