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(54) **GOLF CLUB COMPRISING GOLF CLUB HEAD**

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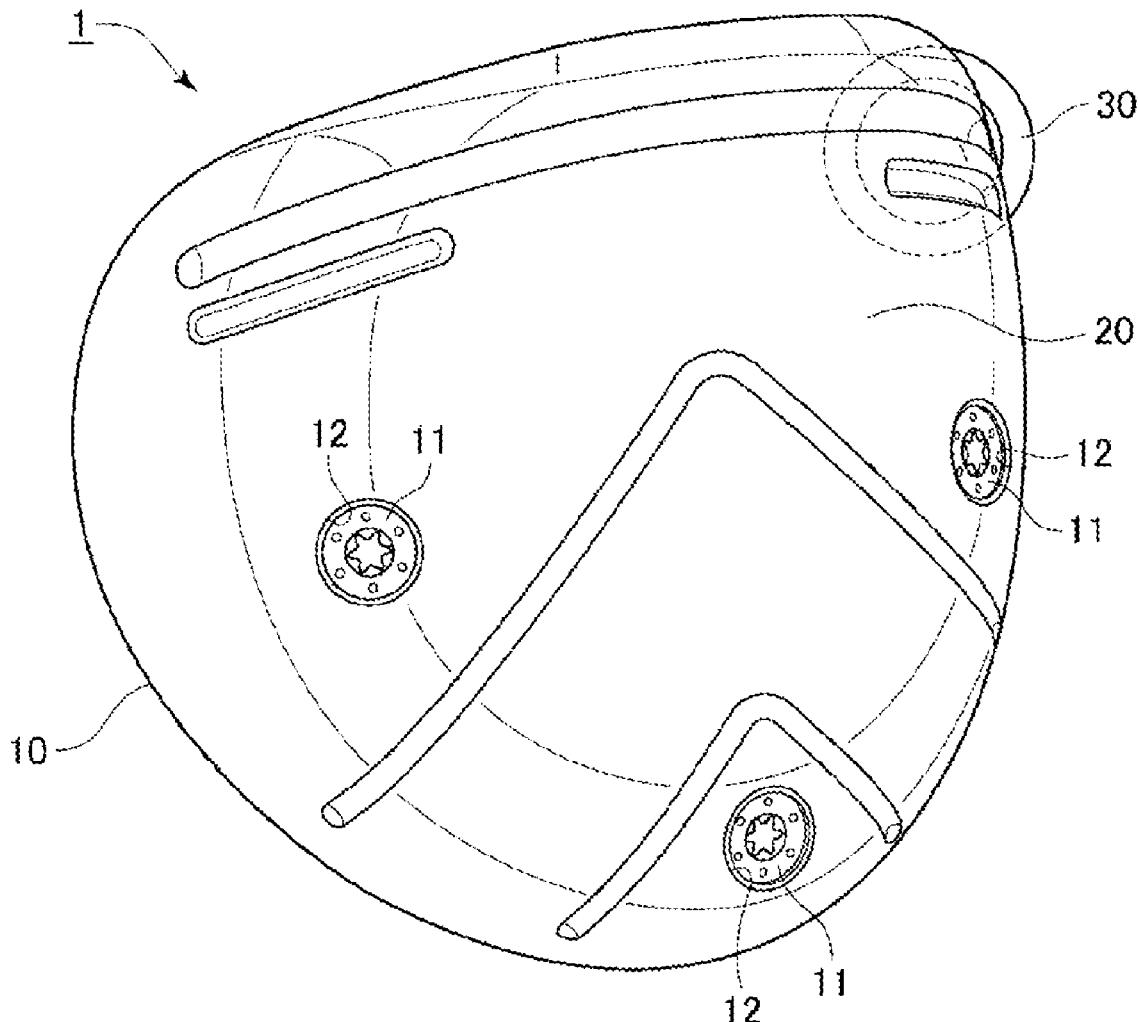
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(57)

ABSTRACT

Provided is a golf club that allows for adjustment of the swing balance in relation to the whole golf club. A golf club head in one embodiment includes a club head and a grip. The club head has a sole portion provided with one or more attachment recesses to which weight attachment members with different weights are attachable, and the grip is provided with an attachment recess to which the weight attachment members with different weights are attachable. The weight attachment members with different weights are interchangeable between the one or more attachment recesses of the club head and between the one or more attachment recesses of the club head and the attachment recess of the grip.



