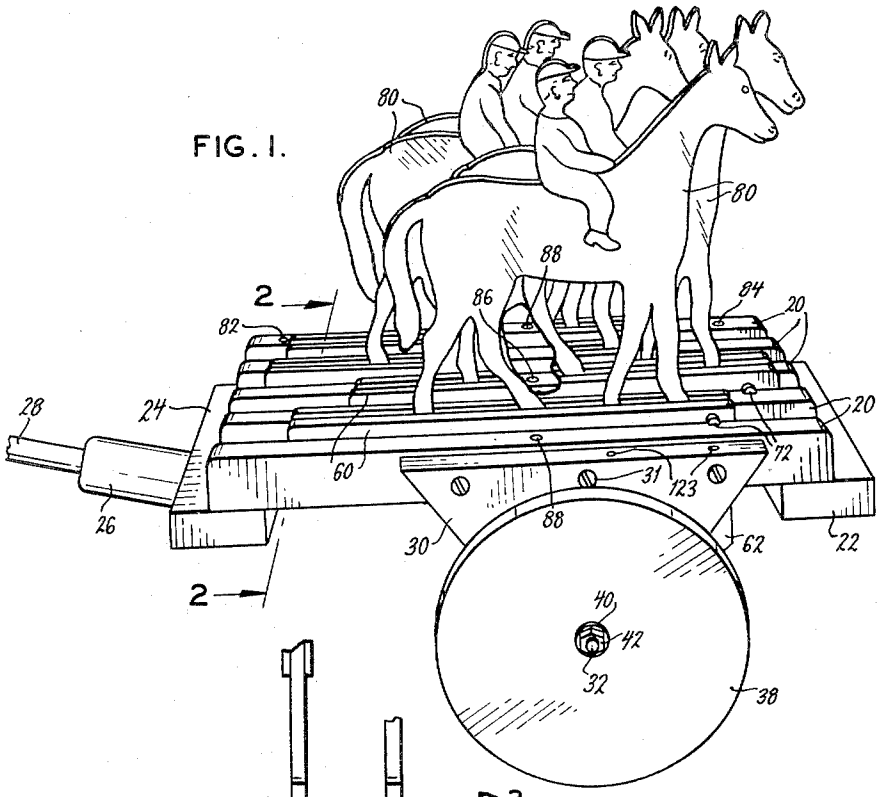
Dec. 4, 1956 J. HAGEN 2,772,513

WHEEL ACTUATED TOY VEHICLE

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FIG. 1.



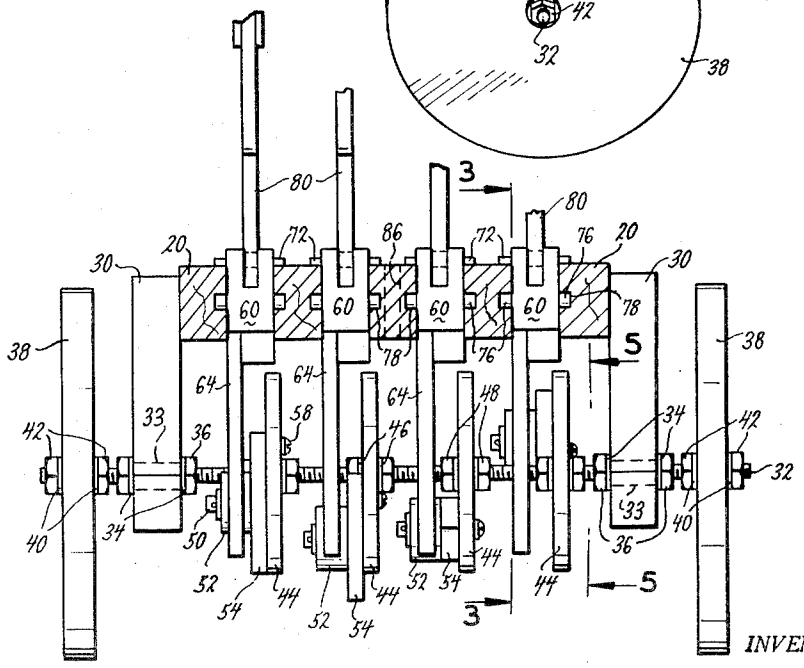


FIG. 2.

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WHEEL ACTUATED TOY VEHICLE

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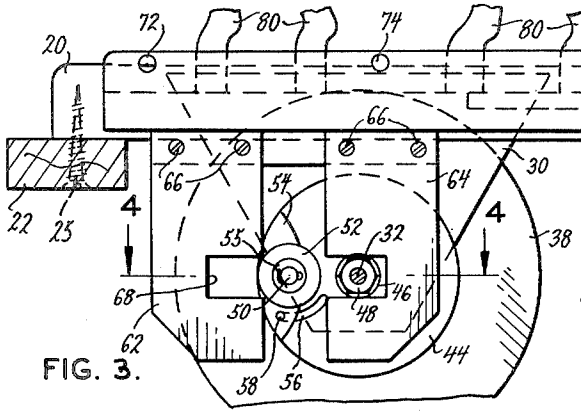


FIG. 3.

