United States Patent [19]

Krug

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[45] **Mar. 25, 1975**

[54] **ATHLETIC TRAINING APPARATUS**

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[21] Appl. No.: **424,187**

[52] **U.S. Cl.** ..... **273/55 R**

[51] **Int. Cl.** **A63b 67/00**

[58] **Field of Search** ..... 273/55 R, 55 A; 272/79 R, 272/82, 83 R

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Primary Examiner—Richard C. Pinkham
Assistant Examiner—T. Brown
Attorney, Agent, or Firm—Arthur G. Yeager; George H. Baldwin

[57] **ABSTRACT**

The modular constructed apparatus includes an elongated rod with impact members on each end and a spring means to bias the rod medially of its length. An indicator is provided for determining the greater exertion of force being applied by trainees on respective impact members. Also, the impact members may be positioned either horizontally or vertically.

10 Claims, 10 Drawing Figures

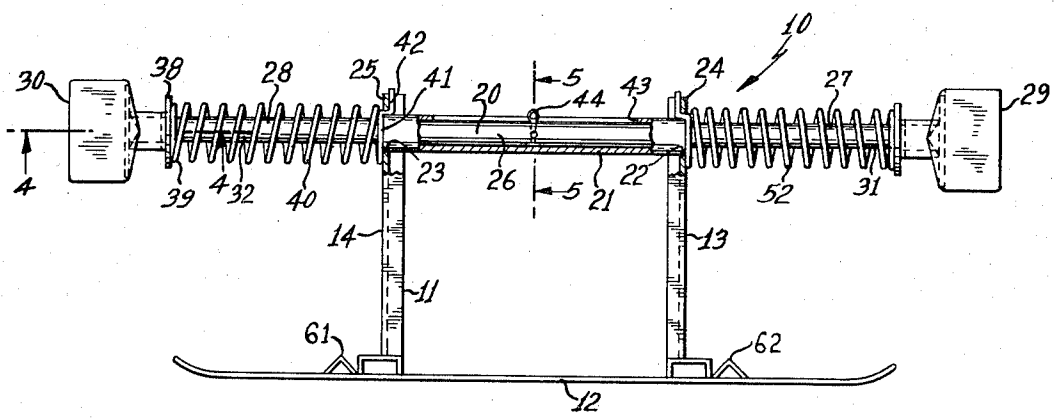


FIG. 1

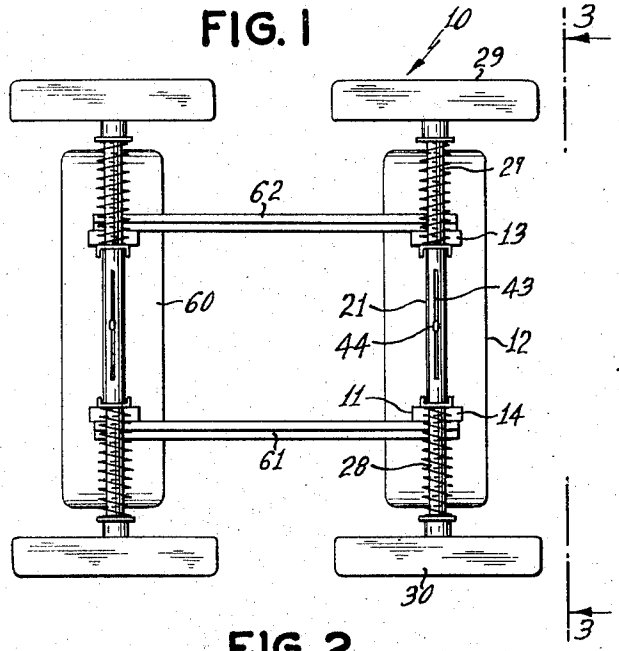


FIG. 4

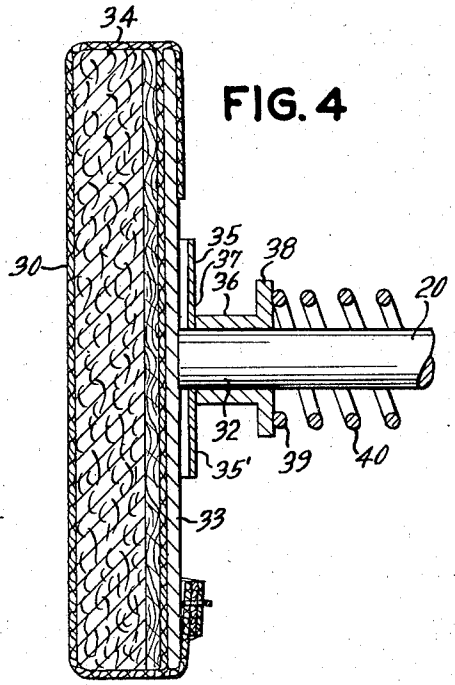


FIG. 2

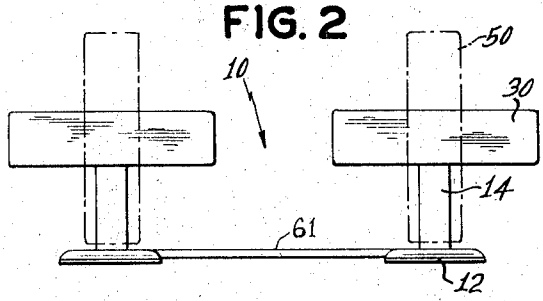


FIG. 5

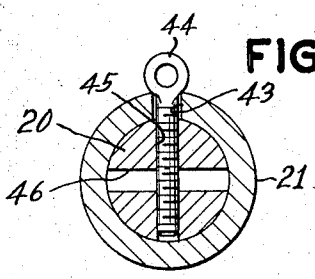


FIG. 3

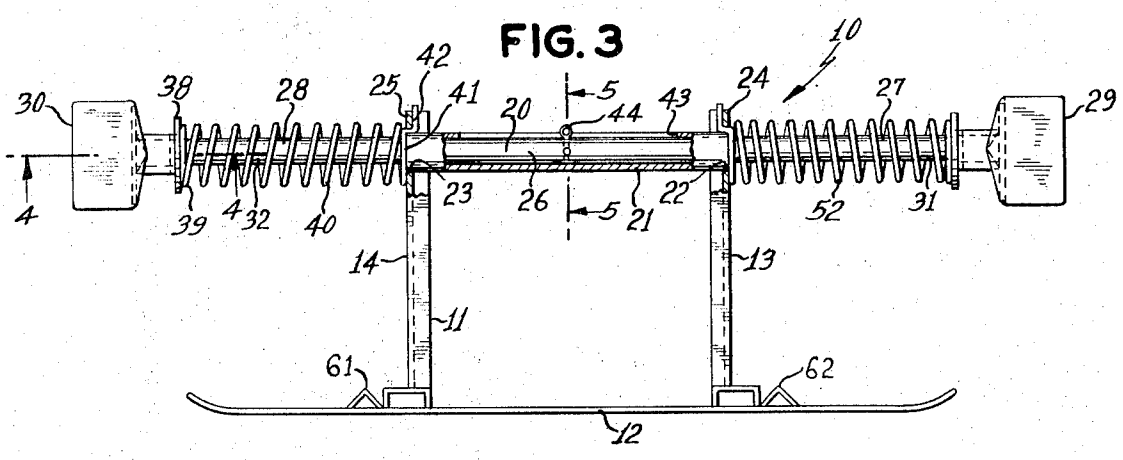


FIG. 6

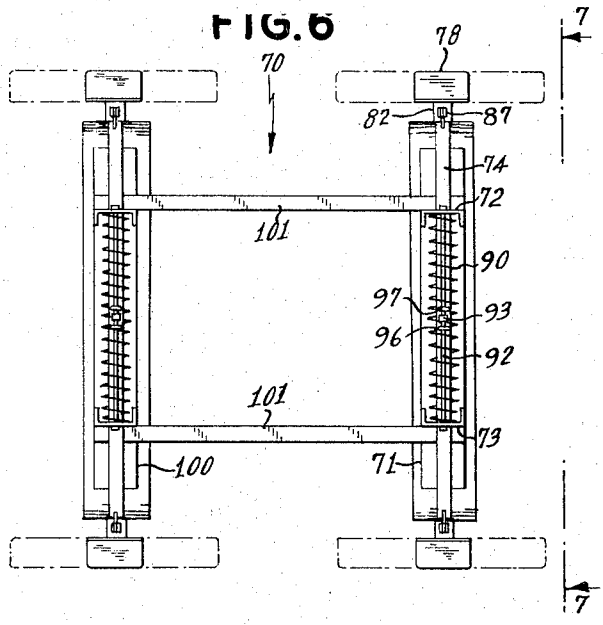


FIG. 8

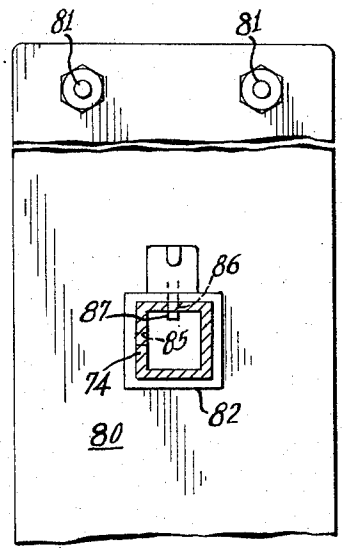


FIG. 9

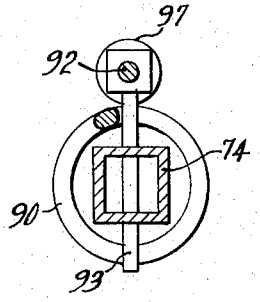


FIG. 10

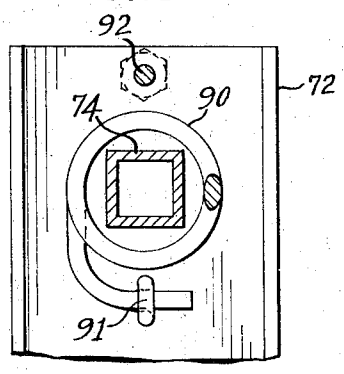
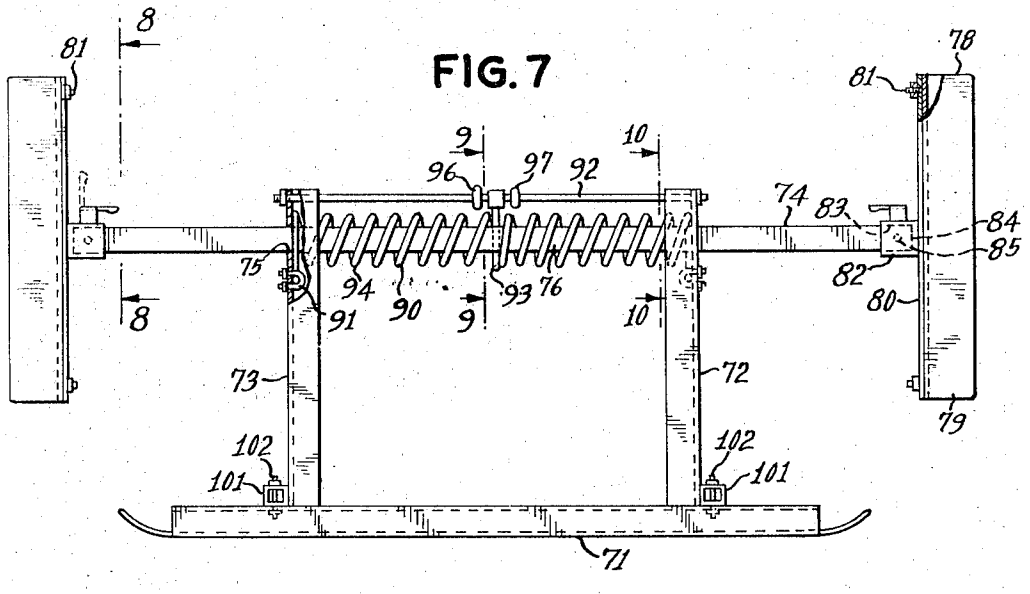


FIG. 7



ATHLETIC TRAINING APPARATUS

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

The invention relates to athletic training apparatus, and more particularly to apparatus for teaching, training and developing players in football tactics and techniques.

2. DESCRIPTION OF THE PRIOR ART

There have been many prior art football training sleds and the like apparatus, exemplary of which are those illustrated in the following U.S. Pat. Nos. 2,558,081; 2,653,816; 2,967,709; 3,062,547; 3,216,724; 3,329,428; 3,365,947; 3,427,021; 3,514,105; and 3,578,324. None of these patents either alone or in any appropriate combination anticipate the invention disclosed herein or render same unpatentable, nor are the results produced by the instant invention accomplished by the prior art, as hereinafter made apparent to those skilled in the art.