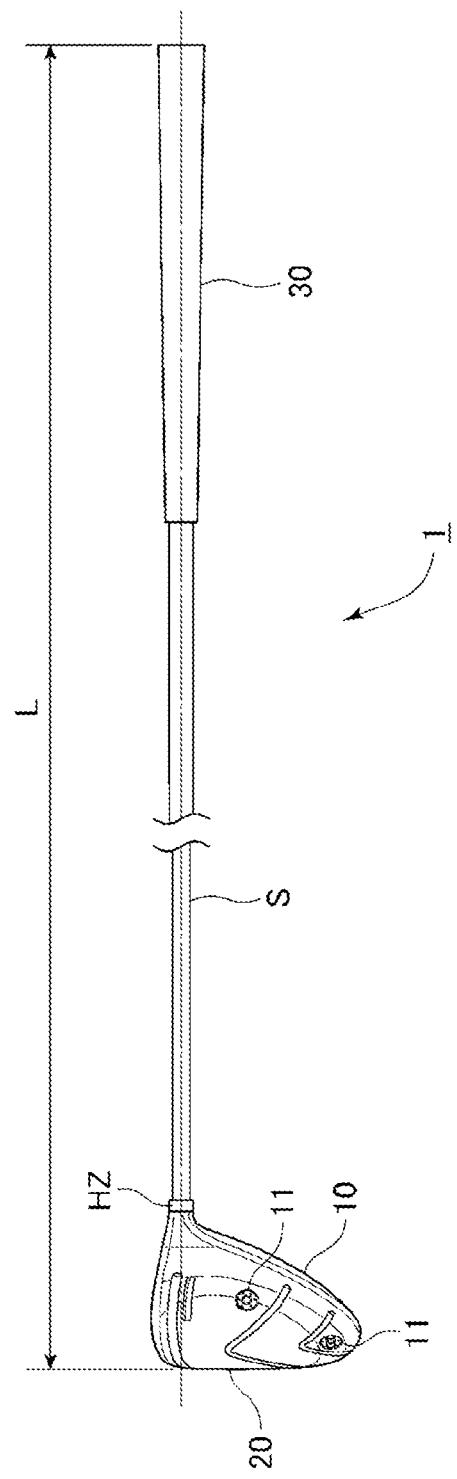


Fig. 1

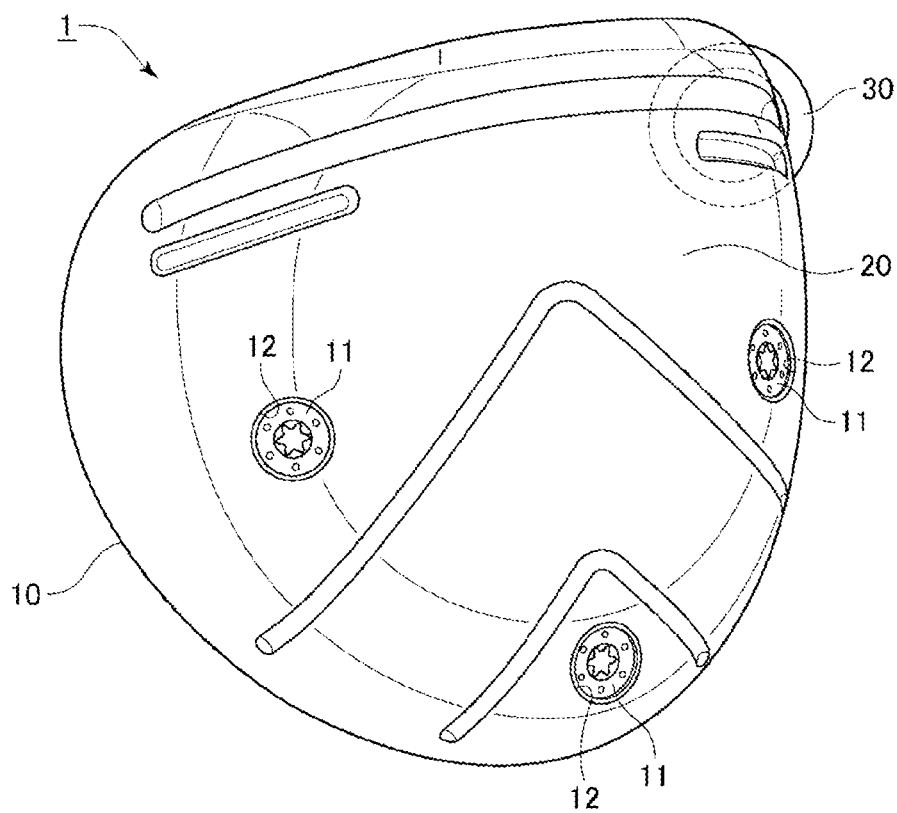


Fig. 2

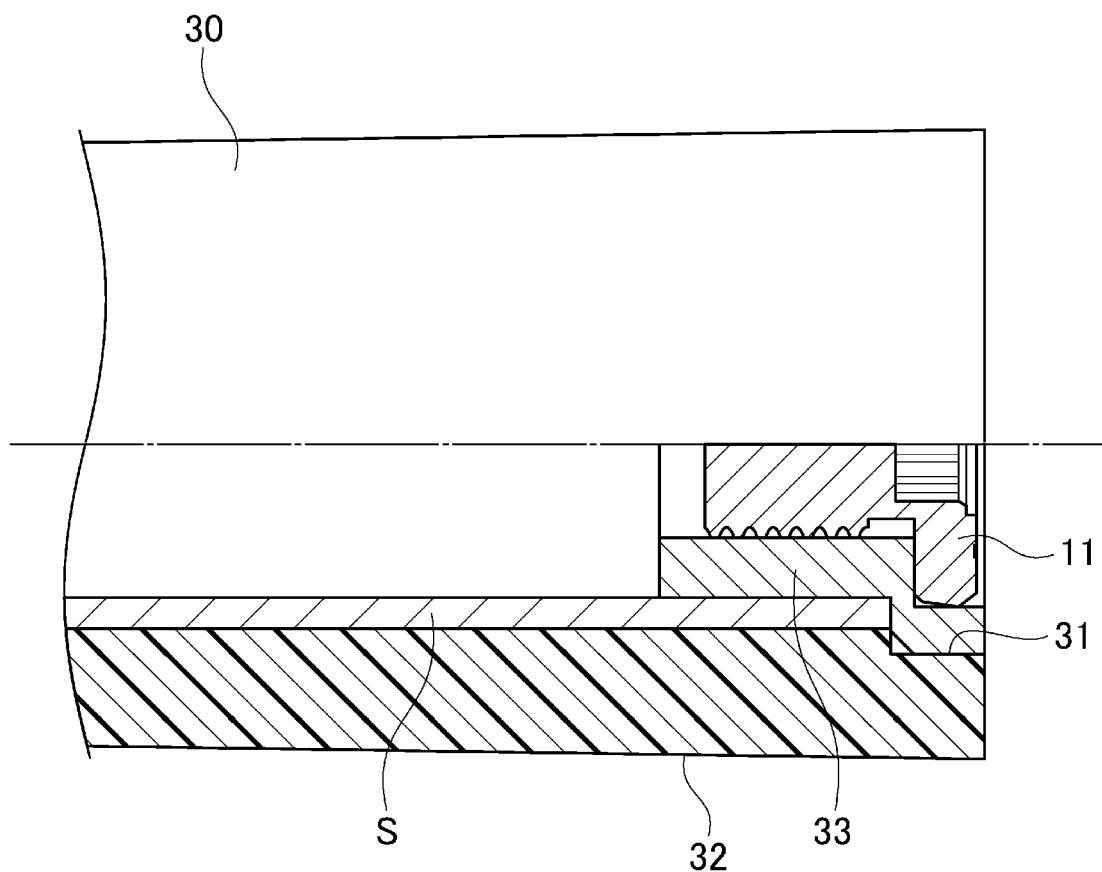


Fig. 3

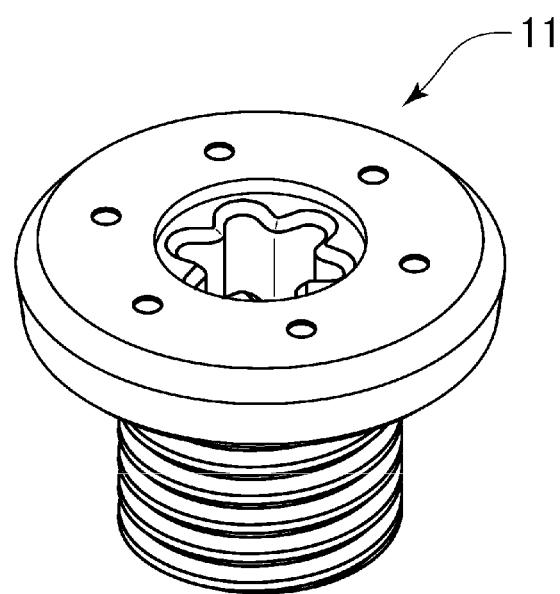


Fig. 4

GOLF CLUB COMPRISING GOLF CLUB HEAD

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application is a National Stage of International Application No. PCT/JP2020/025829 filed on Jul. 1, 2020, which claims priority to and the benefit of Japanese Patent Application No. 2019-235528, filed on Dec. 26, 2019, the contents of which are incorporated herein by reference in their entirety.

FIELD

[0002] The present disclosure relates to a golf club with a golf club head.

BACKGROUND

[0003] Techniques for attaching a weight to a golf club head have been proposed so far to adjust the weight and weight balance of the golf club head. For