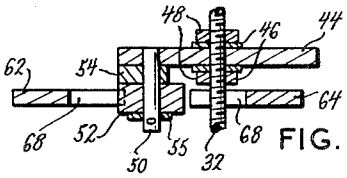


FIG. 4.

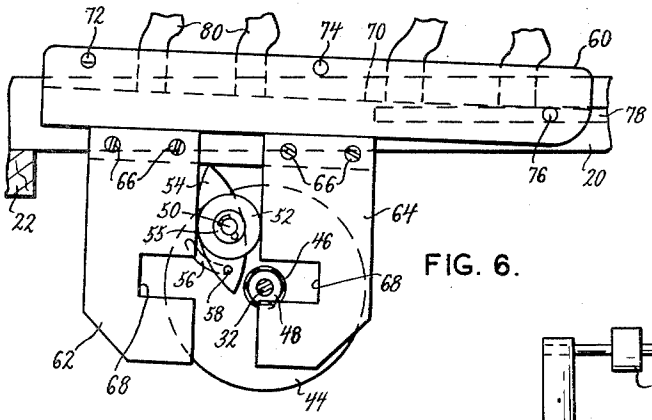


FIG. 6.

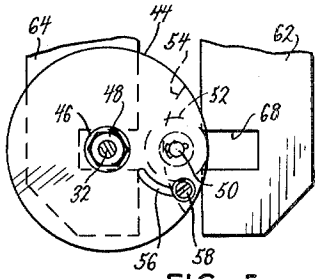


FIG. 5.

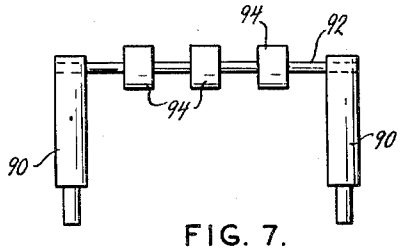


FIG. 7.

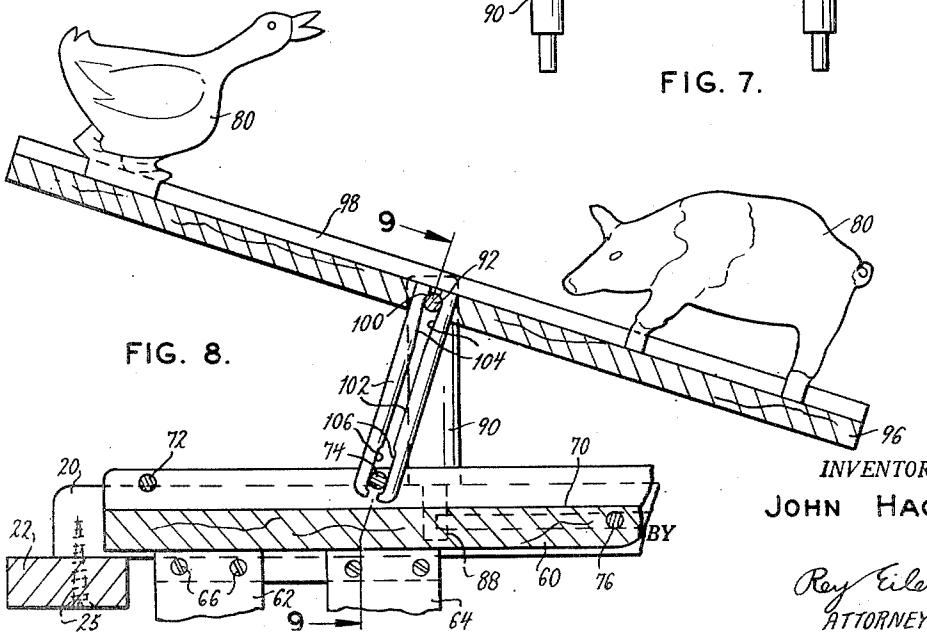


FIG. 8.

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WHEEL ACTUATED TOY VEHICLE

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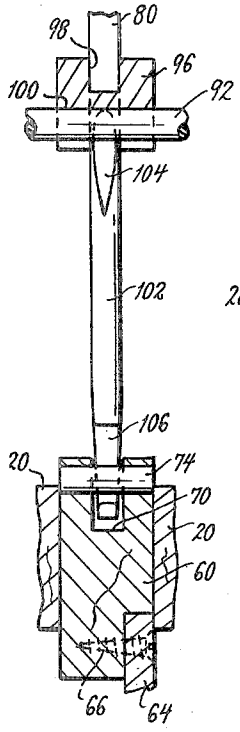
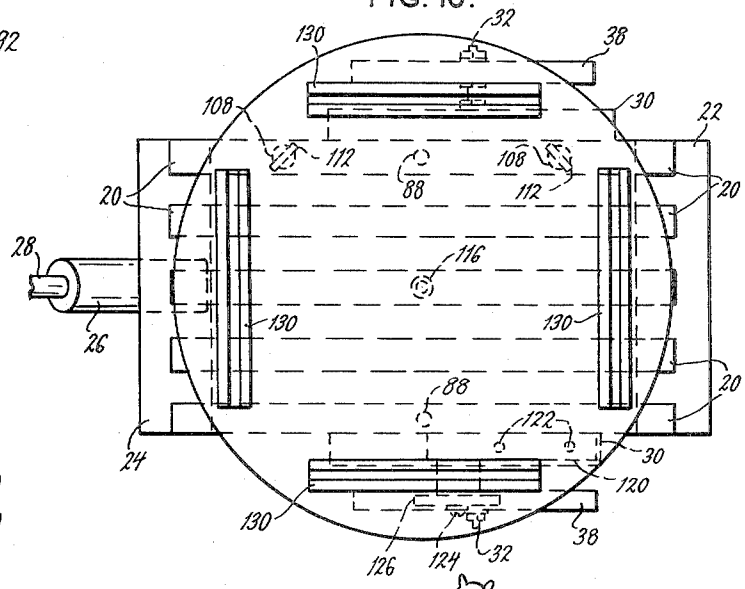


