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(54) **PITCHING TRAINING AID**

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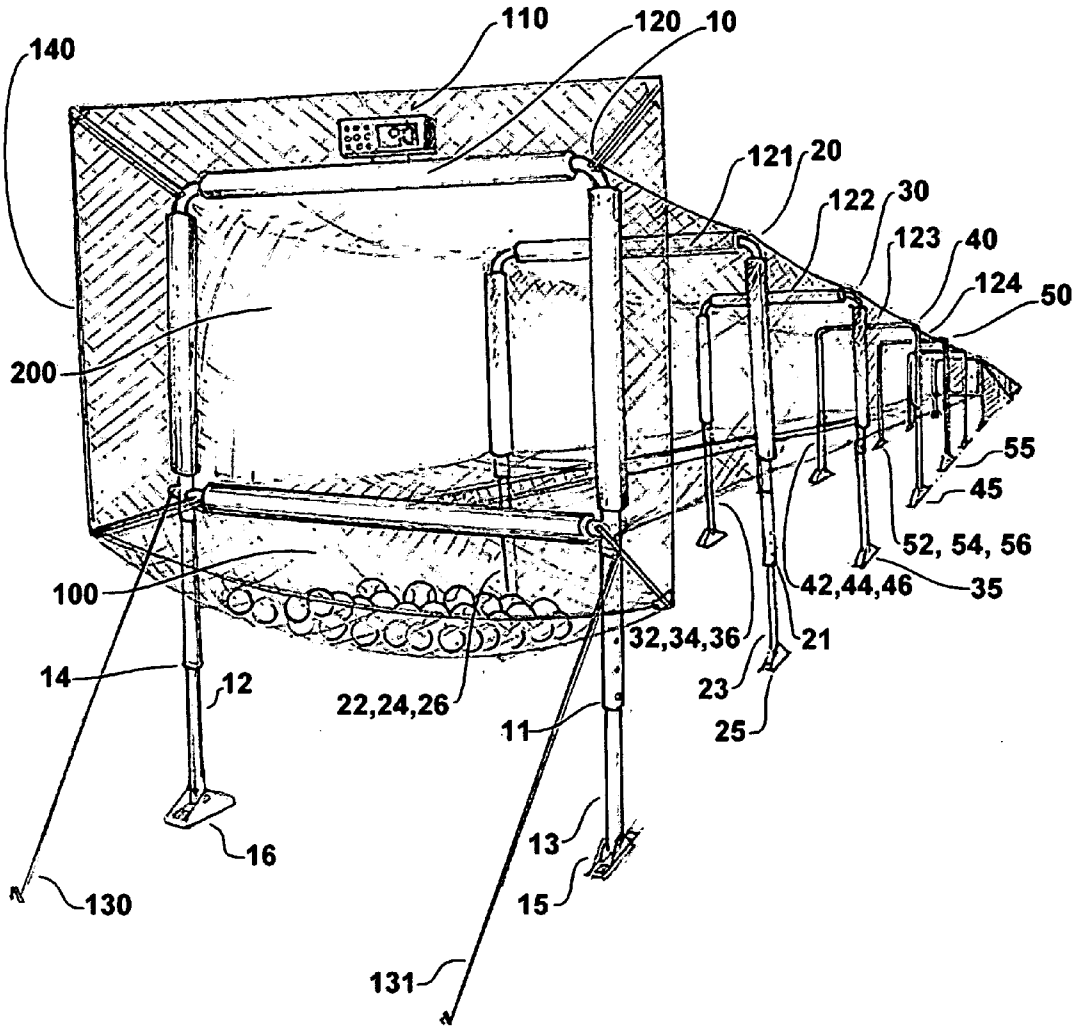
(57) **ABSTRACT**

The present invention relates to a training aid to promote well balanced pitching techniques for any sport that requires a pitching motion related to but not limited to baseball and softball including a pitching tunnel structure and a pitching target and ball containment system.



