Aug. 13, 1957 B. B. SKOGGARD 2,802,671

TOY VEHICLES

Filed March 4, 1954

Fig. 1.

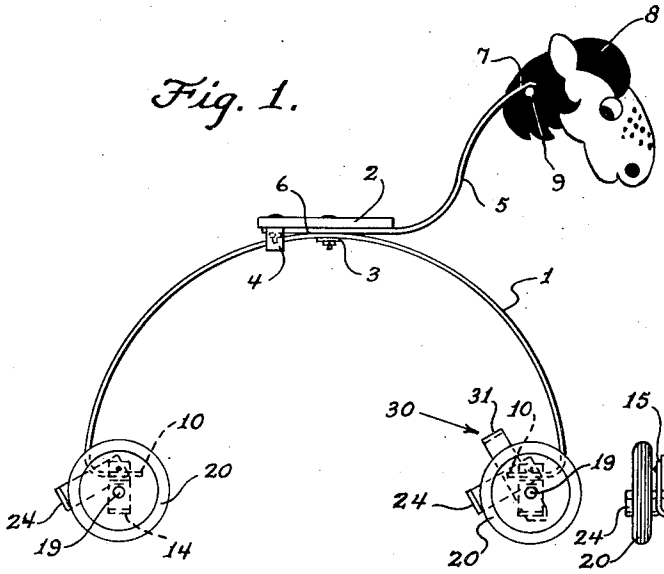


Fig. 2.

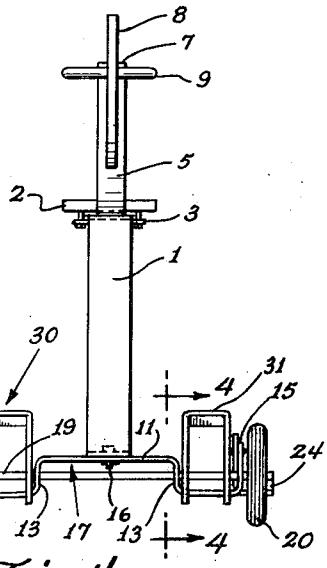


Fig. 3.

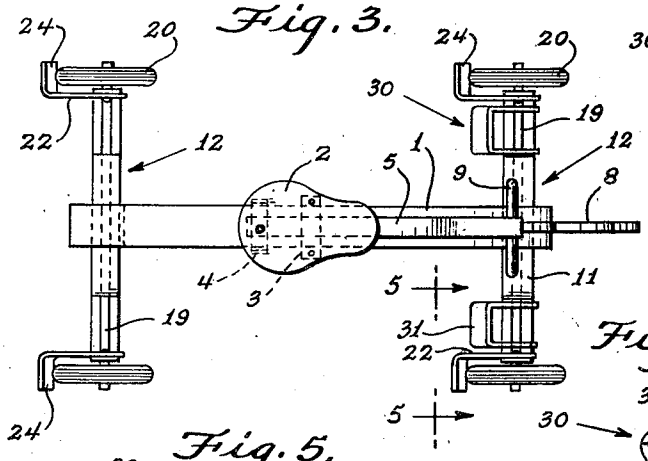


Fig. 4.

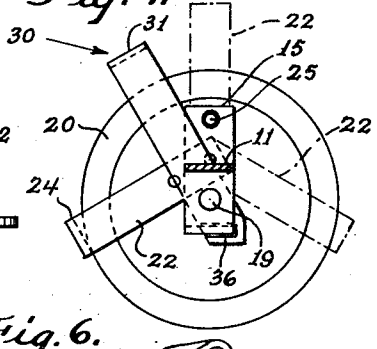


Fig. 5.

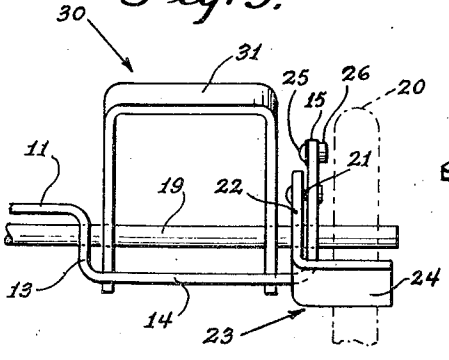
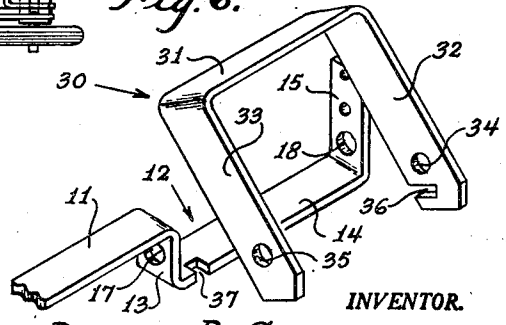


Fig. 6.



