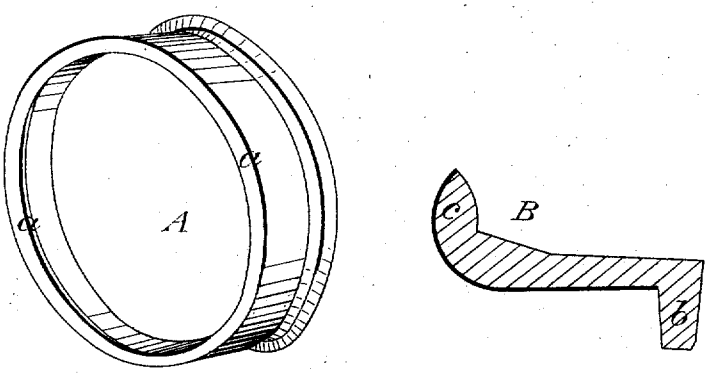
6719X

J. STIMPSON.

Car Wheel.

Patented Aug. 23, 1831.



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

Aug. 23. 1831. Surrendered Sept. 26. 1837 6719x 29

{Antedated for the term of 14 years from 30th August 1831}

James Simpson. Baltimore, Maryland.

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same, containing a description in the words of the said James Simpson, himself of his improvement in the mode of forming and uniting, cast or wrought iron plates or rails for rail road carriage wheels to run upon, for which Letters Patent were granted dated, the twenty third day of August 1831. which Letters Patent being hereby cancelled on account of a defective specification.

To all whom these presents shall come.

Be it known that I James Simpson of the City and County of Baltimore and State of Maryland, have invented a new and useful improvements in the mode of forming and uniting cast or wrought iron plates or rails for rail road carriage wheels to run upon; more especially for them to be used on the streets of cities, where and elsewhere; and that the following is a full and exact description of said inventions or improvements, as invented or improved by me. Viz:

For the purpose of carrying rail roads through the streets of cities and of preserving the same in rail road carriages, wither the streets be daily or occasionally used and at the same time not to be caused any impediment to other carriage operations, I use rails made and applied in the following manner and manners. If it is desired to use cast iron plate rails for a rail road, and the wheels generally to run upon this road, I construct them as follows. I make a channel in the top of the plate rail outwardly near half wide enough the top and sides to receive a portion of the bottom, more or less, and sufficiently deep to prevent the flanges of the wheels from touching the bottom of the channel, making a small curve at the bottom corners of the

sides

flanches, that dist be, may be more easily accomodated or raised out of said channels by the flanches; on the inside of the channel, I leave a check or flank measuring about three quarters of an inch at top and as high or nearly so as the top of the plate on the outside of the channel, the top edge of this next to the channel may be chamfered or bevelled of so as to free the cones, or the largest part of the wheels at the connection of the flanch and tread and thus to keep them from touching; except in one place is a slight work or curve in the tracks. I then in that part of the outer track use rails which have no chamfer, or bevel for the distance necessary for the cones or the larger part of the peripheries of the treads of the wheels at the connection of the flanches thereto measure the necessary distance of said outer track over the inner one, that there may be no necessity of the wheels slipping while passing through the work or curve; and where there is a curve, to be turned shorter than the cones would effect at that point, when laid in the tracks. I so file up or raise the bottom of the outer flanch channel that the periphery of the flanch alone, shall bear, and take the whole weight of the load upon the principle specified in a patent of the same date with the present, thus freeing at the same time the treads entirely for a distance necessary to turn the curve; and when they arrive upon the straight track again the chamfered rails are to be used on both tracks, and the channels to be alike in depth upon both tracks & to be wider so as that the great object in varying the form of the top of the rails by chamfering or not, and by making the flanch channel so as to wholly free the flanches from touching, & so filling them up as to free the treads, will allow the carriage to run upon a crooked or curved road without the necessity of the carriage vibrating within the tracks as they are allowed to do when passing through the brevity in order to prevent meeting

