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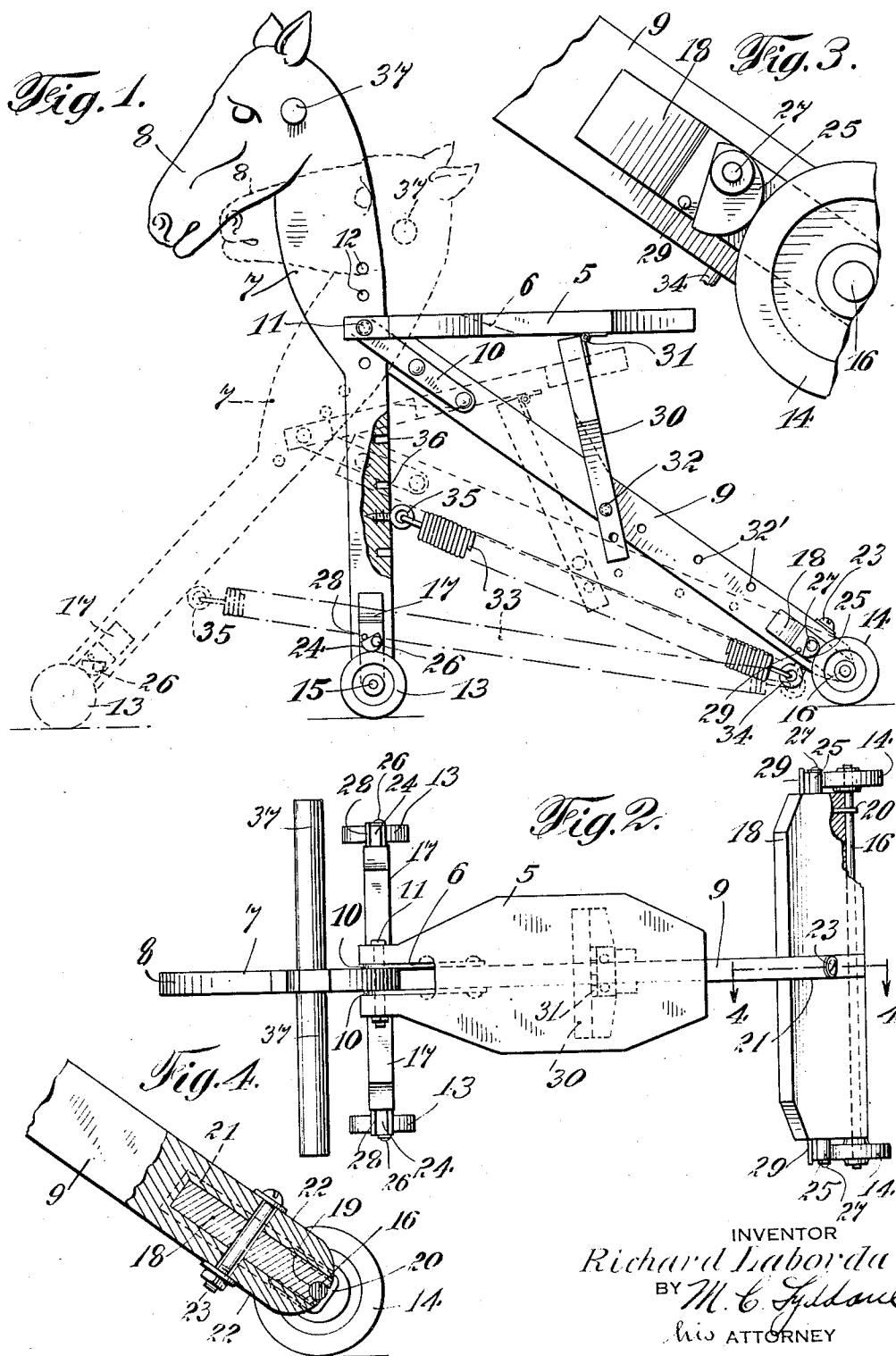
R. LABORDA

