Feb. 15, 1966 C. L. DOERR 3,235,250

CARROUSEL

Filed April 17, 1962 2 Sheets-Sheet 1

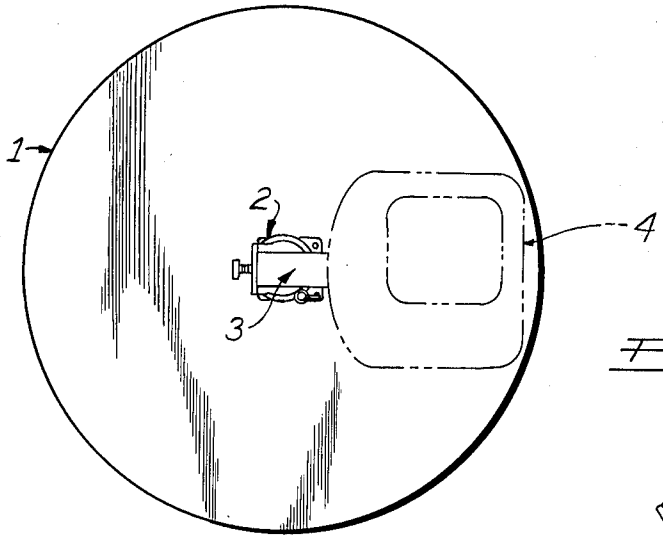

Fig. 1

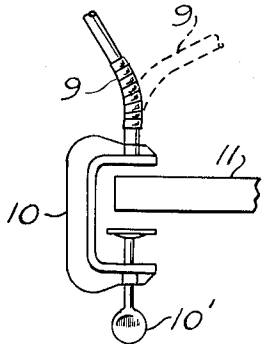

Fig. 3

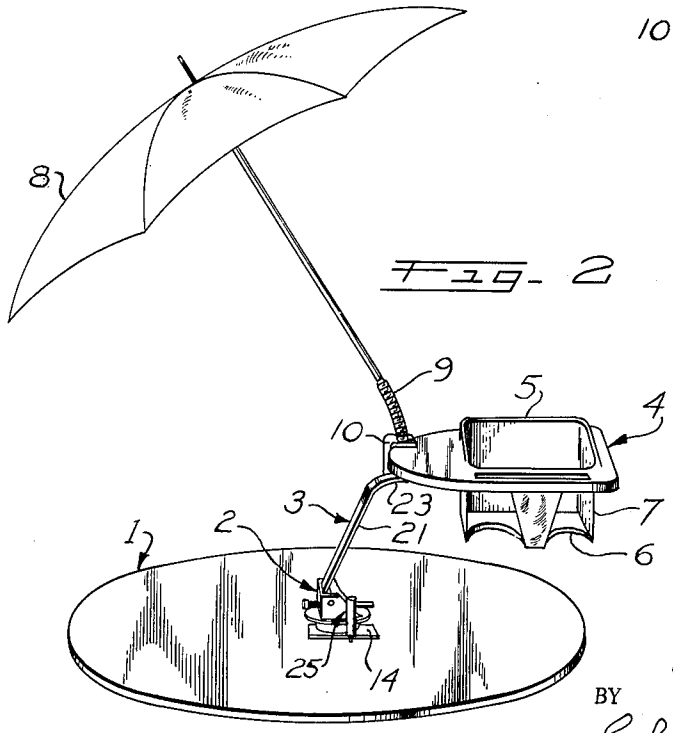

Fig. 2

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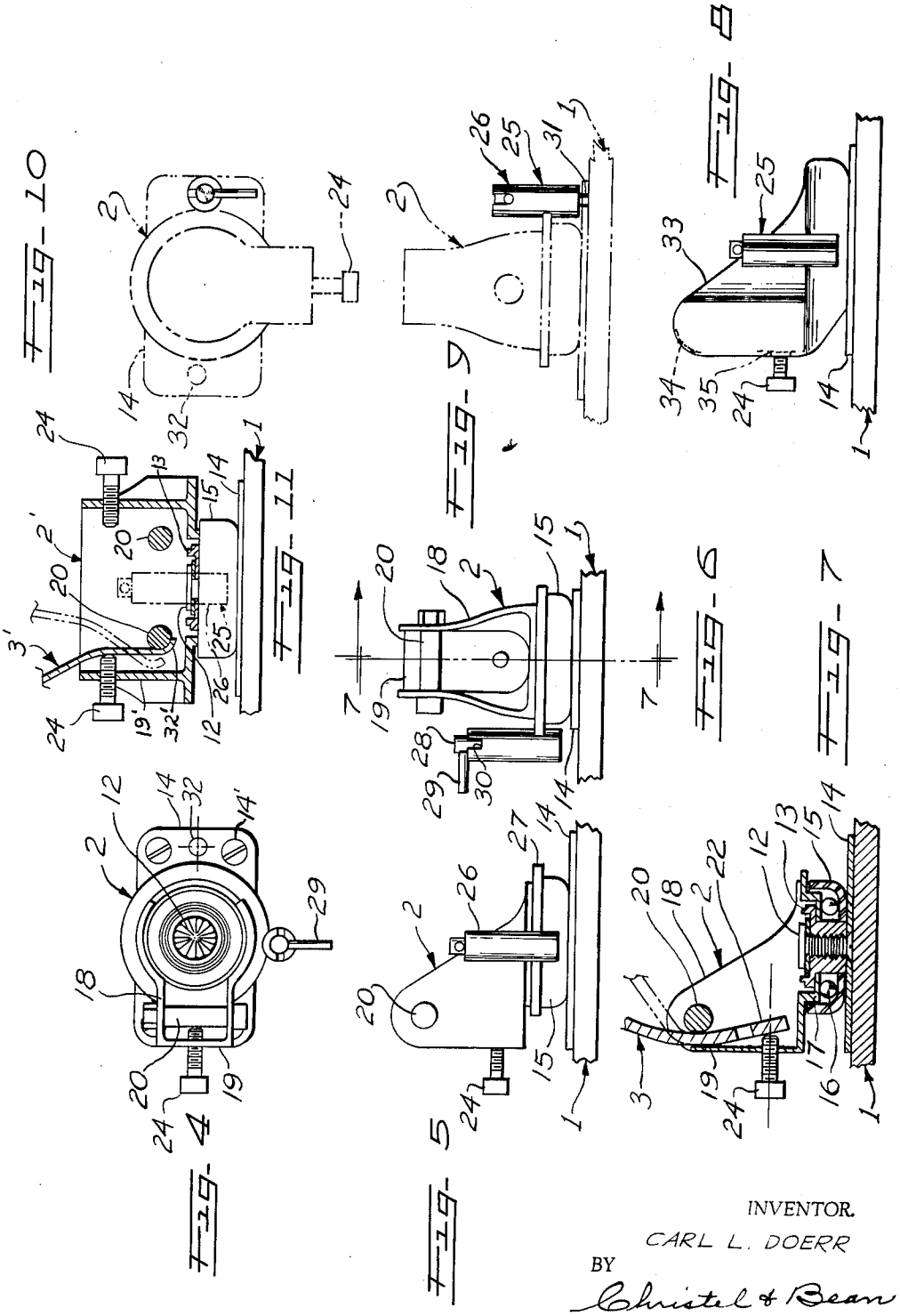

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3,235,250

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8 Claims. (Cl. 272—30)

This invention relates to a new and useful holding and amusement device particularly adapted for babies and small children.

A primary object of my invention is to provide a child's seat which is spring mounted on a base for rotation about a normally upright axis, whereby a child in the seat is permitted to move around and thereby observe all of his surroundings, together with a brake device out of reach of a child in the seat and selectively operable to releasably lock the seat in a given rotary position, the spring mounting permitting up and down movement of the seat while it is being held against rotation as well as when it is being moved around.

Another object of my invention is to provide a child's seat which is spring mounted on a base for movement about a normally upright axis, together with protective cover means enclosing and thereby shielding the working parts of the rotary mounting.

Still another object of my invention is to provide a child's seat which is spring mounted on a base for up and down movement and rotary movement about an upright axis, together with means for selectively varying the height of the seat above the base substantially without varying the spring rate.

An additional object of my invention is to provide the foregoing in a corrousel device having two seats, to accommodate two children.

Yet another object of my invention is to provide the foregoing in a simple and relatively inexpensive construction which is durable and dependable in operation.

The device of my invention comprises a carrousel characterized, in one aspect thereof, by the provision of a base, a leaf spring supported at one end on the base for rotation about a normally generally upright axis, the leaf spring being inclined relative to the axis of rotation, and a seat carried by the leaf spring at the other end thereof.

