(No Model.) 2 Sheets—Sheet 1.

A. E. McDONALD.

INFANT'S SEAT.

No. 289,115. Patented Nov. 27, 1883.

Fig. 1.

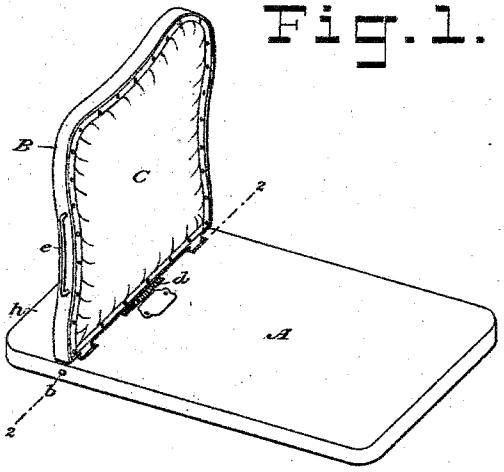


Fig. 2.

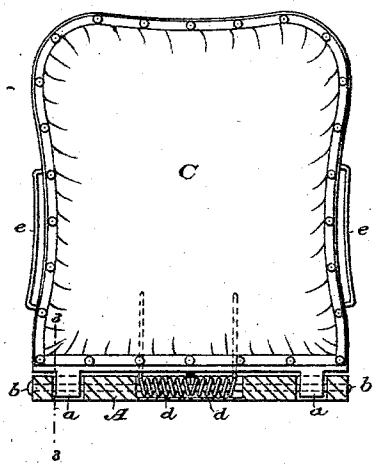


Fig. 3

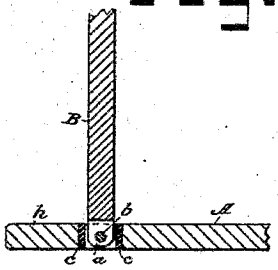


Fig. 4.

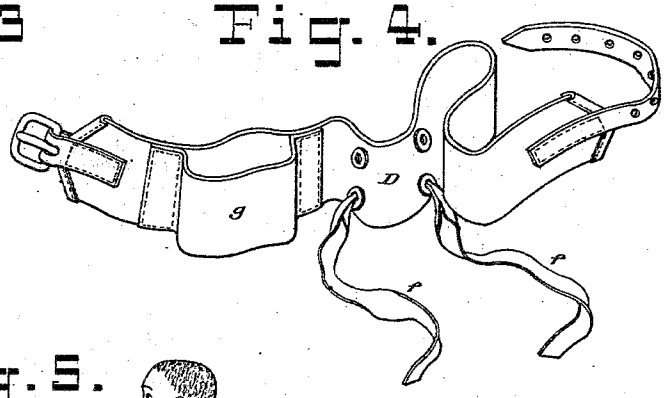


Fig. 5.



Fig. 6.

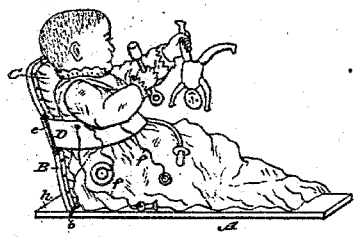
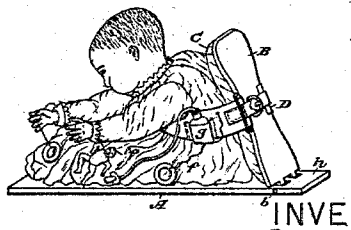


Fig. 7.



WITNESSES:

Geo. H. Fraser.

E. R. Bolton

INVENTOR:

Alexander Ellenor McDonald

By his Attorneys,

Burke, Fraser & Connett

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

A. E. McDONALD.

INFANT'S SEAT.

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Fig. 9.