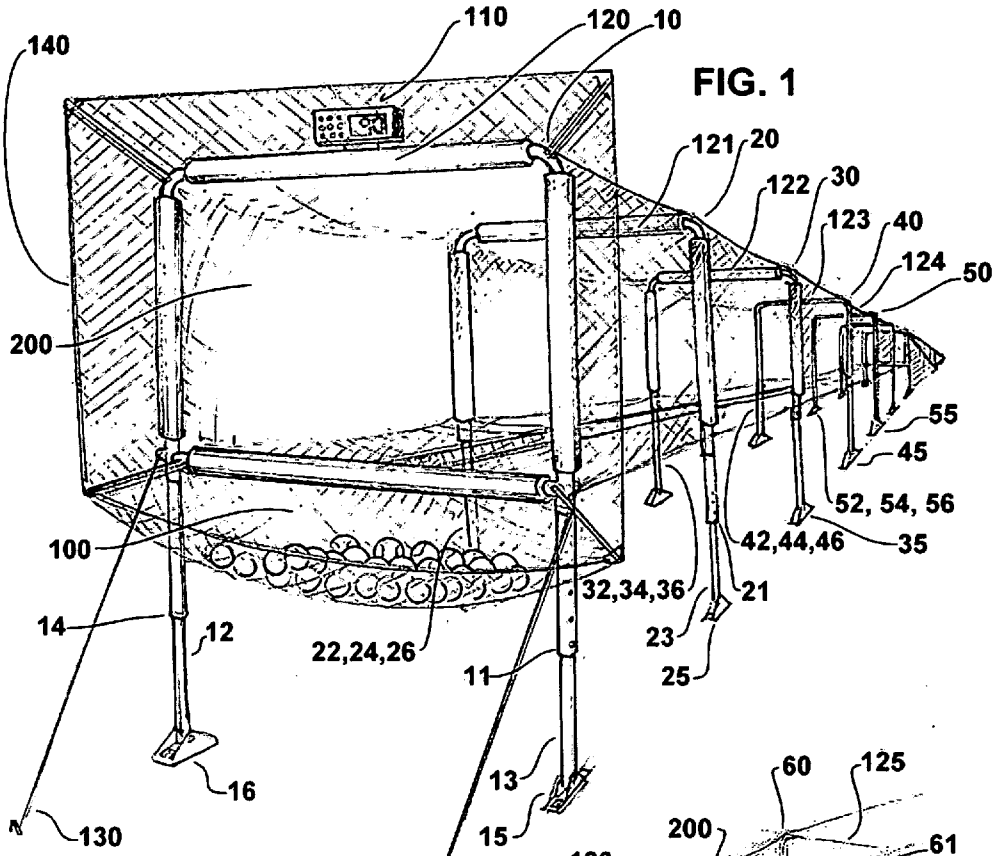


FIG. 1

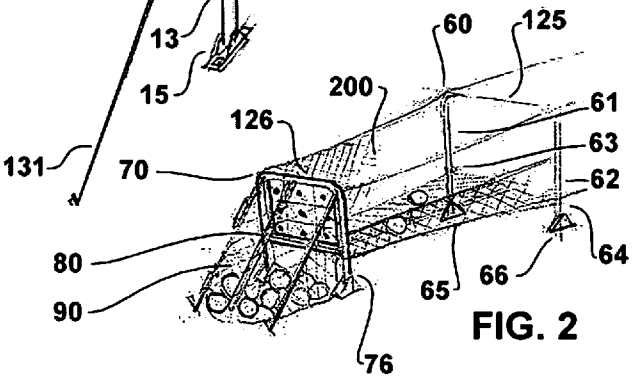


FIG. 2

FIG. 3

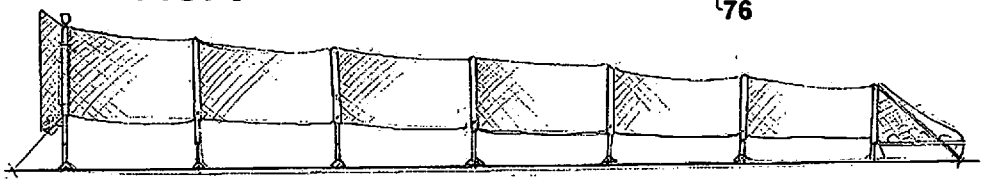


FIG. 4

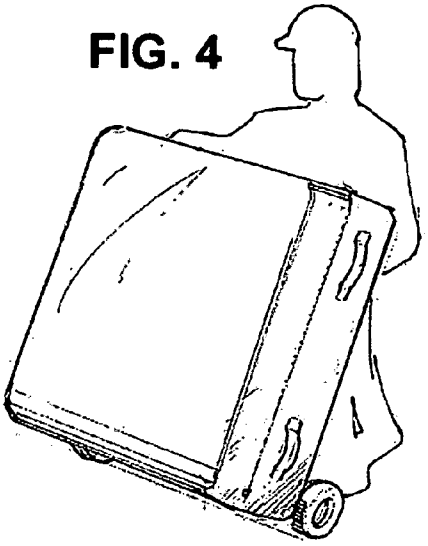


FIG. 5

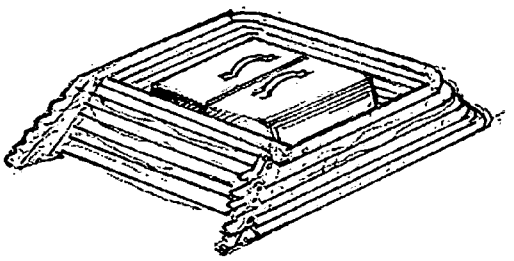


FIG. 6

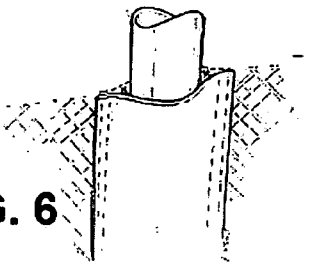


FIG. 7

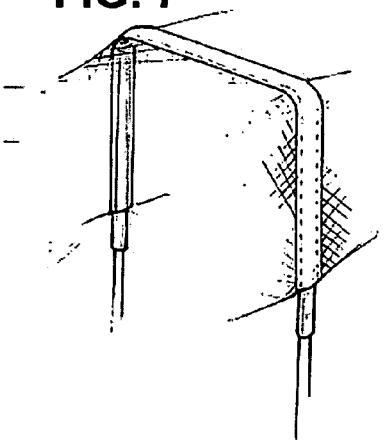


FIG. 8

FIG. 9

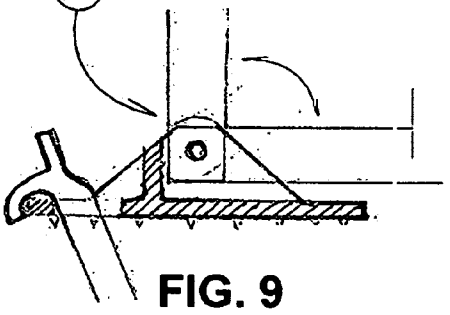


FIG. 10

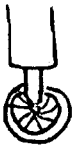


FIG. 11

FIG. 12

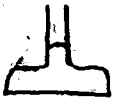
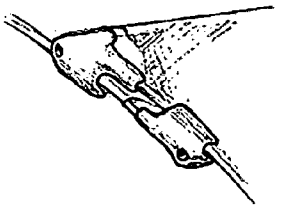


