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Tomlinson

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[54] **MEASURING MEANS FOR POLE VAULTER**

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[52] **U.S. Cl.** ..... **272/59 C**

[51] **Int. Cl.** **A63b 5/16**

[58] **Field of Search** 272/59

[56] **References Cited**

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[57] **ABSTRACT**

A measuring structure adapted to be utilized with a conventional vaulting pole preliminary to vaulting to assure a predetermined horizontal spacing of an elevated cross bar forward of a designated pivot ground point.

The measuring structure includes an opening in the pole and a measuring element which is adjustable along the opening and removable from the pole and also preferably contains measurement increments marked thereon.

7 Claims, 6 Drawing Figures

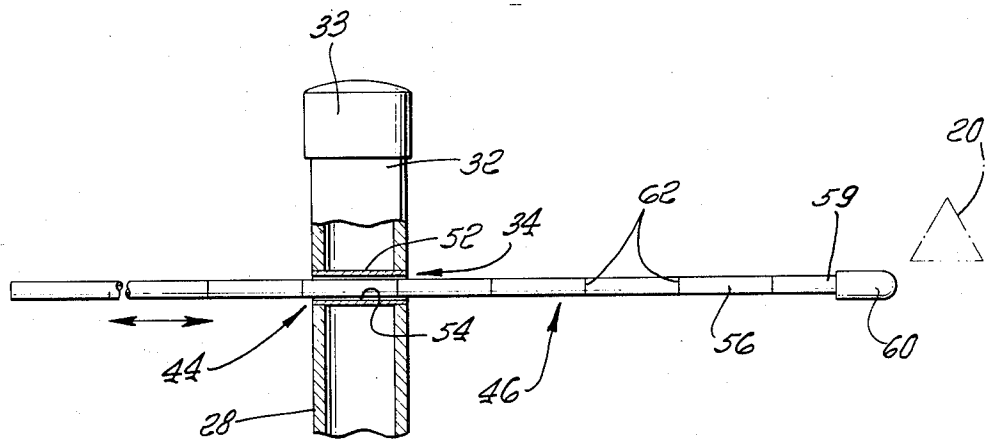


FIG. 1.

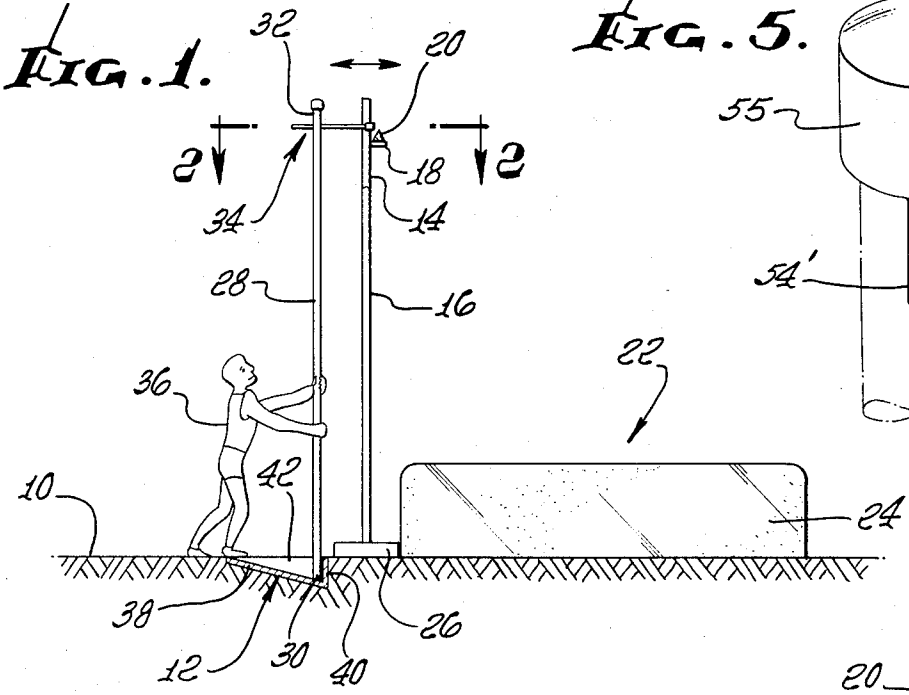


FIG. 5.