FIG. 9.

FIG. 10.



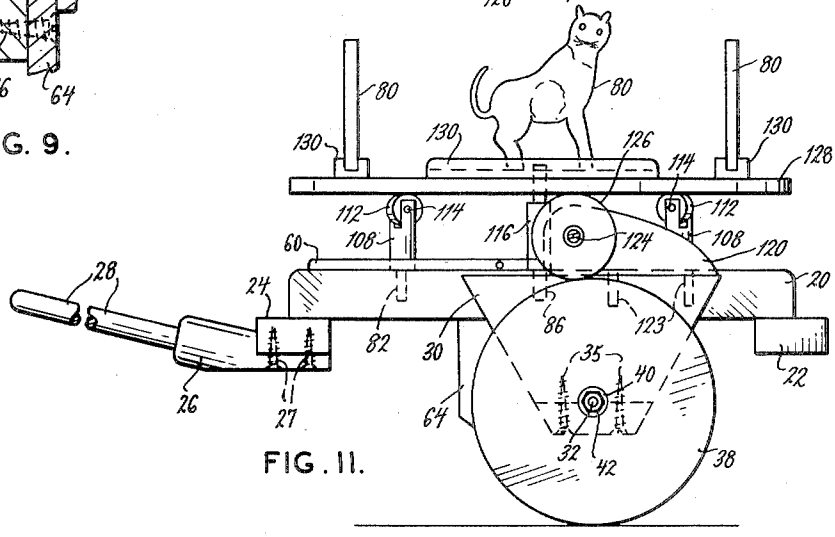


FIG. 11.

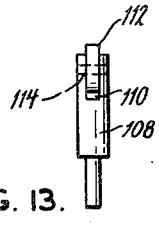


FIG. 13.

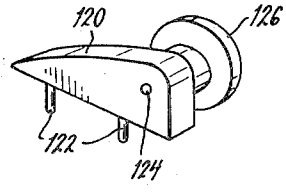


FIG. 12.

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United States Patent Office

2,772,513

Patented Dec. 4, 1956

2,772,513

WHEEL ACTUATED TOY VEHICLE

John Hagen, St. Louis County, Mo.

Application May 3, 1954, Serial No. 427,084

6 Claims. (Cl. 46—205)

This invention relates to improvements in action toys. More particularly this invention relates to improvements in action toys that are used for entertainment and education.

It is therefore an object of the present invention to provide an improved action toy that can be used for entertainment and education.

It is desirable to provide action toys for children, because the action of such toys maintains the interest of the children. It is additionally desirable to make those action toys entertaining as well as educational, because the toys then serve a double purpose. Moreover, the toys will have a continuing interest for children over a long period of time. The present invention provides such a toy; that toy being readily assembled and disassembled by the child. The child not only obtains pronounced pleasure from playing with the toy but also obtains a knowledge of mechanics from working with the toy. It is therefore an object of the present invention to provide an action toy which can be assembled and disassembled by a child.

The action toy provided by the present invention has a number of slides which are supported on a frame and which reciprocate relative to that frame. These slides can have miniature animals secured to them, and those animals will reciprocate as the toy is pushed or pulled along the ground. The slides, and the miniature animals carried thereby, will be staggered, and therefore the miniature animals will move forwardly and rearwardly at different times. This will provide an attractive and interesting effect for the child. In addition, the child can use the toy to simulate races by establishing a starting line and a finishing line and noting which animal is in the foremost position at the moment the toy reaches the finishing line. It is therefore an object of the present invention to provide an action toy which has a number of slides that reciprocate relative to the frame of the toy and which are staggered relative to each other and carry miniature animals.

The slides of the action toy provided by the present invention can be set so they are raised upwardly during a part of their reciprocation. Where those slides carry animals that are noted for their jumping ability, as for example jumping horses or dogs, the raising of the slides during the reciprocation of those slides gives a lifelike simulation of the jumping of those animals. The lifelike simulation of the jumping action of the animals is interesting and attractive to the child, and the mechanism that provides the raising of the slides teaches the child a principle of mechanics. It is therefore an object of the present invention to provide an action toy which has slides that can be caused to raise upwardly during their reciprocation relative to the frame of that toy.

