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(54) **FOLDABLE CHAIR**

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(52) **U.S. Cl.**

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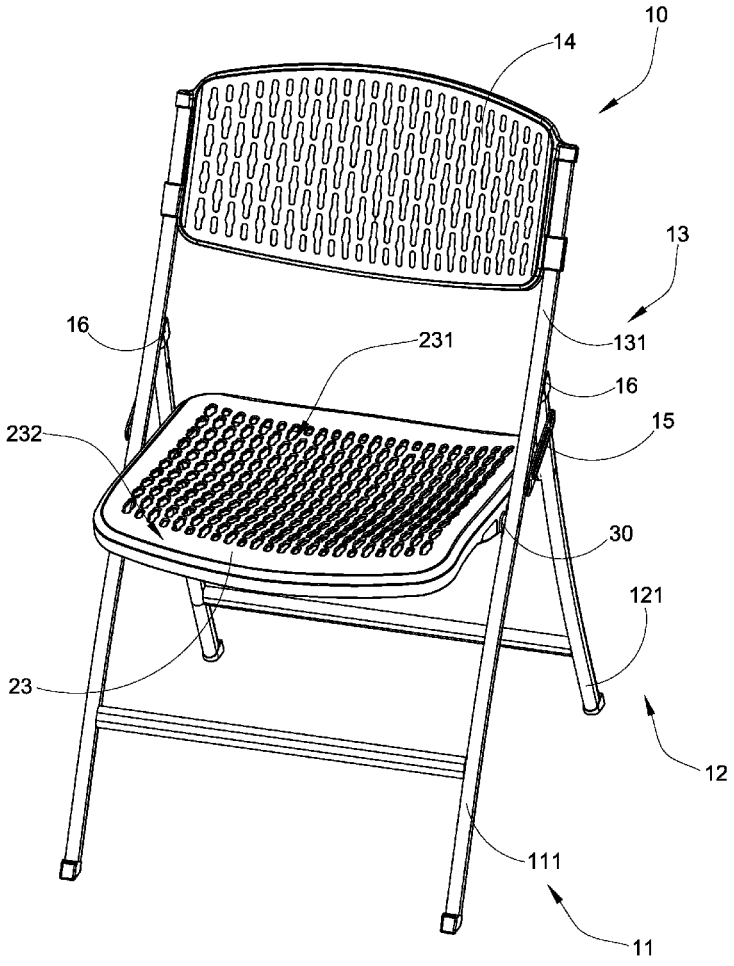
(57) **ABSTRACT**

A foldable chair includes a foldable frame and a reinforcing joint. The foldable frame includes a supporting frame and a seat frame pivotally connected with each other via the reinforcing joint, wherein the reinforcing joint includes a first joint member, a second joint member, and a connecting member connecting the second joint member with the first joint member. The first joint member, having an engaging cavity, is coupled at the seat frame. The second joint member is coupled at the supporting frame and is received at the engaging cavity to frictionally couple with the first joint member. The reinforcing joint serves as a supporting shaft to support between the supporting frame and the seat frame and serves as a rotatable shaft to enable the second joint member to be rotated at the first joint member for a pivotal movement between the supporting frame and the seat frame.



