Feb. 14, 1950 M. LEIT ET AL 2,497,265

CONVERTIBLE ROCKER OR WHEEL BORNE TOY

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Fig. 1.

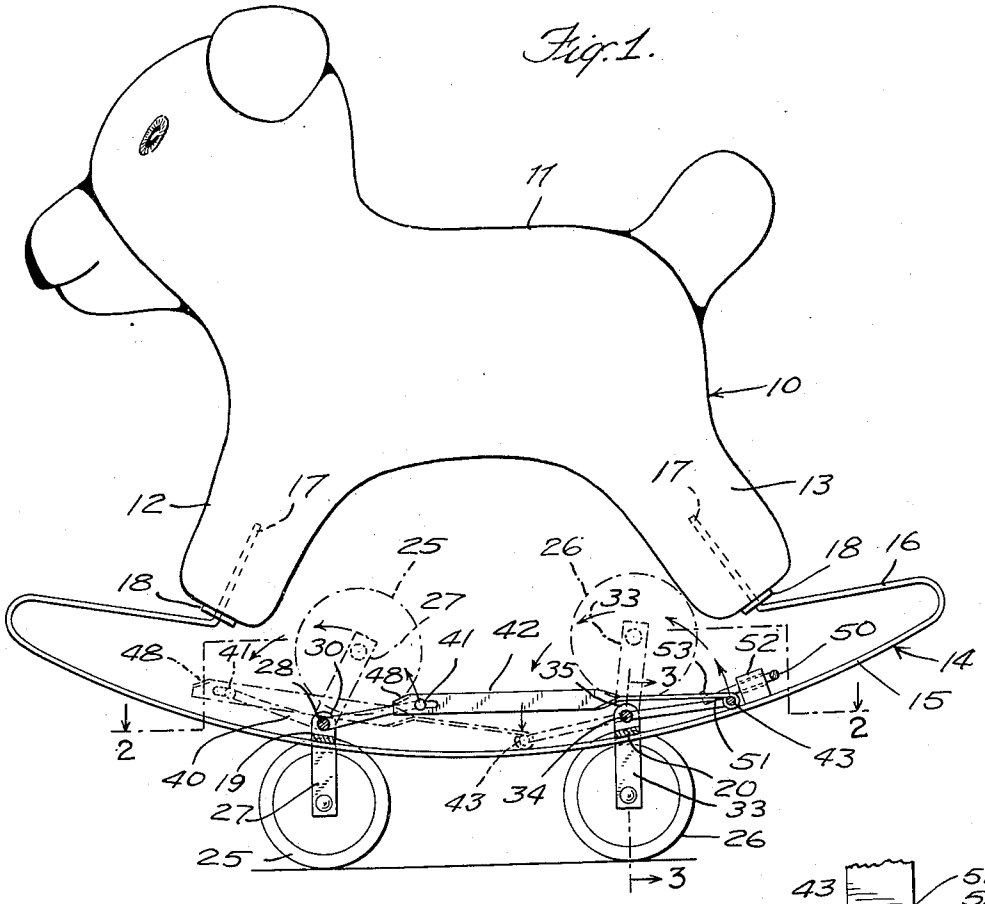


Fig. 2.