The action toy can also be used to simulate a seesaw. The action toy can have a pivot mounted on it and can have bars pivotally secured to that pivot. These bars will have connectors that extend to the slides on the frame of the toy and as those slides reciprocate they will

act on the connectors to oscillate the bars. The slides will be staggered and thus they will cause the bars to be staggered. The overall result is an attractive and pleasing operation of a series of seesaws. In addition, the interaction of the slides, the connectors and the bars will teach the child another principle of mechanics. It is therefore an object of the present invention to provide an action toy with a pivot and with bars which can be oscillated by the reciprocable slides mounted on the frame of that toy.

The miniature animals which were mounted on the reciprocable slides for the purpose of racing or jumping can be secured to the bars of the seesaw. Such animals will heighten the interest and entertainment afforded by the toy when it is used to simulate a plurality of seesaws. These miniature animals can fit snugly but releasably in grooves in the slides and in the bars and can thus be interchanged freely between those slides and bars. It is therefore an object of the present invention to provide grooves in the bars and slides of an action toy which can snugly but releasably secure miniature animals.

The action toy provided by the present invention can simulate the action of a merry-go-round. A pivot will be mounted on the frame of the action toy, supporting rollers will also be mounted on that frame, a driving wheel will be mounted on the frame of the toy at a point spaced from the supporting rollers, and a rotatable disk will be mounted on the pivot so it rests upon the supporting rollers and the driving wheel. The movement of the toy will cause the driving wheel to rotate the disk, and the pivot and the supporting rollers will make that rotation possible.

The action toy provided by the present invention thus enables the child to have a racing and jumping toy, a seesaw toy, and a merry-go-round toy. Furthermore, the child is able to change the toy of the present invention from one of its phases to any of the other of its phases. Consequently, that toy enables the child to attain considerable dexterity and mechanical ability.

Other and further objects and advantages of the present invention should become apparent from an examination of the drawing and accompanying description. In the drawing and accompanying description a preferred form of the invention is shown and described but it is to be understood that the drawing and accompanying description are for the purpose of illustration only and do not limit the invention and that the invention will be defined by the appended claims.

In the drawing,

Fig. 1 is a perspective view of the action toy provided by the present invention, as that toy appears when it simulates a race,

Fig. 2 is a sectional end view of the toy of Fig. 1, and it is taken along the plane indicated by the line **2—2** in Fig. 1,

Fig. 3 is a sectional side view of the toy of Figs. 1 and 2, and it is taken along the plane indicated by the line **3—3** in Fig. 2,

Fig. 4 is a sectional plan view of a part of the toy of Figs. 1–3, and it is taken along the plane indicated by the line **4—4** in Fig. 3,

Fig. 5 is a side view of another portion of the action toy of Figs. 1–3, and it is taken along the plane indicated by the line **5—5** in Fig. 2,

Fig. 6 is another sectional view of the toy of Figs. 1–3, and it is taken along the plane indicated by the line **3—3** in Fig. 2, and it shows the slide of Fig. 3 as that slide "jumps,"

Fig. 7 is an end view of the pivot and the posts used with the toy when the toy simulates a seesaw,

Fig. 8 is a side view of a portion of the action toy of Figs. 1–3 when that toy is used to simulate a seesaw,

Fig. 9 is a sectional end view of the portion of the toy shown in Fig. 8, and it is taken along the broken plane indicated by the line 9—9 in Fig. 8.

Fig. 10 is a plan view of the action toy of Figs. 1–3 when that toy simulates a merry-go-round,

Fig. 11 is a side elevational view of the toy of Fig. 10,

Fig. 12 is a perspective view of the driving wheel used with the toy of Figs. 10 and 11, and

Fig. 13 is an end elevational view of a supporting roller used in the toy of Figs. 10 and 11.

Referring to the drawing in detail, the numeral **20** denotes a number of longitudinally-extending bars. These bars are held in spaced apart, parallel relation by transversely extending bars **22** and **24**. The bar **22** is secured to the forward ends of the bars **20** while the bar **24** is secured to the rear ends of those bars **20**. Fasteners, such as the wood screws **25**, extend through the bars **22** and **24** and seat in the bars **20**. Those fasteners secure the bars **20**, **22** and **24** together in rigid relation.

The numeral **26** denotes a socket which is secured to the transversely-extending bar **24** by fasteners, such as the wood screws **27**. These fasteners extend upwardly through the forward end of the socket **26** and seat in the bar **24**, thereby securing the socket **26** rigidly to the bar **24**. The socket **26** releasably receives a handle **28**. This handle can be used to apply pushing or pulling forces to the socket **26** and thus to the bars **20**, **22** and **24**.

Generally triangular plates **30** are secured to the outermost bars **20**, and those plates extend downwardly below the bottoms of the bars **20**. Fasteners, such as the wood screws **31**, secure the side plates **30** to the outermost bars **20**. The fasteners **31** extend through the side plates **30** and seat in the outermost bars **20**. Each of the side plates **30** is formed in two pieces, and each of the two pieces of each side plate **30** has a semicylindrical recess therein. As a result, when the two pieces of each side plate **30** are fitted together, the side plates **30** have cylindrical openings therethrough adjacent the bottom thereof. Those cylindrical openings in the side plates **30** are denoted by the numeral **33**. The two parts of each side plate **30** are releasably secured together by fasteners such as the wood screws **35**. These fasteners can be removed to facilitate the separation of the parts of the side plates **30** and can be replaced to secure those parts together.

