



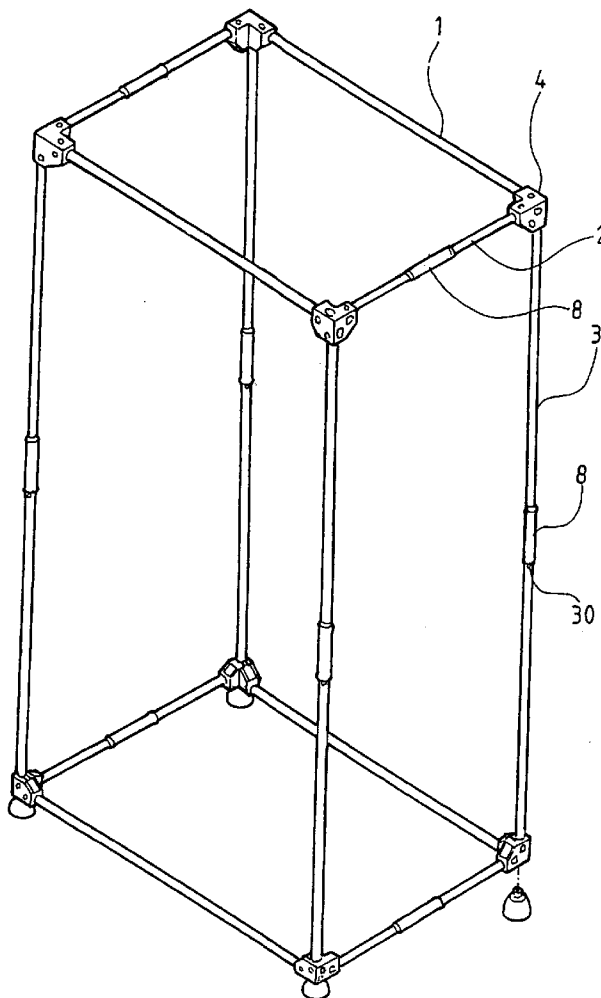
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(19) **United States**(12) **Patent Application Publication**
Liu(10) **Pub. No.: US 2007/0126317 A1**(43) **Pub. Date: Jun. 7, 2007**(54) **COLLAPSIBLE CLOTHES CLOSET****Publication Classification**(75) Inventor: **Chun-Wei Liu**, Chung Li City (TW)(51) **Int. Cl.**
E04H 1/12 (2006.01)(52) **U.S. Cl.** **312/6**

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LEONG C LEI**PMB # 1008****1867 YGNACIO VALLEY ROAD****WALNUT CREEK, CA 94598 (US)**(57) **ABSTRACT**

A clothes closet mainly contains a cubic frame formed by a number of tubes arranged along the width, the depth, and the height respectively, and joined together by coupling members at the corners of the cubic frame. Each of the edges of the cubic frame along the depth and the height contains two tubes connected therebetween with a flexible cable. The holes on the coupling members for the insertion of the tubes along the depth and the height are configured with appropriate slits and openings. As such, when disassembling the clothes closet, the tubes in these holes could be bended 90 degrees toward the inside of the cubic frame. Together with the flexible cables, the cubic frame is collapsed completely into a thin and flat object that is very easy to carry and store.

(73) Assignee: **FORTUNE STANDARD LIMITED**(21) Appl. No.: **11/293,241**(22) Filed: **Dec. 5, 2005**

