An apparatus for launching a projectile at a target, the apparatus being an elongate body having a chamber shaped for holding a projectile in a pre-launch position and for directing the projectile when the end of the launching apparatus is flung forward.
APPARATUS FOR LAUNCHING PROJECTILES

FIELD OF THE INVENTION

[0001] The present invention relates generally to an apparatus for recreational purposes and more particularly to an apparatus for launching projectiles at a target.

BACKGROUND OF THE INVENTION

[0002] The game of darts involves a player throwing pointed projectiles or darts at a target. The target or dartboard is generally circular in shape and is made of a material which allows the points of the projectiles or darts to remain imbedded in the target while the score is tallied. The target is usually divided into different areas which either indicate various points to be scored or tracked. The exact nature of the scoring varies depending on the exact game played.

[0003] The game of darts is generally played with the target hanging on the wall and the players standing some distance away. Because the tips of the darts are pointed, a dart which misses the dartboard is able to embed its tip in the wall upon which the dartboard is hung. Accordingly, it is often necessary to include a large backstop of some kind to protect the wall from darts that have flown off course. Additionally, the sharp pointed darts create a safety hazard for nearby players and/or spectators.

[0004] One method of avoiding the hazards inherent in throwing sharp objects at a target on a wall comprises rounding tipped darts which are thrown at a specially modified dartboard. The surface of such a modified dartboard comprises a series of round nodes or indentations which are shaped to receive the rounded end of the darts. The rounded ends help mitigate the problems with a traditional dart set, but do not eliminate them.

SUMMARY OF THE INVENTION

[0005] In one aspect, the present invention provides an apparatus for launching projectiles at a target.

[0006] In another aspect, the present invention provides an apparatus for launching rounded projectiles in a desired arc toward a target.

[0007] In still another aspect, the present invention directs toward a gaming assembly.

[0008] These and further features and advantages of the present invention will become apparent from the following detailed description, wherein reference is made to the figures in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a side elevational view of the apparatus of the present invention.

[0010] FIG. 2 is a front elevational view of the apparatus of FIG. 1.

[0011] FIG. 3 is a side elevational view, partly in section, of the apparatus shown in FIG. 1.

[0012] FIG. 4 is an elevational view, partly in section, of a target of the present invention.

[0013] FIG. 5 is a front elevational view of the target shown in FIG. 4.

[0014] FIGS. 6 and 7 are environmental views of a method of using the apparatus and target of the present invention.

[0015] FIG. 8 is an enlarged portion of a cross-sectional view of another embodiment of the apparatus of the present invention.

[0016] FIG. 9 is an enlarged portion of a cross-sectional view of still another embodiment of the apparatus of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0017] With respect first to FIGS. 1-3, there is shown the apparatus or launcher of the present invention, shown generally as 10. Launcher 10 comprises an elongate body 15 having a first end 16, a second end 17, a front surface 18, and a back surface 19, a side surface 21 and an opposite side surface 23. Body 15 may be made from any material, preferably light weight, but is most preferably made from wood, plastic, metal or the like.

[0018] In a preferred embodiment, body 15 comprises a grip or handle 20 which extends from second end 17 of body 15 toward first end 16. Grip 20 preferably has contoured formations 22 along front surface 18 to receive the fingers of the user of launcher 10 when handle 20 is gripped. It will be understood that in certain embodiments formations 22 and/or grip 20 may be absent, i.e. the user would grip an external portion of the body 15. However, the launching apparatus would still be within the scope of the present invention. As will be shown hereafter, grip 20 and particularly formations 22 provide additional comfort to the user and help direct a disc-shaped projectile P in the appropriate direction by ensuring the user is holding the launcher correctly.

[0019] There is a recess 30 having an opening 35 in front surface 18 positioned proximal first end 16 of body 15. As best seen with reference to FIG. 3, recess 30 is generally hook-shaped when viewed in transverse cross-section, having a ramp portion 30A and a hook or cradle portion 30B. In a preferred embodiment, ramp portion 30A has a slight concavity along its length. As will be shown hereafter, the shape of the ramp can vary. The shape of recess 30 allows projectile P to rest in cradle portion 30B without falling out of opening 35 when the launcher is held in an upright, generally vertical position and it serves to direct projectile P when it is launched.