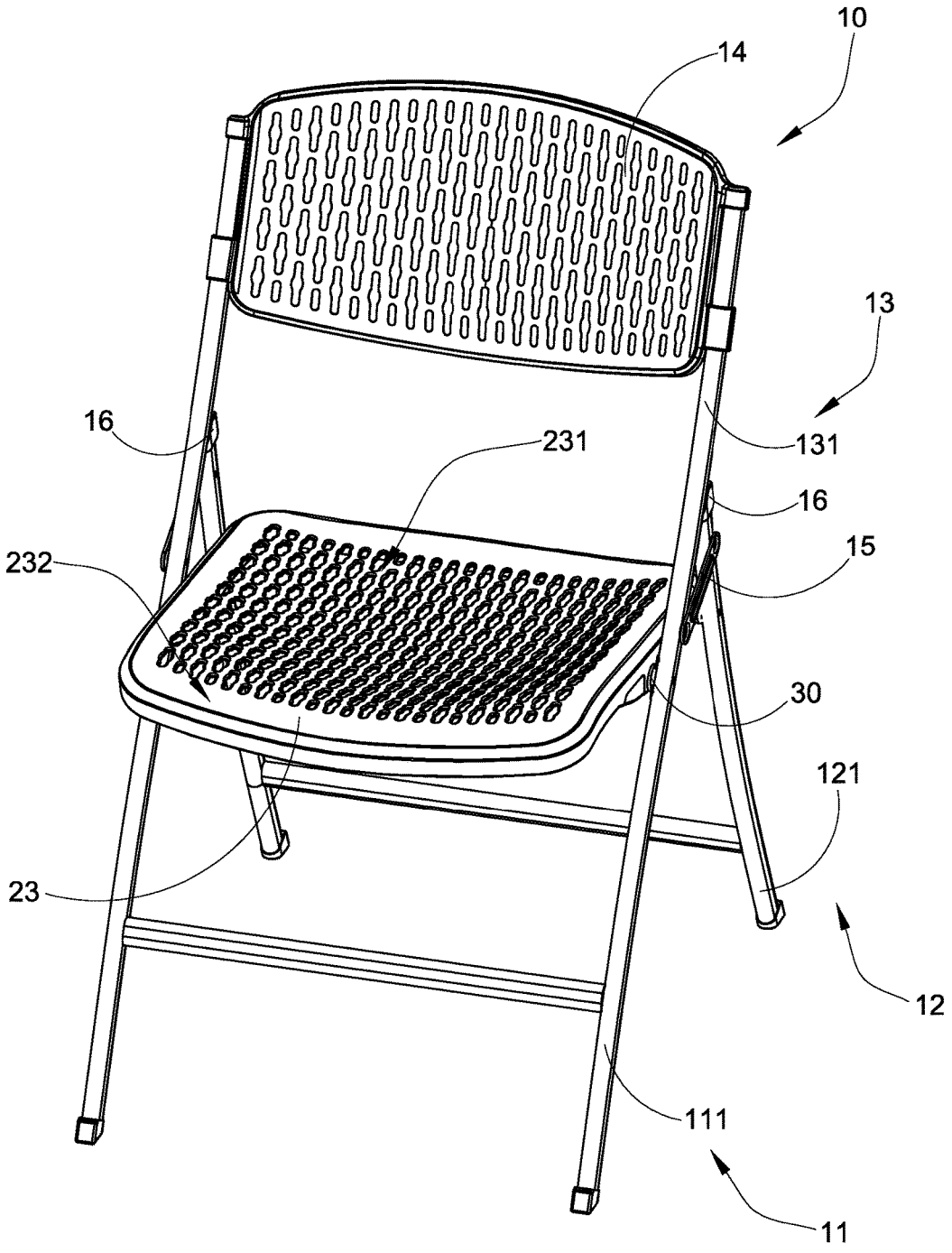


FIG.1

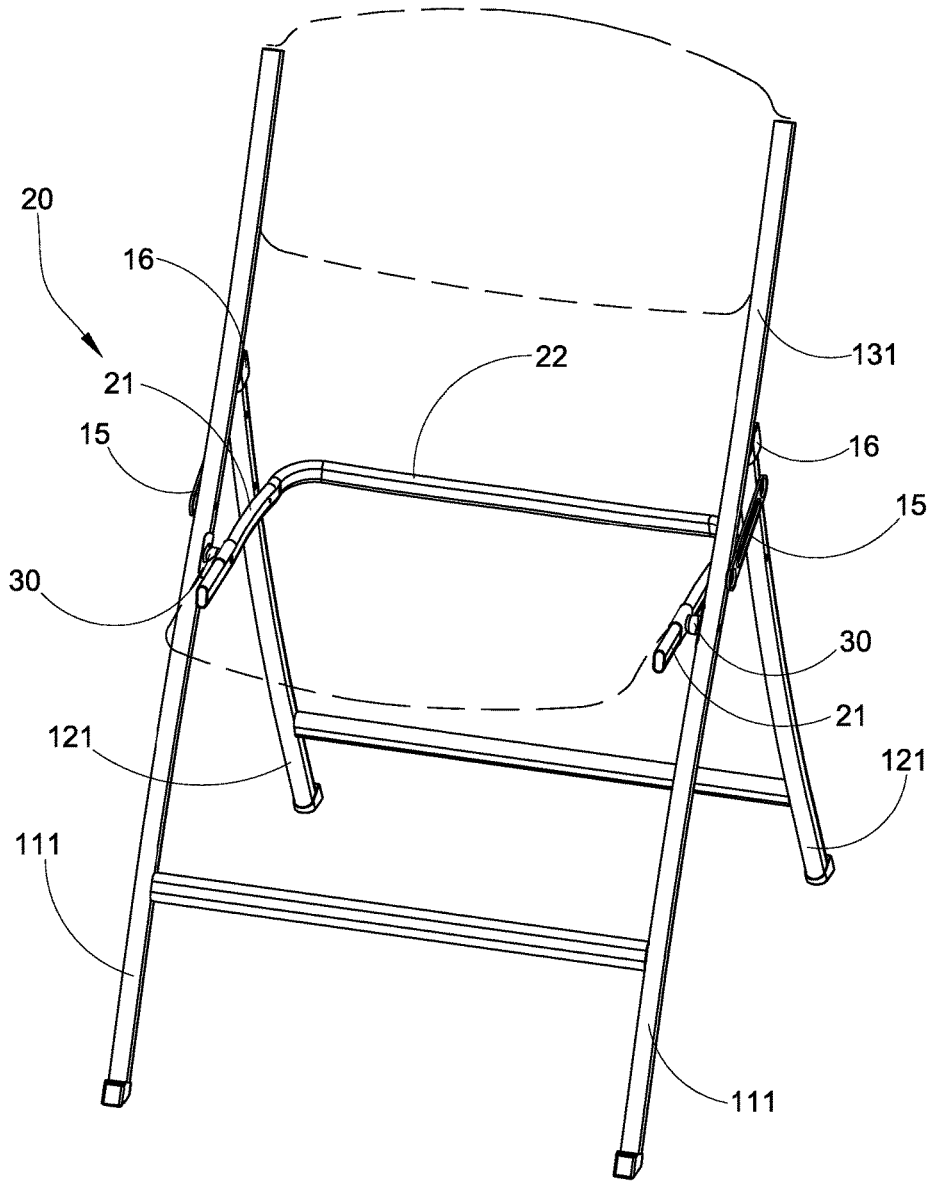


FIG.2

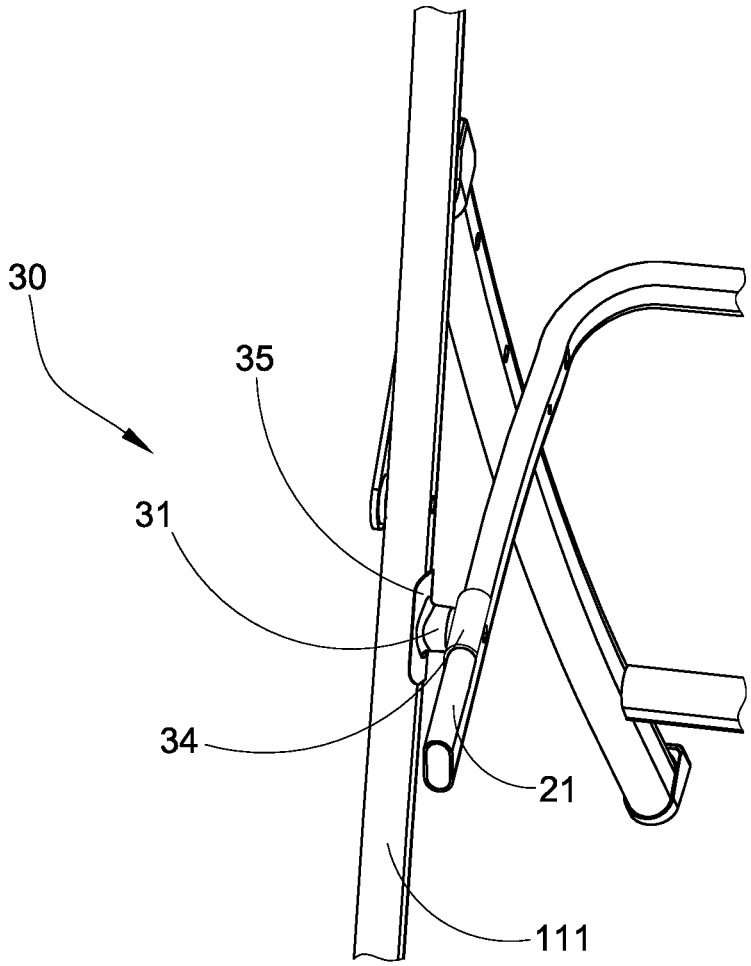


FIG.3

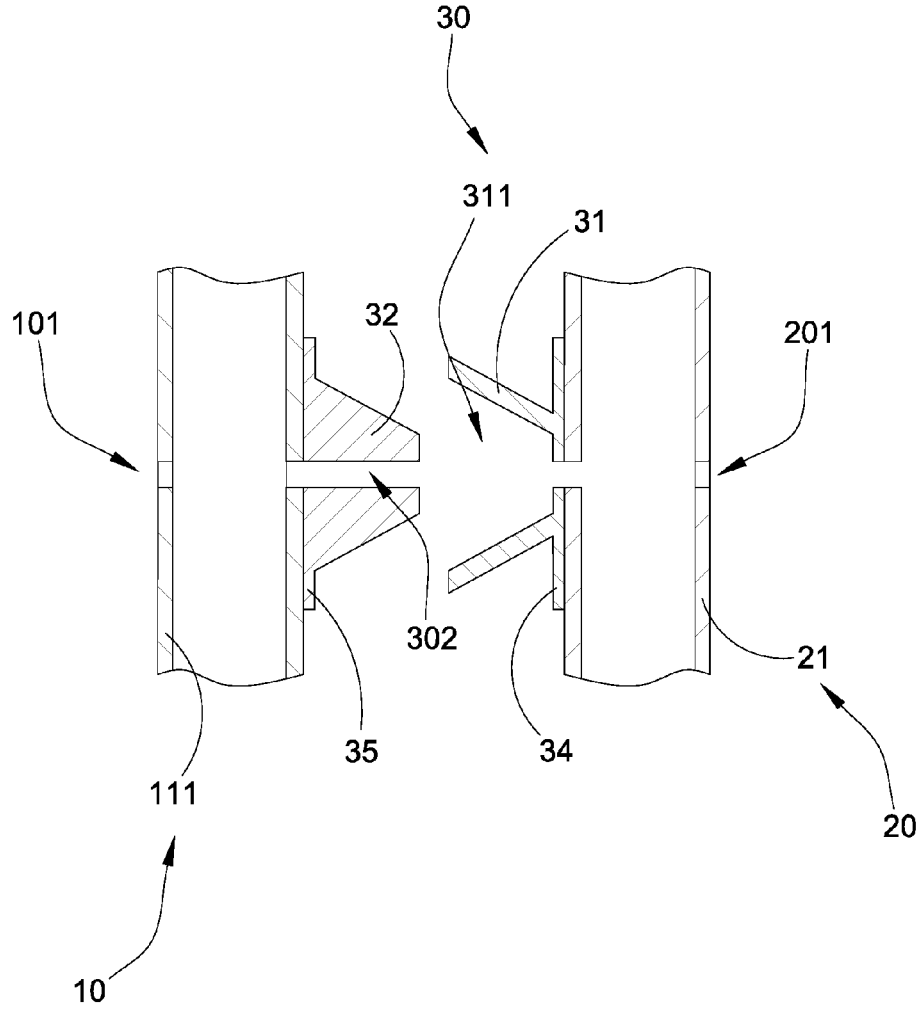


FIG.4

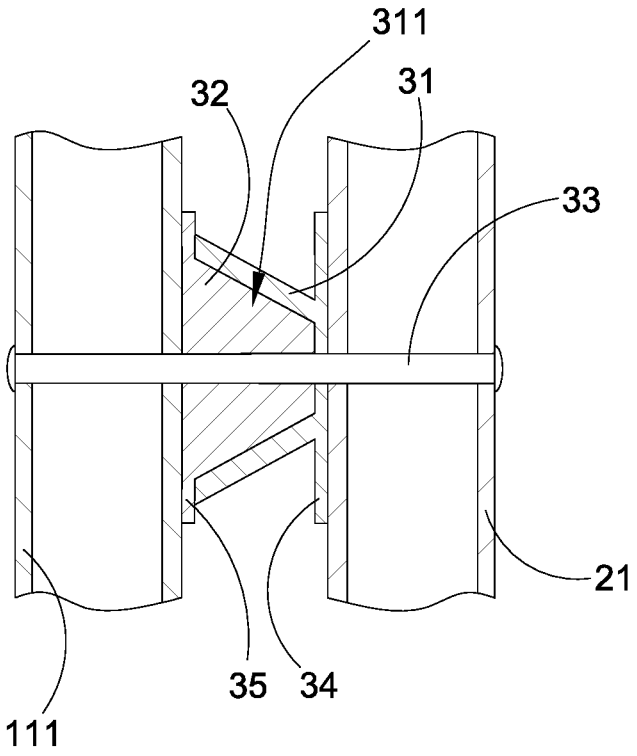


FIG.5

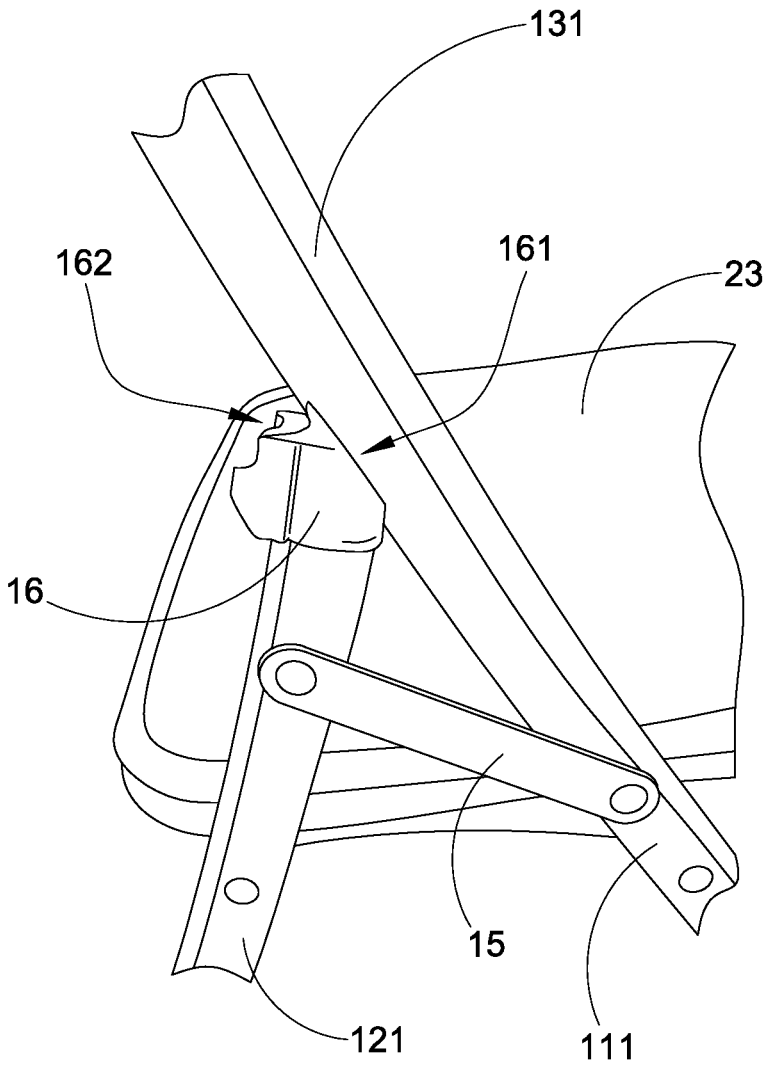


FIG.6

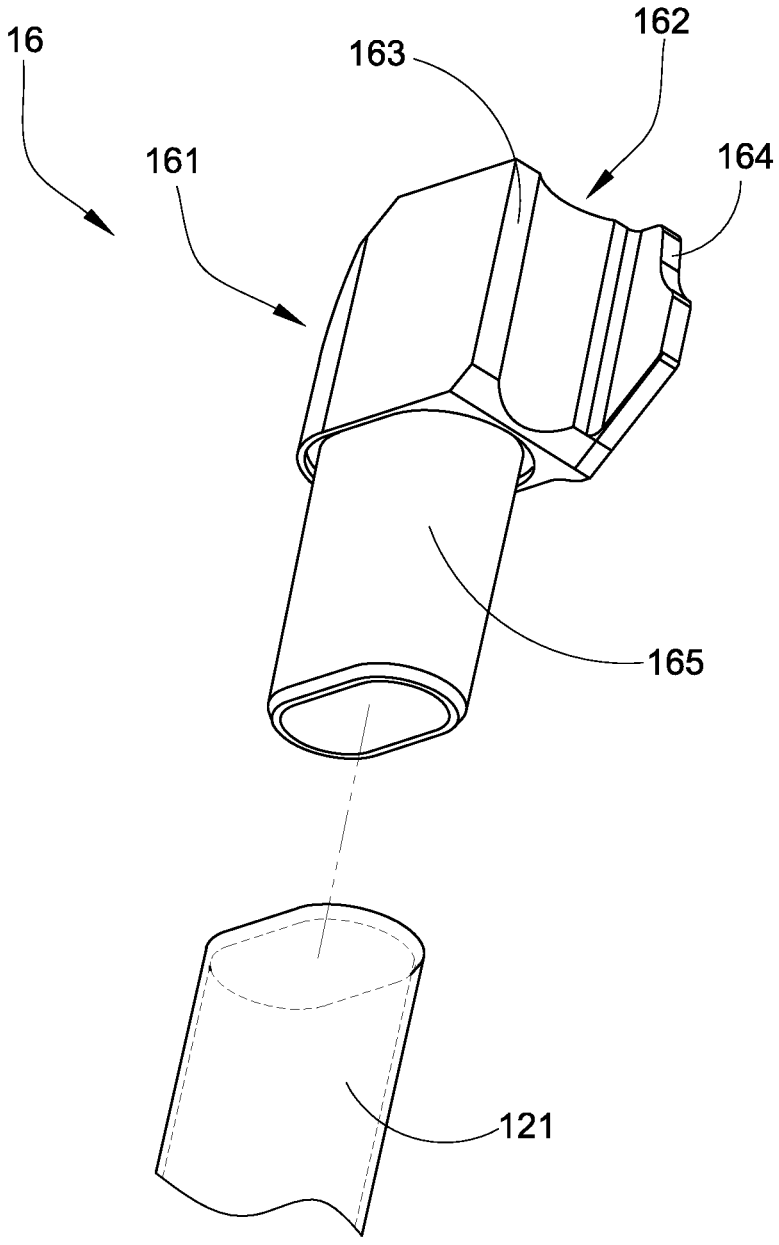


FIG.7

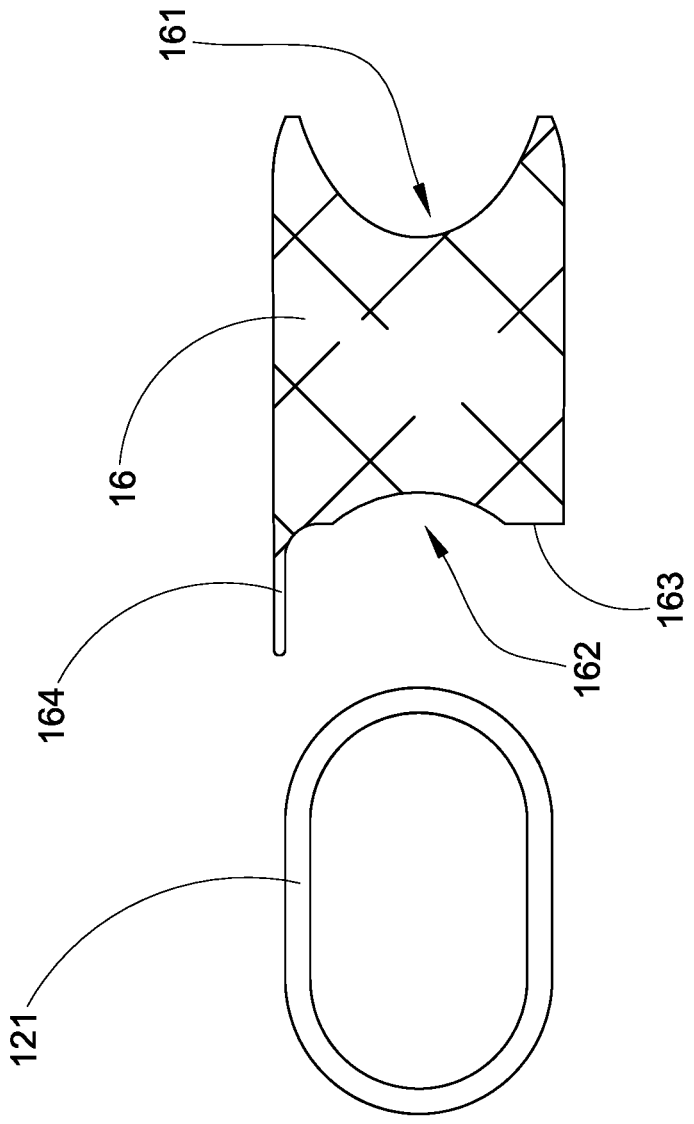


FIG.8

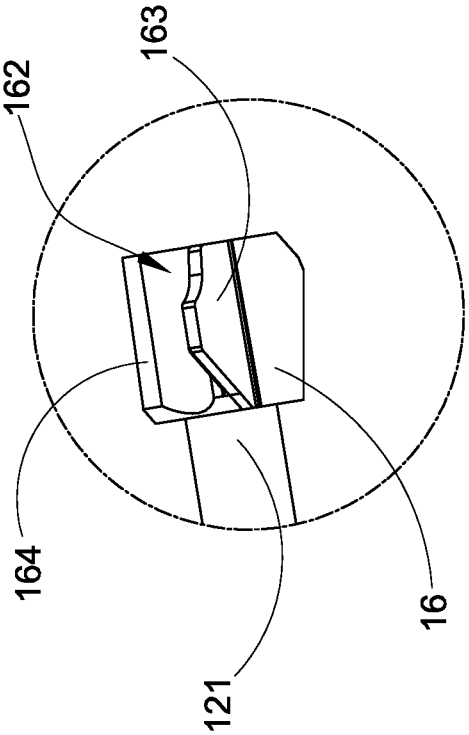


FIG.9B

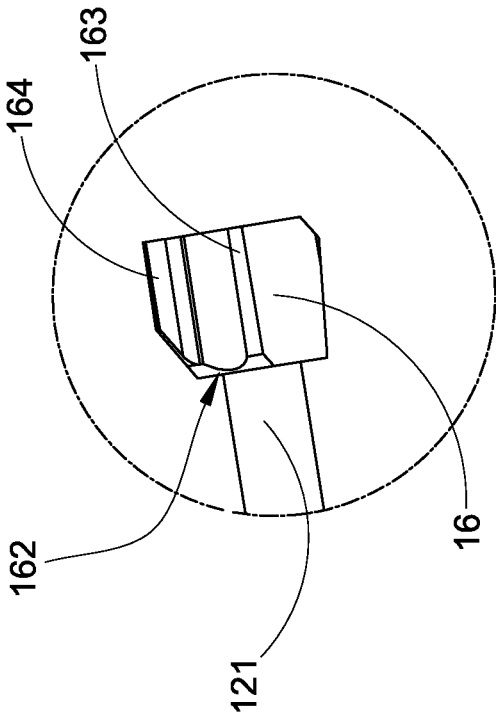


FIG.9A

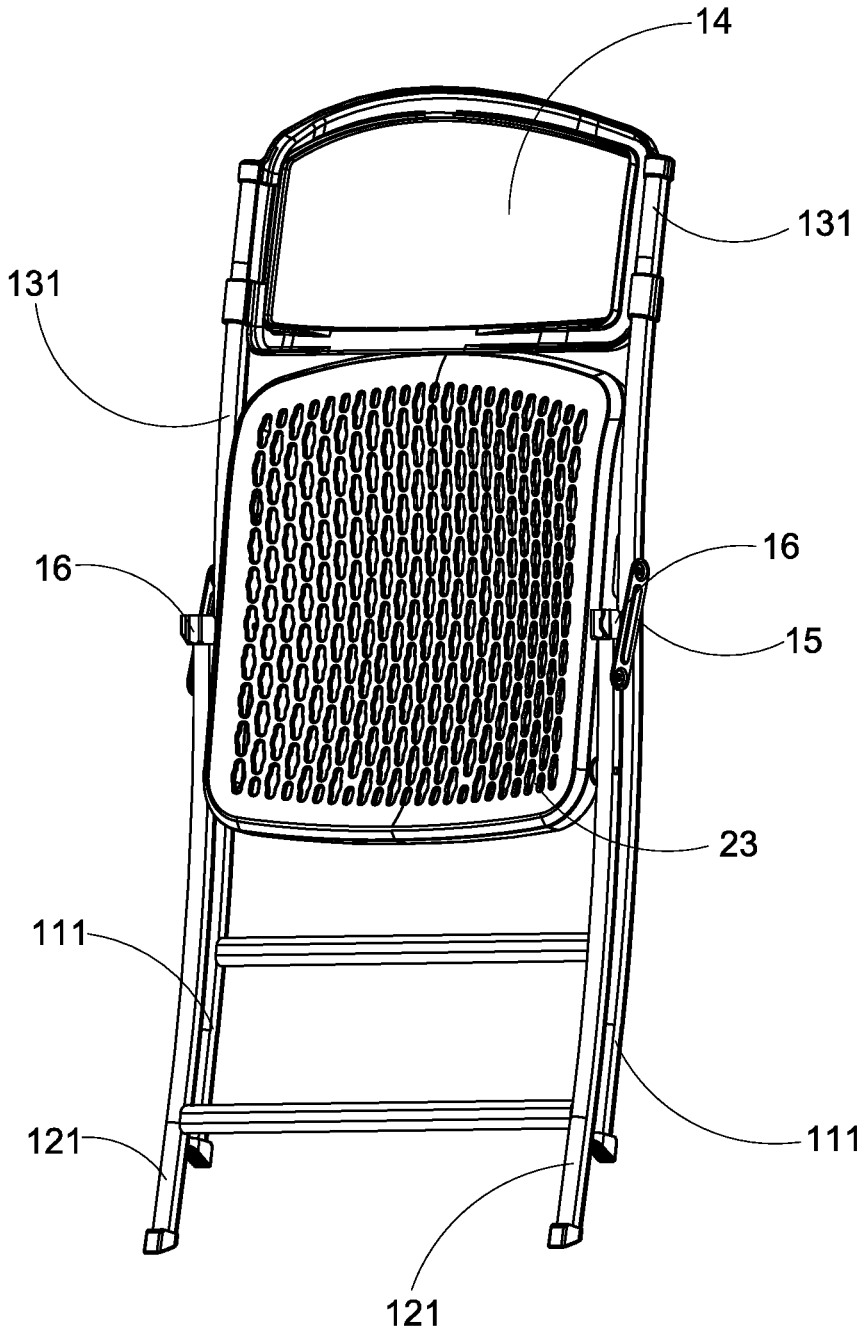


FIG.10

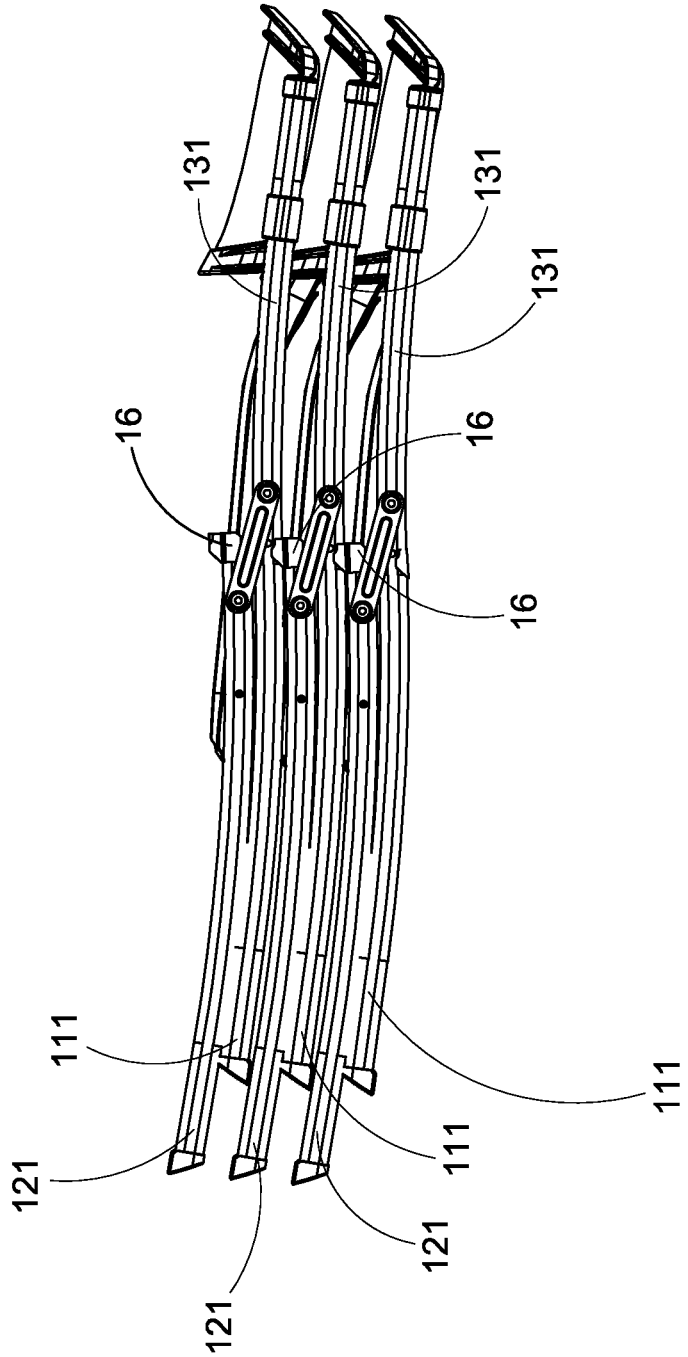


FIG.11

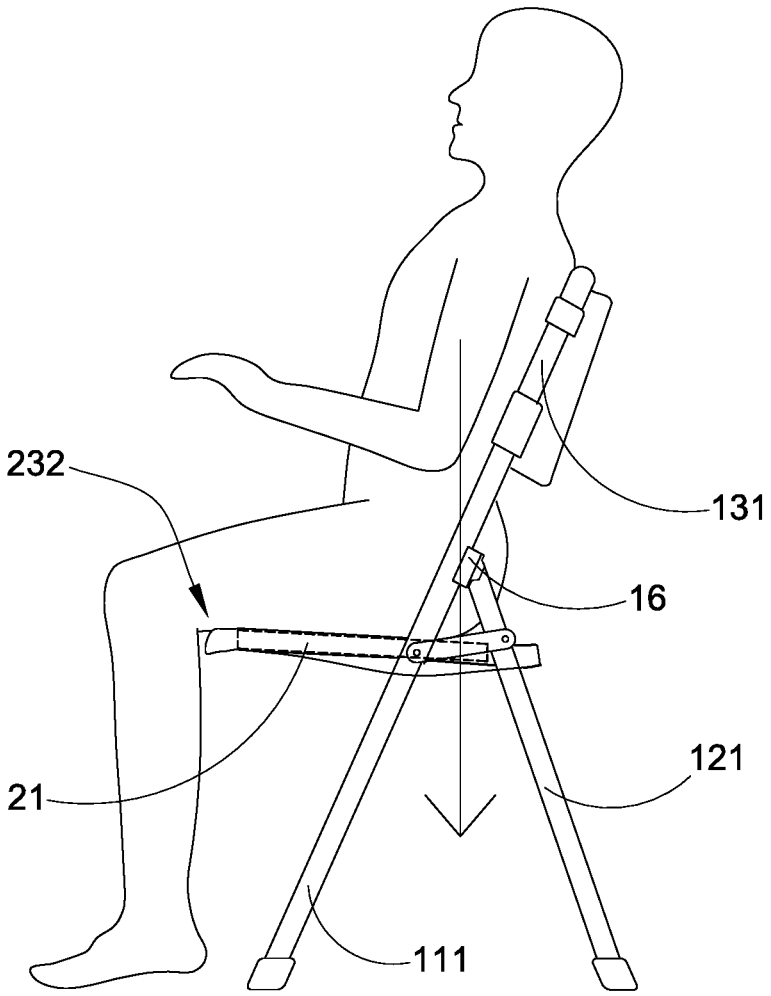


FIG.12

FOLDABLE CHAIR

NOTICE OF COPYRIGHT

BACKGROUND OF THE PRESENT INVENTION

Field of Invention

[0002] The present invention relates to a foldable chair, and more particularly to a foldable chair with a reinforcing joint that not only supports the foldable structure between a supporting frame and a seat frame of the foldable chair but also ensures the loading force at the seat frame to be evenly and efficiently distributed to the supporting frame.

Description of Related Arts

[0003] With present furniture manufacturing technology, a variety of foldable structure is used in the furniture because the furniture can be folded up as a portable furniture such that it is convenient for people to transport the furniture and it needs less room for storage. Therefore, the foldable furniture, such as foldable chair or table, is considered as a common tool being used at homes, offices, and during camping. Accordingly, the foldable furniture is constructed by a plurality of metal construction tubes pivotally connected with other in such a manner that the foldable furniture is capable of folding into a compact size and unfolding to expanse its supporting size by means of the pivot movement of the metal construction tubes.

[0004] For example, a conventional foldable chair comprises a support frame and a seat frame pivotally coupled at the support frame. In particular, the support frame comprises a front leg and a rear leg pivotally coupled with the seat frame. It is worth mentioning that the front leg, the rear leg, and the seat frame are formed with the construction tubes, wherein the construction tubes are pivotally connected together where they cross via a rivet so that the foldable chair can be easily unfolded to provide a rigid cross-support