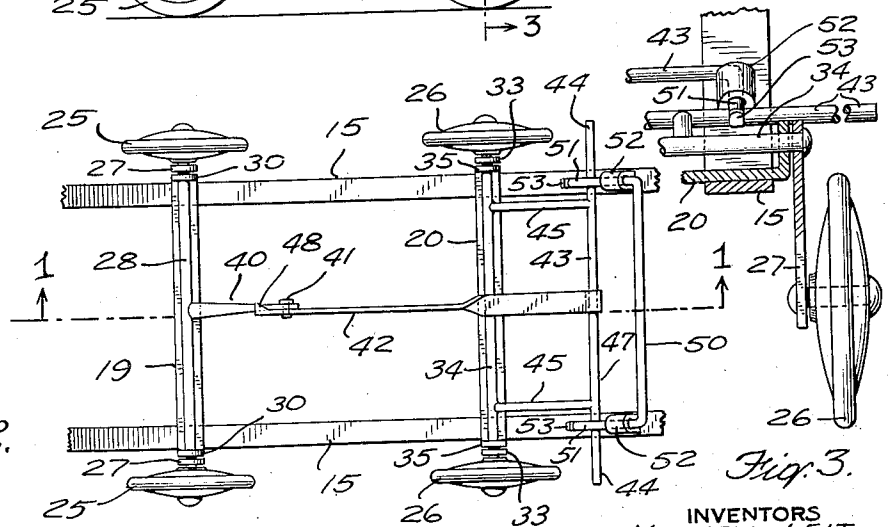


Fig. 3.

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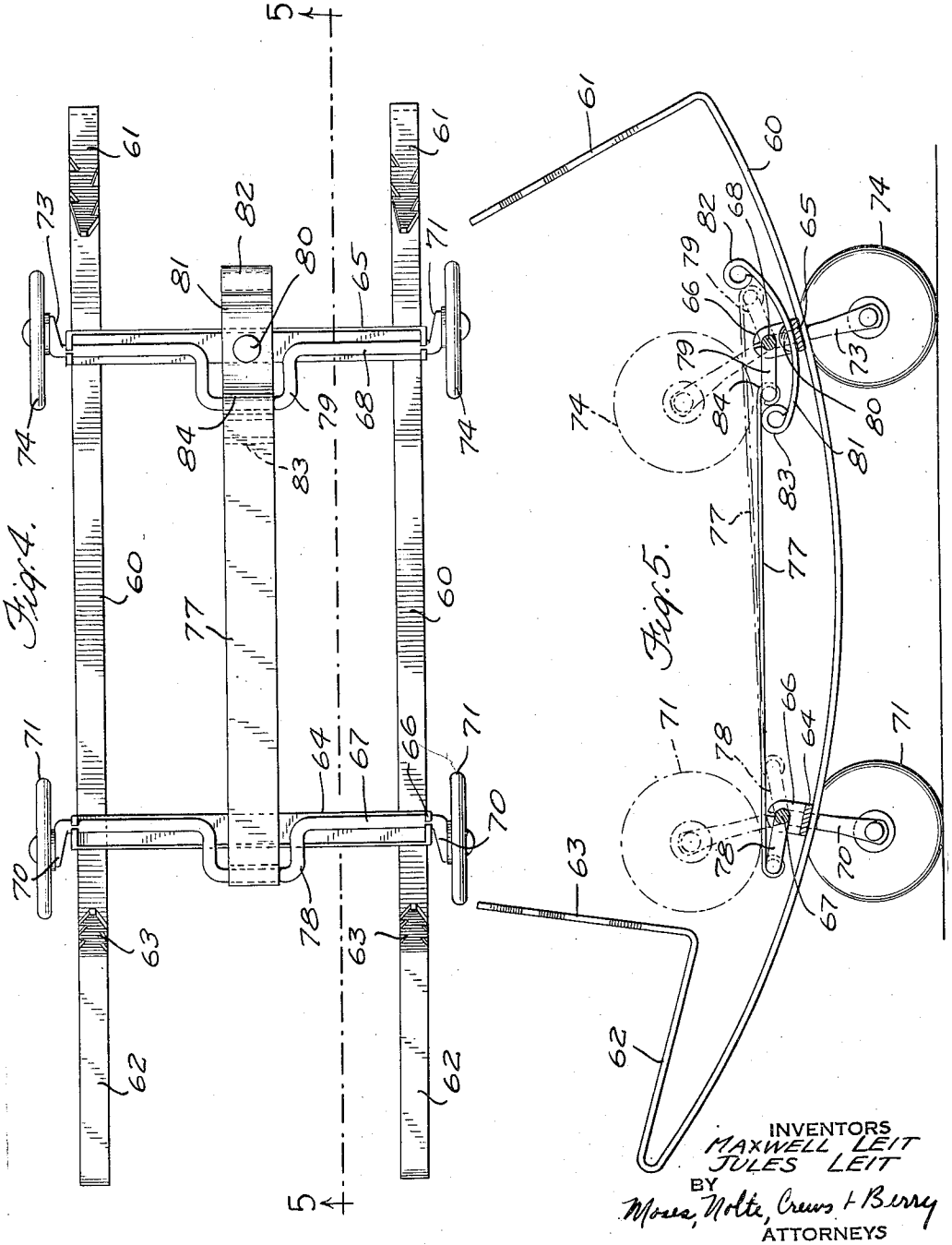


