

No. 669,079.

Patented Mar. 5, 1901.

J. FLINDALL.  
TOY VEHICLE.

(Application filed June 25, 1900.)

(No Model.)

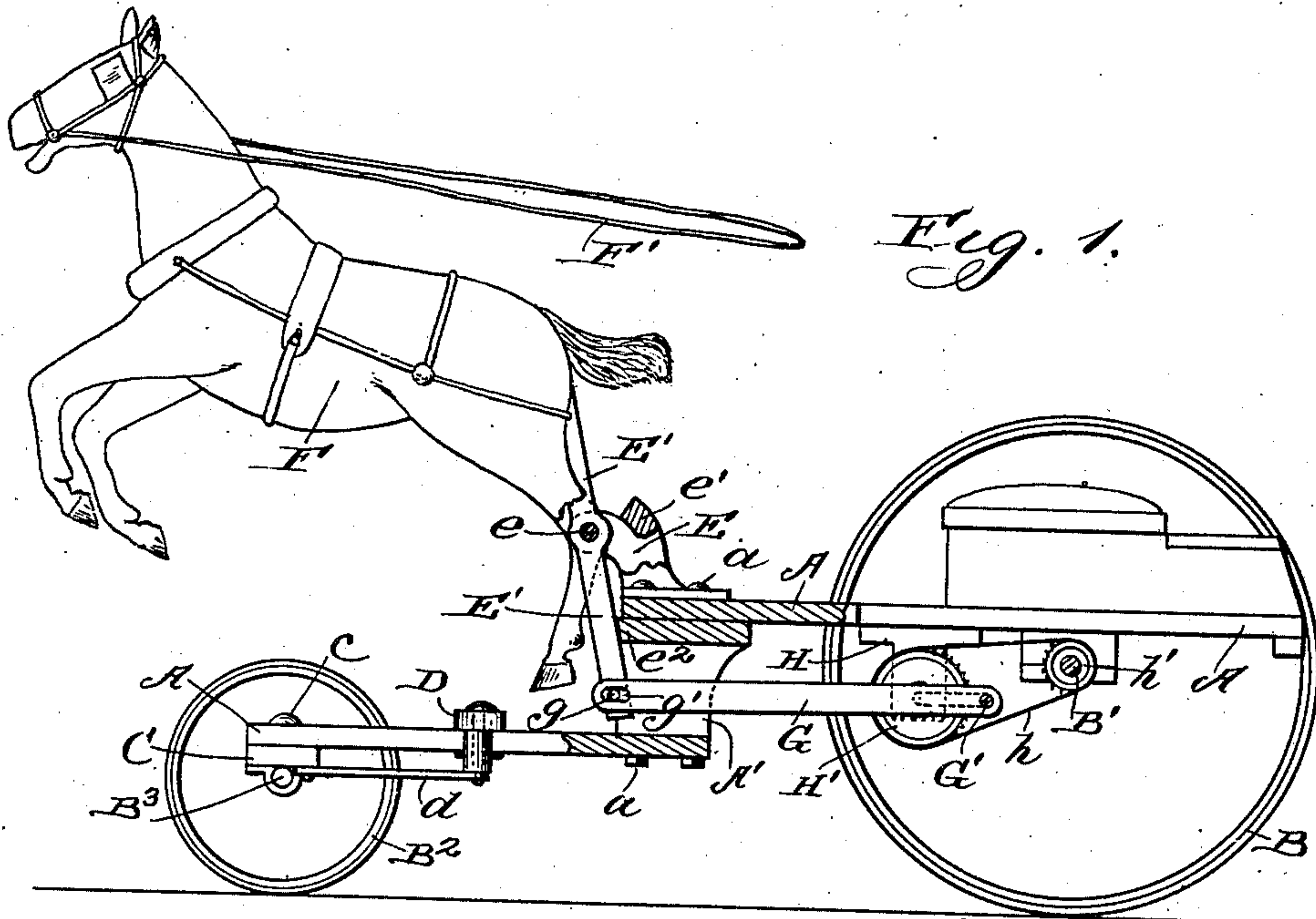


Fig. 2.

