

No. 766,348.

PATENTED AUG. 2, 1904.

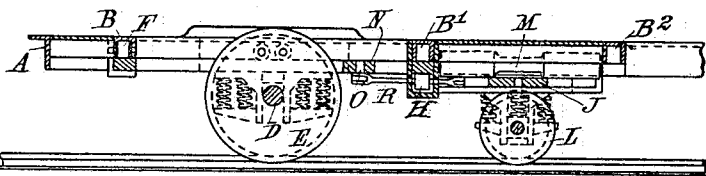
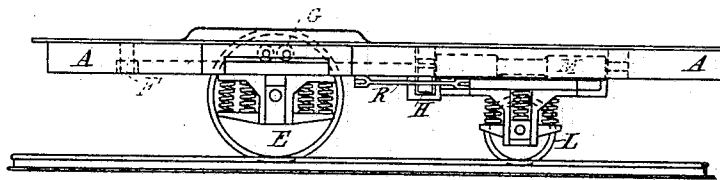
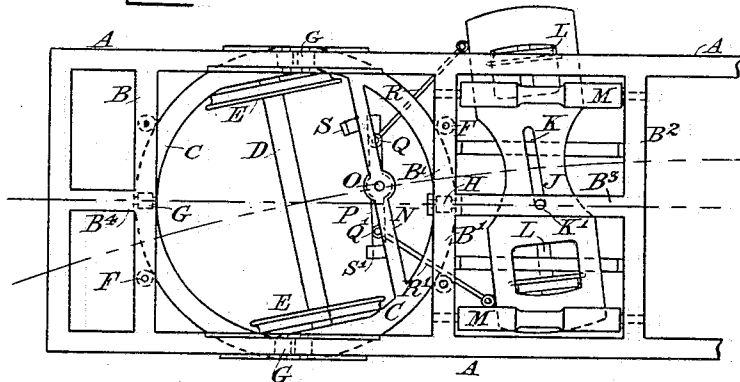
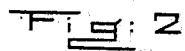
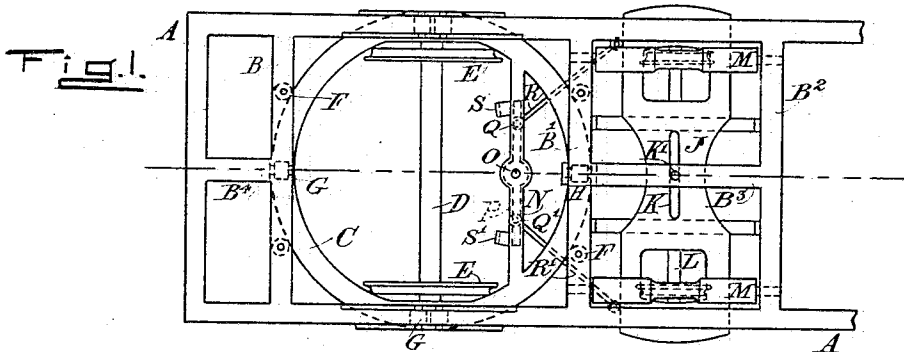
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UNDERCARRIAGE FOR TRAM OR RAILWAY CARS OR WAGONS.

APPLICATION FILED OCT. 7, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES

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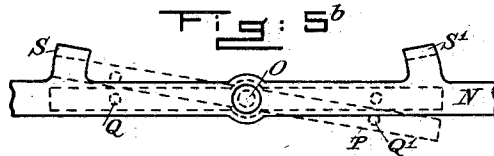
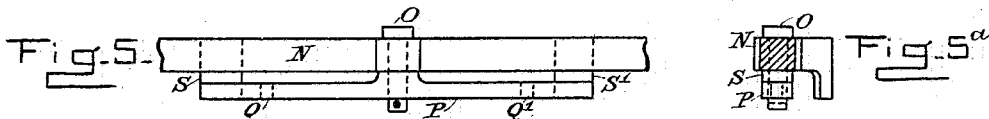