Fig. 4.

Fig. 5.

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Fig. 6.

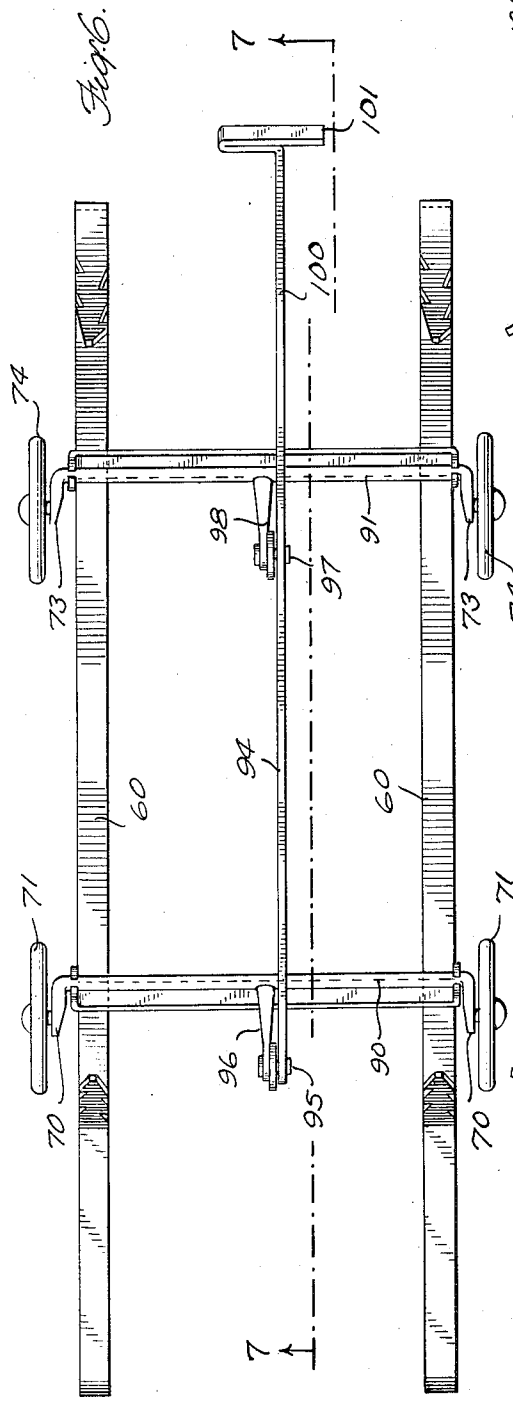
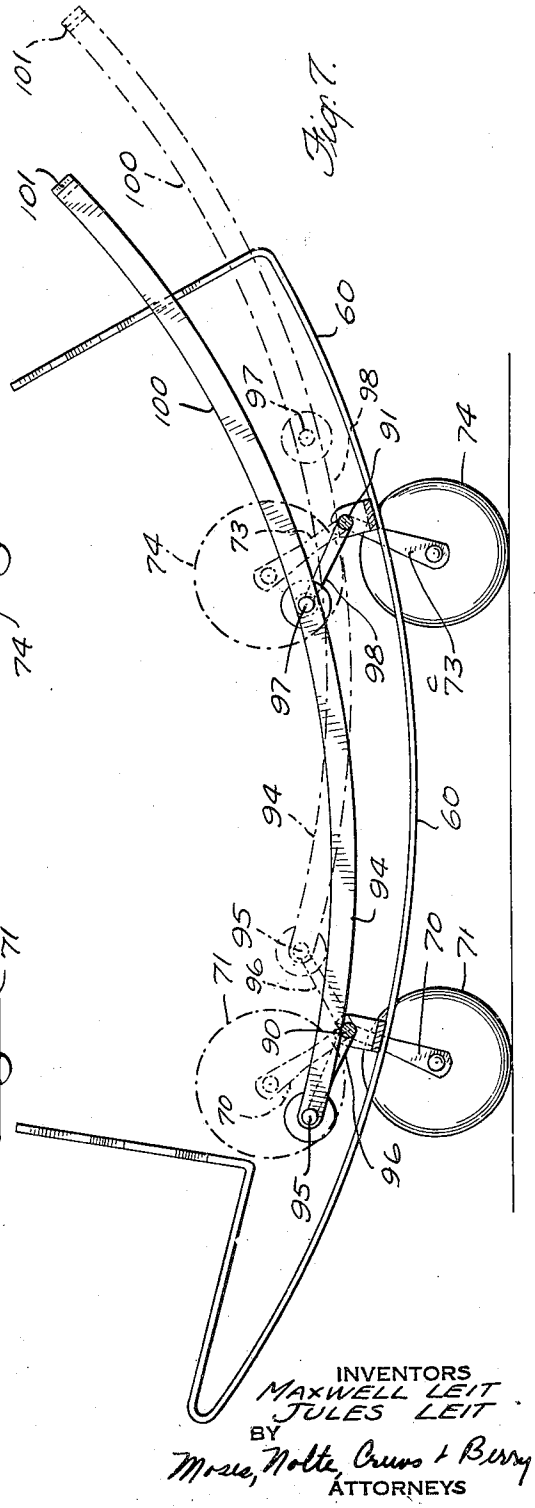