for use and be folded up for storage. Accordingly, a space must be provided between the two construction tubes in order to enable the pivotal movement between the construction tubes via the rivet. As a result, the rivet not only enables the pivotal movement between the construction tubes but also allows an unwanted lateral movement therebetween. This unwanted lateral movement will cause the unstable of the foldable chair when the foldable chair is moved at the unfolded position for supporting the loading force, i.e. when the user sits on the foldable chair. Accordingly, a washer is placed at the space between the two construction tubes to minimize the distance therebetween. In fact, when the user sits on the foldable chair, the weight of the user will substantially distribute to the support frame through the rivets. Therefore, the rivets must be strong enough to support the loading force. Once the rivet is deformed, bent, or even broken by the loading force, the foldable chair cannot be pivotally folded or unfolded. In the worst case, the foldable chair will be collapsed.

[0005] In addition, the rivet passes through rivet holes formed at the construction tubes for pivotally connection therebetween, wherein the diameter of the rivet hole must be larger than a diameter size of the rivet in order to allow the rivet to pass through the rivet hole. Therefore, a clearance is formed between the rim of the rivet hole and the rivet. In other words, the clearance not only allows the rivet to rotate within the rivet hole for pivotally moving the construction tubes but also allows the rivet to laterally move within the rivet hole. As a result, the clearance will cause the wobbling movement of the foldable chair when it is unfolded.

[0006] In addition, during the folding and unfolding movements, frictional forces are unavoidably created between the rim of the rivet hole and the rivet. Therefore, stress will be accumulated at the rim of the rivet hole to cause the deformation of the rivet hole. The size of the rivet hole will become bigger and bigger to affect the pivotal movement of the construction tubes. As a result, the conventional rivet cannot provide a rigid configuration to support the connections of the foldable chair and will only shorten the service life span of the foldable chair.

SUMMARY OF THE PRESENT INVENTION