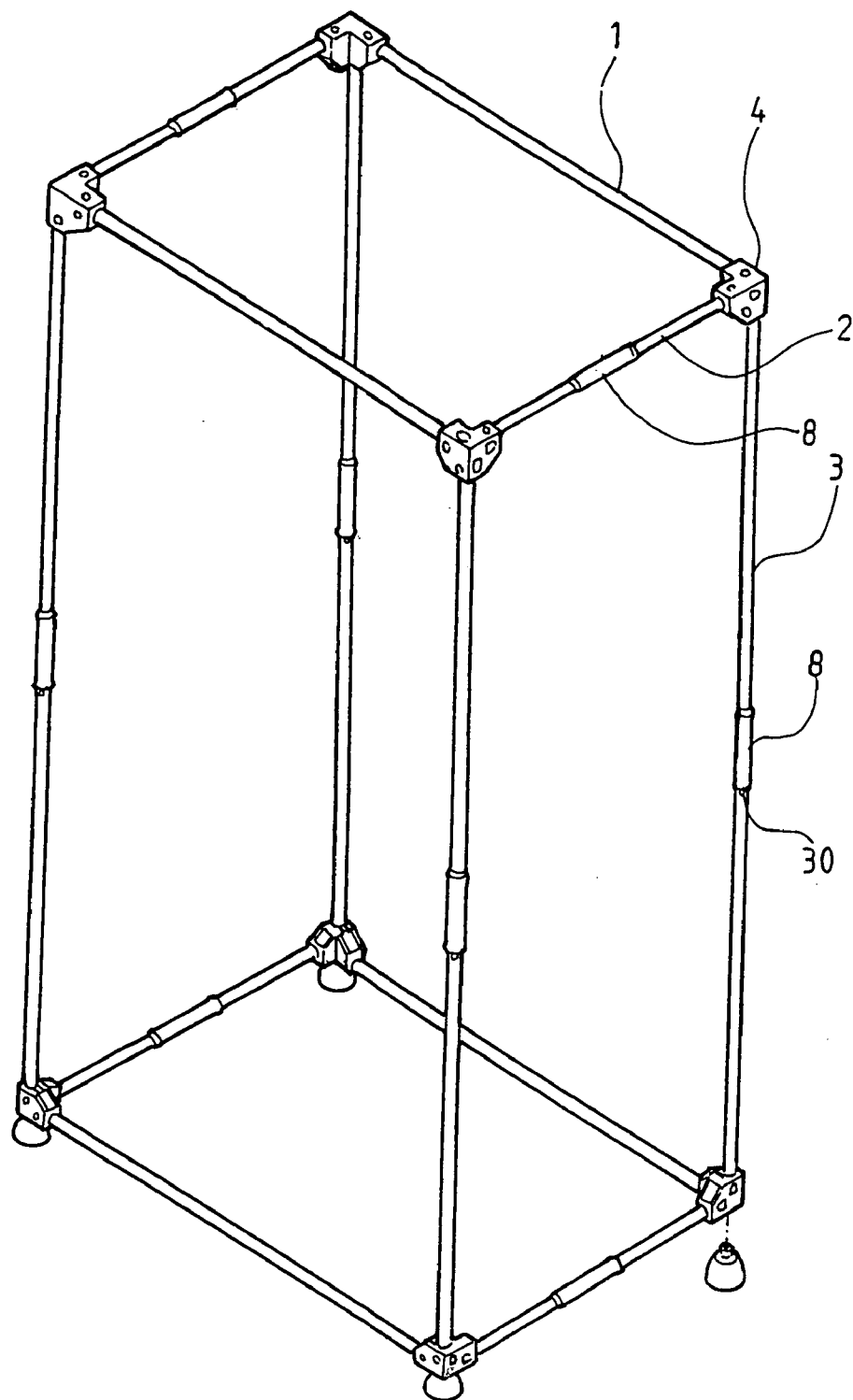


FIG. 1

