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Malamitsas

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(54) **PUTTER STROKE TRAINING DEVICE**

(71) Applicant: **Benjamin Pierre Malamitsas**, Encinitas, CA (US)

(72) Inventor: **Benjamin Pierre Malamitsas**, Encinitas, CA (US)

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A63B 69/36 (2006.01)

(52) **U.S. Cl.**
CPC ***A63B 69/3685*** (2013.01)

(58) **Field of Classification Search**
USPC 473/221, 222, 225, 229, 257, 258, 259, 473/261
See application file for complete search history.

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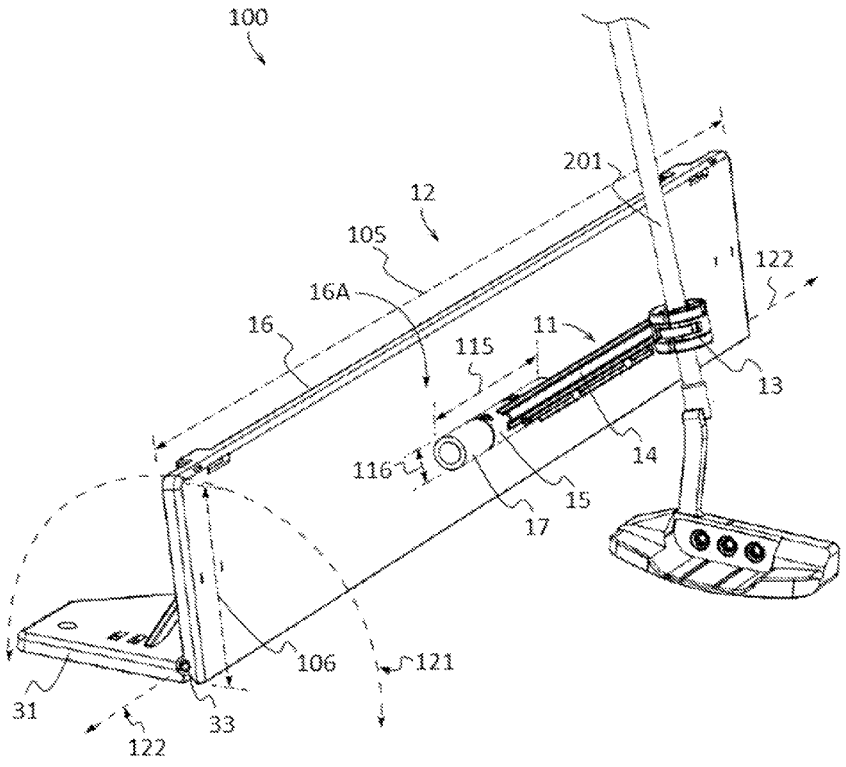
Primary Examiner — Nini Legesse
(74) *Attorney, Agent, or Firm* — PatentFile, LLC; Bradley C. Fach; Steven R. Kick

(57) **ABSTRACT**

A putter stroke training device comprising a putter guide apparatus having a shaft clamp configured to removably secure a golf putter shaft, an arm extension comprising a first end and a second end, wherein the shaft clamp may be coupled to the first end of the arm extension and the arm extension may be configured to extend away from the putter shaft, and wherein a rail contact member may be coupled to the second end of the arm extension; and a putter rail apparatus which may comprise a contact rail with a contact surface configured to make contact with the rail contact member of the putter guide apparatus.