The cylindrical openings through the side plates **30** receive the ends of a shaft **32**. This shaft is shown as being threaded and it therefore will have sleeves, not shown, that fit over the threads and are disposed within the cylindrical openings **33** in the side plates **30**. These sleeves will have smooth exteriors and will facilitate ready rotation of the shaft **32** relative to the side plates **30**. Washers **34** are disposed adjacent the outer and inner faces of each of the side plates **30**, and nuts **36** are threaded onto the shaft **32** so they intimately engage the washers **34**. The length of the sleeves, not shown, is slightly greater than the thickness of the side plates **30**, so the washers **34** can be forced solidly against the ends of those sleeves and will be held out of binding engagement with the side plates **30** by those sleeves. The combination of the sleeves, the washers **34** and the nuts **36** enables the shaft **32** to rotate freely relative to the side plates **30** and yet resist axial shifting of the shaft **32**.

Ground-engaging elements **38**, in the form of wheels, are mounted on the outer ends of the shaft **32**. Washers **40** are disposed on opposite sides of the wheels **38**, and nuts **42** bear against the washers **40**. The wheel **38** that is shown in Fig. 1 will have the washers **40** forced into binding engagement with it by the nuts **42**, and thus that wheel will rotate with the shaft **32**. The other wheel will preferably have a sleeve, not shown, disposed at its center and that sleeve will be locked to the shaft **32** by the washers **40** and the nuts **42** adjacent that wheel. However, the wheel will, itself, be free to rotate relative to that sleeve. If desired, however, both wheels **38** could be locked for rotation with the shaft **32**.

The bars **20**, **22** and **24** and the fasteners **25** constitute an open-work, broad, flat frame. The spacing between the bars **20** enables those bars to define longitudinally-extending guideways. In the particular modification shown in the drawing, there are five bars **20** and those bars define four guideways. This frame has the downwardly depending plates **30**, and those plates rotatably support the shaft **32** with the wheels **38** thereon. This frame can be pushed forwardly along the ground by applying a pushing force to the handle **28**, or it can be pulled rearwardly along the ground by applying a pulling force to the handle **28**. The engagement between the handle **28** and the socket **26** will be snug and therefore the handle **28** will not accidentally slip out of the socket **26** when the frame is pulled rearwardly.

The numeral **44** denotes a cam which is mounted on the shaft **32**. Washers **46** will be disposed at the opposite face of the cam **44** and nuts **48** will be threaded onto the shaft **32** and will lock the cam **44** into binding engagement with the shaft **32**. In the particular modification shown, there will be four such cams **44**, and each of those cams will be in substantial registry with one of the guideways defined by the bars **20**. As shown, the cams **44** are circular disks that are equipped with pins **50**. The pins **50** are eccentric of the shaft **32** and they extend outwardly from one face of the cams **44**. Each of the cams **44** has an elliptical plate **54** rotatably mounted on the pin **50** of that cam; and each of the cams **44** has a roller **52** rotatably mounted on the pin **50** of that cam. A cotter key or other fastener will be used to prevent accidental separation of the roller **52** and the elliptical plate **54** from the pin **50**. A washer **55** will be disposed between the roller **52** and the cotter key to permit free rotation of the roller **52** relative to the pin **50**. An arcuate slot **56** is provided in each of the cams **44**, and a screw **58** extends through the slot **56** and seats in the elliptical plate **54**. Tightening of the screw **58** will lock the elliptical plate **54** relative to the cam **44**, while loosening of that screw will permit movement of the elliptical plate **54** relative to the cam **44**. The arcuate slot **56** facilitates the rotation of the elliptical plate **54** about the pin **50**, but it limits that rotation to desired values. Specifically, the arcuate slot **56** will permit the trailing edge of the elliptical plate **54** to project outwardly beyond the periphery of the cam **44** but will not permit the leading edge of that elliptical plate to project outwardly beyond the periphery of that cam.

The numeral **60** denotes a number of bars that can be mounted in the guideways defined by the bars **20** and which can slide back and forth in those guideways. Each of the bars **60** has a downwardly depending plate **62** adjacent the forward end thereof and it has a second downwardly depending plate **64** spaced rearwardly of the plate **62**. The downwardly dependent plates **62** and **64** are spaced apart to define a vertically-extending slot **63**. This slot is wide enough to receive the roller **52** of the cam **44** associated with that bar **60**. Fasteners **66**, such as nails, rivets or screws, secure the plates **62** and **64** to a shoulder on the bar **60**. Recesses **68** are formed in the confronting faces of the plates **62** and **64**, and those recesses are contiguous with the vertical slot defined by those plates. Moreover, those recesses are in register with the shaft **32** and permit full movement of the bar **60** relative to that shaft. In the absence of the recesses **68**, the forward and rearward movement of the bar **60** would be limited by the engagement of the plates **62** and **64** with the shaft **32**. The roller **52** will be in register with the plates **62** and **64** and will engage the confronting faces of those plates. Consequently, rotation of the shaft **32** will force the bars **60** to move forwardly and rearwardly as the eccentrically-disposed roller **52** moves with the cam **44**. If the elliptical plate **54** is in the position shown in Fig. 5, that plate will not directly engage the bar **60**. However, if the elliptical plate **54** has its trailing end projecting outwardly beyond the periphery of the cam **44**, as shown in Fig.