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TOY VEHICLES

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Application March 4, 1954, Serial No. 414,071

9 Claims. (Cl. 280—1.182)

This invention relates to toy vehicles in the form of hobby-horses and is more particularly concerned with such toy vehicles which can be propelled by a bouncing action imparted by the rider.

It is a principal object of this invention to provide a toy which, though of attractive appearance, is of utmost simplicity in construction.

Another object is to provide such a toy involving a minimum number of parts.

Still another object is to provide such a toy wherein an absolute minimum of fastening members is employed in the assembly of its parts.

A further object is to provide such a toy of simple, rugged construction eliminating parts which might break, get out of order, or be likely to injure a child.

A still further object is to provide such a toy, many of whose parts are interchangeable.

A more detailed object is to provide such a toy which can be marketed in knocked down or kit form capable of being assembled by the purchaser in simple straightforward manner, using a minimum of fastening members.

Still further and more detailed objects of the invention will in part be obvious and in part be pointed out as the description of the invention, taken in conjunction with the accompanying drawing, proceeds.

In that drawing:

Figure 1 is a side elevation of the toy of the invention.

Figure 2 is a front elevation thereof.

Figure 3 is a top plan view thereof.

Figure 4 is a sectional view taken on lines 4—4 of Figure 2 looking in the direction of the arrows and illustrating, in solid and dot-dash lines, the three positions of the brake member.

Figure 5 is a fragmentary enlarged elevation taken on lines 5—5 of Figure 3 and illustrating the assembly of one of the steering yokes with the axle.

Figure 6 is a fragmentary perspective view of one of the steering yokes and a portion of the axle support in position ready to be assembled, illustrating the manner in which such assembly is effected.

Considering the construction of the invention in detail, the principal member thereof is seen to be the flat arcuate spring 1, which, in its relaxed position as shown, forms substantially a semi-circle. At its mid-position, this spring has a suitable seat 2 secured thereto by a pair of straps 3 and 4. The strap 3, as illustrated, underlies the spring at substantially its mid-point and is secured to the seat by a pair of bolts at either end thereof, lying alongside of the spring. The strap 4 forms substantially a hollow rectangle which embraces the spring 1 and the end 6 of the neck and head support 5. The strap 4 has overlapping upper portions lying beneath the seat 2. A single bolt passed through the seat 2, through the end 6 and through the overlapped ends of the strap 4 holds all of the parts together. In this manner the seat is held effectively in place without the spring being weakened by passing securing means through it. The strap 4 engages

the sides of the spring 1 and the end 6 so prevents the seat and head assembly from tending to pivot about the position where the strap 3 engages the spring 1. Nevertheless, the strap 4 allows sufficient space for the spring to move vertically as it is flattened by the bouncing action of the rider. The neck and head support 5, is preferably formed of a flat strip of spring metal. It extends upwardly in a reverse curve and has its upper end 7 received within the body of a suitable decorative head 8. The head 8, or the end of the spring portion 7 as desired, is equipped with a transverse handle bar 9 for the child to hold on to while bouncing on the toy.

It is preferable to have the seat mounted at substantially the mid-position of the arcuate spring 1, thus imparting an even compressing and flattening of that spring when one bounces up and down on the seat. It is to be understood, however, that the specific devices here shown for securing the seat and the portion 6 to the spring 1 as here shown have been selected for illustrative and not limiting purposes. Other holding devices functioning similarly to those shown can, of course, be employed without departing from the spirit and scope of the invention. It is merely preferred that the seat be located at the peak, or mid-point, of the arc of the spring 1 and that such spring be made in a continuous arc, since in this manner more effective operation is achieved.