20 Claims, 9 Drawing Sheets



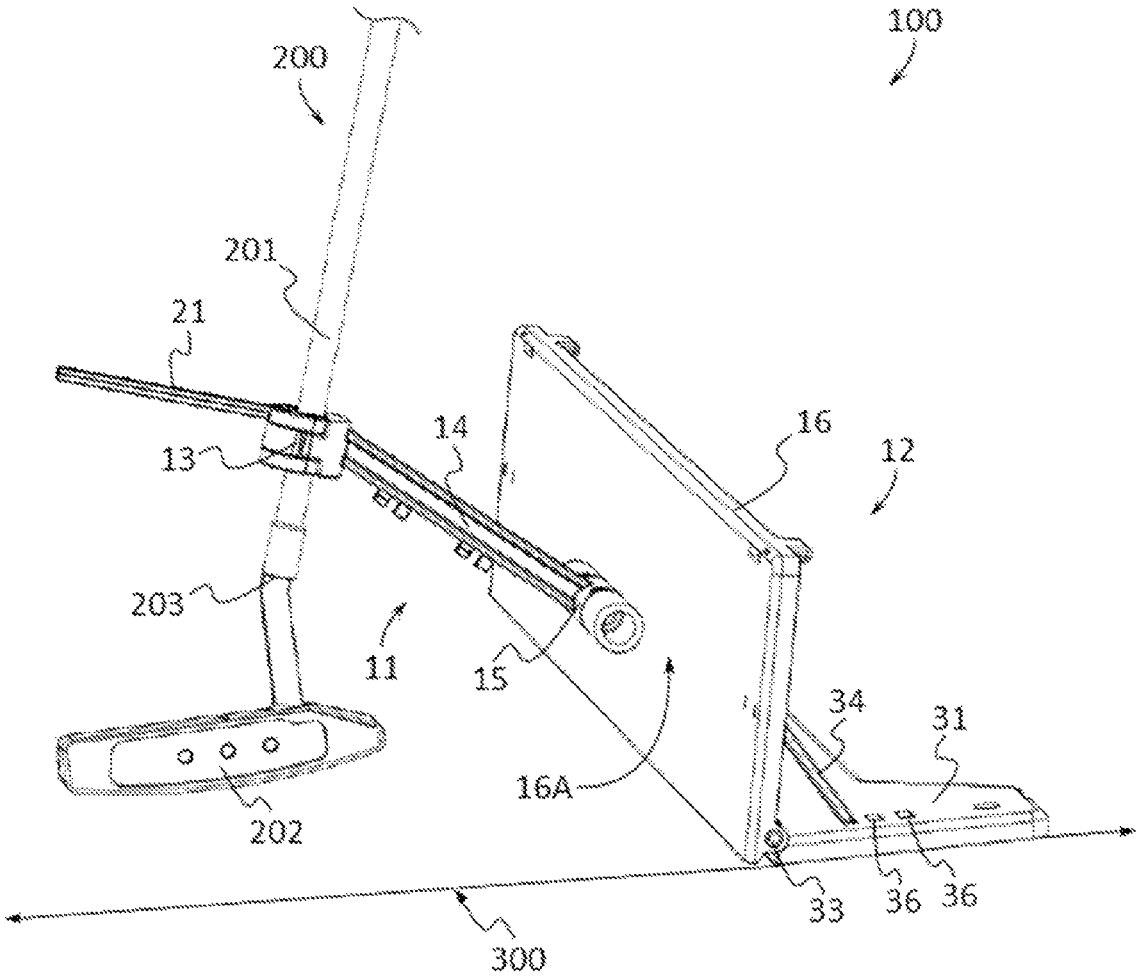


FIG. 1

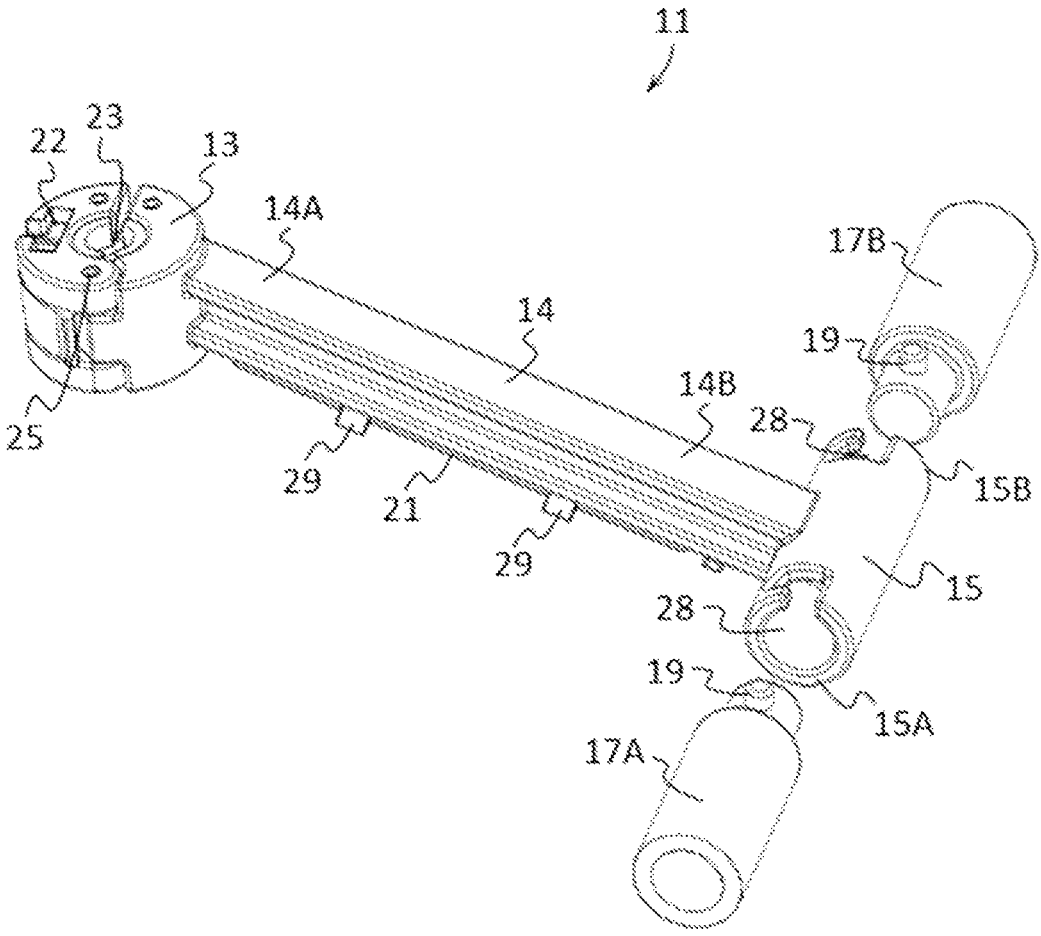


FIG. 2

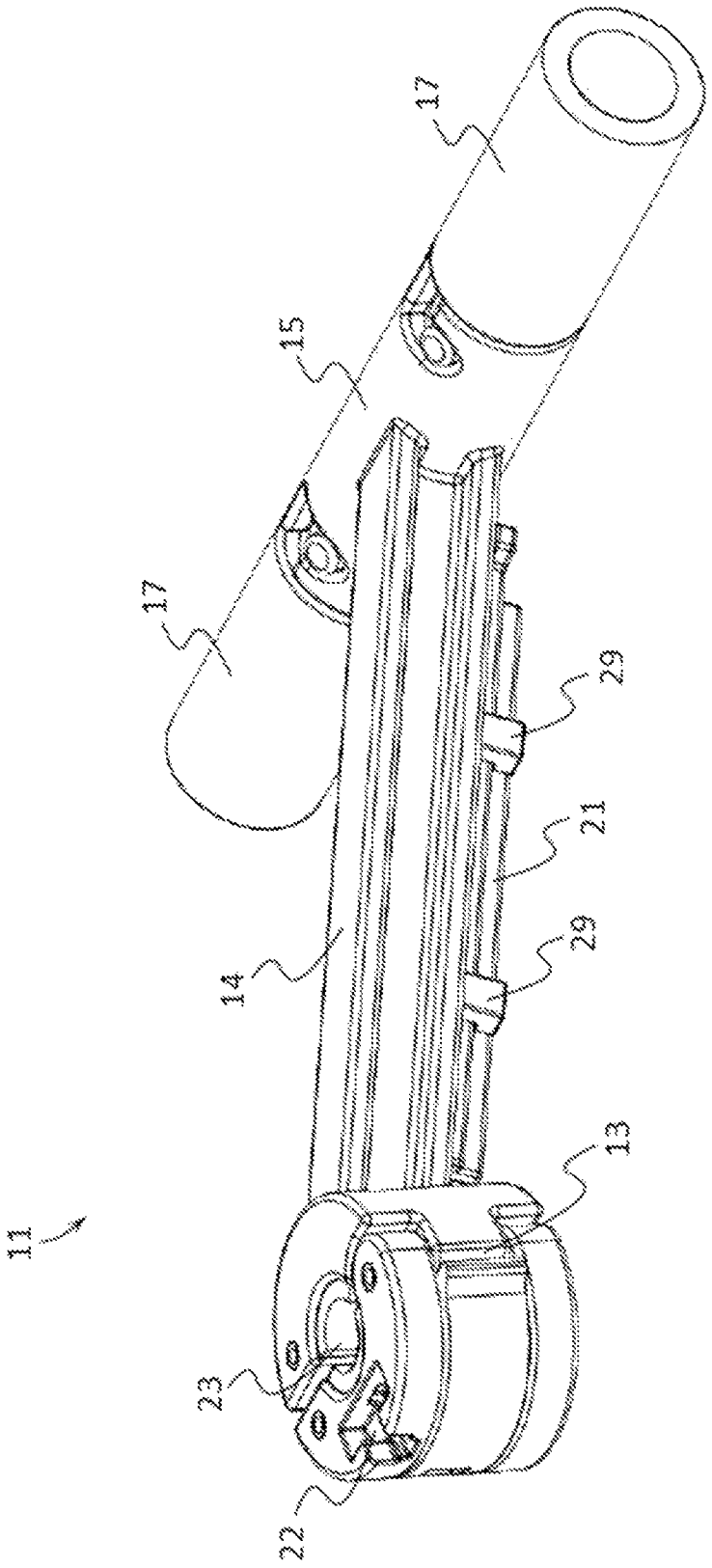


FIG. 3

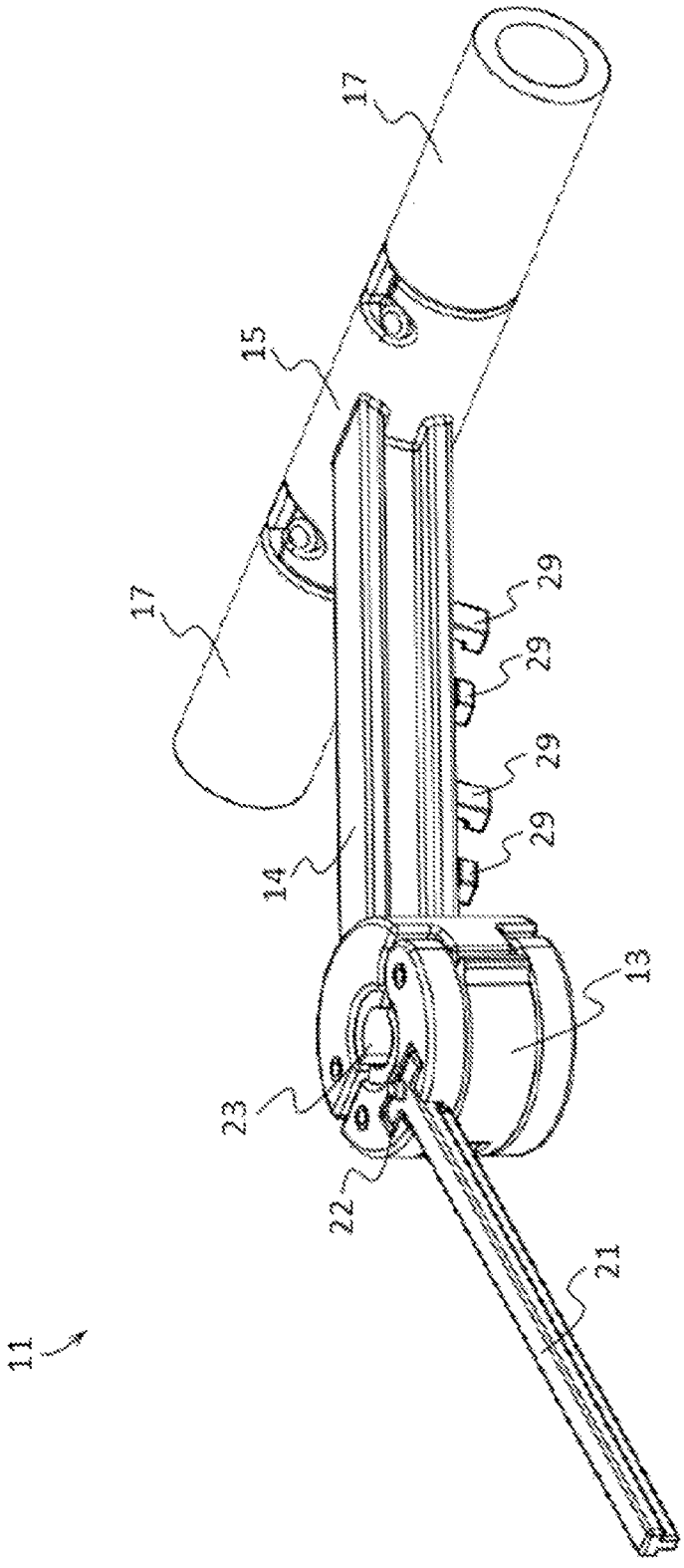


FIG. 4

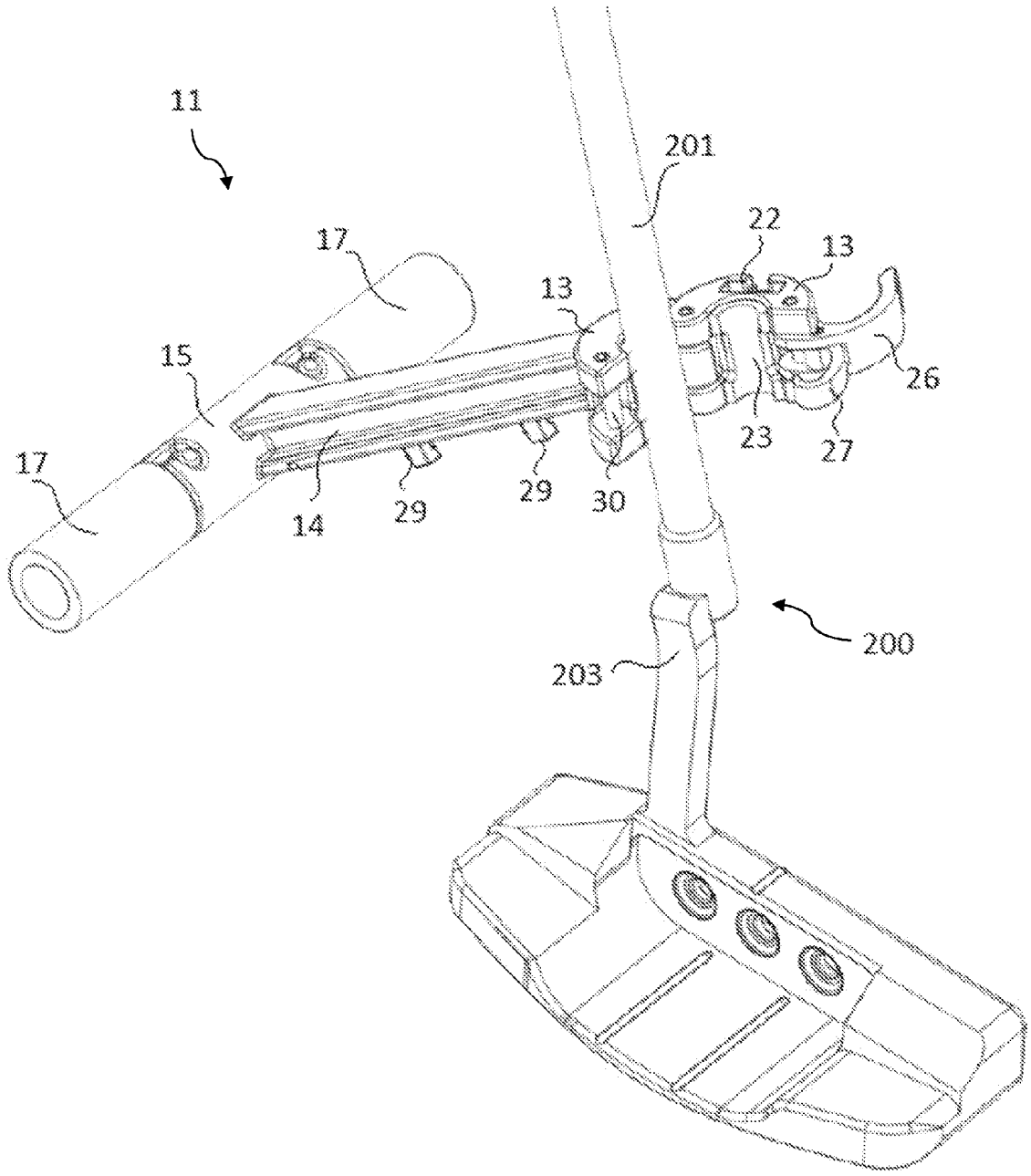


FIG. 5

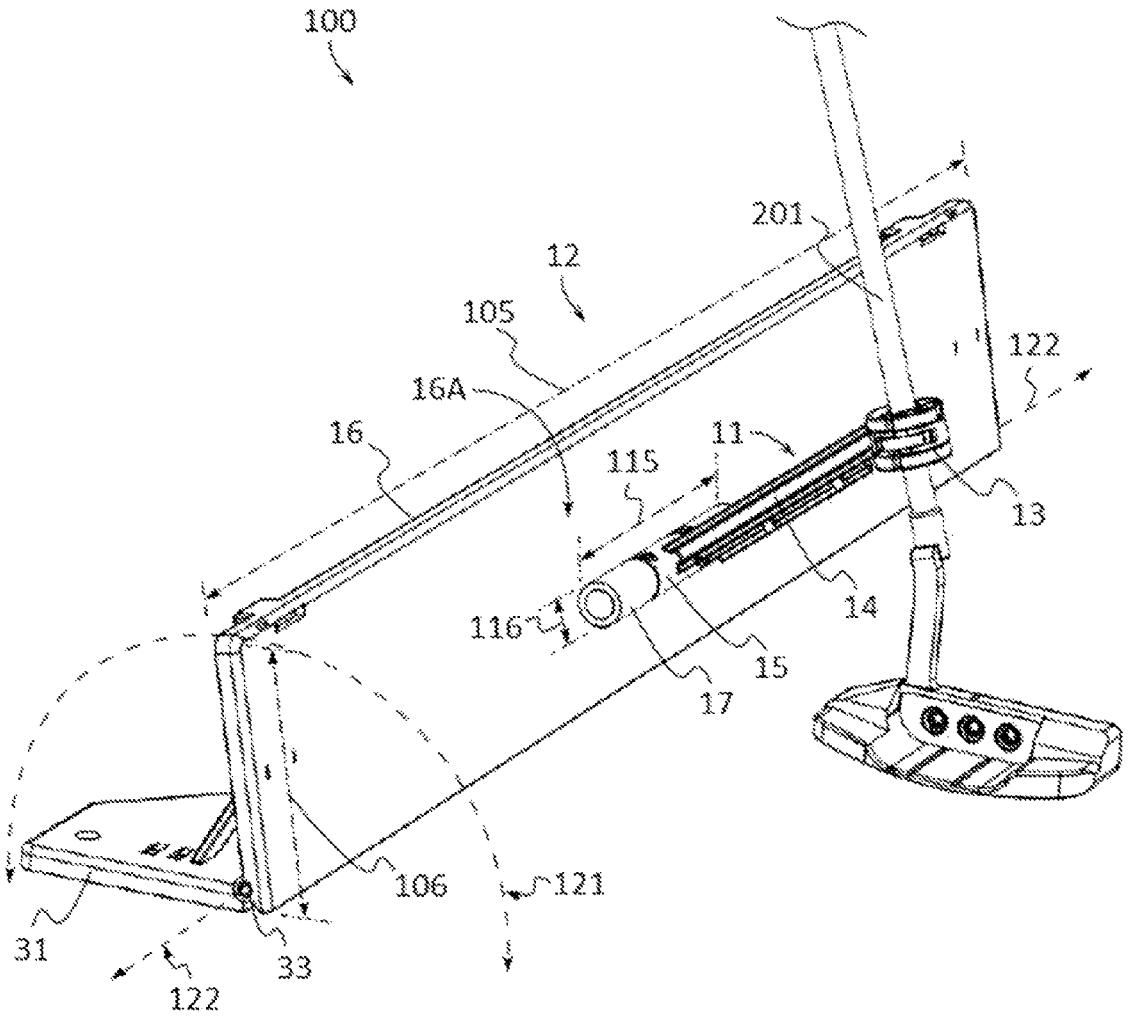


FIG. 6

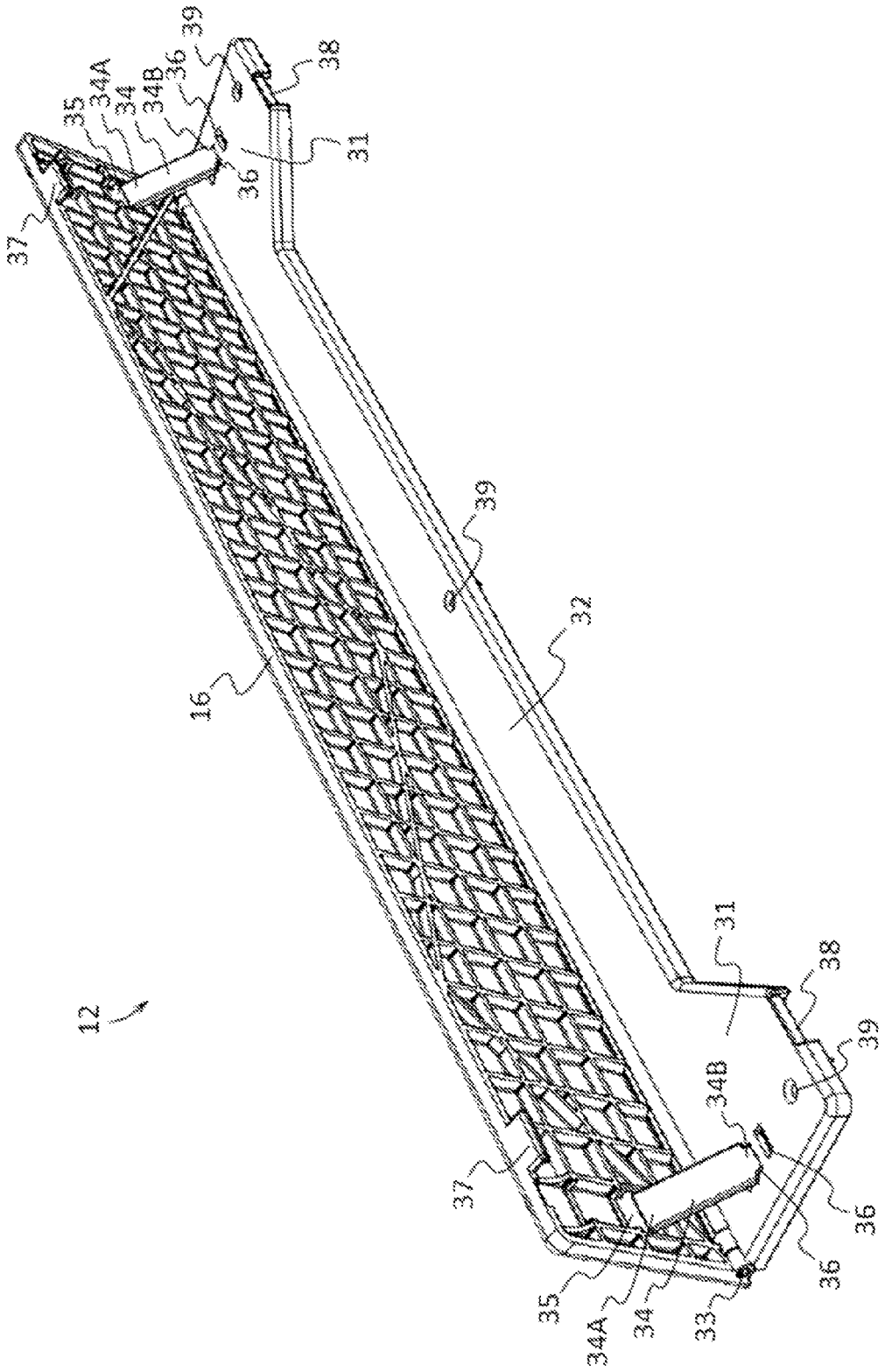


FIG. 7

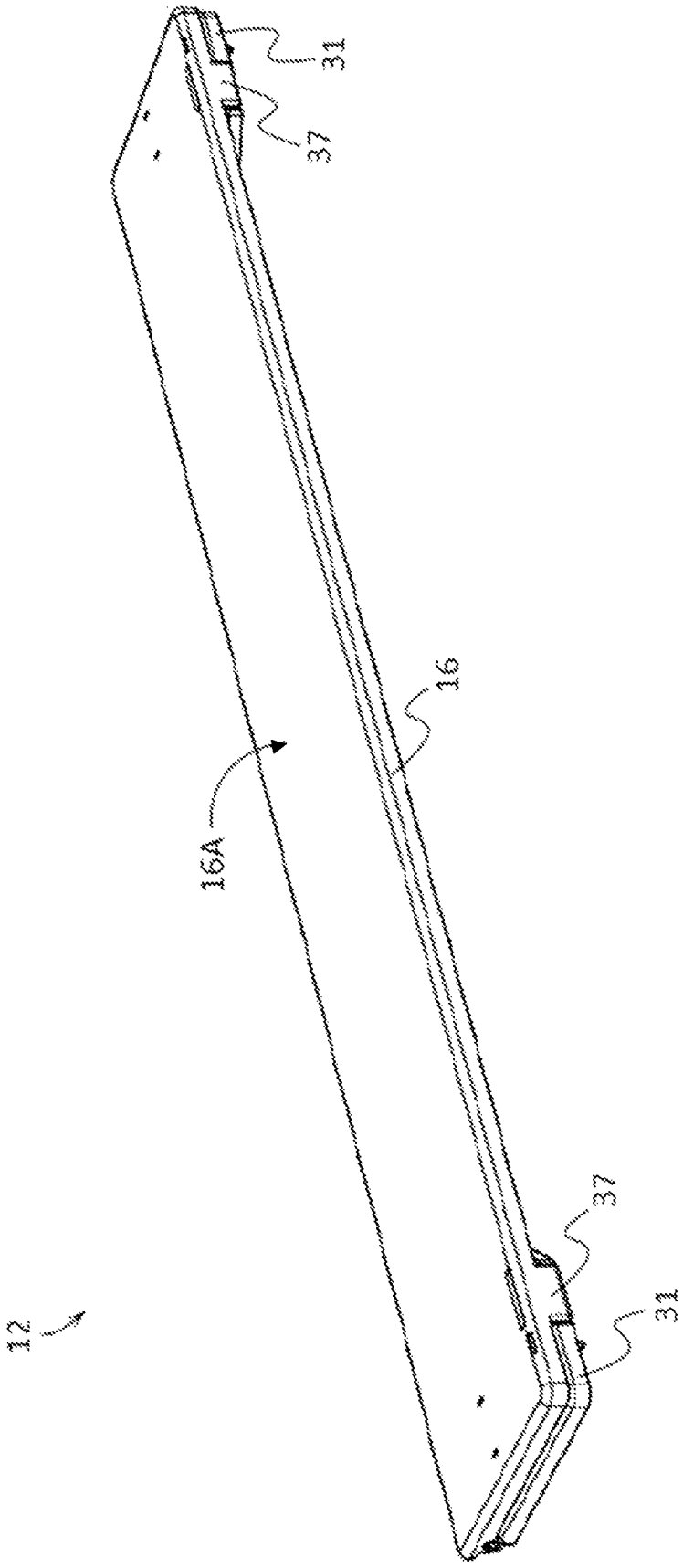


FIG. 8

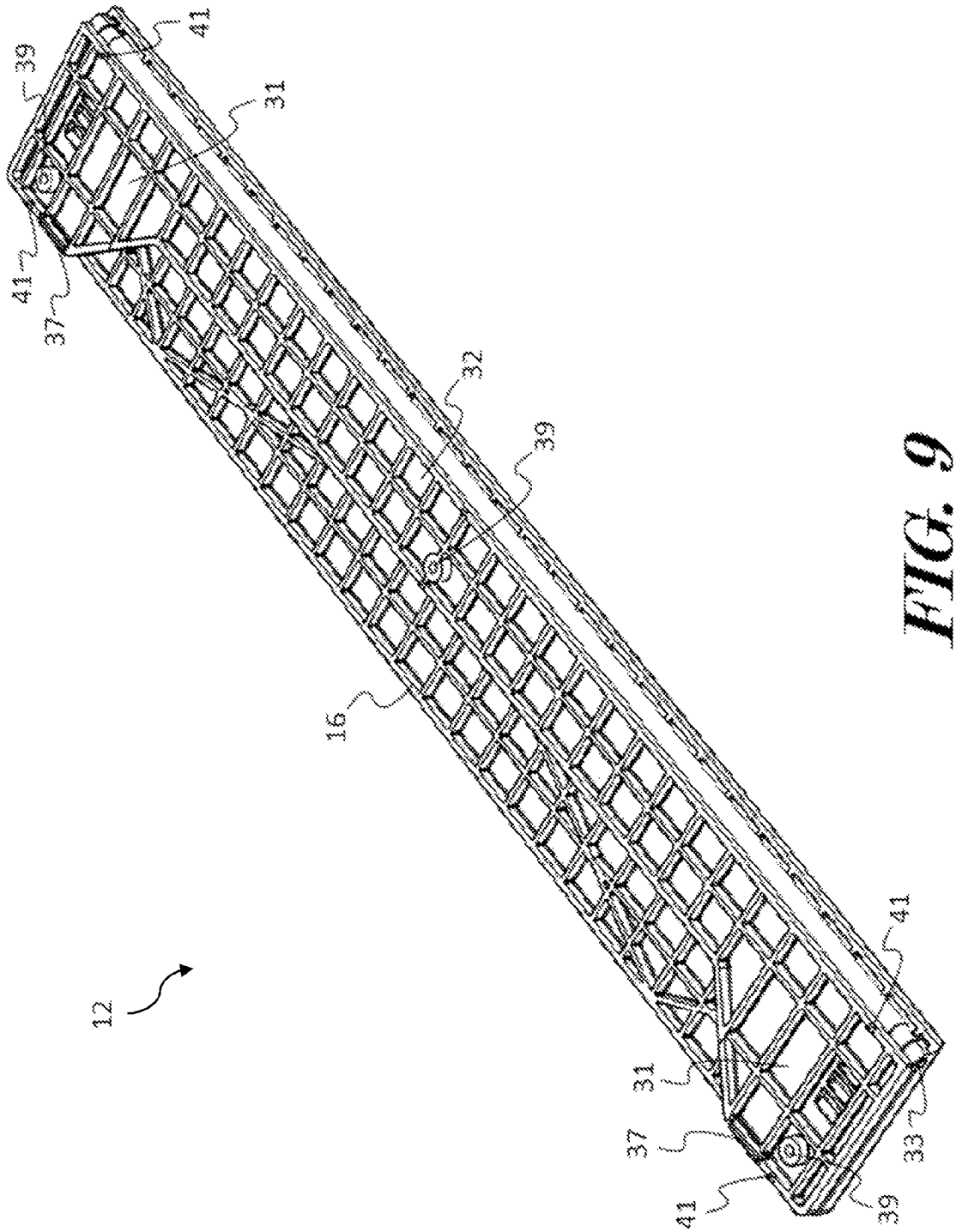


FIG. 9

PUTTER STROKE TRAINING DEVICE

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority to and the benefit of the filing date of U.S. Provisional Application No. 61/942,763, filed on Feb. 21, 2014, entitled "PUTTING GUIDE APPARATUS AND METHODS", which is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

The present invention relates to novel golf enhancing devices and methods for use with golf training activities. More particularly, the invention relates to a putter guide device configured to attach to a wide variety of golf putters to ensure a desired putter orientation throughout a putting stroke.

BACKGROUND

In the game of golf, the winner is determined to be the player that expended the least number of club swings to place the ball in each of eighteen cups of a golf course. As such, it is of paramount important for a golfer to develop a consistent and precise swing, commonly referred to a stroke.

If a consistent stroke is important in the game of golf, then it is often argued that the aspect of putting benefits the most from this consistency. The object of the putting stroke is to strike the ball with the face of the putter club so that the ball travels in the intended line toward the golf cup. Typically, this requires that the face of the putter be precisely perpendicular to the intended path of the ball and that the face of the putter be maintained in this proper perpendicular orientation throughout the putting stroke.

Developing a consistent putting stroke and maintaining the putter face in a perpendicular orientation is one of the most challenging aspects of the game. The human body is comprised of more joints that pivot and rotate during the putting stoke than is convenient to enumerate. Training the various muscles that control these joints to move in a consistent fashion is one recognized way to develop and maintain a consistent putting stroke.

