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(54) **Foldable playyard**

(57) A foldable playyard comprises four long tubes (21), four short tubes (22) a first distal end (221) of which is pivotally connected with a periphery of one of the long tubes via a first connector (30), a second distal (222) end of which is pivotally connected with the second distal end (222) of another one of the short tubes via a second connector (40) and two intermediate tubes (23) a first distal end (231) of which is pivotally connected with the first distal (231) end of the other intermediate tube (23) via a third connector (50) and a second distal end of which is pivotally connected with two pivotally second distal ends of two short tubes via the second connector. Furthermore, a first distal end of one of the four long tubes is pivotally connected with the first distal end of another long tube via a fourth connector (60) and a second distal end of the long tube is pivotally connected with a stand which securely receives therein a pole from an upper frame. An arcuate slot defined in a periphery of the second distal end of the long tube allows a pin to be inserted therethrough and thus allows the pin to move within the arcuate slot and thus the long tube is rotated when the lower frame is folded toward the upper frame of the foldable playyard.

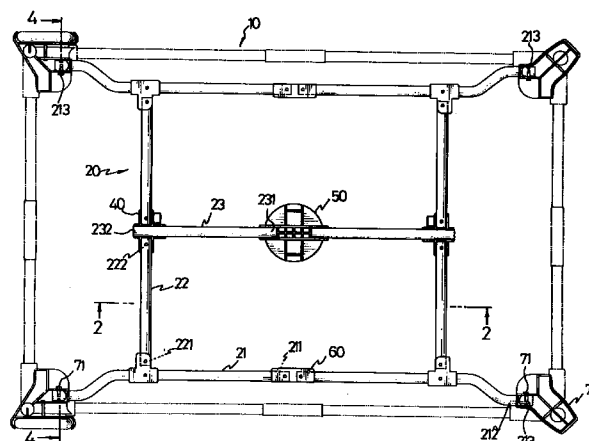


FIG. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention generally relates to a foldable playyard, and more particularly to a lower frame of a foldable playyard. The lower frame of the foldable playyard comprises four long tube, four short tubes a first distal end of which is pivotally connected with a periphery of one of the long tubes via a first connector, a second distal end of which is pivotally connected with the second distal end of one of the short tubes via a second connector and two intermediate tubes a first distal end of which is pivotally connected with the first distal end of the other intermediate tube via a third connector and a second distal end of which is pivotally connected with two pivotally second distal ends of two short tubes via the second connector. The first connector, the second connector and the third connector are configured to allow the first distal ends of the short tube, and the second distal ends of the short tubes and the intermediate tubes to pivot within a range of 90°. Furthermore, an arcuate slot is defined in a periphery of a first distal end of the long tubes thereby allowing each of the long tubes to be rotated when the playyard is unfolded.

BACKGROUND OF THE INVENTION

[0002] Conventional playyards for babies are either made of wood or of plastic and the structure of which is fixed, so that parents will not worry about something bad, such as unintentional collapse of a foldable playyard might happen and let the babies play within the playyards. Although having a fixed structure of the playyard is safe for babies, the playyard will always take up a very big space when in storage, which often brings a lot of trouble to the families having not much space left for storage.

[0003] From the previous description, it is noted that a playyard having a fixed structure is unable to fulfill the practical requirements of modern families. Thus, an application filed by the applicant of the present application on January 22, 1997 bearing the serial number 08/787,446 discloses a foldable device for a playyard. The disclosure of the pending application focuses on an upper frame of the playyard enabling a user to fold/unfold the playyard using only one hand. Therefore, detailed description of the operation and constructure of the upper frame of the foldable playyard is omitted. It will be obvious to those skilled in the art that the construction of the lower frame incorporated with the upper frame of the pending application has different alternatives and modification thereof is easy to be accomplished, once the pending application is in a status of allowance and then published. Nevertheless, the present invention tends to introduce a construction of a lower frame of the foldable playyard.

SUMMARY OF THE INVENTION

[0004] The main objective of the invention is to provide a substantially rectangular lower frame of a foldable playyard. The lower frame of the playyard enables a lower part of the playyard to be folded easily and thus minimize its space for storage.

[0005] Another objective of the invention is to provide a lower frame for a playyard, wherein an arcuate slot is defined in a periphery of the tubes to allow the tubes to be rotated when the lower part of the playyard is about to be folded/unfolded.

