H. O. NORRIS.

LOCOMOTIVE TOY.

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1,161,812.

Patented Nov. 23, 1915.

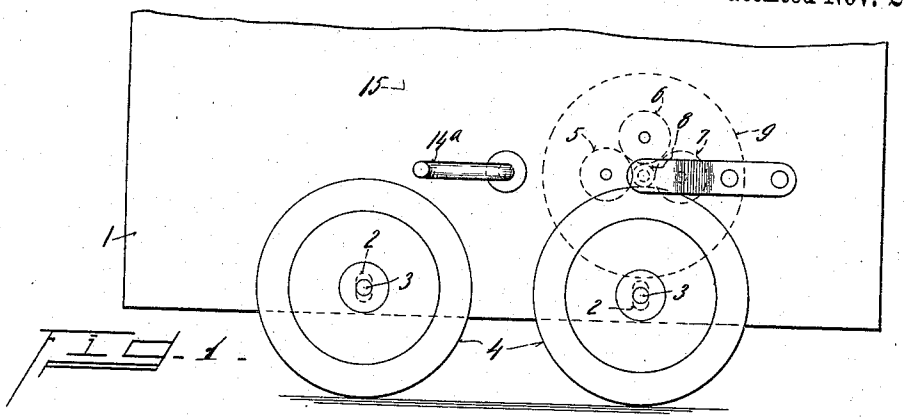


Fig. 1.

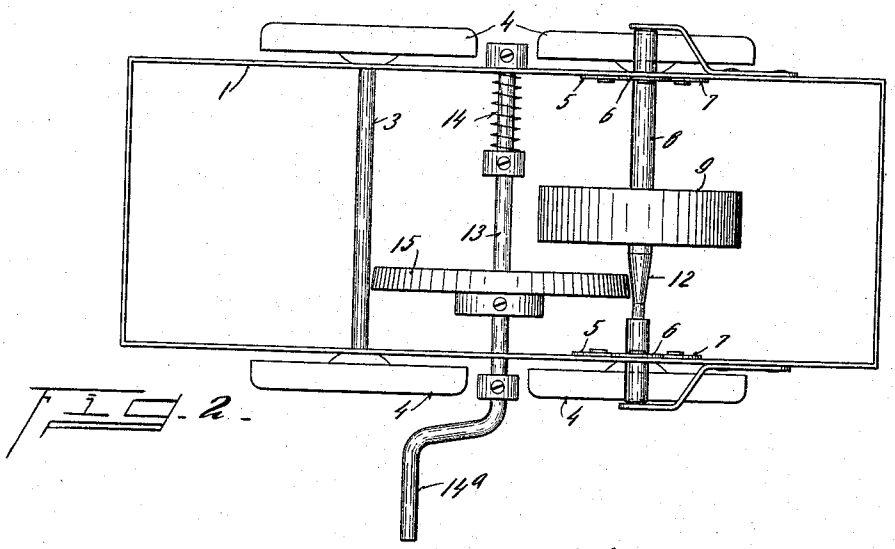


Fig. 2.

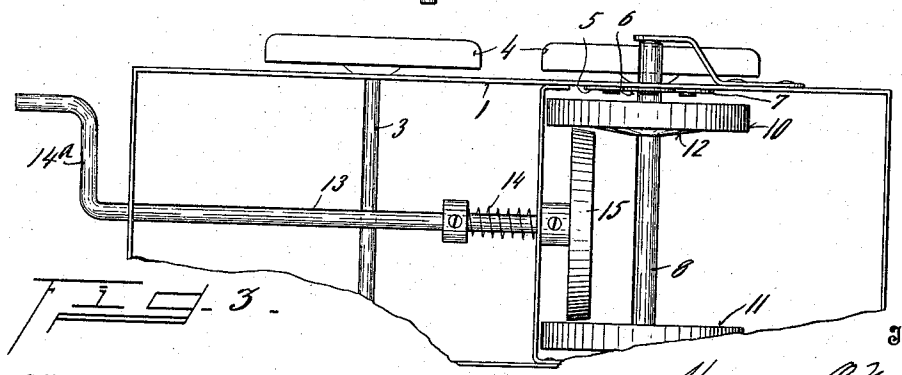


Fig. 3.

Witnesses

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LOCOMOTIVE TOY.

1,161,812. Specification of Letters Patent. Patented Nov. 23, 1915.

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To all whom it may concern:

Be it known that I, HARVEY O. NORRIS, a citizen of the United States, and residing at Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Improvement in Locomotive Toys, of which the following specification is a full disclosure.

