No. 690,996. Patented Jan. 14, 1902.

W. McC. RANSOM.

GOLF CLUB.

(Application filed Jan. 23, 1901.)

(No Model.)

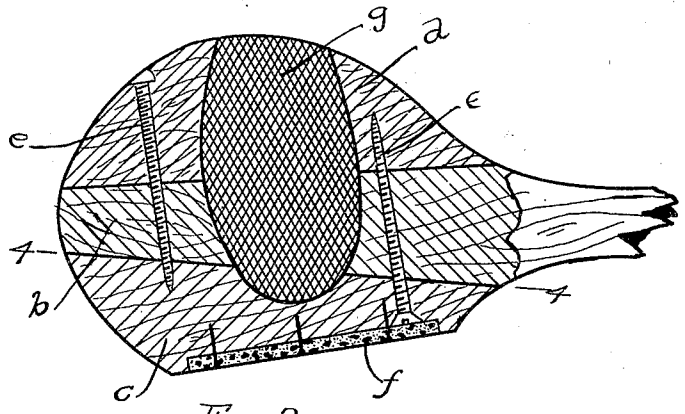


Fig 2

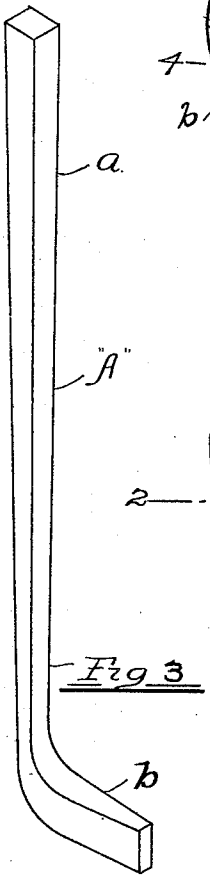


Fig 3

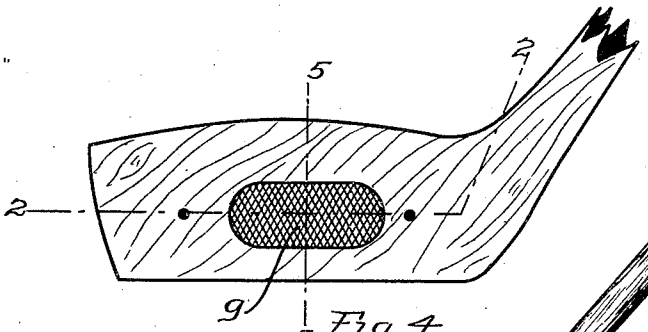


Fig 4

Fig 1

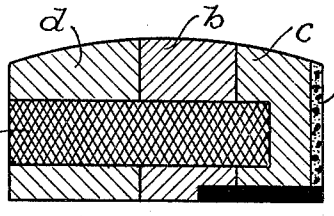


Fig 5

Witnesses.

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UNITED STATES PATENT OFFICE.

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GOLF-CLUB.

SPECIFICATION forming part of Letters Patent No. 690,996, dated January 14, 1902.

Application filed January 23, 1901. Serial No. 44,411. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McC. RANSOM, a resident of Warren, in the county of Bristol and State of Rhode Island, have invented certain new and useful Improvements in Golf-Clubs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This device relates to the construction of golf-clubs, and particularly to the class commonly known as "drivers."

The object of my invention is to provide in the head of a golf-club a weight so formed and located that its center of gravity will lie in the line of motion of the point of impact of the striking-face and as near to this point as practicable.

It is fully illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the club. Fig. 2 is a section of the head on line 2 2, Fig. 4, showing the position of the weight and fastenings with regard to the center portion and face and back blocks. Fig. 3 represents the shape of the shaft as it is sawed from the blank before the face and back blocks are attached. Fig. 4 represents a part of the head, with the face block removed, on the line of the junction of the shaft and face block 4 4, Fig. 2. Fig. 5 shows a cross-section of the head on line 5 5, Fig. 4.

