A baseball and softball batting tee that provides the stability of a weighted base, the self-righting action provided by a helical spring connected to the base, and the strength of a metal telescoping vertical shaft connected to the top of the helical spring, with the durability of a long lasting nylon inserted rubber ball rest connected to the top of the telescoping shaft to allow batters of all sizes and skill levels to practice their swing.
ELI’S SPRINGBACK TEE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] None

FIELD OF THE INVENTION

[0002] The present invention relates to swing training devices in general, and more particularly to self-righting adjustable height batting tees for enabling a batter to practice their batting stance and swing.

BACKGROUND OF THE INVENTION

[0003] Today’s athletes have a plethora of practice tools to choose from when working to improve their game. Since there are so many skill sets required to play ball proficiently, tools for improving everything from the mental attitude to strength and stamina are currently available.

[0004] In baseball and softball, one of the most difficult skills to master is hitting. Beginning batters may use a batting tee to hold the ball in a stationary position at a pre-selected height in the “strike zone” above a representation of home plate so that they can get used to making contact with the ball, without the additional coordination necessary to hit a moving target. Advanced athletes may use the batting tee for perfecting their batting routine, including their swing speed and swing trajectory, as well as to practice hitting the ball at the various positions at which it may cross home plate. Having a height-adjustable tee enables the batter to practice both high and low positions, and adjusting the placement of the tee allows the batter to practice various combinations of high and low pitches along with inside and outside positions. It is to be expected with both beginners and advanced batters that sometimes the batter will not make clean contact with the ball, and may instead strike the tee. When the tee is struck, especially with repeated use, they tend to tip over or break. When the tee breaks, it is usually near the connection between the base and the vertical shaft, or at the top of the shaft where the holder is being struck by the bat. As a result many solutions have been proposed for the absorption of the impact upon the tee, and the re-establishment of the vertical position of the tee after being struck.

[0005] U.S. Pat. Nos. 7,704,168, 8,029,389, and 8,109,844, both relate to flexibility of the vertical support for the ball or a self-righting means when the tee is knocked down.

SUMMARY OF THE INVENTION

[0006] Eli’s Springback Tee is an improved and durable baseball and softball batting tee that addresses many disadvantages of conventional batting tees. Eli’s Springback Tee has a metal base, metal telescoping shaft and durable ball rest at the top. Eli’s Springback Tee uses a helical spring to cause the tee to return to a vertical position after being struck by the bat. This Springback technology allows the batter to save time, and maintain a swing pattern without having to pick the tee back up after a missed-hit and reposition it before taking another swing. The Springback tee does not tip over when a batter accidently hits the ball rest because of the combination of the improved weighted base and the springing action of the vertical shaft of the tee, and is durable enough to withstand thousands of hits from even the strongest batters.

[0007] Eli’s Springback Tee is currently being used by high school teams, college teams, and travel baseball organizations across the nation because of its ease of use, portability, and durable metal construction. Go to www.elspringbacktee.com for video clips of the tee in action, as well as testimonials of some of the current users of Eli’s Springback Tee.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0008] While the invention will be described in connection with a preferred embodiment, it will be understood that the preferred embodiment is not intended to limit the invention to this embodiment. On the contrary, it is intended as an example of the invention, which has various alternative embodiments, modifications, and equivalents that are all included within the spirit and scope of the invention.

[0009] In a preferred embodiment, the Springback tee base has a width or diameter of approximately 6 inches in order to maintain stability even when the ball rest is struck by the bat. The base is removable attached to the spring and vertical shaft by a threaded metal pipe that allows the base to be unscrewed and separated from the shaft for portability or storage purposes.

[0010] The Springback tee has three telescoping vertical sections that allow the tee to adjust to various heights from approximately 26 inches up to 42 inches. The dual tensioners between sections allow the tee to be height adjusted easily, yet remain at the selected height without slipping down. The tensioners can be made from rubber stoppers that have a hole cut through the center a size just large enough to allow them to fit over the vertical shaft, yet remaining tight enough to create tension and friction when the shaft is being pulled up or pushed down.

[0011] The ball rest is a formed by rolling a custom shaped piece of diaphragm grade EPDM rubber material into a cone-shaped opening at the top. The rubber has nylon cloth inserted for extra long life and rip/tear resistance.

[0012] The spring is approximately 5 inches in length with the top diameter of the spring being larger than the bottom diameter of the spring. The spring is similar to a garage door extension spring that has been stretched to create two separate voids between the coils of the spring, one towards the top of the spring, and one close to the bottom of the spring. The bottom void in the spring allows the spring to be secured to the threaded metal pipe with one or more hex head metal screws. The threaded metal pipe can then be screwed into the base. The top void in the spring allows the spring to be securedly attached to the vertical shaft by one or more hex head metal screws. With this configuration, the spring acts to receive the impact of hits against the ball rest by allowing the vertical shaft to swing forward when hit, and then releases that stored energy to spring back to an upright vertical position.

