No. 738,412. PATENTED SEPT. 8, 1903.

D. P. CLARK.

LOCOMOTIVE TOY.

APPLICATION FILED MAY 9, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

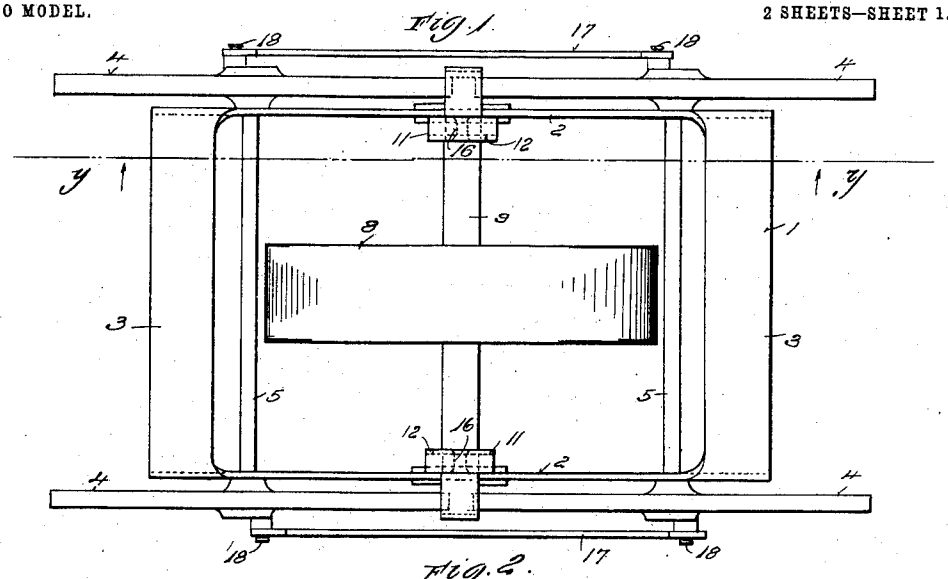
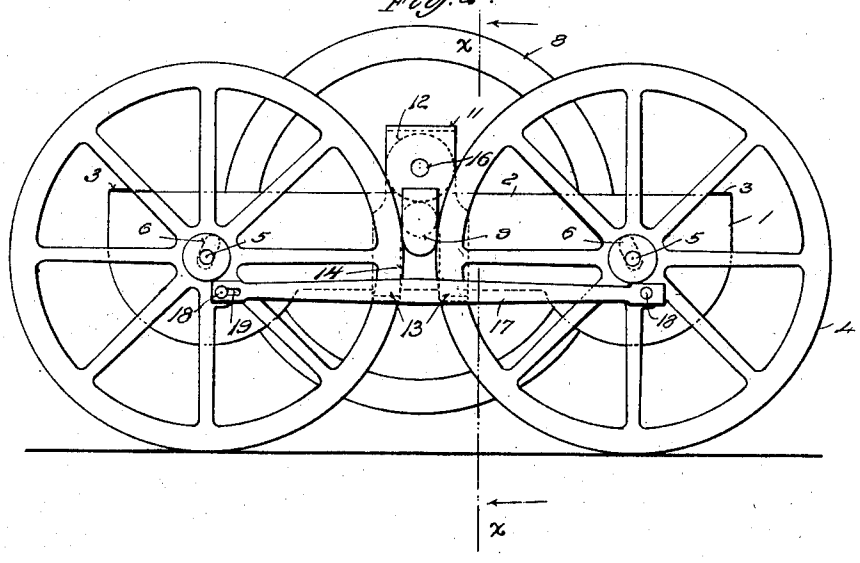