FIG. 13



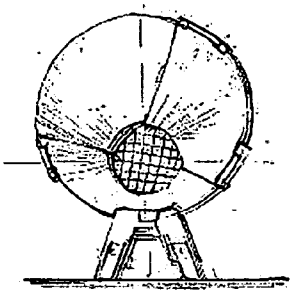


FIG. 14

FIG. 15

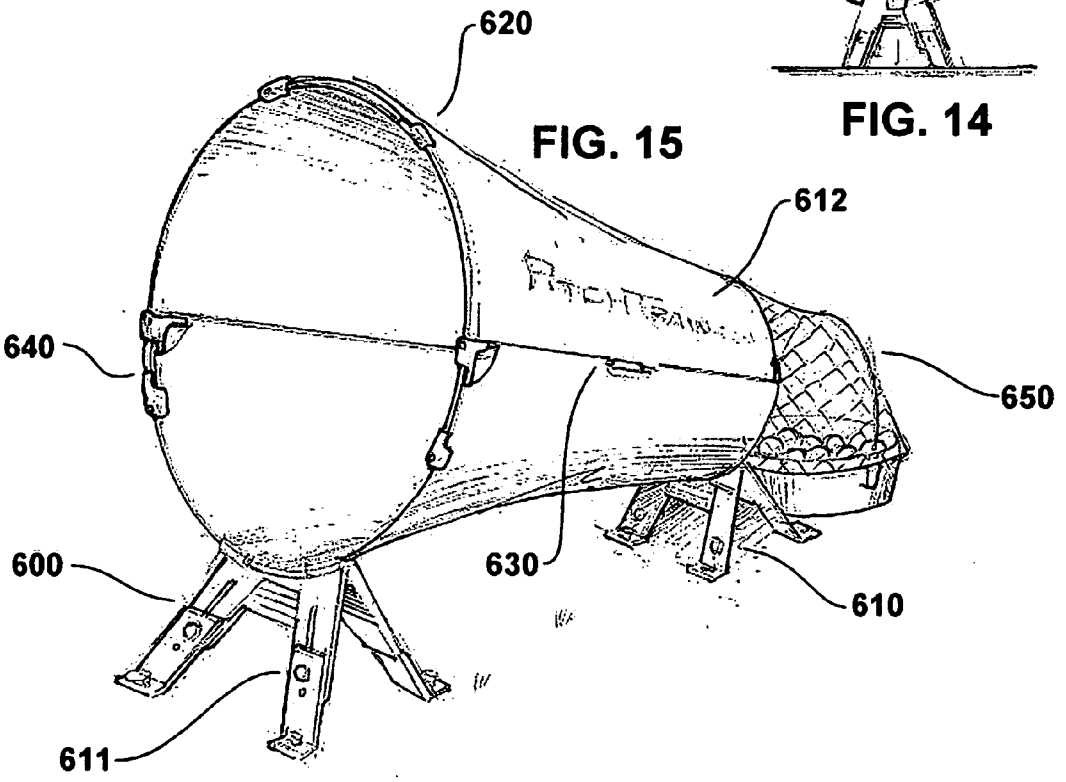
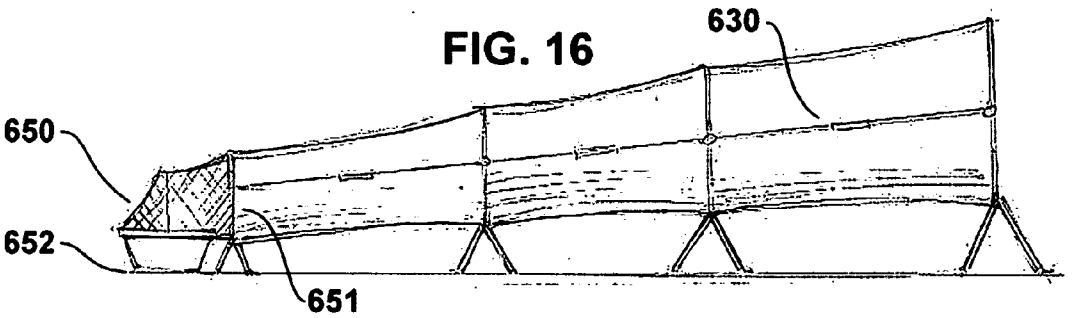


FIG. 16



PITCHING TRAINING AID

FIELD OF INVENTION

[0001] The present invention relates to a training aid to help users develop their own optimal baseball and softball pitching techniques, including a pitching tunnel and ball flight trajectory measure consisting of a series of arches or support frames gradually decreasing or telescoping in size, each connected to another by netting or other suitable material, to form a retractable and telescoping structure (including manual height adjusters attached vertically within each arch support of the pitching tunnel) so that pitching at, into, or through the "pitching tunnel" will help to develop and maintain a balanced, correctly aligned, well directed, efficient, consistent, and repeatable throwing technique specific to the user for various types of pitchers using various types of sports balls.

BACKGROUND OF THE INVENTION

[0002] In sports that require a pitching motion, i.e., baseball and softball, it is understood that the art or science of an optimally delivered overhand or underhand pitch require: properly aligned direction of the human body, efficient balance of the human body throughout the duration of the delivery, proper ball-flight trajectory of the thrown pitch en route to the intended target, and proper ending pitch location resulting from the pitching motion and ball-flight trajectory. Proper direction of the human body toward the target increases the likelihood of the ball reaching the pre-determined target. Balance throughout the pitch ensures minimal eye movement and proper body mechanics prior to and during the moment of ball release. Proper ball-flight trajectory allows the thrown pitch to increase the likelihood the ball will ultimately land in the close vicinity of the intended target. Without proper direction, trajectory, and/or body balance, consistently pitching or "locating" a baseball or softball into the designated strike zone is nearly impossible. Also without repeatability and muscle memory training accomplished by the subject invention, pitching consistency is not attained.

[0003] When pitching a baseball or softball, it is imperative that prior to ball release (the ball leaving the baseball or softball pitcher's hand) the pitcher is completely focused on delivering the ball into the strike zone without worrying about pitch mechanics, balance, ball trajectory, and/or their release point. Using a training aid to train the body and in turn groove muscle memory, helps pitchers in baseball and softball to improve body direction, body balance, and to learn proper pitch trajectory specific to the user, and will help athletes during the pressures of a game or competition to maximize their chances for success by consistently delivering the pitch to their intended target.

[0004] The present invention makes it difficult or impossible to complete an inaccurate, unbalanced, incorrectly aligned, and/or poorly located pitch without missing the intended target or making contact with any surface within the throwing tunnel. Additionally, a target in size, preferably resembling the size as defined by the official rules of Major League Baseball is located at the rear end of the pitching tunnel to enhance visual awareness, determine end-result pitch location, corral all thrown pitches, and aid in the efforts of the user to determine optimal pitch trajectory. The target is also embedded with electronic sensors to accurately determine pitch location and a radar apparatus affixed to the throwing tunnel which can measure and display pitch velocities and/or location.

[0005] It is important to note that many tools and coaching aids exist to help baseball and softball hitters, but physical aids specific to pitching are rare across the globe. Most fields have large rectangular batting cages for hitting practice, and many tools exist (batting tees, self-feeding pitching machines, etc.) that allow hitters to practice their trade without the help of another individual. Pitching is very different from hitting in that pitching practice almost always demands the presence of an individual in addition to the user; pitching practice plans by coaches, and individual pitching practice plans, generally reflect the mindset that it takes two people to play catch and two people to practice pitching in terms of throwing to a catcher. Unlike batting cages, no throwing walls or throwing nets exist at baseball fields to allow pitchers the same opportunities for improvement. Because use of the present invention requires only one person, pitchers will now be able to practice by themselves including repetition of very specific physical actions that will be asked of them during game competition. In other words, with a disclosed invention, pitchers can throw to whatever extent they like on their own terms and help to close the gap that currently exists between existing hitting and pitching performance aids. The physical structure of the disclosed invention is unique in itself and the benefits that come along with use of the disclosed invention may transcend how the game is practiced and played.