Fig. 7.



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CONVERTIBLE ROCKER OR WHEEL BORNE TOY

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Application August 29, 1946, Serial No. 693,736

11 Claims. (Cl. 46—106)

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The present invention relates to toys, and has for some of its objects, the provision of a toy having a new and improved supporting structure which is of simple but light construction, and which can be easily and conveniently manipulated to convert the toy selectively either into a rocker toy or into a wheel borne toy.

Another object of the present invention is to provide a toy having new and improved supporting structure which can be operated by a single simple manipulation to convert said toy either to a rocker toy or a wheeled toy, and which can be locked in either one of its converted positions.

In carrying out certain features of the present invention, the toy, which may, for example, be an animal toy, is mounted on a frame structure which comprises a rocker device and a supporting wheel device. The wheel device is mounted in such a way that it can be selectively moved into or out of operative position by a simple manipulation. All of the wheels are interconnected by a linkage which can be easily operated even by a child.

As another feature, the wheel device is such that it can be easily locked into operative position when the toy has been converted to function as a wheeled toy.

Various other objects, features and advantages of the invention will be apparent from the following particular description, and from an inspection of the accompanying drawings, in which:

Fig. 1 shows a form of toy partly in side elevation and partly in longitudinal section taken along the line 1—1 of Fig. 2, and shows in full lines the supporting structure converted for operation as a wheeled toy, and in dot and dash lines the wheeled device retracted into inoperative position to permit the toy to be operated as a rocker;

Fig. 2 is a section of the toy taken along the lines 2—2 of Fig. 1;

Fig. 3 is a section of the toy taken along the lines 3—3 of Fig. 1;

Fig. 4 is the top plan view of another form of toy supporting structure embodying the present invention;

Fig. 5 is a section of the supporting structure taken along the lines 5—5 of Fig. 4, and showing in full lines the wheels extended for operations, and showing in dot and dash lines the wheels retracted for rocking operations;

Fig. 6 is a top plan view of still another form of toy supporting structure embodying the present invention; and

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Fig. 7 is a section of the structure taken along the lines 7—7 of Fig. 6, and showing in full lines the wheels extended for supporting operations, and showing in dot and dash lines the wheels retracted for rocker operations.