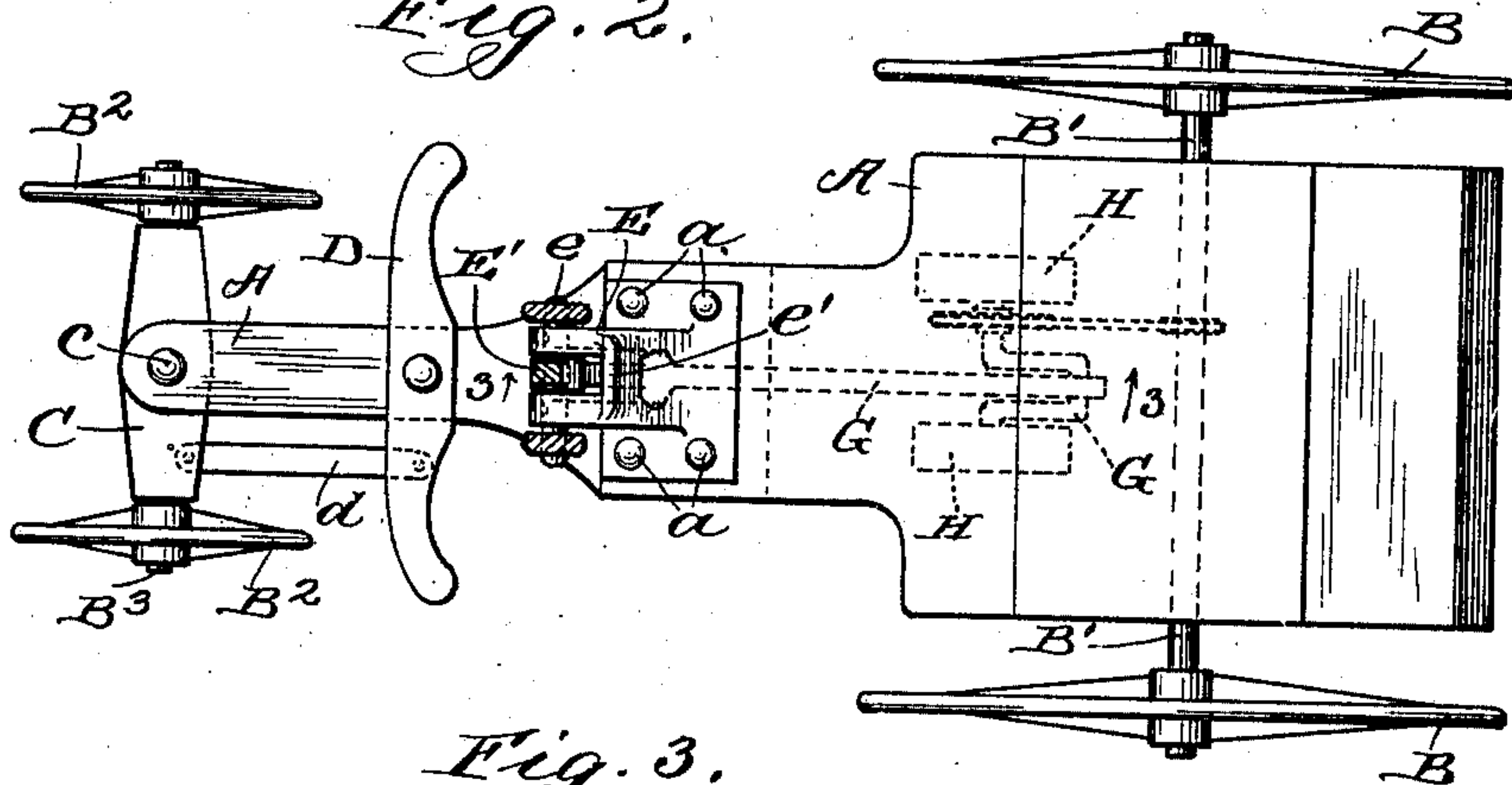
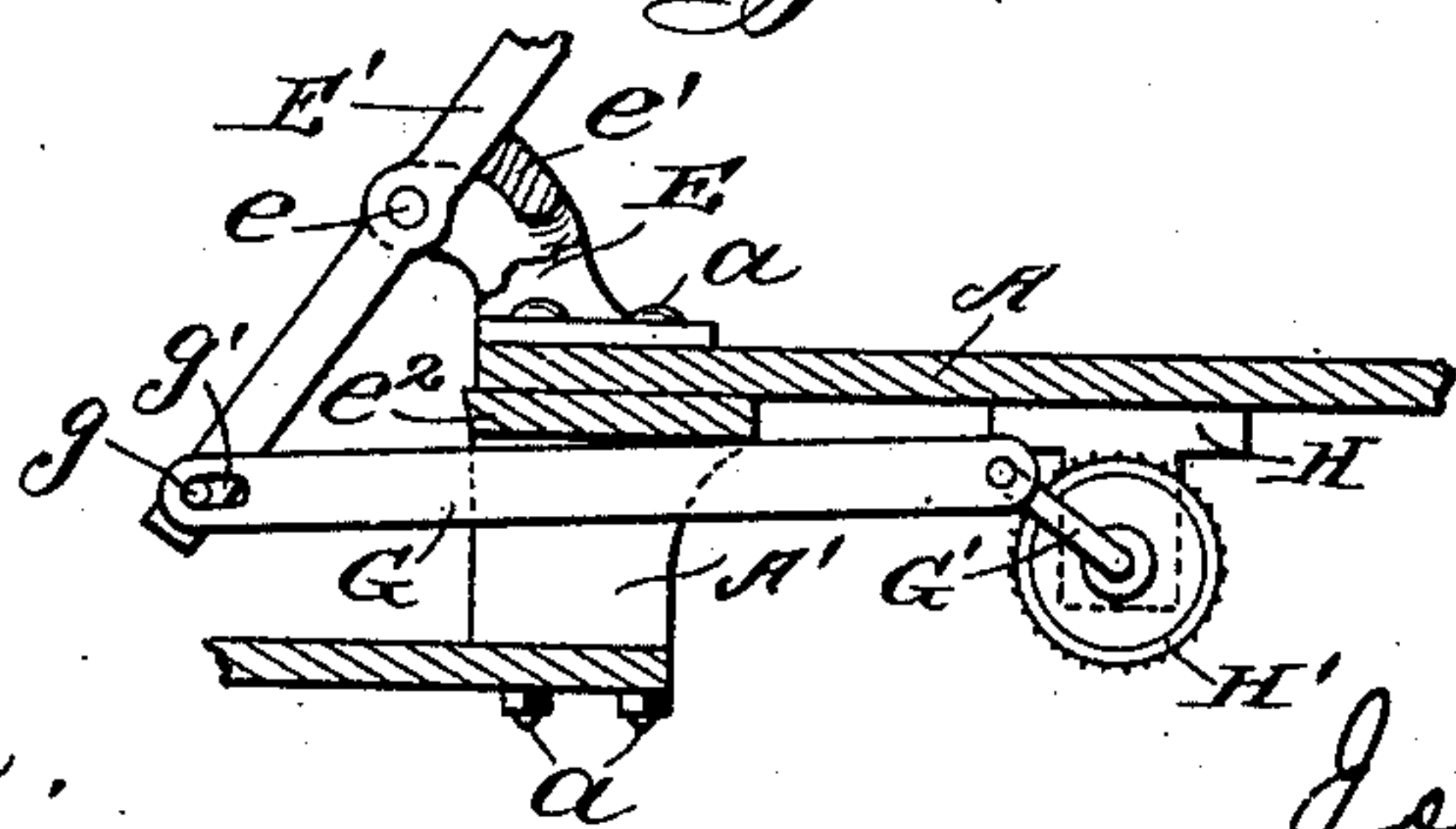