[0006] In addition to helping pitchers with their pitching mechanics, the present invention also improves efficiency in other aspects of pitching and the game of baseball, including visualization, safety, confidence, convenience, and ease of use. This is a huge improvement over conventional pitching aids.

[0007] For example, using small cones and strips placed into a line formation on the ground from the pitcher's mound to home plate may help improve visualization techniques. These aids indicate direction the ball should follow but they do not help improve the actual trajectory the ball must take to successfully hit the intended target. In contrast, the disclosed invention and its preferred embodiments provide a visually-enhanced view of the throwing lanes needed to consistently pitch to the intended strike zone by forming a tunnel or enclosure the ball must travel through the structure in an uninterrupted trajectory, on its way to the intended target. If a pitcher practices with the disclosed invention and hits the inside walls of the enclosure or tunnel with a thrown pitch, he or she learns that the delivery and release point used are not optimal for throwing strikes. With practice and through trial and error, the disclosed invention will teach the individual user how and when he or she must release the ball to get it to where he or she wants it to go. In other words, continued use of the disclosed invention creates a "tunnel image" burned into the pitcher's psyche so that when the pitcher enters into game competition, he or she will be able to repeat the specific pitch trajectory that was learned subconsciously through mass repetition of pitching through the tunnel. Reflective material inside of the throwing chute can aid in creating a three-dimensional visual aid that will further enhance a pitcher's understanding of the trajectory needed to become consistent in throwing the ball to the intended target.

SUMMARY OF THE INVENTION

[0008] In view of the above background and description, one embodiment of the invention includes a baseball pitching

aid or tunnel comprising a support structure comprised of at least one support frame defining a first area, at least a second support frame defining a second area, the support frames being spaced apart to define a chute or enclosure to contain the pitched balls the second area to being smaller than the first area to define a chute or tunnel of diminishing area, wherein the first and second spaced apart support structures are connected on at least on one side by at least one connector, and wherein at least a portion of the support structure is netted. Finally, the second area having at least one target zone to be a target for pitched balls.

[0009] The training device described in one preferred embodiment is a structure defining a series of four to seven frames or arches defining narrowing areas, for example a first area narrowing to a second, third, fourth, and fifth areas. The first area includes an externally padded arch or support structure, housing for support legs for weight support and height adjustment, netting, nuts, bolts, fasteners, support straps, or any resilient member connecting the second, third, fourth, and a fifth frames forming a pitching tunnel, (chute or enclosure). In one embodiment, the material comprising the tunnel attaches to the metal support legs by sewn sleeve connectors that allow the material to be attached to each arch.

[0010] In the embodiment comprised of five or six differently sized arches, each are padded and spaced ten feet apart in a telescoping fashion and held together by material surrounding all four sides of each arch, to form a hollow, height adjustable arch, telescoping in an accordion-like fashion. The retractable pitching tunnel and ball corral helps pitchers to improve body direction, pitch trajectory, and accuracy, while also helping to enhance the visual techniques and skills needed to pitch with success given today's pitching landscape.

[0011] The pitching tunnel can be any shape (oval, circular, square, arched, etc.) and can be adjusted in height from 0 inches off the ground surface (for under hand pitch users, i.e. women's softball, men's "fast pitch" softball, younger and smaller children) to the top reaching a height of 108 inches from the ground surface (for all baseball and softball pitchers regardless of size, user specific release point, age, or skill level). The five or six metal arches are preferably connected roughly 10 feet from each other and vary in size with each arch decreasing 4.8 inches in both width and height to form a telescoping design that creates the framework for a throwing tunnel design structure. Material connects to all four sides within each arch via sewn sleeve inserts such as tent poles, to form a hollow tunnel, strike zone, trajectory indicator, and ball corral. Designated markers along the inside of the tunnel (attached, fastened, glued, painted, drawn, or embroidered) serve as a visual for the pitcher to see the path the ball must follow to reach the target analogous to "arrows" used by bowlers on the surface of bowling lanes to help ensure the ball follows an efficient path to the pins. Users pitch the ball through the tunnel in an effort to hit the target without having the ball hit any surface of the throwing tunnel en route to the intended target.

[0012] The height of each support arch one through five, for example, can be adjusted by use of a push button control assembly. The height adjustment of each support leg encompassed within each arch may be controlled by use of disks, springs, ball bearings or similar types of height adjusting mechanisms. The pitching tunnel may consist of multiple telescoping arches, netting, nuts, bolts, fasteners, support straps, targets, reflective material or encompassing markers for visual enhancement, netting systems for holding and corralling baseballs or softballs prior to and after use of the pitching tunnel, push button control assemblies for pitch tunnel height adjusting, attachments for instruments used to determine pitch velocity, and padding surrounding each portion of the telescoping support arches to minimize the risk of injury resulting from an errant thrown pitch. In short, a summary of another preferred embodiment includes: a collapsible telescoping baseball pitching aid which allows a pitcher to work out independently comprised of: a first support structure comprised of at least one support frame defining a first area A(**1**) where the pitched ball enters the structure, a series of additional support frames defining successive diminishing areas A(**2**), A(**3**) . . . A(n), the last one defining a target zone A(n), wherein the support frames are connected at least on at least one side by at least one detachable connector, wherein the structure is at least partially netted and wherein each support structure includes legs which raise the structure at a level to allow the first structure to accommodate the ball being pitched so that a pitcher can deliver the ball so it enters the first area and is directed to the target area.