example, JP 11-9742 A discloses a golf club head in which a plurality of weight attachment portions are provided on the sole portion of the club head body along a direction substantially orthogonal to the hitting surface, and weight adjustment members of appropriate weights and sizes are selectively attached to the weight attachment portions.

[0004] In addition, techniques for attaching a balance weight to a golf club have also been proposed to increase the swing speed of the golf club. For example, JP 3052898 U discloses a golf club provided with a balance weight at the grip end of the golf club.

CITATION LIST

Patent Literature

[0005] Patent Literature 1: JP 11-9742 A
[0006] Patent Literature 2: JP 3052898 U

SUMMARY

[0007] Although the golf club head disclosed in Patent Literature 1 is advantageous in that it is possible to adjust the position of the center of gravity and the face angle of the club head, the golf club head is problematic in that it is difficult to avoid the influence of such adjustments to the club head on the whole golf club. On the other hand, the golf club disclosed in Patent Literature 2 is advantageous in that it is possible to increase the head speed of the golf club, but is problematic in that the influence of the attachment of the balance weight to the grip end of the golf club on the whole golf club is hardly considered.

[0008] An object of the embodiments of the present disclosure is to provide a golf club that allows for adjustment of the swing balance in relation to the whole golf club. Other objects of the embodiments of the present disclosure will become apparent by reference to the entire description.

