W. B. TREADWELL.

Car Wheel.

No. 6,021. Patented Jan. 9, 1849.

Fig. 1.

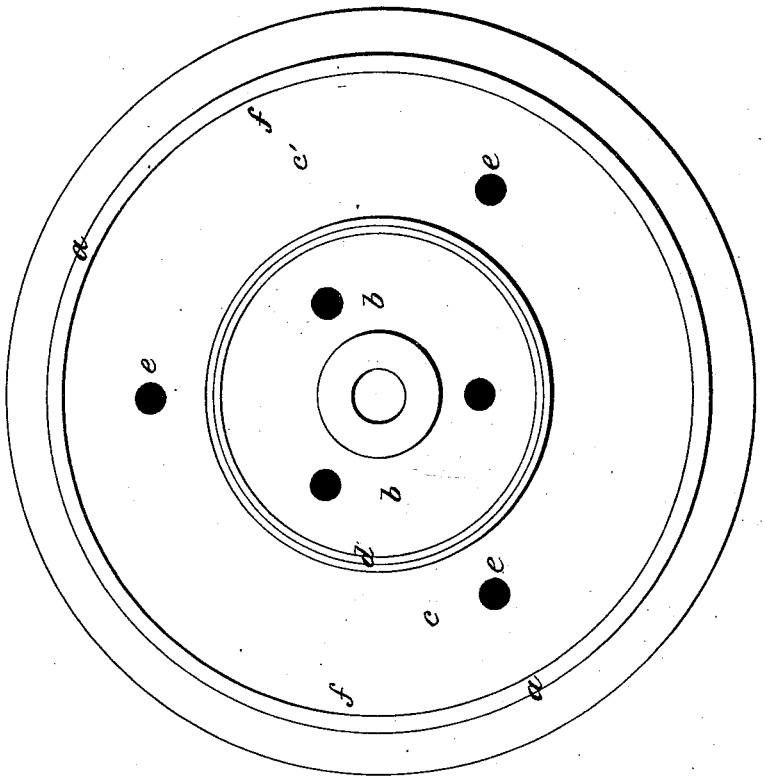
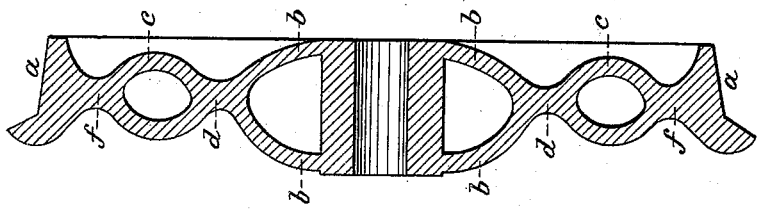


Fig. 2.



UNITED STATES PATENT OFFICE.

WM. B. TREADWELL, OF ALBANY, NEW YORK.

CAST-IRON CAR-WHEEL.

Specification forming part of Letters Patent No. 6,021, dated January 9, 1849; Reissued March 30, 1858, No. 541.

To all whom it may concern:

Be it known that I, WILLIAM B. TREADWELL, of the city and county of Albany and State of New York, have invented certain new and useful Improvements in Wheels for Railroad-Cars, and the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known, and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawing, which forms a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a cross section, and the same letters refer to like parts in each of the figures.

My said invention and improvement consists in forming the connection between the nave or hub and the chilled rim of a cast-iron car wheel all cast in one piece, in such a manner as to dispose of or arrange the metal between the hub and the rim in the strongest mechanical forms, and as nearly as practicable in the line or lines of the force to which the wheel is to be subjected in use on railroads, at the same time making sufficient provision for the contraction of the iron in cooling when the wheel is cast, without danger of fracture or any unnecessary strain upon the parts; in which respects my wheel is preferable to the double and single plate car wheels heretofore in use on which it is claimed to be an improvement, and is thus distinguishable therefrom,—and also in avoiding or diminishing the liability of such plate wheels to have the granular texture of the iron comparing their plates disintegrated and broken by the springing and vibratory motion to which they are exposed in use, and also in wholly obviating the danger of cracking around the circumference of the chilled rim between the plates, to which such double plate wheels are liable; and I claim that by the peculiar formation of the said connection of my wheel, a great increase of strength, durability and lightness is effected over any wheel with which I am acquainted.

The formation of my wheel is as follows: The chilled rim or tread and outer flange (*a*) of the wheel, and the hub or nave (which hub is in one piece as is shown in Fig. 2) are like those now in common use; and the said rim and hub of the wheel are connected together by the following concentric, annular parts, starting from near the center of the inner circumference toward the hub, of the said chilled rim, that is to say, first a narrow, flat solid ring of metal (*f*) expanding next into a hollow ring of metal (*c*) the preferable form of which is such that a transverse section thereof would prevent the shape of two acute or lancet shaped arches, united at their abutments and their virtues or crowns respectively being in a line from the said center of the rim to near the center of the hub,—contracting next into another narrow, flat, solid ring of metal (*d*) and expanding next between that and the ends of the hub into one-half of another such hollow ring of metal (*b*) a transverse section of which would resemble such an arch as aforesaid, its crown joining the last mentioned solid ring, and its extremities or abutments respectively resting on the ends of the hub, and inclosing an annular arch shaped hollow space around the hub, all so arranged as aforesaid that a plane extending from near the center of the hub to the center of the said inner circumference of the rim, would divide all the said annular parts and their inclosed spaces through their circumference into two equal parts. I leave three, more or less holes, (*e*) on the inner or flange side of the wheel through the respective hollow rings, by which the cores on which they are cast are sustained in the mold and afterward removed, in the usual manner of casting with cores.

It is obvious that in large wheels two or more hollow annular tubes like the one shown in the drawing and marked (*c*) can be added, and that the shape of the hollow rings may be varied without materially affecting the principle or usefulness of the invention. The hub may with advantage be placed, as exhibited in Fig. 2, a little more toward the inner of flange side than the outer side of the wheel, with a slight variation in shape of the connecting parts to meet this arrangement.

Having thus fully described my improved wheel, what I claim therein as new and for which I desire to obtain Letters Patent is—

The combination of the arch piece (*b*), and the hollow annulus (*c*) and the solid annular parts (*d* and *f*) by which the solid hub

is connected with the rim and flange, the whole being arranged substantially in the manner and for the purposes above set forth and specified.

In testimony whereof, I the said WILLIAM B. TREADWELL hereto subscribe my name, in the presence of the witnesses whose names are hereto submitted on the 21st day of November A D 1848.

WM. B. TREADWELL.

Signed in our presence—
AZOR TABER,
GEORGE WOLFORD.

[FIRST PRINTED 1913.]