2,017,213

VEHICULAR TOY AND EXERCISER

Filed Aug. 17, 1933

3 Sheets-Sheet 1



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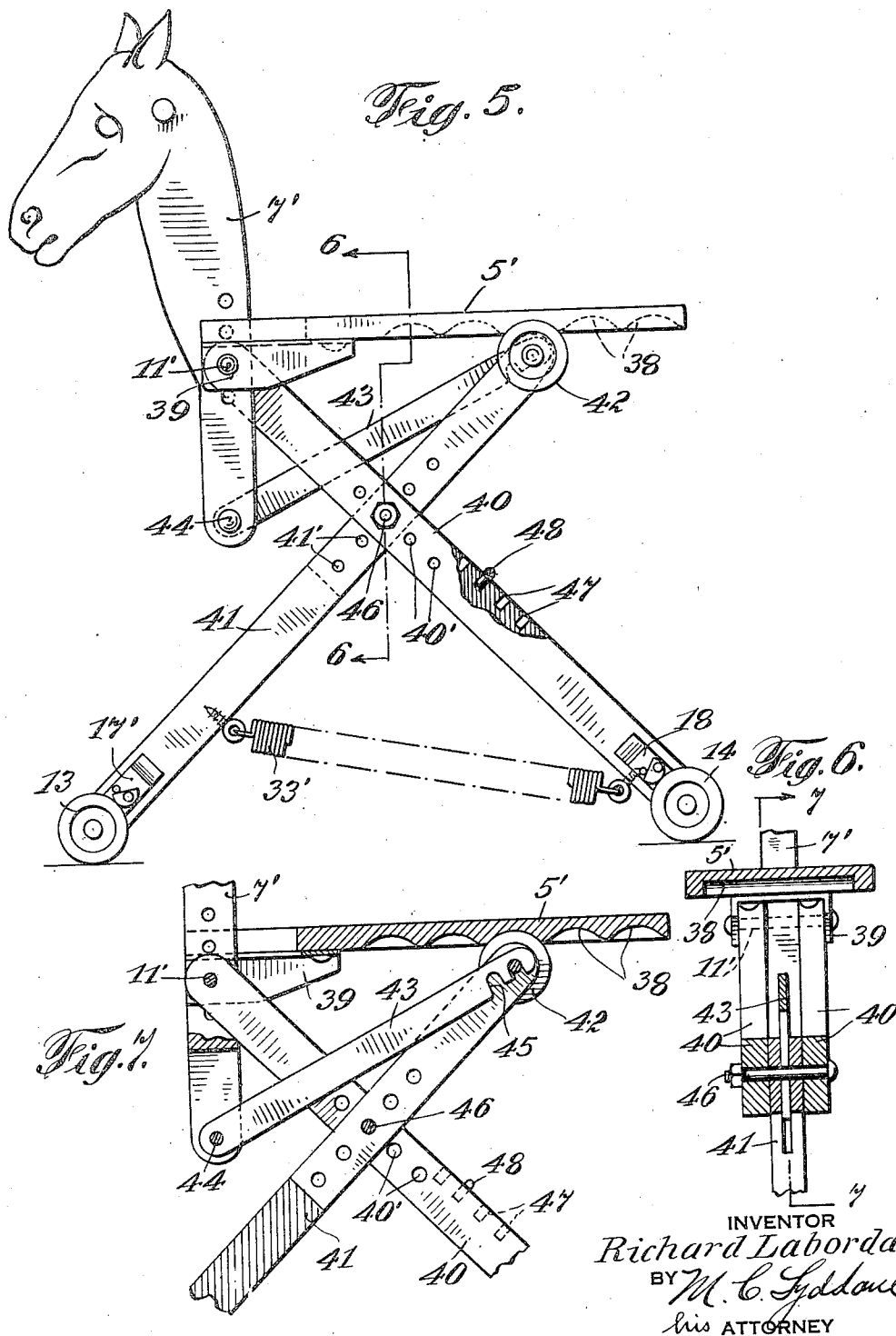
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