[0009] A golf club according to one embodiment of the present disclosure includes a club head and a grip. The club head has a sole portion provided with one or more attachment recesses to which weight attachment members with different weights are attachable, and the grip is provided with an attachment recess to which the weight attachment members with different weights are attachable. The weight

attachment members with different weights are interchangeable between the one or more attachment recesses of the club head and between the one or more attachment recesses of the club head and the attachment recess of the grip.

[0010] In the golf club according to one embodiment of the present disclosure, the weight attachment members are attachable to both the one or more attachment recesses of the club head and the attachment recess of the grip.

[0011] In the golf club according to one embodiment of the present disclosure, the attachment recesses of the club head are provided at three positions.

[0012] In the golf club according to one embodiment of the present disclosure, the attachment recess of the grip is provided at an end portion of the grip.

[0013] In the golf club according to one embodiment of the present disclosure, the one or more attachment recesses of the club head are located within 200 mm of an entire length of the golf club from an edge of the club head.

[0014] In the golf club according to one embodiment of the present disclosure, the one or more attachment recesses of the club head are located within 25% of an entire length of the golf club as viewed from an edge of the club head.

[0015] In the golf club according to one embodiment of the present disclosure, the attachment recess of the grip is located within 350 mm of an entire length of the golf club from an edge of the grip.

[0016] In the golf club according to one embodiment of the present disclosure, the attachment recess of the grip is located within 50% of an entire length of the golf club as viewed from an edge of the grip.

[0017] Various embodiments of the present disclosure allow for not only adjustment of the weight balance of the golf club head and the counterbalance of the golf club grip, but also adjustment of the swing balance in relation to the whole golf club.

BRIEF DESCRIPTION OF DRAWINGS

[0018] FIG. 1 is a configuration diagram illustrating a golf club 1 according to one embodiment.

[0019] FIG. 2 is a schematic view illustrating a sole surface 20 of a golf club golf club head 10 according to one embodiment.

[0020] FIG. 3 is a schematic view illustrating a golf club grip 30 in one embodiment.

[0021] FIG. 4 is a perspective view illustrating a weight attachment member 11 that is attached to the golf club 1 in one embodiment.

DETAILED DESCRIPTION

[0022] Hereinafter, various embodiments of the present disclosure will be described with reference to appropriate drawings. Identical components in different drawings are denoted by the same reference signs.

[0023] FIG. 1 is a configuration diagram schematically illustrating the configuration of a golf club 1 according to one embodiment of the present disclosure with a golf club head (hereinafter may be simply referred to as a "head") 10 according to one embodiment of the present disclosure. As illustrated in the drawing, the golf club 1 in one embodiment includes a golf club grip 30, a shaft S connected to the golf club grip 30, and the golf club golf club head 10 in one embodiment coupled to the shaft S via a hosel HZ. The golf club grip 30 is made of natural rubber, synthetic rubber, or

the like. The shaft S is made of a fiber reinforced resin, a metal material, or the like, and formed in a tubular shape.

[0024] Although the golf club 1 and the golf club head 10 in one embodiment are configured as a wood club and its head, various embodiments of the present disclosure include a golf club and a head configured as an iron club and its head, and are not limited to a specific aspect. The golf club head 10 (hereinafter referred to as the club head 10) in one embodiment is made of a metal material such as stainless steel, titanium, or a titanium alloy, for example.

[0025] Referring next to FIG. 2, there is shown a schematic view schematically illustrating a sole surface 20 of the golf club head 10 in one embodiment. As illustrated in FIG. 2, the club head 10 of the golf club 1 in one embodiment of the present disclosure is configured such that the sole surface 20 of the club head 10 is provided with one or more attachment recesses 12 (at three positions in the illustrated example), and weight attachment members 11 with different weights are attached to the attachment recesses 12 interchangeably.