[0007] The invention is advantageous in that it provides a foldable chair, wherein the foldable chair comprises a reinforcing joint for pivotally connecting a supporting frame with a seat frame to enhance the stabilization of the foldable chair.

[0008] Another advantage of the invention is to provide a foldable chair, wherein the reinforcing joint not only serves as a supporting shaft to support between the supporting frame and the seat frame but also serves as a rotatable shaft to enable the second joint member to be rotated at the first joint member for a pivotal movement between the supporting frame and the seat frame.

[0009] Another advantage of the invention is to provide a foldable chair, wherein the reinforcing joint is able to effectively distribute the loading force at the seat frame to the supporting frame without damaging the connection between the seat frame and the supporting frame.

[0010] Another advantage of the invention is to provide a foldable chair, wherein the reinforcing joint can retain a distance between the seat frame and the supporting frame to prevent any unwanted lateral movement therebetween during the folding and unfolding operations.

[0011] Another advantage of the invention is to provide a foldable chair, wherein the first and second joint members are frictionally engaged with each other to enhance the support of the reinforcing joint between the seat frame and the supporting frame. In particular, no clearance is formed between the first and second joint members to prevent any wobbling movement of the foldable chair especially when it is unfolded.

[0012] Another advantage of the invention is to provide a foldable chair, wherein the foldable chair is able to move between a folded position and an unfolded position via the reinforcing joint, wherein the first joint member is rotated along the second joint member at a direction to move the seat frame to the folded position, and in other words, the first

joint member is rotated along the second joint member at an opposite direction to move the seat frame to the unfolded position.

[0013] Another advantage of the invention is to provide a foldable chair, wherein two joint stoppers are coupled at an upper end of the rear leg frame to provide multiple functions of retaining the foldable chair at the unfolded position by biasing the joint stoppers against the back supporting members of the foldable chair and retaining the foldable chairs at a stacked position by engaging with the joint stoppers with the back supporting members of another foldable chair.