SUMMARY OF THE INVENTION

The athletic training apparatus in accordance with the present invention includes a support means and an elongated rod having opposite end portions and a medial portion slidingly attached to the support means. A pair of impact members are provided on respective rod end portions for contact with parts of the body of one or more trainees. Associated with the rod is resilient means for biasing the rod generally centrally of the support means with the end portions protruding substantially the same distance outwardly from the support means.

Other aspects are included in which each impact member has an elongated base and selective means for securing each base alternatively in an upright position and a horizontal position, thus providing the apparatus with increased flexibility of use. The resilient means in one embodiment includes a pair of springs located between the support means and respective impact members, while in another embodiment, includes a spring attached to the rod generally medial of the rod with the ends of the spring being secured to the support means. In the one embodiment a sleeve is surroundingly disposed about and slidingly supports the rod, with the sleeve being affixed to and supported by the support means. A pair of shoulders in the form of flanges are disposed adjacent respective impact members, and the pair of springs are located between the support means and respective shoulders or flanges. The rod includes a pair of mutually perpendicular openings which cooperate with an elongated slot in the sleeve, and a guiding pin is positioned in the slot and disposed in selected openings to rotatively position and maintain the impact members.

Another aspect of the invention is described in which the support means includes a pair of spaced upstanding posts with the resilient means being attached to and extending therebetween. Connecting means are employed to attach the rod to the resilient means to bias the rod generally medially between the posts. The resilient means may be an elongated coiled spring affixed at each end to the posts, and the connecting means may include an element connected to and extending laterally of the rod. A pin is attached between the posts and an end portion of the element is slidingly disposed on the pin. A pair of slidable rings are mounted on the pin

on respective sides of the element end portion for visually indicating the greater exertion of forces applied to one of the impact members.

In yet another aspect the support means is seen to include a generally horizontal sled and a pair of spaced posts upstanding therefrom with the coiled spring surrounding the rod. The rod has a non-circular cross-section extending at least along its medial length which slides through the posts and each post has an opening accommodating such rod of complemental shape to inhibit rotation of the rod. In this regard the impact members amy be removed and reattached to either of two mutually perpendicular positions.

BRIEF DESCRIPTION OF THE DRAWINGS

The novel features which are believed to be characteristic of this invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and method of operation, together with further objects and advantages thereof, may best be understood by reference to the following description taken in connection with the accompanying drawings, in which:

FIG. **1** is a top plan view of the first embodiment of the athletic training apparatus according to the invention;

FIG. **2** is a side elevational view of the apparatus of FIG. **1**, showing the alternate positions of the impact members in broken lines;

FIG. **3** is an end elevational view taken along line **3—3** of FIG. **1**;

FIG. **4** is a cross-sectional view taken along line **4—4** of FIG. **3**;

FIG. **5** is a cross-sectional view taken along line **5—5** of FIG. **3**;

FIG. **6** is a top plan view of the second embodiment of the athletic training apparatus according to the invention;

FIG. **7** is an end elevational view taken along line **7—7** of FIG. **6**;

FIG. **8** is a cross-sectional view taken along line **8—8** of FIG. **7**;

FIG. **9** is a cross-sectional view taken along line **9—9** of FIG. **7**; and

FIG. **10** is a cross-sectional view taken along line **10—10** of FIG. **7**

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now more particularly to the drawings of FIGS. **1 — 5**, the athletic training apparatus, in accord with the first embodiment of the invention, is generally designated by reference numeral **10** and includes a support means **11**, such support means **11** comprising a generally horizontal, ground engaging sled **12** and a pair of spaced posts **13** and **14** rigidly connected to and upstanding therefrom.

An elongated rod **20** having a circular cross-sectional configuration is attached by means, in the form of cylindrical casing or sleeve **21** and aligned openings **22** and **23** in respective upper end portions **24** and **25** of posts **13** and **14**, such latter means providing sliding attachment of the medial portion **26** of the rod **20** disposed therein to the posts **13** and **14** with the outer or opposite ends **27** and **28** respectively protruding outwardly from post **13** and **14**.

