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**Lyon**

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(54) **BOW APPARATUS AND METHOD FOR PLAYING ARCHERY GOLF**

(52) **U.S. Cl. .... 124/23.1; 473/409; 124/44.5**

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(57) **ABSTRACT**

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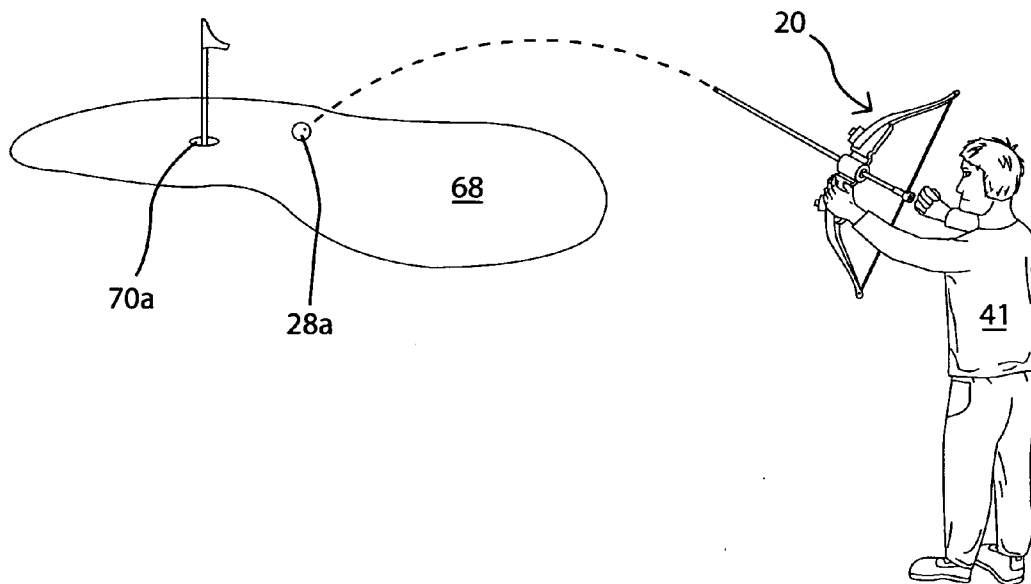
**Related U.S. Application Data**

(60) **Provisional application No. 61/339,292, filed on Mar. 2, 2010.**

**Publication Classification**

(51) **Int. Cl.**  
*A63B 67/02* (2006.01)  
*A63B 69/36* (2006.01)  
*F41B 5/14* (2006.01)

The present invention is directed to a bow apparatus comprising a bow having first and second tips, a string which is attached between the first and second tips and a shaft having a first shaft end and a second shaft end. The first shaft end is secured proximate the midpoint of the string. The shaft passes through a shaft stabilizer located proximate the midpoint of the bow. The second shaft end has a projectile holder. The bow apparatus is used to play a new modified version of archery golf by holding the ball with the projectile holder. The user pulls the shaft to tension the string, aims the shaft towards the cup target, and then releases the shaft to project the ball towards the cup target. The bow apparatus further comprises a putter block for hitting the ball into the cup target once the ball is close to the cup target and on the green.