[0006] According to the preferred embodiment of the present invention, the lower frame of the foldable playyard includes four long tubes, four short tubes and two intermediate tubes which are interconnected appropriately by a variety of connectors whereby the lower frame can be conveniently folded or expanded.

[0007] Other objects, 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

[0008] The present invention will now be better understood with reference to the following drawings, wherein:

Fig. 1 is a bottom plane view of a lower frame of a playyard;

Fig. 2 is a sectional view of the lower frame taken from line 2-2 of Fig. 1;

Fig. 3 is a partial perspective view of a stand and a distal end of a long tube of the lower frame;

Fig. 4 is a sectional view of Fig. 1 taken from line 4-4;

Fig. 4A is a schematic view showing a folding of short tubes will cause the distal ends of the long tubes to rotate;

Fig. 5 is a plane view showing a folded status of the playyard.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0009] Referring to Fig. 1, a foldable playyard constructed in accordance with the present invention is shown. The foldable playyard has an upper frame 10 and a lower frame 20. Because a detailed description of the upper frame 10 has been disclosed in the pending application Serial No.08/787,446, a structure and operation of the upper frame 10 is thus omitted.

[0010] The lower frame 20 of the foldable playyard includes four long tubes 21, four short tubes 22, two intermediate tubes 23, four first connectors 30, two second connectors 40, one third connector 50 and two fourth connectors 60.

[0011] The short tubes 22 are separated into two

aligned pairs. The long tubes 21 are separated into two aligned pairs. A first distal end 211 of each long tube 21 is pivotally connected by means of one of the fourth connectors 60 to the first distal end 211 of the other long tube 21 to which it is paired. A second distal end 212 of each long tube 21 is pivotally received in a respective one of four corner stands 70. A distal end 221 of each short tube 22 is pivotally connected to a respective one of the long tubes 21 by a respective one of the first connectors 30. A second distal end 222 of each short tube is pivotally connected by means of one of the second connectors 40 to the second distal end 222 of the other short tube 22 to which it is paired. The intermediate tubes 23 are arranged as an aligned pair. A first distal end 231 of one of the intermediate tubes 23 is pivotally connected to the corresponding first end 231 of the other intermediate tube 23. A second end 232 of each intermediate tube 23 is pivotally connected by means of a respective one of the second connectors 40 to a corresponding aligned pair of second tubes 23. Each long tube 21 has defined in a periphery thereof an arcuate slot 213 into which a pin 71 is slidably received.

[0012] Referring again to Fig. 1 and Fig. 2, the first connector 30, the second connector 40, the third connector 50 and the fourth connector 60 are so configured that the first distal ends 221 and second distal ends 222 of the short tubes 22, the first distal end 211 and second distal end 212 of the long tube 21 and the first distal end 231 and the second distal end 232 of the intermediate tubes 23 can only pivot within a range of 90° toward the upper frame 10 when the lower frame 20 is being folded (as shown in Fig. 4A).

[0013] As the cornerstands 70 are identical, only one is referred to in the following description. Referring to Fig. 3, the stand 70 is configured to have a first cavity 701 and a second cavity 702 to respectively receive a pole 11 of the upper frame 10 and the respective second distal end 212 of the long tube 21 therein. A through hole 703 is defined in a periphery of the stand 70, such that the second distal end 212 of the long tube 21 is able to pivot within the second space 702 when the pin 71 is inserted into the through hole 703 and then the second distal end 212 of the long tube 21. It is noted that when the pin 71 is inserted into the second distal end 212 of the long tube 21, the pin 71 is disposed within the arcuate slot 213, therefore, the long tube 21 is thus able to rotate for a certain angle by the movement of the pin 71 within the arcuate slot 213.

[0014] Figures 4 and 4A show the folding of the short tubes 22 toward the upper frame 10 whereby the long tubes 21 rotate for a certain degree. It is understood that when the short tubes 22 are folded upward and toward the upper frame 10, due to the pivotal connection between each first connector 30 and the respective first distal end 221 of the short tube 22 and the secured connection between each first connector 30 and the periphery of the respective long tube 21, the long tubes 21 will somewhat be lifted upward and a rotation thereof is

inevitable. Thus, each arcuate slot 213 defined in the second distal end 212 of the respective long tube 21 allows the rotation thereof to be possible, which permits the aligned pairs of long tubes 21 to be folded with the folding movement of the short tubes 22. Figure 3 shows that a length of the arcuate slot 213 is formed to limit the rotation of the long tubes 21 to be in a range of 90°, by which is possible to allow the long tubes 21 to rotate within this range.

