



US 20030188775A1

(19) **United States**

(12) **Patent Application Publication**

Connelly

(10) **Pub. No.: US 2003/0188775 A1**

(43) **Pub. Date: Oct. 9, 2003**

(54) **FITTING FOR A SHADE CANOPY**

Publication Classification

(76) **Inventor: Kevin T. Connelly, Sarasota, FL (US)**

(51) **Int. Cl.⁷ E04H 15/58**

(52) **U.S. Cl. 135/117**

Correspondence Address:

Kevin T Connelly

Sunguard Shade Structures, Inc

4487-A-B Ashton Rd.

Sarasota, FL 34233 (US)

(21) **Appl. No.: 10/429,403**

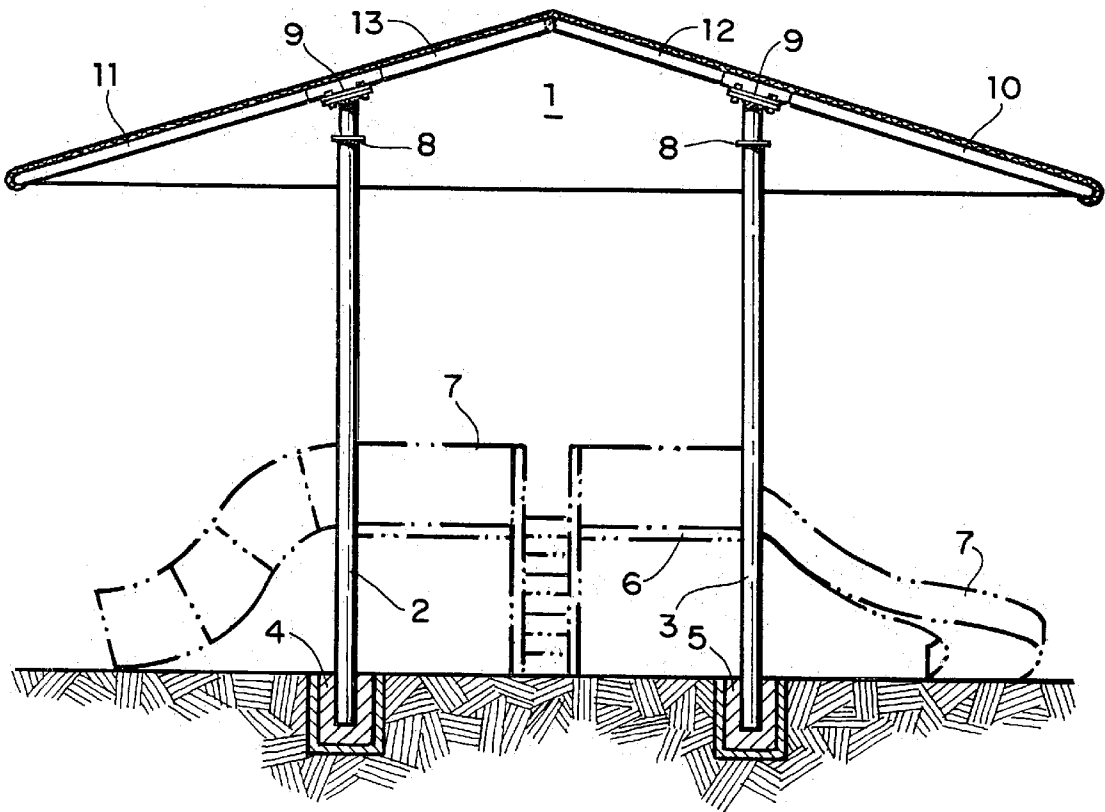
(22) **Filed: May 6, 2003**

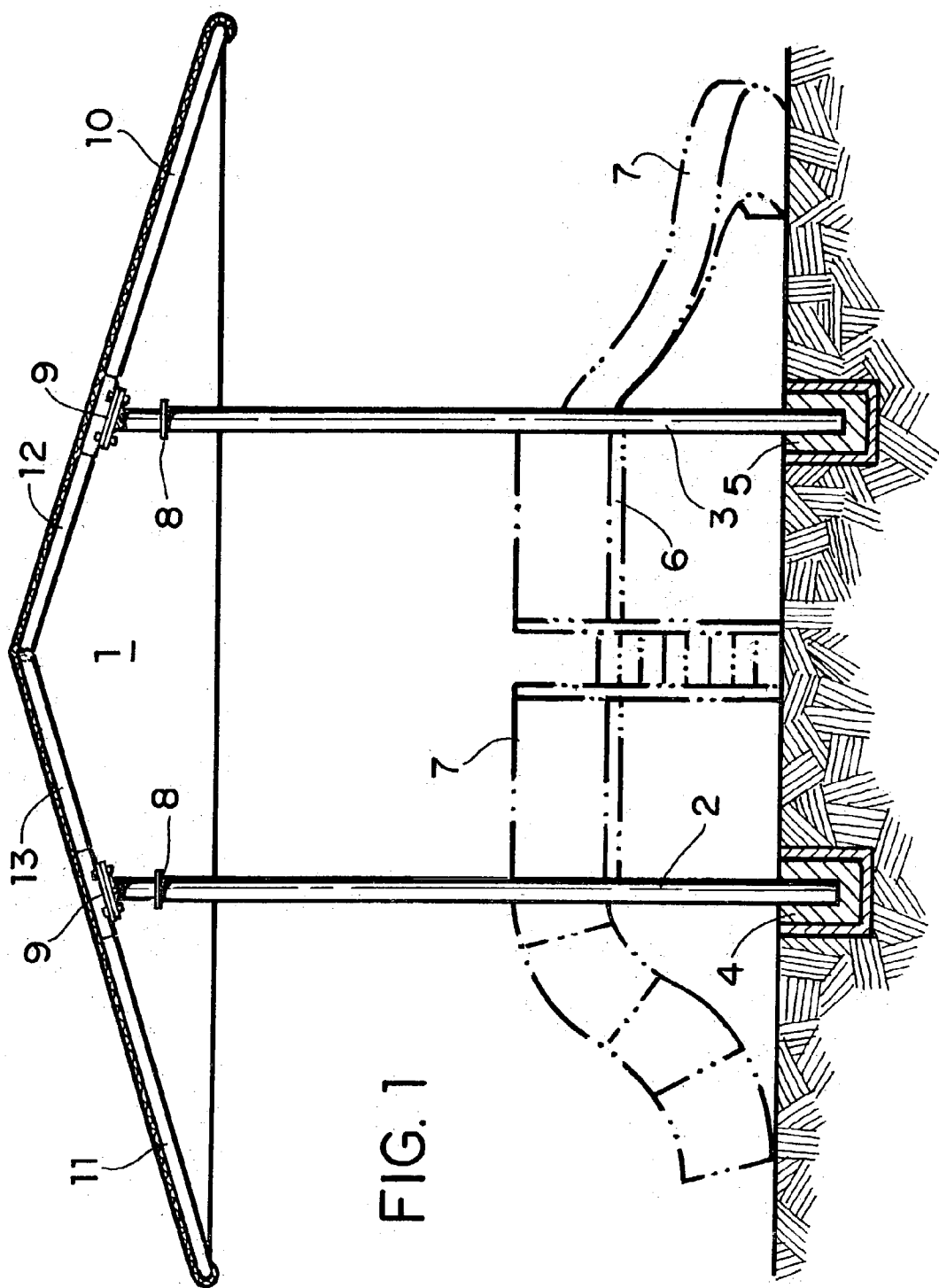
Related U.S. Application Data

(63) **Continuation-in-part of application No. 09/960,483, filed on Sep. 24, 2001.**

(57) **ABSTRACT**

The invention is directed to a fitting that is used in a support structure wherein beams support a shade canopy over a playground for children. The fitting may be inserted at its lower end into vertical support columns rigidly supported in the ground. The fitting includes a connector plate that is welded to an upper end of the fitting but an angle which is determinative of the angle of the roof of the canopy. There is a counter plate attached to a saddle pipe. When the connector plate and the counter plate are attached to each other to thereby form the fitting, a correct pitch and rigidity of the support structure to support the canopy on the support structure.