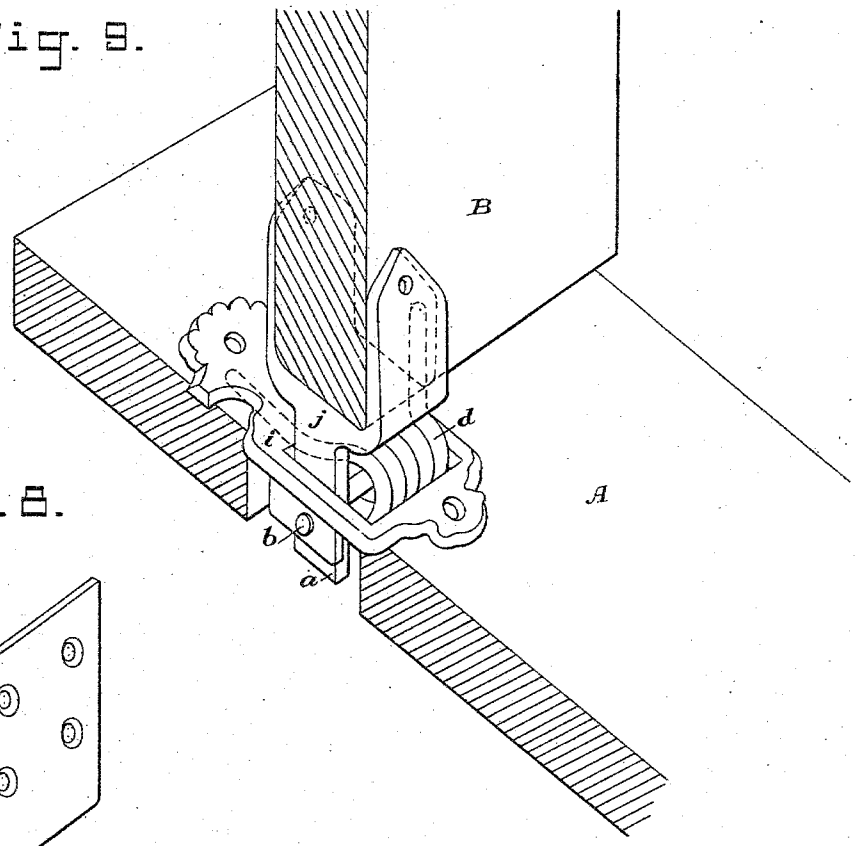


Fig. 8.

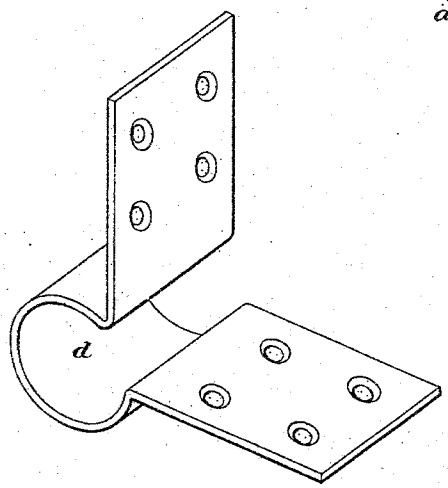


Fig. 10.

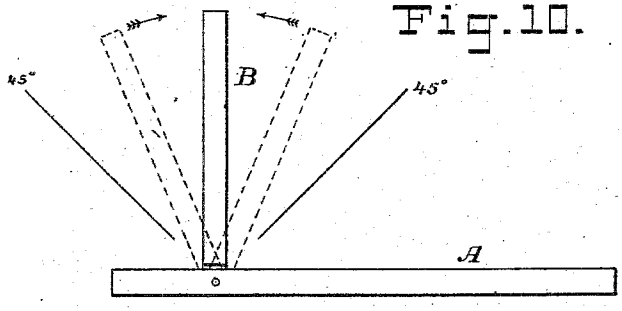
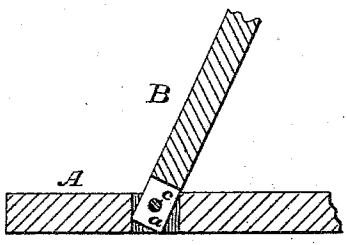


Fig. 11.



WITNESSES:

Geo. H. Fraser.

Geo. Bainton.

INVENTOR:

Alexander E. McDonald.

By his Attorneys,

Burke Fraser & Connell

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ALEXANDER ELMER McDONALD, OF BROOKLYN, NEW YORK, ASSIGNOR TO WILLIAM P. JOHNSTON, OF SAME PLACE.

INFANT'S SEAT.

SPECIFICATION forming part of Letters Patent No. 289,115, dated November 27, 1883.

Application filed July 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER ELMER McDONALD, a citizen of the United States, temporarily residing in Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Infants' Seats, of which the following is a specification.

The object of my invention is to provide a simple, inexpensive, and effective device for sustaining an infant in a sitting position and at the same time permitting it all desirable freedom of movement. When simply set upon the floor a young infant is liable to fall over from weakness, and an infant that has begun to creep is liable to get into mischief or danger if not closely watched. If confined in an ordinary chair, and the latter be overturned, the infant is inevitably more or less hurt. To obviate these difficulties my invention provides a low seat set flat upon the floor, with a supporting back, to which a child may be confined by a belt. This back yields to the natural movements of the infant, and yet tends to retain the latter in an upright position.