[0015] Referring to Fig. 5, it is noted that the foldable playyard constructed in accordance with the present invention is able to be folded into the form as shown, such that the playyard is readily convenient for storage and transporting.

[0016] From the foregoing, it is seen that the objects hereinbefore set forth may readily and efficiently be attained, and since certain changes may be made in the above construction and different embodiments of the invention without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Claims

1. A foldable playyard comprising an upper frame and a lower frame securely connected with said upper frame via poles, in which said lower frame has a rectangular shape and a rotation thereof allows said lower frame to be folded toward said upper frame.
2. The foldable playyard as claimed in claim 1, in which said lower frame comprises four long tubes, four short tubes each having a first distal end which is pivotally connected with a periphery of a respective one of said long tubes via one of four first connectors and a second distal end of which is pivotally connected with said second distal end of another one of said short tubes via one of two second connectors and two intermediate tubes each having a first distal end which is pivotally connected with said first distal end of the other intermediate tube via a third connector and a second distal end which is pivotally connected with two second distal ends of two short tubes via said second connector;

a first distal end of each long tube being pivotally connected with said first distal end of another long tube via a fourth connector and a second distal end of each said long tube being pivotally connected with a respective one of four stands which each securely receives therein a corresponding one of said poles of said upper frame.

3. The foldable playyard as claimed in claim 2, wherein an arcuate slot is defined in a periphery of

said second distal end of each said long tube allowing said second distal end of each said long tube to be rotatably received within a respective one of said stands.

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4. The foldable playyard as claimed in claim 2, in which one of four pins is inserted through a respective one of said stands and said arcuate slot of said second distal end of each said long tube allowing said long tube to be rotated along a length of said arcuate slot. 10

5. The foldable playyard as claimed in claim 3, wherein a length of each said arcuate slot is defined to limit said long tube to be rotated within a range of 90°. 15

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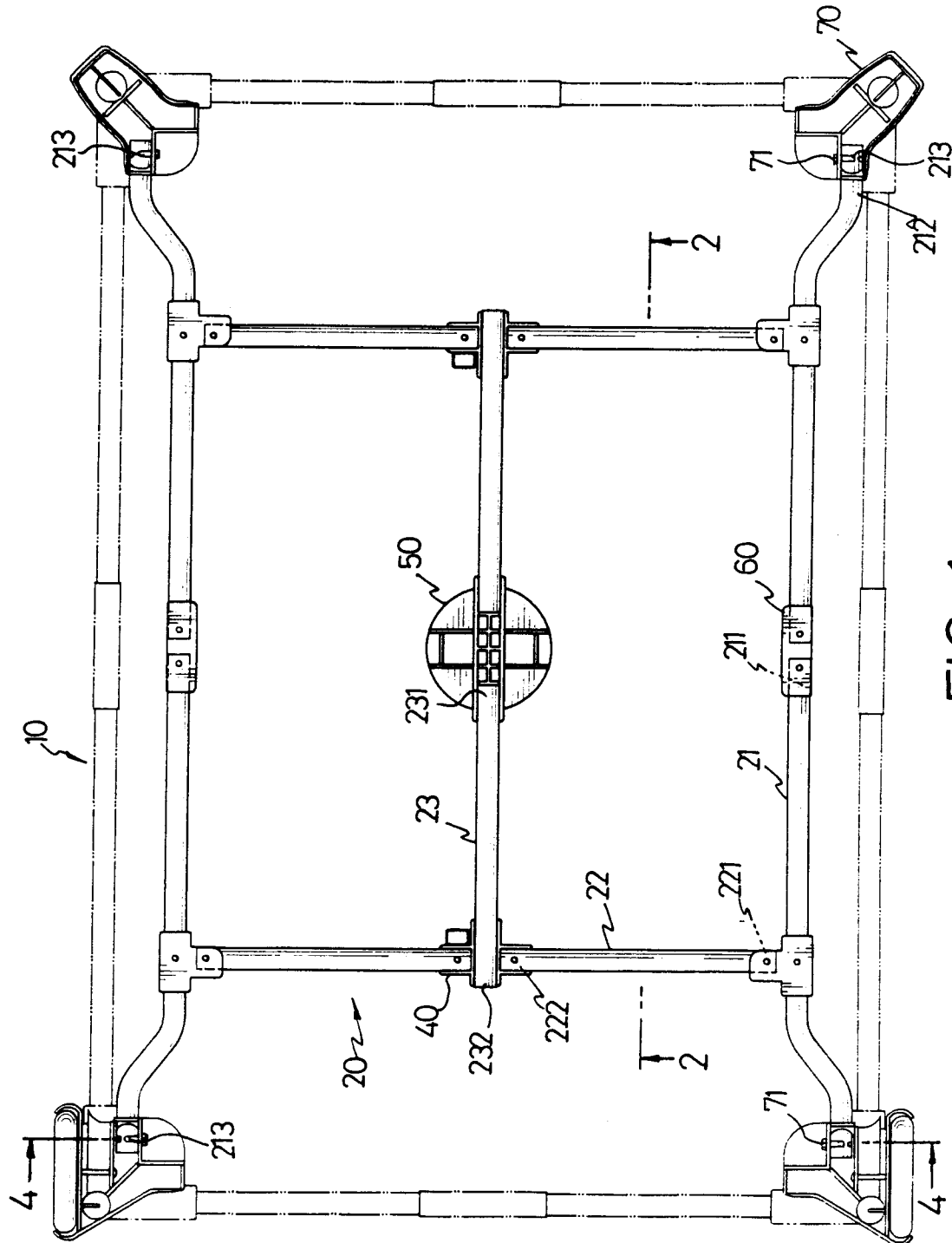