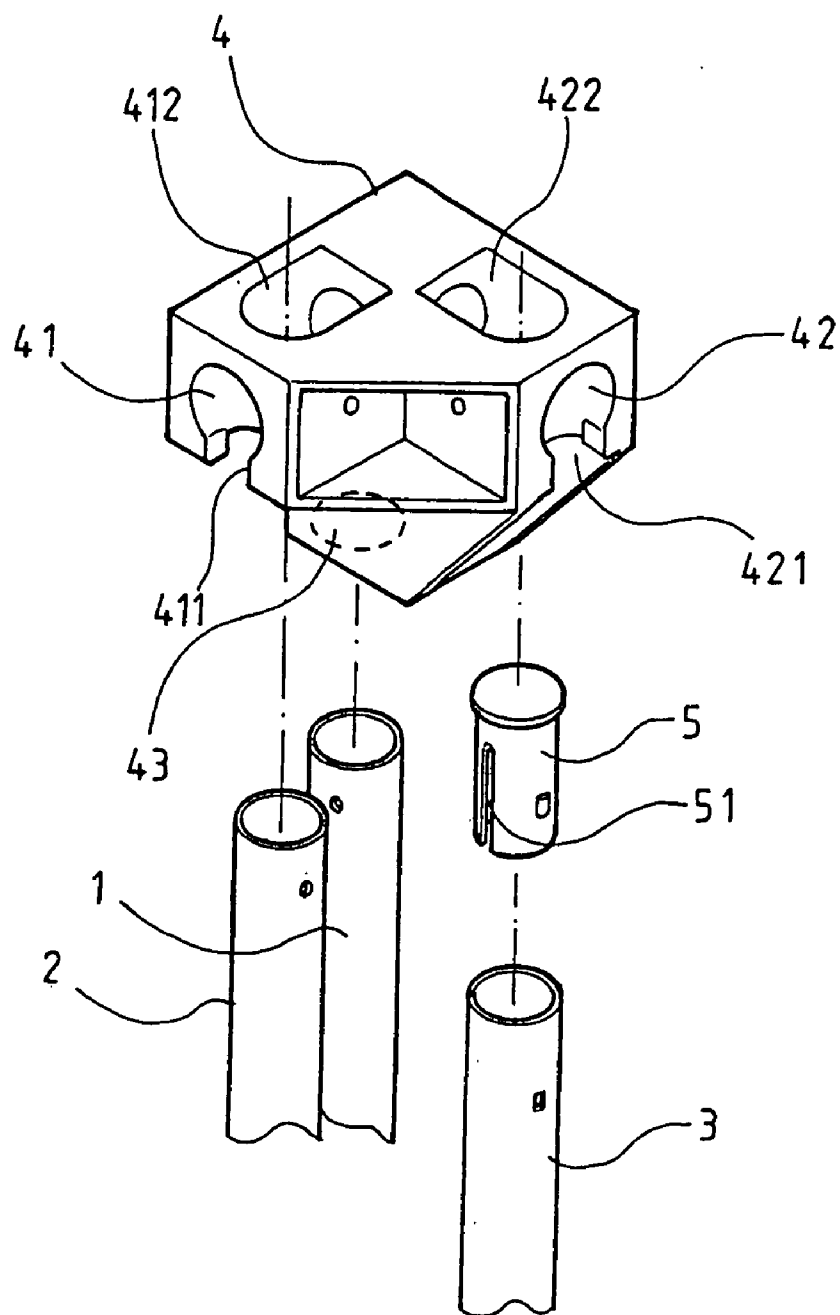


FIG. 2