Fig: 6

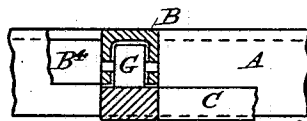


Fig: 6^a

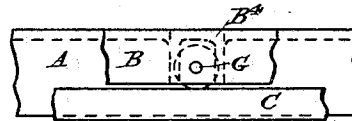


Fig: 6^b

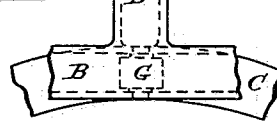


Fig: 7

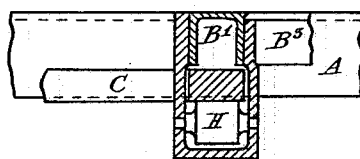


Fig: 7^a

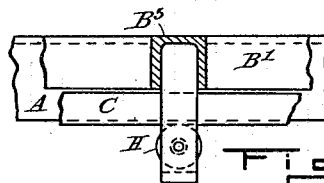


Fig: 7^b

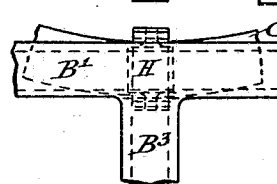


Fig: 8

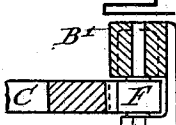


Fig: 8^a

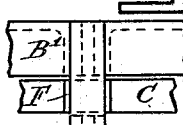
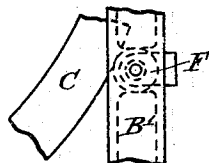


Fig: 8^b



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UNITED STATES PATENT OFFICE.

PETER HERBERT, OF NORTH SYDNEY, NEW SOUTH WALES, AUSTRALIA.

UNDERCARRIAGE FOR TRAM OR RAILWAY CARS OR WAGONS.

SPECIFICATION forming part of Letters Patent No. 766,348, dated August 2, 1904.

Application filed October 7, 1903. Serial No. 176,127. (No model.)

To all whom it may concern:

Be it known that I, PETER HERBERT, a subject of the King of Great Britain and Ireland, and a resident of Chester, Karrabar Road, North Sydney, county of Cumberland, in the State of New South Wales, Commonwealth of Australia, have invented a certain new and useful Improved Undercarriage for Tram or Railway Cars or Wagons, of which the following is a specification.

The underframe of the ordinary car or wagon will remain practically the same; but underlying this frame is the improved undercarriage, which consists of a circular skeleton turn-table upon which the underframe provided with antifriction-rollers will rest. To this skeleton turn-table there will be no center-pin or king-bolt. The turn-table will be maintained in position relative to its theoretical center by a number of peripheral antifriction-rollers on vertical axes on the underframe and which rollers will engage with the periphery of the turn-table. Each turn-table will carry but one axletree supporting one pair of wheels. Upon the turn-table may be mounted a suitable motor-engine for driving the wheels. When the wheel-base of the car is very long, a set of pony-wheels are provided to each turn-table. The pony-wheels are mounted in a pony-frame adapted to slide transversely below the underframe, such pony-frame being connected to the main turn-table by diagonal rods and a pivoted compensating lever. The turn-table and the pony-frame will together thus constitute a kind of bogie-frame.

In order that the invention may be properly understood, reference is made to the accompanying sheet of drawings, in which—

Figure 1 is a plan of the underframe, the turn-table and the bogie-frame running on a straight track. Fig. 2 is a similar plan, but with the car running on a curve of forty-six feet radius. Fig. 3 is a side elevation of Fig. 1. Fig. 4 is a longitudinal vertical section on the center line of Fig. 1. Figs. 5, 5^a, 5^b are side elevation, end elevation, and plan, respectively, of the compensating lever, showing its attachment to the chord-piece of the turn-table. Figs. 6, 6^a, 6^b are cross-section,

end elevation, and plan, respectively, of one of the antifriction-bearing rollers, showing its attachment to the underframe and its relation to the turn-table. Figs. 7, 7^a, 7^b are cross-section, end elevation, and plan, respectively, of the supporting antifriction-roller, showing its attachment to the underframe and its relation to the turn-table. Figs. 8, 8^a, 8^b are cross-section, side elevation, and plan, respectively, of one of the peripheral antifriction-rollers.

A is the external portion of the underframe of the car and is constructed of angle-iron.

B B' B² B³ B⁴ are cross-beams in the underframe constructed of channel-iron, but of less depth than the angle-iron A, which constitutes the external portion of the underframe.

C is the turn-table, which carries the axletree D and wheels E E. The turn-table C is maintained in its central position by the peripheral antifriction-rollers F F. (Shown on an enlarged scale at Figs. 8, 8^a, 8^b.) Antifriction-bearing rollers G G (shown at Figs. 6, 6^a, 6^b) on horizontal axes in the underframe reduce the friction between the under side of the underframe A and the upper side of the turn-table C. Another antifriction-roller, H, (shown at Figs. 7, 7^a, 7^b), is placed under the turn-table in order to assist in supporting the weight of any motor-engine the turn-table may have to carry.