FIG. 1

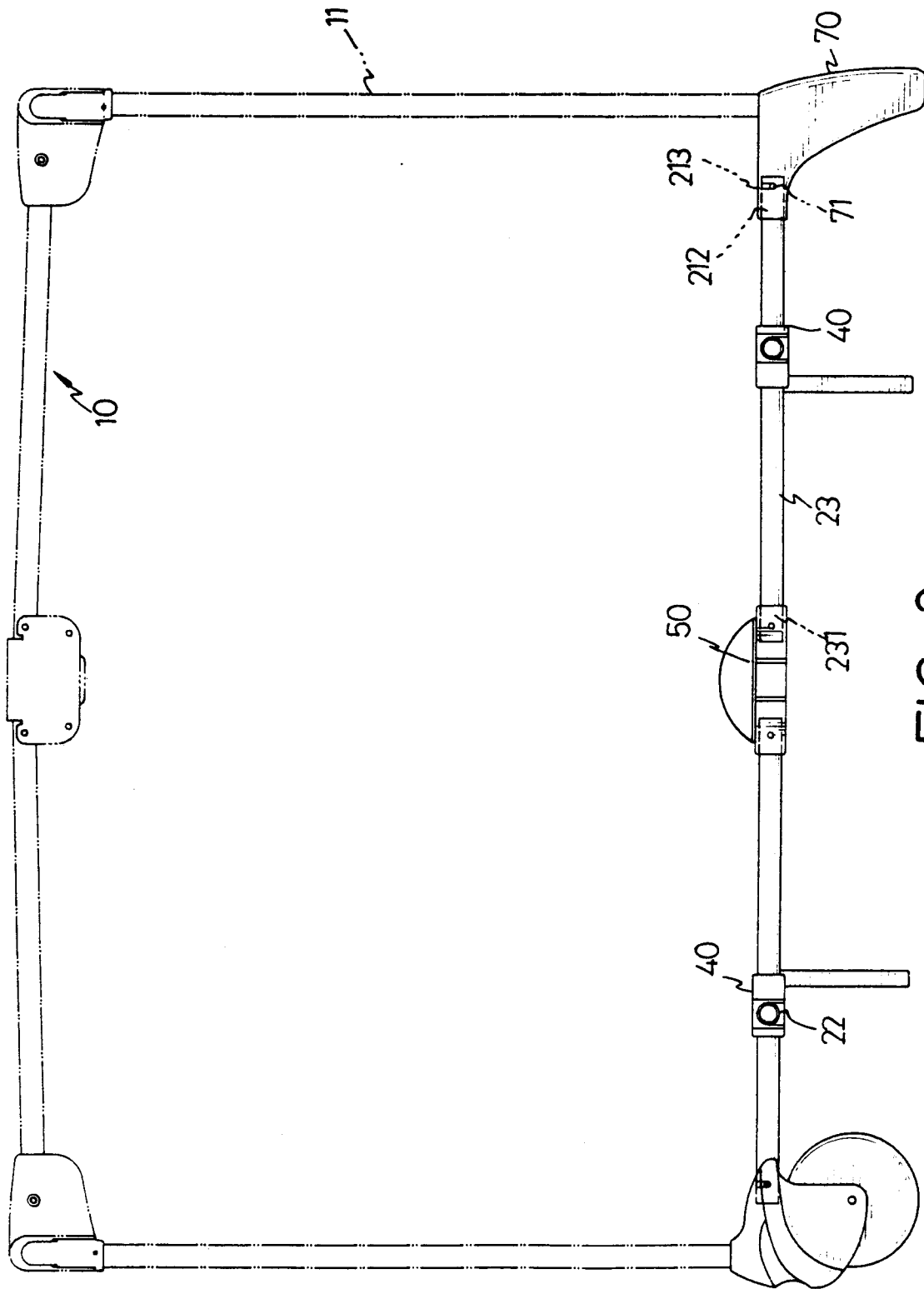


FIG. 2