My invention relates to an improvement in a friction toy of the inertia-wheel type, which has heretofore been energized by floor contact with the ground wheel, and the object of this invention is to retain this characteristic but supply an auxiliary friction energizer for the inertia-wheel, which can be actuated from a crank handle in similation of an automobile; this auxiliary energizer being normally held away from driving contact. Also, preferably, the invention is applied to a toy having a floating type of inertia-wheel axle.

The features of the invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which:—

Figure 1 is a side elevation. Fig. 2 is a top plan view. Fig. 3 is a top plan view of the modification.

I will first describe the preferred form of the invention shown in Figs. 1 and 2. The truck frame 1 is formed with the vertical slots 2 in which are mounted the axles 3 of the ground wheels 4. Only the rear ground wheels are traction wheels. On the inside of the truck upon each side of the frame adjacent the upper peripheries of the rear ground wheels are journaled the anti-friction disks 5, 6, 7. The inertia-wheel axle 8 bridges the truck frame, its opposite ends being floatingly supported between the peripheries of the ground wheels upon the outside and the peripheries of the anti-friction disks upon the inside of the frame. The inertia-wheel 9, in Fig. 2, is fixed to an intermediate portion of the shaft. The inertia-wheel axle is formed with the friction cone 12. An energizing shaft 13 is mounted in bearings in the frame in a manner providing longitudinal movement, the shaft being held in its normal position by the spring 14, the end of the shaft projecting to the outside of the frame upon the side or end thereof, and having the crank handle 14^a. Fixed to shaft 13 is a beveled friction disk 15, which engages the cone 12 with the friction wedge contact when the shaft 13 is forced inwardly against the tension of spring 14. When this energizing friction contact is established, the frame may be lifted from the ground and the inertia-wheel speeded up to great velocity. When placed on the ground the combined weight of the truck, the toy supported thereon, and the inertia-wheel rest upon the peripheries of the ground wheels without imposing appreciable friction on the axles of the ground wheels. When the toy is in operation, the driving friction wedge contact will be automatically disengaged. As is apparent from this disclosure, the toy can be energized in the old manner by wedging friction contact resulting from pressure transmitted through bearing the ground wheel against the floor and accelerating the speed of the ground wheel by a sweeping stroke.

The same principle inheres in the modification shown in Fig. 3, but the hand energizing element is somewhat differently arranged although the truck frame and the ground-wheels are the same. In this form the inertia wheel axle 8^a, is formed with the two-part inertia wheel 10, 11, to distribute the weight evenly on opposite sides of and within the truck frame. One inertia wheel 10 is formed with a friction cone 12^a. The energizing shaft 13^a is placed longitudinally and medially through the truck frame instead of being transversely supported, the front end having a bearing in the forward end of the truck frame, and the rear end having a bearing in the transverse piece 20, spanning the inside of the truck frame in front of the inertia members 10, 11. On the rear end of said energizing shaft 13^a is a beveled friction disk 15^a between the members 10, 11, in position to engage the friction cone, 12^a. Said shaft being held normally in non-engaging position by a spring 14^a, the crank handle 14^b being at the front of the truck.

While it is preferable to provide the anti-friction rollers 5, 6, 7, on the truck frame, this is not essential and does not constitute a limitation except wherein specifically claimed as the energizing operation through the hand operated shaft and the bevel and cone friction wheels is precisely the same regardless of the presence or absence of the anti-friction wheel bearings for the inertia wheel shaft, although a superior result is

attained when the hand energizing means are combined with the anti-friction bearing.

Having described my invention, I claim:—

1. In a toy, a truck frame, ground wheels, an inertia-wheel and shaft supported by the periphery of a ground wheel, a friction cone for the inertia-wheel, a longitudinally movable energizing shaft supported in bearings in the frame, a bevel friction disk thereon adapted to engage the cone when the energizing shaft is appropriately shifted, and means normally holding said shaft out of energizing position.

2. In a toy, a truck frame, ground wheels having axles mounted in slotted bearings in the frame, anti-friction disks supported by the frame, an inertia-wheel and shaft floatingly supported between the peripheries of the anti-friction disks and the ground wheels, a friction cone for the inertia-wheel, a longitudinally movable energizing shaft supported in bearings in the frame, a bevel friction disk thereon adapted to engage the cone when the energizing shaft is appropriately shifted, and means normally holding said shaft out of energizing position.

3. In a toy, a truck frame, ground wheels mounted in slotted bearings in the frame, an inertia wheel and axle for frictionally energizing or propelling the ground wheels, operative by sweeping the ground wheels over the floor, and hand operated means comprising engageable and disengageable friction contact rotary members for energizing the inertia wheel while the truck frame is raised from the floor.

In witness whereof, I hereunto subscribe my name, as attested by the two subscribing witnesses.

HARVEY O. NORRIS.

Witnesses:
L. ROY EBERT,
H. W. FRANK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."