[0013] DESCRIPTION OF ALTERNATE EMBODIMENTS In an alternative embodiment, the Springback tee can be shortened to practice low ball swings. This embodiment is approximately 17 inches high, and can be used to practice pitches underneath the strike zone and the low and outside pitch that is on or right off of the back part of the plate. The base has a width or diameter greater than 6 inches in order to maintain stability. The vertical shaft may be comprised of two or more shorter telescoping sections, or may only have one section and therefore have a non-adjustable height. The low ball Springback tee can also be used for smaller/younger batters including little league teams as well.

[0014] In another alternative embodiment, the Springback tee may have a home plate shaped base or other suitable shape.
that does not compromise the support provided by the base. The base may also be a hollow plastic chamber or bladder that can be filled with water or sand when in use, and emptied out when not in use for increased portability.

OBJECTS AND ADVANTAGES

[0015] It is a general object of this invention to provide a portable yet durable swing training device suitable for all ages and skill levels including up to professional athletes.

[0016] It is also an object of this invention to provide a batting tee that can be quickly and easily adjusted up or down to various heights, yet remain secure enough at any height level to withstand missed hits without slipping down from the pre-selected height.

[0017] It is another object to provide a ball rest that can support a baseball or softball and withstand thousands of swings without ripping or tearing.

[0018] Another object of the invention is to provide a tee that saves the batter the time and effort of picking up and repositioning the tee after striking the tee, by providing a tee that springs back into an upright position.

[0019] It is also an object of this invention to provide a tee that is heavy enough not to tip over when hit, yet remain lightweight enough to be carried by a child.

[0020] It is another object of this invention to provide a tee that is easily assembled for portability and storage purposes.

[0021] Other additional objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0022] FIG. 1 is a front elevation view of the first embodiment of the Springback tee.

[0023] FIG. 2 is an exploded front elevation view of the Springback tee.

[0024] FIG. 3 is a front elevation view of an alternate embodiment.

[0025] FIG. 4 is a detailed view of the unrolled rubber ball rest.

[0026] FIG. 5 is a detailed view of the cone shape formed by rolling the rubber ball rest.

DETAILED DESCRIPTION OF DRAWINGS

[0027] Certain embodiments of the present invention provide a batting and swing training device. In several embodiments, the Springback tee can be adjusted to various heights by the telescoping sections being extended or retracted to the desired height.

[0028] FIG. 1 illustrates the Springback tee 10 of the present invention. The Springback tee 10 has a heavy metal base 12 for supporting the telescoping vertical shaft 14 that supports the top cone 16, which holds a ball in place for hitting. The base 12 is preferably made of cast iron or steel and is heavy enough to prevent the tee from falling over when struck by a bat.

[0029] The rigid metal coupling 20 has a top and bottom side, where the bottom side is fixedly secured to the upper surface of the base 12, such as by welding. The top side of the coupling 20 has a female thread and can receive the male threaded end of a short metal nipple or pipe 22, which is secured at the other end to the bottom of a helical spring 24 by hex head screws (not shown). The threaded connection between the coupling 20 and the metal pipe 22 allows the base 12 to quickly be unscrewed and separated from the vertical shaft 14 for portability and storage of the tee. The helical spring 24 is closely coiled and will bend forward and spring back with the vertical shaft 14 in correlation to the amount of force with which the tee is struck. The top of the spring 24 is secured to a first vertical shaft 26. The spring 24 is secured between the threaded pipe 22 and the first vertical shaft 26 by hex head metal screws (not shown) passing through aligned openings in the lower and upper portion of the spring 24, respectively. In the alternative, the spring 24 can be permanently attached to the metal pipe 22 and/or first vertical shaft 26 such as by welding. The spring 24 serves to bias the vertical shaft 14 to the vertical position, but allows omnidirectional movement of the vertical shaft 14 relative to the base 12. Thus, the spring 24 being fixedly attached to the pipe 22 and movably attached to the base 12 allows the entire vertical shaft 14 to bend forward upon impact by a bat, and then to swing back into its vertical position.

[0030] The Springback tee 10 has a telescoping vertical shaft 14 that is adjustable to various heights. The shaft 14 has two or more collinear support members attached to one another and vertically adjustable relative to one another. In FIG. 1, there are three vertical shaft members, 26, 28 and 30. The members telescope at their points of intersection. A tensioner 32 is disposed between the first vertical shaft 26 and the second vertical shaft 28, and between the second vertical shaft 28 and the third vertical shaft 30. The tensioner 32 not only holds the vertical shaft members in place relative to one another, but also permits slidable and relative movement between them. Each vertical shaft member has a different diameter, permitting the third vertical shaft 30 to slide or telescope within the second vertical shaft 28, and second vertical shaft 28 to slide or telescope within the first vertical shaft 26.

