JOSEPH W. PILKINGTON.

Improvement in Toy Carriages.

No. 115,636. Patented June 6, 1871.

Fig. 1

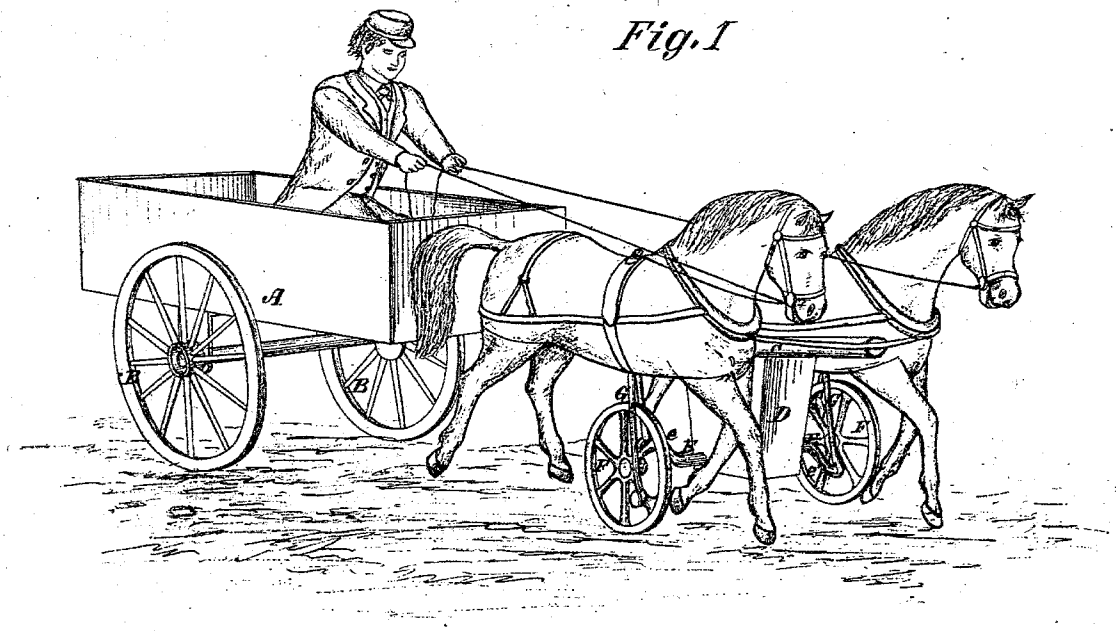
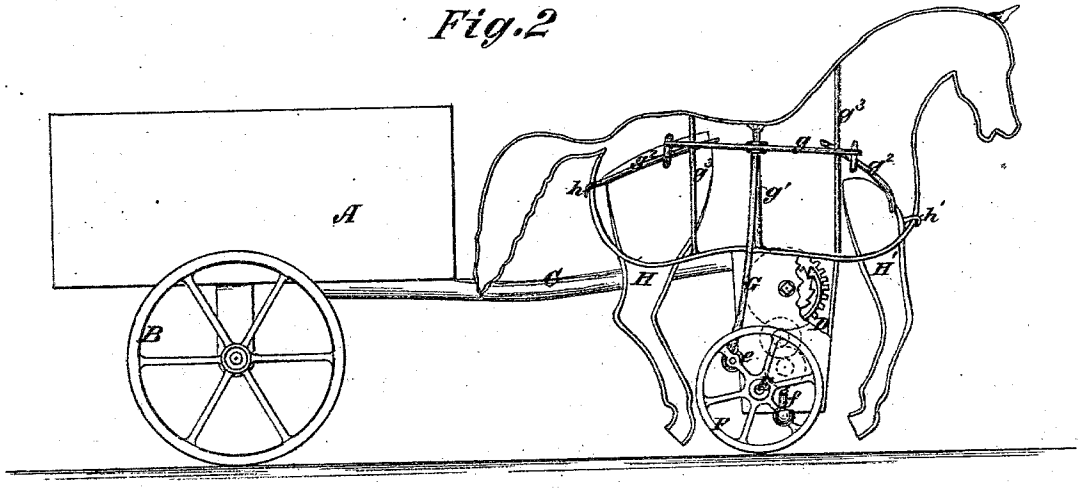


Fig. 2



Witnesses:-
Wm. H. Rowe
Jos. D. Peyton,

Inventor:-
Joseph W. Pilkington,
by his Atty.
Wm D Baldwin

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

JOSEPH W. PILKINGTON, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO HIMSELF AND CHARLES H. COLE, OF SAME PLACE.

IMPROVEMENT IN TOY-CARRIAGES.

Specification forming part of Letters Patent No. 115,636, dated June 6, 1871.