Fig. 3.



Witnesses:

R. J. Jacter.

Annie M. Adams

Inventor:

John Flindall

By Jas. H. Whipple

att'y.



# UNITED STATES PATENT OFFICE.

JOHN FLINDALL, OF CHICAGO, ILLINOIS.

## TOY VEHICLE.

SPECIFICATION forming part of Letters Patent No. 669,079, dated March 5, 1901.

Application filed June 25, 1900. Serial No. 21,449. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN FLINDALL, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Toy Vehicles, of which the following is a specification.

This invention relates to wheeled toy vehicles in which a figure representing a horse or other animal is employed as a weighted lever, in connection with pull-straps, as the means for propulsion of the vehicle by the rider; and one of the objects of my improvements is to provide stops for limiting the oscillation of the lever, in connection with a rigid pitman and its crank, and to provide a flexible connection between the pitman and lever or between the pitman and crank designed and so arranged with relation to the stops as to allow play between the lever and crank during those portions of each revolution commencing just before and ending just after the passing of the centers and to afford an actuating connection between the lever and crank at all other times.

A further object is to improve the details of construction and their arrangement.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of a vehicle of the class mentioned containing the improvements. Fig. 2 is a top or plan view partly in section and showing some of the parts in dotted line. Fig. 3 is a detail showing a fragmentary section on the line 3 3 of Fig. 2, the lever, crank, and pitman being in the reverse position from that of the other views.