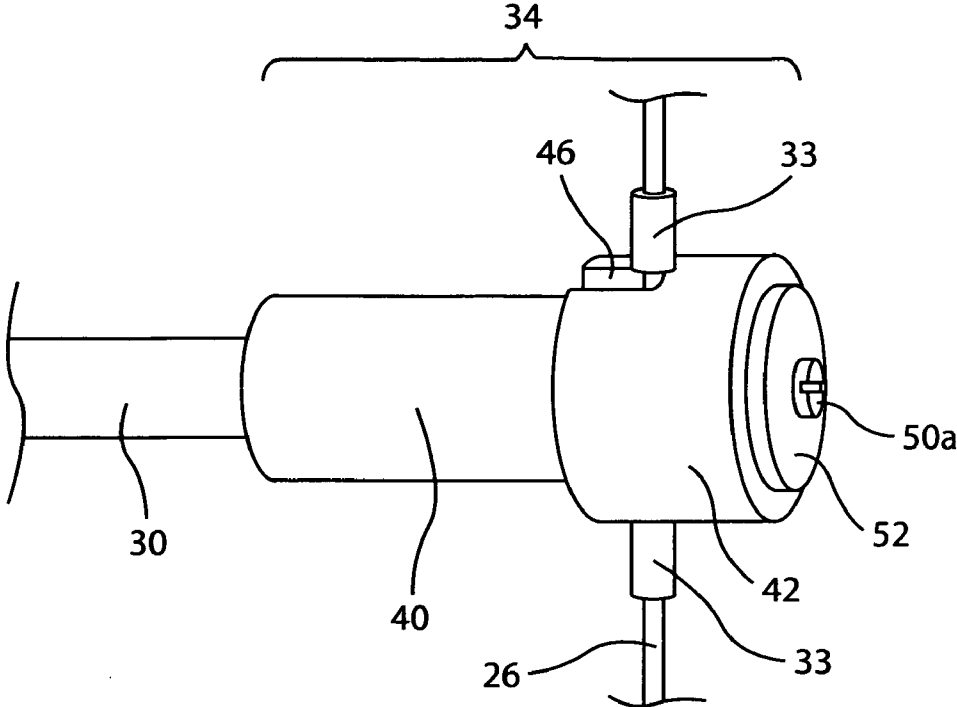


Figure 2a

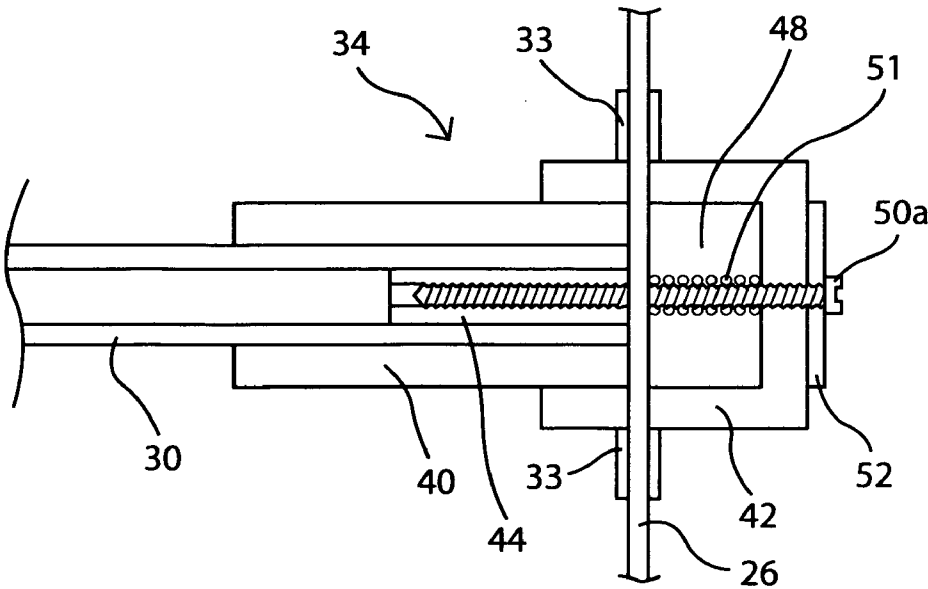


Figure 2b

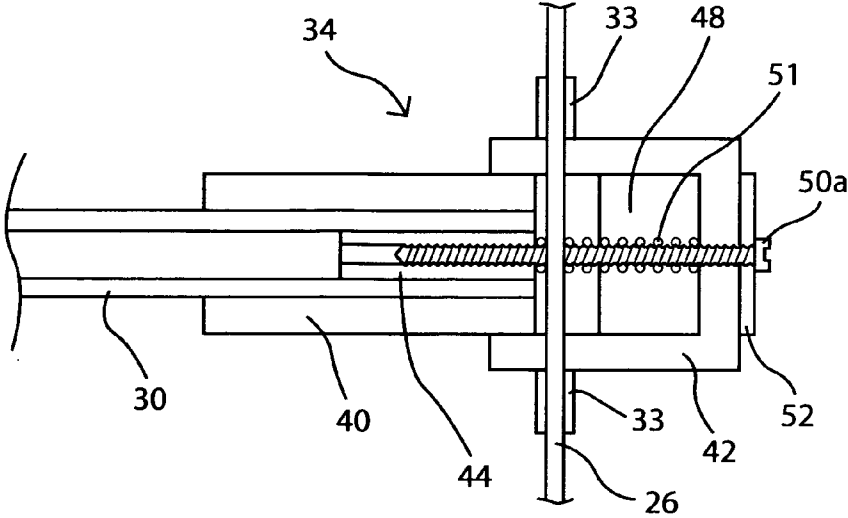


Figure 2c

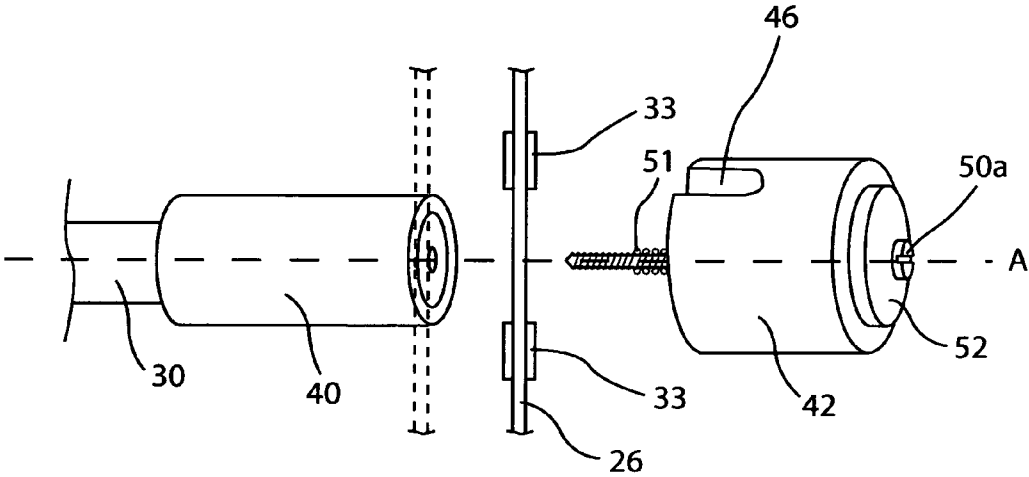


Figure 2d

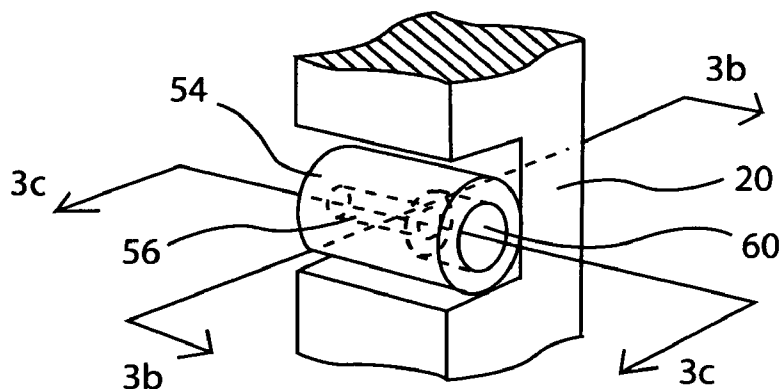


Figure 3a

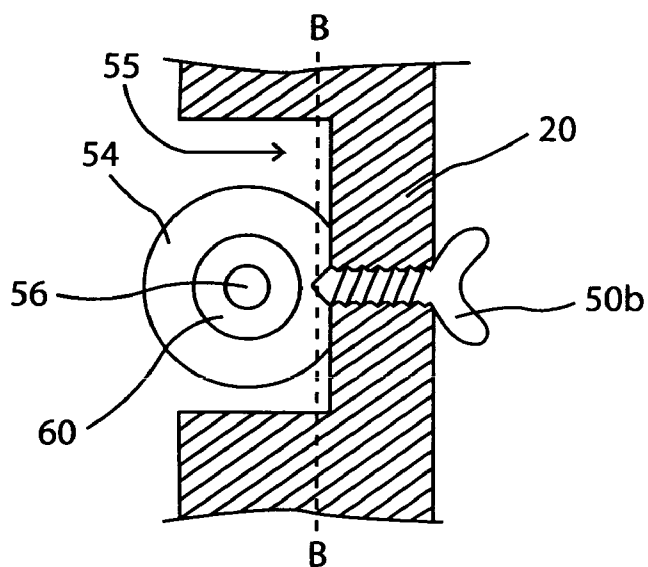


Figure 3b

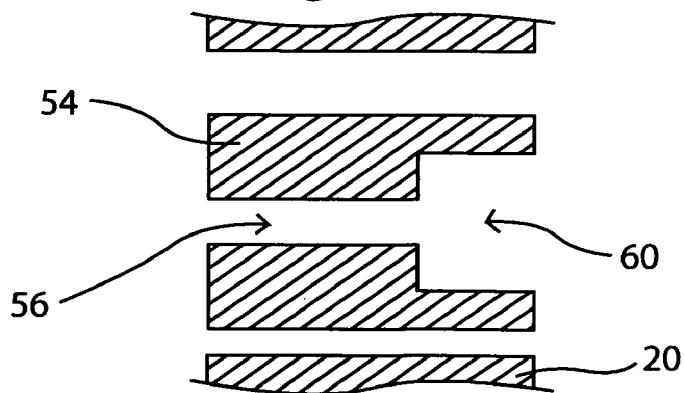


Figure 3c

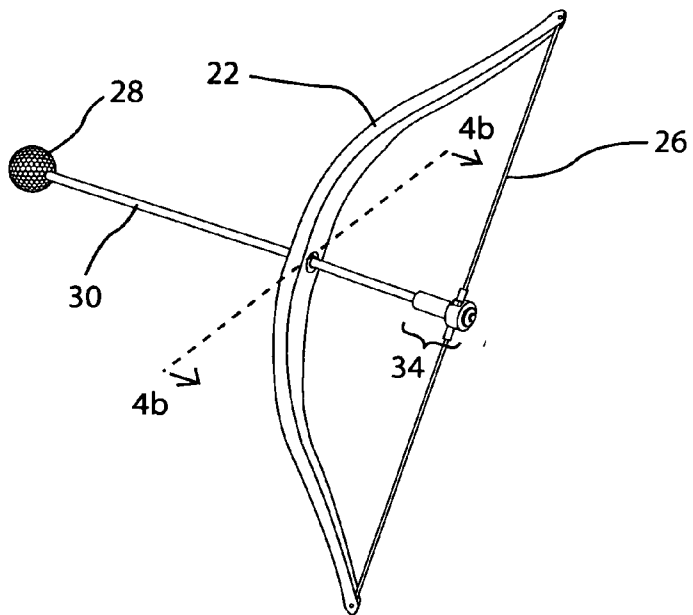


Figure 4a

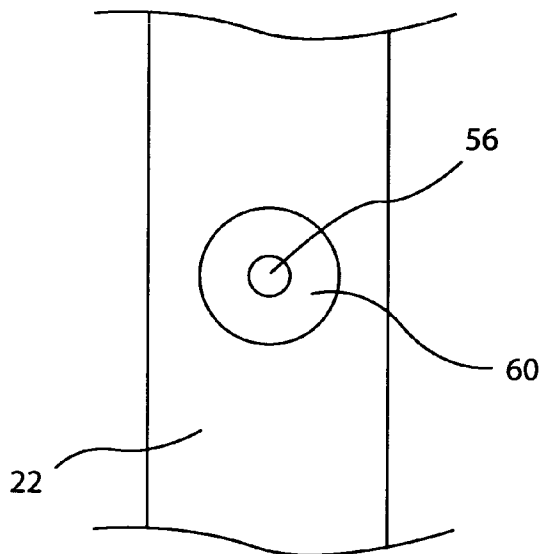


Figure 4b

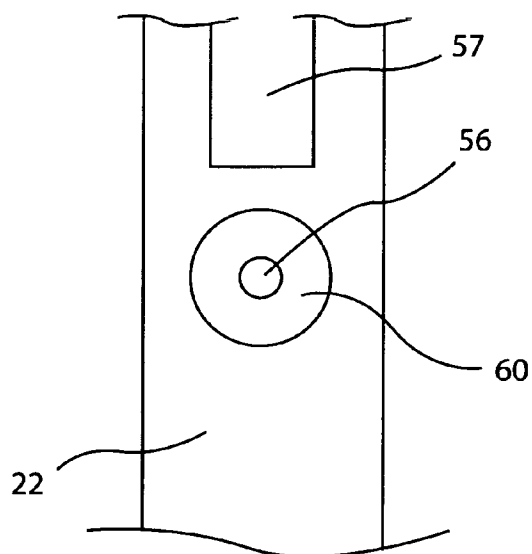


Figure 4c



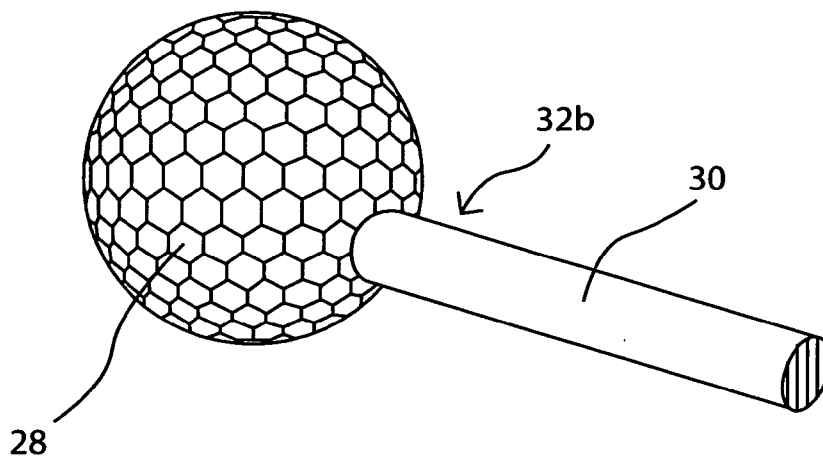


Figure 6a

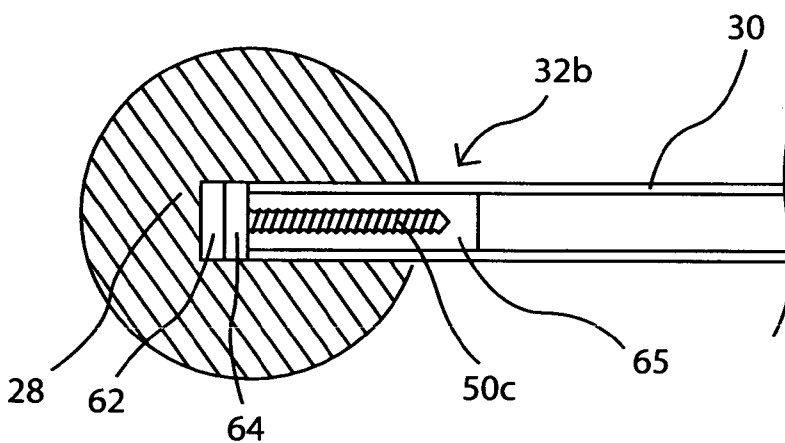


Figure 6b

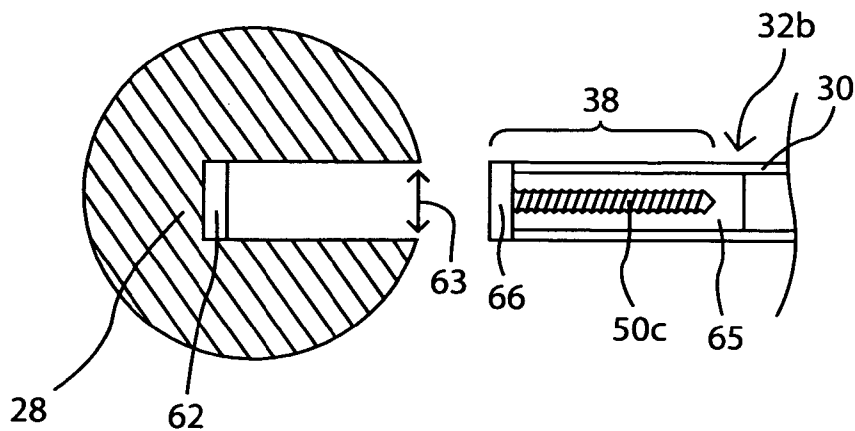


Figure 6c

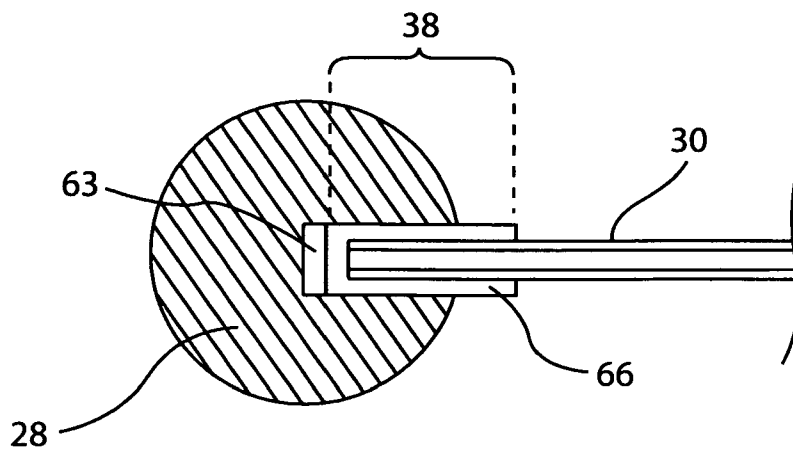


Figure 7a

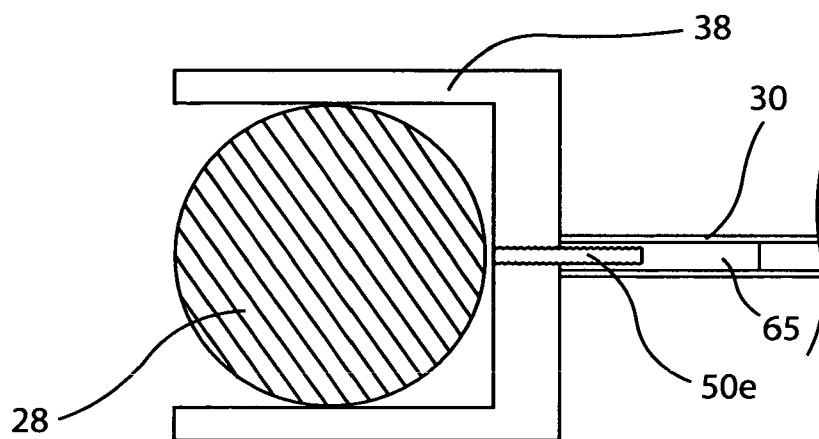


Figure 7b

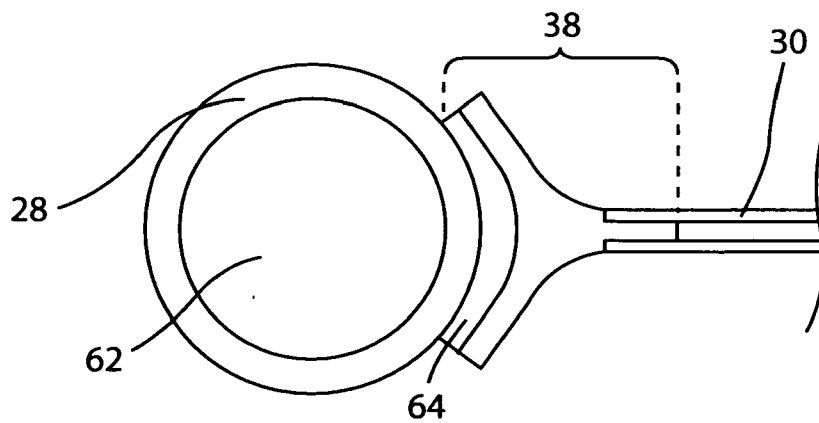


Figure 7c

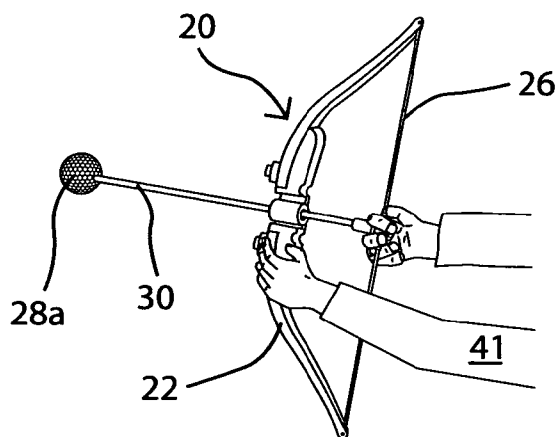


Figure 8a

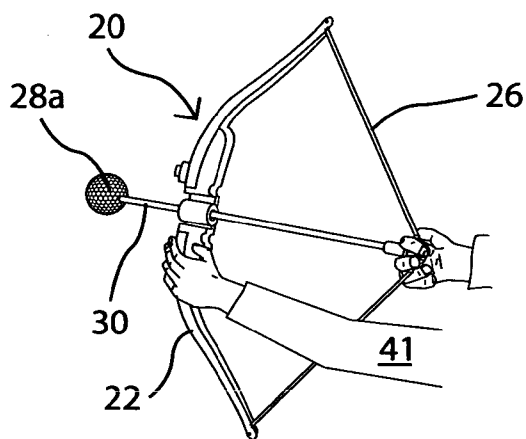


Figure 8b

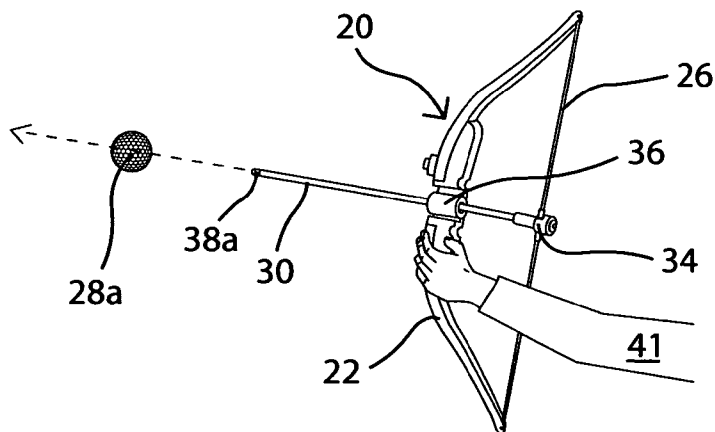


Figure 8c

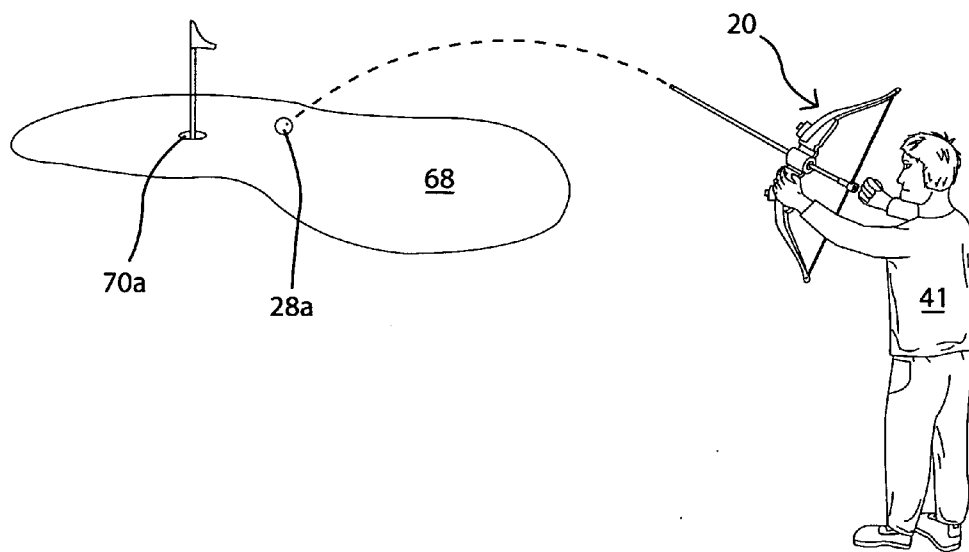


Figure 9a

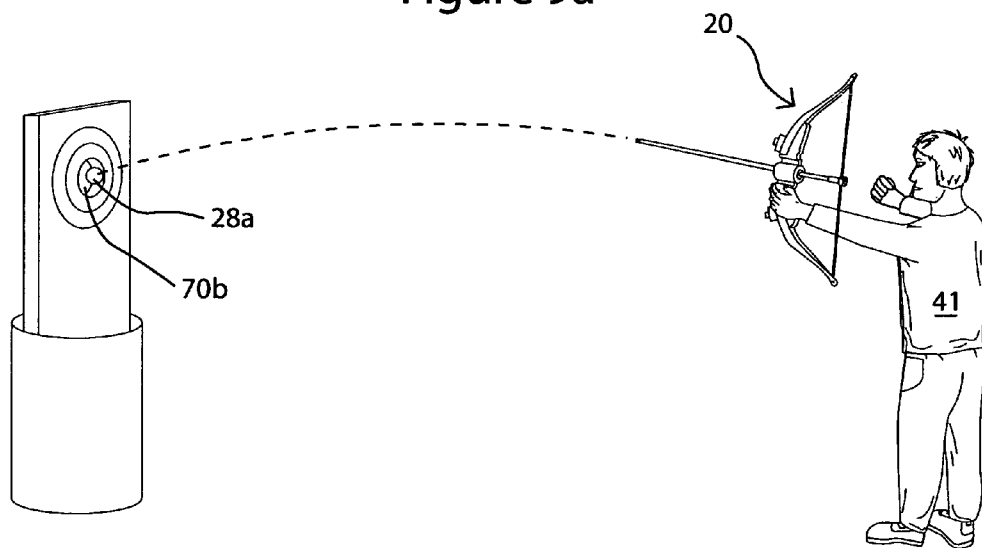