In another aspect thereof, a carrousel constructed in accordance with my invention is characterized by the provision of a base, swivel means mounted on the base for rotation relative thereto about a normally generally upright axis, a leaf spring arm having one end engaging the swivel for rotation therewith about the axis, the arm being inclined relative to the axis, a seat carried by the arm at the other end thereof, and brake means selectively operable to releasably lock the swivel against rotation.

In yet another aspect thereof, a carrousel constructed in accordance with my invention is characterized by the provision of a base, a swivel device mounted on the base for rotation about a normally generally upright axis, the swivel having an upstanding wall and a fulcrum spaced therefrom, a leaf spring lever arm having a main body portion inclined relative to the axis and at least one end portion inclined relative to the main body portion, the one end portion of the arm being slip-fitted between the wall and the fulcrum with the arm bearing against the fulcrum, a seat carried by the other end portion of the arm, and a shield covering the swivel device, the shield having a slot for the arm and otherwise substantially completely enclosing the swivel device.

The foregoing and other objects, advantages and characterizing features of a carrousel constructed in accordance with my invention will become clearly apparent from the ensuing detailed description of two, presently contemplated illustrative embodiments thereof, taken in conjunction with the accompanying drawings illustrating the same, wherein like reference numerals denote like parts throughout the various views and wherein:

FIG. 1 is a planned view of a carrousel of my invention, with the seat being shown in phantom;

FIG. 2 is a perspective view thereof, showing a parasol attached to the seat;

FIG. 3 is a fragmentary, detailed view, on an enlarged scale, of the parasol attachment;

FIG. 4 is a plan view of the swivel device, brake and mounting plate, with the brake device in disengaged position;

FIG. 5 is a side elevational view thereof;

FIG. 6 is an end elevational view thereof;

FIG. 7 is a transverse sectional view thereof, taken about on line 7—7 of FIG. 6, and showing the leaf spring arm engaged in the swivel device;

FIG. 8 is a side elevational view thereof, with a shield covering the swivel device;

FIG. 9 is a fragmentary elevational view, and FIG. 10 a plan view, showing the brake device in locking position, with the swivel device and locking plate indicated in phantom for ease of illustration; and

FIG. 11 is a view like FIG. 7, but showing a modification.

Referring now in detail to the illustrative embodiment of my invention depicted in FIGS. 1–10 of the accompanying drawing, there is shown a base **1**, on which is mounted a swivel device **2**, from which extends a leaf spring arm **3**. A seat **4** is carried at the outer end of arm **3**, over base **1** adjacent the outer periphery thereof. Seat **4** comprises a frame **5** and a bottom **6** suspended from the frame by a fabric body **7**, and is adapted to receive a small child. A parasol **8** has a flexible connection **9** to a clamp **10** having a screw **10'** for releasably clamping the parasol to a shelf-like extension **11** of frame **5**.

Thus, parasol **8** is readily removed when it is not needed, or desired, as when the device is used indoors and the flexible connection **9** enables it to be moved to substantially any position over base **1**, as indicated by the broken line showing in FIG. 3.

Base **1** can comprise a molded, fiberglass reinforced plastic construction, or it can be made of any other suitable material. Swivel device **2** is mounted on base **1** for rotation about a normally, vertically upright axis, by a bolt **12** (FIGS. 4 and 7), extending through a mounting post **13** and secured to base **1** by a plate **14** fastened on the base as by screws **14'** (FIG. 4). A cup **15** containing bearings **16** encircles post **13**, and the bottom wall **17** of swivel device **2** is journalled thereon, being held in place on bearings **16** by an overhanging shoulder on post **13**. Swivel device **2** is thereby journalled for free rotation about the axis of bolt **12**.

Swivel device **2** includes a pair of opposite side walls **18** joined to an upstanding end wall **19**. Side walls **18** support a fulcrum in the form of a bolt or pin **20** which extends therebetween in spaced relation to end wall **19**, at an elevation above the bottom wall **17**. Fulcrum **20** is offset to one side of the axis of bolt **12**. Leaf spring arm **3** has an elongated main body portion **21** and an end portion **22** which is mounted in swivel device **2** and is inclined at an angle to main body portion **21**. The opposite end portion **23** of arm **3**, carrying seat **4**, also is inclined relative to main body portion **21**, but at a different angle than the lower end portion **22**.