While there are devices and methods that aim to train the golfer to swing the putter in a consistent manner throughout the stroke, they are limited in certain aspects that prevent them from having universal application. Putting guide devices in the prior art are either incompatible with all types and styles of golf putters, or they are unable to accommodate the various body types and postures of golfers. These limitations require golfers and golf trainers to buy multiple training devices in order to find one that is beneficial to a particular golfer. Frequently, a golfer's body composition and posture change over time requiring further training device experimentation.

Therefore, a need exists for a novel putting guide apparatuses and methods that are capable of training the various muscles and joints employed during the putting stroke to move in a consistent fashion. There also exists a need for a putting guide apparatus that can be attached to all of the widely varied types of golf putters available. Finally, there exists a need for a putting guide apparatus that can be used by golfers with infinitely varied body types and postures.

BRIEF SUMMARY OF THE INVENTION

A novel putter stroke training device in provided. In some embodiments, the device may comprise a putter guide apparatus comprising a shaft clamp configured to removably secure a golf putter shaft, an arm extension comprising a first end and a second end, wherein the shaft clamp may be coupled to the first end of the arm extension and the arm extension may be configured to extend away from the putter shaft, and wherein a rail contact member may be coupled to the second end of the arm extension; and a putter rail apparatus which may comprise a contact rail with a generally planar contact surface configured to make contact with the rail contact member of the putter guide apparatus.

In further embodiments, the putter rail apparatus may comprise a contact surface which may be substantially planar and may have a first length (L**1**) and a first width (W**1**); the rail contact member of the putter guide apparatus may comprise a second length (L**2**) and a second width (W**2**); and the first length (L**1**) may be greater than the second length (L**2**) and the first width (W**1**) may be at least 150% greater than the second width (W**2**).

In still further embodiments, the putter guide apparatus may comprise a removable putter guide extension which may be removably coupled to the rail contact member.

BRIEF DESCRIPTION OF THE DRAWINGS

Some embodiments of the present invention are illustrated as an example and are not limited by the figures of the accompanying drawings, in which like references may indicate similar elements and in which:

