A folding high chair has a seat assembly, a connection assembly, a support assembly and a rear stand assembly. The seat assembly has a seat and a backrest connecting pivotally to the seat. The connection assembly is mounted on the seat. The support assembly is mounted pivotally on the connection assembly. The rear stand assembly connects pivotally to the support assembly. The seat assembly, support assembly and rear stand assembly are substantially parallel to one another when the folding high chair is folded. Therefore, the folding high chair may be changed into a compact folded configuration convenient for carrying and storage.
FIG. 11
FOLDING HIGH CHAIR

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention
[0002] The present invention relates to a chair, and more particularly to a folding high chair that may be folded into a compact configuration for carrying and storage of the folding high chair.
[0003] 2. Description of Related Art
[0004] High chairs are used for young children or infants and comprise long legs to ensure children are in view, at a convenient height for feeding and participating in activities, especially during meals.
[0005] Conventional high chairs are foldable and have a folding mechanism. However, the folding mechanism comprises many components so is complicated to use, the legs are long so prevent easy storage and transportation and are not easily height adjustable so are inconvenient to use.
[0006] To overcome the shortcomings, the present invention provides a folding high chair to mitigate or obviate the aforementioned problems.

SUMMARY OF THE INVENTION

[0007] The main objective of the invention is to provide a folding high chair that may be folded into a compact configuration for carrying and storage of the folding high chair.
[0008] A folding high chair in accordance with the present invention comprises a seat assembly, a connection assembly, a support assembly and a rear stand assembly. The seat assembly has a seat and a backrest being connected pivotally to the seat. The connection assembly is mounted on the seat. The support assembly connects pivotally to the connection assembly. The rear stand assembly connects vertically to the support assembly. The seat assembly, support assembly and rear stand assembly are substantially parallel to one another when the folding high chair is folded. Therefore, the folding high chair may be transformed easily into a compact folded configuration, convenient for carrying and storage.
[0009] Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a perspective view of a folding high chair in accordance with the present invention;
[0011] FIG. 2 is a rear perspective view of the folding high chair in FIG. 1;
[0012] FIG. 3 is an exploded perspective view of the folding high chair in FIG. 2;
[0013] FIG. 4 is an exploded perspective view of the folding high chair in FIG. 2;
[0014] FIG. 5 is a side view of the folding high chair in FIG. 1;
[0015] FIG. 6 is a side view in partial section of the folding high chair in FIG. 5, showing positioning slots of a leg;
[0016] FIG. 7 is a side view in partial section of the folding high chair in FIG. 5, showing a friction surface of an outer cylinder;
[0017] FIG. 8 is an enlarged side view in partial section of the folding high chair in FIG. 5;
[0018] FIG. 9 is an enlarged side view in partial section of the folding high chair in FIG. 5, showing internal elements of a connecting element;
[0019] FIG. 10 is another enlarged side view in partial section of the folding high chair in FIG. 5, showing internal elements of a connection member;
[0020] FIG. 11 is an operational side view of the folding high chair in FIG. 1, shown partially folded seat assembly; and
[0021] FIG. 12 is an operational side view of the folding high chair in FIG. 11, shown completely folded.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0022] With reference to FIGS. 1 and 2, a folding high chair in accordance with the present invention comprises a seat assembly (10), a connection assembly (20), a support assembly (30) and a rear stand assembly (40).
[0023] With further reference to FIGS. 3, 4 and 8 the seat assembly (10) comprises a seat (11), a backrest (12) and may further have a leg rest (13).
[0024] The seat (11) has an upper surface, a bottom surface, a front end, a rear end, two opposite sides and two armrests and may further have a crossbar (113). The armrests are formed respectively on and protrude respectively from the upper surface at the sides. The crossbar (113) is mounted on the bottom of the seat (11) near the front end.
[0025] The backrest (12) is mounted pivotally on the rear end of the seat (11), is capable of pivoting forward to fold onto the seat (11) and has a front, a rear, a top end, a bottom end and a locking protrusion (121). The bottom end is mounted pivotally on the rear end of the seat (11). The locking protrusion (121) is formed on and protrudes away from the rear at the bottom end.
[0026] The leg rest (13) is mounted detachably on the crossbar (113) on the seat (11) and has multiple mounting slots (131) and a footrest (132). The mounting slots (131) are defined transversely through the footrest (13) and are arranged longitudinally. The footrest (132) is detachably mounted perpendicularly in one of the mounting slots (131) in the leg rest (13) and may be mounted closer to the seat (11) for smaller children and further from the seat (11) for larger children.
[0027] The connection assembly (20) is mounted securely on the bottom surface of the seat (11) of the seat assembly (10) and has a connection member (21) and a lock (22) and may further have a biasing member.
[0028] With further reference to FIGS. 9 and 10, the connection member (21) is mounted on the bottom of the seat (11) and has a bottom, a rear end, two opposite sidewalls, a longitudinal recess (211) and multiple pairs of positioning notches (212).
[0029] Each sidewall may be hollow and have a chamber, an inside surface and a guide slot (217). The chamber is defined in the sidewall and has an inner surface. The guide slot (217) is Y-shaped, is defined in the inner surface of the chamber in the sidewall and has two branching slots.
[0030] The longitudinal recess (211) is defined in the bottom of the connection member (21) between the inside surfaces of the sidewalls.
[0031] The positioning notches (212) of each pair are oppositely defined respectively in the inside surfaces of the sidewalls.
The lock (22) is mounted slidably on the connection member (21), has a top end and a resilient hook (221) and may further have two opposite abutment tabs (222) mounted on the lock (22). The resilient hook (221) is mounted on the top end of the lock (22) and hooks detachably on the locking protrusion (212) to lock and hold the backrest (12) in an unfolded position relative to the seat (11). To release the backrest (12), a user pulls back and bends to disengage the resilient hook (221) from the locking protrusion (212) so that the backrest (12) may pivot forward.