The driver and brassy, for which clubs this invention is particularly intended, are the clubs used when it is desired to drive the ball a long distance, and it is found by experts in the game that in order to obtain the best results with this club its shaft should be made with a suitable handle and very small at the neck. It should be constructed of a particular quality of material, which must be light, tough, and whippy, so that it may be wielded quickly and with great force, while the head should be constructed of a material which is tough, hard, and heavy and capable of withstanding the impact received when it comes in contact with the ball, and the whole should be most carefully and accurately balanced by a weight placed in the head. This weight should be so placed that it should come in a direct line with the impact and as near the face of the club as practicable. A like result cannot be obtained with a driver made with a spliced shaft, as the neck cannot be made so small and still retain the elasticity and strength where it is most essential, while the expensive construction of the one-piece driver keeps it from coming into general use. In my construction it will be seen that the shaft may be sawed into the desired form out of a board of suitable material for a shaft, with a portion of it extending out at the usual angle from the shaft into the head, to which the face and back of the head of a different kind of wood or material are secured by glue and screws, rivets, or other suitable fastenings.

In the drawings, A is the shaft, on the upper end of which is the handle *a*. The flat sides of the lower end *b*, as they extend out, offer a good surface to which to secure a face block *c* and back block *d*, which should be of a wood of a different nature from the shaft, with the grain running lengthwise to strengthen the center portion of the head. The method I usually employ in fastening these three pieces together is by gluing the inner faces of the blocks to the center portion and then inserting the screws *e e;* but other methods may be used.

f is a face plate, of leather or other suitable material, to receive the initial impact when the head comes in contact with the ball, and this is secured to the face block by small brads or nails.

I preferably locate the weight extending inwardly from the back face, its rear face being made flush with the back of the head. I also arrange it preferably intermediate of the top and base of the head and so that its center of gravity will coincide with a line substantially transverse to the striking-face at the point of impact. I preferably shape the weight elliptical in horizontal cross-section, with the major axis coinciding with said transverse line. The upper and lower sides are made substantially parallel with the base of the head and the vertical sides curved, as shown in Fig. 4. Where the head is made in one part, the weight can be of an easily-fusi-

ble metal and poured into the aperture, where it will be retained, because of the intermediate enlargement. When the head is made of two parts joining on a vertical plane, I arrange the bore so that the maximum vertical section will coincide with the said plane. Hence the weight can be inserted in the part of its sockets in one member and then the other member applied thereto and secured by glue, screws, or otherwise, which will retain the weight in position. In the form of head having three members joined on vertical planes, as shown in Fig. 1, I arrange the bore so that the maximum vertical section will lie in one of the two joining planes, preferably in the plane of the joining face of the back block. The front block will have a shallow cavity therein to receive the front end of the weight, which cavity will receive most of the force of the blow. Constructing the club in this way insures the strongest possible connection between the shaft and head and admits of making the rest of the head of other wood than that which is found best for the shaft or handle, which requires a springy resilient wood, like second-growth hickory or ash, while a heavier close-grained hard wood, like second-growth hickory, boxwood, lignum-vitæ, &c., is desirable for the blocks. It also makes it easy to use the face and back blocks made of vulcanized fiber or some similar composition which may be molded to the exact form to be used with the least amount of labor, and thereby reduce the cost of the club.

Having thus described my improvements, I claim as my invention and desire to secure by Letters Patent—

1. In a golf-club, a weight located in the head and extending from the rear face toward the striking-face of the head, said weight diminishing in horizontal width from a horizontal line whose extremities lie in the interior of the head, toward said faces.

2. In a golf-club, a weight located in the head and extending from the rear face toward the striking-face thereof, said weight being substantially elliptical in horizontal section with the extremities of the major axis of the ellipse lying in the interior of the head.

3. In a golf-club, a weight located in the head and extending from the rear face to a place in close proximity to the striking-face of the head.

4. In a golf-club, a weight located in the head and extending from the rear face to a place in close proximity to the striking-face of the head, said weight diminishing in vertical section from an interior part toward said faces.

5. In a golf-club, a weight located in the head and extending from the rear face to a place in close proximity to the striking-face of the head, said weight diminishing in horizontal width from a part lying inside of the head toward said faces.

6. In a golf-club, a weight located in the head and extending from the rear face to a place in close proximity to the striking-face of the head, said weight being substantially elliptical in horizontal section with one axis of the ellipse lying in the interior of the head.

7. In a golf-club having a head composed of a plurality of connected members, a weight located in the head and having different portions disposed respectively in different members.

8. In a golf-club having a head composed of a plurality of connected members in which the adjoining faces are substantially transverse to the base, a weight located in the head and having different portions disposed respectively in different members, said weight diminishing in vertical section from one of said faces to the extremities of the weight.

