

DAVID TODD.
Improvement in Devices for Changing the Gauge
of Railway Cars.
No. 123,308.

Patented Jan. 30, 1872.

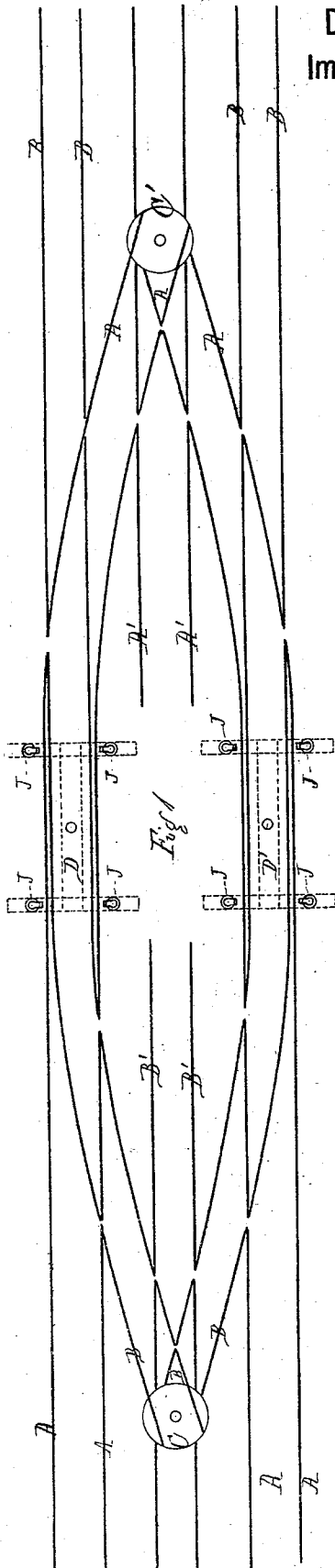


Fig. 1

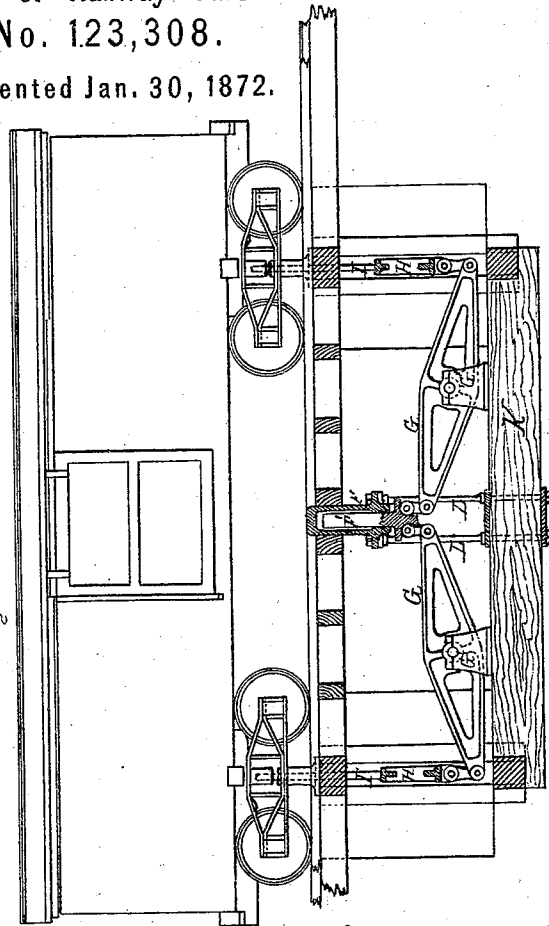
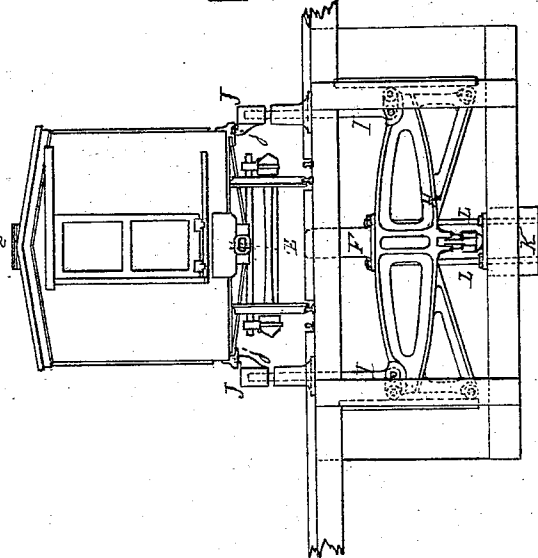


Fig. 2



Witnesses
J. C. Blomdyke
A. E. Mearns

David Todd
by his attorney
Wm. Smith

UNITED STATES PATENT OFFICE.

DAVID TODD, OF DETROIT, MICHIGAN.

IMPROVEMENT IN DEVICES FOR CHANGING THE GAUGE OF RAILWAY CARS.

Specification forming part of Letters Patent No. 123,308, dated January 30, 1872.

