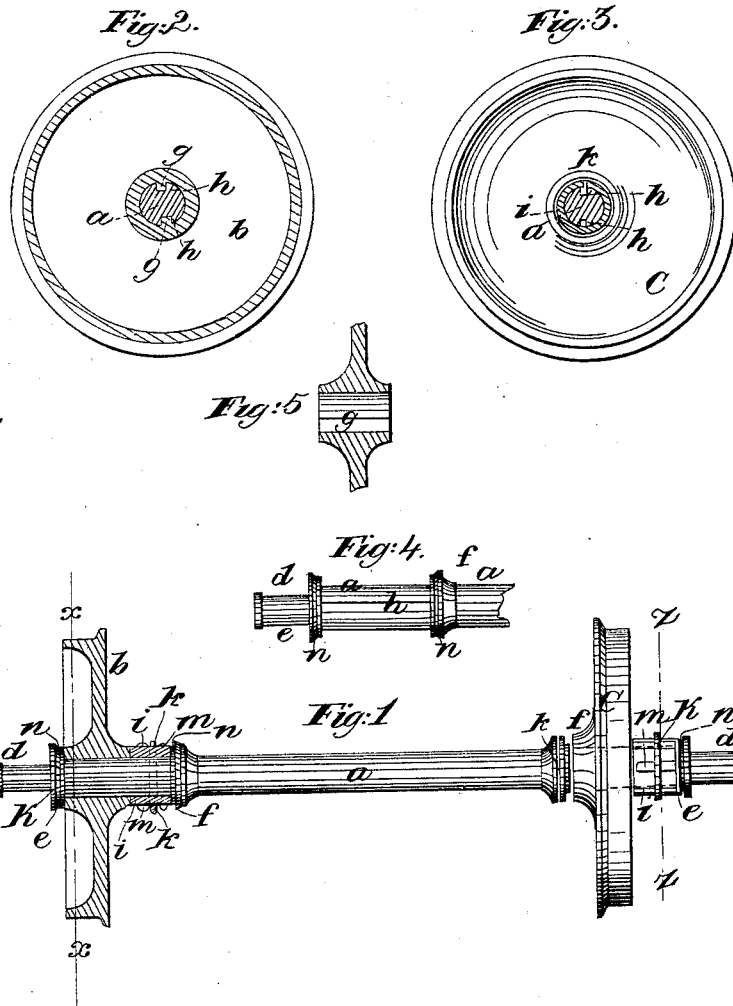


N. F. BRYANT.
Changeable-Gage Truck.

No. 45,583.

Patented Dec. 27, 1864.



Witnesses
Frances Gould
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NAHUM F. BRYANT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CAR-TRUCKS.

Specification forming part of Letters Patent No. 45,583, dated December 27, 1864.

To all whom it may concern:

Be it known that I, NAHUM F. BRYANT, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Car-Trucks, to adapt them to tracks of varying gages; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

This invention relates to the adaptation of car-trucks to run upon railways of varying gages, the improvement consisting in the method of confining the wheels in position upon the axle (to which they are so applied as to be capable of sliding) in such manner as to increase or diminish their distance apart, according to the gage of the track upon which the car is to be run; also, in the details of mechanism employed in carrying out the main part of my invention.

The improvement in no way relates to the manner of or mechanism for sliding or moving the wheels laterally, but to the means employed for chucking or fastening the wheels, so that while they are capable of being drawn together or apart, as circumstances may require, they can also be rigidly confined upon their axles, so as to be incapable of any lateral movement with respect to each other while the car is running.

The invention will be understood from the accompanying drawings, in which—

Figure 1 represents a side elevation and central section of a pair of car-wheels on an axle, *a*. Fig. 2 is a cross section on the line *x x*, and Fig. 3 a cross-section on the line *z z*, of Fig. 1. Fig. 4 shows an elevation of the end of the axle, and Fig. 5 an inner view of the wheel-hub.