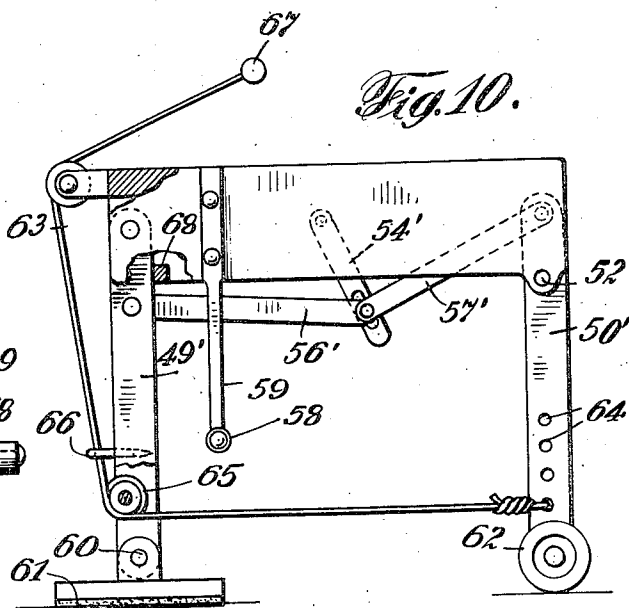
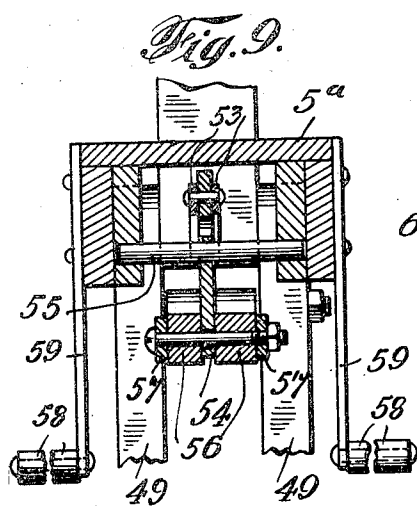
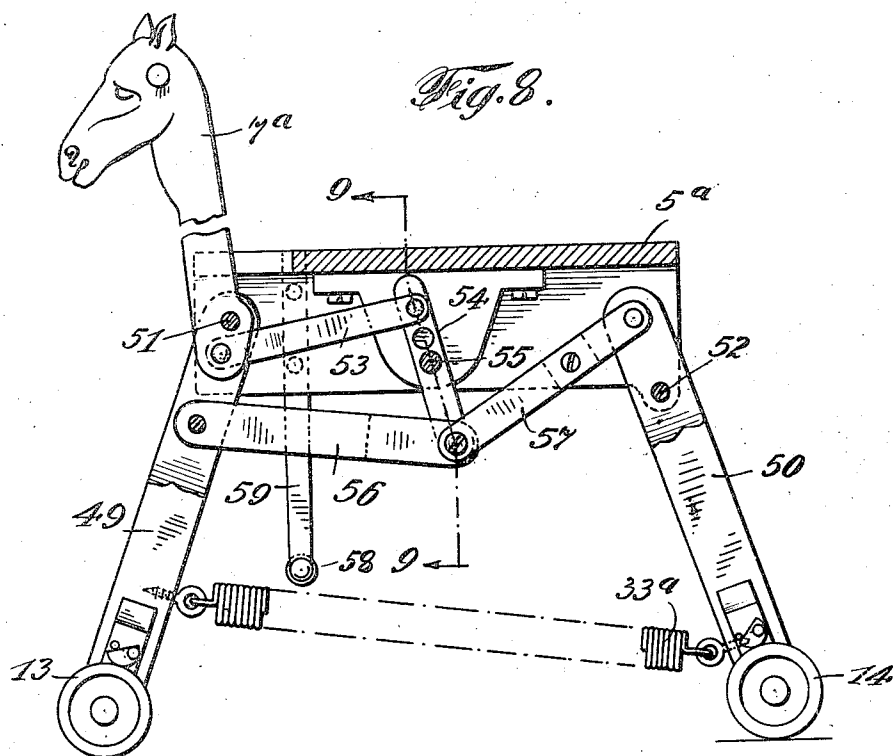
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3 Sheets-Sheet 3