Figure 9b

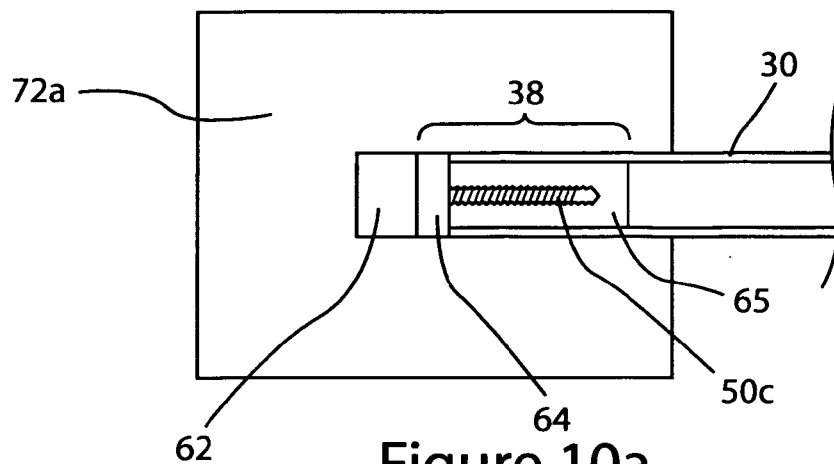


Figure 10a

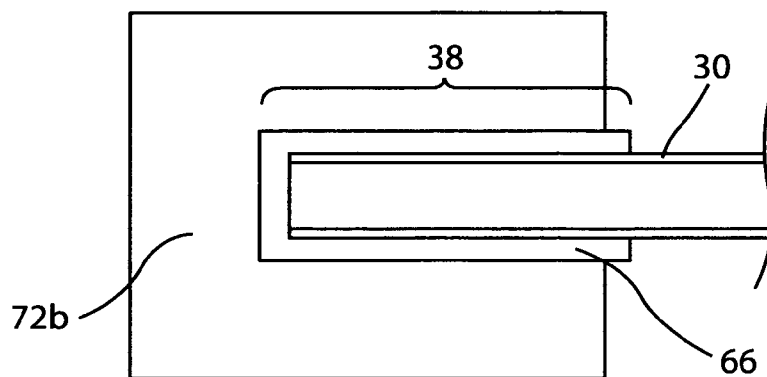


Figure 10b

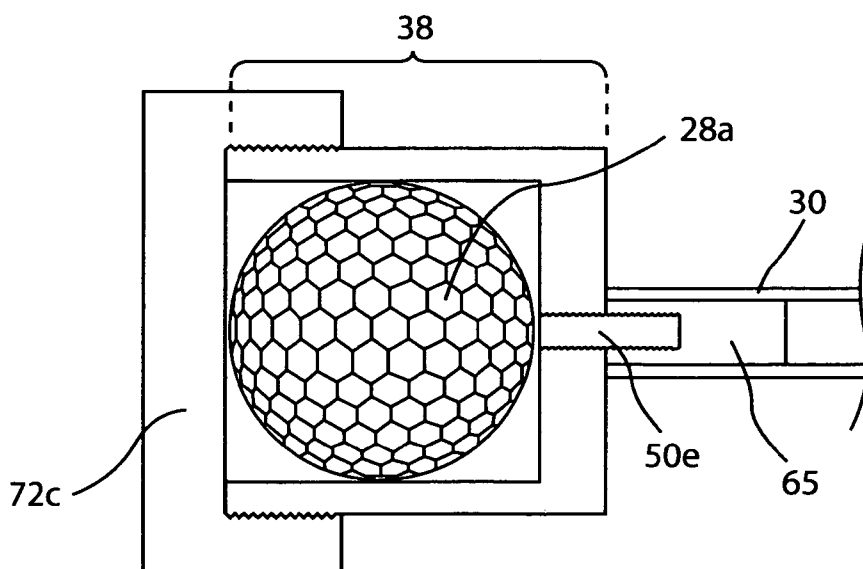


Figure 10c

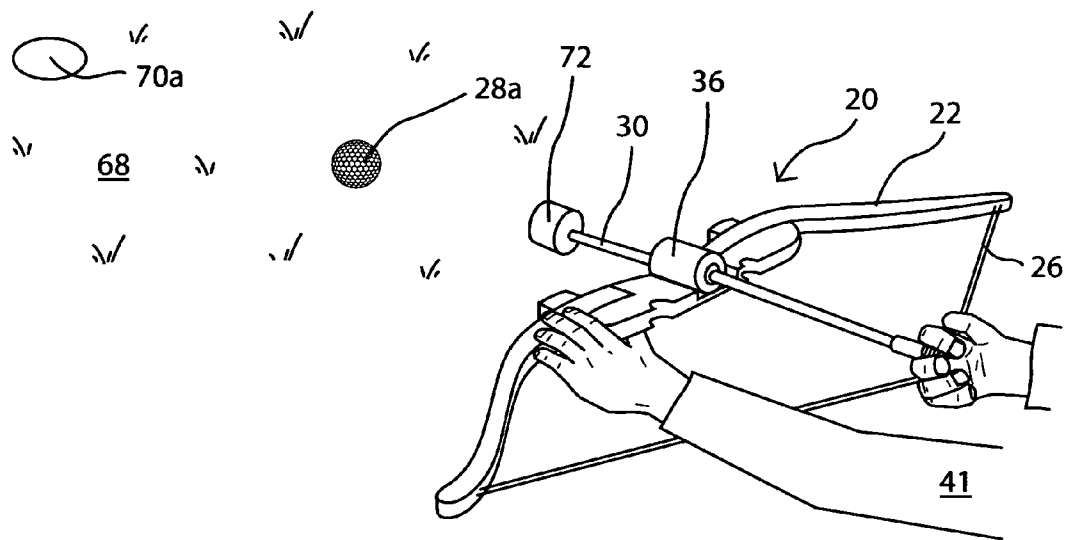


Figure 11a

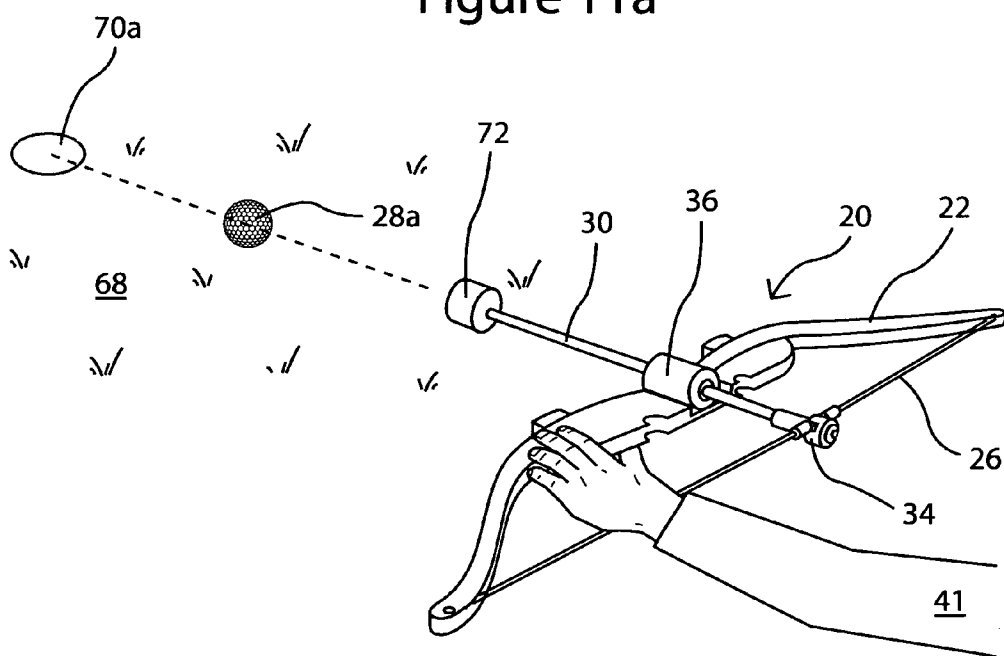


Figure 11b

**BOW APPARATUS AND METHOD FOR PLAYING ARCHERY GOLF**

**RELATED APPLICATIONS**

[0001] This application claims the benefit of priority of U.S. Provisional Patent Application No. 61/339,292, filed Mar. 2, 2010 entitled "Bow Apparatus and Method for Playing Archery Golf", which is incorporated herein by reference.

**FIELD**

[0002] This patent application generally relates to a bow apparatus for projecting objects. More specifically it relates to a bow apparatus for projecting balls used to play a modified version of archery golf and other games.

**BACKGROUND**

[0003] Golf is one of the most played sports in the world with over 50 million players. Archery is also a popular sport with millions of players. The current combination version of these two sports is archery golf, a sport where the players play golf