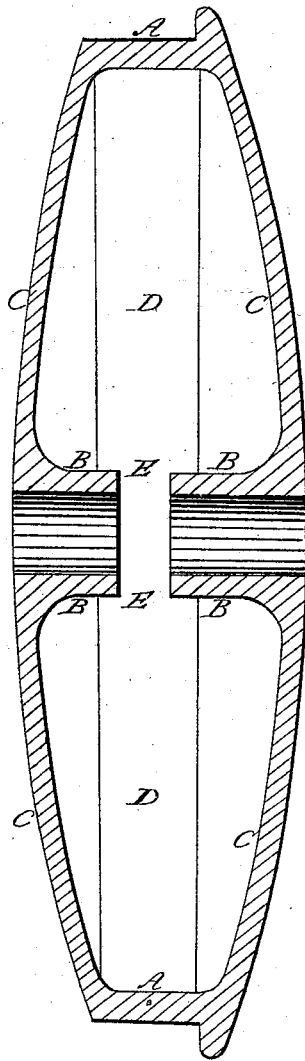


BONNEY, BUSH & LOBDELL.

Car Wheel.

No. 637.

Patented Mar. 17, 1838.



# UNITED STATES PATENT OFFICE.

JONA. BONNEY, CHS. BUSH, AND GEO. G. LOBDELL, OF WILMINGTON, DELAWARE.

## MODE OF MAKING CAST-IRON WHEELS FOR CARS TO BE USED ON RAILROADS AND APPLICABLE TO OTHER PURPOSES.

Specification of Letters Patent No. 637, dated March 17, 1838.

*To all whom it may concern:*

Be it known that we, JONATHAN BONNEY, CHARLES BUSH, and GEORGE G. LOBDELL, of Wilmington, in the county of Newcastle and State of Delaware, have invented an Improvement in the Manner of Constructing Cast-Iron Wheels for Cars to be Used upon Railroads and for other Purposes; and we do hereby declare that the following is a full and exact description thereof.

The accompanying drawing shows a section of our wheel, which, instead of arms as usually employed, has each face thereof convex, a hollow space being left between the two surfaces. The rim of the wheel A, A, does not differ from those usually employed, and is cast in a chill in the ordinary manner. The rim is united to the center, or hub, of the wheel B, B, by the two convex face plates C, C, which are cast in one piece with the rim, and hub. The interiors D, D, between the two convex face plates is formed by cores, supported in a way well known to iron founders. The hub has a transverse division E, E, which separates it into two distinct parts, attached respectively to the two face plates. This division is necessary to prevent all the tension which would be produced by shrinkage in the casting, and which would endanger the breaking of the wheels. The hub, if preferred, may be cast solid, with the exception of the division E, and afterwards bored out, or it may be cored, and turned, to receive the axle.

We are aware that wheels have been made with double convex plates, both of cast

and of wrought iron, but such plates were in separate pieces from the rims and hubs, being received into rebates on the rims, and embracing the hub between them, which extended through openings in their centers, the two plates being secured together by screw bolts. We are also aware that a plan has been devised for cast iron wheels with two face plates, having a space between them, formed by cores, as in our method, but the two plates were in this case parallel to each other, one of them being convex, and the other concave on its face, the hub extending from one face to the other in a continuous piece, rendering it necessary, on account of shrinkage, to place the two plates as described, an arrangement which sacrificed strength to necessity. By constructing the wheel so that the plates shall both be convex outward, as they are, in the position of the greatest strength, they may be made considerably thinner than would otherwise be admissible, and the wheel will consequently be lighter.

All that we claim as our invention is—

The division of the hub into two parts, transversely, between two face plates each convex outwardly, in the manner, and for the purpose set forth.

JONATHAN BONNEY.  
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GEORGE G. LOBDELL.

Witnesses:

THOMAS S. MERROTT,  
W. M. CAULLEY.