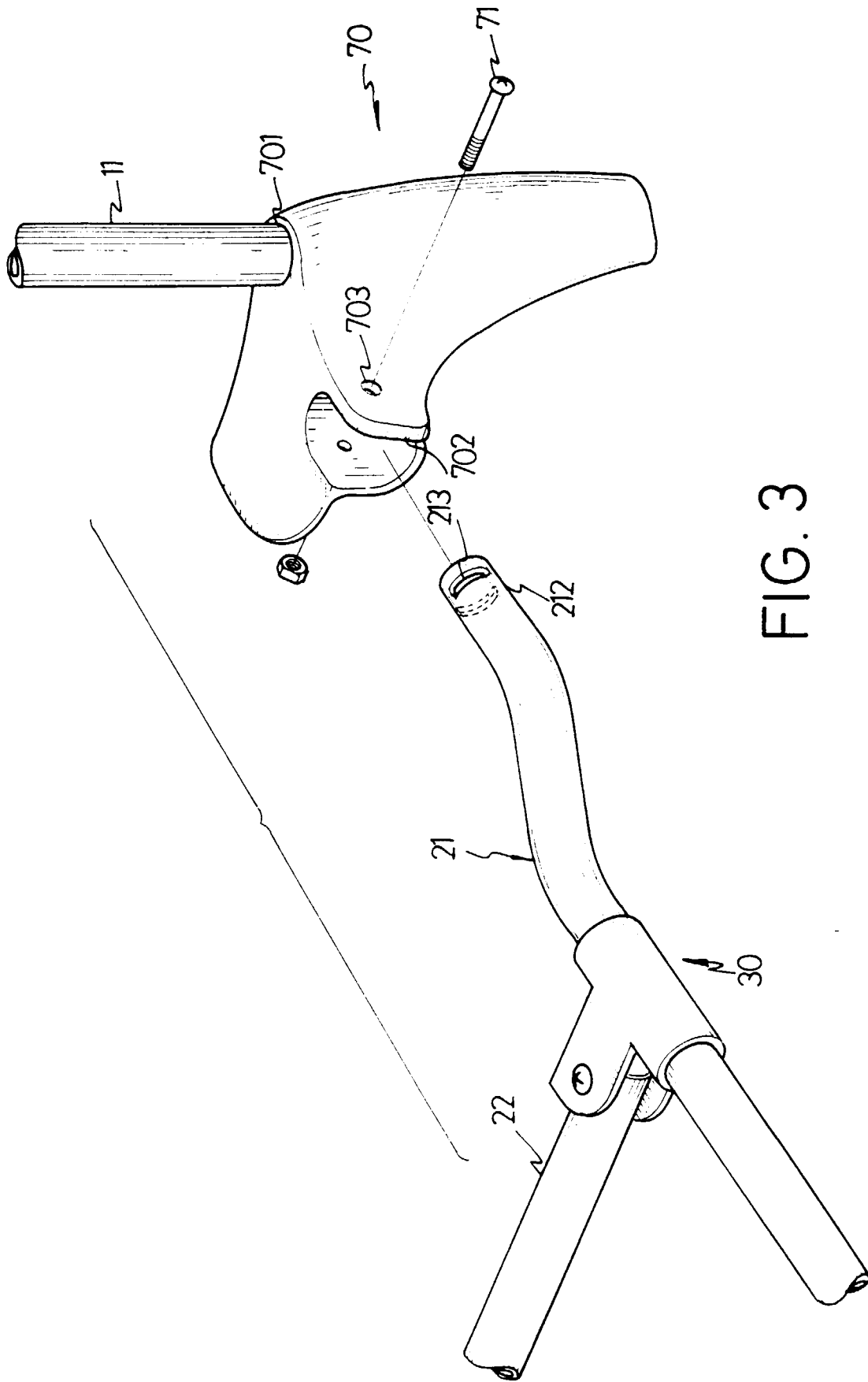
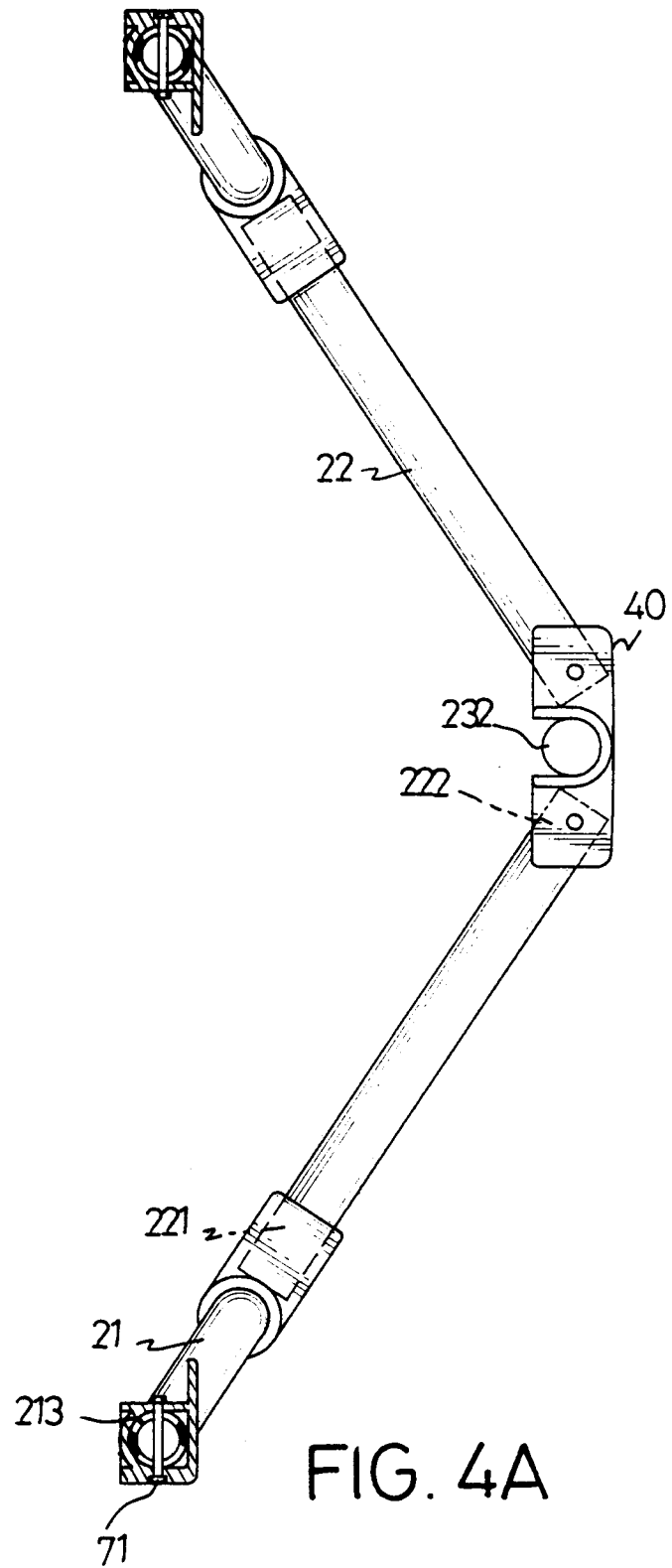