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VEHICULAR TOY AND EXERCISER

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13 Claims. (Cl. 272-53)

This invention relates to an improved vehicular toy and exerciser and has for its general object and purpose to provide a device of this class particularly designed for use by juveniles whereby the operation of the device, in addition to affording a novel ride sensation, results in healthful exercise and muscular development.

It is a more particular object of one embodiment of my invention to provide a child's vehicle which may be easily operated and is so constructed as to travel over the ground or floor by movements simulating those of a galloping horse.

Essentially, the invention comprises a seat, supporting means therefor embodying members pivotally connected to the seat and having ground engaging wheels at their lower ends, one of said members extending above the seat and being manually operable to angularly move the same longitudinally of the seat, a relatively movable part connecting the other member with the seat, and a spring connecting said members with each other to yieldingly hold the same in a normal angular relation to each other.

Another object is to provide simple, automatically acting means permitting rotation of said wheels in the forward direction but locking the same against rearward rotation.

A further object is to provide for relative adjustment between the several parts according to the weight and strength of the particular child, so as to enable the vehicle to be properly operated without injurious overexertion.

Another feature, in one form of the invention, is the provision of means for vertically agitating the seat and rider in the operation of the device.

It is also the aim and purpose of my invention to provide a toy of this kind which is of very strong and durable construction and yet may be profitably manufactured and sold for a comparatively small sum.

With the above and other objects in view, the invention consists in the improved vehicular toy and exerciser, and in the form, construction and relative arrangement of its several parts, as will hereafter be more fully described, illustrated in the accompanying drawings, and subsequently incorporated in the subjoined claims.

In the drawings wherein I have disclosed several simple and practical embodiments of my present improvements, and in which similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a side elevation, illustrating one em-

bodiment of the invention, showing the parts in normal positions in full lines, and in operated positions in dotted lines.

Fig. 2 is a top plan view.

Fig. 3 is a fragmentary detail elevation on an enlarged scale.

Fig. 4 is a detail section taken on the line 4-4 of Fig. 2.

Fig. 5 is a side elevation of another form of the invention.

Fig. 6 is a sectional view taken on the line 6-6 of Fig. 5.

Fig. 7 is a vertical section taken on the line 7-7 of Fig. 6.

Fig. 8 is a longitudinal section illustrating another modification of the device.

Fig. 9 is a transverse section taken on the line 9-9 of Fig. 8, and

Fig. 10 is a side elevation of still another form of the invention.

Referring in detail to the drawings, and more particularly to Figures 1 to 4 thereof, the rider's seat 5 may be of any desired form and dimensions, and at its forward end is slotted or bifurcated, as indicated at 6, to receive the front supporting and operating member 7. The upper end of this member may be fashioned to represent the head of a horse or other animal, as shown at 8.

A second seat supporting member 9 extends downwardly at an oblique angle from the member 7, beneath the forward end of the seat and rearwardly of the latter. To opposite sides of the member 9, at its upper end, forwardly extending metal bars 10 are rigidly fixed and straddle the member 7 within the slot 6 of the seat. These bars, the end of the seat, and member 7 are provided with registering openings to receive a removable pivot bolt 11, whereby the several parts are retained in assembled relation for relative pivotal movement. Preferably the member 7 is provided with a series of spaced openings 12 to receive the bolt 11, whereby the seat 5 may be vertically adjusted for the proper accommodation of the rider.

Each of the members 7 and 9 is provided at its lower end with ground or floor engaging rollers, indicated at 13 and 14 respectively, preferably faced with rubber or other suitable friction material. I find it desirable to provide such front and rear rollers in pairs, suitably spaced apart with respect to the seat 5, and to detachably connect the same to the members 7 and 9 respectively. To this end the rollers are journaled on the ends of fixed axles 15 and 16 respectively secured to the lower edges of the bars 17 and 18. Since the 55

means for mounting the axles and for attaching the bars to the supporting members is the same in both cases, the following description of one will suffice for both.

Referring then to the bar 18, the lower edge thereof is longitudinally grooved, as at 19, to receive the axle 16, and at suitably spaced points the ends of metal retaining members 20 are securely fixed to the bar 18 and tightly confine the axle within said groove. In the present instance these members are in the form of elongated staples which are deeply driven into the wood bar 18.

The opposite side faces of the bar 18, the center thereof, are channeled, as at 21, to receive the spaced parts 22, formed by slotting or bifurcating the lower end of the supporting member 9. Said parts and the bar 18 are provided with registering openings to receive the removable fastening bolt 23.