Referring to Figs. 1 to 3, the toy is shown comprising a toy animal 10, which may be of a size to permit it to be mounted by a child, and which may be stuffed or made in any other suitable manner. This toy 10 has a body portion 11, a pair of forelegs 12, and a pair of hind legs 13, and is supported on a bed structure, which comprises a rocker 14 formed by a pair of curving bars 15, the end sections of which are reversely bent, and the outer ends of which form posts 17 on which the legs 12 and 13 of the toy are impaled and fastened. Suitable shoulder members or collars 18 may be provided in connection with these posts 17, to engage the legs of the toy and limit its position with respect to the supporting structure. The two curving rocker pieces 15 are rigidly connected together by means of a pair of crossbars 19 and 20 riveted, welded or otherwise rigidly fastened thereto.

The supporting structure of the toy also includes two pairs of wheels 25 and 26. The axially aligned wheels 25 are each journalled to one end of an arm 27, the other end being rigidly fixed to a rock shaft 28 journalled in bearings 30 forming upward end flange extensions of the cross frame bar 19.

Each of the other axially aligned wheels 26 is similarly journalled to one end of an arm 33, the other end of which is rigidly fixed to a rock shaft 34 journalled in bearings 35 forming upward end flange extensions of the other crossbar 20.

As a feature of the present invention, the four wheels 25 and 26 are adapted to be moved together by a simple manipulation either into the extended operative position shown in full lines in Fig. 1, in which position the toy can be rolled as a wheeled device, or into the retracted inoperative position shown in dot and dash lines, in which position the toy will rest on the rocker pieces 15, and therefore serve as a rocking device. For that purpose, the rock shaft 28 has rigidly secured thereto intermediate its ends one end of a crank arm 40, having at its other or outer end a pivotal pin and slot lost motion connection 41 with one end of a link bar 42, the other end having a rotatable sleeve connection to a rod 43 extending crosswise of the rocker pieces 15, and forming part of a crank structure 47 rigidly secured to the rock shaft 34. This crank struc-

ture 47 comprises the cross rod 43 and a pair of rods 45 rigidly interconnecting said cross rod and the rock shaft 34.

The cross rod 43 has its end sections 44 projecting outwardly from the outer sides of the curved rocker pieces 15, to serve as handles.

To prevent the crank arm 40 and the link bar 42 from extending beyond an acute angular relationship shown in full lines, said link bar has an end corner 48 bent over to engage the edge of said crank arm.

In order to lock the wheels 25 and 26 in their extended operative position shown in full lines in Figs. 1–3, there is provided a locking device comprising a U-shaped yoke 50 having transverse side arms 51, which are slidable in respective guide brackets 52 secured to the upper sides of the curved rocker pieces 15 respectively, and which are provided with offset ends 53 serving as limiting stops to prevent withdrawal of said side arms from said guide brackets. These arms 51 may be slid in the guide brackets 52 so as to extend over the handles 44 of the crank structure 47, when the wheels 25 and 26 are extended into the operative position shown in full lines in Figs. 1 and 2. The locking yoke 50 may be pulled out, so that its side arms 51 clear the handle 44, whereby these handles are permitted to be moved into position to retract or raise the wheels 25 and 26 into the dot and dash line position shown, above the curved rocker pieces 15.

In one limiting position of the handles 44, when the wheels 25 and 26 are in lowered operative supporting position, said handles rest on the upper faces of the curved rocker pieces 15 on one side of the rock shaft 34. In the opposite limiting position, when the wheels 25 and 26 are raised into inoperative position, the handles 44 rest on the upper faces of the curved rocker pieces 15, but on the opposite side of the rock shaft 34. In this manner, the rocker pieces 15 serve to limit and predetermine the two adjusted positions of the supporting structure.