FIG. **1** depicts a perspective view of an example of a putter stroke training device comprising a putter rail apparatus and a putter guide apparatus secured to a putter club according to various embodiments described herein.

FIG. **2** illustrates a top perspective view of an example of a putter guide apparatus according to various embodiments described herein

FIG. **3** shows a side perspective view of an example of a putter guide apparatus according to various embodiments described herein.

FIG. **4** depicts a side perspective view of an example of a putter guide apparatus according to various embodiments described herein.

FIG. **5** illustrates a side perspective view of an example of a putter guide apparatus and putter club according to various embodiments described herein.

FIG. **6** shows a perspective view of an example of a putter stroke training device and a putter guide apparatus comprising a putter guide apparatus secured to a putter club according to various embodiments described herein.

FIG. **7** depicts a rear perspective view of an example of a putter rail apparatus according to various embodiments described herein.

FIG. **8** illustrates a top perspective view of an example of a putter rail apparatus according to various embodiments described herein.

FIG. **9** shows a bottom perspective view of an example of a putter rail apparatus according to various embodiments described herein.

DETAILED DESCRIPTION OF THE INVENTION

The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items. As used herein, the singular forms "a," "an," and "the" are intended to include the plural forms as well as the singular forms, unless the context clearly indicates

otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, steps, operations, elements, components, and/or groups thereof.

Unless otherwise defined, all terms (including technical and scientific terms) used herein have the same meaning as commonly understood by one having ordinary skill in the art to which this invention belongs. It will be further understood that terms, such as those defined in commonly used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and the present disclosure and will not be interpreted in an idealized or overly formal sense unless expressly so defined herein.

In describing the invention, it will be understood that a number of techniques and steps are disclosed. Each of these has individual benefit and each can also be used in conjunction with one or more, or in some cases all, of the other disclosed techniques. Accordingly, for the sake of clarity, this description will refrain from repeating every possible combination of the individual steps in an unnecessary fashion. Nevertheless, the specification and claims should be read with the understanding that such combinations are entirely within the scope of the invention and the claims.