with bows and arrows instead of clubs and balls. In archery golf, the arrows are used to knock a ball off of a stand instead of hitting a ball into a cup. The current patent application provides for a new version of archery golf that uses a bow apparatus that can project balls into cups.

**SUMMARY**

[0004] One aspect of the present patent application is directed to a bow apparatus comprising a bow having first and second tips, a string which is attached to the bow between the first and second tips and a shaft having a first shaft end and a second shaft end. The first shaft end is secured proximate the midpoint of the string. The shaft passes through a shaft stabilizer. The shaft stabilizer is mounted proximate the midpoint of the bow. The second shaft end has a projectile holder.

[0005] Another aspect of the present patent application is directed to method of projecting a projectile comprising providing a bow having first and second tips, a string which is attached to the bow between the first and second tips, and a shaft having a first shaft end and a second shaft end. The first shaft end is secured proximate the midpoint of the string. The shaft passes through a shaft stabilizer. The shaft stabilizer is mounted proximate the midpoint of the bow. The second shaft end has a projectile holder. The user then places a projectile in the projectile holder, pulls the shaft to tension the string, aims the shaft towards a target, and then releases the shaft to project the projectile towards the target.

[0006] Still another aspect of the present patent application is directed to a method of projecting a ball comprising providing a bow having first and second tips, a string which is attached to the bow between the first and second tips, and a shaft having a first shaft end and a second shaft end. The first shaft end is secured proximate the midpoint of the string. The shaft passes through a shaft stabilizer. The shaft stabilizer is mounted proximate the midpoint of the bow. The second shaft end has a putter block. The user pulls the shaft to tension the string, aims the shaft towards a ball, and then releases the shaft to hit the ball with the putter block so as to project the ball towards a target.