6, that elliptical plate will strike a lower face on the bar 60 and raise that bar upwardly. Thus, the cams 44 can provide either forward and rearward movement of the bar 60 or can provide forward, upward and rearward movement of the bars 60.

The bars 60 have elongated grooves 70 in the upper faces thereof. These grooves will be parallel to the axes of the bars 60. A pin 72 is provided at the leading end of each bar 60, and that pin will overlie and rest upon the upper surfaces of the bars 20 which define the guideway for that bar 60. The pin 72 thus coacts with the bars 20 of that particular guideway to support that particular bar 60. Each of the bars 60 has a pin 74 extending transversely of the groove 70 in the top of that bar. Each of the bars 60 also has a pin 76 extending transversely of that bar and the outer ends of the pins 76 extend into elongated grooves in the confronting faces of the bars 20. These confronting faces of the bars 20 define the guideways for the bars 60, and the grooves 78 are in the faces of those guideways. The pins 76 will extend into the grooves 78 and will coact with those grooves to support the rear ends of the bars or slides 60. The elongated grooves 78 extend all the way to the rear ends of the bars 20, and the pins 76 enter the grooves 78 at those ends. The pins 76 will coact with the grooves 78 to prevent accidental separation of the slides 60 from the frame of the toy. However, the pins 76 will coact with the grooves 78 to permit the forward ends of the slides to move up and down as those slides are caused to "jump" by the engagement of the trailing edges of the elliptical plates 54 with the lower faces of the slides 60.

The numeral 80 denotes miniature animals which can be releasably secured to the slides 60. These animals will fit snugly into the elongated grooves 70 in the upper faces of the slides 60, and will thus be held against accidental separation from those slides. However, the miniature animals 80 can be separated from the slides 60 by applying a firm pull to those animals.

The bars 20, 22 and 24 will be assembled as a rigid frame. The side plates 30 will be rigidly secured to that frame, as will the socket 26. The cams 44 will be rigidly secured to the shaft 32 and at least one of the wheels 38 will be rigidly secured to that shaft. Thereafter, the fasteners 35 will be removed to permit the two parts of each of the side plates 30 to be separated to receive the shaft 32. Thereafter, the two parts of each of the side plates 30 will be moved into engagement with each other and the fasteners 35 re-seated. The slides 60 will then be assembled with the frame of the toy by rotating those slides so the pins 76 are down and so the pins 72 are disposed well above the level of the pins 76. Thereupon, the pins 76 are inserted in the rear ends of the grooves 78 and are moved forwardly of those rear ends. Then, the slides 60 are rotated downwardly, until the vertical slot defined by the plates 62 and 64 is in register with the shaft 32. That shaft will be rotated until the roller 52 of the cam in register with each particular slide is directly above or directly below the shaft 32. Thereupon it is a simple matter to rotate that slide downwardly to the position shown in Fig. 3. Gravity will maintain the slides in that position and thus prevent accidental separation of the slides from the frame of the toy.

The miniature animals can be secured to the side 60 by inserting the lower portions thereof in the grooves 70 of those slides. Thereafter the child need merely push or pull the toy to attain the attractive and interesting reciprocation of those miniature animals. If the child wishes to have the animals reciprocate while moving along at the same level, the child leaves the elliptical plate 54 in the position shown in Figs. 3 and 5. However, if the child wishes to see the animals "jump" as they move back and forth, the child loosens the screw 58 and rotates the elliptical plate 54 to the position shown in Fig. 6, and then tightens the screw 58. Where this is done, the trailing edge of the elliptical plates 54 will strike the bottom faces of the slides 60 once each revolution of the shaft 32 and will force the forward ends of the slides to move upwardly. Once the elliptical plate 54 has passed out of engagement with the lower face of the slide 60, that slide will move downwardly to the position shown in Fig. 3 under the action of gravity.

Openings 82 and 84 are provided in one of the outermost bars 20 of the toy provided by the present invention. Those openings are disposed adjacent the rear and front of that bar. An opening 86 is provided in the centrally-located bar 20 and that opening is located at the approximate longitudinal center of that bar. Openings 88 are provided in the upper surfaces of the outermost bars 20, and those openings are located approximately midway of the length of those bars.