[0014] Another advantage of the invention is to provide a foldable chair, wherein the joint stopper can be incorporated with any existing folding chair to provide the multiple functions.

[0015] Another advantage of the invention is to provide a foldable chair, wherein the seat panel is ergonomically design to ensure the sitting posture of the user.

[0016] Another advantage of the invention is to provide a foldable chair, wherein the and thigh supporting portion of the seat panel is suspendedly supported by the seat frame to provide a predetermined flexibility so as to generate an upward bounding force to the thighs of the user.

[0017] Another advantage of the invention is to provide a foldable chair, wherein the foldable frame further comprises two guiding frames to guide the rear legs of the foldable frame to overlap or expand with respect to the front legs, so as to prevent unexpectedly horizontal movement happened on the rear legs.

[0018] Another object of the present invention is to provide a foldable chair, which does not require altering the original structural design of the foldable chair, so as to minimize the manufacturing cost of the foldable chair incorporating with the reinforcing joint. The reinforcing joint can also incorporated with different foldable furniture such as a foldable table.

[0019] Another object of the present invention is to provide a reinforcing joint for foldable chair, wherein no expensive or complicated structure is required to employ in the present invention in order to achieve the above mentioned objects. Therefore, the present invention successfully provides an economic and efficient solution for providing a rigid configuration for the foldable chair.

[0020] Additional advantages and features of the invention will become apparent from the description which follows, and may be realized by means of the instrumentalities and combinations particular point out in the appended claims.

[0021] According to the present invention, the foregoing and other objects and advantages are attained by a foldable chair which comprises a foldable frame and at least one reinforcing joint.

[0022] The foldable frame is constructed by a plurality of construction tubes, wherein the foldable frame comprises a supporting frame and a seat frame.