[0007] Still yet another aspect of the present patent application is directed to a kit for converting a bow apparatus for shooting arrows into a bow apparatus for launching projectiles, the bow having a string attached between tips of the bow,

the kit comprising a shaft having a first shaft end and a second shaft end. A string securing element is mounted to the first shaft end to secure the shaft to the string. A projectile holder is mounted to the second shaft end. A shaft stabilizer having a stabilizer opening through which to move said shaft, the shaft stabilizer reduces the angular deflection of the shaft as the shaft passes through the stabilizer opening. The shaft stabilizer has a fastener for attachment proximate the midpoint of the bow.

**BRIEF DESCRIPTION OF DRAWINGS**

[0008] The foregoing and other aspects and advantages of the invention will be apparent from the following detailed description of the invention, as illustrated in the accompanying drawings, in which:

- [0009] FIG. 1 is a perspective view of the bow apparatus;
- [0010] FIG. 2a is a perspective view of the first shaft end, string securing element, and string of FIG. 1;
- [0011] FIG. 2b is a sectional view of the first shaft end, string securing element, and string of FIG. 2a with the string secured to the shaft;
- [0012] FIG. 2c is a sectional view of the first shaft end, string securing element, and string of FIG. 2a with the string securing element in a loosened state;
- [0013] FIG. 2d is an exploded view of the first shaft end, string securing element, and string of FIG. 2a;
- [0014] FIG. 3a is a perspective view of the shaft stabilizer of FIG. 1 attached to the bow;
- [0015] FIG. 3b is a sectional view along line 3b-3b of FIG. 3a;
- [0016] FIG. 3c is a sectional view alone line 3c-3c of FIG. 3a;
- [0017] FIG. 4a is a perspective view of one embodiment of the bow apparatus in FIG. 1, where the shaft stabilizer is built into the bow;
- [0018] FIG. 4b is a sectional view along line 4b-4b of FIG. 4a.
- [0019] FIG. 4c is a sectional view of the shaft stabilizer and bow in FIGS. 4a and 4b with an added site opening within the bow;
- [0020] FIG. 5 is a sectional view of the shaft stabilizer and safety element of FIG. 1 shown in an engaged state;
- [0021] FIG. 6a is a perspective view of one embodiment of a projectile holder of FIG. 1 with a projectile held from within;
- [0022] FIG. 6b is a sectional view of the projectile holder and projectile of FIG. 6a;
- [0023] FIG. 6c is a sectional view of the projectile holder and projectile of FIG. 6a with the projectile separated from the projectile holder;
- [0024] FIG. 7a is a sectional view of one embodiment of a projectile holder of FIG. 1 with the projectile being held by a frictional component;
- [0025] FIG. 7b is a sectional view of one embodiment of a projectile holder of FIG. 1 with the projectile being held by the projectile's exterior surface;
- [0026] FIG. 7c is a sectional view of one embodiment of a projectile holder of FIG. 1 with the projectile being held by magnetic attraction between the projectile and projectile holder;
- [0027] FIG. 8a is a perspective view of the bow apparatus of FIG. 1 (having anyone of one of the projectile holders of FIG. 6a-b or 7a-c) held by the user and loaded with a ball;

[0028] FIG. 8*b* is a perspective view of the bow apparatus of FIG. 8*a* held by the user so as to tension the string;

[0029] FIG. 8*c* is a perspective view of the bow apparatus of FIG. 8*b* held by the user after releasing the string and projecting the ball;

[0030] FIG. 9*a* is a diagram showing the bow apparatus of FIG. 1 being used to play a version of archery golf;

[0031] FIG. 9*b* is a diagram showing the bow apparatus of FIG. 1 being used to project balls towards a target;

[0032] FIG. 10*a* is a sectional view of one embodiment of a projectile holder with a putter block in place as it would be integrated with the bow apparatus of FIG. 1;

[0033] FIG. 10*b* is a sectional view of one embodiment of a projectile holder with a putter block in place as it would be integrated with the bow apparatus of FIG. 1;

[0034] FIG. 10*c* is a sectional view of one embodiment of a projectile holder with a putter block in place as it would be integrated with the bow apparatus of FIG. 1;

[0035] FIG. 11*a* is a perspective view of the bow apparatus of FIG. 1, now having a putter block from anyone of FIGS. 9*a-c* attached to the second shaft end and pre-tensioned to putt a ball; and

[0036] FIG. 11*b* is a perspective view of the bow apparatus of FIG. 11*a*, with the user releasing the string to hit the ball towards a cup in the ground.

#### DETAILED DESCRIPTION

[0037] FIGS. 1-11*b* illustrate the elements of bow apparatus 20 and how they work together to play a modified version of archery golf and other games. Bow apparatus 20, FIG. 1, comprises bow 22 having a first tip 24*a* and a second tip 24*b*. Bow 22 may be a recurve bow, a compound bow or any other suitable archer's bow. Bow 22 may be of unitary structure or the bow may be fabricated from several pieces such as a riser 23 (a.k.a. handle) and two limbs 25 that are secured together. The shape and material of riser 23 and limbs 25 may vary depending on the performance requirements of bow apparatus 20. String 26 spans between first tip 24*a* and second tip 24*b*. String 26 is secured to bow 22 at first tip 24*a* and second tip 24*b*. String 26 may be a string, a strap or other long thin strip of flexible material. String 26 and bow 22 combine to provide a mechanism for building up stored energy that can be imparted to an object or projectile 28 that is to be propelled through the air. Bow apparatus 20 further comprises a shaft 30 having a first shaft end 32*a* and a second shaft end 32*b*. Shaft 30 is similar in construction to the shaft of a conventional arrow in length, diameter and material. Although preferably circular in cross-section, shaft 30 may take on any cross-sectional shape. Shaft 30 is preferably made of a light and rigid material such as wood, an aluminum tube, a plastic rod or tube, etc. First shaft end 32*a* is secured to string 26 by a string securing element 34 mounted to the first shaft end. First shaft end 32*a* is secured proximate the midpoint of string 26. String positioning elements 33, such as rubber sleeves or brass knots, maybe provided to help stabilize the location of string securing element 34 and keep the string securing element from sliding along the length of string 26. Shaft 30 passes through shaft stabilizer 36. Shaft stabilizer 36 is mounted proximate the midpoint of bow 20. Second shaft end 32*b* has a projectile holder 38.

[0038] Details of string securing element 34 are shown in FIGS. 2*a-d*. String securing element may surround string 26 or the string securing element may press on the string from opposite sides. String 26 may be secured at a location off axis

(shown as dashed lines) from the central axis A of shaft 30, seen in FIG. 2*d*. Alternatively string securing element 34 may be configured to secure string 26 on the central axis A of shaft 30. In one embodiment, string securing element 34 includes a first securing element 40 and a second securing element 42 that together engage opposite sides of string 26 to secure first shaft end 32*a* to the string. First string securing element 40 is mounted to shaft 30 at the first shaft end 32*a*. A plug 44 is mounted within the first shaft end 32*a* if shaft 30 is tubular. Second securing element 42 is dimensioned to integrate with first securing element 40. A string groove 46 is provided in string securing element 34 so that string 26 can be easily located to pass through the string securing element. A resilient material 48 and spring may be provided within second securing element 42 to aid in securing and releasing the second securing element from string 26. A biasing mechanism 51, such as a spring may be included to help separate first securing element 40 from second securing element 42 when attaching string securing element 34 to string 26. A fastener 50*a*, with optional washer 52, is used to tighten and loosen second securing element 42 from first securing element 40. Other embodiments for string securing element 34 may include a single string securing element that is bonded to string 26, a single string securing element that surrounds and moves along the string or a string securing element that clamps onto the string.

