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(54) **GOLF SWING TRAINING SYSTEM**

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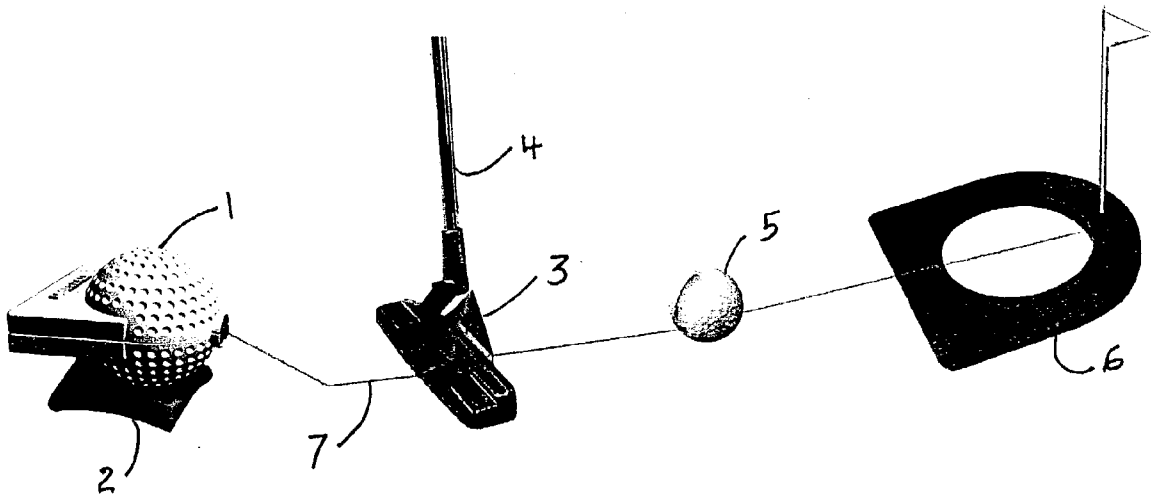
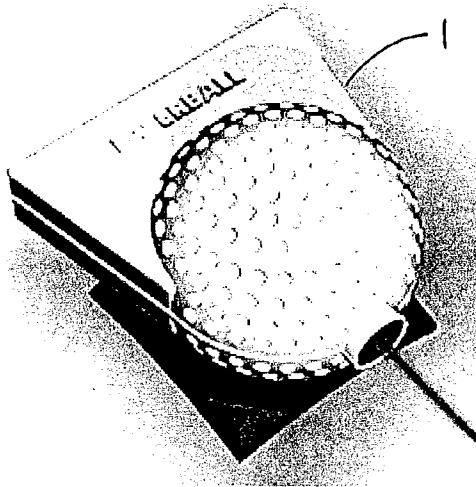
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(57) **ABSTRACT**

A golf swing learning and practice device utilizing a laser light beam to produce a continuous, highly visible light line on floor or wall. The device enables a golfer to visually monitor and correct his golf swing.

