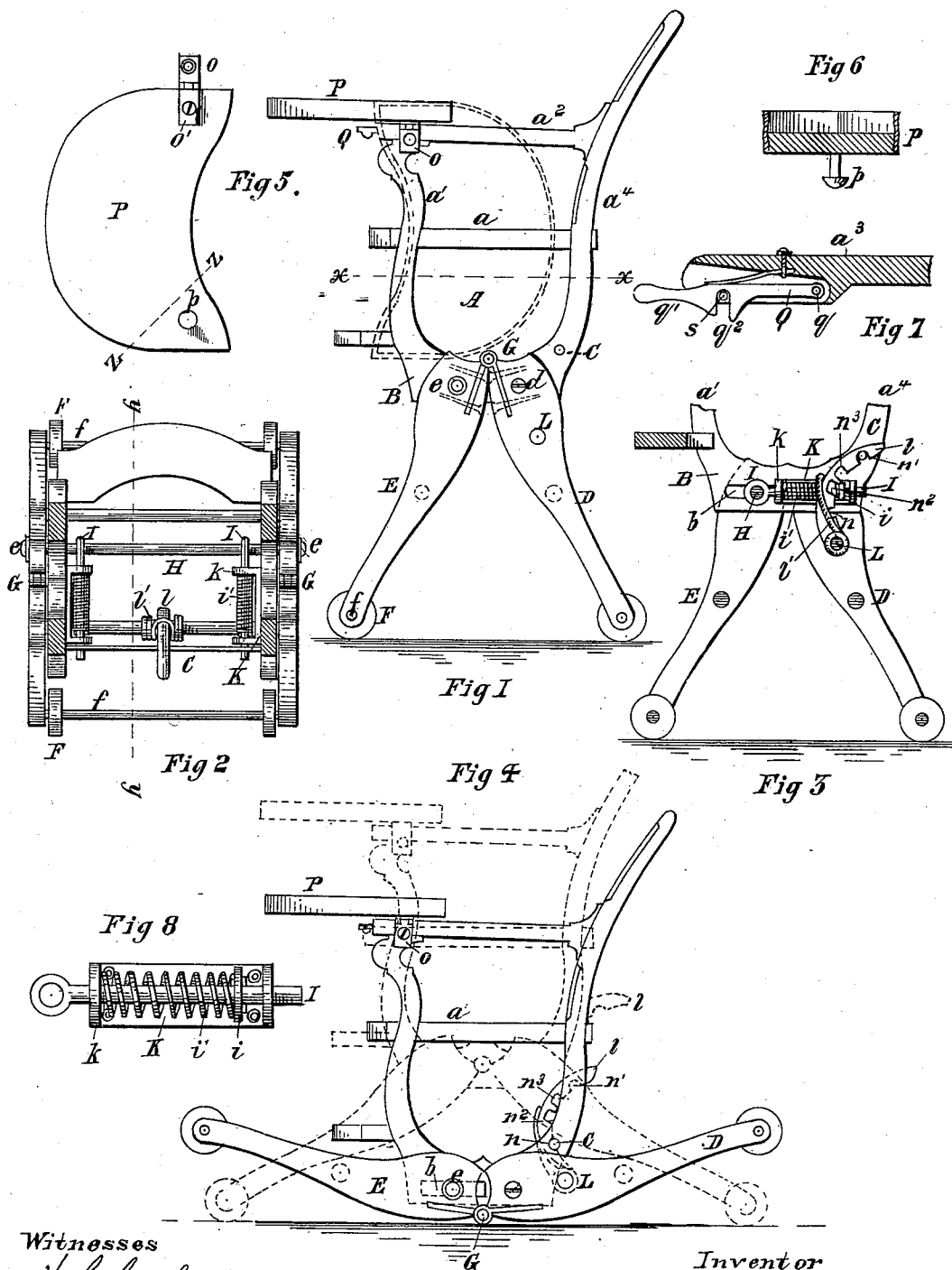


(Model.)