[0039] Details of shaft stabilizer 54 are shown in FIGS. 3*a-c*. Shaft stabilizer 54 is located proximate the midpoint of bow 20 and may be an integral part of the bow or attached by a fastener 50*b*. Shaft stabilizer 54 is preferably off-centered laterally from the mid-plane B of bow 22 and located within recess 55 of riser 23. Having shaft stabilizer 54, shaft 30 and string groove 46 off-center from the mid-plane of the bow allows the user to aim the shaft and projectile 28 without bow 22 obstructing their view. Providing a larger recess 55 along riser 23 may also aid the user in viewing the aim of the projectile. The riser may also include a site or aim location element. Shaft stabilizer 54 includes a stabilizer opening 56 shaped to match that of the outer cross-sectional dimensions of shaft 30, but with the diameter of the stabilizer opening slightly larger than the diameter of the shaft. Stabilizer opening 56 reduces angular deflection of shaft 30 as the shaft passes through shaft stabilizer 54, i.e. when launching a projectile. Stabilizer opening 56 is preferably an elongated stabilizer opening where more length provides more stability. Shaft stabilizer 54 is critical for providing accurate aim of shaft 30, especially when a projectile such as a golf ball is held at the second shaft end 32*b*. Fastener 50*b* can be used to adjust the positioning and angular orientation of the shaft stabilizer 54 relative to bow 22 so as to adjust for height range and windage.

[0040] In one embodiment, FIGS. 4*a-c*, stabilizer opening 56 and shaft stabilizer 54 may be fabricated to reside within the bow 22 itself and not be a separate element. A sight opening 57 may also be provided to aid the user in aiming projectile 28.

[0041] During use of bow apparatus 20, if for some reason string securing element 34 was to fail, the user would not want shaft 30 to release and jab into someone or something. For this reason, bow apparatus 20 is may be fitted with a shaft safety element 58. In one embodiment, FIG. 5, shaft safety element 58 is an area of enlarge diameter around shaft 30 near first shaft end 32*a* that is larger than the diameter of stabilizer opening 56. This shaft safety element 58 may be an integral

part of first string securing element 42 or shaft 30, or a separate element. A shaft safety element channel 60 may be provided within shaft stabilizer 54 for accepting the shaft safety element 58. Providing a taper on both shaft safety element 58 and shaft safety element channel 60 can help with engaging these two elements. In an alternative embodiment of bow apparatus 20, shaft safety element may be a safety strap running from shaft 30 to string 26.

[0042] Bow apparatus 20 has a projectile holder 38, such as those shown in FIG. 6a-c and 7a-c, secured to second shaft end 32b of shaft 30 for holding a projectile 28. Projectile 28 will be released during the act of launching the projectile. Projectile holder 38 may be secured to shaft 30 by a fastener 50c or permanently mounted to the shaft. Projectile holder 38 preferably holds projectile 28 with an inertial release mechanism so that the projectile is released when the force of inertia of the projectile overcomes the holding force of the projectile holder during launching. The inertial release mechanism may incorporate magnetic attraction between projectile holder 38 and projectile 28 (FIG. 6a-c and 7c), frictional forces between the projectile holder and the projectile (7a and 7b), or vacuum (not shown) for the holding projectile in place while firing the projectile. Projectile holder 38 is matched in size and shape to a given projectile to be launched. Projectile holder 38 may be removeably attached to second shaft end 32b. One example of a removable attachment would be a thread on the end of shaft 30 that would thread into projectile holder 38. Another option is using a fastener or clip to attach projectile holder to second shaft end 32b. These would all provide different means for removeably securing the projectile holder. Projectile holders 38 may be interchangeable with different projectile holders put on second shaft end 32b to play different sports and project different projectiles 28. Projectile 28 can be one from the group including a golf ball, a paint ball, a whiffle ball, a water balloon, a bean bag or other similar objects, but not limited to these objects. For holding spherical objects, projectile holder 38 may be considered a ball holder.

[0043] In one embodiment projectile holder 38 is structured to fit inside projectile 28, holding the projectile from an opening within the projectile, FIG. 6a-c. Here projectile 28 has a projectile opening 63 drilled into its center. A first magnet 62 is provided within projectile opening 63. Second shaft end 32b is fitted with a plug 65 (if shaft 30 is a hollow tube) and a second magnet 64. Second magnet 64 may be secured with a fastener 50d to second shaft end 32b. First magnet 62 and second magnet 64 provide enough force to hold projectile 28 on second shaft end 32b so that the projectile does not fall off due to gravity or minor handling of bow apparatus 20. However, the force of attraction is small compared to the inertial force that will propel projectile 28 through the air once the projectile is launched. First magnet 62 and second magnet 64 can independently be a magnet or a magnetically attracted material such as a Ferro magnet. Although a golf ball is illustrated in FIG. 6a-c as projectile 28, this same structure of holding the projectile could be used with other types of projectiles.

[0044] In one embodiment projectile holder 38 is structured to fit inside projectile 28 holding the projectile from an opening within the projectile, FIG. 7a. Here projectile 28 has a projectile opening 63 drilled into its center. A frictional material or frictional strip 66 is provided over second shaft end 32b to provide enough force to hold projectile 28 on second shaft end 32b so that the projectile does not fall off due to gravity or minor handling of bow apparatus 20. However, the force of

friction is small compared to the inertial force that will propel projectile 28 through the air once the projectile is launched. Although a golf ball is illustrated in FIG. 7a, this same structure of holding projectile 28 could be used with other types of projectiles.

[0045] In one embodiment projectile holder 38 is structured so that projectile 28 is held by the exterior surface of the projectile, FIG. 7b. Here projectile holder 38 takes the form of a cup that is secured to second shaft end 32b by a fastener 50e. Projectile 28 is held within projectile holder 38 by frictional forces until the projectile is launched. Again, the frictional force of attraction is small compared to the inertial force that will propel projectile 28 through the air once the projectile is launched. Although a golf ball is illustrated in FIG. 7b, this same structure of holding projectile 28 from the exterior could be used with other types of projectiles and may be advantageous for projectiles such as water balloons or paintballs that cannot be easily held from within.

[0046] In one embodiment projectile holder 38 uses magnetic forces to hold projectile 28 by its exterior surface, FIG. 7c. Projectile 28 has a first magnet 62 or magnetic material embedded within it. Projectile holder includes a second magnet 64 or magnetic material attached to second shaft end 32b. Projectile 28 is held to projectile holder 38 by magnetic forces until the projectile is launched. Again, the magnetic force of attraction is small compared to the inertial force that will propel projectile 28 through the air once the projectile is launched. A similar structure for projectile holder 38 could be used with a vacuum sucking on the outer surface of projectile 28, this version is not shown. Although a golf ball is illustrated in FIG. 7c, this same structure of holding projectile 28 could be used with other types of projectiles.

[0047] Bow apparatus 20 can be configured to project almost any type of projectile 28. However for the specific use of playing modified archery golf; bow apparatus 20 is fitted with a golf ball holder 38a, which may take the form of any of projectile holders 38 shown in 6a-c and 7a-c. The configuration of bow apparatus 20 for playing "ball-based" archery golf is shown in FIGS. 8a-c, 9a-b and 11a-b. The method of projecting golf ball 28a through the air is specifically shown in FIGS. 8a-c. User 41 first places golf ball 28a in or on golf ball holder 38a. User 41 then grasps bow apparatus 20 with one hand on bow 22 and one hand near the midpoint of string 26, FIG. 8a. User 41 then pulls string 26 and shaft 30 towards the user's body to tension the string, FIG. 8b. Once string 26 is of appropriate tension, user 41 aims shaft 30 towards the target and releases the string, FIG. 8c. Upon release, the built up energy from the tensioning process is transferred to shaft 30, golf ball holder 38a and golf ball 28a. Golf ball holder 38a and shaft 30 are only allowed to travel so far before they are stopped by their connection to string 26 via either shaft safety element 58 or string securing element 34. The momentum of golf ball 28a will overcome the force holding the ball by golf ball holder 28a and the golf ball will be released into the air. The distance golf ball 28a will travel is determined by the amount of potential energy created in the tensioned string 26. If user 41 pulls string 26 back further, golf ball 28a will be imparted more energy causing it to travel further. With a typical recurve bow, a golf ball may be launched in the range of a few feet to hundreds of feet. Forming shaft 30 and ball holder 38a from very light materials insures that most of the energy is transferred to golf ball 28a upon release.