The biasing member is resilient and V-shaped, is mounted slidably in the guide slot (217) and has a biasing branch (214) and a latch branch (215). The biasing branch (214) is curved, extends slidably out of one branching slot and presses against one of the abutment tabs (222) on the lock (22) to bias the lock (22) in an upper position. The latch branch (215) is straight and extends out of the other branching slot.

The support assembly (30) is retractable, may be a pneumatic cylinder assembly, connects pivotally to the connection member (21) of the support assembly (20) and has an outer cylinder (31), an inner cylinder (32) and a connecting element.

With further reference to FIG. 7, the outer cylinder (31) is hollow, may be an inverted T-shape, stands on the ground and has a top end, a bottom end, a mounting hole and two opposite positioning blocks (312) and may further have two opposite friction surfaces (313) and a foot. The mounting hole is defined axially in the top end of the outer cylinder (31). The positioning blocks (312) are formed on and protrude radially from the outer cylinder (31) near the top end of the outer cylinder (31). The friction surfaces (313) are formed on the outer cylinder (31) respectively adjacent to the positioning blocks (312) and each friction surface (313) has multiple friction ribs. The foot is formed transversely on the bottom end of the outer cylinder (31) and stands stably on the ground.

The inner cylinder (32) is mounted telescopically in the mounting hole in the outer cylinder (32) and has a top end.

The connecting element is mounted on the top end of the inner cylinder (32), connects pivotally to the connection member (20) to pivot the inner cylinder (32) and the outer cylinder (31) on the seat (11). The connecting element has a pivot member (33) and a positioning member (34).

The pivot member (33) is formed on the connecting member, is mounted securely on the top end of the inner cylinder (32) and is mounted rotatably upon using a pivot pin in the longitudinal recess (211) of the connection member (20) between the inside surfaces of the sidewalls.

