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(54) CONNECTOR FOR TRAMPOLINE SAFETY FENCE POST

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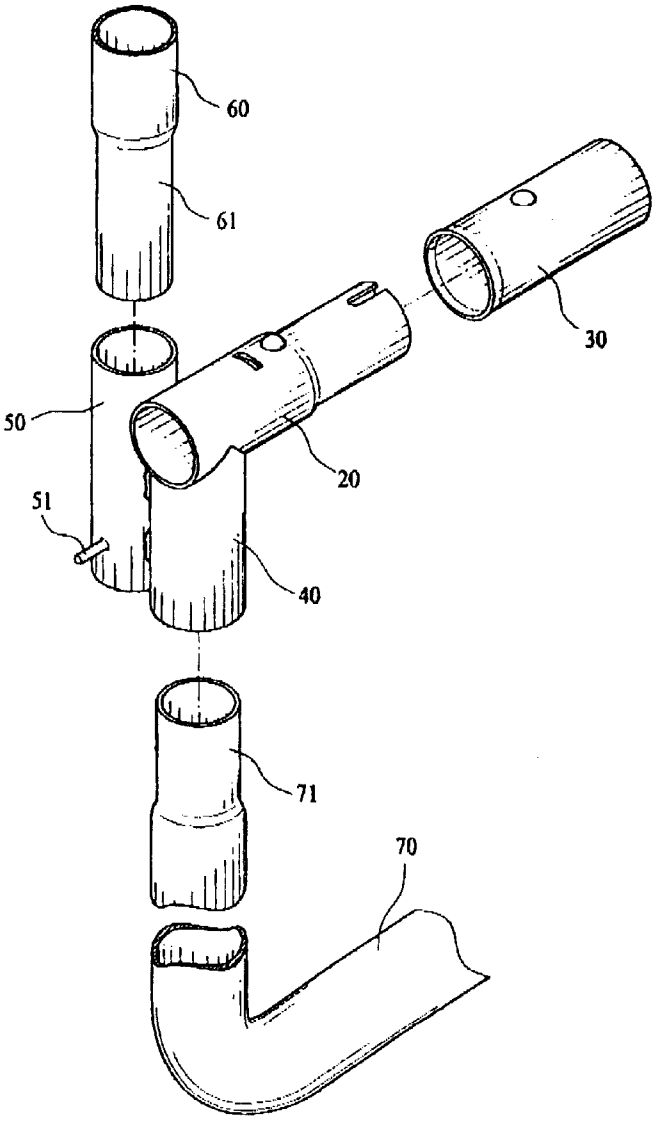
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(57) ABSTRACT

A connector for trampoline safety fence post includes a short supporting tube and a short connecting tube fixedly and parallelly connected to one side of the supporting tube. The supporting tube is fixedly connected at an upper end to a lower side of one of many frame pipes forming a trampoline frame, so that a corresponding tube-connecting end of one trampoline supporting leg may be upward inserted into a lower open end of the supporting tube, and a tube-connecting end of the safety fence poet may be downward inserted into an upper open end of the connecting tube. The connectors enable the trampoline supporting legs and the safety fence posts to be quickly connected to the frame supporting a jumping bed of the trampoline and ensure an enhanced structural strength at the connected points.