[0013] The disclosed invention will help improve safety of many of those involved in baseball and softball. Because the preferred embodiment replaces the need for a catcher, injuries that often occur with those who catch pitchers in a practice setting (parents, teammates, friends, etc.) not to mention those injured by errant pitches will be eliminated. At various levels of baseball and softball pitching practice, especially at those of younger age groups, the skill set of the person catching the ball does not match up with the person pitching the ball and catchers often sustain injuries because they simply cannot catch the thrown ball or they physically cannot get out of the way of an errant throw. In addition, many catchers in practice settings do not wear protective equipment that would help them to otherwise stay safe in their efforts to catch, stop, or block errant throws from a pitcher. In game settings, when used by pitchers prior to entering a game, use of the disclosed invention will minimize the risk of other injuries that are suffered in these situations such as errant pitches or rebounds off of the catcher that may reach fans, teammates, and media personnel in the vicinity of the pitcher's warm-up area. The disclosed invention will also help to minimize the risk of injury when it comes to pitchers who live in especially cold environments where poor weather often eliminates the opportunity for pitchers to get in the throwing work they need year-round to stay healthy and have success when their baseball season arrives. For example, a pitcher who lives in geographies where it rains or snows a lot may not have the ability to throw year-round or as frequently as another pitcher who lives in a warmer part of the world because harsh winter conditions will exclude him or her from throwing outside during many months of the year. However, the disclosed invention can be used indoor and as a result, can help pitchers to minimize the risk of injury associated with pitching because users will have the option to throw year-round and better keep their bodies in "pitching shape." Specific to the design of the disclosed invention, padding around at least the first support structure can prevent dangerous backfires or rebounds in the rare instance a support is hit with an errant pitch. The canvas type material or netting encompassing at least portions of the tunnel eliminates the ability for a ball to exit the throwing tunnel. Preferably, there will not be any holes or seams the ball can find to "escape" the tunnel. Use of expanded netting around the tunnel entrance significantly

decreases the likelihood of any errant throw that the disclosed invention cannot contain or funnel. In addition, the "foot" of each support leg of the disclosed invention can easily be interchanged depending on the ground surface; the standard metal foot provides stability on most ground surfaces but could be conveniently interchanged for example with a "suction cup" foot if the user's ground surface included an indoor gymnasium. Straps attached to the outside of the disclosed invention can be fastened to the ground or wall surface to further decrease any likelihood of tunnel collapse.

[0014] The disclosed invention will also help to improve a pitcher's level of confidence, a crucial aspect of succeeding during competition. Use of the disclosed invention will help to eliminate "embarrassing wild pitches" that are often a byproduct of pitching to a catcher in practice settings. Because only the user is required when using the disclosed invention, a pitcher can practice by him or herself without the verbal and physical negative reinforcement that often presents itself when working with a coach, peer, or parent. Repetitive use of the disclosed invention will help teach each user an efficient pitching delivery that is specific to them; improved technique via use of the throwing tunnel can lead to "muscle memory" and in turn recruit a higher level of self-confidence for the user.

[0015] The disclosed invention will additionally help to create a learning environment more convenient than what most pitchers and coaches currently experience when it comes to pitching practice. The disclosed invention eliminates the need for a throwing partner; pitchers no longer need to rely on incorporating another person into their own throwing routine for their own practice. The disclosed invention eliminates the need for a catcher for pitching coaches who depend on them for their required help in a pitching lesson environment. With the presence of a disclosed invention in a Little League, high school, college, or professional baseball or softball setting, coaches will have the ability to get more pitchers more pitching practice in a shorter amount of time because no catchers are needed and no time is wasted on retrieving errant pitches. Players can even gain an education on pitching and execution even when there is no coach present to let them know if what the pitcher just did was "good or bad" because the disclosed invention provides instant feedback on the efficiency of each throw; it was a "good" pitch if the balls hit the target without scraping any surface inside the tunnel and a "bad" pitch if the ball hits any part of the tunnel on its way to the target. Many teams, especially at ages 6-18 do not even have pitching coaches, and the disclosed invention may replace the need for a coach at times as the feedback and progress can easily be learned by the user. The disclosed invention can be assembled and disassembled by one person in just minutes and can be used in the comfort of one's home or at parks or fields close to the user's location. The disclosed invention also funnels and corals all throws, both accurate and errant, eliminating the need to chase balls and decreasing the ball collection period after use. The net structure that, in one embodiment can be connected to the end of the tunnel can conveniently detach and double not only as an apparatus to collect the balls, but as a way to then carry the balls back to the tunnel opening. In other words, pitchers using the disclosed invention can throw multiple pitches, good or bad, and then learn from their results, knowing the whole time that every thrown ball will be collected into a small confined space less than sixty feet away, all thrown balls being easily carried back from one end of the tunnel to the other in order to conveniently begin the next series of pitches. In addition, the disclosed invention support legs can be increased or decreased in size to form a throwing tunnel size specific to the age, size, and throwing technique of each individual user for occasions when pitchers of various skill levels and physical sizes come together at one time for use of the same throwing tunnel. Because the disclosed invention can be disassembled and downsized in a telescoping fashion, it does not require substantial space for storage and can conveniently be carried by users traveling by foot or automobile.

[0016] The disclosed invention is also easy to use and can benefit players and teams that travel extensively. The breakdown and portability aspect of the disclosed invention is conducive to easy travel, easy set up, and easy disassembly. The entire disclosed invention can be condensed into an "easy-to-carry" bundle that can be zippered into a custom-made bag on wheels (similar to wheeled luggage). Should it be required that the disclosed invention be set up indoors, it has optional features that translate from an outdoor piece of equipment to indoor gear (suction-cup feet, straps that allow for additional support in terms of attaching to walls, etc.).

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. **1** shows a perspective view of the present invention.

[0018] FIG. **2** shows an enlarged perspective of the rear of the present invention.

[0019] FIG. **3** is a side view of one embodiment the pitch training device shown in FIG. **1**.

[0020] FIG. **4** shows the present invention broken down and placed inside a wheeled travel/storage case for ease of transport.

[0021] FIG. **5** shows the invention in a disassembled, broken down state, with the support structures (frames) stacked and nested, and the legs retracted or removed, and the accessory/travel case also nestled therein for ease of portability or storage.

[0022] FIG. **6** shows how the material encompassing the present invention is attached to its support structures (sleeve system).

[0023] FIG. **7** shows what the sleeve systems look like when the present invention shown in FIG. **1** is fully assembled.

[0024] FIG. **8** is a side view of the user's assembly/disassembly of one embodiment the pitch training device shown in FIG. **1**.

[0025] FIG. **9** shows an enlarged perspective of the footing of the present invention shown in FIG. **1**, further showing a leg pad to help level, stabilize, and stake the invention in place.

[0026] FIG. **10** shows a wheel, which can be an additional option for the footing of the present invention.

[0027] FIG. **11** shows a metal spike, which can be an additional option for the footing of the present invention.

[0028] FIG. **12** shows a pad or suction cup, which can be an additional option for the footing of the present invention.

[0029] FIG. **13** is the user's view of the adjustable diameter feature of another embodiment the pitch training device shown in FIG. **15**.

[0030] FIG. **14** is a front view of the embodiment of FIG. **15**.

[0031] FIG. **15** is a front/side view of another embodiment the pitch training device utilizing an oval structure with

adjustable diameters with the first portion attached to at least a second portion in accordance with the present invention.