In the drawings, A is the body of the vehicle. This is made in two parts connected centrally by a slotted bracket A' with screw-bolts *a*, the front part A being narrower and in a lower plane than the rear part A. The rear wheels B are fixed to a shaft B', journaled in brackets adapted to support the rear part, and the front wheels B<sup>2</sup> are fixed to a shaft B<sup>3</sup>, journaled in brackets secured to the fifth-wheel piece C, having pivotal connection at *c* with the front part.

D is a foot-piece pivoted to the front part and having link connection *d* with the fifth-wheel piece for steering. The screw-bolts *a*

pass through the base-piece of and secure to the top of the body a slotted bracket E, which is provided with a hole for a pivot-pin *e*. 55

E' is a lever adapted to the slot of the bracket E. On the upper end of the lever is mounted a figure-weight F, representing a horse in this instance, the lever being rigidly connected with the figure-weight, so as to support the same in a rearing attitude, as illustrated in Fig. 1, when the lever is pivotally secured in the slot of said bracket by the pivot-pin *e*. By means of pull-straps F' the rider seated on the vehicle can raise the figure by pulling, and when raised it will fall back on being released. A stop *e'* on the bracket E, striking the lever, limits the upward movement, and a stop *e*<sup>2</sup> on the bracket A' limits the downward movement. The pitman G is connected to the lower end of the lever by means of a pivot-pin *g*, working in a slot *g'*, and this connection is so arranged relatively to the stops *e'* *e*<sup>2</sup> and to the center of movement as to take off from the crank G' the actuating effect of the lever just previous to passing the center and apply it again just after, the movement over the center being maintained by momentum alone and the pin for the time passing in the slot. The pin is at the center of the slot, as illustrated in Fig. 1, when the crank and pitman are at the center of movement, and the pin impinges the opposite ends of the slot as the lever is reversed in reapplying the lever-power to the crank. The stops serve as guides to the rider in operating the weighted lever. The crank is journaled in brackets H, and on the crank-shaft is fixed a sprocket-gear H', provided with the chain *h*, engaging the smaller gear *h'*, fixed to the shaft B', whereby the lever-power is applied in propelling the vehicle. 85 90

In operation, the pitman being off the center, the rider pulls the straps and raises the weighted end of the lever until checked by the stop *e'* and then slackens the straps, allowing a reverse action by gravity. The pull action serves to bring the crank and pitman to the position seen in Fig. 3, from which it is carried by the impetus on past the center, the pin in the slot *g'* passing to the opposite end, so that the gravity action is applied at the opposite side to continue the motion. The pull will be brought to a dead stop just be- 95 100



fore the center is reached, and by this the rider is warned just in time to relax and allow the weight to be applied for the reverse movement. The gravity effect also comes to a  
5 dead stop just before the center is reached, and a similar yielding effect and warning are given previous to the up movement. A further effect of the gravity stop and the yielding connection between the pitman and lever  
10 is that pressure is taken off the crank when the wagon is standing still, so that it can be more easily set going at the start.

What I claim is—

1. In a vehicle of the class mentioned the  
15 combination with an inclined weighted lever pivotally mounted on the body, stops arranged on opposite sides of the pivotal mounting of the lever, a crank and its shaft journaled under the body and geared to the shaft  
20 of the hind wheels, and a rigid pitman provided with a flexible connection between the lever and crank, the relative arrangement of the flexible connection and the stops being as and for the purpose specified.

25 2. In a vehicle of the class described the combination with a crank geared to the shaft of the running wheels, of a lever pivotally mounted on the vehicle-body, stops arranged and adapted to limit the oscillation of the

lever, and a rigid pitman provided with a  
30 flexible connection between the crank and lever arranged and adapted to permit the pitman to travel at the center of motion slightly beyond the limited oscillation of the lever in both directions substantially as specified. 35

3. In a vehicle of the class described the lever, crank and pitman movement comprising an oscillating lever, stops arranged to limit the lever oscillation, and the crank and rigid pitman provided with a loose connection adapted to allow the pitman to move beyond the lever oscillation at the center of motion substantially as specified. 40

4. A vehicle of the class described comprising the body A provided with slotted  
45 brackets A' and E, a weighted lever E' F pivoted in the bracket E and provided with pullstraps, stops  $e'$  and  $e^2$ , a rigid pitman G and crank G', the pitman having a slot  $g'$  in one end affording a loose connection between the  
50 crank and lever, the crank, pitman, lever and stops being relatively arranged to afford play at the loose connection at the center of motion as specified.

JOHN FLINDALL.

Witnesses:

ANNIE M. ADAMS,  
ROBERT VAN SANDS.