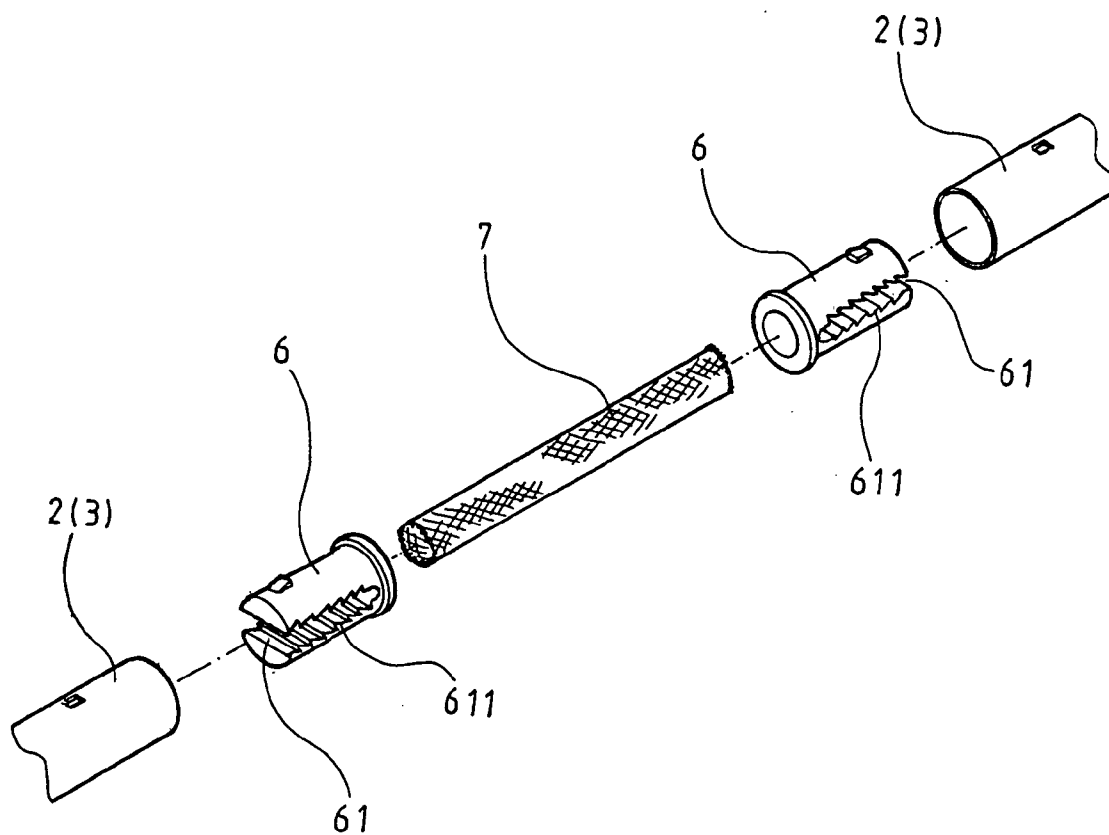


FIG. 3

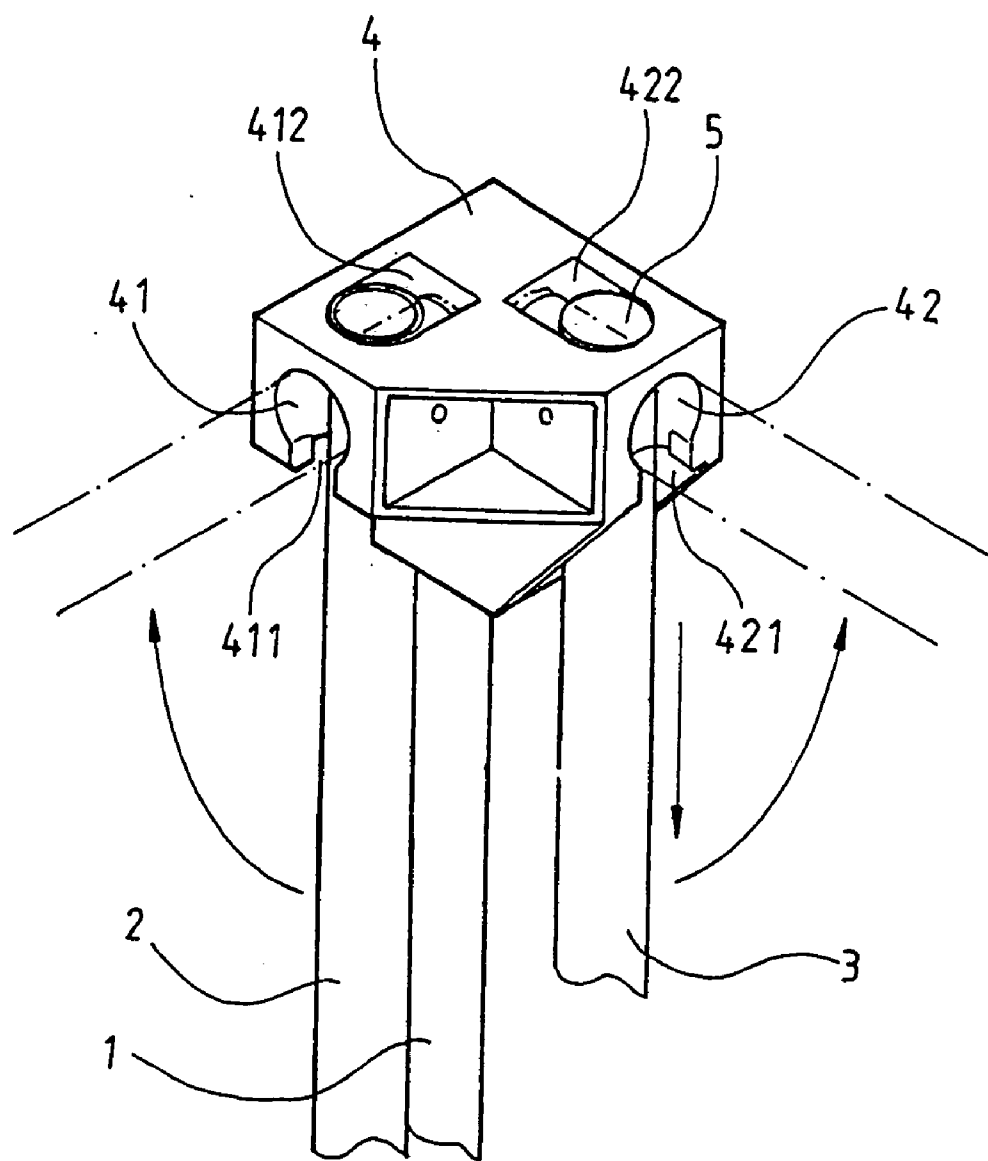