9. In a golf-club having a head composed of a plurality of connected members in which the adjoining faces are substantially transverse to the base, a weight located in the head and having different portions disposed respectively in different members, said weight diminishing in horizontal width from one of said faces to the extremities of the weight.

10. In a golf-club having a head composed of a plurality of connected members in which the adjoining faces are substantially transverse to the base, a weight located in the head and having different portions disposed respectively in different members, said weight being substantially elliptical in section transverse to the striking-face with one axis of the ellipse lying in one of said faces.

11. In a golf-club having a head composed of a plurality of connected members in which the adjoining faces are substantially transverse to the base, a weight located in the head and having different portions disposed respectively in different members, said weight being substantially elliptical in section transverse to the striking-face with the minor axis of the ellipse lying in said one of said faces.

12. In a golf-club having a head composed of a plurality of connected members, one of the members being a back block that is joined to the adjacent members with the adjoining faces substantially transverse to the base, a weight having different portions disposed respectively in different members and extending through the said back block.

13. In a golf-club having a head composed of a plurality of connected members, one of the members being a back block that is joined to the adjacent member with the adjoining faces substantially transverse to the base, a weight having different portions disposed respectively in different members and extending through the said back blocks, said weight diminishing in vertical section from said transverse adjoining faces toward its extremities.

14. In a golf-club, a head composed of an intermediate member having a back block and also a face block attached thereto in such a manner that the adjoining faces are sub-

stantially transverse to the base, and a weight having different portions lying respectively in each of said three members of the head.

15. In a golf-club, a head composed of an intermediate member having a back block and also a face block attached thereto in such a manner that the adjoining faces are substantially transverse to the base, and a weight extending through the back block and through said intermediate member and into said face block from its adjoining face.

16. In a golf-club, a head composed of an intermediate member having a back block and also a face block attached thereto in such a manner that the adjoining faces are substantially transverse to the base, and a weight located partly in each of said three members of the head, said weight being of maximum cross-section at the joining face of the back block.

17. A golf-club having a head composed of an intermediate member to which a back block and a face block are joined on planes substantially transverse to the base of the head, in combination with a weight located partly in each of said three members of the head, said weight being substantially elliptical in section transverse to the striking-face of the head.

18. In a golf-club having a head composed of three members, the combination of an intermediate member to which a face block and a back block are joined on planes transverse to the base, said intermediate member having a horizontal aperture tapering from one of said joining faces to the other, said back block having a horizontal aperture registering with the said aperture in the intermediate member and tapering from said joining face to the outer side of the block, said face block having a cavity in its joining side that registers with said aperture in the intermediate member, and a weight located in the said apertures and said cavity and engaging the walls thereof.

19. In a golf-club having a head composed of three members, the combination of an intermediate member to which a face block and a back block are joined on planes transverse to the base, said intermediate member having a horizontal aperture tapering from its end adjacent to the back block to the other end, said back block having a horizontal aperture registering with the said aperture in the intermediate member and tapering from said joining face to its outer end, said face block having a cavity in its joining side that registers with said aperture in the intermediate member, and a weight located in the said apertures and in said cavity and engaging the walls thereof.

20. In a golf-club having a head composed of three members, the combination of an intermediate member to which a face block and a back block are joined on planes transverse to the base, said intermediate member having a horizontal aperture tapering from one of said joining faces to the other, said back block having a horizontal aperture registering with the said aperture in the intermediate member and tapering from said joining face to the outer side of the block, said face block having a cavity in its joining side that registers with the said aperture in the intermediate member, said apertures and cavity being substantially elliptical in horizontal section, and a weight located in the said apertures and said cavity and engaging the walls thereof.

21. In a golf-club the combination of a shaft or handle extending down into and forming the center portion of the head, a face block and a back block attached thereto, a metal weight inserted from the back and extending through the back block and center portion of the head into the front block, substantially as described.

22. In a golf-club, a shaft having an integral portion extending out therefrom at an angle, into and forming a central portion of the head, a face block and a back block attached to said central portion only in combination with an oblong metal weight placed in the head with its longest axis at right angles to the line of the shaft and in direct line with the point of impact of the force of the blow, said weight being made larger in the interior of the head and tapering toward the back side to prevent it from coming out, substantially as described.

In testimony whereof I have hereunto set my hand this 21st day of January, A. D. 1901.

WILLIAM McC. RANSOM.

In presence of—

BENJ. ARNOLD,

HOWARD E. BARLOW.