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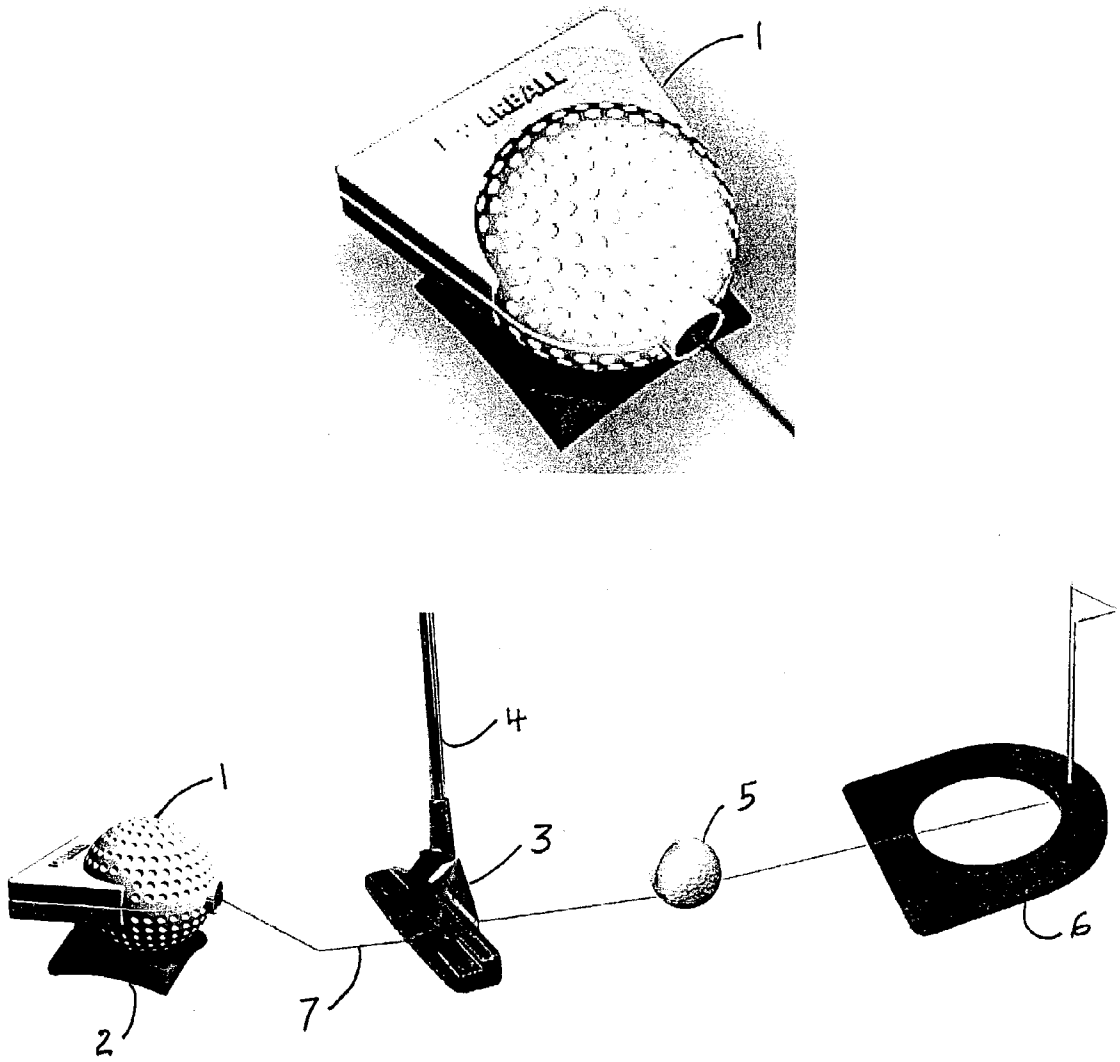