a denotes the axle; *b c*, the car-wheels. Each end of the axle *a*, inside of the journal *d*, is provided with two flanges or shoulders, *e f*, made integral with the axis or immovably fastened thereupon after the wheels are mounted. Between these flanges the wheel can slide freely on the axle, a spline, *g*, in the hub fitting into a groove, *h*, in the axle, as will be understood from Figs. 2, 4, and 5, said spline and groove guiding the wheel in its lateral movement, and keeping it from rotating on the axle. The space between the flanges is so fixed that

when the wheels are drawn in so that their hubs abut against the inner flanges the wheels are at that distance apart which shall adapt the truck to a railway of narrow gage, while when they are slid outward so as to abut against the outer flanges they are in position for the car to run upon the broad gage. The board and narrow gages being of a regulated or determined width, the narrow gage being the common railway of four feet eight and one-half inches between the rails, and the broad gage having six feet between the rails, it will be seen that the wheel has only to be secured against one or the other of the flanges *e f*, and never midway between them, a modification of this arrangement being necessary, when the car is to run upon more than the two gages. To effect this securing, I employ a cylindrical collar, *i*, made in parts or halves, so as to be removable from the axle, which parts may be hinged together, if necessary, as seen in Fig. 3. This collar fits accurately upon the axle and between either end of the hub and the adjacent shoulder on the axle, and so as to entirely prevent any lateral movement of the wheel upon the axle.

To secure the parts of the collar together or upon the axle, a ring, *k*, fits upon and slides over the collar, such ring being made of metal or of elastic material, and being kept in position by its own elasticity or impingement around the collar, or by sliding over a spring, *m*, as will be readily understood. When the collar is to be removed, the ring *k*, is slid off from the end of the collar upon a groove, *n*, made in the flanges *e f*. Any other convenient method may be used for confining the parts of the collar upon the axle. To change the car, therefore, from one track to another, it is only necessary to remove the collars, slide the wheels in or out upon the axles, and again place the collars in position on the opposite sides of the wheels, between the hub and the other flanges *e f*; the simplicity of the operation enabling a train of cars to be run from one track to another of different width with great expedition, and with no other than the ordinary skill, to be found in the common employés of a railroad. As it may be found necessary to somewhat elongate the ordinary hub of car-wheels, to adapt them to my invention, I would remark that the hub may be

provided, if found necessary, with a bushing of steel, such construction adding strength to the hub and enabling it better to resist any tendency to wear from movement upon the axle. The position of the spline and groove *g h* may be reversed, the spline being placed on the axle and in a modification of my invention which I propose sometimes to employ, instead of using a removable collar, *i*, I place a narrow collar or ring upon the axle, on each end of the hub. The axle is provided with a number of splines, and the rings with corresponding grooves, and when the wheel is slid up to its place on the axle the ring is brought up against it, and then rotated slightly, so as to bring the ends of the splines (behind the ring) against the solid parts of the ring, concentric with its grooves, thus fastening the wheel in position, a key or pin being used to prevent the ring from turning on the axle. With this arrangement the wheels and axle are made easily adaptable to more than two gages of track, as spaces may be left between the ends of the splines to correspond with the different widths of tracks to be run upon; or a lipped projection may be made upon the hub, the lip extending over a sliding collar or collars made with grooves, which slide with the hub and over the splines upon the axle, rotation of the collar interlocking spline and collar, and the collar when so interlocked, confining hub and wheel in lateral position; or two cylindrical collars or a series of collars, similar to the collar *i*, but of less width, may be used to adapt the car to tracks of more than two gages, one or more collars being placed on each side of the wheel to confine it

in intermediate position. With all of these methods there will be observed the same peculiarity of construction—namely, the interposition between the hub of the wheel and that part of the axle over which it can slide of a collar, or series of projections by which the wheel is made incapable of lateral movement while running, such collar or projection abutting against the wheel-hub, and confining it between the collar and a flange upon the axle.

I claim—

1. The combination, with a car-wheel and an axle upon which said wheel slides, of flanges or projections *e f*, which control the extent of lateral movement of the slide-wheel, and a device or devices placed on one or both sides of the hub for confining the wheel against the flange *e* or *f*, and between said flange and the locking device, in the manner and for the purpose substantially as set forth.
2. The removable cylindrical collar to be placed between the hub and the flange *e* or *f* on either side of the wheel, substantially as described.
3. The manner of securing the collar in position upon the axle by means of the ring.
4. The springs which keep the ring from lateral movement.
5. In combination with a sliding wheel, the spline in the hub thereof, and the groove in the axle, operating together to guide the wheel in its lateral movement, and to prevent its rotation on the axle, substantially as specified.

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