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

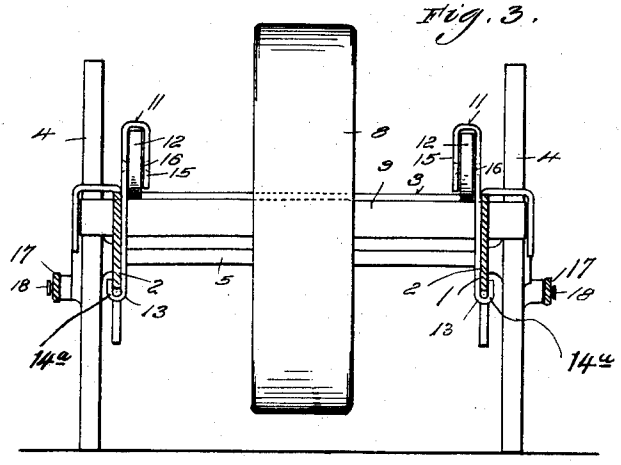


Fig. 4

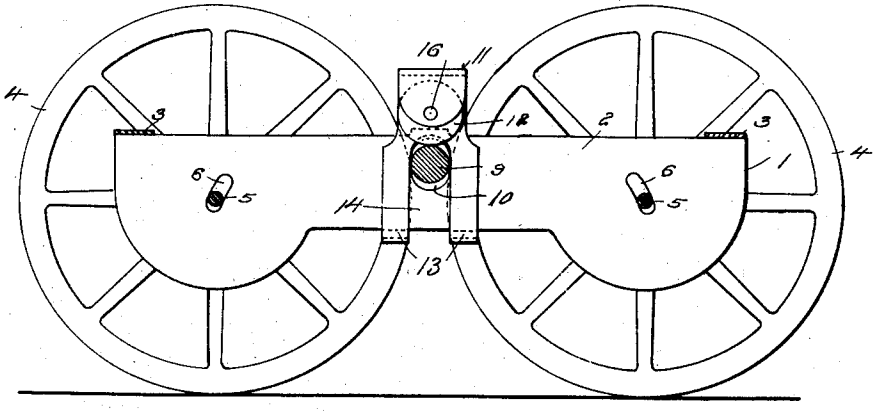
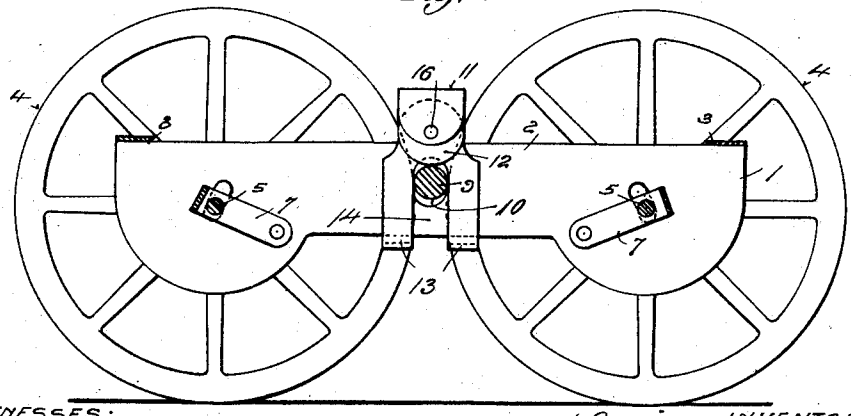


Fig. 5.



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No. 738,412. Patented September 8, 1903.

UNITED STATES PATENT OFFICE.

DAVID P. CLARK, OF DAYTON, OHIO.

LOCOMOTIVE TOY.

SPECIFICATION forming part of Letters Patent No. 738,412, dated September 8, 1903.

Application filed May 9, 1902. Serial No. 106,512. (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, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to locomotive toys, and is in the nature of an improvement upon the toy set forth in Letters Patent No. 676,420, granted to me June 18, 1901, and in Letters Patent No. 693,375, granted to me February 18, 1902.

The present invention has for its object the production of a toy of this class having an increased efficiency and certainty of operativeness; and to this end my present 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 a toy embodying my invention in one form. Fig. 2 is a side elevation, partly in vertical section. Fig. 3 is a vertical sectional view taken on the line $x\ x$ of Fig. 2 and looking in the direction of the arrows. Fig. 4 is an enlarged detail sectional view taken on the line $y\ y$ of Fig. 1 and looking in the direction of the arrows; and Fig. 5 is a view similar to Fig. 2, illustrating a modification.

In the accompanying drawings, 1 indicates the supporting-frame or truck-frame, which may be of any suitable form, preferably the rectangular form shown, which comprises the side pieces 2 and end pieces 3. The running wheels are indicated at 4, and in the particular form of toy shown there are two pairs of these running wheels, each pair being secured to the end of an axle 5. In the form of construction shown in Figs. 1 to 4 these axles pass through slots 6 in the side members 2 of the truck-frame, these slots being converging, so that when pressure is applied to the frame the running wheels and their axles will tend to approach each other in the manner set forth in Letters Patent No. 676,420, hereinbefore referred to. In Fig. 5 I have shown a construction similar to that set forth in Letters Patent No. 693,375, in which the running wheels are mounted in arms 7, pivoted to the main frame and serving the same purposes as the inclined or converging slots 6—to wit, to cause the running wheels to approach each other when pressure is applied to the frame.

8 indicates an inertia-wheel secured on an axle 9, said axle bearing on the peripheries of the running wheels in such a way as to receive motion from the same when the toy is being prepared for use and to transmit motion to said running wheels when the toy is operating automatically. It is to the mode of mounting this inertia-wheel and its axle that my present invention more particularly relates.