[0032] FIG. **16** is a side view of another embodiment the pitch training device shown in FIG. **15**.

DETAILED DESCRIPTION OF THE DRAWINGS

[0033] Referring to FIG. **1** and FIG. **2** which should be viewed in tandem, in one preferred embodiment, the throwing tunnel is comprised of seven support structures **10**,**20**,**30**,**40**, **50**,**60**,**70** which, in the preferred embodiment, are typically fabricated metal, plastic, or aluminum poles mended to become arch or square in shape, gradually decreasing in size to form the framework and foundation for the throwing chute. The first support area **10** (Arch **1**) is about 48" high by about 48" wide (excluding the roughly 3" width of each frame pole) featuring a double extension leg design **11**,**12** to allow for a maximum arch height of 108" off the ground surface **11** and **12** consist of metal, plastic, or aluminum poles with pre-drilled holes and push button assemblies **13**,**14** for users to raise or lower the tunnel to meet their height preference. Footing **15**,**16** are attached to poles **11** and **12** by nuts and bolts to form additional support on the ground surface. Depending on the user's ground surface, Footing **15**,**16** can include small wheels for transporting the preferred embodiment, a spike design for additional stability on grass or dirt, or a soft pad or suction cup design for use of the tunnel indoor. **10** (Arch**1**) is housed inside a thick padding sleeve system **120** to cover any metal material comprising the arch support structure. Attached to **10** is **140**, a combination of netting and support poles fasted to **10** by nuts and bolts to form an "expanded opening" of the throwing chute to further decrease the likelihood of a thrown ball not entering the throwing chute. **110** is affixed to the structure **10** by nuts and bolts and consists of a battery operated radar gun and digital screen to measure and display velocities of objects thrown through the tunnel. **110** is connected by electronic wiring to the pitching target **80** (see FIG. **2**) which houses an electric sensory system to accurately measure final pitch location. Also attached to **110** can be a set of computer adaptable cables and wires for electronically transmitting information obtained by the present invention to electronics such as the user's personal computer. Attached externally to **10** by small hooks is **100**, a net, basket in shape, to hold and store balls during use of the throwing tunnel. **90** (see FIG. **2**) is identical to **100** in shape and form and is connected to the rear of the tunnel to collect all objects thrown through the chute. In a preferred embodiment storage devices **90** and **100** are "reversible" in a sense that either can serve as the ball holder at the opening of the tunnel or the ball collector at the end of the tunnel, and both can be used as a way for the user to carry and transport objects from the rear of the tunnel to the front. Support straps **130** and **131** are connected to **10** with nuts and bolts and can be used to provide additional support of the embodiment by providing securing and fastening abilities to surfaces and objects separate and external to the throwing tunnel. Attached to structure **10** is **200**, the netting or other suitable material attached to all support arches that creates the physical structure (tunnel) users will throw the ball through.

[0034] Referring to FIG. **1**, the next arch in the series, **20** (Arch **2**) is bout 43.2" high by about 43.2" wide (excluding the roughly 3" width of each frame pole) featuring a double extension leg design **21** and **22** consisting of metal, plastic, or aluminum poles with pre-drilled holes and push button assemblies **23** and **24**. Footing **25** and **26** are attached to poles **21** and **22** by nuts and bolts to form additional support on the ground surface. **20** is housed inside a thick padding sleeve system **121** to cover any metal material comprising the arch support structure. Attached to **20** is **200**, the netting or other suitable material attached to all support arches that creates the physical structure (tunnel) users will throw the ball through.

[0035] Referring to FIG. **1**, the next arch in the series, **30** (Arch **3**) is about 38.4" high by about 38.4" wide (excluding the roughly 3" width of each frame pole) featuring legs **31** and **32** consisting of metal or aluminum poles with pre-drilled holes and push button assemblies **33** and **34**. Footing **35** and **36** are attached to poles **31** and **32** by nuts and bolts to form additional support on the ground surface. **30** is housed inside a thick padding sleeve system **122** to cover any metal material comprising the arch support structure. Attached to **30** is **200**, the netting or other suitable material attached to all support arches that creates the physical structure (tunnel) users will throw the ball through.

[0036] Referring to FIG. **1**, the next arch in the series, **40** (Arch **4**) is about 33.6" high by about 33.6" wide (excluding the roughly **3**" width of each frame pole) featuring legs **41** and **42** consisting of metal or aluminum poles with pre-drilled holes and push button assemblies **43** and **44**. Footing **45** and **46** are attached to poles **41** and **42** by nuts and bolts to form additional support on the ground surface. **40** is housed inside a thick padding sleeve system **123** to cover any metal material comprising the arch support structure. Attached to **40** is **200**, the netting or other suitable material attached to all support arches that creates the physical structure (tunnel) users will throw the ball through.

[0037] Referring to FIG. **1**, the next arch in the series, **50** (Arch **5**) is about 28.8" high by about 28.8" wide (excluding the roughly 3" width of each frame pole) featuring legs **51** and **52** consisting of metal or aluminum poles with pre-drilled holes and push button assemblies **53** and **54**. Footing **55** and **56** are attached to poles **51** and **52** by nuts and bolts to form additional support on the ground surface. **50** is housed inside a thick padding sleeve system **124** to cover any metal material comprising the arch support structure. Attached to **50** is **200**, the netting or other suitable material attached to all support arches that creates the physical structure (tunnel) users will throw the ball through.

[0038] Continuing to refer to FIGS. **1** and **2**, the next arch in the series, **60** (Arch **6**) is about 26" high by about 26" wide (excluding the roughly 3" width of each frame pole) featuring legs **61** and **62** consisting of metal or aluminum poles with pre-drilled holes and push button assemblies **63** and **64**. Footing **65** and **66** are attached to poles **61** and **62** by nuts and bolts to form additional support on the ground surface. **60** is housed inside a thick padding sleeve system **125** to cover any metal material comprising the arch support structure. Attached to **60** is **200**, the netting or other suitable material attached to all support arches that creates the physical structure (tunnel) users will throw the ball through.

[0039] Referring to FIG. **2**, the last arch in the series, **70** (Arch **7**) is about 24" high by about 24" wide (excluding the roughly 3" width of each frame pole) featuring legs **71** and **72** 12" in length. Footing **75** and **76** are attached to legs **71** and **72** by nuts and bolts to form additional support on the ground surface. **70** is housed inside a thick padding sleeve system **126** to cover any metal material comprising the arch support structure. Attached to **70** is **200**, the netting or other suitable material attached to all support arches that creates the physical structure (tunnel) users will throw the ball through.