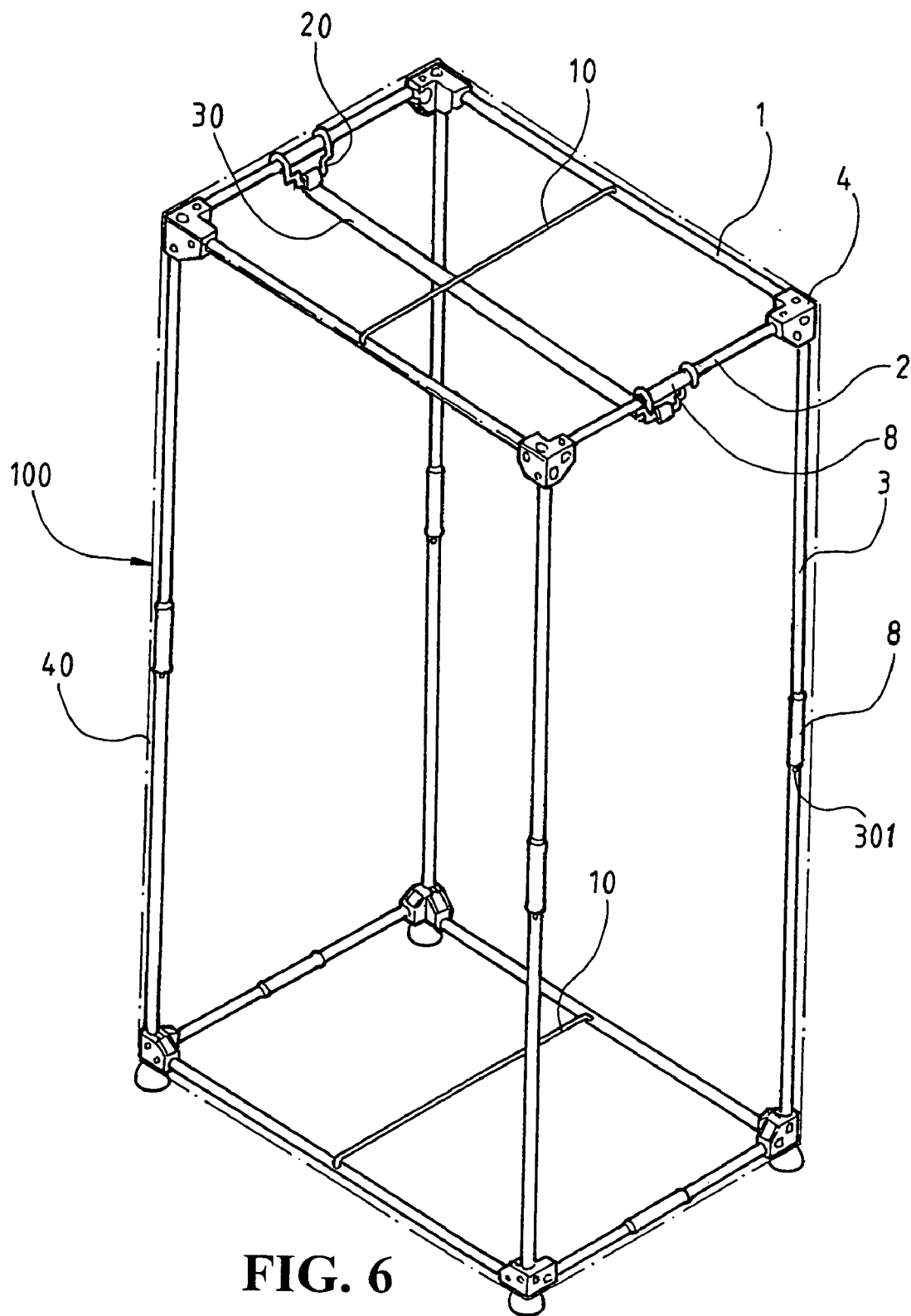