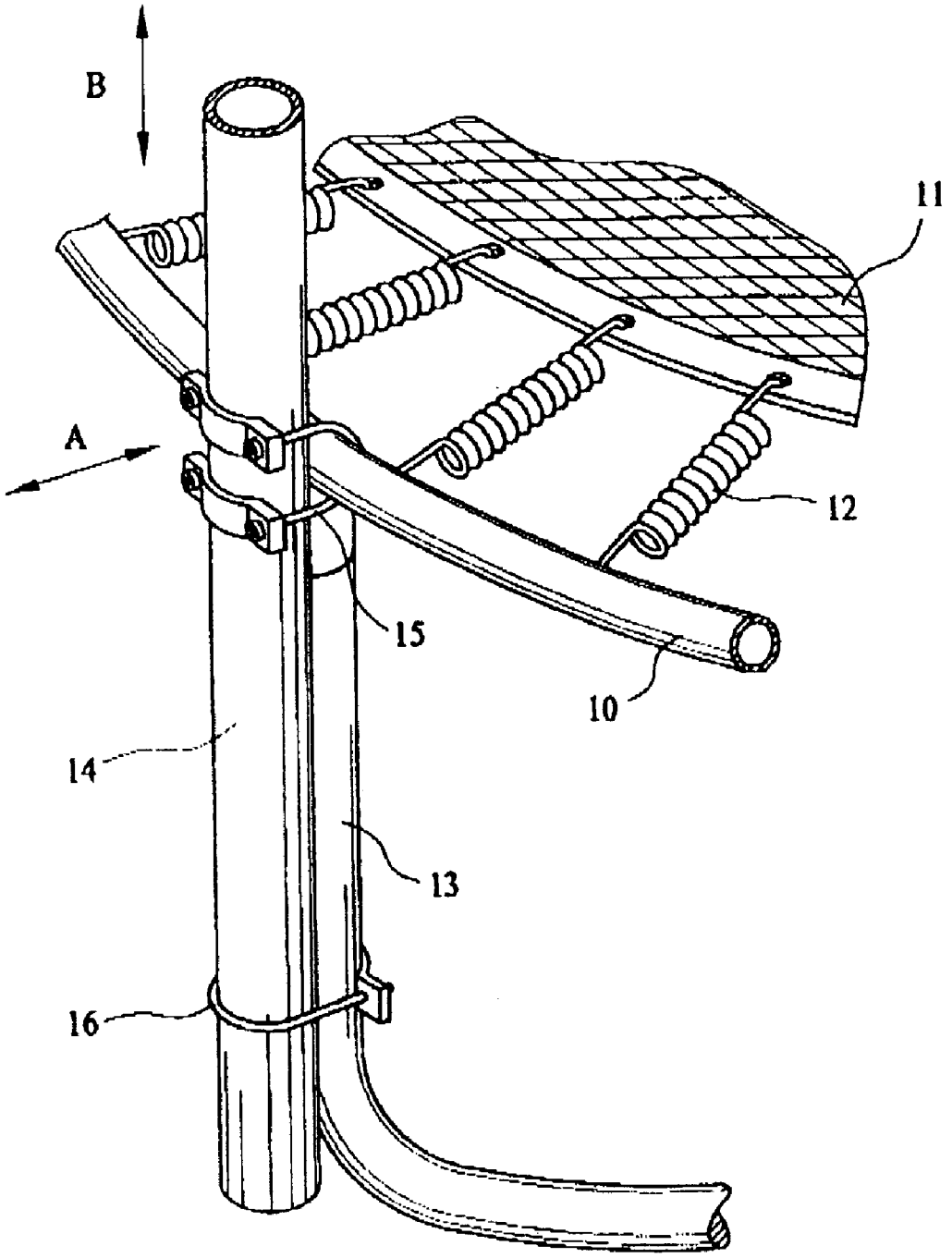


FIG. 1
(PRIOR ART)