Attached by bolts and nuts to **70** is target **80**, a sensor mat comprised of a sheet of rubber roughly ½" thick and about 24" high by about 24" wide (excluding the roughly 3" width of each frame pole), to act as a "backstop" for objects thrown through the tunnel and to house electronic or mechanical sensors to track pitch location. Attached to **70** by hooks is **90**, the netting system that is used to coral and house all objects thrown through the preferred embodiment. Device **90** can be a removable basket with a zipper opening to allow transport of balls to container **100** used to hold the balls that are to be thrown through the tunnel. Referring to FIG. **3**, the baseball pitching aid is shown from the side to demonstrate the total approximate length of one preferred embodiment (**52'**) including approximate distances between support arches (**9'**). As far as ranges go, the structure would most likely never be longer than 52' but other preferred embodiments could be much shorter (approximately 35'-45') to build smaller structures with less arches that would be more appropriate for Little League and shorter distance pitchers. As far as the range between arches on preferred embodiment of the drawings in FIG. **1** and FIG. **2**, the arches will be spaced between 5 and 10 feet apart. The round version as seen in FIGS. **13-16** would be the only design that would allow for a greater distance between arches with one version being 10' or so.

[0040] FIG. **4** shows how the invention can be stacked, nested and placed in a wheeled container akin to a large roll-on suitcase for travel and storage.

[0041] Referring to FIG. **5**, the telescoping support structure as described in FIG. **1** is shown in its most collapsible form to illustrate its stacked appearance both prior to and after disassembly including the form in which the present invention would take for transport and storage.

[0042] Referring to FIG. **6**, shown is how the sleeve system fits or "slides" over the support arches. These sleeves are attached to the material comprising the throwing tunnel and help the structure to keep its tunnel shape tight.

[0043] Referring to FIG. **7**, shown is what the sleeve systems for each support arch look like when the structure is assembled and ready for use. The sleeve systems connect the material comprising the tunnel to each support arch. These sleeve systems also allow the support arches to become "hidden", meaning the support arches become external to the throwing tunnel during use, preventing a ball thrown through the tunnel from ever coming in contact with a support arch; errant balls simply graze and skip off the insides of the tunnel walls on their way through it instead of having any ability of coming in contact with, bouncing, or ricocheting off of any hard surface.

[0044] Referring to FIG. **8**, the preferred embodiment as described in FIG. **1** is shown from the side view. Illustrated is how the user can assemble or disassemble one version of the present invention including elongating the connected plurality of legs and deploying the series of support structures to form the throwing tunnel.

[0045] Referring to FIG. **9**, illustrated is an enlarged view of the footing or leg pads for each support structure as shown in FIG. **8**. When in contact with the ground surface, the footing or leg pads help level and stabilize the throwing chute including holes for stakes should the user choose to dig into or beneath the ground surface for additional stability.

[0046] Referring to FIG. **10**, illustrated is an enlarged view of an optional form of footing for each support structure as shown in FIG. **9**. A wheel, similar in size to one seen on a grocery shopping cart, may be inserted into the bottom of each plurality of legs to allow the user to transport the preferred embodiment in its fully assembled form.

[0047] Referring to FIG. **11**, illustrated is an enlarged view of an optional form of footing for each support structure as shown in FIG. **9**. A spike, resembling the size of a tent stake, may be inserted into the bottom of each plurality of legs to allow the user to secure the structure into pre-drilled or pre-dug holes beneath the ground surface allowing for more permanent installation.

[0048] Referring to FIG. **12**, illustrated is an enlarged view of an optional form of footing for each support structure as shown in FIG. **9**. A suction cup or pad, resembling the size of those seen on toilet plungers, may be inserted into the bottom of each plurality of legs to allow the user to secure the structure onto the ground surface should the present invention be used on a gymnasium floor or other indoor surface that allows for suction or traction.

[0049] Referring to FIG. **13**, shown is an enlarged image of the fiberglass tent pole and plastic connector piece mechanism that helps to form adjustable rings at the front and rear of another possible shape of the tunnel as seen in FIG. **15**, allowing the tunnel opening to reach a diameter of between 5'-10' and a rear ring diameter range of 2'-4' in one preferred embodiment. This is an enlarged view of **640** as seen in FIG. **15**.

[0050] Referring to FIG. **14**, the user's view of the adjustable diameter feature of another embodiment the pitch training device shown, also illustrating the "tunnel vision" concept created by the present invention.

[0051] Referring to FIGS. **15-16** which should be viewed in tandem, are side views of a preferred embodiment and demonstrates a segment design of the present invention. Segments including tunnel material, connector poles, and support legs may be added or removed from the tunnel to comprise an overall structure length desired by the user. **600** and **610** show the "quad-leg" design of the durable plastic or metal support legs that provide stability and sturdiness to the throwing chute including forming the base to which the tunnel material **612** is attached. **611** shows foldable and height adjustable legs. **620** gives a perspective as to the "rip-stop nylon" fabric or other suitable material that comprises the throwing chute including its internal and external walls. **630** is an example of a fiberglass spacing rod external to the throwing chute connecting the two areas to keep the tunnel's shape tight. **640** shows the diameter of the front and rear rings are adjustable to allow for an increase or decrease in size of the tunnel opening and rear target to for accommodating the user's skill level and intended target size. Referring to FIG. **16**, **650** is comprised of netting and fasteners that serve as a pitching target, backstop **651**, and ball coral **650**. **650** is connected to the throwing tunnel by small hooks, Velcro or other fasteners and can be comprised of a large plastic bucket **652** to collect, store, and transport thrown objects.

[0052] The above slides disclose various embodiments including: a baseball training device to assist with proper pitch trajectory, comprising; a telescoping tunnel that can support the use of one pitching adult or child, having a proximal end and a distal end; the tunnel comprised of at least two support members defining areas decreasing in size and; height-adjustable support legs connected to each support member.

[0053] In operation, one method of improving the pitching motion of a pitcher includes: providing a portable telescoping tunnel structure that can support the use of one pitching adult

or child, having a proximal end and a distal end, the tunnel comprised of at least a first and second support members defining areas decreasing in size and having height-adjustable support legs connected to each support member, and a target; deploying the structure by separating the support members; adjusting the legs to elevate the tunnel to accommodate the size of the pitcher; maintaining the structure in a structurally rigid and stable shape during use; positioning the pitcher to align the throwing motion in relation to the first support member; throwing the ball into the tunnel towards the target and; repeating the process with succeeding pitches.