FIG. 5



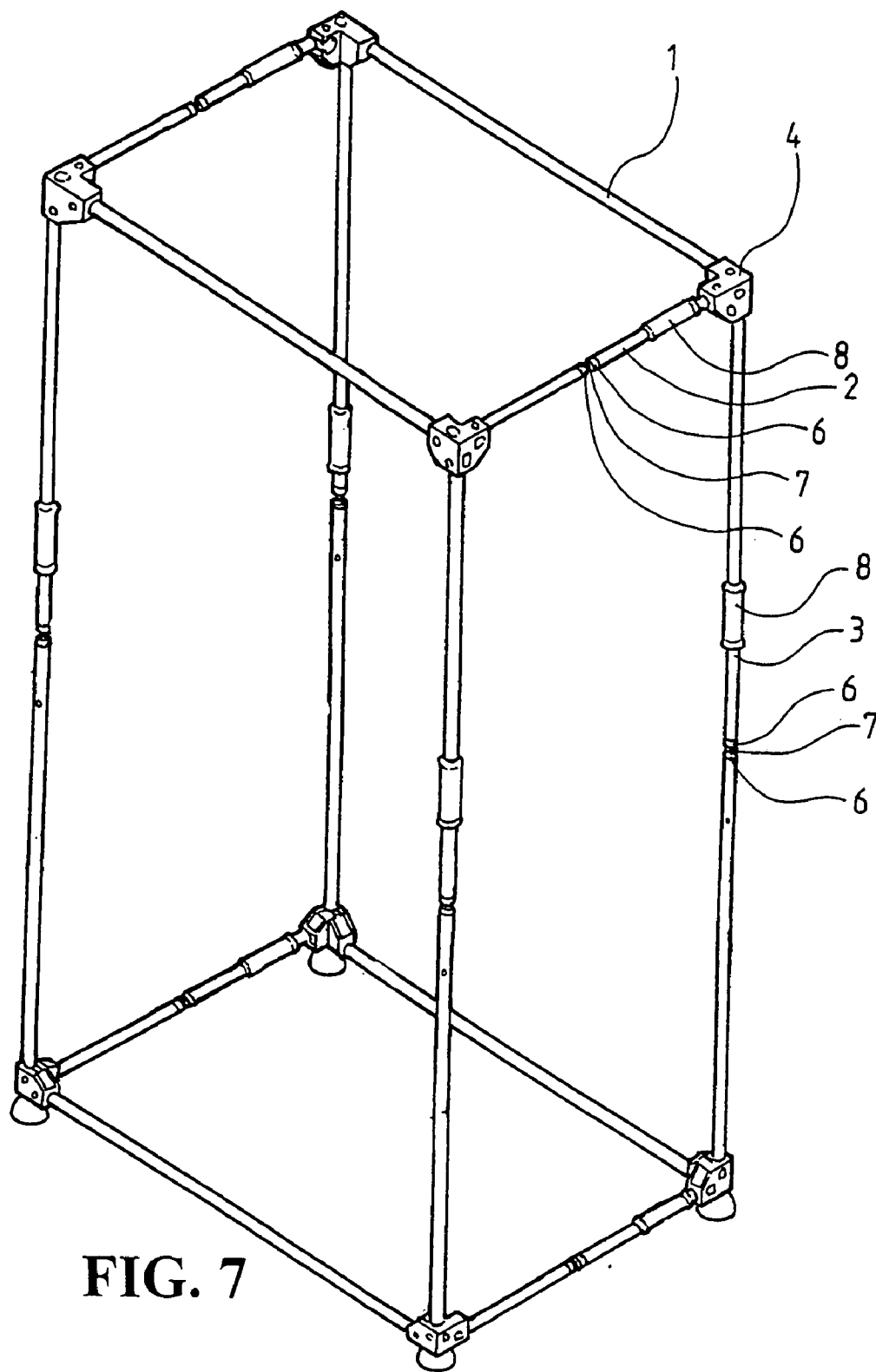


FIG. 7

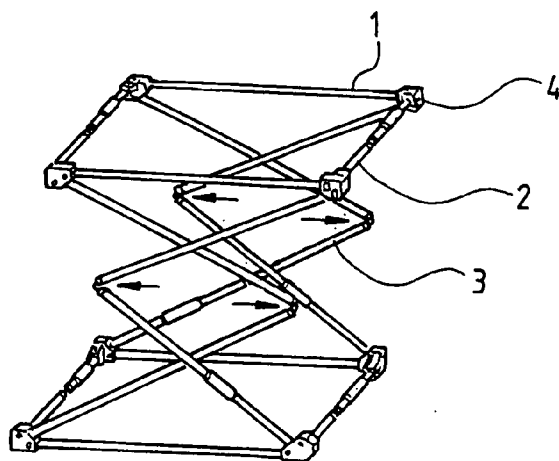


FIG. 8

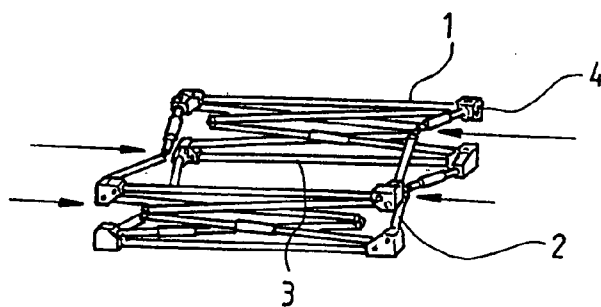


FIG. 9

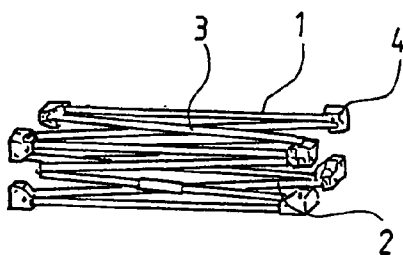


FIG. 10

COLLAPSIBLE CLOTHES CLOSET

BACKGROUND OF THE INVENTION

[0001] (a) Technical Field of the Invention

[0002] The present invention generally relates to clothes closets, and more particularly to a collapsible clothes closet that is easy to assemble and disassemble.

[0003] (b) Description of the Prior Art

[0004] Currently there are quite a few clothes closets on the market that allow people to assemble by themselves. However, these collapsible clothes closets usually contain quite some parts and are structured rather complicated. Most of the time, a user would spend significant amount of effort and time to get the closet assembled. In addition, when the closet is not used, it is difficult to disassemble and, if it is indeed disassembled, the parts are bulky to carry and store, and some loosed parts are very easy to get misplaced and lost. As a result, these closets, once disassembled, usually can never be re-assembled and used again.