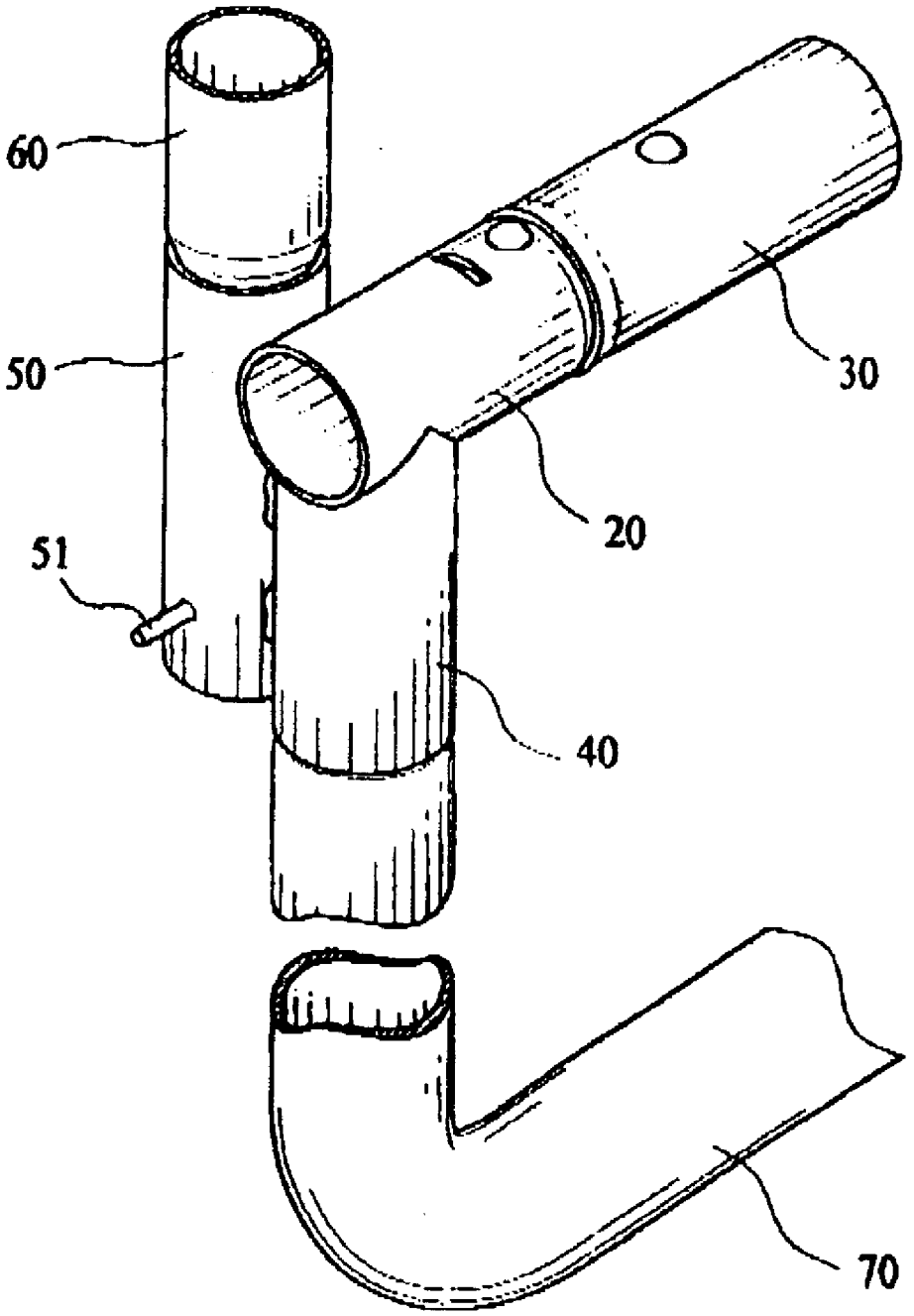


FIG. 2

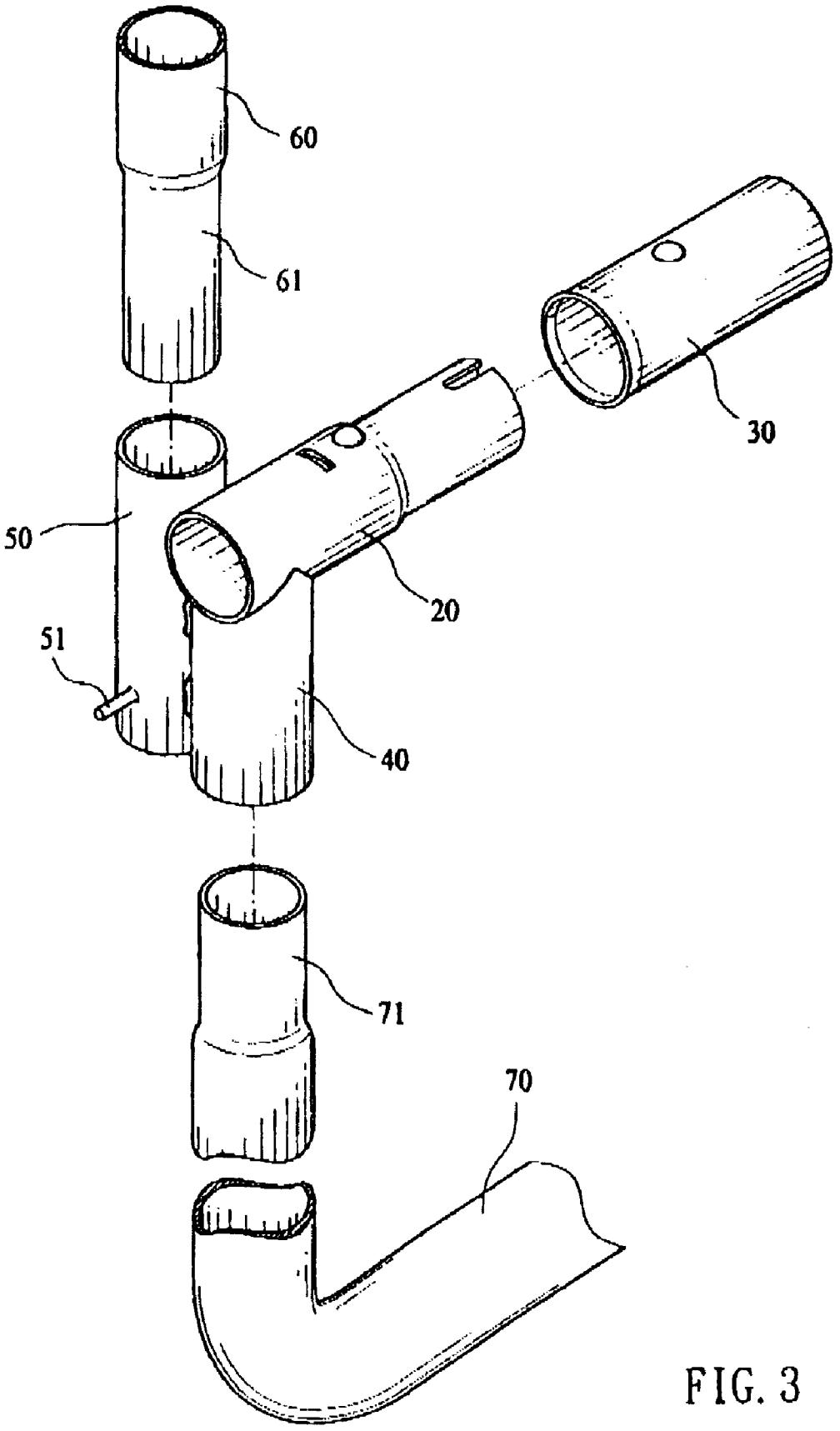


FIG. 3

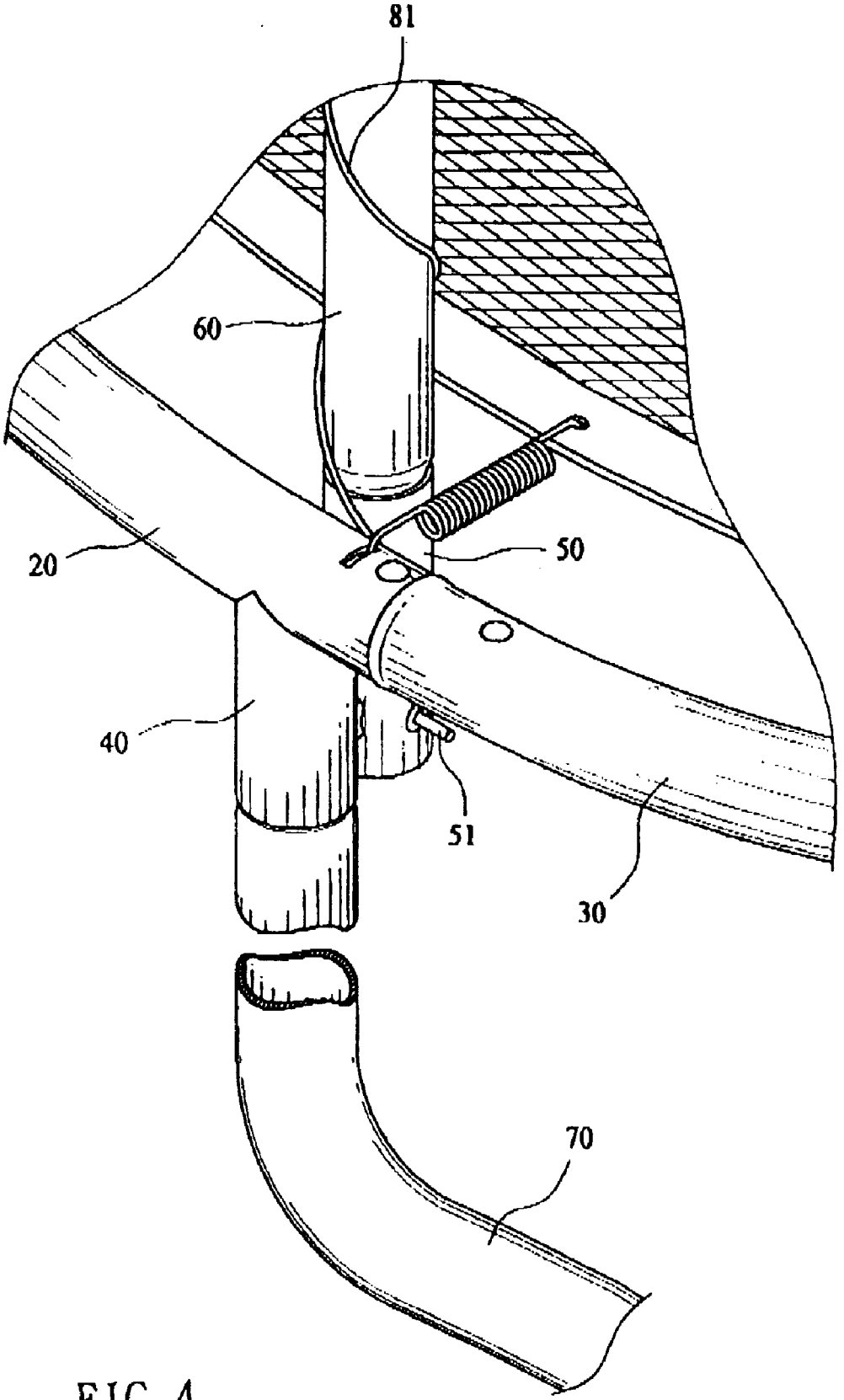


FIG. 4

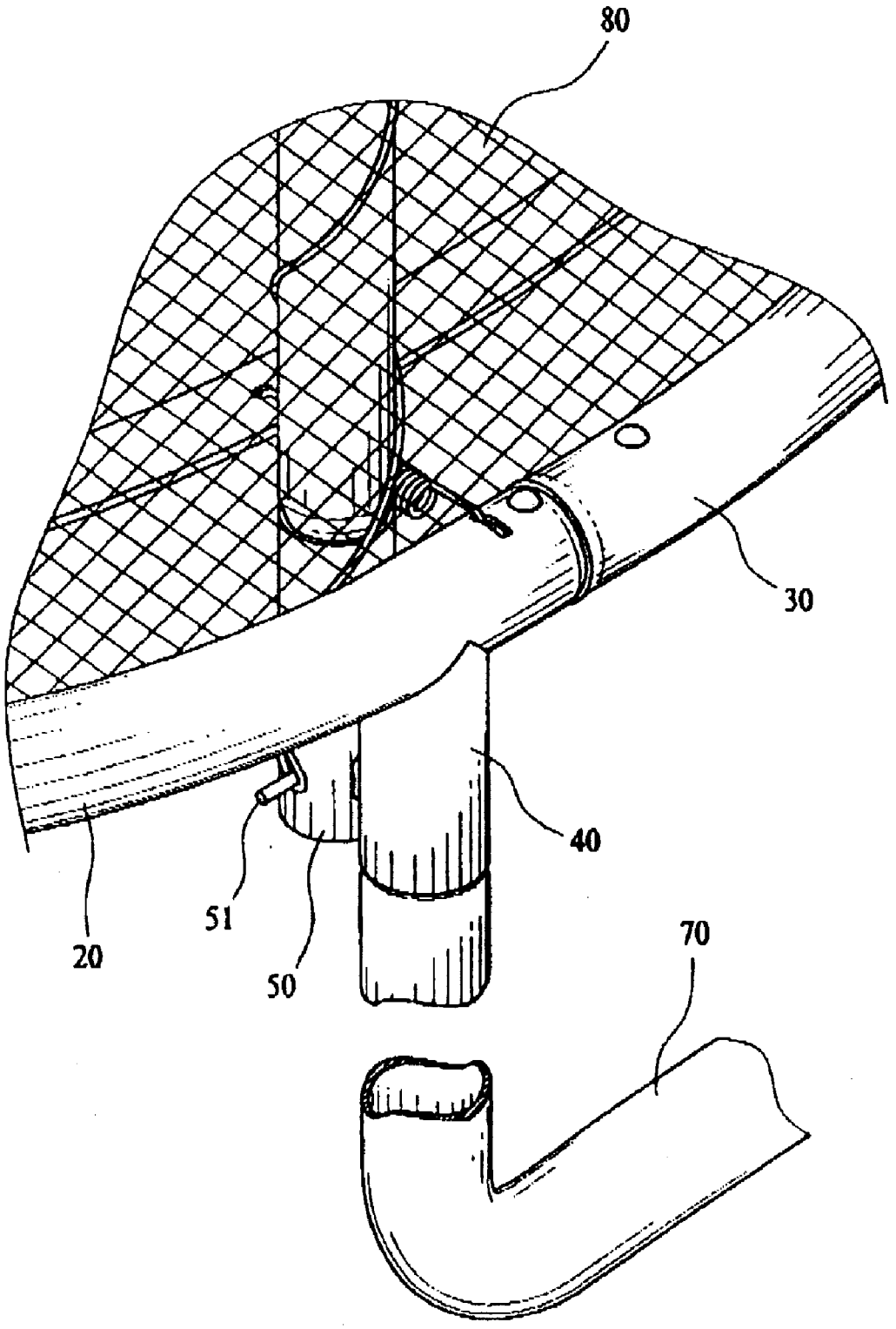


FIG. 5

CONNECTOR FOR TRAMPOLINE SAFETY FENCE POST

FIELD OF THE INVENTION

[0001] The present invention relates to safety fence posts for a trampoline, and more particularly to a connector enabling quick and structurally enhanced connection of safety fence posts to supporting legs and frame of a trampoline.

BACKGROUND OF THE INVENTION

[0002] A trampoline typically includes a jumping bed connected to and tightly stretched over a round frame via a plurality of elastic elements extended between the jumping bed and the frame. A user may stand on the jumping bed to do various jumping movements. Conventional trampolines have an open jumping bed that tends to cause accidents when a user jumps thereon and carelessly collides against the frame or falls to the ground on which the trampoline is positioned. Such accidents often happen particular when the user is a child. It is necessary to improve the conventional trampoline having an open jumping bed.