Upon each end of the bars 17 and 18 the braking elements 24 and 25 are eccentrically pivoted, as at 26 and 27, and have contact with the tread faces of the wheels 13 and 14 respectively, to permit forward rotation of said wheels but frictionally lock the same against rearward rotation.

Pivotal movement of the braking elements in the forward rotation of the wheels is limited by the stop pins 28 and 29 respectively.

The seat is sustained in a normal horizontal position by the part 30, hinged at one end thereof to the underside of the seat, adjacent its rear end, as at 31. The other end of this part is slotted or bifurcated to straddle the member 9 and is adjustably connected with the latter by a pivot bolt 32, insertable through openings in the part 30, registering with any one of the series of spaced openings 32' provided in the member 9.

A coiled spring 33 has one end thereof connected to an eye 34 fixed in the rear end of member 9, and is provided at its other end with the screw eye 35, which may be adjustably engaged in any one of the spaced sockets 36 in the member 7. However, any other desired means may be provided for adjustably connecting the spring to the member 7. Thus the action of the spring may be regulated in accordance with the weight and strength of the rider.

The bar 17 provides means engageable by the feet of the rider, whereby he may exert a forward push against the lower end of the support 7. From opposite sides of the head 8 of said supporting member suitable handle bars 37 project, whereby a simultaneous rearward pull is exerted upon the upper end of the support.

As the device is thus operated by the rider, the spring 33 is stretched and the supports 7 and 9 angularly moved relative to each other, while the seat 5 is lowered and assumes a horizontally inclined position until the rear edge of the support 7 comes into abutting contact with the forward end of the supporting member 9. This position of the parts is illustrated in dotted lines in Figure 1. As the wheels of support 7 roll forwardly over the ground, the wheels 14 of support 9 are locked against rearward rotation by the brake elements 25, so that the latter wheels remain stationary with respect to the axle 16.

When the rider releases the foot pressure against the bar 17 and the pull on the handles 37, the spring 33 contracts and pulls the rear end of support 9 forwardly. The wheels 14 now roll forwardly over the ground while the wheels 13 are locked by the elements 24 against rearward rotation, as the support 7 returns to its normal ver-

tical position. In this way the vehicle progresses over the ground in a manner simulating the galloping motions of a horse. By adjusting the connection of spring 33 with support 7 towards the pivot 11, the resistance offered by said spring may be increased, and by lowering the connection towards wheels 13 the resistance may be decreased. Thus the degree of physical exertion necessary to operate the vehicle may be regulated in accordance with the weight and strength of the rider. Therefore the device, in addition to providing an enjoyable ride for the child, in the operation thereof, affords healthful bodily exercise.

The several principal parts of the vehicle may be very inexpensively constructed of wood, and since they can be easily separated or assembled, when not in use, the device can be compactly stored away in a comparatively small space. It will be understood, of course, that, if desired, two or more springs 33 may be provided with each vehicle for interchangeable connection with the supports 7 and 9.

In Figures 5, 6 and 7 of the drawings an alternative form of the invention is illustrated. In this construction the bottom surface of the seat 5' is longitudinally corrugated, as shown at 38, and at its forward end is provided with a metal bracket 39, in which the operating member 7', extending above and below the seat, is mounted upon the pivot bolt 11'. The upper ends of parallel supporting bars 40 are also connected with the bolt 11' and extend downwardly and rearwardly therefrom, and have their lower ends connected to the wheel carrying bar 18', as in the construction first described.

A supporting bar 41 is disposed between and in intersecting relation to the bars 40, and at its upper end is provided with a rubber surfaced roller 42 to travel on the corrugations 38 of the seat 5'. The lower forward end of the supporting bar 41 is connected to the wheel carrying bar 17', as above explained.

The operating member 7' is vertically adjustable, and a rearwardly extending link 43 is pivotally connected, as at 44, to the lower end thereof. The rear end of this link is provided with teeth 45 for adjustable engagement with the axis of the roller 42.

The bars 40 and 41 are provided with spaced openings 40' and 41' respectively, to be selectively registered at the point of intersection, for the reception of a removable pivot bolt 46. The upper edges of the spacer bars 40 are provided with longitudinally spaced sockets 47 to receive the ends of an adjustable stop 48, which limits the relative pivotal movement of bars 40 and 41 in one direction. The coiled spring 33' connects the supporting bars 40 and 41 at their lower ends, and braking elements, such as those previously described, are provided for the ground wheels or rollers.