[0048] FIGS. 9a and 9b illustrate two simple games that can be played with bow apparatus 20 and golf ball 28a. FIG. 9a

illustrates playing “ball-based” archery golf on a standard golf course having a green **68** and cup target **70a**. FIG. **8b** illustrates a game of “get the ball in the standing hole target **70b**”. Because ball-based archery golf does not use arrows to hit a ball off a stand as is the case in standard archery golf, bow apparatus **20** must be modified with putter block **72** to finish the game and get golf ball **28a** into cup target **70a**.

[0049] FIGS. **10a-c** show various types of putter blocks **72** (**72a-c**) that can be used depending on the type of ball holder **38** that is attached to second shaft end **32b**. In FIG. **10a** putter block **72a** slides over the end of ball holder **38** and is held on by magnetic force. This would use the same ball holder **38** as shown in FIGS. **6a-c**. The putter block can be fitted with a strong first magnet **62** to hold it from separating from ball holder **38**. In FIG. **10b** putter block **72b** slides over the end of ball holder **38** and is held by frictional forces. This would use the same ball holder **38** as shown in FIG. **7a**. In FIG. **10c** putter block **72c** may slide or be screwed onto the ball holder **38**. This would use the same ball holder **38** as shown in FIG. **7b**. The impacting end of putter block **72**, the part that hits the ball, may take on any shape that can facilitate the accurate movement of ball **28a**. Putter block **72c**, FIG. **10c**, may also be used as a way to hold and store golf ball **28a** in ball holder **38** when traveling between different holes on the green.

[0050] To use bow apparatus **20** with putter block **72**, user **41** first places the putter block on or in ball holder **38**. User **41** then grasps bow apparatus **20** with one hand on bow **22** and one hand near the midpoint of string **26**. User **41** then pulls string **26** and shaft **30** towards the user’s body to tension the string, FIG. **11a**. Once string **26** is appropriately tensioned, user **41** aims shaft **30** towards golf ball **28a** that is on the ground **74** and releases the string, FIG. **11b**. Upon release, the built up energy from the tensioning process is transferred to shaft **30**, ball holder **38** and putter block **72**. When putter block **72** hits golf ball **28a**, momentum is imparted to the golf ball and moves the golf ball towards cup target **70a**. The distance and direction golf ball **28a** will travel is determined by the amount of potential energy created in the tensioned string **26** and the aim of the user. In the game of ball-based archery golf, both the skill of the player and the performance of the bow apparatus play a role in the game outcome.

[0051] In one embodiment bow apparatus **20** for launching projectiles **28** may be created out of a conventional bow for shooting arrows. The end result is a bow apparatus **20** as shown in FIG. **1**, with the additional elements attached to the conventional bow. This is done by providing a kit that includes a shaft having a first shaft end and a second shaft end. Mounted to the first shaft end is a string securing element. Mounted to the second shaft end is a projectile holder. The shaft passes through a shaft stabilizer having an stabilizer opening that reduces the angular deflection of the shaft as it passes through the stabilizer opening. The shaft stabilizer has a fastener that is used to mount the shaft stabilizer proximate the midpoint of the conventional bow. String securing element is secured to the string of the conventional bow. This kit now attached to a conventional bow makes the bow ready for launching appropriate projectiles.

[0052] In one embodiment bow apparatus **20** may be made as a toy for kids. Bow apparatus **20** can be made to only launch projectiles short distances and with low impact force. For example bow apparatus may be structured to launch NERF®-type balls. The whole bow apparatus **20** may be fabricated inexpensively from plastic.

[0053] The invention is not limited to the embodiments represented and described above but includes all variants notably the shape and size of all components, the materials that components are manufactured from, and the type and size of objects that can be held and projected. Nothing in the above specification is intended to limit the invention more narrowly than the appended claims. The examples given are intended only to be illustrative rather than exclusive.

What is claimed is:

1) A bow apparatus, comprising:

a bow having first and second tips, a string attached to said bow between said first and second tips, a shaft having a first shaft end and a second shaft end, wherein said first shaft end is secured proximate the midpoint of said string, wherein said shaft passes through a shaft stabilizer, wherein said shaft stabilizer is mounted proximate the midpoint of said bow, and wherein said second shaft end has a projectile holder.

2) A bow apparatus as recited in claim 1, wherein said projectile holder is a ball holder.

3) A bow apparatus as recited in claim 2, wherein said ball holder holds the ball from within an opening in the ball.

4) A bow apparatus as recited in claim 2, wherein said ball holder holds the ball by the exterior surface of the ball.

5) A bow apparatus as recited in claim 1, wherein said projectile holder incorporates an inertial release mechanism.

6) A bow apparatus as recited in claim 5, wherein said inertial release mechanism includes magnetic attraction between said projectile holder and a projectile.

7) A bow apparatus as recited in claim 5, wherein said inertial release mechanism includes frictional holding between said projectile holder and a projectile.

8) A bow apparatus as recited in claim 1, further comprising a putter block attached to said projectile holder.

9) A bow apparatus as recited in claim 8, wherein said putter block fits over said projectile holder.

10) A bow apparatus as recited in claim 8, wherein said putter block fits within said projectile holder.

11) A bow apparatus as recited in claim 1, wherein said shaft stabilizer includes a stabilizer opening to reduce angular deflection of said shaft when said shaft passes through said stabilizer.

12) A bow apparatus as recited in claim 1, wherein said shaft stabilizer is located outside the mid plane of said bow.

13) A bow apparatus as recited in claim 1, further comprising a string securing element mounted to said first shaft end.

14) A bow apparatus as recited in claim 13, wherein said string securing element surrounds said string.

15) A bow apparatus as recited in claim 13, wherein said string is secured off axis from the central axis of said shaft.

16) A bow apparatus as recited in claim 13, wherein said string securing element includes a first securing element and a second securing element that together engage opposite sides of said string to secure said first shaft end to said string.

17) A bow apparatus as recited in claim 1, further comprising a shaft safety element, wherein said shaft safety element is secured proximate said first shaft end and cannot pass through said shaft stabilizer.

18) A method of projecting a ball, comprising the steps of a) providing (i) a bow having first and second tips, a string attached to said bow between said first and second tips, a shaft having a first shaft end and a second shaft end, wherein said first shaft end is secured proximate the midpoint of said string, wherein said shaft passes

through a shaft stabilizer, wherein said shaft stabilizer is mounted proximate the midpoint of said bow, wherein said second shaft end has a projectile holder and (ii) a projectile;

- b) holding said projectile with said projectile holder;
- c) pulling said shaft to tension said string;
- d) aiming said shaft towards a target; and
- e) releasing said shaft to project said projectile towards said target.

**19)** A method as recited in claim **18**, wherein said projectile is a ball.

**20)** A method as recited in claim **18**, wherein said target is at least one from the group including a cup target and a hole target.

**21)** A method of projecting a ball, comprising the steps of

- a) providing (i) a bow having first and second tips, a string attached to said bow between said first and second tips, a shaft having a first shaft end and a second shaft end, wherein said first shaft end is secured proximate the midpoint of said string, wherein said shaft passes through a shaft stabilizer, wherein said shaft stabilizer is mounted proximate the midpoint of said bow, wherein said second shaft end has a putter block and (ii) a ball;
- b) pulling said shaft to tension said string;

- c) aiming said shaft towards said ball; and
- d) releasing said shaft to hit said ball with said putter block so as to project said ball towards a target.

**22)** A method as recited in claim **21**, wherein said target is a cup.

**23)** A kit for converting a bow apparatus for shooting arrows into a bow apparatus for launching projectiles, said bow apparatus including a bow having a string attached between tips of said bow, said kit comprising:

- a) a shaft having a first shaft end and a second shaft end;
- b) a string securing element mounted to said first shaft end to secure said shaft to the string;
- c) a projectile holder mounted to said second shaft end; and
- d) a shaft stabilizer having an stabilizer opening through which to move said shaft, wherein said shaft stabilizer reduces the angular deflection of said shaft as said shaft passes through said stabilizer opening, wherein said shaft stabilizer attaches proximate the midpoint of said bow.

**24)** A kit for converting a bow apparatus as in claim **23**, further comprising a shaft safety element, wherein said shaft safety element is secured proximate said first shaft end and cannot pass through said shaft stabilizer.

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