J. Elgar.

7801X

Car Wheel.

Patented Nov. 19, 1833.

Fig. 3.

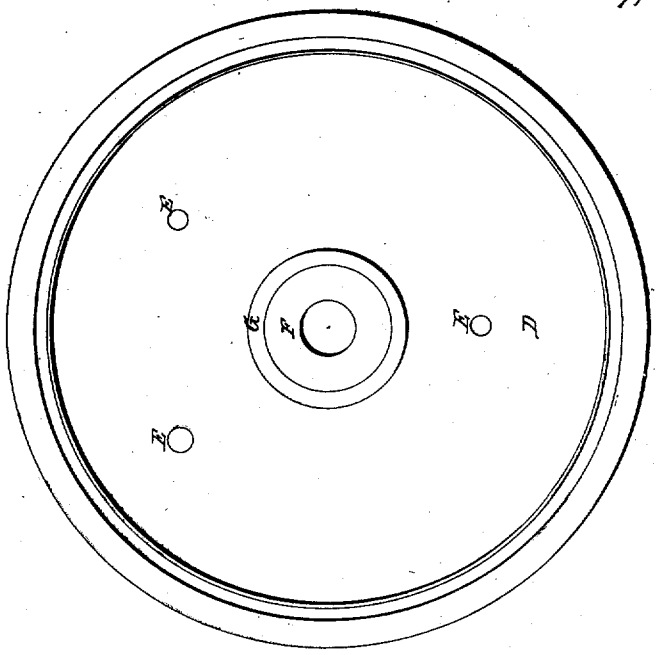


Fig. 2.

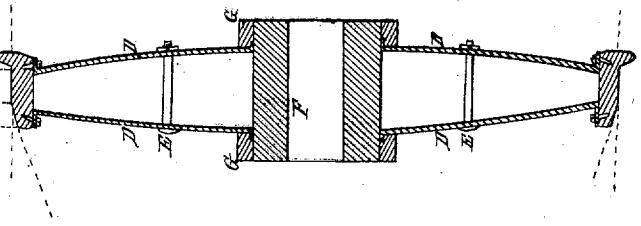
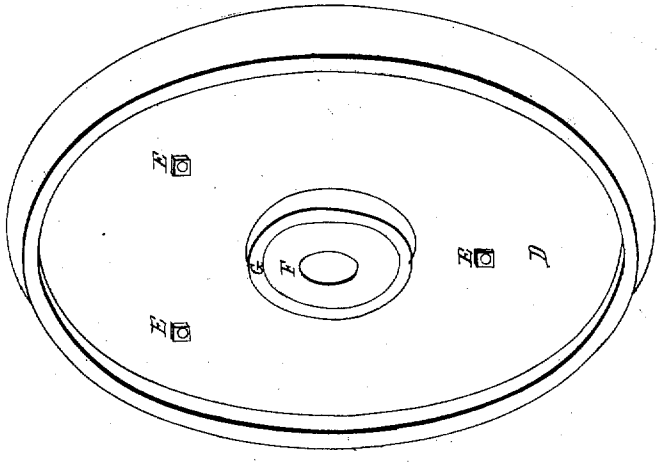


Fig. 1.



(Extended for three years from 19 November 1847)

Nov. 19. 1833

3/5

7801X John Elgar.

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said John Elgar himself of his improvement in the wheels of Rail Road Carriages. ——

To all whom it may concern.

Be it known, that I John Elgar Civil Engineer, of the City of Philadelphia, have invented certain improvements in the wheels of Rail Road carriages, by one of which improvements they are made to adapt themselves more readily to curved roads than such as have heretofore been used for that purpose, and by the other a construction is given to them which will render them more firm and durable than those now in general use, and I do hereby declare that the following is a full and exact description of my said improvements. ——— The self adjusting conical wheel for running upon curved roads is well known to Engineers, it having been made the subject of a patent by James Knight, and a modified form of it being now used on the Baltimore and Ohio Rail Road. The plan which I have devised is a new modification of this principle, by which some of the inconveniences which have hitherto attended its employment are in a great degree if not altogether obviated. ——— Instead of making the wheel conical on its whole tread, like Knight's or of forming the conical part against the flanch, and leaving the other part cylindrical, as in those used on the Baltimore Road, I form the cone on the outer part of the tread of the wheel, opposite to the flanch, leaving that part of the tread which extends from the flanch towards the opposite side cylindrical, or nearly so, for one half of its width, more or less, and then tapering outward in such degree as may be found most convenient, according to the curvature of that part of the road which has the smallest radius. ——— The curved part of the road is adapted to these wheels by widening the track in proportion to the radius of curvature; so as to admit the conical part to roll on the [illegible]

terior rail whilst the cylindrical part bears upon the exterior rail. This construction obviates the objection arising from the wrong tendency of the cone when running on the interior rail and adapts the wheel more perfectly to those parts of the [redacted] are straight, and produces other advantages which will readily occur to experienced engineers. ——

——In order to render rail road wheels more firm and durable than they now in use, I form that part of the wheel usually occupied by the spokes, of two plates of iron, preferring for this purpose thick sheet iron of three eighths of an inch, more or less, in thickness. These sheets of iron are raised so as to be concave, or dishing, forming the segment of a large sphere, or if preferred, they may be made conical. These plates have a hole in their centres to receive the hub or nave, and have a flanch turned up, over which the hoops of the hub may pass, or the hub may be secured in other ways if preferred. If the rim, or tire, is of wrought iron, the plates may have a flanch turned at their peripheries, thro' which they may be rivetted to the interior of the rim. When the rim is of cast iron, the plates may be secured without a flanch, one being cast within the rim, against which the plates may fit on either side, rivets, or bolts passing thro' them and thro' the flanch to secure them in their places. Other modes of fixing the plates in their places may be devised, and I do not mean to confine myself to any specific plan of effecting this object, the manner of doing so, not in any way affecting the principle upon which my improvement is founded. —— What I claim as my invention in my first described improvement is making the wheel of a railway carriage conical on its outer edge and cylindrical between said conical part and the flanch, for the purpose of enabling it to run on curved roads, and applying it thereto upon the principle and in the manner herein before set forth. —— What I claim as my invention in my second described improvement is the substituting of metallic plates (generally of wrought iron) for the spokes usually employed, and giving to such plates a form which shall be convex, either curved or conical, from the rim to the hub of the wheel.

John Elgar

Witnesses
Elizabeth Yorke
Wm. Wallis

Enrolled November 19, 1833

Specification of the Patent granted to John Elgar of Paris in the Republic of France Engineer for the Invention of "Improvements in the Construction of Wheels for Railway Carriages" which Invention was communicated to him by a certain foreigner residing abroad being dated the 19th day of May 1837 and enrolled in His Majesty's High Court of Chancery in pursuance of the Provisions of an Act of Parliament made and passed in the 5th and 6th years of His present Majesty's Reign entitled "An Act for the better Protection of Inventions"