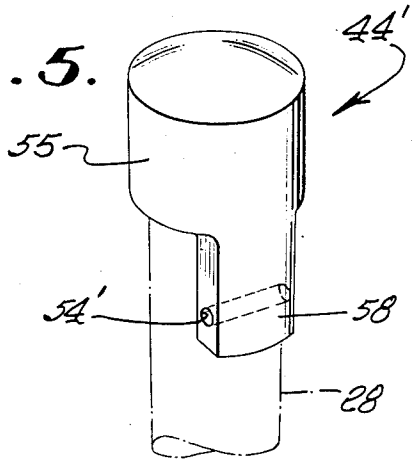


FIG. 2.

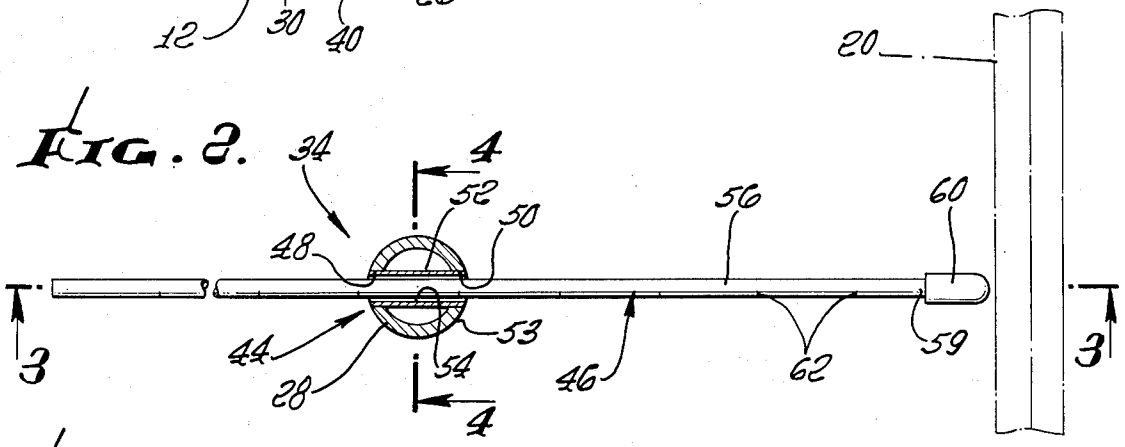


FIG. 6.

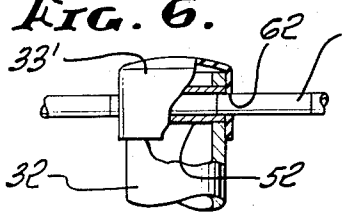


FIG. 4.

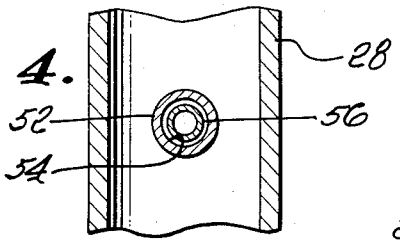
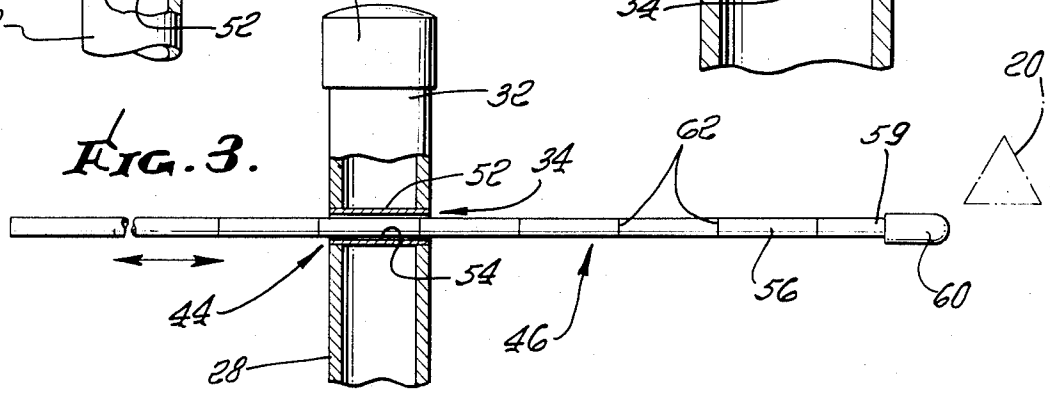


FIG. 3.



