F. HARBACH.

Car Wheel.

No. 5,360. Patented Nov. 6, 1847.

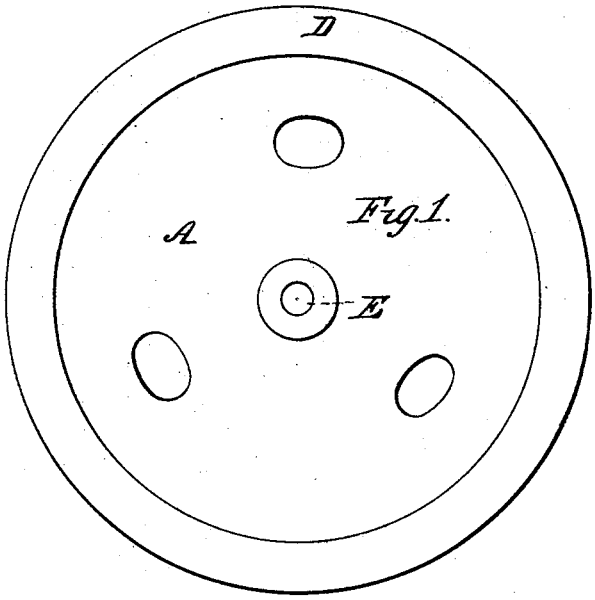
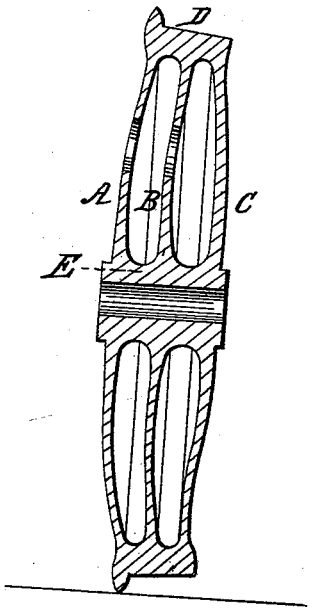


Fig. 1.

Fig. 2.



UNITED STATES PATENT OFFICE.

FREDK. HARBACH, OF PITTSFIELD, MASSACHUSETTS.

CAR-WHEEL.

Specification of Letters Patent No. 5,360, dated November 6, 1847.

To all whom it may concern:

Be it known that I, FREDERICK HARBACH, of Pittsfield, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Cast-Metal-Plate Wheels for Railway or other Carriages; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of said drawings Figure 1 represents an elevation of the flange side of my improved wheel. Fig. 2 is a central, vertical and transverse section of the said wheel.

The difficulties of founding iron wheels, with what is termed a chilled tread are well known. The rim or tread is cast against an iron ring or chill, for the purpose of rendering it extremely hard. When the metal is run into the mold and meets the said chilling ring, it immediately becomes set or hard, and before that which composes the plates (by which the hub is united to the rim) can solidify. The consequence is that while the cooling of the plates takes place there is a constant contraction of them which tends greatly to break them, particularly when the hub of the wheel is cast solid or undivided. The remedies heretofore proposed have been to make the plates concave or convex and separate the hub into two cylindrical portions, one of which is cast or attached to each side plate. Also to make one or both of the plates of an undulating form in cross section while the hub may be divided or undivided.

By my improvement, I am able to cast the circular plates and hub solid, and with little or no danger of rupture of them, during the process of founding them in the mold.

My improvement consists in the employment of a third circular plate B, which I arrange between the circular plates A and C, and which I cause to extend from a solid hub E to the rim D, and be connected to, or cast with and to said hub and rim, in the same manner, as are the other plates. The said middle plate, I prefer to make convex like the inner plate A. The quantity of metal which has usually been deemed necessary to insure stability to the plates I divide between the three plates A, B, and C, thus making each of said plates somewhat thinner than either of the plates, when two only are used. I do not however confine my invention to the use of such a quantity, as I am able by the employment of three plates to obtain the necessary strength by a much less quantity, thereby creating a saving in weight and expenditure of metal.

The wheel is rendered so strong by the use of three plates, that each of the said plates, may be made so thin, as to cool or become solid in the same or about the same time with the rim, and in such manner, as to contract without any material danger of rupture. The third or central plate B presents a great support to the middle of the tread or rim of the wheel, which by being sustained in the above denoted manner by three plates, is less liable to be broken, by shocks against it or the flange, than it is when but two plates are used. By casting the hub solid, I am not obliged to use the ring, which requires to be inserted between the sections of the hub, when the wheel is driven on the axle.

What I claim as my invention is—

The combination of the middle plate B with the two outer plates A and C and hub and rim, in the manner and for the purpose as specified.

In testimony whereof I have hereto set my signature this sixth day of April, A. D. 1847.

FREDERICK HARBACH.

Witnesses:

JAMES D. COLT, 2d.,

ROBT. POMEROY.