July 28, 1964 E. F. HAMILTON ETAL 3,142,512

INFANT'S CHAIR

Filed Feb. 12, 1962 3 Sheets-Sheet 1

Fig. 1.

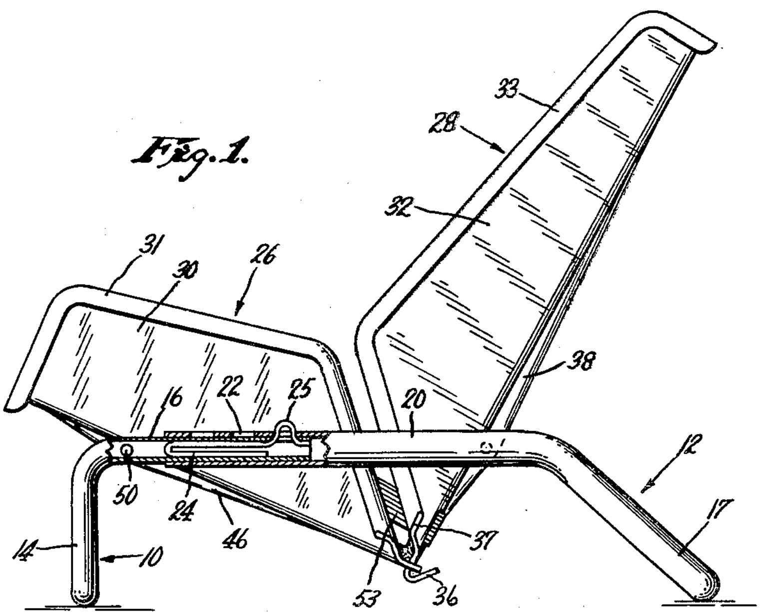

Fig. 2.

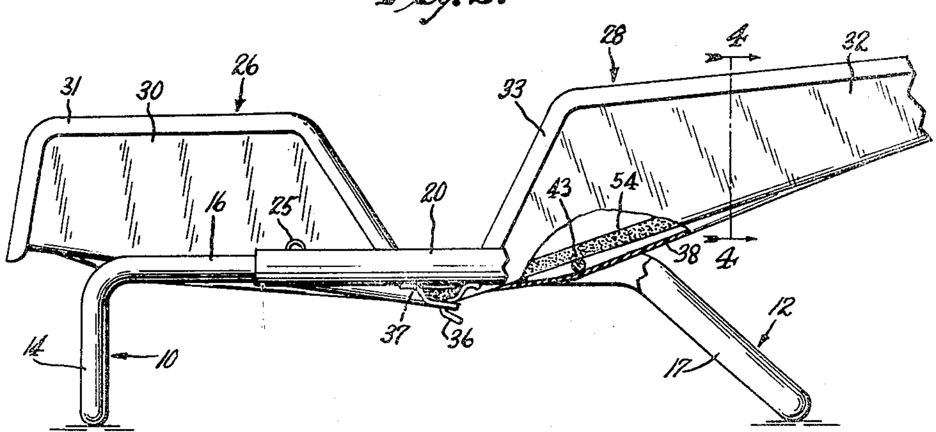

Fig. 4.