New golf training apparatuses and methods are discussed herein. In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be evident, however, to one skilled in the art that the present invention may be practiced without these specific details.

The present disclosure is to be considered as an exemplification of the invention, and is not intended to limit the invention to the specific embodiments illustrated by the figures or description below.

The present invention will now be described by referencing the appended figures representing preferred embodiments. FIG. **1** illustrates an example of a putter stroke training device **100** according to various embodiments described herein. In this example, the putter stroke training device **100** comprises a putter guide apparatus **11** and a putter rail apparatus **12**. A putter guide apparatus **11** may be configured to removably secure to a golf club such as a putter club **200**. In some embodiments, a putter guide apparatus **11** may comprise a shaft clamp **13**, an arm extension **14**, and a rail contact member **15**. An arm extension **14** may comprise a first end **14**A and a second end **14**B which is configured to extend away from the first end **14**A. A shaft clamp **13** may be configured to removably secure a shaft of a putter club **201** and may be coupled to the first end **14**A of the arm extension **14**. A rail contact member **15** may be configured to contact a portion of the putter rail apparatus **12** and may be coupled to the second end **14**B of the arm extension **14** allowing the rail contact member to extend away from the shaft clamp **13**.

A putter rail apparatus **12** may comprise a contact rail **16** which may be supported and positioned at an angle relative to a surface such as the ground **300** that the putter rail apparatus **12** is supported by. In some embodiments, the contact rail **16** may comprise a contact surface **16**A configured to allow portions of the putter guide to contact and move across or along the contact surface **16**A. In further embodiments, the putter rail apparatus **12** may be configured to direct the movement of a putter guide apparatus **11**, and a putter club **200** to which the putter guide apparatus **11** is secured to, as portions of the rail contact member **15** contact and move across the guide contacting surface **16**A of the contact rail **16**.