[0023] The reinforcing joint is arranged for pivotally connecting one of the construction tubes of the supporting frame with one of the construction tubes of the seat frame, wherein the reinforcing joint comprises a first joint member, a second joint member, and a connecting member extended from the second joint member through the first joint member to ensure an engagement therebetween.

[0024] The first joint member, having an engaging cavity, is coupled at the seat frame. The second joint member is coupled at the supporting frame and is received at the engaging cavity to frictionally couple with the first joint member. Accordingly, the first and second joint members serve as a supporting shaft to support between the supporting frame and the seat frame and serve as a rotatable shaft to enable the second joint member to be rotated at the first joint member for a pivotal movement between the supporting frame and the seat frame.

[0025] In accordance with another aspect of the invention, the present invention comprises a reinforcing joint for pivotally connecting first and second construction tubes of a foldable chair, comprising:

[0026] a first joint member, having an engaging cavity, arranged for coupling at the first construction tube;

[0027] a second joint member arranged for coupling at the second construction tube, wherein the second joint member is received at the engaging cavity to frictionally couple with the first joint member, such that the second joint member serves as a supporting shaft for supporting between the two construction tubes and serves as a rotatable shaft to enable the second joint member to be rotated at the first joint member for a pivotal movement between the two construction tubes; and

[0028] a connecting member extended from the second joint member through the first joint member to ensure an engagement therebetween.

[0029] Still further objects and advantages will become apparent from a consideration of the ensuing description and drawings.

[0030] These and other objectives, features, and advantages of the present invention will become apparent from the following detailed description, the accompanying drawings, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0031] FIG. **1** is a perspective view of a foldable chair according to a preferred embodiment of the present invention.

[0032] FIG. **2** is a perspective view of the foldable chair according to the above mentioned preferred embodiment of the present invention, illustrating the supporting frame pivotally coupled with the seat frame via the reinforcing joints.

[0033] FIG. **3** is a perspective view of the foldable chair according to the above mentioned preferred embodiment of the present invention, illustrating the construction tubes of the supporting frame and the seat frame being connected by the reinforcing joint.

[0034] FIG. **4** is a sectional view of the reinforcing joint of the foldable chair according to the above mentioned preferred embodiment of the present invention, illustrating the configurations of the first and second joint members.

[0035] FIG. **5** is a sectional view of the reinforcing joint of the foldable chair according to the above mentioned preferred embodiment of the present invention, illustrating the first and second joint members being frictionally engaged with each other.

[0036] FIG. **6** is a partially perspective view of the foldable chair according to the above mentioned preferred embodiment of the present invention, illustrating the joint stopper.

[0037] FIG. **7** is a perspective view of the joint stopper of the foldable chair according to the above mentioned preferred embodiment of the present invention.

[0038] FIG. **8** is a sectional view of the joint stopper of the foldable chair according to the above mentioned preferred embodiment of the present invention.

[0039] FIGS. **9**A and **9**B illustrates different alternative mode of the joint stopper of the foldable chair according to the above mentioned preferred embodiment of the present invention.

[0040] FIG. **10** is a perspective view of the foldable chair at a folded position according to the above mentioned preferred embodiment of the present invention.

[0041] FIG. **11** is a side view illustrating the foldable chairs being stacked with each other according to the above mentioned preferred embodiment of the present invention.

[0042] FIG. **12** illustrates the user sitting on the foldable chair according to the above mentioned preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0043] The following description is disclosed to enable any person skilled in the art to make and use the present invention. Preferred embodiments are provided in the following description only as examples and modifications will be apparent to those skilled in the art. The general principles defined in the following description would be applied to other embodiments, alternatives, modifications, equivalents, and applications without departing from the spirit and scope of the present invention.

[0044] Referring to FIGS. **1** and **2** of the drawings, a foldable chair according to a preferred embodiment of the present invention is illustrated, wherein the foldable chair comprises a foldable frame constructed by a plurality of construction tubes, wherein each of the construction tubes is made of rigid material such as metal, and is configured to have a rectangular cross section or circular cross section. In particular, the foldable frame comprises a supporting frame **10**, a seat frame **20**, and one or more reinforcing joints **30**.

[0045] As shown in FIG. **2**, the supporting frame **10** comprises a front leg frame **11** and a rear leg frame **12**. The front leg frame **11** comprises two front legs **111** which are two construction tubes. The rear leg frame **12** comprises two rear legs **121** which are also two construction tubes. The foldable frame further comprises a back support frame **13** which comprises two back support members **131** integrally and upwardly extended from the front legs **111** respectively. Accordingly, the foldable frame is adapted to move between a folded position that the rear legs **121** are moved and parallelly extended to the front legs **111** respectively to support the seat frame **20** at a vertical manner as shown in FIG. **1**, and an unfolded position that the front and rear legs **111**, **121** are moved at a predetermined angle to support the seat frame **20** at a horizontal manner, as shown in FIG. **10**.

[0046] The seat frame **20** is constructed by a U-shaped construction tube defining two parallel side seat members **21** and a rear seat support **22** integrally extended between two rear ends of the seat members **21**. Accordingly, the reinforcing joints **30** are pivotally coupled the two seat members **21** of the seat frame **20** with the front legs **111** of the supporting frame **11** respectively. It is appreciated that the reinforcing joints **30** are pivotally coupled the two side seat members **21** of the seat frame **20** with the rear legs **121** of the supporting frame **11** respectively.

[0047] As shown in FIG. **2**, the foldable frame further comprises two guiding arms **15**, wherein each of the guiding arms **15** has one end affixed at the front leg **111**, and an opposed end affixed on the rear leg **121**. When the foldable chair is moved to the folded position, the rear legs **121** of the foldable frame **10** are guided by the guiding arms **15** to pivotally move toward the front legs **111**. In addition, when the foldable chair is moved to the unfolded position, the rear legs **121** are guided to pivotally move away with respect to the front legs **111** by the guiding arms **15**.

[0048] The foldable chair further comprises a seat panel **23** supported by the seat frame **20** and a back panel **14** supported by the back support members **131** of the back support frame **13**. Accordingly, a rear edge portion of the seat panel **23** is supported by the rear seat support **22** of the seat frame **20** and two side edge portions of the seat panel **23** are supported by the two side seat members **21** of the seat frame **20**. In other words, the front edge portion of the seat panel **23** is suspendedly supported by the seat frame **20**. In particular, the seat panel **23** is ergonomically design to ensure the sitting posture of the user. The seat panel **23** has a butt supporting portion **231** formed indentedly and thigh supporting portion **232** frontwardly extended from the butt supporting portion **231**. When the user sits on the seat panel **23**, the butt and thighs of the user will be supported by the butt supporting portion **231** and the thigh supporting portion **232** to ensure the proper sitting posture of the user in which the back of the user is straight and supported by the back panel **14**. The thigh supporting portion **232** has an upward curving configuration to substantially match with the shape of the thigh of the user. It is worth mentioning that the thigh supporting portion **232** of the seat frame **20** is defined at the front portion thereof, wherein the thigh supporting portion **232** is suspendedly supported by the seat frame **20**, such that the thigh supporting portion **232** is free from the seat frame **20** to provide a predetermined flexibility so as to generate an upward bounding force to the thighs of the user. Preferably, the seat panel **23** is made of mesh fabric or mesh plastic for enhancing the air circulation. When the user sits on the foldable chair, as shown in FIG. **12**, the butt supporting portion **231** and the thigh supporting portion **232** of the seat panel **23** will support the butt and thighs of the user. In addition, the weight of the user will be applied on the seat panel **23** at a position that a center of mass of the user will be located on the seat frame **23** between a first connection point at the side seat members **21** coupled to the rear leg **121** and a second connection point at the side seat members **21** coupled to the front leg **111**. Therefore, the foldable chair is able to support the weight of the user and to ensure the sitting posture of the user.

[0049] As shown in FIGS. **3** to **5**, the reinforcing joint **30** is arranged for pivotally connecting the supporting frame **10** with the seat frame **20**, wherein the reinforcing joint **30** comprises a first joint member **31** coupled at the seat frame **20**, a second joint member coupled at the supporting frame **10** to frictionally engage with the first joint member **31**, and a connecting member **33** extended from the second joint member **32** through the first joint member **31** to ensure an engagement therebetween.

[0050] The first joint member **31** has an engaging cavity **311** that the second joint member **32** is received at the engaging cavity **311**. In particular, the first joint member **31** has a tubular shape defining the engaging cavity **311** therein, such that the second joint member **32** is inserted into the engaging cavity **311**. Once the second joint member **31** is received in the engaging cavity **311**, an outer circumferential

surface of the second joint member **32** is frictionally engaged with an inner circumferential surface of the engaging cavity **311** of the first joint member **31**.