MEASURING MEANS FOR POLE VAULTER

BACKGROUND OF THE INVENTION

In the sport of pole vaulting the positioning of the conventional cross bar suspended between a pair of vertical standards can become quite critical to the vaulter. The positioning is relative to the pole vault box, where the vaulting pole will pivot upward.

As is known the pole vaulting area and equipment includes a relatively long runway and at the end thereof a conventional pole vault box is set in the ground. The box includes a downward inclined bottom which intersects a vertical backwall. The athlete runs down the runway, plants the end of the pole in the box at the intersection pushing upwardly on the pole so the pole pivots upwardly propelling the athlete upward over the cross bar.

During the upward pivoting of the pole it is also necessary for the athlete to pull his body upward higher than the length of the pole. If the cross bar is too close to a vertical plane projected upwardly from the vertical back wall of the pole vault box the athlete may hit the cross bar with his feet thus knocking it off the standards. If, on the other hand, the cross bar is too far forward of the vertical plane of the back wall of the pole vault box gravity and momentum will cause the athlete to drop his feet or body on to the cross bar and again knock it off the standards.

By most track and field rules the cross bar may be longitudinally shifted forward from the vertical plane projecting from the vertical back wall of the pole vault box a maximum of four feet.

The longitudinal positioning of the cross bar depends upon various circumstances, such as the height and weight of the athlete, the elevation of the cross bar and in outdoor vaulting the direction and speed of the wind.

Heretofore the setting of the cross bar forwardly of or on the vertical plane projecting from the vertical back wall of the pole vault box has always been by line of sight. The vaulter has stood over the pole vault box and looked upward and visually attempted to calculate whether the cross bar and in turn the standards should be moved to achieve the desired location. This method has provded to be merely guess work and an approximation and if, as is customary, the standards are shifted for another vaulter than the resetting for the first vaulter again is only an approximation of his first setting. As can be appreciated with the development of new vaulting poles and techniques of vaulting a more exacting setting must be achieved.

SUMMARY OF THE INVENTION

An object of this invention is a new measuring means which achieves exact settings of the spacing any time the vaulter wishes.

Once the vaulter has determined from past experience or during preliminary trails the correct spacing sufficient to his needs the measuring means of this invention may be utilized to achieve exact measurement each time.

The preferred embodiment of the invention includes a passage through the elongated vaulting pole normal to the longitudinal axis thereof and an elongated measuring element slidably positioned in the guide passage which is frictionally retainable at a predetermined setting. In other words, if the athlete decides the cross bar should be 24 inches forward of a vertical plane struck from the vertical back wall of the box, he moves the measuring element to the desired increment reading placed on the element. He then vertically places the pole in the box against the back wall and the measuring guide is directed forward toward the cross bar. The vertical standards may then be moved so the cross bar is vertically aligned with the end of the measuring guide.

These and other objects and advantages will become more fully apparent from the following description and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevational environmental view of pole vaulting equipment and the measuring means constituting the invention;

FIG. **2** is a top elevational view partly in section taken on line **2—2** of FIG. **1**;

FIG. **3** is a side elevational view partly in section taken on line **3—3** of FIG. **2**;

FIG. **4** is a cross sectional view taken on line **4—4** of FIG. **2**;

FIG. **5** illustrates a modified guide and holding means; and

FIG. **6** illustrates a further modified guide and holding means.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

There is illustrated in FIG. **1** conventional equipment and area utilized in the sport of pole vaulting and included therein is the measuring means which is the subject of this invention. The normal pole vaulting area and equipment includes a runway or base **10**, a pole vault box generally designated **12** and a pair of vertical standards **14** and **16** which are laterally spaced normal to the axis of the runway **10**. Each of the vertical standards **14** and **16** include cross bar rests **18** projecting on the side opposite the runway **10** and pole vault box **12**. Suspended between the vertical standards **14** and **16** on the cross bar rests **18** is a conventional cross bar **20** which is preferably triangular in shape so that it may remain in position as illustrated in FIG. **1** and not be susceptible to dislodgement by wind or slight movement particularly during outdoor track and field events, yet if hit by a vaulter will be dislodged.