In some embodiments, a putter stroke training device may comprise: a putter guide apparatus **11** comprising a shaft clamp **13** configured to removably secure a golf putter shaft **201**, an arm extension **14** comprising a first end **14**A and a second end **14**B, to the shaft clamp **13** may be coupled to the first end **14**A of the arm extension **14** and may be configured to extend away from the putter shaft **201**, and wherein a rail contact member **15** may be coupled to the second end **14**B of the arm extension **14**; and a putter rail apparatus **12** having a contact rail **16** with a contact surface **16**A configured to make contact with the rail contact member **15** of the putter guide apparatus **11**.

FIG. **2** illustrates a side perspective view of an example of a putting guide **11** according to various embodiments of the present invention. In some embodiments, one or more putter guide extensions **17** may be removably coupled to the rail contacting member **15** and configured to further stabilize and guide the angle and distance of the putter club **200** from the putter rail apparatus **12** as the rail contact member **15** contacts and moves across the contact surface **16**A of the contact rail **16** (FIG. **1**). In preferred embodiments, portions of a rail contact member **15** and/or a putter guide extension **14** may be cylindrical in shape to facilitate movement of the rail contact member **15** and/or putter guide extension **14** across the contact surface **16**A of the contact rail **16** as a putter club **200** (FIG. **1**) and the putting guide apparatus **11** are swung by a user. In other embodiments, the rail contact member **15** and/or a putter guide extension **17** may be cylindrical in shape, oblong cylindrical in shape, or comprise a combination of substantially cylindrical shapes that facilitate the movement of the rail contact member **15** and/or a putter guide extension **17** across the contact surface **16**A of the contact rail **16** as a putter club **200** and the putting guide apparatus **11** are swung by a user.

In some embodiments, the putter guide apparatus **11** may comprise a removable first putter guide extension **17**A and/or a second removable putter guide extension **17**B which may be each be temporarily coupled to a distal end of a rail contact member **15** such as a first distal end of a contact member **15**A and a second distal end of a contact member **15**B, respectively. The rail contact member **15** may comprise a generally cylindrical shape which may be configured to contact and move across or along the contact surface **16**A (FIG. **1**). In further embodiments, a removable putter guide extension **17** may be removably coupled to the rail contact member **15** of the putter guide apparatus **11** with a fastener **19**. In some preferred embodiments, the fastener **19** may comprise a cam lock fastening method, in which the fastener **19** of a putter guide extension **17** may be inserted and rotated into a cam lock aperture **28** on a rail contact member **15** thereby frictionally and mechanically removably coupling a putter guide extension **17** to a rail contact member **15**.

In other embodiments, a putter guide extension **17** may be removably coupled to a rail contact member **15** by being press fit or snap fit together, by one or more fasteners such as hook and loop type or Velcro® fasteners, magnetic type fasteners, threaded type fasteners, sealable tongue and groove fasteners, snap fasteners, clip type fasteners, clasp type fasteners, ratchet type fasteners, a push-to-lock type connection method, a turn-to-lock type connection method, slide-to-lock type connection method or any other suitable temporary connection method as one reasonably skilled in the art could envision to serve the same function.

In some embodiments, the putter guide apparatus **11** may comprise a first putter guide extension **17**A and a second putter guide extension **17**B which may each be temporarily coupled to a contact member **15**. A first putter guide extension

17A and a second putter guide extension 17B may each also comprise a generally cylindrical shape and may be temporarily coupled to a first distal end of a contact member 15A and a second distal end of a contact member 15B, respectively. When a first putter guide extension 17A and a second putter guide extension 17B are coupled to the contact member 15, as the contact member 15 is contacting and moving across or along the contact surface 16A (FIG. 1), the first putter guide extension 17A and a second putter guide extension 17B may then also simultaneously contact and move across or along the guide contact surface 16A. In this manner, the amount of surface area of a putter guide apparatus 11 that is configured to contact the contact rail 16 may be adjusted. Without either a first putter guide extension 17 or a second putter guide extension 17 coupled to the contact member 15, the amount of surface area a putter guide apparatus 11 that is configured to contact the contact rail 16 may be limited to the surface area provided by the contact member 15. Coupling one of a first putter guide extension 17 or a second putter guide extension 17 to the contact member 15 may allow both the contact member 15 and a coupled putter guide extension 17 to provide surface area configured to contact the contact rail 16 that is greater than the surface area provided by the contact member 15 alone. Likewise, by coupling a first putter guide extension 17 and a second putter guide extension 17 to a first end of a contact member 15A and a second end of a contact member 15B, respectively, a contact member 15 and the first coupled putter guide extension 17 and second coupled putter guide extension 17 may provide surface area configured to contact the contact rail 16 that is greater than the surface area provided by the contact member 15 and one putter guide extension 17.

In some embodiments, where less stability is desired, one or more putter guide extensions 17 may be removed from the rail contact member 15 to provide less stability and guidance with respect to the angle and distance of the putter club 200 (FIG. 1) from the putter rail apparatus 12 (FIG. 1) for golfers including advanced golfers. In other embodiments, where more stability is desired, one or more putter guide extensions 17 may be removably coupled to the rail contact member 15 to provide greater stability and guidance with respect to the angle and distance of the putter club 200 from the putter rail apparatus 12 for golfers including moderately skilled golfers. In further embodiments, where even more stability is desired, one or more putter guide extensions 17 may be removably coupled to one or more putter guide extensions 17 that are already removably coupled to the rail contact member 15 to provide even greater stability and guidance with respect to the angle and distance of the putter club 200 from the putter rail apparatus 12 for golfers including novice golfers.

In other embodiments, one or more putter guide extensions 17 may be configured to temporarily attach to the putter guide apparatus 11 and further attach to other putter guide extensions 17 to provide combinations of putter guide extensions 17 with various lengths. In further embodiments, the putter guide extensions 17 may be temporarily attached to the putter guide apparatus 11 with a threaded screw type connection method, a push-to-lock type connection method, a turn-to-lock type connection method, or any other suitable temporary connection method as one reasonably skilled in the art could envision to serve the same function. In still further embodiments, one or more putter guide extensions 17 may be permanently attached to or integrally formed to the putter guide apparatus 11.

Turning now to FIG. 3 and FIG. 4 which depict a side perspective view of an example of a putter guide apparatus 11 according to various embodiments described herein is shown. In some embodiments, the putter guide apparatus 11 may comprise an alignment aid 21 which may be temporarily coupled to one or more locations on the putter guide apparatus 11 such as to the shaft clamp 13 (FIGS. 1 and 4) and/or to the arm extension 14 (FIGS. 2 and 3). An alignment aid 21 may be removably coupled to the shaft clamp 13 and configured to extend away from the arm extension to provide a method for maintaining the orientation of the putter face 202 of the putter club 200 (FIG. 1) relative to the user during the swing as the putter guide apparatus 11 contacts and moves across the putter rail apparatus 12 (FIGS. 1 and 6). The user may removably couple the alignment aid 21 to the shaft clamp 13 by inserting or frictionally securing a portion of the alignment aid 21 into an alignment aid recess 22 (FIGS. 2-5) although any other method of temporarily coupling the alignment aid 21 to the shaft clamp 13 may be used. As the user grips a putter club 200 (FIG. 1) that is removably secured to the putter guide apparatus 11, the eyes of the user may be positioned over the putter club 200 and the alignment aid 21 may be positioned so that it is parallel to the putter face 202 as viewed by the user. Optionally, the user may position the device 100 so that any portion of the putter club 200 may be parallel with the alignment aid 21 as viewed by the user. As the user moves the putter club 200, this method may be used to visualize how much wrist break the user has through impact of the putter club 200 with a golf ball. For example, the alignment aid 21 may be positioned to appear one quarter of an inch in front of and parallel to the putter face 202 as viewed by the user. As the putt is stroked, the positioning of the alignment aid 21 relative to the putter club 200 may be maintained. If when viewed by the user, the positioning of the alignment aid 21 relative to the putter club 200 appears to change, that may indicated that the user is breaking their wrists during the putt. In further embodiments, when the alignment aid 21 is not in use it may be to the arm extension 14 (FIGS. 2 and 3) by inserting and frictionally securing the alignment 21 between two or more clip arms 29 although any other method of temporarily coupling the alignment aid 21 to the putter guide apparatus 11 may be used.

Referring now to FIG. 5, a side perspective view of an example of a putter guide apparatus 11 comprising a shaft clamp 13 and a putter club 200 according to various embodiments described herein. A shaft clamp 13 may comprise a shaft aperture 23 which may be configured to receive the shaft of a putter club 201 generally above the hosel 203 of the putter club 200. In this embodiment, the shaft clamp 13 may comprise a clamp hinge 25 which may allow portions of the shaft clamp 13 to temporarily separate to allow the shaft of a putter club 201 to be secured and released from the shaft clamp 13. A shaft clamp 13 may further comprise a shaft clamp latch 27 which may be actuated by a shaft clamp handle 26. Portions of the shaft clamp latch 27 may be secured and released from portions of the shaft clamp 13 such as to a shaft clamp catch 30, thereby securing and releasing the shaft of a putter club 201 in the shaft aperture 23 by securing and releasing the shaft clamp handle 26.