[0054] In sum, the present invention and its many embodiments provide numerous benefits and features during operation. The implementation of the present invention has been described in relation to several generally preferred embodiments, however, it should be recognized that the system may be utilized with or without a number of the feature elements, and that the invention may be implemented in a number of alternative ways without departing from the teachings of the present invention.

[0055] Although the description above contains many details, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. Therefore, it will be appreciated that the scope of the present invention fully encompasses other embodiments known to those skilled in the art, and that the scope of the present invention is accordingly not to be limited by the appended claims, in which reference to an element in the singular is not intended to mean "one and only one" unless explicitly so stated, but rather "one or more." All structural and functional equivalents to the elements of the above-described preferred embodiment that are known to those of ordinary skill in the art are expressly incorporated herein by reference and are intended to be encompassed by the present claims. Moreover, it is not necessary for a device or method to address each and every problem sought to be solved by the present invention, for it to be encompassed by the present claims. Furthermore, no element, component, or method step in the present disclosure is intended to be dedicated to the public regardless of whether the element, component, or method step is explicitly recited in the claims. No claim element herein is to be construed under the provisions of 35 U.S.C. 112, sixth paragraph, unless the element is expressly recited using the phrase "means for."

1) A pitching aid comprising: a support structure comprised of at least one support frame defining a first entry area, at least a second support frame defining at least a second area, the support frames being spaced apart to define a chute to contain pitched balls, the second area being smaller than the first area, wherein the first and second spaced apart support structures are connected on at least on one side by at least one connector, and wherein at least a portion of the support structure is netted, the second area having at least one target zone to be a target for pitched balls.

2) The pitching aid of claim **1** wherein the target zone has at least one of receptor to pinpoint the approximate ending location of the pitches.

3) The pitching aid of claim **2** where the at least one receptor is configured to accept a baseball or a softball.

4) The structure of claim **1** wherein the support frames are collapsible.

5) The structure of claim **1**, further comprising a plurality of legs attached to the support frames;

6) The structure of claim **5** where the legs are collapsible.

7) The structure of claim **1** whereby a radar gun is affixed to at least one support frame.

8) The structure of claim **7** wherein a display is connected to the radar gun for displaying the velocity of pitches.

9) The structure of claim **7**, whereby the radar is linked to the display and whereby the display is configured to display the speed of the ball.

10) The pitching cage of claim **3** including a receptor such as a bucket and wherein at least one receptor is configured to form a chute to direct balls to a particular bucket.

11) The pitching cage of claim **2** where the receptor is comprised of ma series of tubes or chutes set at different locations to pinpoint how many pitches ended up directed to different locations.

12) The structure of claim **1** wherein the support members are generally in the shape of a square having dimensions ranging from 20' to 80'.

13) The structure of claim **1** wherein the support members are generally in the shape of a rectangle.

14) A collapsible telescoping thrown ball pitching aid which allows a pitcher to work out independently by throwing balls into a confined area comprised of: a first support structure comprised of at least a first support frame defining a first area (A**1**) where the pitched ball enters the structure when it leaves the hand of the pitcher; a series of additional support frames defining successive diminishing areas, the last one defining a target zone area A(n), wherein the support frames are connected at least on at least one side by at least one connector, wherein the structure is at least partially netted and wherein each support structure includes at least one leg which can raise the structure at a level tuned to the height of a pitcher to allow the first structure to accommodate the ball being pitched so that a pitcher can deliver the ball so it enters the first area and is directed to the target area.

15) The pitching cage of claim **14** wherein the target area has at least one receptor.

16) The pitching cage of claim **15** where the at least one receptor is configured to accept a baseball or softball.

17) The structure of claim **14** wherein the support structure is collapsible.

18) The structure of claim **14** wherein at least one of the legs is collapsible;

19) The structure of claim **14** whereby a radar gun is affixed to the structure.

20) The structure of claim **19** wherein a display is connected to the radar gun displaying the location of the pitches.

21) The structure of claim **20** whereby the radar gun is linked to the display and whereby the display is configured to display the speed of the pitched balls.

22) The pitching aid of claim **14** including at least one bucket and wherein the target area has at least one of receptor in the form of a chute to direct the ball to a particular bucket.

23) The pitching aid of claim **15** where the receptor comprises a series of tubes or chutes configured to accept a baseball.

24) The structure of claim **14** wherein the support members are in the shape of a square having dimensions ranging from 20 to 80 inches.

25) The structure of claim **14** wherein the target area has a plurality of sensors to mark the position of the pitch.

26) The structure of claim **25** wherein the plurality of sensors include mechanical, electrical, or electronic sensors.

27) The structure of claim **14** wherein the support frames are in the shape of a rectangle.

28) The structure of claim **14** wherein the support frames are in the shape of an oval.

29) A baseball training device to assist with proper pitch trajectory, comprising:

a. a telescoping tunnel that can support the use of one pitching adult or child, having a proximal end and a distal end,

b. the tunnel comprised of at least two support members defining areas decreasing in size and

c. height-adjustable support legs connected to each support member.

30) A method of improving the pitching motion of a pitcher comprising:

a. providing a portable telescoping tunnel structure that can support the use of one pitching adult or child, having a proximal end and a distal end, the tunnel comprised of at least a first and second support members defining areas decreasing in size and having height-adjustable support legs connected to each support member, and a target;

b. deploying the structure by separating the support members;

c. adjusting the legs to elevate the tunnel to accommodate the size of the pitcher;

d. maintaining the structure in a structurally rigid and stable shape during use;

e. positioning the pitcher to align the throwing motion in relation to the first support member;

f. throwing the ball into the tunnel towards the target;

g. repeating the process with succeeding pitches.

31) The device in claim **14** including padding placed around the first support structure.

32) The pitching aid of claim **1** wherein each support leg has an interchangeable foot depending on the ground surface upon which the pitching aid is placed, including a metal spiked foot, a suction cup, wheels, or rubber foot.

33) The portable pitching aid of claim **1** wherein straps and posts are attached to the structure to prevent the structure from collapsing once it is deployed, the straps anchoring the structure to the ground.

34) The method of claim **30** further comprising, providing a wheeled carrier and transporting the structure once it is broken down and stacked into itself.

35) The method of claim **30** further compromising supporting the structure by deploying straps securing the structure to posts in the ground.

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