In its simplest form my invention consists, essentially, of a bottom board or seat, which rests upon the floor, and a back hinged or pivoted thereto forward of its rear side, with a spring, which tends to press the back into a perpendicular position, and suitable stops to limit the forward and backward motion of the back and restrain it from being inclined to a reclining position.

My invention also consists in certain other features of construction, all as will be fully hereinafter set forth.

In the drawings which serve to illustrate my invention, Figure 1 is a perspective view of my seat in its most approved form. Fig. 2 is a cross-section on line 2 2 in Fig. 1. Fig. 3 is a section on line 3 3 in Fig. 2; and Fig. 4 is a view of the belt for attaching the child to the back of the seat. Figs. 5, 6, and 7 are illustrative perspective views, showing an infant secured in the seat and occupying three different positions. Fig. 8 is a perspective view of a modified form of the spring which sustains the back. Fig. 9 is a perspective showing the spring and hinge combined. Fig. 10 is a side elevation of the seat on a small scale, showing the extent of inclination of the back. Fig. 11 is a fragmentary section cut through the hinge in the same plane as Fig. 3.

Referring to the several figures, and particularly to Figs. 1, 2, 3, and 10, let A designate a bottom board or base-piece, which is designed to rest flat upon the floor, and B a back hinged or pivoted thereto and pressed by a spring into an upright or substantially perpendicular position. This spring holds the back elastically in that position, and gently resists any effort to press it forward or backward, and if it be deflected from the perpendicular, the spring returns it to that position when released. The hinging of the back allows it a limited motion forward and back of the perpendicular, and stops are provided to keep it from being inclined too far. The infant is confined to the back B by a belt, D, Fig. 4, or by other suitable means, and the tension of the spring aids the child in retaining an upright position, as shown in Fig. 5. The child may readily overcome the light tension of the spring and lean backward, as shown in Fig. 6, or forward to reach its toys, as shown in Fig. 7, the spring then aiding the child in resuming the upright position. It will then be seen that when the child wishes to incline its body in either direction, its weight aids it in overcoming the tension of the spring, and when it wishes to return to an upright position the spring aids it in lifting its weight. My improved seat is thus adapted to quite young and feeble infants to enable them to sit up and play, and teach them to retain of themselves the sitting posture; and it is none the less adapted to larger babies, who have reached the creeping age, to confine them safely in a comfortable position for a time, and so relieve the mother or nurse of the necessity of constantly attending them to keep them from mischief or danger.

The particular method of hinging the back to the bottom board is not essential; but the method shown in Figs. 1, 2, 3, and 11 has several advantages, and forms one feature of my invention. The back is formed with tenons *a* *a* on its lower side, which enter mortises cut

through the board A a short distance forward of its rear edge, as shown. A hinge-rod or pins, *b b*, are then put through the tenons and the board A. The tenons fit the mortises loosely, so that the back A may be inclined forward or back of the perpendicular to about the extent denoted by the dotted lines in Fig. 10. When inclined to either extreme position the tenons strike against the sides of the mortise, both above and below the hinging-axis, as shown in Fig. 11, thus relieving the rod or pin *b* of all strain. In Fig. 3 the sides of the mortises are shown as lined with rubber cushions *c c*, in order that when the back is inclined the tenon shall strike a soft, yielding stop and the back be brought to rest without jar or shock. In a recess in the board A, under the bottom edge of the back, is placed the spring or springs, two helical springs, *d d*, being shown, with their opposite ends secured, respectively, to the back and bottom board. The construction of these springs and their connection relatively to the back and bottom board is such that their tension acts to retain the back B in an upright or approximately perpendicular position, and to elastically resist any tendency to either push it backward or pull it forward. When two coiled springs are used, as shown, this result may be produced by twisting them in opposite directions until their tensions are equal but opposite, and then connecting their opposite ends to the back and bottom board, respectively. This connection may be effected by thrusting the ends of the spring into holes in the respective boards, as shown. This form of spring and its arrangement in a recess where it is out of sight and inaccessible, and where nothing can get caught or pinched in it, I consider preferable to any other, and it has the advantage of bringing the spring so close to the fulcrum or hinging-axis that it acts at a great mechanical disadvantage, so that but little strength on the part of the infant will be required to incline the back. Other forms of springs may, however, be used, if preferred, such as the leaf-spring shown in Fig. 8. The tenons *a a* are not absolutely essential if some other suitable stop is provided, in which case the back might be secured to the base-piece by the springs alone, thus forming an elastic hinge. A cushion or pad, C, is preferably secured upon the back B in the manner of upholstery. The belt D passes through eyes *e e* on the back B, and its ends are buckled together behind the same. The belt may be provided with strings *f f*, to which the child's toys may be attached, and with a pocket, *g*, to hold a nursing-bottle. The back B is set at some distance from the rear end, *h*, of the board A, in order to prevent the child from toppling over backward, which is very important. The board A might be made slightly convex on its lower side, so that the child would be able to rock a little back and forth; but I prefer to make it flat.