[0026] Referring next to FIG. 3, there is shown a schematic view schematically illustrating an end portion 32 of the golf club grip 30 (hereinafter referred to as the grip 30) in one embodiment. As illustrated in FIG. 3, the grip 30 of the golf club 1 in one embodiment of the present disclosure is configured such that an attachment recess 31 is formed by a sleeve 33 formed in the end portion 32 of the grip 30, and the weight attachment members 11 with different weights are attached to the attachment recess 31 interchangeably.

[0027] The golf club 1 according to one embodiment of the present disclosure will be described in more detail with reference to FIGS. 1, 2, and 3. The golf club 1 according to one embodiment of the present disclosure includes the club head 10 and the grip 30. The club head 10 has the sole portion (sole element) 20 provided with the one or more attachment recesses 12 to which the weight attachment members 11 with different weights are attachable, and the grip 30 is provided with the attachment recess 12 to which the weight attachment members 11 with different weights are attachable. The weight attachment members 11 with different weights are interchangeable between the one or more attachment recesses 12 of the club head 10 and between the one or more attachment recesses 12 of the club head 10 and the attachment recess 31 of the grip 30.

[0028] In the golf club 1 according to one embodiment of the present disclosure, the weight attachment members 11 are attachable to both the one or more attachment recesses 12 of the club head 10 and the attachment recess 31 of the grip 30.

[0029] The golf club 1 according to one embodiment of the present disclosure allows for not only adjustment of the weight balance of the golf club head and the counterbalance of the golf club grip, but also adjustment of the swing balance in relation to the whole golf club.

[0030] As illustrated in FIG. 2, in the golf club 1 according to one embodiment of the present disclosure, the attachment recesses 12 of the club head 10 are provided at three positions. However, the number of attachment recesses 12 provided in the club head 10 may be two or more than three.

[0031] In the golf club 1 according to one embodiment of the present disclosure, the attachment recess 12 of the grip 30 is provided at the end portion 32 of the grip 30.

[0032] The golf club 1 according to one embodiment of the present disclosure will be described with reference to

FIG. 1. In the golf club 1 according to one embodiment of the present disclosure, the one or more attachment recesses 12 of the club head 10 are located within 200 mm of an entire length L of the golf club 1 from the edge (end) of the club head 10 or from the club head 10 side.

[0033] In addition, in the golf club 1 according to one embodiment of the present disclosure, the one or more attachment recesses 12 of the club head 10 are located within 25% of the entire length L of the golf club 1 as viewed from the edge (end) of the club head 10 or from the club head 10 side.

[0034] Furthermore, in the golf club 1 according to one embodiment of the present disclosure, the attachment recess 31 of the grip 30 is located within 350 mm of the entire length L of the golf club 1 from the edge (end) of the grip 30 or from the grip 30 side.

[0035] Moreover, in the golf club 1 according to one embodiment of the present disclosure, the attachment recess 31 of the grip 30 is located within 50% of the entire length L of the golf club 1 as viewed from the edge (end) of the grip 30 or from the grip 30 side.

[0036] The golf club 1 according to one embodiment of the present disclosure allows for not only adjustment of the weight balance of the golf club head and the counterbalance of the golf club grip, but also more accurate adjustment of the swing balance in relation to the whole golf club.

[0037] Referring next to FIG. 4, there is shown an example of the weight attachment members 11. In order to use the weight attachment members 11 with different weights as described above, the weight attachment members 11 with various weights can be formed using different materials, for example. Examples of materials of the weight attachment members 11 can include, but are not limited to, an aluminum alloy, stainless steel, a titanium alloy, and a tungsten alloy. More specifically, the attachment members with different weights can be exemplified by a weight attachment member 11a having a weight of 3 g, a weight attachment member 11b having a weight of 4 g, a weight attachment member 11c having a weight of 7 g, and a weight attachment member 11d having a weight of 6 g, which will be further described below.