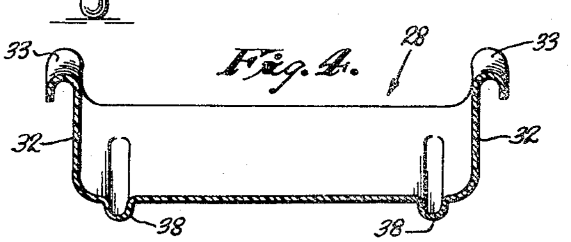

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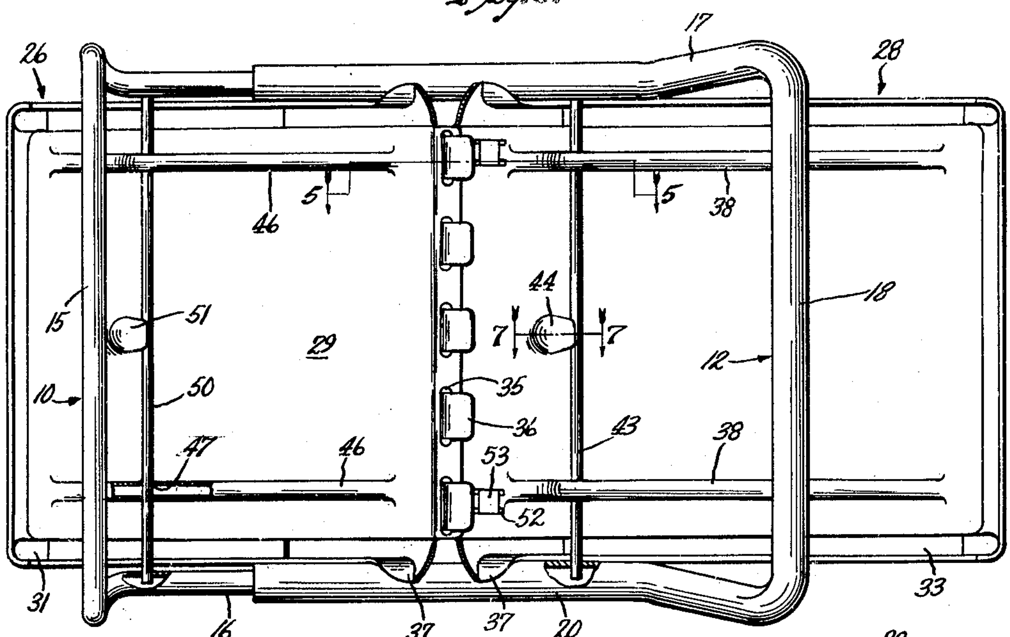
Fig. 3.



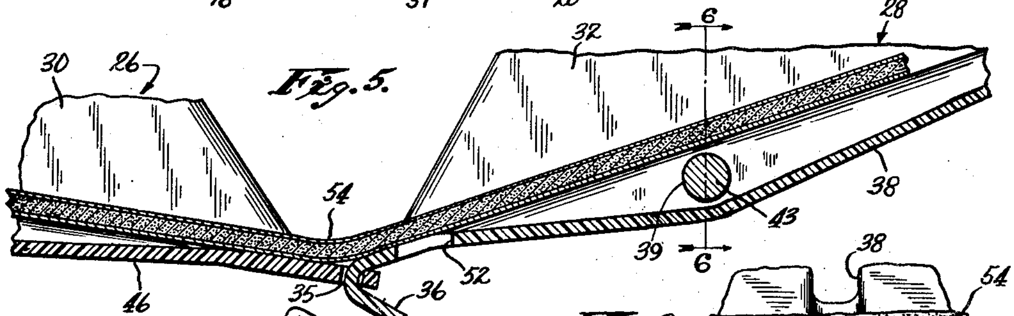


Fig. 6.

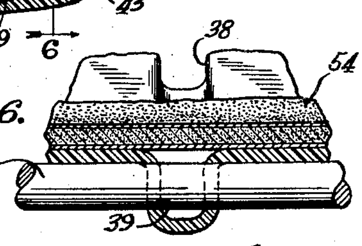


Fig. 8.

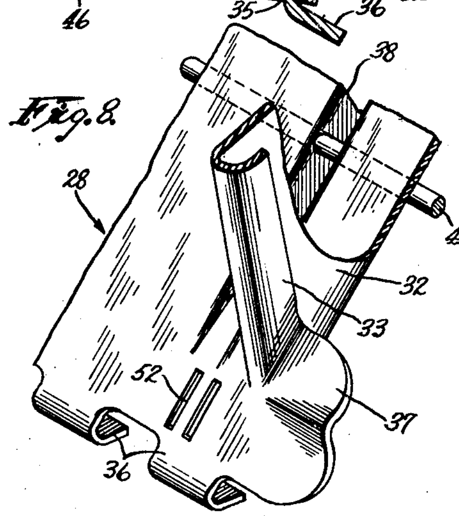


Fig. 7.