Fig. 9 shows the spring and hinge combined. The hinge consists of a socket, *i*, of cast metal, adapted to be let into a recess in the board A, and in this is hinged a forked holder, *j*, which receives the bottom edge of the back B, the tenons *a a* being omitted. The ends of the coiled spring are clamped between the metal parts and the wooden back and bottom board. When the rubber cushions *c c* are used, as shown in Fig. 3, they are best arranged so that the back, when standing perpendicularly, is supported only by the spring *d;* but when inclined slightly in either direction it soon strikes the rubber, and is supported by both the spring and the cushion until inclined so far that the limit of compressibility of the cushion is reached, when it is gently stopped. The belt D need not be sold with the seat, but may be supplied by the purchaser, it being only essential that the infant be in some way confined to the back, so that it cannot fall out forward or sidewise.

I am well aware that chairs for adults have had their backs hinged to their seats and pressed forward by springs; but such have been incapable of inclining forward of the perpendicular; also, that adults' chairs for special purposes have had spring-backs without stops; and also that a tailor's seat has had an adjustable back, with a spring to keep it pressed back against a screw-stop, merely as a means of adjusting the inclination of the back. None of these are adapted for infants' seats, as they are all either devoid of stops to limit the forward movement of the back, or the stops are so arranged that the back can have no movement forward of the perpendicular, and the springs act to force the back against the stops.

I am also familiar with the combined cradle and chair disclosed in the patent of E. Stoney, No. 113,812, dated April 18, 1871, which has a back hinged to a bottom board and capable of being turned back until it is almost flat upon the latter and of being drawn forward to the perpendicular and very slightly beyond, and having a spring coiled behind the back and tending to hold the latter at an angle of about sixty degrees from the horizontal. This device differs from mine in being designed to hold the infant in a reclining or semi-erect position, instead of an upright sitting posture, its arrangement of spring to draw the back to the angle named precluding its use for the latter purpose, as it would resist the efforts of the child to assume a sitting position and constantly tend to pull it backward. Its want of a stop to limit the backward movement of the back until it turns down nearly flat upon the board, and its being provided with a stop to prevent the back from inclining substantially forward of the perpendicular also unfit it for the use for which my seat is designed.

It is essential to my invention that the spring shall act to press the back into a perpendicular position, that stops be provided to prevent

it from being inclined farther than forty-five degrees in either direction, and that the forward stop permit the back to incline forward at least twenty degrees from the vertical. The actual inclination which is permitted in my seat is about twenty to twenty-five degrees forward and about fifteen to twenty-five degrees backward from the vertical; but a greater inclination may be permitted without detriment.

I claim as my invention—

1. An infant's seat consisting, essentially, of the combination of a bottom board, A, a back, B, hinged thereto forward of the rear end thereof, a spring or springs connected to said back and bottom board, and constructed, substantially as described, so as to press the back normally to a substantially perpendicular position and resist any effort to incline it forward or back thereof, and stops adapted to limit the forward and backward movement of the back in substantially the manner and to substantially the extent set forth, whereby a child fastened to said back is aided in retaining an erect sitting position and is enabled to bend forward.

2. The combination of bottom board, A, provided with mortises, back B, hinged thereto, tenons *a a* on said back, entering said mortises and thereby forming stops to limit the forward and backward inclination of the back, while permitting the back to be inclined both forward and backward of the vertical, and spring or springs *d*, connected to said back and bottom board, and constructed, substantially as described, so as to press the back normally to a substantially perpendicular position, for the purposes set forth.

3. The combination of bottom board, A, provided with mortises, back B, hinged thereto, tenons *a a* thereon, entering said mortises, a mortise in the board A beneath and covered by the bottom edge of the back, and a spring or springs, *d*, coiled on said mortise and their opposite ends fastened to said bottom board and back, respectively, substantially as set forth, whereby the spring is housed and acts at a great disadvantage of leverage.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALEXANDER ELMER McDONALD.

Witnesses:
HENRY CONNETT,
GEO. BAINTOW.