[0020] Projectile P is preferably disc-shaped and can be made of virtually any material. In a preferred embodiment, though, the projectile P is approximately equivalent in size and weight to that of a United States Quarter. As seen in FIGS. 6 and 7, projectile P remains in cradle 30B of recess 30 (FIG. 6) until the launcher 10 is flung forward at the desired angle (FIG. 7). At this point, projectile P is launched along ramp 30A of recess 30, out opening 35 and toward a target, shown generally as 60. It will be appreciated that the distance of recess 30 from first end 16 can vary, but in a preferred embodiment, recess 30 is proximal first end 16 of body 15. The placement of recess 30 further from first end 16 will inherently change the angle at which projectile P is launched. Similarly, a change in length of body 15 will change the angle at which projectile P is launched. In general the length of body 15 and the relative placement of recess 30 determine the speed at which the projectile P is launched. In a preferred embodiment, the length of launcher 10 is from about 10 to about 13 inches.

[0021] Turning to FIGS. 8 and 9, there are shown alternate embodiments of recess 30 of FIGS. 1-3. In FIG. 8, recess 32 is in open communication with both the front surface 18 and first end 16 of body 15. In FIG. 9, recess 34 is positioned...
similarly to recess 30 of FIGS. 1-3 but ramp portion 34A is straight rather than concave. It will be appreciated that the recess can be tailored in shape to achieve the desired speed, accuracy, angle of launch, etc.

[0022] Turning now to FIGS. 4 and 5, there is shown one embodiment of a target for use with the launcher of the present invention. As is generally understood in the art, a prior art dartboard is made of a material in which the pointed ends of the darts are easily embedded. The projectiles P contemplated by the present invention are preferably disc-shaped and thus have no pointed ends for embedding in the target. However, a need to determine the location of impact with the target is still present if the launcher 10 is used as part of a game. One embodiment of a target is shown generally as 60. Target 60 comprises a box-like structure 70 having an upper wall 71, a lower wall 72, first and second side walls 73 and 74, a back wall 75 and a front wall 76. Front wall 76 has an opening 62 over which is positioned targeting sheet 65. Targeting sheet 65 is preferably made of paper having a thickness which ensures that it is durable enough to be held in place over opening 62 but which allows the projectile P to pass through it. As shown in FIGS. 4 and 5, targeting sheet 65 is held in place over opening 62 by spring hinges 90 and 92 positioned above and below opening 62, respectively. Spring hinge 90 has first leaf 90A and second leaf 90B. To insert the targeting sheet, the user can press the first leaf 90A toward the target which will in turn release second leaf 90B so that the targeting sheet can be slid beneath it. Releasing leaf 90B will then force leaf 90A to grip targeting sheet. The same mechanism is used in opening spring hinge 92 below opening 62. It will be appreciated that the embodiment shown and described with respect to FIGS. 4 and 5 is one of many target embodiments that could be used. Other means for holding a sheet in place over opening 62 are within the scope of the invention. Such means include, but are not limited to, the use of magnets, notched slots, etc.

[0023] Turning to FIGS. 6 and 7, the method of using the launcher 10 and target 60 are shown. As seen in FIG. 6, the user places projectile P into recess 30, tilts the launcher 10 at a slight angle away from target 60, and takes aim at target 60. When the user is satisfied with the aim, the user flicks his/her wrist forward, as seen in FIG. 7, quickly moving the launcher in the direction of arrow A. This motion ejects projectile P from recess 30, out opening 35 and toward target 60. If the user’s aim is accurate, projectile P will strike and pass through targeting sheet 65 to land in box 70 of target 60.