SUMMARY OF THE INVENTION

[0005] The primary purpose of the present invention is to provide a collapsible clothes closet that is very easy to assemble and disassemble and, after it is disassembled, it is very easy to carry and store with very few loosed parts.

[0006] The clothes closet of the present invention mainly contains a cubic frame formed by a number of tubes arranged along the width, the depth, and the height respectively, and joined together by coupling members at the corners of the cubic frame.

[0007] Each of the edges of the cubic frame along the depth and the height contains two tubes connected therebetween with a flexible cable. The two ends of the flexible cable are fixedly locked to the two tubes respectively by the saw teeth of the plugs installed at the opposing ends of the two tubes. The two tubes are threaded through a sleeve which, when assembling the cubic frame, could be slid to wrap around the flexible cable and the two opposing ends of the tubes so as to prevent the edge they form from collapse.

[0008] The holes on the coupling members for the insertion of the tubes along the depth and the height are configured with appropriate slits and openings. As such, when disassembling the clothes closet, the tubes in these holes could be bended 90 degrees toward the inside of the cubic frame. In addition, by revealing the flexible cables of the edges and thereby allowing the edges to bend, the cubic frame is collapsed completely into a thin and flat object that is very easy to carry and store. After the collapse of the cubic frame, all components of the cubic frame are still attached together with no loosed parts, and the cubic frame is therefore immediately ready for re-assembly.

[0009] The foregoing object and summary provide only a brief introduction to the present invention. To fully appreciate these and other objects of the present invention as well as the invention itself, all of which will become apparent to those skilled in the art, the following detailed description of the invention and the claims should be read in conjunction with the accompanying drawings. Throughout the specification and drawings identical reference numerals refer to identical or similar parts.

[0010] Many other advantages and features of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying sheets of drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a perspective view showing the cubic frame of a clothes closet according to an embodiment of the present invention.

[0012] FIG. 2 is a perspective view showing the joining of the tubes and the coupling member in the cubic frame of FIG. 1.

[0013] FIG. 3 is a perspective view showing the connection of two tubes by the flexible cable in the cubic frame of FIG. 1.

[0014] FIG. 4 is a schematic view showing the sleeve is slid over the two connected tubes in the cubic frame of FIG. 1.

[0015] FIG. 5 is a perspective view showing the joining of the tubes and the coupling member in the cubic frame of FIG. 1.

[0016] FIG. 6 is a perspective view showing the clothes closet after its assembly.

[0017] FIG. 7 is a perspective view showing the cubic frame of FIG. 1 being disassembled.

[0018] FIGS. 8-10 are perspective views showing consecutive stages of collapsing the cubic frame of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] The following descriptions are of exemplary embodiments only, and are not intended to limit the scope, applicability or configuration of the invention in any way. Rather, the following description provides a convenient illustration for implementing exemplary embodiments of the invention. Various changes to the described embodiments may be made in the function and arrangement of the elements described without departing from the scope of the invention as set forth in the appended claims.

[0020] As shown in FIG. 1, the closet according to an embodiment of the present invention mainly contains a cubic frame (not numbered) formed by a number of tubes 1, 2, and 3, which are arranged along the width, the depth, and the height of the cubic frame respectively. At the eight corners of the cubic frame, the tubes 1, 2, and 3 are joined with each other by coupling members 4, whose details are depicted in FIG. 2. The coupling member 4 is a solid flat object having three mutually orthogonal holes 41, 42, and 43, for the insertion of the tubes 2, 3, and 1, respectively. The hole 43 is into a flat surface of the coupling member 4 that is facing toward the inside of the cubic frame (hereinafter, the inner surface). The holes 41 and 42, on the other hand, are into two narrow sides of the coupling member 4. The holes 41 and 42 have slits 411 and 421 that open the holes 41 and 42 to the inner surface. On the other flat surface (i.e., the outer surface), there are semi-circle-like openings 412 and 422 that go into the holes 41 and 42 respectively. To join

a tube 3 into a coupling member 4, a plug 5 having a slit 51 at one end is first inserted into an end of the tube 3, where the slit 51 provides the flexibility allowing the plug 5 to go into the tube 3. The end of tube 3 having the plug 5 installed is then inserted into the hole 42 of the coupling member 4 so that the tube 3 is tightly joined to the coupling member 4 by the plug 5. For the tubes 1 and 2, they are inserted into the holes 43 and 41 directly.