Both ends of the spring are turned inwardly in horizontally extending portions 10 which are suitably secured to the mid-points of the raised center portions 11 of the axle supports, generally indicated at 12. These particular axle supports are an important feature of the invention, since they are made to be interchangeable and are made to perform a variety of functions, thus assisting materially in keeping the number of parts, and the fastenings for the parts, going to make up the toy, down to a minimum.

The supports 12 are in the form of an elongated strip of metal having a center upwardly offset portion 11 which is joined at each of its ends by downwardly extending portions 13, to downwardly offset portions 14. The portions 14 extend outwardly to a position closely adjacent where the wheels are to be applied and then terminate in upstanding ends 15. Here, it is to be noted that the parts of the supports 12 on either side of the center position 16 thereof are identical and are merely reversed in location, so it is only necessary to describe one side of the support.

The first thing to be noted with regard to the downwardly offset portions 13 and the upstanding ends 15 is that they are both perforated with coaxial perforations, 17 and 18, whose axis is parallel to, but spaced from, the portions 11 and 14 of the support 12. These perforations receive and mount the axles 19 of the toy. A wheel 20 is rotatably mounted on each end of each axle and is secured thereto in suitable manner.

As already indicated, the wheels 20 and the upstanding ends 15 of the supports 12 lie closely adjacent each other and extend in parallel relationship. At a position above the axle 19 the ends 15 are provided with pivot pins 21 to which the shanks 22 of the brake members, generally indicated at 23, are pivotally mounted. These brake members are generally L-shaped and terminate in outwardly extending shoes 24 which form the base of the L. The position of the pivot 21 and the length of the shanks 22 is such that, as illustrated diagrammatically in Figure 4, the brakes may be swung from a position where the shoes 24 engages the rear edge face of the wheel to a position where they similarly engage the front edge face of it, so as to brake the action of the wheels in one direction or the other, as desired.

In addition to providing for the shoes to engage either the front or rear edge faces of the wheels, the mounting

structure for the brakes also provides for the maintaining of them in an upright inoperative position. This is effected by means of inwardly extending projections **25** on the ends **15** above the pivots **21** which resiliently engage the arms **22** and hold them in upright position. These projections may merely be an inwardly struck dimple, formed out of the material of the portion **15**. Preferably, however, they are separate spring pressed plugs applied thereto, as here illustrated. When separate plugs are employed, they are of the common spring loaded type housed in a cup **26** which also houses the actuating spring.

It will be apparent that so long as the pivot pin **21** holds the shank **22** of the brakes close enough to the member **15**, it will be necessary to spring the shanks **22** inwardly, or push the plugs **25** back into their housings, to move the shanks **22** past the upright position. Thus, if it is merely desired to locate the brakes in upright, inoperative position, they merely need to be raised to where their shanks **22** are engaged by the plugs **25**. The spring loading of the plugs will then serve to keep them up out of the way.

At the front end of the toy, the support **12** is pivotally connected to the inward projection **10** of the spring **1**, as illustrated at **16** in Figure 2. This, of course, allows the support and the axle carried by it to turn, so that the toy can be steered. Steering is preferably effected by the feet and for this purpose suitable simple yokes are provided, which are secured in place without the addition of any fastening means. These yokes, one of which is located at either end of the raised portion **11**, are generally indicated at **30**.

Each yoke **30** has a flat foot engaging portion **31**, with a pair of arms **32** and **33** extending at right angles therefrom at the ends thereof. The arms **32** and **33** are perforated at **34** and **34** adjacent their lower ends for the reception of the axle **19** and one of the arms, such as **32**, is slotted part way through at **36** to receive a portion of the part **14** of the axle support. Additionally, the part **14** has a slot formed therein at **37** to receive a portion of the unslotted arm **33** below the perforation **35** therethrough. From the foregoing it will be readily apparent that the yokes **30** can be assembled with the front end structure of the vehicle by merely seating part of the arm **33** in the slot **37**, engaging the slot **36** with a portion of the part **14** and then passing the axle **19** through the perforations **18**, **34**, **35** and **17**. So long as the perforations and slot of the yoke and the portions engaged by them are properly related, the yoke will be held rigidly in place and the rider can steer the vehicle by merely pushing against one or the other of the yokes.