To all whom it may concern:

Be it known that I, DAVID TODD, of Detroit, county of Wayne, State of Michigan, have invented certain new and useful Improvements in the Method of Changing the Gauge of Railroad Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 represents a system or method of laying tracks, which forms one part of my invention. Fig. 2 represents an end view of an arrangement of devices for carrying out my invention, and Fig. 3 is a side view of the same.

Much difficulty has been experienced in shipping freight over long lines of railroad arising from the necessity of breaking bulk at each change of gauge, as the expense of the extra handling of freight, and the loss and wastage incidental to such handling, add heavily to the cost of shipping goods. Many methods have been tried to overcome the necessity for the reshipping above referred to, some of which have been partially successful; but all have been attended with serious defects; and with a view to obviate these objections the invention consists in combining with a system or arrangement of tracks of different gauges, to be hereafter described, a series of lifting-jacks, operated by hydraulic power, for lifting the cars bodily while the trucks are being removed and those of a different gauge substituted.

Having thus set forth the nature of my invention, I will now proceed to describe one system of devices which I have adopted for carrying it into effect.

In the accompanying drawing, A A represent the main line of broad-gauge track, and B B represent the main line of narrow-gauge. I usually arrange these tracks so as to intersect and cross each other, substantially as shown in the drawing, for convenience in operating, as will be fully explained hereafter.

C C' are turn-tables, placed, as shown, at the points where the converging extension of the tracks of equal gauge meet. A' A' and B' B' are short supplemental sections of track, the broad-gauge being placed between the main or trunk lines of narrow-gauge, and vice versa. E are the king-bolts, by which the body of the car is united to the truck. This king-

bolt and the friction bearing-plates upon the truck may be constructed and arranged in any usual or desired manner, care being taken, of course, to adapt them to fit any or all of the cars and trucks to which they will be applied. F F', shown in section in Figs. 2 and 3, is a hydraulic ram, F being the cylinder and F' the piston or plunger. This ram is secured to a suitable bed-piece or sill, K, by means of supporting-columns L L, and the plunger F' is connected with the inner ends of lever-beams G G, which are mounted in suitable pillar-blocks G' G'. H H are cross-heads, moving in vertical ways or guides, and connected with the outer ends of lever-beams G G. I are vertical lifting or jack rods, connected at their lower ends with cross-heads H H. The operating devices just described are placed in a pit below the level of the track, except that the lifting or jack rods I extend up to about the height of the wheels of the cars. J are brackets mounted upon the upper ends of jack-rods I, being connected therewith by means of sockets, as in Fig. 2, in such manner that they (the brackets) can readily swivel upon the rods. There are four of these jack-rods and brackets to each car, as shown in Fig. 1; and, by preference, I arrange them in such position that they shall bear against the transverse supporting girt or bolster of the car through which the king-bolt passes.

The operation of the devices just described is as follows: Suppose a car to be coming in on either of the broad-gauges A A and one upon either of the narrow-gauges B B, and I wish to forward them both immediately. I run one of them upon the intersecting portion of track at D and the other upon the portion D', then turn the brackets J around until their projecting ends j are underneath the bodies of the car. Water is then forced into the ram F by any desired means, and the plunger F' is forced down and the cars are lifted from their trucks until the king-bolts are disengaged, when the trucks are interchanged and each car is, when let down on the truck, ready to go ahead over its new track; and, by preference, I so arrange and combine my lifting devices that I can elevate both cars at once and by the use of one ram.

As a modification of my invention I may pre

fer to support a short section of track—say enough for one car—upon a movable platform; then run the car upon it, and let it (the platform) down until the trucks are released from the king-bolts, and replace them by those of different gauge, the car meanwhile being supported upon pedestals.

In Fig. 1 I have represented a method of laying the track so as to facilitate the exchange of trucks. By an inspection of this figure it will be seen that broad tracks A, after passing the lifting devices, converge and approach a common center at one of the turn-tables, C C', and that the narrow tracks B B do the same thing at the opposite side of the lifting devices. Thus it will be seen that when a broad-gauge truck is removed from a car at D it is run onto the turn-table at C' and swung around so as to be run back to D', and these placed under a car which has come in from the narrow-gauge, the truck from this last car having been run over turn-table C', the car standing at D, from which the first-named broad truck has been removed.

This operation supposes that there was a car of each gauge to be shifted at the same time;

but as it sometimes happens that there is but a single car to be treated, or that a number of cars are to be shifted from broad to narrow (or vice versa) without having a corresponding number of cars going the other way from which to get trucks, this necessitates keeping a number of trucks of both widths on hand; and with a view to keep them within convenient reach I have introduced the supplemental tracks A' B' between the main or trunk lines and connected them with the turn-tables, as shown in the drawing; but this part of the invention is merely accessory to the other, and I do not wish to be confined to its use in combination with the lifting devices.

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

In combination with the herein-described system of tracks of different gauges the hydraulic ram F F', jacks I, and connecting devices, substantially as described.

DAVID TODD.

Witnesses:

H. H. DOUBLED,
EDM. F. BROWN.