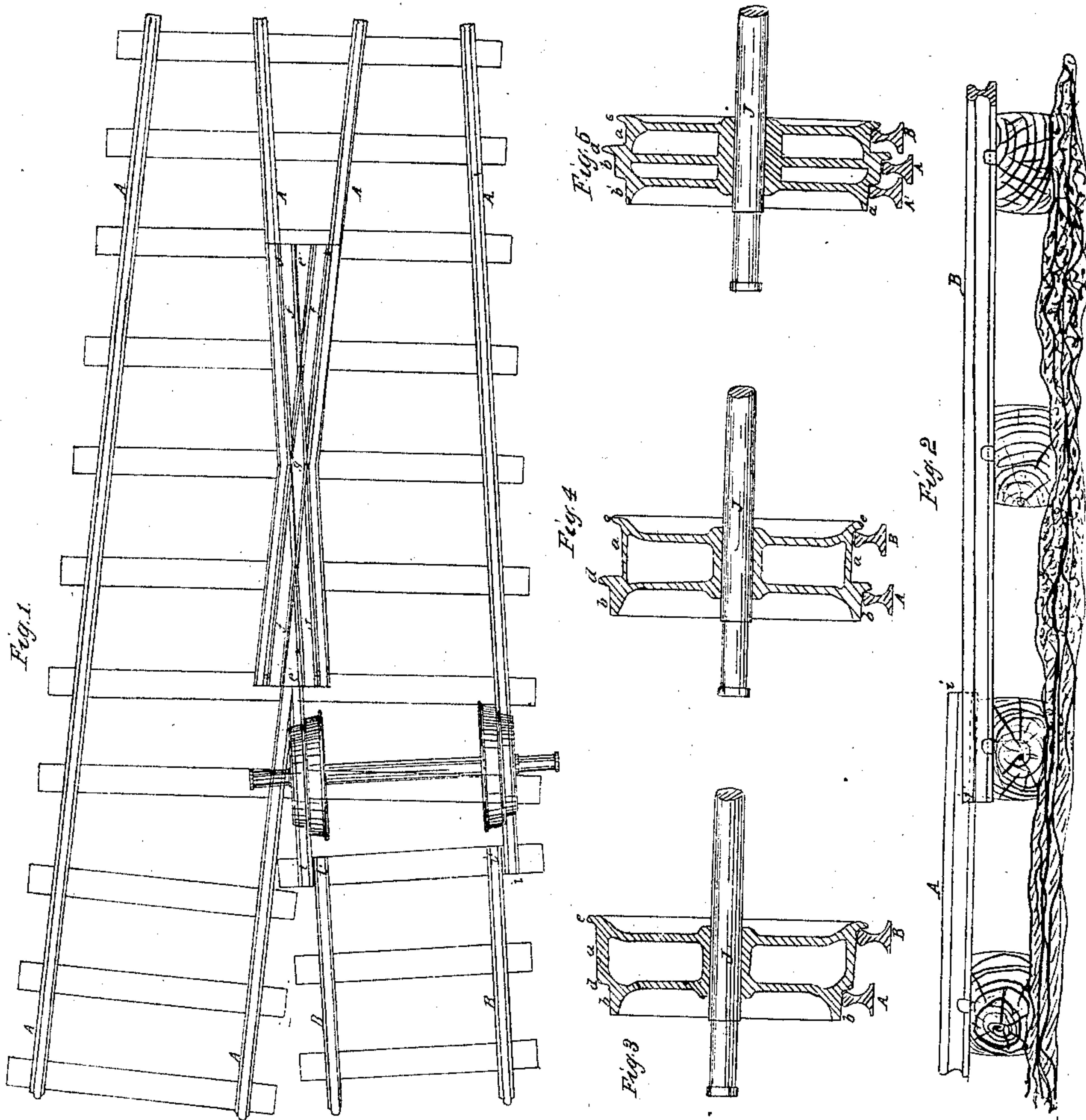


W. H. CHILDE.
CAR WHEEL AND FROG FOR WIDE AND NARROW GAGE RAILWAYS.
No. 82,086. Patented Sept. 15, 1868.



Witnesses

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Letters Patent No. 82,086, dated September 15, 1868.

IMPROVEMENT IN CAR-WHEELS AND FROGS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, W. H. CHILDE, of Gainesville, in the county of Sumter, and State of Alabama, have invented certain new and useful Improvements in Car-Wheels and Frogs for combined wide and narrow-gauge railways; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plane view of combined wide and narrow-gauge tracks, showing the improved frog applied thereto.

Figure 2 is a vertical sectional view, taken through cross-ties, between wide and narrow-gauge tracks, at the junction of such tracks.

Figure 3 is a diametrical section of the improved car-wheel which I have adapted for wide and narrow-gauge tracks.

Figures 4 and 5 are modifications of the wheel of fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to unite the varying gauges or widths of railroad-tracks at the least possible expense to railroad-companies, and without impairing their strength, safety, or utility, as a reliable medium for traffic and travel to the public.