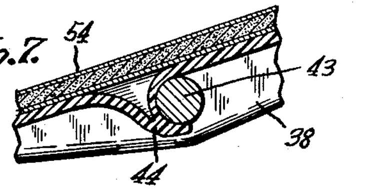


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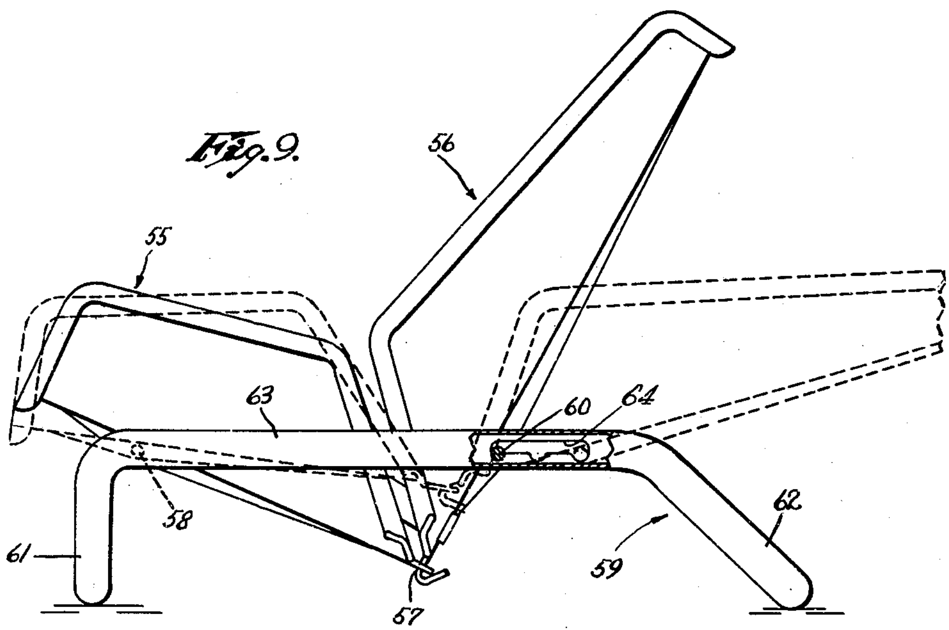
Fig. 9.



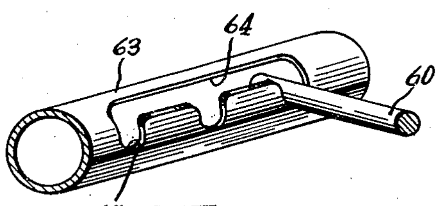


Fig. 10.

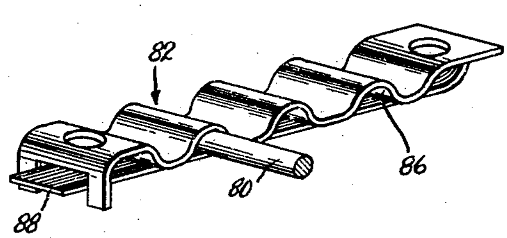
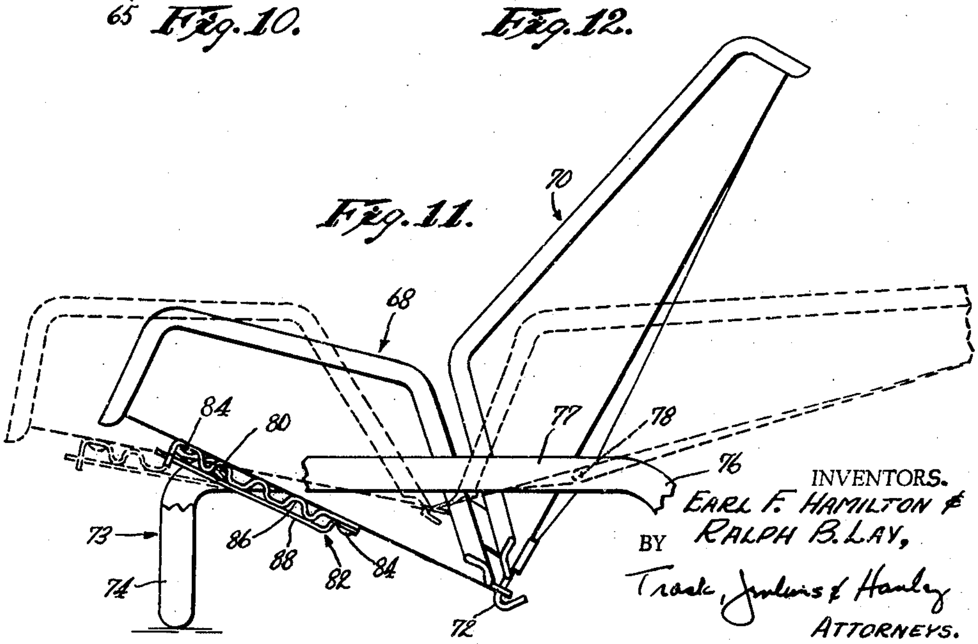