The axle 9 rests normally upon the peripheries of the running wheels and extends through enlarged apertures 10 in the side pieces 2 of the truck-frame 1. Said truck-frame has loosely connected with it at each side a carrier or yoke 11, in which is mounted an antifriction roller or wheel 12, which bears upon the top of the inertia-wheel axle when pressure is applied to the frame. The connection between said yokes and the truck-frame may be any suitable one which will allow said yokes sufficient freedom to make them self-adjusting and at the same time cause the downward pressure of the frame to be exerted through the yokes on the antifriction-wheel in a downward direction, so as to cause these wheels in turn to press downward on the axle of the inertia-wheel, and thereby press this latter against the peripheries of the running wheels. In the present instance I have shown these yokes as having downward extensions 13, slotted at 14 for the passage of the inertia-wheel axle and provided at their lower extremities with upwardly-extending hooks 14^a, which engage the lower edges of the side members 2 of the truck-frame. The upper end of each yoke is bent down parallel with the body thereof, as indicated at 15, thus forming a housing or covering in which the shaft or journal 16 of the antifriction-wheel 12 is mounted, said housing inclosing, and thereby covering and protecting, said antifriction-wheel.

It will be seen that when downward pressure is applied to the frame this pressure will in turn be transmitted through the yokes

and antifriction-wheels to the inertia-wheel axle, while at the same time the running wheels will be forced toward said inertia-wheel axle, so that a frictional contact between said axle and the running wheels will be obtained of such a character as to give a maximum efficiency in the transmission of power at the points of contact. Toys of this class are usually operated by placing the toy upon a suitable surface and moving it over the same, applying pressure to the truck-frame, whereby rapid motion is imparted from the running wheels to the inertia-wheel. When the toy is released, the inertia-wheel will in turn impart movement to the running wheels, thereby causing the toy to move over the surface on which it is placed. By reason of the loose connection between the yokes of the antifriction-wheels and the truck-frame the several parts become practically self-adjusting, so that no matter how the pressure is applied there will be no tendency to bind or stick. This is obviously advantageous and productive of superior results even when the toy is constructed with the greatest care and accuracy. It is further advantageous in that a toy thus constructed does not require the same accuracy of construction as one in which the antifriction-wheels have a fixed relation to the truck-frame, since even if the running wheels are not exactly true or the other parts of the toy are not accurately constructed the several parts will adjust themselves so as to produce a proper contact when pressure is applied to the truck-frame.

It will be understood, of course, that a suitable toy vehicle-body or the like will be mounted on the truck-frame in order to complete the toy. It will also be noted that I have shown the wheels on each side of the frame as connected in pairs by means of a connecting-rod 17 after the manner of locomotive driving-wheels. Each connecting-rod is pivoted to crank-pins 18 on the running wheels, said connecting-rod being slotted, as indicated at 19, at one of its ends where this connection with the crank-pin occurs in order to prevent binding and permit freedom of operation of the running wheels.

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described and shown in the accompanying drawings, as it is obvious that these details 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, an inertia-wheel having a free axle resting on the peripheries of the running wheels, and carriers or yokes loosely or movably connected with the truck-frame and provided with antifriction-wheels adapted to bear on the inertia-wheel axle when said truck-frame is depressed, substantially as described.

2. 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 means for causing the running wheels to approach each other when said truck-frame is depressed, an inertia-wheel having a free axle resting on the peripheries of the running wheels, and carriers or yokes loosely or movably connected with the truck-frame and provided with antifriction-wheels adapted to bear on the inertia-wheel axle when said truck-frame is depressed, 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 provided with converging slots through which the running-wheel axles pass, an inertia-wheel having a free axle resting on the peripheries of the running wheels, and carriers or yokes loosely or movably connected with the truck-frame and provided with antifriction-wheels adapted to bear on the inertia-wheel axle when said truck-frame is depressed, substantially as described.

4. In a locomotive toy, the combination, with two pairs of running wheels having parallel axles, of a truck-frame vertically movable relatively thereto, an inertia-wheel having a free axle resting on the peripheries of the running wheels, yokes or carriers having a limited sliding connection with the truck-frame, and antifriction-wheels mounted in said yokes or carriers and adapted to bear on the inertia-wheel axle when the truck-frame is depressed, substantially as described.

5. In a locomotive toy, the combination, with two pairs of running wheels having parallel axles, of a truck-frame vertically movable relatively thereto, an inertia-wheel having a free axle resting on the peripheries of the running wheels, a yoke or carrier straddling the inertia-wheel axle at each end thereof and having hooked extremities to engage the truck-frame, and antifriction-wheels mounted in said yokes or carriers and bearing on the inertia-wheel axle when the truck-frame is depressed, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID P. CLARK.

Witnesses:
LEOPOLD HAMMEL,
REGINA KRAUSKOPF.