No. 676,420. Patented June 18, 1901.

D. P. CLARK.

LOCOMOTIVE TOY.

(Application filed Feb. 19, 1900.)

(No Model.)

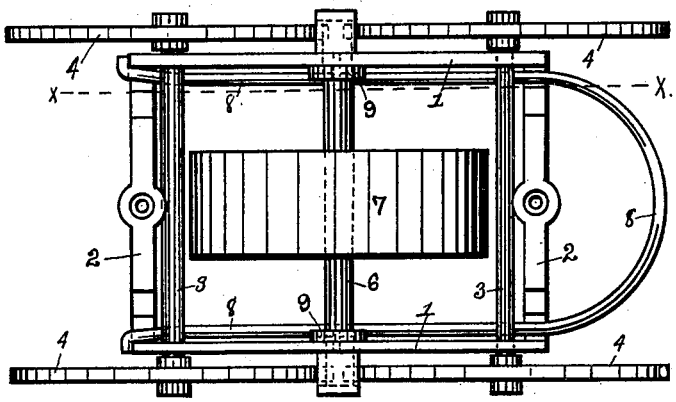

Fig. 1.

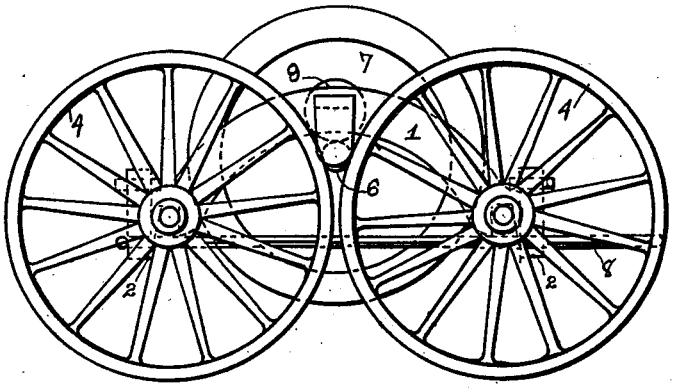

Fig. 2.

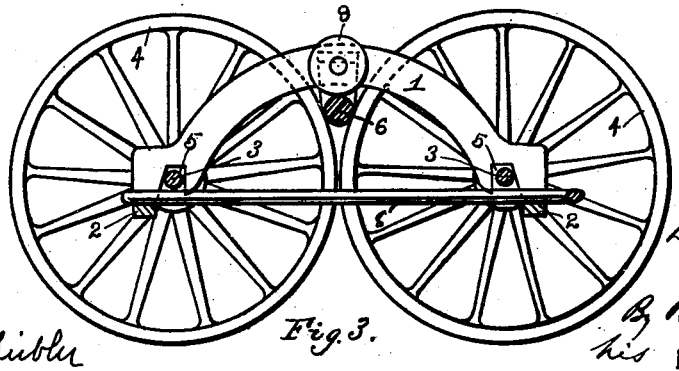

Fig. 3.

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UNITED STATES PATENT OFFICE.

DAVID P. CLARK, OF DAYTON, OHIO.

LOCOMOTIVE TOY.

SPECIFICATION forming part of Letters Patent No. 676,420, dated June 18, 1901.

Application filed February 19, 1900. Serial No. 5,675. (No model.)

To all whom it may concern:

Be it known that I, DAVID P. CLARK, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Locomotive Toys; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to locomotive toys, and is in the general nature of an improvement upon the structure set forth in Letters Patent No. 593,174, granted November 2, 1897, to Clark & Boyer as assignees of Israel D. Boyer and Edith E. L. Boyer.

The object of my present invention is to improve the efficiency of toys of this character, so that a greater velocity may be imparted to the inertia-wheel while the toy is being prepared for operation and a much longer operative period and a higher initial speed may be obtained when the toy is released for automatic operation.

To these ends the invention consists in certain novel features, which I will now proceed to describe and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the operative parts of a locomotive toy embodying my invention in one form. Fig. 2 is a side elevation of the same, and Fig. 3 is a vertical sectional view taken on the line *x x* of Fig. 1.