The lower end portion **22** is slip-fitted into swivel device **2**, by simple insertion between the upstanding end wall **19** and fulcrum **20**, with arm **3** extending across fulcrum **20** and bearing thereagainst. The arm main body portion **21** is inclined, relative to the swivel axis, and extends across the axis to support seat **4** in a position spaced above the outer, circumferential portion of base **1**.

Spring arm **3** resiliently yields, when a child is placed

in seat 4, and permits a vertical bouncing motion by a child in the seat. For best effect, the child's feet should touch base 1, and in order to adjust the normal, unloaded height of seat 4 above base 1 to accommodate childen of different weights and heights I provide means for varying the inclination of arm 3. Such means comprise, in the example shown, a spacing, adjusting screw 24 carried by wall 19 and engaging the lower end 22 of arm 3 at a point spaced below fulcrum 20. Arm end 22 is held against screw 24 by the force of gravity on the rest of the arm, and by the weight of the seat. As a result, the spacing between wall 19 and arm end 22, at that point, can be varied by merely turning screw 24. This will vary the angle of inclination of the arm main body portion 3 relative to the axis of rotation, and thereby raise or lower the elevation of the unloaded seat above the base.

This adjustment is readily accomplished, and does not materially affect the spring rate of the spring. Any change in spring rate which might be produced is inconsequential and purely incidental. Also, note that spring arm 3 is not fastened down in swivel device 2, but merely slip-fits therein, whereby these parts are readily assembled and then disassembled for carrying the device from place to place.

In addition to the adjustment provided by member 24, seat 4 can be removed from the outer arm end 23 to which it will have a nut and bolt or other releasable type of fastening, whereupon arm end 23 can be inserted in the swivel instead of the end 22. The different inclination of end 23 relative to main body portion 21, will incline main body portion 21 at a quite different angle, as indicated in phantom in FIG. 7, and this position can be varied by adjusting screw 24, as previously described. Both ends are apertured, to receive the seat fastening.

Thus, the child is permitted a springing, up and down movement in the seat, and also is permitted a rotary movement about the swivel axis. In this way, the child's field of vision is not confined, and he can freely follow his mother, for example, as she moves about the room.

However, there will be times when it is desired to hold the seat in one rotary position. This may occur, for example, when the child is being fed in the seat, or if the child desires to remain in a certain position but is unable to do so of his own accord. Therefore, I provide a brake 25 which, in the form illustrated, comprises an upright, tubular housing 26 carried by a lateral flange 27 around swivel 2. A lock bolt 28 is vertically slidable within housing 26, and has a lateral actuating arm 29 adapted to rest on the upper end of housing 26, as shown for example in FIGS. 4, 5, 6 and 8, to hold the lock bolt elevated above the plate 14.

However, upon turning arm 29 and bolt 28 approximately 90°, the arm 29 is aligned with one of the notches 30 in housing 26, permitting the bolt to drop and engage its reduced end portion 31 in one of the apertures 32 (FIGS. 4 and 10) in plate 14, as shown in FIG. 9. Swivel 2, arm 3 and seat 4 then are held against rotary movement. Of course, a lock plate providing a greater, or lesser number of fixed positions can be used.

Thus, there is provided a readily actuated brake or lock, which normally is held out of engagement with its lock plate and which, being positioned at the swivel device 2, is well beyond the reach of a child positioned in the seat 4. If limited rotary movement is desired, the lock bolt can be dropped to engage either side of plate 14, as shown in FIGS. 1 and 2.

To shield children from the working parts of the swivel, I provide a cover 33, which can be of plastic or any other suitable material. Cover 33 comprises a shroud around the swivel device, and has a slot 34 in its upper end, for passage of arm 3, and an opening 35 for passage of adjusting screw 24. Otherwise, cover 33 completely encloses the swivel device as illustrated in FIG. 8.

Thus, it is seen that my invention fully accomplishes its intended objects. The carrousel is simple in construction, easily collapsed and assembled, sturdy and dependable, and a very adaptable means for holding and entertaining young children.

FIG. 11 shows a modification particularly adapted for use with two springs and seats, although equally usable with a single spring and seat. In this instance there is provided a double swivel device 2' having opposed end walls 19' each carrying an adjusting screw 24. A pair of pins 20 are provided in special relation to walls 19', and a pair of spring arms 3' can have their ends fitted between the associated end walls 19' and pins 20.