In the operation of this form of the device, the weight of the rider on the seat 5' causes the separation of the upper and lower ends of the supporting bars 40 and 41, thereby expanding the spring 33' and lowering the seat. The rollers at the forward end of support 41 roll forwardly while the rollers of support 40 are locked against rearward rotation, so that the rear end of said support does not move longitudinally. As roller 42 on the upper end of support 41 moves rearwardly in contact with the corrugated surface 38, the seat 5' and the rider are vertically agitated, while the link connection 43 causes the upper portion of operating member 7' to be tilted

forwardly. This downward movement of the seat and expansion of spring 33' is limited by the stop 48. The rider, with his feet pressed firmly upon bar 17', then pulls rearwardly upon the upper end of the support 7', and with the aid of spring 33' as it contracts, pulls the upper end of support 41 and the lower end of support 40, forwardly, as the seat 5' rises to its normal position. Thus forward progress over the ground is made, and when the pull upon the upper end of operating member 7' is released, the above described operation is repeated.

In Figures 8 and 9 another construction is shown, in which the front and rear supports 49 and 50 respectively are pivotally connected at their upper ends to opposite ends of the seat 5a, as at 51 and 52, the rear support extending above said pivot 52. These supports are provided at their lower ends with the ground engaging rollers and braking means therefor, and are connected by a spring 33a as previously described.

The operating member 7a is mounted adjacent its lower end on the pivot 51, and below said pivot, is connected by link 53 to the upper end of a lever 54, fulcrumed intermediate of its ends upon the transverse axis 55 on the seat 5a. The lower end of this lever is pivotally connected by links 56 and 57 to the front and rear supports 49 and 50 respectively. Link 56 is connected to support 49 at a point spaced below the pivot 51, while link 57 is connected to the upper end of support 50, above the pivot 52.

In operation, under the weight of the rider, the rear support 50 pivots forwardly on its wheel axis, while the forward support 49 rolls forwardly over the ground, and the seat moves downwardly. Links 56 and 57 are thereby relatively moved towards aligned positions, and the upper end of lever 54 moves rearwardly. Thus, through the link connection 56, the upper end of operating member 7a is thrown forwardly. The spring 33a is, of course, thereby expanded. If desired, rubber covered rollers 58, on the lower ends of arms 59, depending from the seat, may be provided to limit downward movement of the seat, and obviate excessive strains upon the spring and link connections.

The rider now pulls the upper end of member 7a rearwardly and, as the spring 33a contracts, the rear support 50 is pulled forwardly, while the front support 49 pivots on its wheel axis, thereby raising the seat to normal position, as the lever 54 and links 56 and 57 are returned to the positions shown on the drawings.

In Figure 10 I have shown a device embodying the essential parts of the last described construction, but which does not travel over the ground and is intended for use as an exercising machine. Thus, the seat is pivotally mounted at its opposite ends on the upper ends of supports 49' and 50', in the same manner as in Fig. 8. However, the support 49' in this case is pivotally mounted at its lower end, as at 60, on a stationary base 61, preferably having a floor engaging surface of rubber or other friction material. The support 50' has suitable rollers 62 on its lower end, to travel freely on the floor in both directions. Links 56' and 57' connect the supports at their upper ends, as in Fig. 8, the pivotally connected ends of these links having a sliding connection with the lower end of lever 54', pivoted at its upper end to the seat.

The operating member consists of a rope or cable 63, fastened at one end to the support 50'

through any one of a series of spaced openings 64 therein. This rope is engaged around a sheave 65, mounted on the lower end of support 49', and extends upwardly therefrom through a guide eye 66 and over a second sheave 67, mounted on the end of the seat. A suitable handle 67 is secured to the other end of said rope.

A stop 68 on the seat limits swinging movement of support 49' in one direction, while the members 58' attached to the seat, serve as foot rests for the operator.