Adjacent to the standards **14** and **16** is the landing area generally designated **22** which is made of polyurethane foam retained within a plastic or canvas envelope **24** normally secured to the ground to prevent movement thereof. The height is sufficient to break the fall of the vaulter and prevent injury.

Referring again to the standards **14** and **16**, the base **26** may be physically moved along the axis of the runway **10** or in some of the more modern vertical standards the base will remain fixed and the vertical standards then may be shiftable. However, the means employed to cause the shifting is immaterial just as long as they can be shifted, which in turn will cause the proper cross bar location.

Additionally, there is illustrated a conventional vaulting pole **28** which includes a bottom end **30**, top end **32** and is preferably made of hollow tubular fiberglass structure. Additionally, a top cap **33** may be placed over the top end **32** to prevent entry of foreign material. This structure will enable the vaulter to get more

"kick" to his vault and furnishes a very resilient structure for vaulting. However, the construction of the vaulting pole **28** is not critical and the measuring means can be utilized with any type of pole **28** no matter of what material it is constructed.

Under most rules governing pole vaulting, the vaulter is allowed to have the cross bar **20** shifted forwardly of the pole vault box **12** a distance no greater than four feet. Because of the fact that vaulters differ in height and weight and the elevation of the cross bar from the ground each vaulter attempts to regulate the distance so as to afford him the best physical and psychological opportunity to complete a successful pole vault.

The pole vault box **12** is mounted into the head or forward end of the runway **10** and includes a downwardly inclined bottom **38** which intersects a vertically extending back wall **40** which normally is six inches in height. On either side of the bottom **38** and extending from the bottom **38** to the back wall **40** are spaced apart parallel side walls **42**, one of which is illustrated in FIG. **1**. Thus, the pole vault box **12** becomes a channel in which the bottom end **30** of the pole **28** is lodged at the intersection which becomes the pivot point or base pivot point for the vault.

To undertake the vault, the vaulter **36** grasping the vaulting pole **28** which is normally eighteen feet in length adjacent the top end **32** thereof will move rearwardly on the runway **10** to a desired location and then running with the vaulting pole **28** in a generally horizontal position will plant the bottom end **30** within the pole vault box **12** at the intersection of the bottom **38** and back wall **40** causing the pole to pivot upwardly whereby the vaulter will then swing his feet and push upwardly and over the cross bar **20** landing on the landing area **22** and pushing the pole **28** rearwardly so as not to hit the cross bar **20**.

The subject of this invention as aforementioned is measuring means generally designated **34**. Preferably there is a guide and holding means generally designated **44**, and a measuring element **46** retained therein. The guide and holding means **44** may be permanently built into the pole **28** which is normally of hollow tubular construction, see FIGS. **2, 3** and **4**. In such a case the pole **28** is diametrically bored preferably adjacent the top end **32** forming aligned bores **48** and **50**. Inserted through the pole **28** within the bores **48** and **50** is a tubular sleeve **52** which is cut off flush with the exterior **53** of the vaulting pole **28**. There is an annular passage **54** extending therethrough normal to the axis of pole **28**.

If, on the other hand, it is not desired to disrupt the pole **28** by boring therethrough, the modified guide and holding means **44'** may be utilized, see FIG. **5**. Here a cap **55** having a generally elongated flattened extension **58** may be provided to fit over the end **32** of the pole **28** and then removed when the measuring has been accomplished. The extension **58** is bored forming an annular passage **54'** normal to the axis of the pole **28**.

While the embodiment of FIG. **5** is one form of modified guide and holding means **44'**, it should be appreciated that the cap **55** does not necessarily require an extension **58**, but that any configuration of cap **55** which can include a straight passage **54'** therethrough will accomplish the desired results.

Inserted through the passage **54** or **54'** is the measuring element **46**. The measuring element **46** includes a rod **56** which is elongated and preferably round and may be either solid or hollow. The diameter of the rod **56** is slightly less than the diameter of passage **54** or **54'** so that it may be slid back and forth within the passage for proper positioning, and will be frictionally maintained therein.