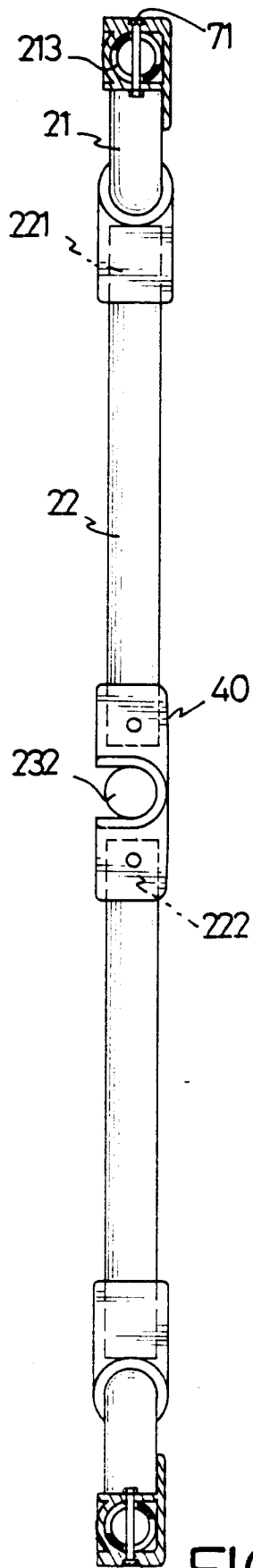