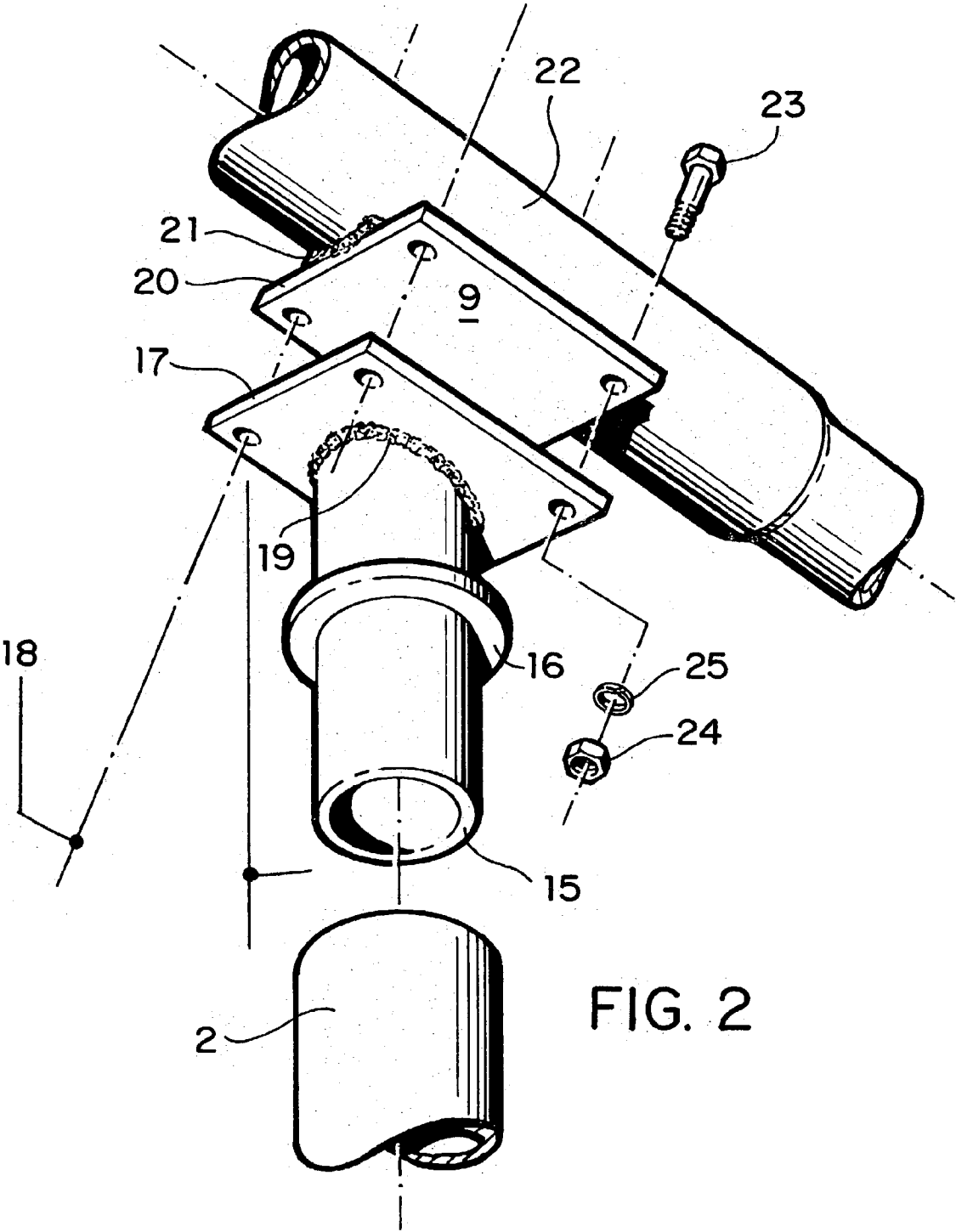
