C. D. TISDALE.

Changeable-Gage Truck.

No. 90,410. Patented May 25, 1869.

Fig. 1.

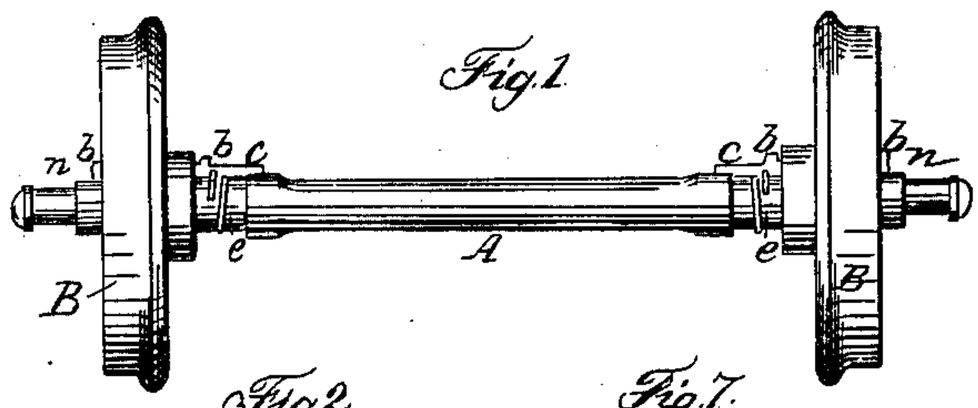


Fig. 2.

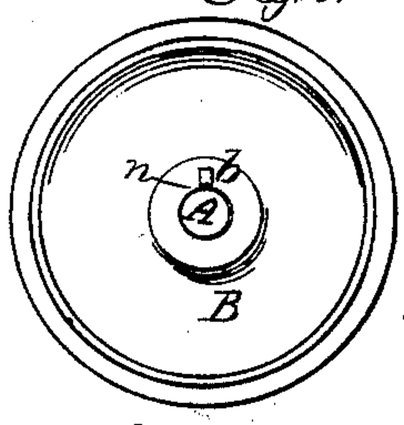


Fig. 7.

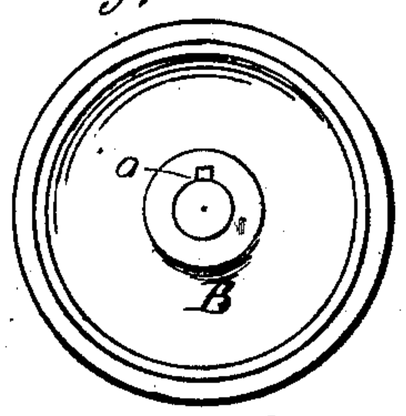


Fig. 3.

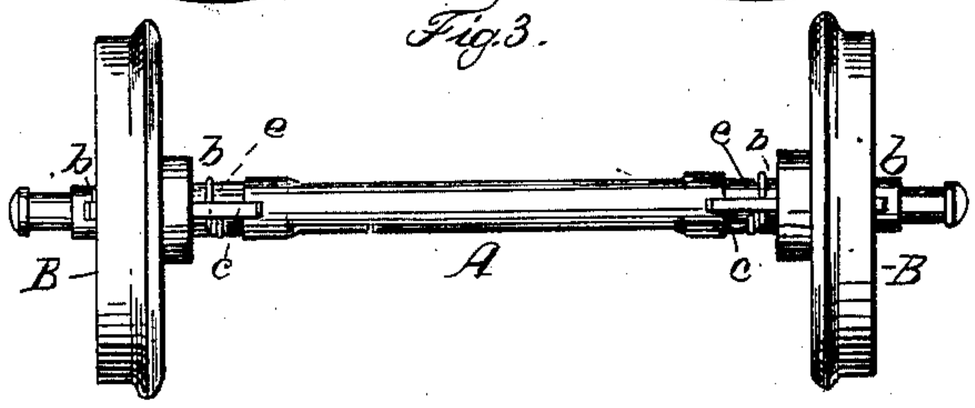


Fig. 4.

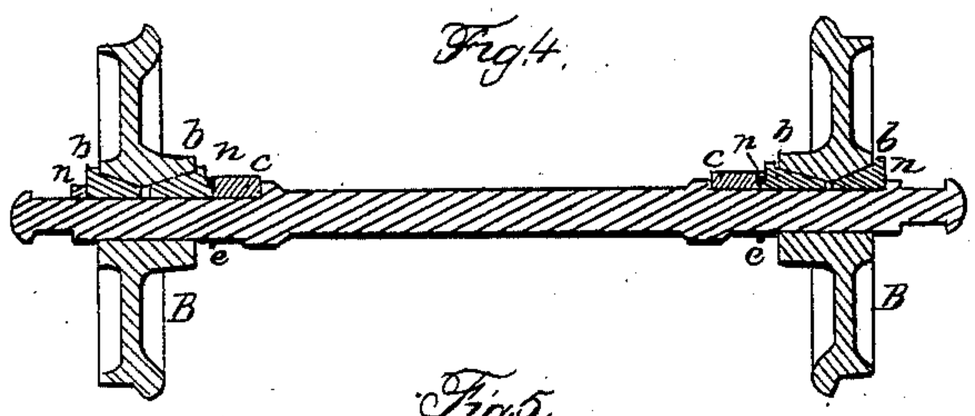


Fig. 5.