Fig. 12.

Fig. 11.



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INFANT'S CHAIR

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Filed Feb. 12, 1962, Ser. No. 172,444
7 Claims. (Cl. 297—317)

This invention relates to an infant's chair, and more particularly to an infant's chair which is adjustable between generally upright and reclining positions.

It is an object of the invention to provide an infant's chair of attractive appearance which can be easily adjusted between a generally upright position and a reclining position, which will safely and comfortably hold an infant in any of its positions of adjustment, which will be light in weight and sturdy and durable in use, and which can be shipped and stored in a compact knocked-down condition.

In accordance with one form of the invention, there is provided a base frame having ground-engageable leg members retained in a fixed vertical orientation and interconnected by a pair of lateral stretches disposed in an elevated position. A seat is pivotally interconnected to said lateral stretches on a first transverse pivot axis and is hingedly connected to a back which is pivotally interconnected to said lateral stretches on a second transverse pivot axis rearwardly of said first pivot axis. Means are provided for moving said seat and back longitudinally with respect to each other causing them to pivot with respect to each other about the axis of their hinged interconnection between a generally chair-upright position and a reclining position. Conveniently, means are provided for adjustably controlling the relative movement of said seat and back with respect to each other to dispose said seat and back in intermediate positions of adjustment between said upright and reclining positions.

The accompanying drawings illustrate the invention. In such drawings:

FIG. 1 is a side elevation of an infant's chair embodying our invention, with portions thereof being broken away;

FIG. 2 is a side elevation of the infant's chair shown in FIG. 1, but with portions thereof broken away and showing said chair in its reclining position;

FIG. 3 is a bottom plan view of the infant's chair shown in FIG. 2;

FIG. 4 is a vertical section taken on the line **4—4** of FIG. 1;

FIG. 5 is an enlarged fragmentary vertical section taken on the line **5—5** of FIG. 3;

FIG. 6 is a fragmentary vertical section taken on the line **6—6** of FIG. 5;

FIG. 7 is an enlarged fragmentary vertical section taken on the line **7—7** of FIG. 5;

FIG. 8 is an enlarged fragmentary isometric view of the lower portion of the chair back;

FIG. 9 is a modified form of the infant's chair shown in FIG. 1, with portions thereof being broken away;

FIG. 10 is an enlarged fragmentary isometric view of a portion of the chair shown in FIG. 9 and showing the interconnection between the chair back and base;

FIG. 11 is a side elevation of another modified form of the chair shown in FIG. 1, but with portions thereof being broken away; and

FIG. 12 is an enlarged isometric view of the means for adjusting the positioning of the chair shown in FIG. 11.