[0051] In order to enhance the friction between the first and second joint members **31**, **32**, the engaging cavity **311** has a conical shape that a size of the engaging cavity **311** is gradually increasing from the seat frame **20** to form an enlarged opening. Correspondingly, the second joint member **32** has a conical shape having a size gradually reducing from the supporting frame **10** to fit into the engaging cavity **311** through the enlarged opening thereof. In particular, a depth of the engaging cavity **311** matches with a length of the second joint member **32**.

[0052] Therefore, when the second joint member **32** is received in the engaging cavity **311**, the first and second joint members **31**, **32** serve as a supporting shaft to support between the supporting frame **10** and the seat frame **20** for effectively distributing a loading force from the seat frame **20** to the supporting frame **10**. In other words, when the user sits on the seat frame **20**, the loading force, i.e. the weight of the user, will transfer to the supporting frame **10** through the first and second joint members **31**, **32**. Since the second joint member **32** is a solid and rigid member, the second joint member **32** forms a supporting shaft to replace the conventional rivet to support the foldable chair. Furthermore, the first and second joint members **31**, **32** also serve as a rotatable shaft to enable the second joint member **32** to be rotated at the first joint member **31** within the engaging cavity **311** thereof for a pivotal movement between the supporting frame **10** and the seat frame **20**.

[0053] As shown in FIGS. **3** to **5**, the first joint member **31** is sidewardly extended from the seat member **21** of the seat frame **20** and the second joint member **32** is sidewardly extended from the front leg **111** of the supporting frame **10**. For pivotally connecting the seat frame **20** with the rear leg frame **12**, the first joint member **31** is sidewardly extended from the seat member **21** of the seat frame **20** and the second joint member **32** is sidewardly extended from the rear leg **121** of the supporting frame **10**.

[0054] It is worth mentioning that no washer is required for coupling between the supporting frame **10** and the seat frame **20**. Since the second joint member **32** has a predetermined length to be received in the engaging cavity **311** of the first joint member **31**, the distance between the two construction tubes, i.e. the seat member **21** and the front leg **111**, can be substantially retained by the length of the second joint member **32**. Therefore, the seat frame **20** can only be pivotally moved with respect to the supporting frame **10** via the reinforcing joint **30** to prevent any unwanted lateral movement therebetween during the folding and unfolding operations and especially when the foldable chair is moved at the unfolded position for the user to sit thereon.

[0055] According to the preferred embodiment, the connecting member **33** is embodied as a rivet to couple between the first and second joint members **31**, **32**. However, the connecting member **33** is not used for supporting the folding chair. In other words, since the loading force will be transferred to the first and second joint members **31**, **32**, the loading force will not be applied to the connecting member **33**. It is appreciated that the connecting member **33** can be a screw or other fastening elements.

[0056] Accordingly, the supporting frame **10** has a first coupling hole **101** and the seat frame **20** has a second coupling hole **201** aligned with the first coupling hole **101**, wherein the first and second coupling holes **101**, **201** is slightly larger than a diameter of the connecting member **33**. The connecting member **33** has two ends rotatably coupled at the first and second coupling holes **101**, **201** through the first and second joint members, **31**, **32**. It is worth mentioning that the second joint member **32** has a through channel **320** aligned with the first and second coupling holes **101**, **201**, such that the connecting member **33** extended between the first and second coupling holes **101**, **201** through the through channel **320** of the second joint member **32**. It is appreciated that the connecting member **33** can be integrally extended from the second joint member **32** to engage with the first coupling hole **101** after the second joint member **32** is received in the engaging cavity **111** of the first joint member **31**, such that no second coupling hole **201** and the through channel **320** will be required.

[0057] As shown in FIGS. **4** and **5**, the reinforcing joint **30** further comprises a first attachment panel **34** and a second attachment panel **35** securely affixing to the seat frame **20** and the supporting frame **10** respectively, wherein the first and second joint members **31**, **32** are integrally extended from the first and second attachment panels **34**, **35** respectively.

[0058] Accordingly, the first attachment panel **34** has a first attachment surface configured to match with a contour of the seat member **21** of the seat frame **20**, wherein the first attachment surface of the first attachment panel **34** is affixed to the seat member **21** of the seat frame **20**. Likewise, the second attachment panel **35** has a second attachment surface configured to match with a contour of the front leg **111** of the supporting frame **10**, wherein the second attachment surface of the second attachment panel **35** is affixed to the front leg **111** of the supporting frame **10**. Therefore, the reinforcing joint **30** can be incorporated with the two construction tubes with different cross sections. It is worth mentioning that the first attachment panel **34** and a second attachment panel **35** are securely affixed to the seat frame **20** and the supporting frame **10** respectively via fasteners, such as pins or nails. In addition, the first and second attachment panels **34**, **35** will enlarge the force transmitting surfaces for the seat frame **20** and the supporting frame **10** to enhance the loading force to effectively transmit from the seat frame **20** to the supporting frame **10**.

[0059] When the foldable chair is moved between the unfolded position and the folded position, the rear legs **121** are pivotally moved with respect to the front legs **111**, such that the second joint member **32** is frictionally rotated within the engaging cavity **311** of the first joint member **31**. It is worth mentioning that the frictional engagement between the first and second joint members **31**, **32** will generate the frictional force to retain the foldable chair at the folded position. In other words, the user must apply the force to overcome the frictional force in order to move the foldable chair from the folded position to the unfolded position. Likewise, the frictional engagement between the first and second joint members **31**, **32** will generate the frictional force to retain the foldable chair at the unfolded position to prevent the foldable chair from being folded accidentally.

[0060] It is worth mentioning that the reinforcing joint **30** of the present invention is able to pivotally connect two construction tubes of any foldable furniture, such as foldable table. In addition, the reinforcing joint **30** can also connect two construction tubes of the foldable chair at any location for pivotal movement. Accordingly, the reinforcing joint **30**

can solve the problems of the existing rivet connection structure for pivotally connecting two construction tubes. The width of the reinforcing joint **30** will retain the distance between the construction tubes to stabilize the structure of the foldable frame to prevent any unwanted lateral movement between the construction tube. The reinforcing joint **30** is more rigid than the rivet to support the foldable frame and to effective distribute the loading force. Since the first and second joint members **31**, **32** are frictionally engaged with each other, there is no clearance formed therebetween to create any wobbling movement of the foldable chair especially when it is unfolded.

[0061] As shown in FIG. **6**, the rear legs **121** of the rear leg frame **12** are pivotally folded at the unfolded position that two upper ends of the rear legs **121** are biased against the back support members **131** respectively, such that the front and rear legs **111**, **121** are moved at the predetermined angle. In particular, the supporting frame **10** further comprises a joint stopper **16** coupled at an upper end of the rear leg frame **12** for biasing against the back frame **13** to retain the foldable frame at the unfolded position. Accordingly, two joint stoppers **16** are coupled at the upper ends of the rear legs **121** respectively, wherein each of the joint stoppers **16** has a stopping surface **161**, as a front stopping surface, biased against the corresponding back supporting member **131** to ensure the foldable frame at the unfolded position. Accordingly, the contour of the stopping surface **161** matches with the contour of the rear side of the back supporting member **131** for maximizing the contacting area therebetween. For example, when the back supporting member **131** has a circular cross section, the stopping surface **161** will be configured to have an arc-shaped surface to substantially bias against the rear side of the back supporting member **131**. In one embodiment, the stopping surface **161** has a concave configuration to bias against the rear side of the back supporting member **131**.

[0062] Each of the joint stoppers **16** further has a joining surface **162**, as a rear joining surface, formed opposite to the stopping surface **161**, as shown in FIG. **8**. For example, the stopping surface **161** is formed at a front side of the joint stopper **16** and the joining surface **162** is formed at a rear side of the joint stopper **16**. Accordingly, the joint surfaces **162** of the joint stoppers **16** are arranged for coupling with the back supporting members **131** of another foldable chair so as to stack the foldable chairs with each other. In other words, the joint stoppers **16** also serve as stackable joints for retaining the foldable chairs to be stacked with each other. In particular, when the foldable chair is folded, the front and rear legs **111**, **121** are moved to each other side-by-side, such that the joint surfaces **162** of the joint stoppers **16** face rearwardly when the foldable chair is folded. Therefore, when two folded foldable chairs, i.e. the first folded chair and the second folded chair, are stacked with each other, the joint surfaces **162** of the joint stoppers **16** of the first folded chair are detachably coupled with the back supporting members **131** of the second folded chair, so as to retain the folded chairs in a stacked manner, as shown in FIG. **11**. It is appreciated that multiple folded chairs can be stacked with each other and can be interlocked with each other to retain the folded chairs in a stacked manner.

[0063] It is worth mentioning that the contour of the joining surface **162** matches with the contour of the front side of the back supporting member **131** for maximizing the contacting area therebetween when two foldable chairs are stacked. In one embodiment, the joining surface **162** has a concave configuration to bias against the front side of the back supporting member **131** of another foldable chair.