FIG. 3



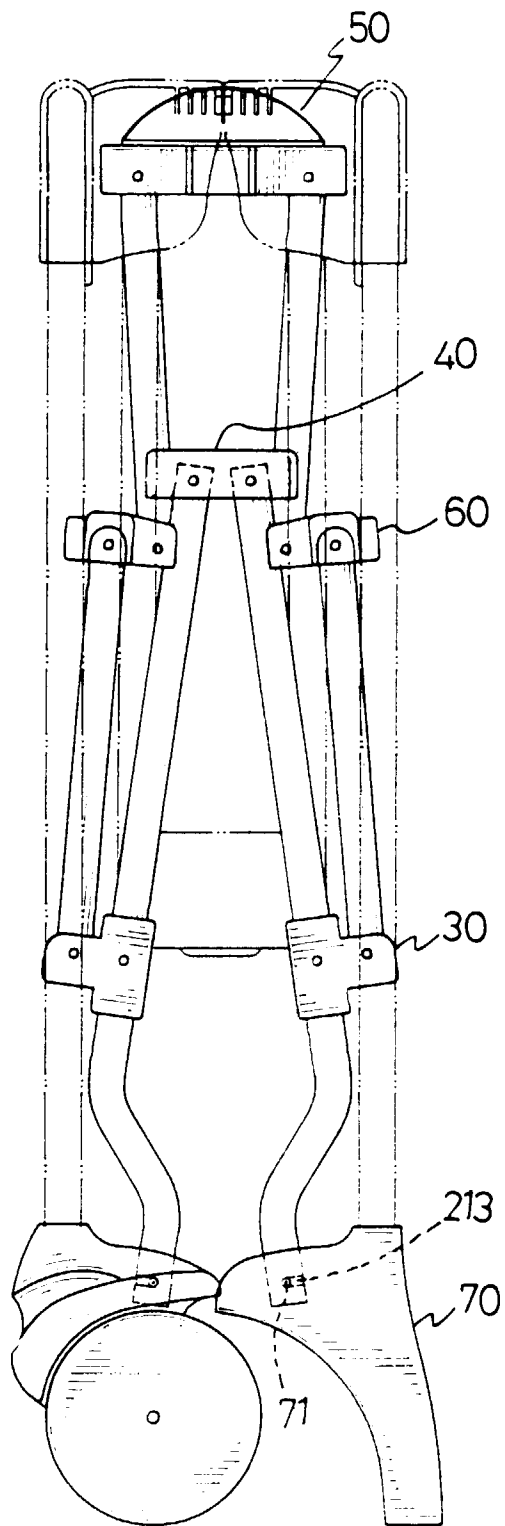


FIG. 5