In the full line position shown in Figs. 1, 2 and 3, the wheels 25 and 26 depend from the rocker structure 15, and the yoke 50 is in locking position with respect to the handles 44. In this position, the toy is wheel borne.

When it is desired to convert the toy into a rocker, the yoke 50 is pulled to the right (Fig. 1), until its side arms 51 clear the handles 44. Then either handle 44 may be grasped and pulled upwardly. This upward movement of either handle 44 causes a counterclockwise rotation of the crank 47, and thereby rotates the rock shaft 34 counterclockwise (Fig. 1). At the same time, this movement of the handle 44 is transmitted through the link 42 to the crank 40 and to the rock shaft 28, so that this rock shaft is similarly rotated counterclockwise (Fig. 1). The counterclockwise rotation of the two rock shafts 28 and 34 causes the wheel bearing arms 27 and 33 to be moved counterclockwise, so that the wheels 25 and 26 are swung bodily counterclockwise about the axes of the rock shafts 28 and 34, until these wheels are in the raised or retracted position above the curved rocker pieces 15 shown in dot and dash lines in Fig. 1. In this retracted position of the wheels 25 and 26, the toy can be operated as a rocker. Also, in this retracted position, the linkage system interconnecting the wheels with the rock shaft are almost in dead center position, so that they are self-locked in this position, and can only be released by manipulation of the handles 44 in a clockwise direction from the dot and dash line position shown in Fig. 1.

Figs. 4 and 5 show a modified form of construction which, although employable in connection with a large toy of the type which can be mounted by the child, is particularly applicable to a miniature form of toy. In this form of construction, the bed or frame supporting structure of the toy comprises the curved rocker pieces 60, the rear ends of which respectively define upwardly extending posts 61 serrated to provide firm anchorage into a leg of the toy to be attached to the structure. The front parts of the curved rocker pieces 60 have reversely curved sections 62 terminating in upward posts 63, also serrated for firm anchorage into the leg structures of the toy to be supported. The two curved rocker pieces 60 are rigidly interconnected by means of the crossbars 64 and 65. These cross frame bars 64 and 65 have ears or bracket extensions 66 forming bearings for rock shafts 67 and 68. The rock shaft 67 has rigidly secured to the ends thereof beyond the outer sides of the rocker pieces 60 the arms 70, rotatably carrying at their outer ends the wheels 71. The rocker shaft 68 has similarly secured rigidly to the ends thereof beyond the outer sides of the rocker pieces 60 the arms 73, rotatably carrying at their outer ends the wheels 74.

The two rock shafts 67 and 68 are interconnected for rotation together by means of a link bar 77 having rotatable sleeve connections at its ends to double crank conformations 78 and 79 formed intermediate of the ends of said rock shafts.

For locking the wheels 71, 74 into either operative or inoperative position, there is provided a leaf spring 81 fixed intermediate its ends to the crossbar 65 by a rivet 80, and having its ends curved to form catches 82 and 83. The end of the link 77 engaging the double crank 79 has a sleeve conformation 84, which embraces said double crank 79 with a free rotatable fit, and which is adapted to be snapped into engagement with the spring catches 82 or 83, and held in locked position thereby in either one of the extreme positions of the wheels 71 and 74.

In operative extended position of the wheels 71 and 74 shown in full lines in Figs. 4 and 5, the linkage interconnecting the two rock shafts 67 and 68 is almost in dead center position, and the sleeve 84 has a friction engagement with the catch 83, so that the wheels 71 and 74 will be locked in position for wheeled operation of the toy. In order to convert the toy into a rocker, all that is necessary is to force the link 77 upwardly (Fig. 5), and then actuate said link to rotate the rock shafts 67 and 68 until the sleeve 84 is snapped into frictional locking engagement with the catch 82. During this manipulation, the wheels 71 and 74 will be carried clockwise (Fig. 5), until they are in the retracted raised position shown in dot and dash lines above the curved rocker pieces 60. In this retracted position, the toy can be operated as a rocker.