A pair of impact members **29** and **30** are respectively mounted to the opposite end portions **31** and **32** of rod **20** for contact with parts of the body of one or more trainees. Impact member **30**, as seen in FIG. **4**, includes a generally rectangular metal back plate **33** securely affixed to rod end portion **32**, as by welding or the like, and a covered cushion **34** releasably fastened to back plate **33** in any conventional manner. Reinforcing ribs **35** and **35'** are welded along the back plate **33** for rigidfying same, and a short sleeve or tube section **36** is also welded at end portion **37** to back plate **33**. The opposite end **38** of section **36** terminates in an outwardly extending shoulder or flange against which an end **39** of a resilient means, in the form of a compression spring **40**, is disposed. The opposite end **41** of the compression spring **40** is in engagement with the shoulder portion **42** of upright post **14** which generally surrounds opening **23**. Preferably, the end **41** of spring **40** is looped through the opening **23** or through a distinct other opening in post **14** to inhibit disengagement of the spring **40** from the post **14** due to a force being exerted onto impact member **29**.

The resilient means, including springs **40** and **52**, surround rod **20** and bias the rod **20** generally centrally thereof with the end portions **27** and **28** protruding substantially the same distance outwardly from respective posts **13** and **14**.

Sleeve **21** includes an elongated slot **43** through which a pin **44** extends and rides upon movement of rod **20**. The rod **20** is provided with a pair of mutually perpendicular passageways **45** and **46** and the pin **44** is selectively positioned in either of such passageways depending on whether the impact members **29** and **30** are to be in the generally horizontal position shown in FIGS. **1**, **2** and **3**, or in the vertical position shown by broken lines **50** of FIG. **2**. This selective positioning of the impact members **29** and **30** is readily accomplished by mere withdrawal of pin **44** from passageway **45**, rotating rod **20** by 90°, and then reinserting pin **44** through slot **43** and into passageway **46**.

A trainee may engage one of the impact members **29** or **30** or a pair of trainees may engage respective impact members **29** and **30**. Thus, when trainees are engaging respective impact members **29** and **30**, the trainees are participating in man to man competition and the coach or trainer can determine which trainee is hitting the impact member the hardest and which trainee is quicker to respond to the command to hit the impact member or to respond to seeing the ball hiked. With impact members **29** and **30** in the horizontal position, two trainees may engage each such impact member, i.e., tow trainees against two other trainees.

While the athletic training apparatus as shown in FIGS. **1–5**, includes another sled **60** and corresponding other components identical to the components mounted on sled **12**, it is to be understood that additional sleds may be added thereto or subtracted therefrom by adding or subtracting cross bars, for example, bars **61** and **62**, from such sleds. Thus, a two, four, six, eight or ten impact members may be provided on the modular constructed training apparatus in accord with this invention.

The second embodiment of the training apparatus in accord with this invention is depicted in FIGS. **6** to **10** and is generally designated by reference numeral **70**, apparatus **70** comprising a sled **71** and a pair of upstanding posts **72** and **73** slidingly supporting elongated rod **74** within a pair of aligned openings, including opening **75**, in respective posts **72** and **73**. The rod **74** is preferably of a non-circular or rectangular cross-secctional configuration at least sufficiently along its medial length **76** which slides through the openings, including opening **75**, of complemental shape to accommodate the non-circular cross-section of the rod **74** to prevent rotation thereof within such post openings.

The impact member **78** includes a cushion assembly **79** rigidly and removably attached to rectangular metal plate **80** by a plurality of spaced nut and bolts **81**. Extending rearwardly from and rigidly secured to each plate **80** is a socket member **82** of a complemental shaped opening **83** for the reception thereinto of the end portion **84** of rod **74**, rod end portion **84** being provided with mutually perpendicular passageway **85** and **86** through which a spring loaded locking pin **87** extends. Such an arrangement permits the alternate positioning of the impact members **78** in either the horizontal or vertical positions, but, without rotating the entire rod, such as is shown in the first embodiment of the invention of FIGS. **1–5**.