In this instance, the spring arms 3' do not extend across the pins 20, as in the embodiment of FIGS. 1–10, because they would interfere with each other. Instead, each arm 3' will bear at its end 32' against pin 20, and at a point spaced from pin 20 against screw 24. Adjustment of screws 24 will vary the inclination of the associated arm 3', only one of which is shown, as previously described.

Each arm 3' has a curved terminal 32' which extends under pin 20 and ensures that arm 3' will not inadvertently pull out of the swivel 2'. To remove the arm, it must first be tilted away from normal, to the position shown in phantom in FIG. 11. This provides a desirable factor of safety.

While I have disclosed and described in detail only one, presently preferred embodiment of my invention, that has been done by way of illustration only and without thought of limitation. Variations and modifications will naturally occur to those skilled in the art, without departing from the spirit of my invention, and they are intended to be included within the scope of the appended claims. Obviously, seats other than that shown, including horses and the like, can be used.

Having fully disclosed and described my invention, together with its mode of operation, what I claim as new is:

1. A carrousel comprising a base, a swivel device mounted on said base for rotation about a normally generally upright axis, said swivel device having an upstanding wall and a fulcrum spaced therefrom, a leaf spring lever arm having a main body portion inclined relative to said axis and opposite end portions inclined relative to said main body portion, one end portion of said arm being slip-fitted between said wall and said fulcrum with said arm bearing against said fulcrum, and a seat carried by the other end portion of said arm, wherein said other end portion of said arm is inclined relative to said main body portion at an angle different from the angle of inclination of said one end portion relative thereto, either of said end portions being engageable in said swivel device to provide different inclinations of said main body portion relative to said axis.

2. A carrousel comprising a base, a swivel device mounted on said base for rotation about a normally generally upright axis, said swivel device having upstanding side walls joined to an upstanding end wall, a fulcrum extending between said side walls in spaced relation to said end wall, a leaf spring lever arm having a main body portion and at least one end portion inclined relative to said main body portion, said one end portion of said arm being slip-fitted into said swivel device by insertion between said end wall and said fulcrum with said arm bearing against said fulcrum and with said main body portion of said arm inclined relative to said axis upwardly from said swivel device, and a seat carried by the other end portion of said arm.

3. A carrousel as set forth in claim 2, together with spacing means offset from said fulcrum and extending between said one end portion of said arm and said end wall, said spacing means being adjustable to selectively vary the spacing between said end wall and said one end portion of said arm at a point offset from said fulcrum, thereby to vary the angle of inclination of said main body

portion relative to said axis and thereby vary the elevation of said seat relative to said base.

4. A carrousel as set forth in claim 3 wherein said spacing means comprises an adjusting screw carried by said end wall and engaging said one end portion of said arm.

5. A carrousel as set forth in claim 2 together with a lock bolt carried by said swivel device, a lock plate carried by said base, said lock bolt being engageable with said plate to releasably lock said swivel device against rotation about said axis relative to said base, and means for releasably holding said bolt out of engagement with said plate.

6. A carrousel as set forth in claim 2, wherein said one end portion of said arm curves beneath said fulcrum to prevent inadvertent removal of said one arm end portion from between said wall and said fulcrum.

7. A carrousel as set forth in claim 2, wherein said end wall is offset to one side of said axis, and wherein said arm main body portion is inclined upwardly across said axis.

8. A carrousel comprising a base, a swivel device mounted on said base for rotation about a normally generally upright axis, said swivel device having upstanding side walls and opposite end walls on opposite sides of said axis, a pair of fulcrums extending between said side walls in spaced relation to said end walls, a pair of leaf spring arms each having a main body portion and an end portion inclined relative thereto, said end portion of one of said arms being slip-fitted into said swivel device by insertion between one of said end walls and the fulcrum adjacent thereto, said end portion of the other of said arms being slip-fitted into said swivel device by insertion between the other of said end walls and the fulcrum adjacent thereto, said arms bearing against said fulcrums with said main body portions of said arms inclined relative to said axis upwardly away from said swivel device and from each other, and seats carried by said arms adjacent the other end portions thereof.

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RICHARD C. PINKHAM, *Primary Examiner.*