a recession by the excavation in the diameter in the heads of the wheels; by these means the surfaces of the rails instead of giving [illegible] to the wheels never channels ever for the flanches to run in, in all parts of the tracks, and the slipping of the wheels is avoided. These narrow channels are of essential advantage for steel rails as they obviate the whole difficulty heretofore experienced in the keeping of gigs and other carriages with narrow wheels along the same streets: The part of the plate under the heads may be formed a little swelling on the top and hollow underneath to save weight and as wide as the heads outside of the flanches if laid upon wooden rails as before stated the object in this would be to cover the wood as wide at least as the heads of the wheels, that they may not be injured by the pavements, or the wooden rails by other carriages &c. I have now described this kind of plate in its form, and as laid in the streets proper for a straight or curved way. It must be understood of course that there must be different patterns for casting the straight and curve chaneled rails and those with deep and shallow channels. The cross section of the plate as should measure at the base about six inches and a half, the top six inches and a quarter and they should be in depth about two inches and a quarter the inside flanch three quarters of an inch in thickness, the channel one inch and a half wide at top, and one and a quarter at bottom or nearly so and the part outside of the channel which will be under the heads, four inches although they may be less if desired, they may be cast in convenient lengths say three to twelve feet, the ends should be bevelled, say upon an angle of forty five degrees, or a tenon and mortise with spike holes through them in order that they may be fastened down to the wooden or stone rails with the spikes. In most cases, I should rather be added into stone rails or plates two inches and three quarters wide at top and three at the base, or section, the channel five eighths of an inch in depth one inch and a quarter wide at top and one inch at the bottom, or two and three quarters of an inch in thickness below the bottom of the channel leaving the ends to be of the plate on each side of the channel would be one inch and three eighths by three inch bars; and in lengths and

formed

formed at the ends, as before described. - In this kind of rail plate the
intention is that the wheels shall run and bear only upon their flanch-
es, and this mode is by far the best for the use of sheets in cities for it
requires less power to move the cars while they are undoubtedly as
safely guided, and the rails are as durable and much lighter than in
any other way, they require no clearing out, to which the deep ones
will be liable, as the flanches will effect this in such shallow grooves
The shallow channels may be made narrower than the deep ones the
form of the flanches admitting this they being much thicker at their
juncture with the treads of the wheels than at their peripheries, and
therefore require more room in the deep channels to allow the dirt
to rise freely out - But should the common flat wrought iron rails
be preferred, they may be laid double all the distance thus forming
the flanch channel between them, but only where there is a curve
or crook in the tracks to be turned, then in those curves the outer
channel may be discontinued, or so filled up as to have the peripheries
of the flanches bear alone on that side of the plate on the outer track
may be of only one wide piece, with a flat surface laid centrally upon
under the flanches and nearly even with the surface of the pave-
ments, the flanch channel being left outside, on the inside track; or
an iron plate may be rolled with the channel in the centre in one piece,
that is a plate two inches wide on each side of the channel, more or less
about three quarters of an inch thick channel one inch and a quarter
wide at top and one inch at bottom, five eighths of an inch deep, all the
plate of the same thickness throughout if wrought bent, and with holes
bored alternately on each side of the channel. Where it is necessary to
cross a water gutter in the street have a cast iron plate to cover said
gutter, with the flanch channels cast in said plate next all the pave
or space between the channels cast rough, to prevent horses from
from slipping. It may be cast in one or more pieces but the former
is to be in use, as with this plan be stronger although of the same
thickness. And where there are curves need only be put at the
same time the flanch channel rail in that curve be cast

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conformably to the curve and only on the inner track of the inside, while the outer track may be left flat and smooth without thumbs just even with the top of the cutting or stiffle below it if desired upon the principle explained in the ~~same~~ patent before alluded to. The former cast iron plate which covers the water gutters, being cast in one piece and of a width sufficient to cover any duct gutter, should have ribs cast underneath about one inch and a quarter deep inclusive of the thickness of the plate, Let under the outer edges to increase its strength. In some cases I cover the gutters the whole width of the street without iron plates and some distance past the curbings thus making a very great improvement to the street for the ordinary travel. It will be observed that the rail plates are directed to be made widest upon their bases, the effect of which is that when sunk into a channel in the centre of a stone or wooden rail the pressure of wheels will force them into the joints of the stone or wood. What I claim as my improvements or improvements are the employment of plates or rails either of cast or wrought iron constructed upon the principle or in the manner herein described, having narrow grooves for the flanches to run in by which they are perfectly adapted to the unobstructed paving of all kinds of carriage roads in direct contact with them. The running of the peripheries of the flanches or of the cone, or rise on the head of the wheel upon the rail in the manner, and for the purposes set forth, and the employment of plates upon cast iron upon the principle described for the roofing of gutters, and the forming of curves. And I do hereby declare that I do not intend to confine myself to the precise forms and dimensions given, them being intended merely to exemplify in a clear manner the nature, object, and mode of carrying into effect my said inventions

Witnesses
James Hutchinson
Saml. Breneman

James Hutchinson

Ex. Opr.