The nature of my invention consists in making car-wheels of such width of tread as to adapt them, when applied upon their axles, for tracks of different gauges or widths, and in constructing such wheels with two or more independent treads which are separated by flanges, shoulders, or their equivalents, so that there shall be a flange for each tread, which will keep the wheels in place upon the rails and in crossing frogs, and prevent undue lateral motion, as will be hereinafter explained.

The invention further consists in a frog for tracks of different gauges, which is adapted to serve for the improved wheels, and also for the common single-tread wheels; said frog being constructed with grooves or channels in its surface, intersecting each other at proper angles, and corresponding to the different treads and flanges of the wheels to be used, as will be hereinafter explained.

It has been the practice heretofore, upon lines of railroads having varying gauges, to adjust the single-tread wheels upon their axles for the narrowest gauge of the line, but when the wheels or trucks pass upon the wider gauge of the line, there are necessarily spaces left between the rails and flanges of the wheels, which not only cause lateral motion to the trucks, but are destructive to the rolling stock, and exceedingly unsafe and unpleasant to passengers.

In order to avoid these objections it has been suggested to employ separate tracks, adapted for the different gauges of a line of road, but this system would involve great expense, besides loss of time and labor to effect the required changes at the junctions or breaks of one gauge of road to another gauge.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, fig. 1, I have represented wide and narrow-gauge tracks, at the junction or crossing of two lines. A A A A represent the wide-gauge rails, and B B represent the narrower-gauge rails, the latter commencing inside of the wide gauge, and lapping or passing at the ends, as shown at *i i'*, so that a perfect junction can be made to allow the improved compound-tread wheels to roll safely from one gauge of track upon another.

By reference to fig. 2 it will be seen that the rails of the narrower gauge, B, terminate in inclined planes, and are thus brought to a lower level at their termini than the rails of the wide-gauge track. This difference in height, being equal to about one-half the variation in the diameters of the treads of the improved wheels, will allow cars to be passed from one gauge or width of track upon another gauge or width of track, without loss of time or inconvenience.

The frog, which I have represented in fig. 1, is constructed with additional grooves, arranged at such distances apart as will correspond with the widths of the treads of the improved wheels. The grooves *d d* serve the flanges of the common single-tread wheel. The grooves *e e* serve the flange of my double-tread wheel.

To make the frog available for varying combinations with the double-tread wheel, additional grooves, corresponding to the flanges of the wheels, should be made.

Between the points *ff* the car-wheels are to run on the flange instead of the tread; that is to say, between said points *ff*, the grooves are so adjusted with reference to the treads of the wheels that the superincumbent weight will be borne by the flange. This arrangement has special reference to common car-wheels with single tread, and is designed for confining these wheels to the right track without the use of guard-rails, which could not be very well used for both single and double-tread wheels.

The surfaces of the grooves may be plated with steel, to lessen the abrasion or wear by the flanges of the wheels. The surfaces of the frog, between its external rail-flanges, being inclined from the points *ff* cutward, requires that the double-tread wheel shall overcome an elevation equal to the depth of a flange of such wheel, say one inch and a half perpendicular rise between the foot *f* and summit *g* of the frog. This brings the bearings for all the wheels upon the same plane where they pass in the frog, and is an indispensable prerequisite to safety and smooth running.

The frog which I have shown in fig. 1 is applied to the widest-gauge track, and passes the improved wheels, double-tread wheels, on the narrowest-gauge tread and flange, and *vice versa*, when the frog is applied to the narrowest-gauge track.

Having now described one mode of constructing and using a frog adapted to single or double-tread wheel, I will describe the improved wheels which I have adapted for the varying-gauge roads or tracks.

In the accompanying drawings, fig. 3, I have shown, by a sectional view, one form of car-wheel, which is adapted for a line of road having two different gauges or widths of track. This wheel is constructed with two independent treads, *a b*, one of which, *a*, is adapted for a narrow-gauge track, and the other, *b*, is adapted for a wide-gauge track.

In order to effect this object successfully, without changing the frog on both of the varying-gauge roads, and prevent undue lateral play of the wheels or trucks upon their rails when the cars are in motion, and also to insure safety of travel over the rails, at turnouts, crossings, and other points of a road, I make one tread of larger diameter than the other, as shown in figs. 3, 4, and 5.

In fig. 3, the outer tread *b* is of less diameter than the inner tread *a*, which leaves a flange or shoulder, *d*, of equal depth to the inner flange *c*. In fig. 4, the outer tread *b* is of larger diameter than the inner tread, and the two treads are separated by a raised flange, *d*; and in fig. 5, three treads, *a b b'*, are shown, the intermediate one being of larger diameter than the others.

This wheel, shown in fig. 5, is a treble-tread wheel, in which the larger periphery or tread *b* applies to a middle-gauge road, and the two smaller peripheries to extreme wide and narrow-gauge roads.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

Uniting railroads of different gauges, by means of a frog, applied at the junction of two or more tracks, and constructed as described, and by railroad-wheels, constructed with two or more independent treads, the said frog and wheels being employed together, but the former also permitting wheels with a single tread to pass over it, all substantially as described.

W. H. CHILDE.

Witnesses:

JONA. BLISS,
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