In the said drawings the truck-frame is shown as composed of side members 1, having preferably the arched form shown and joined at their ends by transverse members 2. The axles 3 of the running-wheels 4 pass through slots 5 in the side members of the truck-frame. These slots are of such depth as to prevent contact between the upper ends of said slots and the axles in the manner and for the purpose hereinafter set forth. The outer side walls of the slots are inclined toward each other, as shown, their upper ends being closer to each other than their lower ends.

6 indicates the axle of the inertia-wheel, which rests upon the peripheries of the running-wheels and which carries the inertia-wheel 7. It will be observed that this axle impinges upon the running-wheels at a very acute angle, its line of movement being parallel to a tangent to said wheels. In order to support the axles of the running-wheels and prevent their dropping out of the slots 5 when the truck-frame is lifted, I employ a wire frame 8, which passes under said axle and extends over the end bars of the truck-frame. On each side of the truck-frame, at the central portion of the side members thereof, there is located an antifriction-roller or wheel 9, and these rollers bear upon the inertia-wheel axle.

It will be noted that the weight of the truck-frame is removed from the running-wheel axles and is supported on the inertia-wheel axle, so that the frictional resistance to the movement of rotation of the running-wheel axles is reduced to a minimum, while at the same time the weight of the truck-frame is added to the weight of the inertia-wheel and its axle in pressing said axle against the running-wheels, thus insuring a more efficient contact and reducing the liability to slip. It will also be noted that it results from the construction described that the inertia-wheel is provided with a floating axle having no fixed bearing, but being supported at each end on a three-point bearing composed of the running-wheels and the antifriction-rollers on the truck-frame, all of the contacts being rolling contacts. It will further be noted that, owing to the inclination of the outer walls of the slots in which the running-wheel axles are mounted, downward pressure applied to the truck-frame will cause the running-wheel axles to be moved toward each other and press more firmly against the inertia-wheel axle, thus further insuring an efficient contact of these parts. The movement of the inertia-wheel axle being at an acute angle to the peripheries of the running-wheels, a biting action is obtained, which still further enhances the effectiveness of the contact between the parts.

It will be noted, of course, that the truck-frame may serve as a support for any suitable vehicle-body or other toy mounted thereon,

and this weight in addition to that of the truck-frame and of the inertia-wheel and its axle is utilized to increase the efficiency of the contact between said axle and the running-wheels.

The toy is operated by placing it upon a suitable surface and moving it over the same while pressure is applied to the truck-frame. In this manner motion is imparted from the running-wheels to the inertia-wheel, and when the pressure is removed and the toy released the inertia-wheel will in turn impart movement to the running-wheels and cause the toy to move over the surface on which it is placed. By reason of the superior efficiency of the contact between the running-wheels and the axle of the inertia-wheel I am enabled in the first place to impart a greater velocity to the inertia-wheel while the toy is being prepared for operation and to obtain a much longer operative period and a higher initial speed when the toy is released for automatic operation.

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described, and shown in the drawings, and it is obvious that they may be modified without departing from the principle of my invention.

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

1. In a locomotive toy, the combination, with two pairs of running-wheels having parallel axles, of a truck-frame vertically movable relatively thereto and provided with bearing-rollers, and an inertia-wheel having a floating axle, said axle having a three-point bearing at each end between the running-wheels and the truck-frame rollers, the weight of the truck-frame being supported on said inertia-wheel axle, substantially as described.

2. In a locomotive toy, the combination, with two pairs of running-wheels having parallel axles, of a truck-frame having slots, the bearing-walls of which are inclined to force the truck-wheels laterally toward the inertia-wheel axle when the truck-frame is depressed, and an inertia-wheel having an axle bearing upon the peripheries of the running-wheels, substantially as described.

3. In a locomotive toy, the combination, with two pairs of running-wheels having parallel axles, of a truck-frame vertically movable relatively thereto and having bearing-rollers and slots, the bearing-walls of which are inclined to force the truck-wheels toward each other, and an inertia-wheel provided with a floating axle bearing at its ends between the peripheries of the running-wheels and the truck-frame rollers, the weight of the truck-frame being supported on said axle by said rollers, substantially as described.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

DAVID P. CLARK.

Witnesses:
R. J. McCARTY,
CARL H. NOE.