In alternative embodiments, a shaft clamp 13 may comprise two fastener apertures which are configured to accept and secure one or more threaded fasteners such as a bolt and wing nut. In some embodiments, the shaft clamp 13 may comprise one, three, or more fastener apertures. The putter guide apparatus 11 may be secured to a putter club 200 by inserting the shaft 201 of the golf putter into the shaft clamp 13 and then tightening one or more threaded fasteners, such as a bolt type fastener and wing nut type fastener. In further embodiments, the threaded fasteners may be tightened and loosened by hand, while other embodiments may use fasten-

ers that may require the use of tools to tighten and loosen them. In other embodiments, one or more screw type, nut type, lever locking, or any other type of fastener of fastening method configured to removably secure a may be used to removably secure a golf putter shaft **201** to the putter guide apparatus **11** may be used.

In some embodiments, a compressionable material **24** may be configured to line the portions of the shaft aperture **23** which are configured to contact portions of a putter club **200** such as the shaft of the putter club **201**. In further embodiments, the shaft clamp **13** of the putter guide apparatus **11** may comprise a compressionable material **24** configured to make contact with and frictionally secure the shaft of a putter **201** above the putter hosel **203**. The compressionable material **24** may prevent the shaft clamp from damaging the putter club **200** and/or prevent the putter club **200** from being moved or removed from the shaft clamp **13** until the user releases the shaft of the putter club **201** from the shaft clamp **13** such as by releasing a shaft clamp latch **27** or other fastener. In further embodiments, a compressionable material **24** may comprise silicone rubber, ARTiLAGE foams, Poron foams, silicone foams, rubber foams, plastic foams, neoprene foam, latex foam rubber, polyurenthane foam rubber, or elastomer materials such as elastic plastics, elastic silicone, elastic rubbers, silicone rubbers, or any other suitable elastomer or resilient material.

FIG. **6** shows a perspective view of an example of a putter stroke training device **100** comprising a putter rail apparatus **12** and a putter guide apparatus **11** secured to a putter club **200** according to various embodiments described herein. In this illustration it can be seen that the putter stroke training device **100** is configured to provide a method for improving the putter stroke of a golfer to guide the movement of a putter club **200** by maintaining the angle and distance of the putter club **200** in relation to the putter rail apparatus **12**. In some embodiments, a putter guide apparatus **11** may comprise a shaft clamp **13** configured to removably secure a golf putter shaft **201** above the hosel **203**; an arm extension **14** coupled to the shaft clamp **13** at a first end **14**A and extending away from the putter shaft **201** at an angled orientation; and a rail contact member **15** coupled to the second end **14**B of the arm extension **14**. In some embodiments, the arm extension **14** may comprise an angled orientation with the arm extension angled away from the shaft clamp **13** between 10 and 180 degrees.

The shaft clamp **13** may be attached to the shaft **201** of the putter club **200** and therefore maintains the spatial relationship and orientation between the putter club **200**, arm extension **14**, and the contact member **15**. The rail contact member **15** and/or one or more putter guide extensions **17** may be configured to contact and slide along the contact surface **16**A of the contact rail **16** thereby guiding the angle and distance of the putter club **200** from the putter rail apparatus **12**. In preferred embodiments, the rail contact member **15** and/or one or more putter guide extensions **17** may be cylindrical in shape to facilitate movement of the rail contact member **15** and/or one or more putter guide extensions **17** across the contact surface **16**A of the contact rail **16** as a golf putter **200** and the putter guide apparatus **11** are swung by a user. In other embodiments, a putter guide **13** and/or one or more putter guide extensions **17** may be cylindrical in shape, oblong cylindrical in shape, or comprise a combination of substantially cylindrical shapes that facilitate the movement of the putter guide **13** across the rail **211** as a golf putter and the putting device apparatus **100** are swung by a user.

In preferred embodiments, the contact surface **16**A of the contact rail may comprise a generally or substantially planar shape which is configured to facilitate the contact and movement of the rail contact member **15** and/or one or more putter guide extensions **17** across the contact surface **16**A of the contact rail **16**. In further embodiments, the contact surface **16**A of the putter rail apparatus **12** may be substantially planar and have a first length (L**1**) **105** and a first width (W**1**) **106** which may define a generally rectangular shape. Also, the rail contact member **15** of the putter guide apparatus **11** may have a second length (L**2**) **115** and a second width (W**2**) **116** with said rail contact member **15** (and optionally extensions **17**) having a substantially cylindrical shape. In these embodiments, the first length (L**1**) **105** may be greater than the second length (L**2**) **115** and the first width (W**1**) **106** may be at least 50% greater but preferably at least 100% greater, and even more preferably at least 150% greater than the second width (W**2**) **116** so that the dimensions of the contact surface **16**A of the contact rail **16** may be substantially larger than the dimensions of the rail contact member **15**.

FIG. **7** depicts a rear perspective view of an example of a putter rail apparatus **12** comprises a contact rail **16** which is flexibly coupled with a support leg **31** and which may be secured into one of a plurality of angled positions relative to the ground **300** according to various embodiments described herein. Flexibly coupled may refer to a bendable attachment of a contact rail **16** to a support leg **31**, such as can be achieved by a hinge. A hinge may encompass any type of hinge known in the art, including so-called "living" hinges, which typically comprise a linear, relatively flexible area between two relatively more rigid components, such as a line of thin plastic between thicker plastic portions, as is well known in the art. In some embodiments, a rail hinge **33** may provide a flexible coupling or hinge between a contact rail **16** and a support leg **31** and may comprise a piano hinge which may be formed with one or more portions of a contact rail **16** which are configured to interlock with one or more portions of a support leg **31** thereby forming a flexible coupling which connects a contact rail **16** to a support leg **31** that is configured to allow an angle of rotation **121**, about the axis **122** provided by the rail hinge **33**, between the contact rail **16** and a support leg **31**. By changing the angle of rotation **121**, the contact rail **16** may be positioned in a plurality of angled positions relative to the ground **300** that the support leg **31** is contacting.

By flexibly coupling a support leg **31** to the contact rail **16**, the device **100** may be adjusted for golfers that stand closer to the ball and prefer to swing the putter club **200** in a line of travel closer to vertical, by changing the angle of the contact rail **16** relative to the ground and/or a support leg **31** may be decreased. Conversely, for golfers that stand further from the ball and prefer to swing the putter club **200** in a line of travel further from vertical, the angle of the contact rail **16** from vertical may be increased by changing the angle of the contact rail **16** relative to the ground and/or a support leg **31**.

In other embodiments, a rail hinge **33** may comprise a butt hinge, barrel hinge, butt/Mortise hinge, case hinge, flag hinge, strap hinge, H hinge, HL hinge, piano hinge, butterfly hinge, flush hinge, barrel hinge, concealed hinge, continuous hinge, T-hinge, strap hinge, double-acting hinge, Soss hinge, counterflap hinge, flush hinge, coach hinge, rising butt hinge, double action spring hinge, tee hinge, friction hinge, security hinge, cranked hinge or storm proof hinge, lift-off hinge, self closing or self positioning hinge, flexible material hinge, or any other type or style of hinge suitable for flexibly coupling a contact rail **16** to a support leg **31**.

In this example, the putter rail apparatus **12** comprises a contact rail **16**, two adjustable support brace members **34**, a rail hinge **33**, six brace notches **36**, and two support legs **31**. A support brace member **34** may comprise a first end **34**A and a second end **34**B. The contact rail **16** of the putter rail appara-

tus **12** may be secured into one of a plurality of angled positions by a support brace member **34** having a first end **34**A rotatably coupled to the contact rail **16** and a second end **34**B configured to temporarily mate with a brace notch **36** located on a support leg **31**. A first end **34**A may be rotatably coupled to or flexibly coupled to the contact rail **16** with a support brace member hinge **35** comprising any type of flexible coupling such as any type of hinge. The second end **34**B of the support brace member **34** may be configured to temporarily mate or insert into one or more brace notches **36** located on a support leg **31**. By positioning and mating the second end **34**B of a support brace member **34** into a brace notch **36** on a support leg **31** located closer to the rail hinge **33**, the angle of the contact rail **16** from relative to the ground **300** or the support leg **31** (angle of rotation **121**) may be decreased. Conversely, by positioning and mating the second end **34**B of a support brace member **34** into a brace notch **36** on a support leg **31** located further from the rail hinge **33**, the angle of the contact rail **16** relative to the ground **300** or the support leg **31** (angle of rotation **121**) may be increased.