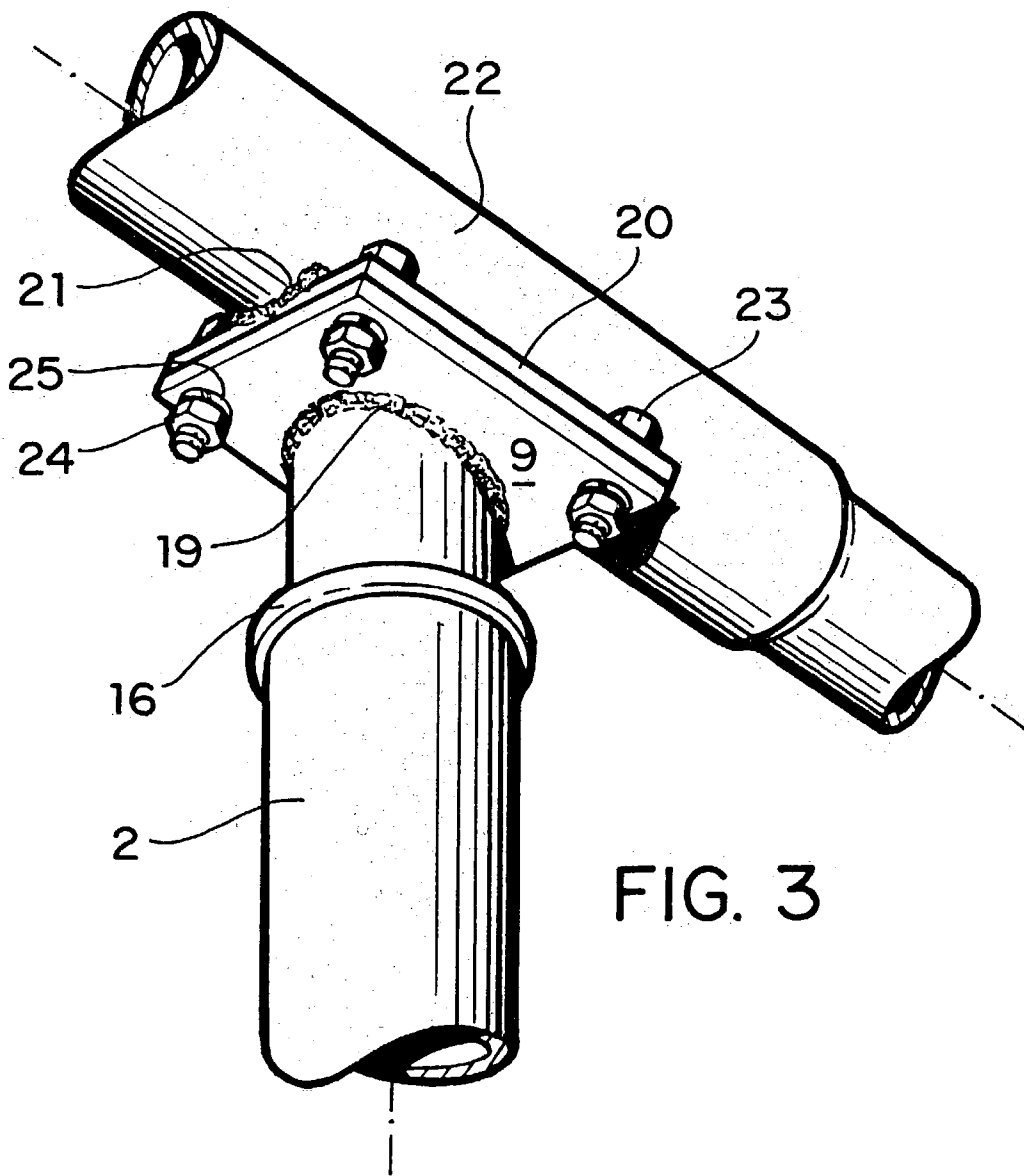