In the embodiment shown in FIG. 1, our infant's chair is supported on a base frame conveniently formed of lengths of metal-tubing and comprising forwardly and rearwardly disposed sections **10** and **12**. The forward base section **10** is formed from a length of metal-tubing

bent to provide a pair of downwardly extending ground-engageable legs **14** interconnected by a transversely extending bight **15** and integrally connected to rearwardly extending lateral stretches **16**. Similarly, the rearward base section **12** comprises downwardly extending ground-engageable legs **17** interconnected by a transversely extending bight **18** and integrally connected to forwardly extending lateral stretches **20**. The tubing forming the forward base frame section **10** is of smaller diameter than the tubing forming the rearward base frame section **12**, and the lateral stretches **16** of the forward section **10** are thus telescopically received in the lateral stretches **20** of the rearward section **12**. For reasons that will become more apparent hereinafter, one of the lateral stretches **20** is provided with a series of longitudinally spaced openings **22**, and the lateral stretch **16** received in the lateral stretch **20** provided with such openings is provided with a spring lock **24** having a detent **25** receivable in the openings **22** for thus adjustably locking the frame sections **10** and **12** in various positions of telescopic adjustment.

Conveniently, the chair seat **26** and chair back **28** are each formed as integral plastic moldings. Projecting upwardly from the seat bottom **29** along each of its lateral edges are side panels **30** having their edges remote from the seat bottom **29** curved outwardly and downwardly, as at **31**. Similarly, the seat back **28** is provided with forwardly projecting side panels **32** along its lateral edges, with the edges of said side panels being curved outwardly and rearwardly, as at **33**. As shown in FIG. 1, the rear edges of the seat side panels **30** and the lower edges of the back side panels **33** both slope obliquely upwardly, so that with the chair in its generally upright position, said side panels form a pair of substantially continuous infant-confining side walls.

As shown in FIG. 3, a plurality of laterally spaced slots **35** are formed in the seat bottom **29** adjacent its rear edge. Received in each of the slots **35** is one of a plurality of hooked tongues **36** integrally formed on the chair back **28** adjacent its lower end to thus hingedly interconnect the chair seat and bottom along a transverse axis. For reasons that will become more apparent hereinafter, both the seat **26** and back **28** are provided with pairs of laterally projecting noses **37** immediately adjacent their hingedly interconnected edges.

The seat **26** and back **28** are pivotally interconnected to the lateral frame stretches **16** and **20**, respectively, to thus support the chair formed by said seat and back on the base frame in an elevated position above the floor. As shown in FIGS. 3–6, the chair back **28** is provided with a pair of laterally spaced, rearwardly projecting ribs **38** provided with transversely aligned openings **39**. A rod **43** is journaled in the rib openings **39** with its ends projecting outwardly beyond the edges of the chair back **28** and rotatably received in openings formed in the inner faces of the lateral frame stretches **20**. Conveniently, a rearwardly projecting, upwardly open finger **44** is formed on the back of the chair back **28** intermediate the ribs **38** and is received over the rod **43** to thus further interconnect said rod to the chair back.

Like the back **28**, the seat **26** has a pair of laterally spaced, downwardly projecting ribs which are provided with transversely aligned openings **47**. A transversely extending pivot rod **50** is journaled in the rib openings **47** with its ends projecting outwardly beyond the lateral edges of the chair seat **26** and rotatably received in aligned openings formed in the inner faces of the lateral frame stretches **16**. A downwardly projecting, rearwardly open finger **51** is also formed on the seat bottom **29** intermediate the ribs **46** and extends over the rod **50** to further interconnect said rod to the seat **26**.

Conveniently, slots **52** are formed in the back **28** adjacent its lateral edges for mounting an infant-retaining strap **53** on the chair. And a resilient cushion **54** extends from the forward edges of the seat **26** to the top edge of the back **28** over the upwardly presented faces of said seat and back to enhance the comfort thereof.