J. W. KENNA.
CHILD'S CHAIR AND CARRIAGE.

No. 254,023.

Patented Feb. 21, 1882.



Witnesses

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CHILD'S CHAIR AND CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 254,023, dated February 21, 1882.

Application filed October 14, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOSEPH W. KENNA, of the city of Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in a Child's Chair and Carriage, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved chair and carriage arranged as a high chair. Fig. 2 is a horizontal section of the same on the line xx in Fig. 1, the point of view being above the section line. Fig. 3 is a vertical section on the line yy in Fig. 2, the point of view being on the left of the section line. Fig. 4 is a side elevation of the same structure arranged as a rocking-chair, the carriage arrangement being shown in dotted lines. Fig. 5 is a bottom plan view of the shelf or table which is attached to the chair. Fig. 6 is a section on the line zz in Fig. 5. Fig. 7 is an enlarged section of the front portion of that arm to which the shelf is detachably fastened, showing the device for fastening it. Fig. 8 is an enlarged side elevation of the device for regulating the position of the bearings of the front supports.

The same letters denote the same parts in all the figures.

My invention relates to adjustable chairs for children; and it consists in the several devices and combinations of devices, which will be hereinafter fully described, and pointed out in the claims.

In the drawings, A represents a chair-body, provided at or near its lowest part with two parallel side bars, B, and with a rod or stretcher, C, extending from side to side, a little higher up, and having the seat a placed as far above the lowest point as it is desirable to have the seat of the rocking-chair above the ground. In other respects the chair-body may be of any desired construction. As represented in the drawings, its general form is square, its front posts, a' , extending above the seat, so as to support arms a^2 and a^3 , and also supporting a foot-rest below the seat, and both front and back posts being set on the upper edges of the side bars, B.

On the outer side of each side bar are set, by pivotal attachments independent of each other, a pair of supports, D and E, both of the same shape and set with their similar edges facing opposite ways, the edges toward each other following each a wave-line convex toward the other support in the upper or pivoted part and concave toward the other support in the lower or outer part. The shape of the farther edge of each support is modified only by a gradual increase in the breadth of the support toward the pivoted part. The degree of curvature is preferably so adjusted to the length of the curve as to make the least divergence of the supports at their lower or farther ends somewhat greater than the depth of the chair-seat from front to back, in order that when the chair is occupied the weight in all positions may be entirely within the line of support.

Each of the supports has at its lower or farther end, and preferably on the inner side, a wheel, F, the preferable mode of attachment being by an axle-rod, f , connecting each pair of wheels and turning with them in bearings in the supports.

The supports on each side of the structure are connected to each other at the extreme ends of their inner edges by hinges G, which are otherwise independent of the chair-body.

Each of the rear supports D is pivoted at d a little below its upper or inner end to a fixed point on the side bar, B, a little nearer to the lower edge of the side bar than to the inner edge of D, so that when the supports are turned end to end, as shown in Fig. 4 of the drawings, the inner edge of D will rest on the floor and the lower edge of B be held a little above it. At the corresponding point, e , on the front supports E these are connected by a transverse rod or stretcher, H, passing through the horizontal slot b in each side bar at the same height as the fixed pivot d . The length of this slot is not less than the extreme range of necessary variation in the horizontal distance of the two pivotal points d and e from each other, which is evidently least when the line drawn from each to the center of the hinge is most nearly perpendicular and greatest when that line is horizontal, and these changes in the relative position

of the hinge and the pivot are as evidently incidental to the turning of the supports on their pivots.

The rod H is rigidly affixed to the supports D, but has itself a rotary motion in two rings, i , which are respectively formed or set in the forward ends of two rods, I. These rods are supported in a horizontal position each on the inner side of one of the side bars, B. The means of support shown in the drawings is a metal plate, K, fastened on the side bar, and having its ends k bent at right angles to the rest of the plate, and perforated so as to afford staple-like rests for the rod I, in which it may have a play backward and forward, the forward rest being a little back of the back end of the slot b and the ring i always projecting in front of that rest, so as to be opposite the slot. The length of the rod I should of course exceed the distance between the two rests by not less than the distance through which the pivot-rod H has to move back and forth in the slot b .