While a particular yoke construction and assembly arrangement has here been shown, it is, of course, to be appreciated that variations therefrom will suggest themselves to those skilled in the art and can be incorporated herein without departing from the spirit and scope of the invention. It is to be noted, however, that this arrangement saves the use of any additional fastening means, enables the assembly of the parts without the use of any particular tools, and enables the same supporting members **12** to be used at either the front or rear of the vehicle. Whether the member **12** used at the rear end is slotted, without any use being made of the slot, is immaterial.

It is believed that the operation of this toy will be readily apparent to those skilled in the art. To propel the toy forward, one sets the brakes on the rear edge faces of the wheels, as illustrated in Figure 1. Then, as the rider bounces downward, the spring **1** is flattened out causing the front wheels to go forward with respect to the back wheels. As the spring moves up again, however, the brakes on the wheels prevent them from going backwards, thus the back wheels must come up towards the front wheels. By repetition of that action forward movement of the vehicle is effected. Conversely, if it is desired to make the vehicle move backward, that is accomplished by swinging the brakes over into engagement with the front edge faces of the wheels, whereupon the rear wheels go backwards and the front wheels have to follow them.

To convert the toy into a stationary bouncing horse toy, desirable for indoor use, it is merely necessary to set all four brakes in the upright position free from the edge faces of the wheels. Then when the child bounces up and down the spring will flatten and return, causing the front and back wheels to move out and back again. Accordingly, the toy has little or no movement along the floor and it stays in place while the child bounces up and down on it.

The toy can also be caused to "walk" forwards or backwards. This is done by setting the brakes in either the front or back position, then steering the front wheels from side to side. This serves to move the toy forwards or backwards, as the case may be, with a simulated walking motion.

It is believed that it will be apparent from the foregoing that the toy vehicle of the instant invention, while being of the utmost simplicity, will perform a variety of interesting functions and do so in a most effective manner. At the same time, its construction is sufficiently rugged that it will withstand the amazing amount of punishment that children are able to give to their toys. Furthermore, the structure employed reduces to the barest minimum the number of joints between parts which must be made by bolts, welds, or other fastenings. Hence, not only are economy of construction and assembly fostered to the highest degree, but once the toy is put to use, there is a minimum number of parts to come loose and fall off.

While certain particular formations of elements have been shown for facilitating economy of construction and assembly, while maintaining functional effectiveness, it is of course to be understood that such showings are for illustrative and not for limiting purposes. Various other formations may suggest themselves to those skilled in the art on considering the instant disclosure. It is, accordingly, to be understood that since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description, or shown in the accompanying drawing, shall be interpreted as illustrative and not in a limiting sense.

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

1. A vehicular toy comprising a one piece spring arch member, a pair of axle supports, means securing the ends of said arch member to said axle supports, axles carried by said supports, wheels mounted on the ends of said axles, brake mounting means formed on said axle supports, brake members each including a mounting portion and a wheel periphery engaging portion, said mounting portion being pivotally mounted on said brake mounting means for movement of said engaging portion into engagement with either the front or rear edge faces of said wheels, and means acting between said mounting portion and said mounting means for maintaining said brake members in a position out of engagement with the edge faces of said wheels.

2. A vehicular toy comprising a one piece spring arch member, a pair of axle supports, means securing the ends of said arch member to said axle supports, axles carried by said supports, wheels mounted on the ends of said axles, brake mounting means formed on said axle supports, brake members each including a mounting portion and a wheel periphery engaging portion, said mounting portion being pivotally mounted on said brake mounting means at positions spaced from said axles for movement into engagement with either the front or rear edge faces of said wheels, and means carried by said brake mounting means and engageable with said mounting por-

tion for maintaining said brake members in a position out of engagement with the edge faces of said wheels.

3. A vehicular toy comprising a one piece spring arch member, a pair of axle supports, means securing the ends of said arch member to said axle supports, axles carried by said supports, wheels mounted on the ends of said axles, brake mounting means formed on said axle supports, brake members each including a mounting arm and a wheel periphery engaging foot extending laterally from said arm being pivotally mounted on said brake mounting means eccentrically with respect to said axles for movement of said foot into engagement with either the front or rear edge faces of said wheels, and interengaging means between said brake mounting means and said brake members for maintaining said brake members in a position out of engagement with the edge faces of said wheels.