[0064] According to the preferred embodiment, each of the joint stoppers **16** further comprises an inner join wall **163** and an outer join wall **164** spacedly and rearwardly extended to define the joint surface **162** between the inner and outer join walls **163**, **164**. In particular, the inner and outer join walls **163**, **164** are rearwardly extended from two sidewalls of the joint stopper **16** respectively. In other words, the back supporting member **131** of second folded chair will engage with the joining surface **162** of the joint stopper **16** between the inner and outer join walls **163**, **164**.

[0065] Preferably, a height of the outer join wall **164** is larger than a height of the inner join wall **163**. Therefore, the two outer join walls **164** of the joint stoppers **16** of each of the foldable chair form two boundary walls to guide and couple the back supporting member **131** of second folded chair so as to retain the foldable chairs in a stacked manner. Preferably, each of the outer join walls **164** has a trapezoid shape and each of the inner join walls **163** has a rectangular shape. Preferably, one side edge of the outer join wall **164** is a slanted side edge and another side edge of the outer join wall **164** is a curved side edge. It is appreciated that the height difference between the outer joint wall **164** and the inner joint wall **163** can be modified and the shape of the outer joint wall **164** and the inner joint wall **163** can be altered as shown in FIGS. **9**A and **9**B.

[0066] In one embodiment, in order to couple the joint stoppers **16** at the upper ends of the rear legs **121** respectively, each of the joint stoppers **16** further comprises an joint connector **165** extended downwardly to slidably insert into the upper end of the rear leg **121**, as shown in FIG. **7**. Preferably, each of the rear legs **121** has tubular shape defining an upper opening at the upper end of the rear leg **121**, wherein the joint connector **165** is inserted into the rear leg **121** through the upper opening thereof. It is appreciated that the joint stopper **16** can be incorporated with any existing folding chair to provide multiple functions of retaining the foldable chair at the unfolded position by biasing against the back supporting members **131** of the foldable chair and retaining the foldable chairs at a stacked position by engaging with the back supporting members **131** of another foldable chair.

[0067] One skilled in the art will understand that the embodiment of the present invention as shown in the drawings and described above is exemplary only and not intended to be limiting.

[0068] It will thus be seen that the objects of the present invention have been fully and effectively accomplished. The embodiments have been shown and described for the purposes of illustrating the functional and structural principles of the present invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

What is claimed is:

1. A foldable chair, comprising:

a foldable frame which comprises a supporting frame and a seat frame; and

at least one reinforcing joint for pivotally connecting said supporting frame with said seat frame, wherein said reinforcing joint comprises:

a first joint member, having an engaging cavity, coupled at said seat frame;

a second joint member coupled at said supporting frame and received at said engaging cavity to frictionally couple with said first joint member, wherein said first and second joint members serve as a supporting shaft to support between said supporting frame and said seat frame and serve as a rotatable shaft to enable said second joint member to be rotated at said first joint member for a pivotal movement between said supporting frame and said seat frame; and

a connecting member extended from said second joint member through said first joint member to ensure an engagement therebetween.

2. The foldable chair, as recited in claim **1**, wherein said first joint member has a tubular shape defining said engaging cavity therein, such that said second joint member is inserted into said engaging cavity at a position that an outer circumferential surface of said second joint member is frictionally engaged with an inner circumferential surface of said engaging cavity.

3. The foldable chair, as recited in claim **2**, wherein said engaging cavity is a conical cavity and said second joint member has a corresponding conical shape to enlarge a frictional contacting area between said first joint member and said second joint member.

4. The foldable chair, as recited in claim **3**, wherein a depth of said engaging cavity matches with a length of said second joint member.

5. The foldable chair, as recited in claim **1**, wherein said supporting frame has a first coupling hole and said seat frame has a second coupling hole, wherein said connecting member has two ends rotatably coupled at said first and second coupling holes through said first and second joint members.

6. The foldable chair, as recited in claim **4**, wherein said supporting frame has a first coupling hole and said seat frame has a second coupling hole, wherein said connecting member has two ends rotatably coupled at said first and second coupling holes through said first and second joint members.

7. The foldable chair, as recited in claim **1**, wherein said reinforcing joint further comprises a first attachment panel and a second attachment panel securely affixing to said seat frame and said supporting frame respectively, wherein said first and second joint members are integrally extended from said first and second attachment panels respectively.

8. The foldable chair, as recited in claim **6**, wherein said reinforcing joint further comprises a first attachment panel and a second attachment panel securely affixing to said seat frame and said supporting frame respectively, wherein said first and second joint members are integrally extended from said first and second attachment panels respectively.

9. The foldable chair, as recited in claim **1**, wherein said supporting frame comprises a front leg frame and a rear leg frame, wherein said seat frame is pivotally coupled at said front and rear leg frames via said reinforcing joints respectively.

10. The foldable chair, as recited in claim **8**, wherein said supporting frame comprises a front leg frame and a rear leg frame, wherein said seat frame is pivotally coupled at said front and rear leg frames via said reinforcing joints respectively.

11. The foldable chair, as recited in claim **9**, wherein said supporting frame further comprises a back frame upwardly extended from said front leg frame, and a joint stopper coupled at an upper end of said rear leg frame, wherein said joint stopper has a front stopping surface configured for biasing against said back frame to retain said foldable frame at an unfolded position and a rear joining surface arranged in such a manner that when two of said foldable chairs are stacked with each other, said rear joint surface of one foldable chair is engaged with said back frame of another foldable chair so as to retain said foldable chairs in a stacked manner.

12. The foldable chair, as recited in claim **10**, wherein said supporting frame further comprises a back frame upwardly extended from said front leg frame, and a joint stopper coupled at an upper end of said rear leg frame, wherein said joint stopper has a front stopping surface configured for biasing against said back frame to retain said foldable frame at an unfolded position and a rear joining surface arranged in such a manner that when two of said foldable chairs are stacked with each other, said rear joint surface of one foldable chair is engaged with said back frame of another foldable chair so as to retain said foldable chairs in a stacked manner.

13. The foldable chair, as recited in claim **12**, wherein said front stopping surface and said rear joining surface are configured to have a contour matching with a contour of a rear side of said back frame and a contour of a front side of said back frame respectively.

14. A reinforcing joint for pivotally connecting first and second construction tubes of a foldable chair, comprising:

a first joint member, having an engaging cavity, arranged for coupling at the first construction tube;

a second joint member arranged for coupling at the second construction tube, wherein said second joint member is received at said engaging cavity to frictionally couple with said first joint member, such that said second joint member serves as a supporting shaft for supporting between the two construction tubes and serves as a rotatable shaft to enable said second joint member to be rotated at said first joint member for a pivotal movement between the two construction tubes; and

a connecting member extended through said first joint member and said second joint member to ensure an engagement therebetween.

15. The reinforcing joint, as recited in claim **14**, wherein said first joint member has a tubular shape defining said engaging cavity therein, such that said second joint member is inserted into said engaging cavity at a position that an outer circumferential surface of said second joint member is frictionally engaged with an inner circumferential surface of said engaging cavity.

16. The reinforcing joint, as recited in claim **15**, wherein said engaging cavity is a conical cavity and said second joint member has a corresponding conical shape to enlarge a frictional contacting area between said first joint member and said second joint member.

17. The reinforcing joint, as recited in claim **14**, wherein a depth of said engaging cavity matches with a length of said second joint member.

18. The reinforcing joint, as recited in claim **16**, wherein a depth of said engaging cavity matches with a length of said second joint member.

19. The reinforcing joint, as recited in claim **14**, further comprising a first attachment panel and a second attachment panel for securely affixing to said seat frame and said supporting frame respectively, wherein said first and second joint members are integrally extended from said first and second attachment panels respectively.

20. The reinforcing joint, as recited in claim **18**, further comprising a first attachment panel and a second attachment panel for securely affixing to said seat frame and said supporting frame respectively, wherein said first and second joint members are integrally extended from said first and second attachment panels respectively.

21. A foldable chair, comprising:

a foldable frame which comprises a supporting frame and a seat frame, wherein said supporting frame comprises a front leg frame, a rear leg frame and a back frame upwardly extended from said front leg frame;

at least a joint pivotally coupled at said front leg frame and said rear leg frame for pivotally connecting said supporting frame with said frame such that said foldable frame is adapted to move between a folded position that said supporting frame supports said seat frame at a vertical manner, and an unfolded position that said support frame is moved at a predetermined angle to support said seat frame at a horizontal manner; and

a joint stopper, which is coupled at an upper portion of said rear leg frame, having a front stopping surface configured for biasing against said back leg frame to retain said foldable frame at said unfolded position and a rear joining surface arranged in such a manner that when two of said foldable chairs are stacked with each other, said rear joint surface of one of said foldable chairs is engaged with said back frame of another said foldable chair so as to retain said foldable chairs in a stacked manner.

22. The foldable chair, as recited in claim **21**, wherein said front stopping surface and said rear joining surface are configured to have a contour matching with a contour of a rear said of said back frame and a contour of a front side of said back frame respectively.

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