To move the chair from its generally upright position shown in FIG. 1 into its reclining position shown in FIG. 2, the detent **25** of the spring **24** is depressed out of the most rearwardly disposed slot **22** and the frame sections **10** and **12** are then moved forwardly and rearwardly, respectively, to increase the longitudinal spacing between pivot axes formed by the rods **43** and **50**. As the longitudinal spacing between said pair of rods is increased, the seat **26** and back **28** are moved longitudinally with respect to each other and pivot about the axes of the rods **43** and **50** and their hinged interconnection into the reclining position shown in FIG. 2. With the chair in its full reclining position, the noses **37** on the seat and back will engage the lower faces of the frame stretches **20** to prevent the hinge axis of the tongues **36** and slots **35** from swinging upwardly through the plane of the pivot rods **43** and **50**. The chair is releasably locked in its reclining position shown in FIG. 2 by the lock-detent **25** projecting upwardly through the most forward slot **22**. The detent **25** may, of course, also be received in an intermediate slot **22** to releasably lock the chair in an intermediate position of adjustment between its generally upright and reclining positions. To move the chair from its reclining position of FIG. 2 into its upright position of FIG. 1, it is merely necessary to depress the detent **25** and telescope the frame stretches **16** into the stretches **20** to move the seat and back relative to each other in an opposite direction.

A modified form of the invention is illustrated in FIGS. 9 and 10, and comprises a chair seat and back construction identical to that shown in FIG. 1, wherein a chair seat **55** is hingedly connected to the chair back **56**, as at **57**, and transversely extending pivot rods **58** and **60** are mounted on the underside of the seat **55** and a rear face of the back **56**, respectively, in the same manner as the rods **43** and **50** described in the previous modification. The chair is supported on a rigid base **59** having pairs of front legs **61** and rear legs **62** interconnected by transverse bights, with the upper ends of the front and rear legs along each side of said frame being interconnected by a horizontally disposed lateral frame stretch **63**. As shown in FIG. 10, an elongated slot **64** having a plurality of longitudinally spaced downwardly projecting notches **65** is formed in the inner face of each of the lateral stretches **63** adjacent the rear legs **62**. The seat rod **58** projects laterally outwardly from the seat **55** and is rotatably carried in aligned openings formed in the lateral frame stretches **63**, and the back rod **60** projects laterally outwardly from the back **66** for reception in the slots **64**. Thus, upon movement of the rod **60** in the slots **64**, the seat **55** and back **56** move longitudinally with respect to each other and pivot with respect to each other about the axes **57**, **58**, and **60** between the generally upright position shown in full line in FIG. 9 and the reclining position shown in dotted line in FIG. 9.

Still another modification of our chair structure is illustrated in FIGS. 11 and 12, and like the other modifications, comprises a chair seat **68** hingedly interconnected to a chair back **70**, as at **72**. The chair is supported on a base frame **73** comprising pairs of front legs **74** and rear legs **76** interconnected by transversely extending bights, with the upper ends of the front and rear legs along each side of the frame being interconnected by a lateral stretch **77**. A transversely extending pivot rod **78** is mounted on the back **70** in the manner described in connection with the rod **43** shown in FIG. 3, and projects laterally outwardly from said back for reception in aligned openings formed in the inner faces of the lateral stretches **77** adjacent the rear ends thereof. A second pivot rod **80** extends under the seat **68** and has its ends received in the frame stretches **77** adjacent the forward ends thereof. As shown in FIG. 12, the seat **68** is interconnected to the rod **80** by means

of a bracket **82** mounted on the underside of the seat **66** as by fasteners **84**. As shown, the bracket **82** is provided with a plurality of longitudinally spaced, downwardly open sockets **86** adapted to be selectively received over the rod **80** to thus form an axis of interconnection between the seat **68** and rod **80**. Conveniently, a leaf spring **88** is connected to the bracket **82**, as by one of the fastening members **84**, and extends along the bottom thereof below the plane of the rod **80**.

To move the chair from its generally upright position shown in full lines in FIG. 11 to its fully reclining position shown in dotted lines, it is merely necessary to raise the seat **68** against the biasing action of the spring **88**, and slide said seat forwardly until the most rearwardly disposed bracket socket **86** is in position to be received over the rod **80**. Conversely, movement of the seat **68** in an opposite direction to dispose one of the more forwardly disposed sockets **86** over the rod **80** will move said seat and back into their generally chair-upright positions. As the seat **68** is moved longitudinally with respect to the back **70**, it will pivot relative to the axis of the rod **80** and will pivot with respect to said back **70** about their hinge axis **72**, said back pivoting about the axis of its pivot rod **80** during such movement.