In operation, the weight of the operator causes the rollers of support 50' to move towards the right, rocking the upper end of said support towards the left, and swinging support 49' towards the right from its pivoted end, as the seat moves downwardly. This movement of the seat is limited by engagement of the connecting pivot between the link members 56' and 57' with the lower end of the slot in lever 54', when the links will be in substantial alignment. The handle 67 will then be adjacent to the guide 66. The operator by grasping said handle and pulling upwardly returns the supports to upright positions, and thereby raises the seat and his own weight. In this case no spring is used, and the degree of physical exertion which must be expended in the operation of the device, may be varied by adjusting the connection of the operating rope with the support 50'.

If desired, a second operating rope, connected to the support 49' and engaged with a sheave on the support 50', may be provided, said ropes being simultaneously pulled by the operator from a standing position on the seat, as will be readily understood.

From the foregoing description in connection with the accompanying drawings, the construction, manner of operation, and several advantages of the described embodiments of my invention will be clearly apparent. It will be seen that as a toy vehicle the device will afford amusement and pleasure to children, and may be readily adjusted in accordance with the age and strength of the child so as to be easily operated in the intended manner. The various parts are of rugged and durable construction and may be quickly assembled or disassembled and compactly arranged for storage or transportation.

While I have illustrated several practical forms of my invention, it will be understood that the same may be embodied in other alternative structural combinations, and I therefore reserve the privilege of resorting to all such legitimate modifications in the form, construction, and relative arrangement of the various parts as may be fairly considered within the scope of the appended claims.

What I claim is:

1. A toy vehicle comprising a seat, relatively movable supporting members for said seat, a rigid seat sustaining part directly mounted to pivot on one of the supporting members for movement relative to said member and the seat, ground engaging rollers pivotally supporting said members at their lower ends, means, including a member manually operable from said seat, to effect angular movement of said supporting members relative to each other to lower and raise said seat, and automatic brake devices permitting forward rotation of said rollers, but locking the same against rearward rotation.

2. A toy vehicle comprising a seat, a front supporting member pivotally connected to the forward end of said seat, a second supporting

member pivotally connected to the seat and extending downwardly and rearwardly therefrom, a sustaining element hinged to the rear end of the seat and movably connected with the latter supporting member, ground engaging rollers upon which the supporting members are pivotally mounted at their lower ends, a part connected to the front supporting member and manually operable from the seat, to effect a relative angular movement of said supporting members to raise and lower the seat, and automatic brake devices permitting forward rotation of said rollers, but locking the same against rearward rotation.

3. A toy vehicle comprising a seat, supporting members each pivotally connected to the forward end of the seat for angular movement relative to each other, ground engaging rollers pivotally supporting said members at their lower ends, a contractile spring connecting said members with each other to yieldingly retain the same in a normal position, a part pivotally connected at one of its ends to the under side of the seat, means for connecting the other end of said part to one of the supporting members at one of a series of spaced points to vary the position of the seat, automatic brake devices permitting forward rotation of said rollers, but locking the same against rearward rotation, and one of said supporting members extending above said seat to provide an operating part for effecting relative angular movement of the supporting members, and vertical movement of the seat.

4. A toy vehicle comprising a seat, a pair of supporting members, a common means for adjustably connecting one of said members and the forward end of the seat to the other of said members for angular movement of said members and seat with respect to each other, ground engaging rollers pivotally supporting said members at their lower ends, a contractile spring connecting said members with each other to yieldingly retain the same in a normal position, a part pivotally connected at one of its ends to the underside of the seat, means for connecting the other end of said part to one of the supporting members at one of a series of spaced points to vary the position of the seat, automatic brake devices permitting forward rotation of said rollers, but locking the same against rearward rotation, and one of said supporting members extending above said seat to provide an operating part for effecting relative angular movement of the supporting members, and vertical movement of the seat.

5. A toy vehicle comprising a seat, a front supporting member pivotally connected to the forward end of said seat, a rear supporting member extending obliquely from said front member and pivotally connected to the forward end of said seat, ground engaging rollers pivotally supporting said members at their lower ends, a rigid sustaining element depending from the seat near its rear end, means for connecting said element to the rear supporting member at one of a series of spaced points to vary the position of the seat, automatic brake devices permitting rotation of said rollers in a forward direction, but locking the same against rearward rotation, a contractile spring connecting said supporting members with each other, said front supporting member having an operating part extending above the seat, whereby angular movement of said members relative to each other is effected and said spring rendered operative to cause forward travel of the vehicle.