[0024] In one embodiment, and as can be seen with reference to FIGS. 4, 6, and 5, side walls 73 and 74 and back wall 75 of box 70 have lower portions 73A, 74A, and 75A, respectively, which are angled inwardly. Additionally, bottom wall 72 is attached to lower back wall portion 75A by a hinge and is held closed by latch 82 on front wall 76. This design of target 60 allows for easy collection of the projectiles at the end of a turn/round in a game. After being launched through targeting sheet 65, the projectiles fall onto bottom wall 72 of box 70. The user may then release latch 82 to open bottom wall 72 and collect the projectiles P. Bottom wall 72 may then be returned to its closed position and latch 82 closed again for the next round or the next game. In this fashion, the user can easily collect the projectiles in one location and retrieve them from box 70 without the need to remove targeting sheet 65 between each turn.

[0025] As shown in FIG. 5, the targeting sheet 65 can have a well-known bullseye design comprised of a series of concentric rings. The design displayed on the targeting sheet can of course be anything and the bullseye shown in FIG. 5 is for illustrative purposes and is not intended to limit the invention in anyway.

[0026] The launcher can be used without a specialized target. For example, the projectiles P may be launched into a bucket or the like. The launcher may also be used in the manner of a sling shot. Additionally, the recess of the launcher may be shaped to hold spherical projectiles such as paint balls, BB pellets, ball bearings, or the like.

[0027] Although specific embodiments of the invention have been described herein in some detail, this has been done solely for the purposes of explaining the various aspects of the invention, and is not intended to limit the scope of the invention as defined in the claims which follow. Those skilled in the art will understand that the embodiment shown and described is exemplary, and various other substitutions, alterations and modifications, including but not limited to those design alternatives specifically discussed herein, may be made in the practice of the invention without departing from its scope.

What is claimed is:

1. An apparatus for launching a projectile, comprising:
an elongate body having a first end, a second end, a front face, and a back face; and

a recess formed in said front face of said body proximal said first end of said body, said recess having a first portion and a second portion, said second portion of said recess being shaped to hold a projectile when said body is in a first, pre-launch position said first portion of said recess forming a ramp to direct said projectile in a forwardly direction when said body is moved to a second, launch position.

2. The apparatus of claim 1, wherein said ramp of said recess is slightly concave.

3. The apparatus of claim 1, wherein said body is shaped to hold a disc-shaped projectile.

4. The apparatus of claim 1, further comprising:
a handle proximal said second end of said body.

5. The apparatus of claim 4, wherein said handle is on said second end of said body.

6. The apparatus of claim 4, further comprising:
a plurality of contoured formations along said handle, forming a grip.

7. The apparatus of claim 1, wherein said first portion of said recess is in open communication with said front face and said first end of said body.

8. A game assembly, comprising:
a launching apparatus, said launching apparatus comprising:
an elongate body having a first end, a second end, a front face, and a back face; and

a recess formed in said front face of said body proximal said first end of said body, said recess having a first portion and a second portion, said second portion of said recess being shaped to hold a projectile when said body is in a first, pre-launch position said first portion of said recess forming a ramp to direct said projectile in a forwardly direction when said body is moved to a second, launch position; and

target for indicating impact of said launched projectile.

9. The assembly of claim 8, wherein said target comprises:
a receiving structure having a front, target wall having an opening; and
a target sheet positioned over said opening in said front wall.

10. The assembly of claim 9, wherein said target has a back wall, an upper wall, a lower wall, a first side wall, and a second, opposite side wall.

11. The assembly of claim 10, wherein said bottom wall is pivotally connected to said back wall.

12. The assembly of claim 11, further comprising:
   a latch on said front wall, said latch selectively securing said bottom wall in a closed position.

13. The assembly of claim 8, wherein said target sheet is held in place by at least one leaf spring.

14. A method of launching a projectile at a target, comprising:
   providing a launcher comprised of an elongate body having a first end, a second end, a front face, and a back face;
   providing a recess formed in said front face of said body proximal said first end of said body, said recess having a first portion and a second portion, said second portion of said recess being shaped to hold a projectile, said first portion of said recess forming a ramp to direct said projectile in a forwardly direction; and
   providing a target;
   placing a projectile in said recess;
   positioning said launcher in a pre-launch position wherein said first end of said launcher is tilted at a slight angle away from said target;
   flinging said first end of said launcher toward said target such that said projectile is ejected from said chamber toward said target.

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