FIG. 2



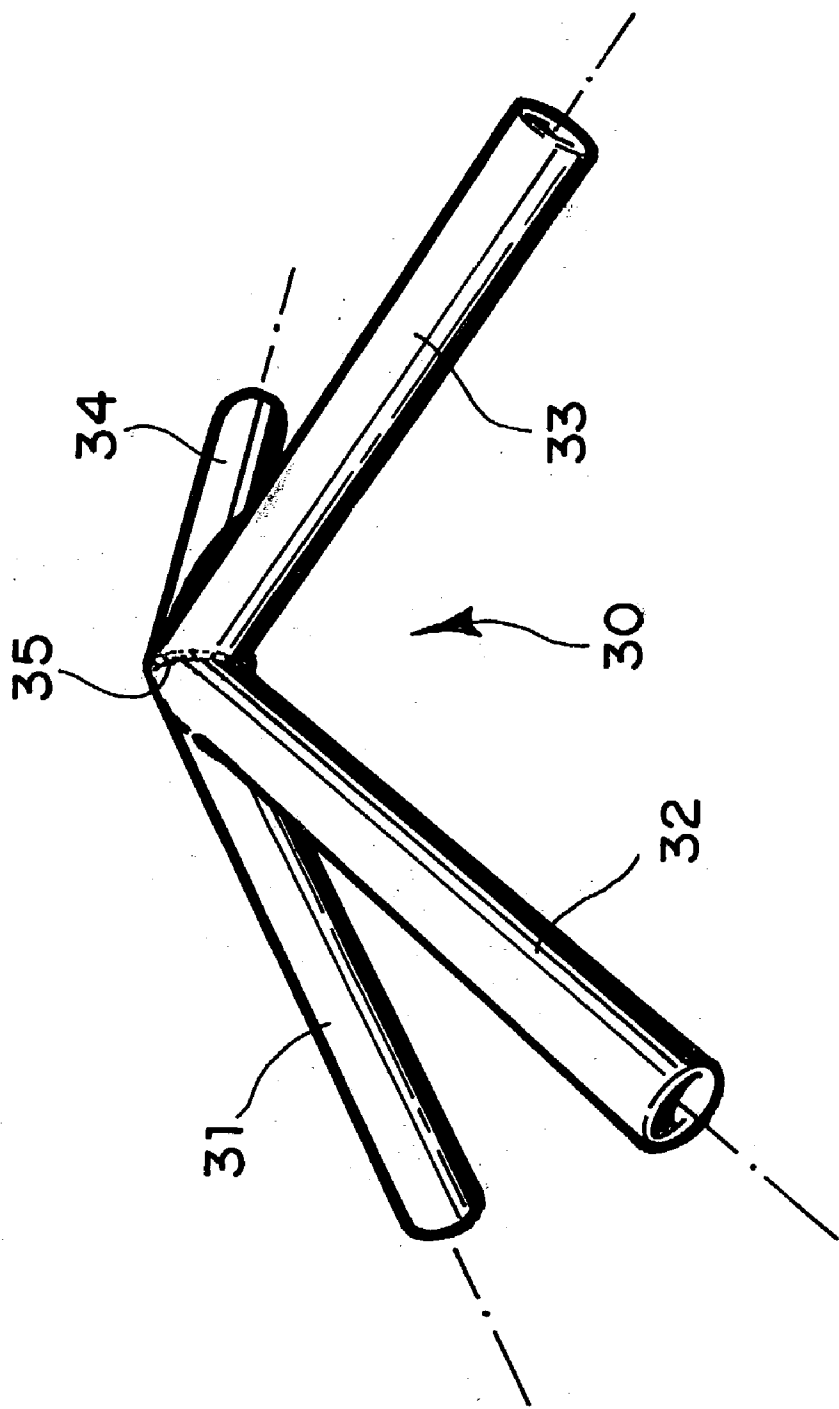
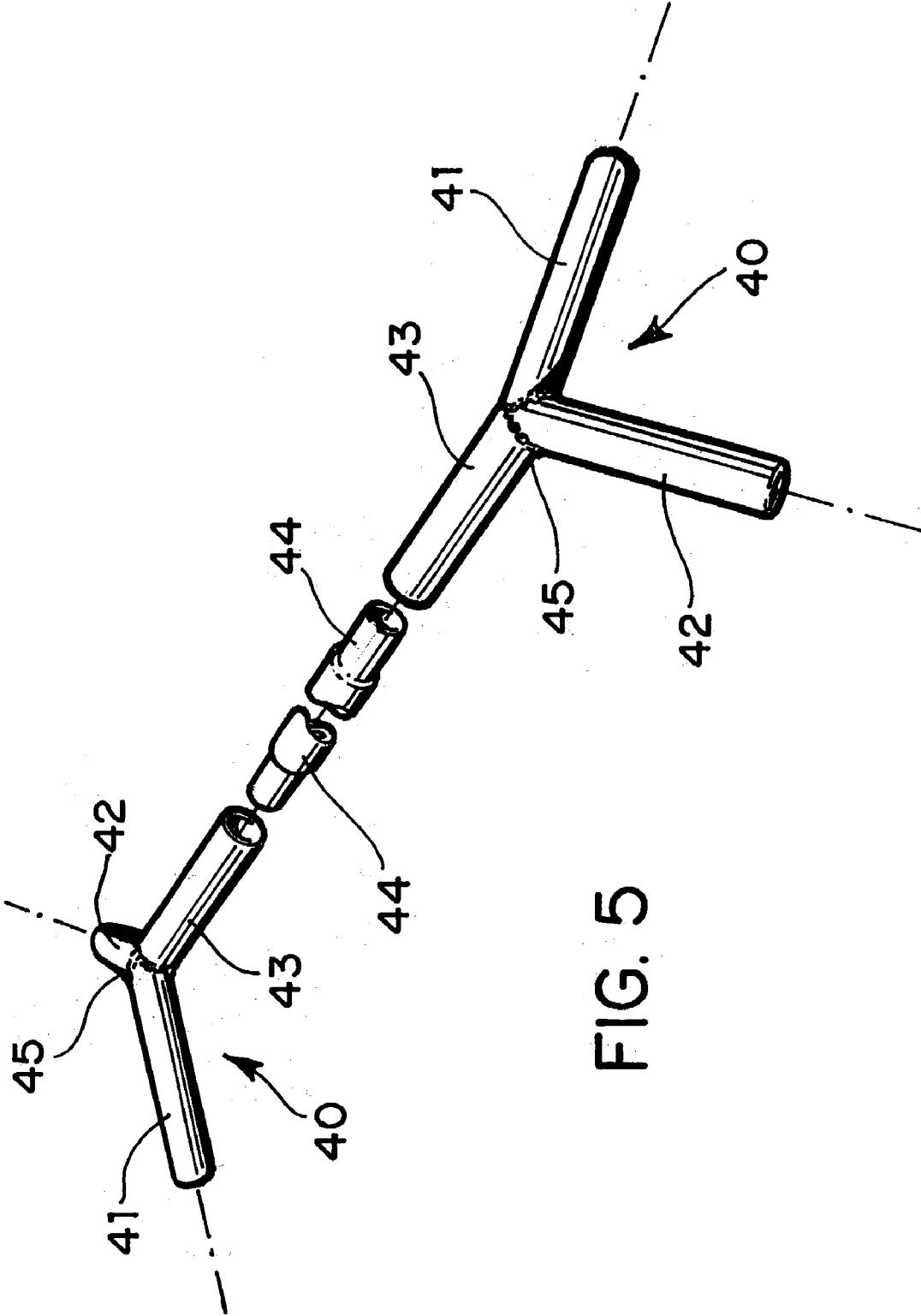


FIG. 4



FITTING FOR A SHADE CANOPY

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a Continuation-In Part of application Ser. No. 09/960,483 filed on Sep. 24, 2001.