6. A toy vehicle comprising a seat, intersecting

supports for said seat pivotally connected with each other below the seat, one of said supports being pivoted at its upper end to the forward end of the seat, a roller mounted on the upper end of the other support to travel longitudinally on the underside of said seat, an operating member pivoted intermediate of its ends on the forward end of the seat, a link pivoted to the lower end of said operating member and connected to the upper end of the latter support, ground engaging rollers upon which the supports are pivotally mounted at their lower ends, means permitting forward rotation of said rollers, but preventing rearward rotation thereof, and a contractile spring connecting the supports near their lower ends and resisting relative angular movement thereof under the weight of a rider on said seat.

7. A toy vehicle comprising a seat, intersecting supports for said seat pivotally connected with each other below the seat, one of said supports being pivoted at its upper end to the forward end of the seat, said seat having a longitudinally corrugated bottom surface, a roller mounted on the upper end of the other support engaged with said surface, an operating member pivoted intermediate of its ends on the forward end of the seat, a link pivoted to the lower end of said operating member and connected to the upper end of the latter support, ground engaging rollers upon which the supports are pivotally mounted at their lower ends, means permitting forward rotation of said rollers, but preventing rearward rotation thereof, and a contractile spring connecting the supports near their lower ends and resisting relative angular movement thereof under the weight of a rider on said seat.

8. A toy vehicle comprising a seat, a pair of pivotally connected supporting members for said seat, means operable from said seat to move said members relative to each other whereby the vehicle is progressed, and an element directly mounted to pivot upon one of the supporting members for movement with and relative to said member and coacting with said seat to impart vertical movement thereto with respect to the supporting members.

9. A toy vehicle comprising a seat, front and rear supporting members, a common connecting means between the forward end of said seat and each of said members permitting of the independent pivotal movement of said members with respect to each other, means including a member operable from said seat for progressively moving said supporting members relative to each other over a supporting surface, and, means adjustably connected with one of said supporting members and cooperating with said seat to vertically adjust the latter with respect to said supporting members.

10. A toy vehicle comprising a seat, front and rear supporting members, a common pivotal connection between said members and the seat, permitting independent pivotal movement of each of said members and the seat relative to each other, a member connected to the seat and means for adjustably connecting said member to the rear supporting member to vary the position of the seat, a spring connecting said members with each other and yieldingly resisting relative movement thereof from a normal position with respect to said seat, ground engaging rollers upon which said members are mounted at their lower ends, brake means preventing rearward rotation of said rollers, and one of said supporting members extending above the seat for manual operation.

11. A toy vehicle comprising a seat, a pair of supporting members for said seat, means pivotally connecting said members with each other below the seat, means pivotally connecting one of said members with the seat, an operating member pivotally connected with said last named means and extending above the seat, an operating connection between said member and one of the supporting members, a spring connecting said members with each other and yieldingly resisting relative movement thereof from a normal position with respect to said seat, ground engaging rollers upon which said members are mounted at their lower ends, and brake means preventing rearward rotation of said rollers.

12. A toy vehicle comprising a seat, supporting means pivotally connected with the forward end of the seat and including front and rear members pivotally connected for angular movement relative to each other, means directly mounted on one of said members for movement as a unit therewith, and positioned beneath and in sustaining relation to the rear portion of the seat during relative movement of the supporting members, a spring connecting said members with each other to yieldingly resist relative movement thereof from a

normal position with respect to said seat, an operating member extending above the seat and connected with the front supporting member to manually move the same with respect to the rear supporting member and the seat, ground engaging rollers upon which said supporting members are mounted at their lower ends, and brake means preventing rearward rotation of said rollers.

13. A toy vehicle comprising a seat, front and rear supporting members, means common to both of said members pivotally connecting the same to the forward end of the seat for movement relative to each other, said front supporting member extending above the seat and having an operating handle, a rigid element extending downwardly from the seat and connected to the rear supporting member, sustaining the seat in fixed relation to said member for movement as a unit therewith, a spring connecting said supporting members and yieldingly resisting relative pivotal movement thereof from a normal position with respect to said seat, ground engaging rollers upon which said supporting members are mounted at their lower ends, and brake means preventing forward rotation of said rollers.

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