[0003] U.S. Pat. No. 6,261, 207 B1 discloses a trampoline safety fence for enclosing a space immediately above the jumping bed, **80** as to protect a user from any unexpected injury caused by colliding against the frame or falling to the ground outside the jumping bed.

[0004] The trampoline safety fence disclosed in U.S. Pat. No. 6,261,207 B1 mainly includes a plurality of poets spaced along an outer periphery of the trampoline at a position higher than the jumping bed. A protective net is supported on these posts to circumferentially enclose the trampoline. The most convenient way to vertically erect the posts along the outer periphery of the trampoline is to bind them to supporting legs and the frame of the trampoline. However, a conventional manner of binding the safety fence poets to the trampoline legs requires a lot of labors and time, and has the disadvantage of insufficient structural and bearing strength.

[0005] **FIG. 1** shows a conventional manner of connecting a safety fence post to the trampoline frame and leg. Basically, the trampoline frame is a round frame formed from a plurality of sequentially connected frame pipes **10**. A jumping bed **11** is connected to and tightly stretched over the frame pipes **10** via a plurality of elastic elements **12**. To set the jumping bed **11** to a predetermined height, a plurality of supporting legs **13** must be connected to a lower side of the frame pipes **10**. Each safety fence post **14** for supporting the protective net is connected to the frame pipe **10** and the supporting leg **13** by means of upper and lower U-shaped fastening members **15** and **16**, respectively. Since there may be more than eight safety fence posts **14** for each trampoline, and each post **14** requires multiple U-shaped fastening members **15**, **16** to connect it to the frame pipe **10** and the supporting leg **13**, a lot of time and labors are needed to complete such connection. Meanwhile, the safety fence post **14** is connected to the frame pipe **10** and the supporting leg **13** in a horizontal direction as indicated by the arrow A, while the trampoline is subject to a jumping force in a vertical direction as indicated by the arrow B. As a result, the fastening members **15**, **16** and the safety fence posts **14** bear forces in a non-ideal manner and have apparently insufficient structural strength, and therefore tend to produce shaking or even damage the binding joints.

SUMMARY OF THE INVENTION

[0006] A primary object of the present invention is to provide a connector for trampoline safety fence post to enable quick, convenient, and effectively enhanced connection of the safety fence post to trampoline frame and supporting legs.

[0007] To achieve the above object, the connector for trampoline safety fence post according to the present invention includes a short supporting tube fixedly connected to and downward extended from a lower side of one of many frame pipes of a trampoline frame for a corresponding tube-connecting end of a supporting leg of the trampoline to insert into a lower open end of the supporting tube, and a short connecting tube fixedly parallelly connected to one side of the short supporting tube for a corresponding tube-connecting end of the safety fence post to insert into an upper open end of the connecting tube.

[0008] Both the supporting and the connecting tube are hollow tubes having a predetermined diameter The tube-connecting ends of the supporting legs and the safety fence posts are diameter-reduced end adapted to tightly fit in the supporting and the connecting tube, respectively.

[0009] The supporting tube is welded to the connecting tube and the frame pipe.

[0010] The connector of the present invention enables quicker and more convenient connection of the safety fence posts to the trampoline frame and supporting legs. The troublesome and time-consuming connection of the safety fence posts to the trampoline frame pipes and supporting legs using the upper and lower U-shaped fastening members can therefore be saved to reduce the manufacturing cost of the trampoline. Moreover, since points of load at connecting areas of the connector are welded, the connector has apparently enhanced structural strength.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The structure and the technical means adopted by the present invention to achieve the above and other objects can be beat understood by referring to the following detailed description of the preferred embodiments and the accompanying drawings, wherein

[0012] **FIG. 1** is a fragmentary perspective view showing a conventional manner of connecting a safety fence post to a trampoline;

[0013] **FIG. 2** is an assembled perspective view of a connector for trampoline safety fence post according to a preferred embodiment of the present invention;

[0014] **FIG. 3** is an exploded perspective view of **FIG. 2**;