The positioning member (34) is mounted slidably on the connecting element, is mounted in the recess (211) in the connection member (21), has a rear end, two opposite sides and two opposite positioning projections (341) and may further have a lever handle (343) when the support assembly (30) is a pneumatic cylinder assembly. The positioning projections (341) are formed oppositely on and protrude respectively from the sides of the positioning member (34) and correspond respectively to the pairs of positioning notches (212). Each positioning projection (341) engages detachably with one of the positioning notches (212) of a corresponding pair of positioning notches (212) to position the seat assembly (10) at a specific angle relative to the support assembly (30). The user may pull and slide the positioning member (34) to disengage the positioning projections (341) from the positioning notches (212) in the connection member (21) to adjust the angle of the seat assembly (10). Each positioning projection (341) may be held selectively by one of the latch branches (215) on the biasing members. When the lock (22) is slid down and compresses the biasing members, the latch branches (215) retract into the guide slots (217) and the positioning projections (341) are released to allow the support assembly (30) to pivot toward and fold onto the seat (11) of the seat assembly (10). The lever handle (343) connects pivotally to the inner cylinder (32) and may be operated to change a longitudinal position of the inner cylinder (32) relative to the outer cylinder (31).

With further reference to FIG. 5, the rear stand assembly (40) is connected pivotally to the support assembly (30) and may have a linkage (42) and a rear stand (41).

The linkage (42) is connected pivotally to the outer cylinder (31) of the support assembly (30) and has a connecting end, an engaging end and an engaging rod. The connecting end connects pivotally to the outer cylinder (31). The engaging rod is formed transversely on the engaging end and has two opposite ends.

With further reference to FIG. 6, the rear stand (41) is U-shaped, being connected pivotally to the engaging end of the linkage (42) and has two opposite legs (411). The legs (411) are formed on the rear stand (41) and each leg (411) has an inside surface, a pivot slot and multiple positioning slots (412). The inside surface may selectively contact one of the friction surfaces (313) to prevent the legs (411) from inadvertently pivoting. The pivot slot is defined in the inside surface of the leg (41), rotatably and detachably holds one end of the engaging rod on the linkage (42) so that the rear stand (41) may pivot on the linkage (42). The positioning slots (412) are defined in the inside surface of the leg (411), are arranged longitudinally and one of the positioning slots (412) engages detachably with one of the positioning blocks (312) to hold the rear stand (41) at a specific angular position relative to the support assembly (30).

With reference to FIGS. 11 and 12, when the folding high chair is folded, the resilient hook (221) of the lock (22) is pulled back and bent to disengage from the locking protrusion (212) and the lock (22) is slid down. Simultaneously, the biasing branch (214) and the latch branch (215) of each biasing member are retracted into the guide slot (217) in the connection member (21) to release both the backrest (12) and the support assembly (30). The backrest (12) and the support assembly (30) pivot toward the seat (11) so that the seat assembly (10) and the support assembly (30) are folded substantially parallel to one another, as shown in FIG. 11. Then, the rear stand (41) is detached from the inner cylinder (32). The linkage (42) and rear stand (41) are pivoted substantially parallel to the seat assembly (10) and the support assembly (30), as shown in FIG. 12.

The seat assembly (10), support assembly (30) and rear stand assembly (40) are substantially parallel to one another when the folding high chair is folded. Therefore, the folding high chair may be folded into a highly compact configuration, convenient for carrying and storage at home or even carried in a vehicle and opened for use in restaurants or other’s homes. Furthermore, sliding down the lock (22) simultaneously releases the backrest (12) and the support
assembly (30) relative to the seat (11) so that folding the folding high chair is easy, simple and fast.