We claim:

1. An adjustable infant's chair, comprising
   (*a*) a tubular base frame having pairs of front and rear leg members,
   (*b*) a pair of laterally disposed, longitudinally extending, horizontal frame stretches, each extending between the front and rear leg members and interconnecting said front and rear leg members along one side of the base and maintaining said leg members in a fixed vertical orientation with respect to each other,
   (*c*) a chair seat pivotally interconnected to said frame stretches on a first transverse pivot rod carried in said frame stretches,
   (*d*) a chair back hingedly connected to said seat below the plane of said frame stretches and pivotally interconnected to said frame stretches on a second transverse pivot rod carried in said frame stretches in the same general plane as said first pivot rod,
   (*e*) said first and second pivot rods constituting the sole means of interconnecting said seat and back to said frame and at least one of said first and second pivot rods being longitudinally adjustable in the plane of said pivot rods and frame stretches, whereby said seat and back are angularly movable with respect to each other between a chair-upright position and a chair-reclining position, and
   (*f*) means on said frame stretches intermediate the ends thereof adjustably controlling the relative longitudinal positioning of the pivot rods for said seat and back for controlling the angular positioning of said seat and back relative to each other.

2. An adjustable infant's chair as set forth in claim 1 with the addition that
   (*a*) means project laterally outwardly from said chair adjacent the interconnection of said seat and back for engagement with the lower faces of said frame stretches when said seat and back are in said chair-reclining position.

3. An infant's chair as set forth in claim 1 in which
   (*a*) said seat and back comprise a pair of plastic moldings with pairs of longitudinally extending channeled ribs projecting downwardly and rearwardly from said seat and back, respectively, and having aligned openings formed therein,
   (*b*) said first and second pivot rods are received in the openings in the ribs on the seat and back, respectively, with their ends received in openings formed in said frame stretches,
   (*c*) a rearwardly open finger is disposed on the lower face of said seat between the pair of ribs thereon and is received over said first pivot rod, and

(*d*) an upwardly open finger is disposed on the rear face of said back between the pair of ribs thereon and is received over said second pivot rod.

4. An adjustable, infant's chair, comprising

(*a*) a base frame having pairs of front and rear leg members,

(*b*) a pair of laterally disposed longitudinally extending frame stretches each comprising a forward portion connected to the front legs and to a rearward portion connected to the rear legs whereby said frame stretches interconnect the front and rear leg members along each side of the base and maintain said leg members in a fixed vertical orientation with respect to each other,

(*c*) a chair seat pivotally interconnected to the forward portions of said frame stretches on a first transverse pivot rod carried in said frame stretches, and

(*d*) a chair back hingedly connected to said seat and pivotally interconnected to the rearward portions of said frame stretches on a second transverse pivot rod carried in said frame stretches;

(*e*) the ends of the forward and rearward portions of said frame stretches being telescopically interconnected for longitudinally positioning said first and second pivot rods relative to each other whereby said seat and back are adjustably tiltable with respect to each other about their hinged connection between a chair-upright position nad a chair-reclining position.

5. An infant's chair as set forth in claim 4 with the addition that

(*a*) said forward and rearward portions are provided with cooperative lock means for releasably locking them in the desired position of telescopic adjustment.

6. An infant's chair as set forth in claim 4 in which

(*a*) said forward and rearward portions of the frame

stretches comprise the ends of a forwardly and a rearwardly disposed pair of generally U-shaped base sections, the bights of which project downwardly to form said leg members,

(*b*) said first and second pivot rods are received in openings formed in said forwardly and rearwardly disposed base sections, respectively.

7. An infant's chair as set forth in claim 1 in which

(*a*) said means comprises a pair of elongated slots formed in said lateral frame stretches and provided with a plurality of longitudinally spaced notches, and

(*b*) one of said first and second pivot rods has its ends slidably received in said slots for selective reception in said notches.

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