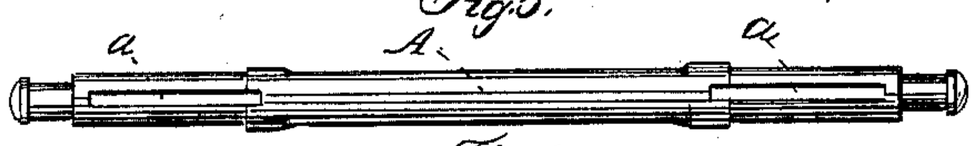
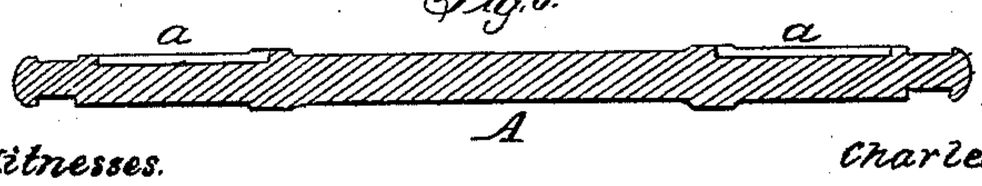


Fig. 6.



Witnesses.

S. N. Piper.

J. R. Snow.

Inventor.

Charles D. Tisdale

by his attorney

R. H. Eddy.

UNITED STATES PATENT OFFICE.

CHARLES D. TISDALE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND JOSEPH H. CLAPP, OF SAME PLACE.

IMPROVED RAILWAY-CAR WHEEL AND AXLE.

Specification forming part of Letters Patent No. **90,410**, dated May 25, 1869.

To all persons to whom these presents may come:

Be it known that I, CHARLES D. TISDALE, of Boston, of the county of Suffolk and State of Massachusetts, have made a new and useful invention having reference to Railway-Carriage Wheels and Axles; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, Fig. 2 an end view, Fig. 3 a top view, and Fig. 4 a longitudinal section, of an axle and a pair of wheels provided with my invention.

The purpose of such invention is to enable each of the wheels to be adjusted and fixed in either of two different positions on the axle, in order to accommodate the said wheels to railway-tracks of different widths, or, in other words, to adapt them either to a "narrow-gage" or a "broad-gage" track, as circumstances may require.

In carrying out my invention, the axle A, where it passes through each wheel B, and for a short distance therefrom, is to be grooved, such grooves being shown at *a a* in Fig. 5, which is a top view of the axle. They are also shown in Fig. 6, which is a longitudinal section of such axle. Into each of such grooves, and so as to extend into the wheel-hub from its opposite ends, and also into a groove, *o*, made in the hub, (see Fig. 7, which is a side elevation of one of the wheels,) a pair of wedge-keys, *b b*, is inserted, they being formed in manner as represented. Besides these keys there is driven into the groove a stop-piece, *c*, it being formed and made to extend from the groove and press against one end of it and the head of the next key, in manner as represented. Each end of the groove is to be beveled or inclined a little, as shown, in order to aid in keeping the stop-piece in place, such stop-piece having the form of a parallelogram, or an approximation thereto, its two opposite ends being arranged a little oblique to the opposite edges. Where the stop-piece and the key abut together they are each notched, as shown at *n*, to receive a helix-key, consisting of an elastic rod, *e*, bent around the shaft, and having one end lapped by the other a short distance, the whole being as shown in the drawings.

As the wedge-keys *b b*, when one of them abuts against one end of the slot, and the two are kept in place by the stop-piece, cannot rise out of the slot, they, with the helix-key, will aid in holding the stop-piece in place. The helix-key can only turn about the shaft until either of the ends of the key may bring up against the stop-piece. Thus there will be no danger of the said key being displaced and dropping out of the grooves of the wedge-key and stop-piece while the wheels and axle may be in movement on a railway. There is to be a groove or notch, *n*, in the head of each wedge-key.

By removing the helix or coil key from the stop-piece and wedge-key, and extracting the stop-piece from the groove, the wheel, with the wedge-keys, will be free to be moved on the shaft, either nearer to or farther from the other wheel. The stop-piece being next placed in the groove, and on the opposite side of the wheel to which it was before arranged, and the helix-coil being inserted in the stop-piece and next adjacent key, the wheel will be fixed in a new position on the axle.

The advantage of the wedge-keys is, that they hold the wheel firmly to the shaft, so as not only to prevent it from revolving thereon, but also from lateral play thereon in radial directions.

The stop-piece, when placed in the groove and against one or the other end of it, determines, with the wedge-keys, the position of the wheel, whether for a broad gage or a narrow gage. The stop-piece, by being driven down into the groove and against one of the wedge-keys, will set it into the wheel, and crowd the latter upon the other wedge-key.

The whole constitutes a very secure and eminently practical fastening for the wheel and axle. It is one which admits of the wheel being easily adjusted into either position, as circumstances may require, to adapt the carriage to run either upon a broad-gage or a narrow-gage track.

I am aware that it is not new to apply a car-wheel to its shaft or axle so as to be capable of being slid thereon, and to secure such wheel in place by mechanical devices applied to the axle, such being to enable the wheel to be fixed

in either of two positions on the axle, in order to adapt the car to a broad-gage or a narrow-gage track, as might be desirable. Consequently I make no claim to the principle of so applying and fixing a wheel to an axle.

What I claim as my invention is—

1. The combination and arrangement of the wedge-keys *b b*, the stop-piece *c*, and the grooves *a o* in the wheel-hub and axle, the whole being applied to the wheel and axle in manner as set forth.

2. Also, the combination and arrangement of the helix coil or key *e* with the stop-piece *c* and the wedge-keys *b b*, applied to the wheel and axle in manner as explained.

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Witnesses:
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