Even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only. Changes may be made in the details, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A folding high chair comprising:
   a seat assembly having
   a seat having an upper surface, a bottom surface, a front end, a rear end, two opposite sides and two armrests formed respectively on and protruding respectively from the upper surface at the sides; and
   a backrest being mounted pivotally on the rear end of the seat, being capable of pivoting forward to fold onto the seat and having a front, a rear, a top end, a bottom end connecting pivotally to the rear end of the seat and a locking protrusion being formed on and protruding away from the rear at the bottom end;
   a connection assembly being mounted securely on the bottom surface of the seat of the seat assembly and having
   a connection member being mounted on the bottom of the seat and having
   a bottom;
   a rear end;
   two opposite sidewalls and each sidewall having an inside surface;
   a longitudinal recess defined in the bottom of the connection member between the inside surface of the sidewalls; and
   multiple pairs of positioning notches, and the positioning notches of each pair being oppositely defined respectively in the inside surfaces of the sidewalls; and
   a lock being mounted slidably on the connection member and having a top end and a resilient hook mounted on the top end of the lock and locking detachably on the locking protrusion;
   a support assembly being retractable, connecting pivotally to the connection member of the connection assembly and having
   an outer cylinder being hollow and having
   a top end;
   a bottom end;
   a mounting hole being defined axially in the top end of the outer cylinder; and
   two opposite positioning blocks being formed on and protruding radially from the outer cylinder near the top end of the outer cylinder;
   an inner cylinder mounted telescopically in the mounting hole of the outer cylinder and having a top end; and
   a connecting element mounted on the top end of the inner cylinder, connecting pivotally to the connection member and having
   a pivot member formed on the connecting member, being mounted securely on the top end of the inner cylinder and being mounted rotatably in the longitudinal recess of the connection member between the inside surfaces of the sidewalls; and
   a positioning member being mounted slidably on the connecting element, mounted in the recess in the connection member and having a rear end, two opposite sides and two opposite positioning projections formed oppositely on and protruding respectively from the sides of the positioning member and corresponding respectively to the pairs of positioning notches, wherein each positioning projection engages detachably with one of the positioning notches of a corresponding pair; and
   a rear stand assembly being connected pivotally to the support assembly.

2. The folding high chair as claimed in claim 1, wherein the rear stand assembly has
   a linkage being connected pivotally to the outer cylinder of the support assembly and having
   a connecting end being connected pivotally to the outer cylinder;
   an engaging end; and
   an engaging rod formed transversely on the engaging end and having two opposite ends; and
   a rear stand being U-shaped, being connected pivotally to the engaging end of the linkage and having two opposite legs formed on the rear stand and each leg having an inside surface;
   a pivot slot being defined in the inside surface of the leg, rotatably and detachably holding one end of the engaging rod on the linkage; and
   multiple positioning slots being defined in the inside surface of the leg, arranged longitudinally and one of the positioning slots engaging detachably with one of the positioning blocks.

3. The folding high chair as claimed in claim 2, wherein:
   each sidewall of the connection member is hollow and further has
   a chamber defined in the sidewall and having an inner surface; and
   a guide slot being Y-shaped, defined in the inner surface of the chamber in the sidewall and having two branching slots;
   the lock of the connection assembly further has two opposite abutment tabs mounted on the lock;
   the connection assembly further has a biasing member being resilient and Y-shaped, mounted slidably in the guide slot and having
   a biasing branch being curved, extending slidably out of one branching slot and pressing against one of the abutment tabs on the lock to bias the lock in an upper position; and
   a latch branch being straight and extending out of the other branching slot; and
   each positioning projection of the positioning member of the connecting element is held selectively by one of the latch branches on the biasing members.

4. The folding high chair as claimed in claim 3, wherein:
   the outer cylinder further has two opposite friction surfaces formed on the outer cylinder respectively adjacent to the positioning blocks and each friction surface having multiple friction ribs; and
the inside surface of each leg of the rear stand selectively contacts one of the friction surfaces.

5. The folding high chair as claimed in claim 3, wherein the outer cylinder further has a foot formed transversely on the bottom end of the outer cylinder.

6. The folding high chair as claimed in claim 3, wherein: the seat further has a crossbar mounted on the bottom of the seat near the front end; and the seat assembly further has a leg rest mounted detachably on the crossbar on the seat and has multiple mounting slots being defined transversely through the footrest and arranged longitudinally; and a footrest being detachably mounted perpendicularly in one of the mounting slots in the leg rest.

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