STATEMENT REGARDING FED SPONSORED R & D

[0002] (none)

BACKGROUND OF THE INVENTION

[0003] This invention relates generally to de-mountable sunshade canopy structures and in particular to sunshade canopies for ultraviolet (UV) sun ray protection for children in play areas.

[0004] It is increasingly acknowledged that physically challenging outdoor play structures are of a benefit to the physical and emotional development of young children. A code of safety specifications for the construction and maintenance of children's play has been developed by the National Play and Playground Authorities, published (1996) by the National Play and Playground Association in Arlington, Va. These construction specifications describe construction features for the support of children's slides, swings, climbing apparatus, etc. which minimize risk of injury to children engaged in all manners of predictable use and misuse of the play structures.

[0005] The specifications requires that the play structures be mounted on a platform or on play towers elevated up to six feet above a resilient (non-hardened) surface such as cork or rubber panels, and the towers or platforms to be supported by a very limited number of support columns. The vertical columns have in the past been a source of injuries to children engaged in unintended use of these structures. Accordingly, the minimum number of vertical support columns, all free of hand and foot holds, has become a specification standard for acceptable safe design.

[0006] Separate from the safe construction design specifications referred to above, which have and are significantly reducing playground injuries, there is a growing threat to children's health when the are engaged in outdoor play and exercise in the sun shine.

[0007] The earth's protective atmosphere ozone layer has been significantly depleted due to the release of chemical pollutants into the atmosphere during the last five decades. The result of the ozone depletion is that the solar ultraviolet (UV) are significantly more intense and comprise a serious health hazard or risk to children without protection when playing in the new unfiltered UV sun radiation.

[0008] The copending application Ser. No. 09/960,483 goes into detail how to construct a sun shaded canopy over a children's play or exercise area which is incorporated herein by reference. Of particular interest are the connections of the cantilever beams and the angled hip beams that are made to conform to the vertical support columns. These connections are simplified by constructing certain fittings that will greatly simplify these connections in a standard and more precise way and at a much lower cost.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a construction of a canopy including the cantilevered beams and the hip beams as the are mounted on vertical columns as explained in the above copending application;

[0010] FIG. 2 illustrates the fittings prior to be connected to a vertical column;

[0011] FIG. 3 shows the fitting of FIG. 2 after the connection has been made.

[0012] FIG. 4 shows an apex of several hip beams coming together;

[0013] FIG. 5 shows a connecting beam connecting several apexes together;

DETAILED DESCRIPTION OF THE INVENTION

[0014] FIG. 1 illustrates the overall construction of the canopy 1 over a children's play area.

[0015] The canopy 1 is supported over the play area by way of two spaced apart columns 2 and 3. Of course, more columns may be used depending on the size of the play area. The columns 2 and 3 should be supported in the ground foundation footings 4 and 6, respectively. The play area apparatus are indicated 6 and 7. The top of each of the the vertical columns is indicated at 8. The present fittings in the prior patent are indicated at 9. The present fittings of the prior application are welded into place once the overall canopy structure is constructed in place. This particular method of construction is prone to mistakes and misalignments. The fitting 9 has cantilevered beams 10 and 11 connected thereto on the down slope of the fitting 9 and the hip beams 10 and 11 are attached to the up slope of the canopy.