Around the rod I and between the rests k is a coiled spring, i' , secured at its rear end to the rod, and confined in front by the rest k . The elasticity of this spring tends to keep it expanded the whole length of the space between the two rests k , and thus to hold the rod I, and consequently the pivot-rod H, as far back as possible, in which position the bearings of the two supports D and E will be at their least distance apart. This device is shown in Figs. 2, 3, and 8.

The two back supports D are joined a short distance below their pivots d , but far enough to avoid collision with the chair-body in any position of the supports, by a rod or stretcher, L, on which is pivoted a curved arm, l , which, when above the rod L, has its concavity backward. The curved arm l is of a length exceeding the greatest distance between the rods L and C. It is held with its concavity pressing backward against C by a spring, l' , the ends of which are coiled around the rod L, while its middle part extends upward in a loop against the convexity of the arm l . The arm is notched at n and n' , near its inner and outer ends, respectively, so as to catch on the rod C when the supports D and E are in their position of greatest divergence, and when that divergence is least it is also notched in one or more places, as indicated by the letters n^2 and n^3 , about midway between n and n' , the number of these notches depending on the number of intermediate positions in which it may be desired to adjust the structure. The inner surfaces of the notches are preferably somewhat curved. This device is shown in Figs. 2 and 3 and partly by dotted lines in Fig. 4.

On the outer side of one arm, a^2 , of the chair-body is attached the lower wing, o , of a hinge, to whose upper wing, o' , is pivoted a shelf or table, P, so as to turn freely in a plane parallel to that of o' . When the wing o' is turned into a vertical position the shelf can be turned on its pivot, so as to hang at the side of the chair out of

the way, as shown by dotted lines in Fig. 1. This arrangement is especially useful when it is desired to sit the child in its high chair at the common table. The opposite arm, e^2 , is grooved on its inner side and forward end to receive a catch, Q, which is pivoted in the groove at its rear end, q , so as to be capable of a horizontal motion. Its front end projects a little beyond the arm, so as to form a handle, q' . A spring, r , set in the bottom of the groove, tends by its elasticity to force the catch outward. Its motion in this direction is limited by a pin, s , passing vertically through a slot, q^2 , in the catch. The catch is widest where this slot is cut in it, and considerably wider at the back edge of the slot than at the front. From each edge it tapers toward the ends. From that part of the shelf P which is directly over this slot when the shelf is in position for use a pin, p , projects downward, so as to engage in the slot, its horizontally-projecting head p' also preventing any upward motion of the shelf. By pressing the handle q' the catch is forced into the groove and the pin p disengaged, so that the shelf may be lifted up or turned aside. To catch it in position for use again it may be brought into a level position, so that the pin p will be in front of the slot q^2 . Then by moving the shelf backward the pin will exert sufficient pressure on the tapering portion of the edge of the catch to force the latter back into the groove, from which it will be thrown out again by the spring r the instant that the pin comes opposite the mouth of the slot. The increased width of the catch behind the slot is sufficient to arrest the pin, and thus prevent any further backward motion of the shelf, even without the return of the catch under pressure of the spring. This device is shown in Figs. 6 and 7.

To arrange the structure for use as a high chair, the bent arm l being kept disengaged from the rod C, the supports D and E are brought into the position of least divergence or nearest approach to perpendicularity, when, of course, the rod L connecting the back supports D will be at its greatest distance from the rod C. The arm l being let go, its uppermost notch, n' , will catch on the rod C, and the structure will be securely held in position. The horizontal distance between the pivots of the supports D and E being least in this position, the elasticity of the spring i' , drawing the rod I backward, will also tend to maintain this arrangement.