[0015] **FIG. 4** is a fragmentary perspective view showing the use of the connector of the present invention to connect a safety fence post to a trampoline; and

[0016] **FIG. 5** shows a protective net is connected to the trampoline safety fence post of **FIG. 4**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] Please refer to **FIGS. 2 and 3** that are fragmentary assembled and exploded perspective views, respectively, of

a connector for trampoline safety fence post according to a preferred embodiment of the present invention. As shown, the connector is a strengthened member for connecting a safety fence post **60** to a frame pipe and supporting leg **70** of a trampoline and is formed from a short supporting tube **40** and a short connecting tube **50** welded to one side of the short supporting tube **40**. A trampoline typically includes a plurality of frame pipes that are sequentially connected to form, for example, a round-shaped trampoline frame. In the illustrated drawings, two serially connected frame pipes **20**, **30** are shown. Basically, the short supporting tube **40** is welded to a lower side of a frame pipe, say, the frame pipe **20**, to downward project from the frame pipe **20**.

[**0018**] Both the supporting tube **40** and the connecting tube **50** are hollow tubes having a predetermined diameter. The safety fence post **60** and the supporting leg **70** have diameter-reduced tube-connecting ends **61** and **71**, respectively, for inserting into and thereby tightly connecting to an upper open end of the connecting tube **50** and a lower open end of the supporting tube **40**, respectively.

[**0019**] Meanwhile, in the illustrated embodiment, the connecting tube **50** for connecting to the safety fence post **60** is provided on an outer wall surface near a lower end thereof with a radially projected bar **51** having a predetermined small diameter.

[**0020**] Please refer to **FIGS. 4 and 5**. The safety fence post **60** having a predetermined specific height is directly connected to the connecting tube **50** by downward inserting the diameter-reduced tube-connecting end **61** into the upper open end of the connecting tube **50**, and the supporting leg **70**, which is a U-shaped member with two upward tube-connecting ends **71** in the illustrated drawings, is connected to supporting tubes **40** of two of the connectors of the present invention by upward inserting the diameter-reduced tube-connecting ends **71** into lower open ends of the two supporting tubes **40** that downward extend from the frame tubes **20**, as shown in **FIG. 4**. After all safety fence posts **60** for the trampoline are properly connected to the frame and the supporting legs **70** of the trampoline via the connectors of the present invention, a protective net **80** is firmly connected to the safety fence posts **60** at predetermined height with tying cords **81** provided on the protective net **80** being tightened to the mall-diameter radial bars **51** provided at lower ends of the connecting tubes **50**.

[**0021**] The present invention has been described with a preferred embodiment thereof and it is understood that many changes and modifications in the described embodiment can be carried out without departing from the scope and the spirit of the invention as defined by the appended claims.

What is claimed is:

1. A connector for connecting a safety fence post to a trampoline, said trampoline including a frame formed from a plurality of sequentially connected frame pipes to support a jumping bed thereon, and being supported on supporting legs, said connector comprising:

a short supporting tube fixedly connected to and downward extended from a lower side of one said frame pipe of said trampoline frame for a corresponding tube-connecting end of one said supporting leg to insert into a lower open end of said supporting tube; and

a short connecting tube fixedly parallelly connected to one side of said short supporting tube for a corresponding tube-connecting end of said safety fence post to insert into an upper open end of said connecting tube.

2. The connector for connecting a safety fence post to a trampoline as claimed in claim 1, wherein said short supporting tube and said short connecting tube fixedly connected to each other are hollow tubes having a predetermined diameter, and said tube-connecting ends of said supporting legs and said safety fence post having reduced diameters adapted to tightly fit in said open ends of said supporting tube and said connecting tube, respectively.

3. The connector for connecting a safety fence post to a trampoline as claimed in claim 1, wherein said short supporting tube is welded to said frame pipe and said short connecting tube.

4. The connector for connecting a safety fence post to a trampoline as claimed in claim 2, wherein said short supporting tube is welded to said frame pipe and said short connecting tube.

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