Preferably placed on the end **59** of the rod **54** is a referencing cap **60** of contrasting color for ease of viewing, and of a larger diameter than said rod. Additionally, the rod **56** is preferably provided with a plurality of measurement increments **62**. Additionally, other indicia may be placed thereon such a "3 ins." "6 ins." "18 ins.", etc.

Once the measuring element **46** has been properly positioned in the guide and holding means **44**, the vaulter **36** will then slide the tubular rod **56** outwardly of the pole **28** to the appropriate marking. This, of course, is an individual choice depending upon the athlete or vaulter. Therefore, if the vaulter recognizes that his best effort can be made with the cross bar, **24** inches ahead of the rear wall **40** of the pole vault box **12**, he will then move the rod **56** forward to the **24** inch increment. At that point he will then proceed to the vaulting area, placing the pole **28** with the bottom end **30** in the pole vault box **12** such as is shown in FIG. **1**. The rod **56** is extended forwardly and at that point he then will instruct helpers to shift the vertical standards **14** and **16** forwardly or rearwardly so that the referencing cap **60** is vertically aligned with the cross bar **20**.

The illustration in FIG. **1** shows the cross bar almost horizontally aligned with the rod **56** of the measuring guide **34**. However, in actual practice, the cross bar is normally lower than is illustrated and in such a case it is merely a matter of having the vaulter or his coach stand between the two vertical standards **14** and **16** and sight upwardly so that the referencing cap **60** will be vertically aligned with the cross bar **20**.

The tubular rod **56** is then removed from the vaulting pole **28** or the rod **56** and guide and holding means **44'** are removed and the vaulter or athlete **36** may proceed with his vault.

The invention is particularly useful in a track and field meet when there are a number of vaulters who are utilizing the same vaulting equipment and each athlete requiring the cross bar to be shifted to his individual requirement. Heretofore, there has never been an accurate means of positioning the cross bar exactly where the vaulter wants it to be each time it comes his turn to vault. However, with the present invention the guess work has been removed and the exact setting for the vaulter may be obtained each time that it is his turn to participate.

It should also be noted in the preferred embodiment the positioning of the sleeve **52** adjacent the end **32** of the vaulting pole **28** is far enough above the normal area held by a vaulter that there is no undue strain on the pole or weakening thereof which could cause its breakage during a vault.

In FIG. **6** the invention is illustrated positioned above the placement of FIGS. **1, 2** and **3**. In this modification the sleeve **52** is positioned as close as practical to the end **32** of the pole **28**. The cap **33'** overlies the sleeve **52** and is provided with opposed openings **62** which are aligned with the bore of sleeve **52**. Preferably the openings **62** correspond in diameter with the diameter of rod **56** so that when inserted the rod **56** will be frictionally maintained in position until it is removed just prior to vaulting.

Although I have herein shown and described my invention in what I have conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of my invention.

I claim:

1. In the combination of a pole vault box having a back vertical wall, a pair of laterally spaced standards longitudinally translatable relative to said pole vault box and a transverse cross bar supportable between said standards, the improvement comprising guide and holding means associated with a vaulting pole having an elongated axis, said means including a guide passage therethrough normal to the longitudinal axis of said pole, and a measuring element slidably positioned in the guide passage and frictionally retainable at a predetermined setting whereby an athlete may hold the pole vertically in the pole vault box with the measuring element directed toward the vertical plane of said cross bar and thereby indicate the desired horizontal spacing between the vertical plane of said pole and the vertical plane of said cross bar.

2. The improvement of claim **1** wherein said guide and holding means includes a cap adapted to fit over the end of said pole and said guide passage extends through said cap.

3. The improvement of claim **2** wherein said cap overlies said guide passage, and said cap is provided with opposed openings aligned with said guide passage creating an unobstructed passage through said pole and said cap.

4. The improvement of claim **2** wherein said cap includes an extension extending therefrom and said guide passage extends therethrough.

5. The improvement of claim **1** wherein said measuring element is an elongated rod whose diameter is slightly less than the diameter of said guide passage and whereby said rod is slidable therein and frictionally releasably maintained therein.

6. The improvement of claim **5** wherein said rod includes measurement increments therealong.

7. The improvement of claim **6** wherein said rod includes a referencing cap on an end thereof.

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