A resilient means, in the form of an elongated coiled spring **90**, is suitably affixed at its ends to the posts **72** and **73** by U-shaped clamp **91**. Spring **90** surrounds rod **74** and provides essentially the same spring action to the rod **74** as the two coil springs **40** and **52** of the first embodiment. Means are provided for connecting rod **74** to the coil spring **90** and is seen to include an elongated pin **92** attached between posts **72** and **73** and generally parallel with and spaced above rod **74** and spring **90** and a laterally extending element **93** slidingly disposed on pin **92**. Element **93** is rigidly affixed to and extends laterally outwardly of rod **74** generally medially thereof and extends through a turn of the coiled spring **90**, as clearly shown in FIGS. **7** and **9**. Thus, when one trainee is engaging the right impact member **78**, the trainee would be compressing the left end portion **94** of spring **90** while tensioning the right end portion **94** thereof. A pair of slidable rings **96** and **97** are frictionally and slidingly disposed on pin **92** on either side of element **93** so that the trainer may suitably determine the greater exertion of force being applied to one of the impact members **79** attached to rod **74** by oppositely pushing or hitting trainees engaging such impact members, i.e., when ring **96** assumes a position further away from the element **93** after forces are applied to the impact members **79**, then the right impact member **79** was hit harder than the left impact member **79**, as would be visually perceived by the trainer as well as the trainees.

The sled **71** is suitably connected to another sled **100** by cross bars **101** removably attached by nuts and bolts **102** to box member **103** welded along sled **71**. In this second embodiment, similar to the first embodiment, a two, four, six, eight or ten impact member training apparatus may be constructed as would be apparent to persons skilled in the art.

While the invention has been described with respect to certain specific embodiments, it will be appreciated that many modifications and changes may be made by those skilled in the art without departing from the spirit of the invention. It is intended, therefore, by the appended claims to cover all such modifications and changes as fall within the true spirit and scope of the invention.

What is claimed as new and what it is desired to secure by Letters Patent of the United States is:

1. In an athletic training apparatus the combination comprising a support means, an elongated rod having opposite end portions and a medial portion, means for slidingly attaching said medial portion to said support means with said opposite end portions protruding outwardly therefrom, a pair of impact members mounted on respective said rod end portions for contact with parts of the body of one or more trainees, resilient means associated with said rod for biasing said rod generally centrally of said support means with said end portions protruding substantially the same distance outwardly from said support means.

2. In the apparatus as defined in claim 1 wherein each of said impact members includes an elongated base, selective means for securing each said base alternatively in an upright position and a horizontal position.

3. In the apparatus as defined in claim 1 wherein said resilient means includes a pair of springs located between said support means and respective said impact members.

4. In the apparatus as defined in claim 3 further comprising a pair of sleeves surrounding said rod and located adjacent respective said impact members, each said sleeve having a shoulder extending laterally outwardly of said rod, said springs being disposed between said support means and respective said shoulders.

5. In the apparatus as defined in claim 3 wherein said support means includes an elongated sleeve having an elongated slot therealong, said rod including a pair of mutually perpendicular passageways therethrough, said apparatus further comprising a pin guidable in said slot and disposable in either of said passageways whereby the rotative position of said impact members may be selected.

6. In the apparatus as defined in claim 1 wherein said support means includes a pair of spaced upstanding posts, said resilient means being attached to and extend between said posts, means for connecting said rod to said resilient means.

7. In the apparatus as defined in claim 6 wherein said resilient means includes an elongated coiled spring affixed at each end to respective said posts, said means for connecting including an element connected to and extending laterally of said rod generally medially thereof, said resilient means being located between and contacted by said element and each of said posts.

8. In the apparatus as defined in claim 6 further comprising a pin attached between said posts, said element having an end portion slidingly disposed on said pin, and a pair of slidable rings disposed on said pin on respective sides of said element end portion whereby the greater exertion of force applied to one of said impact members is transmitted by said rod to said element and thence to said ring remote from said one impact member to visually indicate such greater exertion of force.

9. In the apparatus as defined in claim 1 wherein said support means includes a generally horizontal sled and a pair of spaced posts upstanding therefrom.

10. In the apparatus as defined in claim 9 wherein said resilient means includes an elongated coiled spring surrounding said rod and connected to and between said spaced posts, an element attached to said rod generally medially thereof and extending laterally outwardly therefrom and between a pair of turns of said spring, said rod having a non-circular cross-section extending at least sufficiently along its memdial length which slides through said posts, each said post having an opening generally of complemental shape to accommodate the non-circular cross-section of said rod to inhibit rotation of said rod.

* * * * *