When the wheel-base of the car is long—say twenty feet and upward—pony-wheels must be provided to assist in carrying the underframe; but as the improved undercarriage is specially adapted to travel round curves of small radius special appliances must be provided to prevent tangential friction between the flanges of the wheels and the rails. To this end the pony-wheels L are carried by a pony-frame J, in which is a slot K, traversed by a center-pin K', carried by the cross-piece B³ in the underframe. The pony-frame J is adapted to slide transversely with respect to the underframe. Long antifriction-rollers M M, carried by the underframe, rest upon the upper surface of the pony-frame J, and thus assist in supporting the body of the car, while at the same time the pony-frame can move or

swing under the car without undue friction. In the turn-table C is a chord-piece N, to the center of which is pivoted at O a compensating lever P. (Shown in detail at Figs. 5, 5^a, 5^b.) The pony-frame J is connected to points Q Q' on the compensating lever P by bars or connecting-rods R R', and the compensating lever is prevented from turning too far in either direction by stops S S' on the chord-piece N.

Fig. 2 shows the car traveling round a curve having a radius of forty-six feet with a wheel-base of twenty feet between the driving-wheels and clearly indicates the positions that the driving-wheels and pony-wheels will assume relatively to the underframe when traveling round such a curve.

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

1. In undercarriages of tram-cars, in combination the underframe of a tram-car, a skeleton turn-table upon which the underframe rests, antifriction-bearing rollers between the turn-table and the underframe, peripheral rollers around the turn-table, an antifriction supporting-roller below the turn-table, and axletree and wheels carried by the turn-table and supporting it, as specified.

2. In undercarriages of tram-cars, in combination, the underframe of a tram-car, a skeleton turn-table upon which the underframe rests, a chord piece or bar across the skeleton turn-table, antifriction-bearing rollers between the turn-table and the underframe, an antifriction supporting-roller under the turn-table, peripheral rollers around the turn-table, and an axletree and wheels carried by the turn-table and supporting it, as herein set forth.

3. In undercarriages of tram-cars, in combination, the underframe of a tram-car, a skeleton turn-table upon which the underframe rests, a chord piece or bar across the skeleton turn-table, a compensating lever fulcrumed on the chord-piece, antifriction-bearing rollers between the turn-table and the underframe, an antifriction supporting-roller under the turn-table, peripheral rollers around the turn-table, and an axletree and wheels carried by the turn-table and supporting it, as herein set forth.

4. In undercarriages of tram-cars, in combination, the underframe of a tram-car, a pony-frame upon which the underframe rests, such pony-frame carrying pony-wheels, antifriction-rollers between the underframe and

the pony-frame, a skeleton turn-table underlying the underframe, means for connecting the pony-frame to the turn-table, as specified.

5. In undercarriages of tram-cars, in combination, the underframe of a tram-car, a pony-frame upon which the underframe rests, such pony-frame carrying pony-wheels, a longitudinal slot in the pony-frame, a pin in the underframe which traverses the slot in the pony-frame, antifriction-rollers between the underframe and the pony-frame, a skeleton turn-table underlying the underframe, means for connecting the pony-frame to the turn-table, as specified.

6. In undercarriages of tram-cars, in combination, the underframe of a tram-car, a pony-frame upon which the underframe rests, such pony-frame carrying pony-wheels, a longitudinal slot in the pony-frame, a pin in the underframe which traverses the slot in the pony-frame, antifriction-rollers between the underframe and the pony-frame, a skeleton turn-table underlying the underframe, a chord piece or bar in the skeleton turn-table, a compensating lever pivoted to the chord piece or bar and connecting-rods connecting the pony-frame and the compensating lever, as herein set forth.

7. In combination with the car-frame, a turn-table carrying wheels, a laterally-shiftable pony-frame below the car-frame, wheels carried by the pony-frame and connections between the pony-frame and the turn-table substantially as described.

8. In combination with the car-frame, a turn-table carrying wheels, a laterally-shiftable pony-frame below the car-frame, wheels carried by the pony-frame and connections between the pony-frame and the turn-table said connections between the pony-frame and the turn-table comprising a compensating lever, substantially as described.

9. In combination with the car-frame, a turn-table below the same carrying wheels, a pony-frame, a pin-and-slot connection between the pony-frame and car-frame allowing the pony to shift laterally, wheels carried by the pony-frame and connections between the pony-frame and the turn-table substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

PETER HERBERT.

Witnesses:

MANFIELD NEWTON,
A. L. W. MASSEY.