FIG. 1

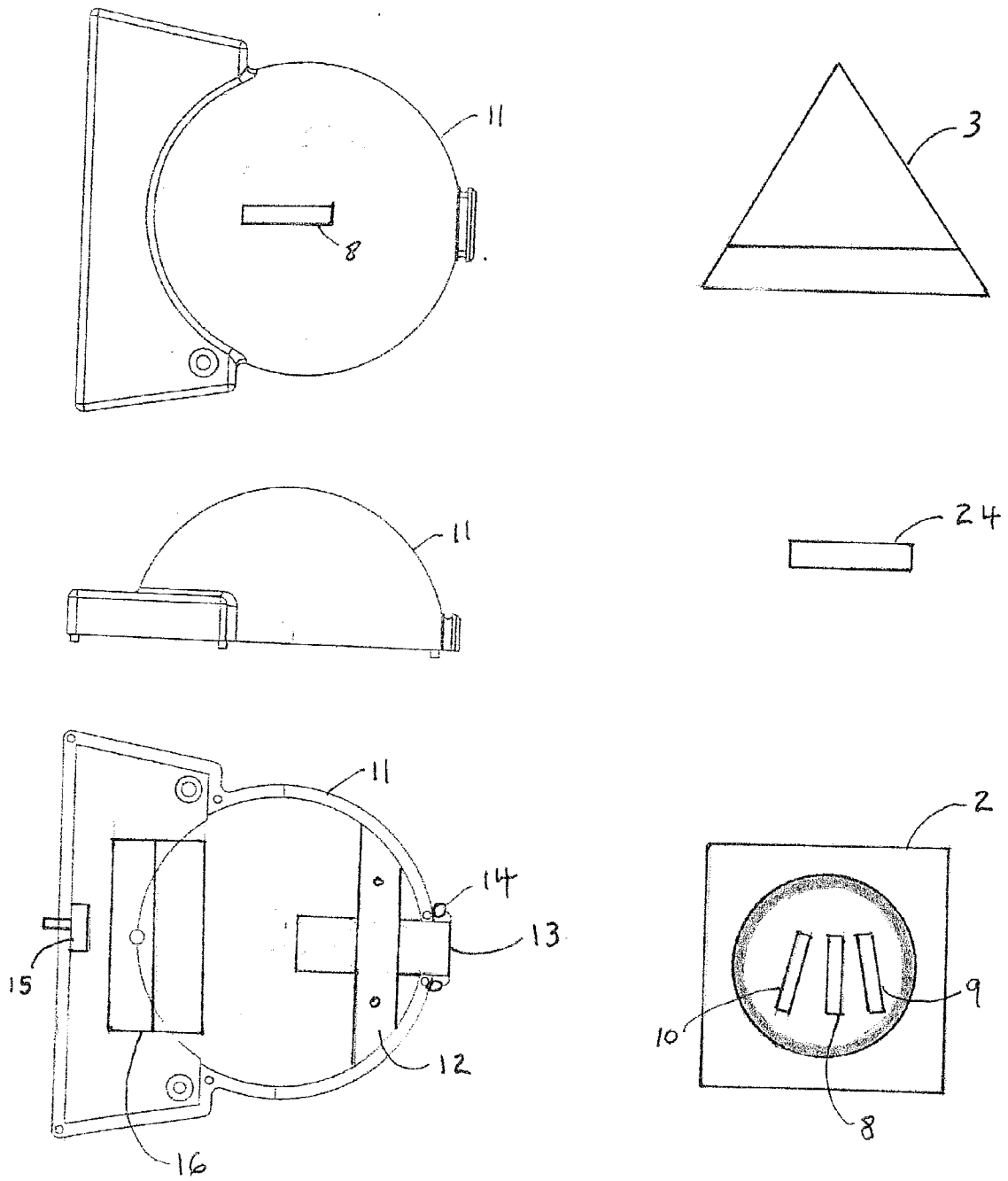


FIG. 2

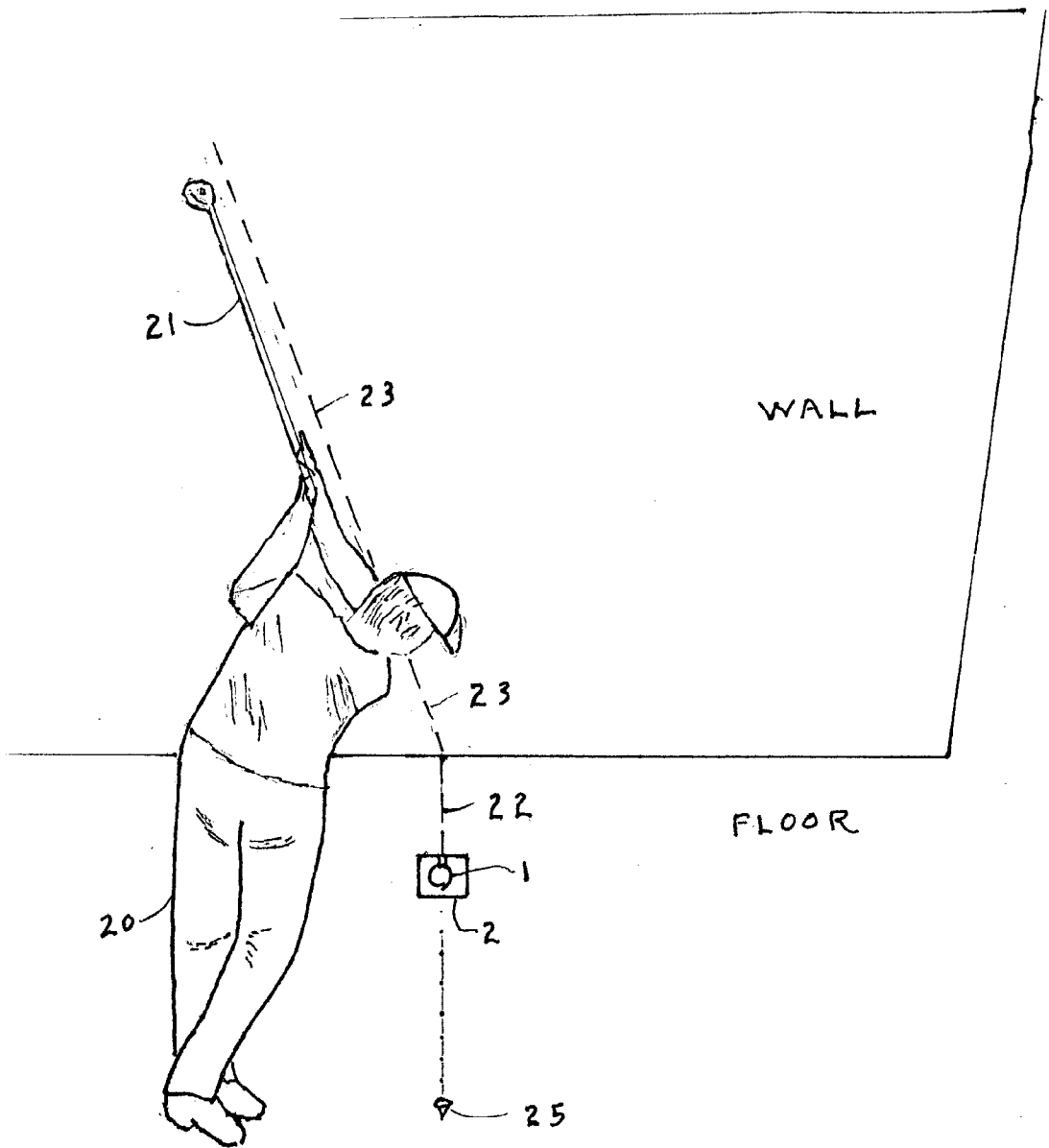


FIG. 3

**GOLF SWING TRAINING SYSTEM****CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims the benefit of Provisional Patent Application Serial No. 60/379,805 filed May 13, 2002 by the present inventors.

**BACKGROUND OF THE INVENTION****[0002] 1. Field of the Invention**

[0003] This invention generally relates to golf swing training and practice devices utilizing visible laser produced light lines. More particularly, the present invention relates to a golf swing training system employing a light line source not attached to the golf club and directed downward from an elevated position, which results in a highly visible light at ground level.

**[0004] 2. Description of Prior Art**

[0005] Prior art has disclosed projecting a laser light line from the ground level, from a device attached to the club or producing a non-solid light line. This invention provides a highly visual light line by projecting down from an elevated level. When a laser is employed at ground level the brightness of the light line is greatly reduced. Connecting a device to the golf club changes the feel and balance of the club and interferes with the golfer's swing. When dot or pointer lasers are used, they do not produce a continuous light line.