4. A vehicular toy which comprises, a one piece spring arch formed of flat metal, said arch forming substantially a semi-circle, a pair of axle supports extending transversely with respect to the ends of said spring arch, one of said axle supports being fixedly secured to one end of said spring arch and the other of said axle supports being pivotally secured to the other end of said spring arch, axles carried by said axle supports, wheels on the ends of said axles, brake mounting means formed integrally with said axle supports and extending upwardly therefrom adjacent said wheels and brake members pivotally mounted on said upwardly extending brake mounting means for pivotal movement into engagement with the front or rear edge face of said wheels, said brake members including an elongated arm pivoted to said brake mounting means to swing parallel thereto and a laterally extending brake shoe carried by said arm and extending across the periphery of said wheel.

5. A vehicular toy comprising a body member consisting of an upwardly convex spring arch formed of flat spring metal, a pair of axles, and a pair of wheels, one secured to an end of each axle, supports for each of said axles and for mounting the ends of said arch with respect thereto, each of said supports being secured to each end of said arch, each of said supports comprising a single one-piece metal strap having a raised center portion, depressed side portions, joining portions between said raised center portion and said depressed side portions, and upwardly extending end portions at each end thereof, said joining portions and said end portions being formed to receive said axle therethrough.

6. A vehicular toy comprising a body member consisting of an upwardly convex spring arch formed of flat spring metal, a pair of axles, and a pair of wheels, one secured to an end of each axle, supports for each of said axles and for mounting the ends of said arch with respect thereto, each of said supports comprising a single one-piece metal strap having a raised center portion, depressed side portions, joining portions between said raised center portion and said depressed side portions, and upwardly extending end portions at each end thereof, said joining portions and said end portions being formed to receive said axle therethrough and brake members pivotally mounted on said end portions at positions above said axle.

7. A vehicular toy comprising a body member consisting of an upwardly convex spring arch formed of flat spring metal, a pair of axles, and a pair of wheels, one secured to an end of each axle, supports for each of said axles and for mounting the ends of said arch with respect thereto, each of said supports being secured to each end of said arch, each of said supports comprising a single one-piece metal strap having a raised center portion, depressed side portions, joining portions between said center portion and said side portions and upwardly extending end portions at each end thereof, said raised center portion and said end portions being formed to receive said axle therethrough, and steering yokes mounted on said axle at either side of said raised portion of said support, said steering yokes including arms having portions formed for the reception of said axle therethrough and having other portions formed for engagement with said supports.

8. A vehicular toy comprising a body portion consisting of an upwardly arched flat spring member substantially in the form of a semi-circle, a seat engaged with said spring member at substantially the mid-point thereof, and an arm secured to said spring member adjacent said seat and extending upwardly from said seat for supporting a simulated head, a pair of axles, a pair of wheels for each axle, a support for each of said axles, each of said supports comprising a flat metal strap having a raised center portion, downwardly extending shoulders at the ends of said center portion, outwardly extending side portions extending outwardly from the lower ends of said shoulders and upwardly extending end portions at the end of each of said side portions, said upwardly extending end portions and said downwardly extending shoulder portions being formed with axially aligned perforations therethrough for the reception of said axles, said axles being mounted in place on said supports, brake members pivotally secured to said upwardly extending end portions and having outwardly extending shoes for engaging said wheels at either side of the edge face thereof, a pair of steering yokes secured in place on one of said axles, in alignment with said outwardly extending portions, said yokes having arms formed for the reception of said axle and having extending portions formed to engage said supports, means for fixedly mounting one of said supports on one end of said arch and means for pivotally mounting said support carrying said steering yokes to the other end of said spring arch.

9. A vehicular toy comprising a body member consisting of an upwardly convex spring arch formed of flat spring metal, a pair of axles, and a pair of wheels, one secured to an end of each axle, supports for each of said axles and for mounting the ends of said arch with respect thereto, each of said supports being secured to each end of said arch, each of said supports comprising a single one-piece metal strap having a center portion radially spaced from said axle on one side thereof and engaged with an end of said spring arch, side portions at either side of said center portion, said side portions being radially spaced from said axle on the opposite side thereof from said center portions, joining portions extending between said center portion and said side portions and end portions at the ends of said side portions remote from said joining portions and extending in parallel relationship with respect to said joining portions, said joining portions and said end portions being formed to receive said axle therethrough.

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