[0031] The diameter of the first vertical shaft 26 is larger than the diameter of the second vertical shaft 28, which has a larger diameter than the third vertical shaft 30. The tops of both the first vertical shaft 26 and the second vertical shaft 28 are machined down or crimped enough to prevent the next and smaller shaft from being pulled all of the way out of the larger shaft. In FIG. 2, there are two wideners 34 that are placed around the lower portion of the second vertical shaft 28 so that when it slides through the larger first vertical shaft 26, the tensioner 32 and the wideners 34 restrict the vertical movement of the second vertical shaft 28, and prevent the second vertical shaft 28 from being pulled out of the first vertical shaft 26. The third vertical shaft 30 is a solid piece of plastic, such as acetal plastic, and has a self-lapping screw 36 inserted through a washer 38, and screwed into the third vertical shaft 30 to prevent movement of the short length of liquid tight conduit 40 around the lower portion of the third vertical shaft 30. The liquid tight conduit 40 around the lower portion of the third vertical shaft 30 serves to increase the width of the third vertical shaft 30 inside the second vertical shaft 28, and prevent it from being pulled out of the second vertical shaft 28.

[0032] As a result, the smaller shafts can be slid within the larger shafts and secured and held in place with a tensioner 32. The tensioners 32 disposed between the vertical members can adjustably secure the vertical shaft members at a variety of heights selected by the batter.

[0033] The rubber sleeve 42 overlies the bonding area where the third vertical shaft 30 and the ball rest 16 are
connected, and provides a smooth and aesthetically pleasing transition from the shaft to the ball rest 16.

FIG. 4 displays the customized shape of the rubber ball rest. The tapered look seen in FIG. 5 is accomplished by rolling the rubber into a cone shape at the top for supporting a baseball or softball.

CONCLUSION, RAMIFICATIONS AND SCOPE

Accordingly, the reader will see that according to the various embodiments of the invention, a more durable but still portable batting tee comprised of mostly metal materials has been provided. The metal construction provides durability in the shaft, and the nylon injected rubber provides a tear resistant ball rest that can withstand thousands of hits from even the strongest batters. The weighted metal base provides excellent stability even when the vertical shaft is struck. The stability of the base is further enhanced by the springing action provided by the spring to allow the vertical shaft to lean over with the impact of the hit and use that force to spring back into an upright position.

Although the descriptions above contain much specificity, they should not be construed as limiting the scope of the invention, but as merely providing illustrations of some of the presently preferred embodiments of the Springback tee. Many other variations and modifications will be apparent to those skilled in the art, including the ability to modify materials used for the base and shaft to make the tee more lightweight. For example, the base could be modified to have a wider diameter to provide additional stability instead of using a heavier metal base. Additionally, the ball rest could be comprised of other elastomeric materials, with or without cloth or nylon insertion for additional durability.

Accordingly, the scope of the invention should be determined not by the embodiments illustrated, but by the appended claims and their legal equivalents.

We Claim:

1. An adjustable batting tee that returns to a vertical position when hit comprising:
   a substantially cone shaped ball rest,
   a plurality of telescoping vertical shafts for elevating the ball rest,
   a weighted base for stabilizing the vertical shaft and ball rest,
   a helical spring for connecting the base with the vertical shaft, and allowing the vertical shaft to spring back to a vertical position after being struck by a batter.
2. The adjustable batting tee of claim 1 wherein one or more of the vertical shafts are comprised of metal conduit.
3. The adjustable batting tee of claim 2 wherein one or more of the vertical shafts is comprised of a solid plastic.
4. The adjustable batting tee of claim 1 wherein the weighted base is approximately ten (10) pounds.
5. The adjustable batting tee of claim 2 wherein the helical spring comprises a garage door spring approximately five (5) inches long.
6. A self-righting and height adjustable batting tee comprising:
   a metal base for maintaining a fixed position relative to the ground,
   a metal spring for returning the tee to an upright position when struck,
   two or more telescoping metal shafts for vertical adjustment, and
   a tear resistant ball supporting means for placement of a baseball or softball.
7. The self-righting and height adjustable batting tee of claim 6 wherein the tear resistant ball supporting means is comprised of a diaphragm grade EPDM rubber with nylon cloth insertion.
8. The self-righting and height adjustable batting tee of claim 6 wherein the metal spring is fixedly attached to the telescoping shaft by metal screws, and removeably attached to the base by a threaded metal pipe.
9. The self-righting and height adjustable batting tee of claim 7 wherein the metal spring is fixedly attached to the telescoping shaft by metal screws, and removeably attached to the base by a threaded metal pipe.
10. The self-righting and height adjustable batting tee of claim 6 further comprising one or more rubber tensioners for maintaining the vertical position of the telescoping shaft.
11. The self-righting and height adjustable batting tee of claim 6 further comprising one or more widening means for preventing a smaller telescoping shaft member from sliding completely out of a larger shaft member.
12. A self-righting batting trainer comprising:
   a weighted base,
   a closely coiled spring for redirecting the force of a missed hit,
   a rubberlike ball rest for placement of a ball for hitting, and
   a metal shaft for elevating the ball rest.
13. The self righting batting trainer of claim 12 further comprising an acetate plastic shaft within the metal shaft for adjusting the height of the ball rest.
14. The self righting batting trainer of claim 13 wherein the acetate plastic shaft is maintained within the metal shaft by a widening means such as liquid tight conduit being placed around the lower circumference of the plastic shaft.