**SUMMARY OF THE INVENTION (OBJECTIVES)****[0006] 1. Objective of the Invention**

[0007] The objective of this invention is to provide a golf practice and learning device. Another objective of this invention is to provide visual feedback of the golf club swing measured against a desired swing path. Another objective of this invention is to provide means to properly align the golf club face prior to beginning the swing. Another objective of this invention is to provide a system suitable for use with a putter or other golf club.

**[0008] 2. Brief Description of Invention as Claimed**

[0009] This invention provides for a unit, which houses a laser lens combination, a power source and a switch. This invention also provides a base pad to support the housing in various positions. This invention also provides a target, which reflects the laser light beam and a golf cup.

**LIST OF DRAWINGS****Brief Description of Drawings**

[0010] **FIG. 1** is a schematic illustration of the golf apparatus used in putting training and practice device according to the invention.

[0011] **FIG. 2** is a drawing illustration of the light beam generator system components.

[0012] **FIG. 3** is a schematic illustration of an alternative embodiment wherein the laser light beam generator is used as a golf swing training and practice device according to the invention.

**DETAIL DESCRIPTION OF PREFERRED EMBODIMENTS**

[0013] This invention will now be described more fully hereafter with reference to the accompanying drawings with preferred embodiments as shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Rather, these illustrated embodiments are provided so that this disclosure will be thorough and complete and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout. The invention provides a laser light beam generator assembly **1**, base **2**, target **3**, and cup **6**. The laser light beam generator assembly includes an upper housing and lower housing **11**. The lower housing contains a laser lens assembly **13**, retaining clamp **12**, switch **15**, batteries and holder **16**. The laser light beam generator assembly is placed and supported on a base **2** and positioned by a locating key **24**. The invention is designed to be used in two different modes. First, to be used with a golf putter and second to be used with other golf clubs. When used to improve putting ability as illustrated in **FIG. 1**, the invention provides:

[0014] a) A learning device to improve putting stroke, timing, accuracy, consistency and ability

[0015] b) A teaching device to demonstrate proper putting technique when giving instruction to golf students

[0016] c) A device to challenge putting ability and provide accurate visual feedback during recreational putting practice through laser tracking and guidance of putting stroke

[0017] To operate the device, the support base **2** is placed on the top surface of a desk, table or similar elevated surface. The laser beam generator assembly **1** is placed on base **2** indexed by key **24** in slot **8**. When the unit is turned on, a light beam **7** is projected down at an angle of approximately thirty degrees and forward on the putting surface for a distance of approximately twenty feet to the putting cup as shown in **FIG. 1**. The act of projecting the laser light beam down and forward greatly increases the brightness of the light line on the putting surface, putter face **4**, golf ball **5** cup **6** and target **3**. The person putting may take a position at a desired distance from the cup **6**. The golf ball **5** is placed on the laser lens light line **7** and putted. The direction of the ball **5** relative to the light line **7** can be observed from the point of contact through the entire path of the ball **5** to the putting cup **6**. The variance between the ball **5** in motion and the light line **7** can be reduced with repetition and/or modification of the putter's swing path.

[0018] A valuable training and teaching method using this technique to improve putting skills can be achieved by observing the light line **7** reflection on the putter face **4** by attaching a laser reflecting target **3** in the form of a red plastic material to the strike zone on the putter face **4**. As the putter **4** swings backward and forward, the laser light line **7** is reflected on the target **3** visually indicating if the putter **4** travels along the intended line. If the light line **7** reflected on the target **3** remains on the apex of the target **3** throughout the putting stroke, the stroke is perfect (straight backward and forward). Deviations of the light line **7** to one side or the other from the target **3** apex indicates a "push" or "pull" putt.