To all whom it may concern:

Be it known that I, JOSEPH W. PILKINGTON, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Toy Carriages and Horses, of which the following is a specification:

My invention relates to imitation horses and carriages of that class which employs a spring and gearing for propelling the toy and giving motion to the legs of the horse. The object of the first part of my invention is to secure a direct connection between the horses and the mechanism for propelling the toy and giving motion to the legs of the horses; and the invention consists, first, in the combination of a carriage, a pair of horses, the driving mechanism arranged between the horses, the leading wheels, and the mechanism for actuating the limbs of the horses, as hereinafter described; second, in the combination of a pair of horses, the driving mechanism arranged between and connecting the horses, the leading wheels, and the mechanism for actuating the legs of the horses, as hereinafter described.

The object of the second part of my invention is to secure a more perfect mechanism for actuating the legs of the horses; and the invention consists in the combination of the leading or driving wheels arranged beneath the horses, the connecting-rods, the cross-bar, and the pivoted legs, as hereinafter more fully set forth.

In the accompanying drawing, Figure 1 is a perspective view of my improved toy, and Fig. 2 a side elevation of the same, with one of the horses in section to show the mechanism for operating the legs.

The carriage-body A is mounted on two wheels, B B. A tongue, C, secured to the carriage, passes between the horses and connects them and the driving mechanism with the carriage. The driving mechanism is inclosed in a suitable casing, D, securely connected with the tongue and horses. The mechanism is of the kind usually employed, and consists of a coiled spring and a train of gear-wheels, which communicate motion to a double-crank axle, E, and driving-wheels F F. As the mechanism for operating the horses' legs is alike in both horses, it is only necessary to refer to that shown in Fig. 2 of the drawing. The crank *e* on the axle is arranged near the inner side of the wheel F, and is attached to a connecting-rod, G, which passes up into the body of the horse. The connecting-rod has a cross-bar, *g*, attached to its upper end, and is also connected, by means of a loop, with a guide-rod, g^1, which serves to guide the connecting-rod and cross-bar so that they move in a vertical plane. The ends of the cross-bar are connected by similar loops with rods g^2 g^2, which are secured at one end to the enlarged hips of the horse's legs H H′. The legs are pivoted at *h h′*, in a suitable manner, to the body of the horse, and are caused to vibrate by the cross-bar *g*, which raises and depresses the rods g^2 attached to the horses' hips. The ends of the cross-bar *g* and rods g^2 are guided by stay-rods g^3, which also serve to brace and strengthen the body of the horse. A similar mechanism is employed to operate the outer legs of the horse, and is connected with a crank-pin, *f*, which is secured on the outer side of the wheel F, and nearly diametrically opposite the crank on the axle, so that, while the inner legs are drawn toward each other by the upward movement of the connecting-rod and cross-bar on the inner side of the driving-wheel, the outer legs are forced apart from each other by the downward movement of the connecting-rod and cross-bar on the outer side of the driving-wheel. By these means I am enabled to secure a mechanism that will produce a movement that closely resembles the action of the horse.

It is obvious that various changes and modifications could be made in this device without departing from the spirit of my invention. For instance, one connecting-rod and cross-bar only could be employed, the front end of the bar connecting the two fore legs and the other end of the bar the two hind legs, and thus produce a galloping instead of a trotting movement of the horse. By arranging the driving mechanism in the manner shown and described the horses could be used either separately or in connection with a carriage. The hoofs may be pivoted, or rollers may be attached thereto, to prevent the feet from catching or being obstructed when the horses are used separately from the carriage, as they would necessarily have to touch the ground when only two

leading wheels are used; but when a carriage is attached it is preferable for the feet to move without touching the ground, as the toy is then not unnecessarily retarded.

It is obvious that the arrangement of the driving mechanism between the horses possesses advantages over other arrangements; as the center of gravity of the toy is lowered, which renders it less liable to be upset; and as two horses may be used instead of one, either separately or in connection with a carriage; and as I am enabled to have a close and direct connection between the driving mechanism and the mechanism for giving motion to the legs of the horse.

I claim as my invention—

1. The combination of a carriage, a pair of horses, the driving mechanism arranged between the horses, the leading wheels, and the mechanism for actuating the horses' legs, substantially as described.

2. The combination of a pair of horses, the driving mechanism arranged between and connecting the horses, the leading wheels, and the mechanism for actuating the legs of the horses, substantially as described.

3. The combination of the driving-wheels beneath the horses, the connecting-rod, the sliding cross-bar, and the pivoted legs of the horses, all these members being constructed and operating in combination, substantially as described.

In testimony whereof I have hereunto subscribed my name.

JOSEPH W. PILKINGTON.

Witnesses:

JOHN H. PORTER,

W. A. PARROTT.