[0016] FIG. 2 illustrates a fitting to be used in erecting the structure that will support the sunshade canopy. This fitting is pre-assembled and will always include the correct angles of the slanted roof structure. The explanation will apply to one column only is applicable to all columns when the canopy structure is assembled. To this end, the fitting includes a lower insert pipe 15 which is of a reduced diameter when compared to the upstanding vertical column 2, also shown in FIG. 1. Therefore, when installing the structure for the canopy 1, the fitting is merely slipped into the opening of the vertical column 2 with its lower insert pipe 15. With other words, it is an interfitting concept. The lower insert pipe 15 has a limiting ring 16 which limits the extent of the insertion pipe 15 into the vertical column 2. Since the slant of the roof of the canopy is predetermined, a connector plate 17 is attached to the top of the insert pipe 15 b a way of welding 19. The predetermined angle is shown at 18. Since all of the angles and distances are predetermined in the fitting 9, it is very easy to assemble the canopy supporting structure. The fitting 9 includes a counter plate 20 which is welded to a saddle pipe 22 at 21. The saddle pipe 22 has an outer diameter that matches the outer diameter of the cantilever pipes 10 and 11 of FIG. 1 and the outer diameter of the hip beam pipes 12 and 13 of FIG. 1.

[0017] With other words, there is a smooth transition between the saddle pipe and the cantilever beam and the hip beam or pipe when connected to each other. Therefore, the

cantilevered beam and the hip beam have a diameter reduced end at the point of insertion into the saddle pipe. Once the connector plate and the counter plate **20** are aligned with each other, the bolts **23** are passed through both of the plates **17** and **20** which will connect the two plates by way of the bolts **23** and the nuts **24** and the lock washers **25**.

[0018] FIG. 3 shows the fitting being assembled in combination with the upstanding vertical column **2** and the saddle pipe **22**. The reference character **10a** indicates the reduced diameter **10a** of the cantilevered pipe or beam **10** of FIG. 1. This way the cantilevered beam can easily slip into the pipe of the saddle pipe and can be fastened therein.

[0019] FIG. 4 illustrates an apex of four hip beams coming together. This fitting can be pre-constructed in that four hip beams **31, 32, 34, 35** come together and are welded to each other at a predetermined angle to form an apex corresponding to four hip beams that can be interfitted with the regular hip beams which form a canopy.

[0020] FIG. 5 shows a construction wherein at least two apexes **40** are combined with each other. In this construction there are at least two hip beams **41** and **42** being the equivalents of hip beams **12** and **13** (FIG. 1) that are connected to each other including one horizontal connector tube **43** that will receive a horizontal connector beam or tube **44** so that two distant apexes can be connected to each other. These two apexes **40** can be pre-constructed and can be delivered to the construction site for assembly just like the fittings of FIGS. 2 and 3.

Conclusion

[0021] In view of all of the above, it can now be seen that the fitting of the invention includes an easy and accurate

installation of the support structure for the canopy over a play ground. In this structure, no angles between the supporting vertical columns and the angled roof beams has to be contemplated or observed because the angles are all predetermined in a rigid fitting.

What I claim is:

1. A fitting adapted to be used in supporting a shade canopy structure having vertical support columns including tubes to inter fit with said support columns, each one of said tubes having a lower insert tube to be inter fitted with said vertical support column, a limiting ring attached to said insert tube to limit an insertion into said vertical support column, a connector plate attached to a top of said insert tube, said connector plate is attached to said insert tube at an angle, said fitting further includes a saddle pipe having a counter plate attached to an under side thereof, means for connecting said connector plate and said counter plate.

2. The fitting of claim 1, wherein said tubes are of a circular shape.

3. The fitting of claim 1 wherein said means for connecting are a nut and bolt arrangement.

4. The fitting of claim 1, wherein at least some of said tubes are connected at a common point to form an apex.

5. The fitting of claim 4, wherein at least one of said tubes extends in a horizontal direction to accommodate a roof connecting beam.

* * * * *