[0038] As one aspect, the golf club 1 according to one embodiment of the present disclosure may be configured by using the weight attachment members 11a, 11b, and 11c for the club head 10 and the weight attachment member 11d for the grip 30. In this case, the moment of inertia of the club is 2.9 million (S.B is C8.5). In such an aspect, it is possible to form a golf club whose swing balance is advantageous for users with a head speed (HS) of about 44 m/s to have ease of swing which ensures maximum performance of carry distance and direction control.

[0039] As another aspect, the golf club 1 according to one embodiment of the present disclosure may be configured by using the weight attachment members 11b, 11c, and 11d for the club head 10 and the weight attachment member 11a for the grip 30. In this case, the moment of inertia of the club is 2.95 million (S.B is D1.4). In such an aspect, it is possible to form a golf club whose swing balance is advantageous for users with a head speed (HS) of about 47 m/s to have ease of swing which ensures maximum performance of carry distance and direction control.

[0040] As another aspect, the golf club 1 according to one embodiment of the present disclosure may be configured by using the weight attachment members 11a, 11c, and 11d for

the club head **10** and the weight attachment member **11b** for the grip **30**. In this case, the moment of inertia of the club is 2.93 million (S.B is D0.4). In such an aspect, it is possible to form a golf club whose swing balance is advantageous for users with a head speed (HS) of about 46 m/s to have ease of swing which ensures maximum performance of carry distance and direction control.

[0041] As still another aspect, the golf club **1** according to one embodiment of the present disclosure may be configured by using the weight attachment members **11a**, **11b**, and **11d** for the club head **10** and the weight attachment member **11c** for the grip **30**. In this case, the moment of inertia of the club is 2.87 million (S.B is C7.5). In such an aspect, it is possible to form a golf club whose swing balance is advantageous for users with a head speed (HS) of about 42 m/s to have ease of swing which ensures maximum performance of carry distance and direction control.

[0042] As described above, the golf club **1** according to one embodiment of the present disclosure allows for more accurate adjustment of the swing balance in relation to the whole golf club, not to a part of the golf club head or the grip, without changing the weight of the whole golf club.

[0043] The dimensions, materials, and arrangements of the components described herein are not limited to those explicitly described in the embodiments. These components may be modified to have any dimensions, materials, and arrangements that may fall within the scope of the present disclosure. In addition, components not explicitly described herein can be added to the described embodiments, or some of the components described in the embodiments can be removed.

REFERENCE SIGNS LIST

- [0044]** 1 golf club
- [0045]** 10 golf club head
- [0046]** 11 weight attachment member
- [0047]** 12 attachment recess
- [0048]** 20 sole surface
- [0049]** 30 golf club grip
- [0050]** 31 attachment recess

[0051] 32 end portion

[0052] 33 sleeve

1. A golf club comprising a club head and a grip, wherein the club head has a sole portion provided with one or more attachment recesses to which weight attachment members with different weights are attachable, and the grip is provided with an attachment recess to which the weight attachment members with different weights are attachable, and

the weight attachment members with different weights are interchangeable between the one or more attachment recesses of the club head and between the one or more attachment recesses of the club head and the attachment recess of the grip.

2. The golf club according to claim **1**, wherein the weight attachment members are attachable to both the one or more attachment recesses of the club head and the attachment recess of the grip.

3. The golf club according to claim **1**, wherein the attachment recesses of the club head are provided at three positions.

4. The golf club according to claim **1**, wherein the attachment recess of the grip is provided at an end portion of the grip.

5. The golf club according to claim **1**, wherein the one or more attachment recesses of the club head are located within 200 mm of an entire length of the golf club from an edge of the club head.

6. The golf club according to claim **1**, wherein the one or more attachment recesses of the club head are located within 25% of an entire length of the golf club as viewed from an edge of the club head.

7. The golf club according to claim **1**, wherein the attachment recess of the grip is located within 350 mm of an entire length of the golf club from an edge of the grip.

8. The golf club according to claim **1**, wherein the attachment recess of the grip is located within 50% of an entire length of the golf club as viewed from an edge of the grip.

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