Cylindrical posts 90 are disposable with their lower ends in the openings 88 in the outermost bars 20 of the frame of the toy. Those posts can be inserted in those openings and will snugly fit those openings. However, those posts can be removed from those openings whenever desired. The posts 90 support a pivot 92 which has spacers 94 thereon. These spacers are made in the form of sleeves, and they will preferably be fixed on the pivot 92. The posts 90 will hold the pivot 92 so it is disposed transversely of the guideways defined by the bars 20. The pivot 92 can support bars 96; those bars having grooves 98 in the upper faces thereof. Those bars also have notches 100 in the under faces thereof and those notches telescope down over the pivot 92. These notches coact with the pivot 92 to prevent forward and rearward movement of the bars 96.

Each of the bars 96 has two arms 102 that extend downwardly from the bottom face of that bar. These arms are disposed on opposite sides of the notch 100 in the bar 96 and they telescope over the pivot 92. The spacing between the arms 102 is preferably slightly less than the diameter of the pivot 92. Thus, to assemble the arms 102 with the pivot 92, the arms 102 have to be distorted slightly. Once the arms 102 have passed downwardly below the pivot 92 the arms will spring back together and prevent accidental separation of the arms 102 and the pivot 92. This is desirable since it avoids accidental separation of the bars 96 from the pivot 92. The confronting faces of the arms 102 are flattened at 104 adjacent the upper ends of those arms. This avoids any binding of the pivot 92 by the arms 102. The confronting faces of the arms 102 are also cut away as at 106, to form a recess. This recess will accommodate the pin 74 in the particular slide 60 with which the arms 102 coact. Again, the spacing between the inner faces of the arms 102 is less than the diameter of the pin 74 so the arms 102 must be distorted slightly to enable the recess defined by the cut away portions at 106 to telescope over the pin 74. This need of distorting the arms 102 is desirable since it prevents accidental separation of those arms from the pins 74. The grooves in the upper faces of the bars 96 can receive the miniature animals 80.

The posts 90 can releasably secure the pivot 92 to the frame of the toy, and the various bars 96 can be releasably secured to the pivot 92. The arms 102 will act as connectors between the bars 96 and the slides 60. As the slides move back and forth while the toy is moved along the ground, those slides will act through the pins 74 and the arms 102 to oscillate the bars 96. The pins will successively move from one side to the other of the pivot 92 and will thus make the bars 96 simulate a series of seesaws. The slides 60 will be staggered and thus the bars 96 will be staggered. This staggering of the bars 96 further enhances the attraction and interest of the toy.

The numeral 108 denotes a post which has a slot 110 in the upper end thereof. The lower end of the post 108 can fit snugly within either of the openings 82 or 84. The

slot in the upper end of the post **108** receives a roller **112** and that roller is mounted on a pivot **114** which spans the slot **110**. The roller **112** can rotate freely relative to the post **108**. Two such posts **108** will be provided for the toy of the present invention. A post **116** will be mounted in the central opening **86**, and that post will snugly fit the opening **86**. A pivot bracket **120** has pins **122** thereon, and those pins will extend into openings **123** in the side plate **30** shown in Fig. 1. The engagement between the openings **123** and the pins **122** will be snug, but the pivot bracket **120** can be selectively secured to or separated from that side plate **30**. A pivot **124** is carried on the pivot bracket **120**, and a wheel **126** is rotatably supported on the pivot **124**. This wheel will be held in register with the ground-engaging wheel **38** shown in Fig. 1, and it will be driven by that wheel. The wheel **126** will, in turn, engage the bottom of a circular disk **128** and will drive that disk. The disk will be supported by the upper surface of the driving wheel **126** and by the upper surfaces of the rollers **112** of the posts **108**. The disk **128** will have a central opening which will telescope over the upper end of the post **116**. The post **116** will confine the disk **128** for rotation but will permit that disk to rotate freely relative to that post. Grooved bars **130** will be mounted on the upper surface of the disk **128**, and those grooved bars can releasably support miniature animals **80**. The periphery of the driving wheel **126** will preferably be of a material that has a high coefficient of friction. Moreover, that material should be resilient. Where this is done, the driving wheel **126** can receive power from the ground-engaging wheel **38** and can transmit that power to the disk **128**. Movement of the toy forwardly and rearwardly will cause the ground-engaging wheel **38** to rotate the driving wheel **126**, and that wheel will drive the circular disk **128** about the central post **116**.

The toy provided by the present invention can be moved forwardly or rearwardly to yield the desired actions in any of its three phases of operation. Specifically, the toy can be moved forwardly or backwardly to simulate racing animals, it can be moved forwardly and backwardly to simulate animals that will "jump," it can be moved forwardly and backwardly to simulate a seesaw, and it can be moved forwardly and backwardly to simulate a merry-go-round. However, if desired, the toy can be moved continuously in a forward or in a rearward direction. Where the toy is intended to simulate the "jumping" of animals, it will seem more natural to push the toy continuously in a forward direction.

The toy provided by the present invention is interesting and entertaining to children but it also teaches them mechanical aptitude, dexterity and principles. Hence the toy is educational as well as entertaining.

Whereas the drawing and accompanying description have shown and described a preferred embodiment of the present invention, it should be apparent to those skilled in the art that various changes may be made in the form of the invention without affecting the scope thereof.