The conversion of the structure into a carriage consists simply in lowering the chair-body and extending the base from front to rear. In order to do this the arm l must be pressed forward until the rod C is clear out of the notch n' . Then, the arm l being still held clear of the rod C by one hand, the supports D and E are made to diverge by downward pressure on the chair-body until they are brought into the required position, when, the arm l being again let go, the spring l' will force

it back, so that the rod C will engage with one of the intermediate notches on the arm *l* and the structure will be held in the carriage position.

5 By having a sufficient number of notches on the arm *l* the supports D and E may be set at any desired position between their least and greatest divergence, as they continue to rest on the wheels almost to the latter point.

10 To convert the structure into a rocking-chair the arm *l* is again detached, when, the movable bearing having passed its point of greatest distance from the other, the tendency of the spring *v* in drawing them together is to increase the divergence of the supports, and thus lower the structure until it rests on the convex edges of the supports near their hinged ends, as shown in Fig. 4, while the lowest notch, *n*, of the arm *l* catches on the rod C.

20 The middle notches in the arm *l* being made somewhat larger than is absolutely necessary to the reception of the rod C, the slight upward- and -downward motion which is thus made possible for C, in combination with the elasticity of the springs *v* and *v'*, makes the support of the seat, when the structure is used as a carriage, elastic, and thus gives all the advantages of a carriage mounted on springs. As the balance of the chair-body remains unchanged in the process of transformation from one adjustment to another, the changes may all be conveniently made without removing the child from the chair.

35 The axle-rod *f*, turning in bearings in the supports D, facilitates in an important degree the conversion of the chair from one position to another. By placing one foot on the rod it may be held still, and then becomes a pivot, on which the supports E turn readily from a more to a less inclined position, or the reverse.

40 It is obvious that several modifications of detail might be made without altering the principle of the arrangements which I have described. I have set forth in every case what I deem the best mode of applying the principle in detail.

45 The bent arm *l* might be turned so as to catch on the pivot-rod H of the front supports E, instead of on the stretcher C, and would thus brace the chair more strongly; but it would not be so convenient to regulate by the hand, and the bracing, as shown, is amply strong for a child's chair.

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

1. In an adjustable chair, one pair of supports, in combination with independent movable bearings provided with springs for the pur-

pose of holding them at a fixed distance from the points of attachment of the other pair of supports, substantially as described.

2. A chair-body, in combination with a pair of front supports and a pair of back supports pivotally attached near their upper ends to its lower part, each pair independently of the other, but hinged together, as described, one pair having its pivotal motion on fixed points and the other in horizontally-movable bearings provided with springs tending to hold them at a fixed distance from the pivotal points of the first pair, substantially as described.

3. A chair-body whose frame extends below the seat and is provided near its lowest part with a transverse stretcher, in combination with a pair of front supports and a pair of back supports pivotally attached to the lower part of the body independently of each other, but hinged together, as described, one pair having its pivotal motion on fixed points and provided with a stretcher carrying a spring-catch, (arranged to engage at several points in its length with the stretcher on the chair-body,) the other pair having its pivotal motion in horizontally-movable bearings provided with springs tending to hold said bearings at a fixed distance from the fixed pivotal points, substantially as and for the purposes described.

4. The chair-body A, provided with the side bars, B, and stretcher C, in combination with the supports D and E, shaped and hinged together as described, pivots *d*, pivotal rods H, rods I, provided with the rings *i* and springs *v*, stretcher L, bent arm *l*, and spring *v'*, substantially as and for the purposes described.

5. A chair-body provided with a transverse stretcher, C, in combination with pivoted supports D and E, the stretcher L, bent arm *l*, and spring *v'*, substantially as and for the purposes described.

6. A chair-body, in combination with the pivoted supports D, supports E, hinges G, rod H, and rods I, provided with the ring *i* and spring *v*, substantially as and for the purposes described.

7. In a child's chair, the pivoted shelf P, provided with the pin *p*, in combination with the grooved chair-arm *a*, the pin *s* set therein, and the spring-catch Q pivoted therein, tapering as described, and having the slot *q* arranged to engage with the pins *s* and *p*, the back margin of said slot projecting beyond the front margin, substantially as and for the purpose described.

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