When the putting stroke drives the golf ball **5** towards the cup **6** the laser light line **7** remains visible on the putting surface and also on the golf ball **5** and cup **6**. If the path of the golf ball deviates from the laser light line **7**, the reflection no longer appears on the golf ball **5** as it tracks either to the right or left. A perfect putt will be indicated when the laser light line **7** remains on the golf ball **5** throughout its travel to cup **6**. The golfer can also check the alignment of the putter **4** by observing the position of the light line **7** on the putter face **4**. The golf swing training device can also be used with a golf club other than a putter as illustrated in **FIG. 3**. The laser light beam generator **1** and base **2** can be positioned on an elevated surface as shown in **FIG. 1** or on the putting surface approximately three feet in front of a blank wall as shown in **FIG. 3**. The laser light beam generator **1** is placed on the base **2** and indexed by key **24** in slot **9** for a right handed golfer or slot **10** for a left handed golfer. **FIG. 3** illustrates a right-handed golfer arrangement. The laser light line **22** will travel straight forward on the floor surface to the wall and continue up the wall at a prescribed angle as illustrated by line **23**. The golfer **20** takes a position six to ten feet from the wall as shown in **FIG. 3**. The laser light line **22** defines the direction the golfer intends the ball to travel when struck. Laser light line **23** defines the proper plane the golf club **21** should follow to hit a straight shot. The visual feedback available to the person swinging the golf club **21** demonstrates whether the swing follow through is properly on track or to the left or to the right. The variance from line **23** can be reduced with repetitive swings. Intended deviation of golf club swing path **21** relative to line **23** can be achieved to practice draw or fade shots.

DESCRIPTION OF THE DRAWING

- [0019] 1. Laser Light Beam Generator
- [0020] 2. Base
- [0021] 3. Target
- [0022] 4. Putter
- [0023] 5. Golf Ball
- [0024] 6. Cup
- [0025] 7. Laser Light Line
- [0026] 8. Center Key Cavity
- [0027] 9. Left Key Cavity
- [0028] 10. Right Key Cavity
- [0029] 11. Lower Housing
- [0030] 12. Clamp
- [0031] 13. Laser Lens Assembly
- [0032] 14. "O" Ring
- [0033] 15. Switch
- [0034] 16. Battery Holder

- [0035] 17. Light Line
- [0036] 18. Light Line
- [0037] 19. Light Line
- [0038] 20. Golfer
- [0039] 21. Golf Club
- [0040] 22. Light Line
- [0041] 23. Light Line
- [0042] 24. Index Key
- [0043] 25. Tee Position
- [0044] 26. Imaginary Line

That which is claimed:

1. A golf club swing training system comprising:
  - a laser and lens light source capable of projecting a continuous highly visible light line onto a flat surface.
  - a laser lens housing assembly capable of directing a highly visible light line on a flat surface at various angles.
  - a method of teaching and learning proper swing technique via accurate visual feedback from a laser lens generated light line and light reflection.
2. The golf swing training system of claim 1 where a housing assembly can project a laser light beam down to a flat surface from an elevated position.
3. The golf swing training system of claim 1 wherein a housing, which incorporates a laser lens combination, lens, switch and power supply can be positioned to direct a laser light beam in various directions.
4. The golf swing training system of claim 1 wherein a base that supports a housing assembly can index the position of the housing assembly and direction of a laser light beam.
5. The golf swing training system of claim 1 wherein a housing assembly that can project a laser light beam onto a flat surface such as a floor and when intersecting a vertical wall can continue as a straight light beam up the wall at a prescribed angle.
6. The golf swing training system of claim 1 wherein movement of a light line reflecting on a golf putter face during the putting stroke provides visual feedback defining the path of the putter head relative to a visual light line leading to a putting cup.
7. The golf swing training system of claim 1 wherein a visible light line reflects upon a golf ball and remains visible on the golf ball as long as the struck ball remains on visible light line directed to a specific target.
8. The golf swing training system of claim 1 wherein a light reflecting target is attached to the putter head face to provide visual feedback defining the path of the putter head relative to a visual light line leading to a putting cup.

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