In the form of the invention shown in Figs. 6 and 7, the rocker structure is similar to that shown in Figs. 4 and 5. The wheels 71 and 74 are similarly supported by the arms 70 and 73 from rocker shafts 90 and 91. The two rocker shafts 90 and 91 are interconnected for operation in unison by means of a rod 94 pivotally connected at 95 to a crank arm 96 rigid with the rock shaft 90 intermediate the ends thereof, and pivotally connected at 97 to a crank arm 98 rigidly

fixed to the rock shaft 91 intermediate its ends. The link 94 extends beyond the pivot connection 97 to form a handle 100, the end being reversely bent to form a transverse hand grasping section 101. The link 94 is curved as shown.

In the extended operative position shown in Figs. 6 and 7, the linkage interconnecting the two rock shafts 90 and 91 is almost in dead center position, so that the wheels 71 and 74 are locked against retraction. The retraction of the wheels 71 and 74, however, can be effected by proper manipulation of the handle 100.

In the retracted inoperative position shown in dot and dash lines, the wheels 71 and 74 are also locked, but can be released for restoration into operative position by proper manipulation of the handle 100, as for example, by pressing down on the end of said handle. The handle 100 bearing against the rock shaft 91 during this manipulation will move the linkage out of substantially dead center position, so that the wheels 71 and 74 can be restored into operation position shown in full lines.

As many changes can be made in the above device, and many apparently widely different embodiments of this invention can be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A toy comprising a supporting rocker, a pair of parallel rock shafts supported on said rocker transversely thereof, and each extending from one side of the rocker to the other, a crank rigid with each of said rock shafts midway thereof, a single link pivotally interconnecting said cranks, a pair of arms rigidly connected at one end to the ends of each shaft, and a supporting wheel rotatably mounted at the other end of each of said arms, whereby said wheels may be operated simultaneously either into operative supporting position or into retracted inoperative position.

2. A toy as described in claim 1, comprising releasable means for locking said wheels in operative position.

3. A toy as described in claim 1, one of said cranks having rigid therewith and transversely of said rocker a handle projecting outwardly beyond one side of said rocker.

4. A toy as described in claim 1, one of said cranks having rigid therewith and transversely of said rocker a handle projecting outwardly beyond one side of said rocker, said rocker serving as a stop to limit said handle in both of said positions of said wheels.

5. A toy as described in claim 1, one of said

cranks having rigid therewith a bar extending transversely of said rocker and projecting at both ends beyond the sides of said rocker to define handles, said toy comprising locking means for said wheels in operative position comprising a U-shaped slide bar, and guide brackets for the side arms of said U-shaped bar connected to said rocker, said side arms being adapted to be slid over said handles to lock said handles, or slid beyond said handles to clear said handles for manipulation.

6. A toy as described in claim 1, comprising a releasable spring snap lock for locking said wheels in one of said positions.

7. A toy as described in claim 1, comprising a leaf spring having a snap lock catch conformation, said cranks and said link forming part of a linkage means having a member movable therewith upon movement of said wheels between limiting positions, and adapted to be automatically latched to said catch conformation when said wheels reach one of said positions.

8. A toy as described in claim 1, said link having a loose sleeve connection with one of said cranks, said toy comprising a leaf spring having a snap lock catch conformation at each end, said sleeve connection being adapted to be latched to said catch conformations respectively when said wheels reach said positions.

9. A toy as described in claim 1, said link extending lengthwise beyond one of said cranks to define a handle by which the toy can be wheeled.

10. A toy as described in claim 1, in which said cranks and said link extend substantially in dead center relationship in either of said positions, whereby said cranks and said link are substantially self-locked in said positions and can be released only by manipulation of said cranks or said link.

11. A toy as described in claim 1, in which the intermediate sections of said shafts are offset to form said cranks.

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