In other embodiments, the contact rail **16** of the putter rail apparatus **12** may be secured into one of a plurality of angled positions relative to the ground by a support brace member **34** having a first end **34**A configured to temporarily mate with a brace notch **36** located on the contact rail **16** and a second end **34**B rotateably coupled to a support leg **31**. By positioning and mating the first end **34**A of a support brace member **34** into a brace notch **36** on the contact rail **16** located closer to the rail hinge **33**, the angle of the contact rail **16** from relative to the ground **300** or the support leg **31** (angle of rotation **121**) may be decreased. Conversely, by positioning and mating the first end **34**A of a support brace member **34** into a brace notch **36** on the contact rail **16** located farther from the rail hinge **33**, the angle of the contact rail **16** relative to the ground **300** or the support leg **31** (angle of rotation **121**) may be increased. In still further embodiments, the contact rail **16** may be flexibly coupled to a support leg **31** with another adjustable method allowing the angle of the contact rail **16** relative to the ground **300** or the support leg **31** (angle of rotation **121**) to be increased or decreased.

As perhaps best illustrated by FIG. **8** which shows a top perspective view of an example of a putter rail apparatus **12** and FIG. **9** which shows a bottom perspective view of an example of a putter rail apparatus **12** according to various embodiments described herein, the contact rail **16** may be secured into one of a plurality of angled positions relative to the ground **300** and/or a support leg **31** such as a generally compact position in which portions of the contact rail **16** may be folded against or in proximity to portions of a support leg **31**. In this and some embodiments, a contact rail **16** may comprise a rail retainer **37** which may be configured to temporarily engage a rail retainer catch **38** on a support leg **31** thereby securing the putter rail apparatus **12** in a compact position. In other embodiments, a contact rail **16** may comprise a rail retainer catch **38** which may be configured to temporarily engage a rail retainer **37** on a support leg **31** thereby securing the putter rail apparatus **12** in a compact position.

In some embodiments, a putter rail apparatus **12** may comprise two support legs **31** with each support leg joined to a support leg extension **32**. A support leg extension may provide additional stability by optionally increasing the surface area of the putter rail apparatus **12** that may contact the ground **300** and/or by joining one or more support legs **31** together in a rigid fashion. Optionally, a support leg **31** and/or a support leg extension **32** may comprise one or more securement apertures **39** which may be configured to receive a fastener which may be inserted into the ground **300**. In some optional embodiments, a securement aperture **39** may receive a golf tee which may be also inserted into the ground **300** and which may function as a fastener to maintain the position of the putter rail apparatus **12** on the ground **300**.

In further embodiments, a support leg **31** and/or a support leg extension **32** may comprise one or more cleats **41** which may be configured to contact the ground **300** and increase the frictional resistance between the ground and the putter rail apparatus **12**. Optionally, one or more cleats may be removably coupled to a support leg **31** and/or a support leg extension **32** such as with a threaded fastener or any other suitable connection method.

The putter stroke training device **100** may be made from rigid and substantially rigid materials such as hard plastics, metal alloys, carbon fiber, fiber glass, wood, ceramics, or any other suitable substantially rigid material including combinations of materials. Additionally, low friction coatings and paints may be applied to the putter guide **13**, putter guide extensions **14**, and/or other locations of the putter stroke training device **100**. Also, one or more elements may be made from or comprise durable and slightly flexible materials such as soft plastics, silicone, soft rubbers, fabrics, or any other suitable materials including combinations of materials.

Although the present invention has been illustrated and described herein with reference to preferred embodiments and specific examples thereof, it will be readily apparent to those of ordinary skill in the art that other embodiments and examples may perform similar functions and/or achieve like results. All such equivalent embodiments and examples are within the spirit and scope of the present invention, are contemplated thereby, and are intended to be covered by the following claims.

What is claimed is:

1. A putter stroke training device, the device comprising:

a. a putter guide apparatus comprising;

i. a shaft clamp configured to removably secure a golf putter shaft,

ii. an arm extension comprising a first end and a second end, wherein the shaft clamp is coupled to the first end of the arm extension and the arm extension is configured to extend away from the putter shaft, and wherein a rail contact member is coupled to the second end of the arm extension, and

iii. wherein the rail contact member is configured to temporarily couple with a removable putter guide extension at a first distal end of the rail contact member so that both the rail contact member and the removable putter guide extension are both configured to make contact with a contact rail of area available for contacting the contact rail of the putter nail apparatus; and

b. a putter rail apparatus having a contact rail with a contact surface configured to make contact with the rail contact member and the putter guide extension of the putter guide apparatus.

2. The putter stroke training the device of claim **1**, wherein the contact surface of the contact rail is substantially planar.

3. The putter stroke training the device of claim **1**, wherein;

a. the contact surface of the putter rail apparatus is substantially planar and has a first length (L**1**) and a first width (W**1**);

b. the rail contact member of the putter guide apparatus has a second length (L**2**) and a second width (W**2**); and

a wherein the first length (L**1**) is greater than the second length (L**2**) and the first width (W**1**) is at least 150% greater than the second width (W**2**).

4. The putter stroke training device of claim 1, wherein the putter guide apparatus further comprises a second removable putter guide extension attached a second distal end positioned horizontally opposite to said first distal end, the second removable putter guide extension configured to further increase the horizontal length and surface area available for contacting the contact rail of the putter rail apparatus.

5. The putter stroke training device of claim 1, wherein the removable putter guide extension is removably coupled to the rail contact member of the putter guide apparatus with a fastener.

6. The putter stroke training device of claim 1, wherein the rail contact member and putter guide extension of the putter guide apparatus are of a substantially cylindrical shape.

7. The putter stroke training device of claim 1, wherein the shaft clamp of the putter guide apparatus comprises a compressionable material configured to make contact with and secure the shaft of a putter above the putter hosel.

8. The putter stroke training device of claim 1, wherein the contact rail of the putter rail apparatus is adjustable to a plurality of angled positions.

9. The putter stroke training device of claim 1, wherein the putter rail apparatus comprises a contact rail flexibly coupled with a support leg.

10. The putter stroke training device of claim 9, wherein the putter rail apparatus contact rail is flexibly coupled to a support leg with a hinge.

11. The putter stroke training device of claim 1, wherein the contact rail of the putter rail apparatus is secured into one of a plurality of angled positions by a support brace member having a first end and a second end, said first end rotatably coupled to the contact rail.

12. The putter stroke training device of claim 11, wherein the support brace member second end is configured to mate with a brace notch located on a support leg.

13. A putter guide apparatus for improving the putter stroke of a golfer, the putter guide apparatus comprising;

a. a shaft clamp configured to removably secure a golf putter shaft above a hosel;

b. an arm extension coupled to the shaft clamp at a first end and extending away from the putter shaft at an angled orientation; and

c. a rail contact member coupled to a second end of the arm extension wherein the rail contact member is configured to temporarily couple with a removable putter guide extension at a distal end of the rail contact member so that both the rail contact member and the removable putter guide extension are both configured to make contact with a contact rail of a putter rail apparatus thereby increasing the horizontal length and surface area available for contacting the contact rail of the putter nail apparatus.

14. The putter guide apparatus of claim 13, wherein the putter guide apparatus contact member and putter guide extension are of a substantially cylindrical shape.

15. A putter rail apparatus configured to make contact with a contact member of a putter guide apparatus, the putter rail apparatus comprising:

a. a contact rail with a contact surface configured to be adjustable to a plurality of angled positions relative to the ground;

b. a support leg configured to be placed onto the ground and to provide support for the contact rail; and

wherein the contact rail is flexibly coupled to the support leg by;

i. a rail hinge connecting a lower elongate end of the contract rail to an elongate end of the support leg, and

ii. a support brace member with a first end and a second end, said first end rotatably coupled to the contact rail and said second end configured to temporarily mate with a brace notch positioned within the support leg.

16. The putter rail apparatus of claim 15, wherein the support leg comprises a set of brace notches configured to receive and mate with the second end of the support brace member thereby allowing the contact rail to be positioned in a plurality of fixed angled positions relative to the ground.

17. The putter rail apparatus of claim 16, wherein the support leg further comprises a set of cleats configured to contact the ground to increase the frictional resistance between the ground and the putter rail apparatus.

18. The putter rail apparatus of claim 17, further comprising a set of securement apertures positioned within the support leg with said securement apertures configured to receive a fastener to temporary secure the putter rail apparatus to the ground.

19. The putter rail apparatus of claim 16, wherein the support leg comprises a set of securement apertures configured to receive a fastener.

20. The putter rail apparatus of claim 19, wherein the fastener is a golf tee.

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