What I claim is:

1. An action toy that comprises a frame, a shaft rotatably supported by said frame, a plurality of ground-engaging elements, at least one of said ground-engaging elements being connected to said shaft to drive said shaft, a guideway on said frame, a slide that is confined by said guideway for reciprocable movement, a second guideway on said frame, a second slide that is confined by said guideway for reciprocable movement, interacting surfaces that reciprocate the first said slide relative to the first said guideway whenever said shaft rotates, and a second set of interacting surfaces that reciprocate said second slide relative to said second guideway whenever said shaft rotates, said interacting surfaces being rollers that move with but are eccentric of said shaft and being slots in said slides that are transverse of said guideways, said slots having recesses contiguous therewith that are parallel to said guideways and that are in register with and can accommodate said shaft.

2. An action toy that comprises a frame, a shaft rotatably supported by said frame, a plurality of ground-engaging elements, at least one of said ground-engaging elements being connected to said shaft to drive said shaft, a guideway on said frame, a slide that is guided by said guideway for reciprocable movement, a second guideway on said frame, a second slide that is guided by said second guideway for reciprocable movement, a set of interacting surfaces that reciprocate the first said slide relative to the first said guideway whenever said shaft rotates, a second set of interacting surfaces that reciprocate said second slide relative to said second guideway whenever said shaft rotates, a pivot that is mounted on said frame and is transverse of said guideways, a bar that is mounted on said pivot and is rotatable about said pivot, a connector that extends between said bar and the first said slide to oscillate said bar about said pivot as the first said slide reciprocates, a second bar that is mounted on said pivot and is rotatable about said pivot, and a second connector that extends between said second bar and said second slide to oscillate said second bar as said second slide reciprocates.

3. An action toy that comprises a frame, a shaft rotatably supported by said frame, a plurality of ground-engaging elements, at least one of said ground-engaging elements being connected to said shaft to drive said shaft, a guideway on said frame, a slide that is guided by said guideway for reciprocable movement, a second guideway on said frame, a second slide that is guided by said second guideway for reciprocable movement, a set of interacting surfaces that reciprocate the first said slide relative to the first said guideway whenever said shaft rotates, a second set of interacting surfaces that reciprocate said second slide relative to said second guideway whenever said shaft rotates, a pivot that is mounted on said frame and is transverse of said guideways, a bar that is mounted on said pivot and is rotatable about said pivot, a connector that extends between said bar and the first said slide to oscillate said bar about said pivot as the first said slide reciprocates, a second bar that is mounted on said pivot and is rotatable about said pivot, and a second connector that extends between said second bar and said second slide to oscillate said second bar as said second slide reciprocates, said connectors being arms that are secured to said bars and that engage and are moved by pins on said slides.

4. An action toy that comprises a frame, a shaft rotatably supported by said frame, a plurality of ground-engaging elements, at least one of said ground-engaging elements being connected to said shaft to drive said shaft, a guideway on said frame, a slide that is guided by said guideway for reciprocable movement, a second guideway on said frame, a second slide that is guided by said second guideway for reciprocable movement, a set of interacting surfaces that reciprocate the first said slide relative to the first said guideway whenever said shaft rotates, a second set of interacting surfaces that reciprocate said second slide relative to said second guideway whenever said shaft rotates, a pivot that is mounted on said frame and is transverse of said guideways, a bar that is mounted on said pivot and is rotatable about said pivot, a connector that extends between said bar and the first said slide to oscillate said bar about said pivot as the first said slide reciprocates, a second bar that is mounted on said pivot and is rotatable about said pivot, and a second connector that extends between said second bar and said second slide to oscillate said second bar as said second slide reciprocates, said sets of interacting surfaces holding said slides in staggered relation, and said connectors and said bars responding to said staggered relation to hold said bars in staggered relation.

5. An action toy that comprises a frame, a shaft ro-

tatably supported by said frame, a plurality of ground-engaging elements, at least one of said ground-engaging elements being connected to said shaft to drive said shaft, a guideway on said frame, a slide that is guided by said guideway for reciprocable movement, a second guideway on said frame, a second slide that is guided by said second guideway for reciprocable movement, a set of interacting surfaces that reciprocate the first said slide relative to the first said guideway whenever said shaft rotates, a second set of interacting surfaces that reciprocate said second slide relative to said second guideway whenever said shaft rotates, a post releasably secured to said frame, a second post releasably secured to said frame, a pivot that is carried by said posts and extends transverseiy of said guideways, bars that are mounted on said pivot and are rotatable relative to said pivot, and connectors that selectively connect said bars with said slides so reciprocation of said slides will oscillate said bars.

6. An action toy that comprises a frame, a shaft rotatably supported by said frame, a plurality of ground-engaging elements, at least one of said ground-engaging elements being connected to said shaft to drive said shaft, a guideway on said frame, a slide that is confined by said guideway for reciprocable movement, interacting surfaces on said shaft and said slide that reciprocate said slide whenever said shaft rotates, a pivot that is mounted on said frame and is transverse of said guideway, a bar that is mounted on said pivot and rotates relative to said pivot, and a connector that extends between said bar and said slide to oscillate said bar as said slide reciprocates.

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