[0021] For the edges along the depth of the cubic frame, each of them is formed by joining two tubes 2 together. Similarly, for the edges along the height of the cubic frame, each of them is formed by joining two tubes 3 together. For the tubes 2 and 3, they all have one of their ends inserted into a coupling member 4. To join the other ends of two tubes 2 or the two tubes 3 together, as shown in FIG. 3, a flexible cable 7 is connected between the two opposing ends of the two tubes 2 or the two tubes 3. The flexible cable 7 has its two ends inserted into two plugs 6 respectively. The plug 6 is split from one end to form a slit 61 between two opposing halves whose inner surfaces have saw teeth 611. The plugs 6 are then inserted into the opposing ends of the two tubes 2 or the two tubes 3. As such, the flexible cable 7 is tightly clipped by the squeezed saw teeth 611. To assemble the cubic frame, as shown in FIG. 4, the two connected tubes 2 or 3 are threaded through a sleeve 8 and the sleeve 8 could be slid to wrap around the flexible cable 7 and the two opposing ends of the tubes 2 or 3. There are wedges (not numbered) on the surfaces of the tubes 2 and 3 respectively to fixedly lock the sleeve 8 at its position. As such, the two tubes 2 or 3 are joined into a solid edge for the cubic frame.

[0022] As shown in FIG. 5, each of the tubes 2 and 3 has one of its ends inserted into the hole 41 and the hole 42 of a coupling member 4. Because of the configuration of the slits 411 and 412 and the openings 412 and 422 on the coupling member 4, when disassembling the cubic frame, both the tubes 2 and 3 could be rotated for 90 degrees toward the inner surface of the coupling member 4 so as to collapse the cubic frame.

[0023] As shown in FIG. 6, as the cubic frame according to the present embodiment is assembled and erected, reinforcing rods 10 could be installed between the pairs of tubes 1 on the top and at the bottom of the cubic frame, to make the cubic frame more robust and rigid. In addition, handles 20 could be installed in the middle of the top edges along the depth, where a rod 30 could be placed therebetween for hanging the clothes hangers. The cubic frame could be clad in a cover 40 and the assembly of the clothes closet 100 is completed.

[0024] As shown in FIG. 7, to disassemble the cubic frame when it is not used, the sleeves 8 are first slid away to reveal the flexible cables 7 between the tubes 2 and 3 so that the edges formed by them are now collapsible.

[0025] As shown in FIGS. 8, 9, and 10, with the flexible cables 7 as pivot points, the tubes 2 and 3 at the two sides are bended toward each other. As such, the cubic frame is collapsed from top to bottom and from back to front to become a flat and narrow object, which is very convenient to carry and store. Please note that, after the collapse of the cubic frame, all components of the cubic frame are still attached together with no loosed parts, and the cubic frame is therefore immediately ready for re-assembly.

[0026] It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods differing from the type described above.

[0027] While certain novel features of this invention have been shown and described and are pointed out in the annexed claim, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.

I claim:

1. A collapsible clothes closet comprising a cubic frame enclosed in a cover, said cubic frame comprising:

- a plurality of coupling members at the corners of said cubic frame, each of which has a first hole, a second hole, and a third hole orthogonal to each other;
- a plurality of first tubes, each of which makes up an edge of said cubic frame along the width by having its ends inserted into said first holes of two opposing coupling members;
- a plurality of second tubes, at least two of which make up an edge of said cubic frame along the depth by having their ends connected by a flexible cable therebetween and the outmost two ends inserted into said second holes of two opposing coupling members;
- a plurality of third tubes, at least two of which make up an edge of said cubic frame along the height by having their ends connected by a flexible cable therebetween and the outmost two ends inserted into said third holes of two opposing coupling members;

wherein said second and third holes of each coupling member have a slit and an opening configured respectively on said coupling member to allow an inserted second tube and an inserted third tube to rotate toward a connected third tube so as to collapse said cubic frame.

2. The collapsible clothes closet according to claim 1, wherein each of said third tubes has a plug installed at the end inserted into said third hole of a coupling member so that said third tube is tightly joined to said coupling member.

3. The collapsible clothes closet according to claim 1, wherein each of said flexible cables has its two ends inserted into two plugs installed at the opposing ends of the connected tubes; each of said plugs are split into two opposing halves having saw teeth to tightly clip said flexible cable.

4. The collapsible clothes closet according to claim 1, wherein each of said edges formed by connected second and third tubes is threaded through at least a movable sleeve; said sleeve is slid over to cover said flexible cable to prevent said edge from collapse.

5. The collapsible clothes closet according to claim 4, wherein each of said second and third tubes has at least a locking mechanism configured on the surface to fixedly lock said sleeve when said sleeve is slid over to cover said flexible cable.