No. 677,811. Patented July 2, 1901.

G. W. MATTERN.

GOLF CLUB.

(Application filed Mar. 29, 1901.)

(No Model.)

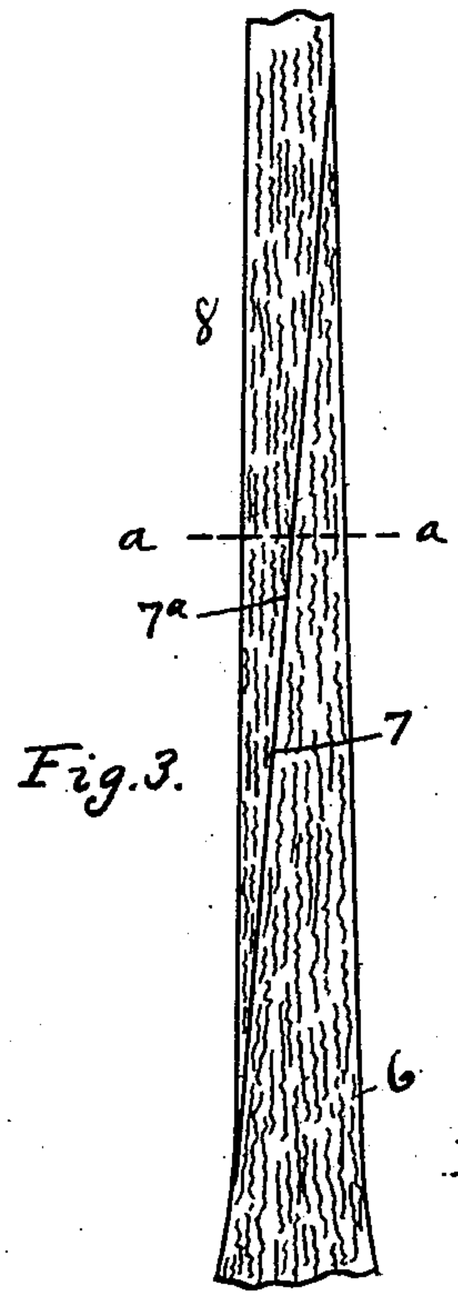

Fig. 3.

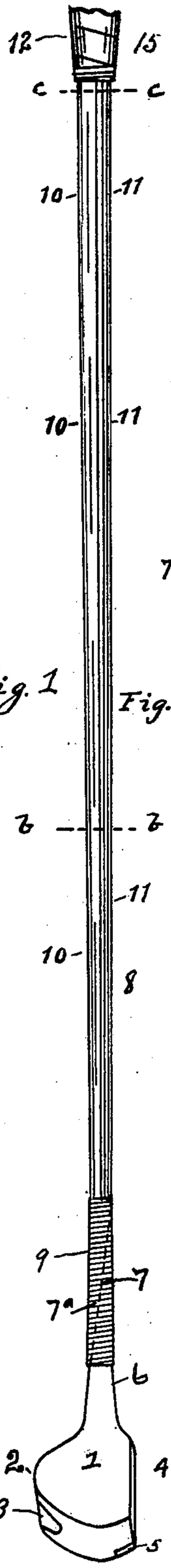

Fig. 1

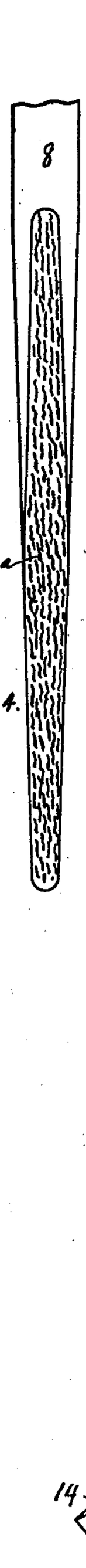

Fig. 4.

Fig. 2.

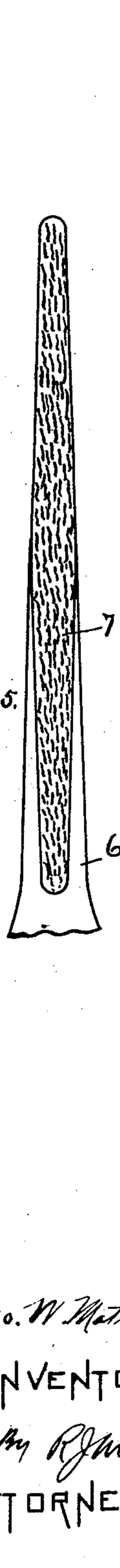

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

WITNESSES
Matthew Leibler.
C. M. Thobald.

Geo. W. Mattern
INVENTOR
by R. J. McCarty.
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE W. MATTERN, OF DAYTON, OHIO, ASSIGNOR TO THE CRAWFORD, McGREGOR & CANBY CO., OF SAME PLACE.

GOLF-CLUB.

SPECIFICATION forming part of Letters Patent No. 677,811, dated July 2, 1901.

Application filed March 29, 1901. Serial No. 53,431. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MATTERN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Golf-Clubs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in golf-clubs, and possesses the new and useful features hereinafter described and claimed.

The object of the invention is to provide a perfect center-balanced club—in other words, a club, in which the weight in the head is equally distributed throughout the length of the club.

Preceding a detailed description of my invention reference is made to the accompanying drawings, of which—

Figure 1 is a front elevation of the club with a portion of the handle or grip-piece broken away. Fig. 2 is a side elevation with a portion of the shaft below the handle or grip-piece broken away. Fig. 3 is a front view showing the side-spliced joint between the head and the shaft. Fig. 4 is a view of the splice end of the shaft. Fig. 5 is a similar view of the splice end of the head. Fig. 6 is a sectional view on the line *a a* of Fig. 3. Fig. 7 is a sectional view on the line *b b* of Fig. 1. Fig. 8 is a sectional view on the line *c c* of Fig. 1.

1 designates the head of the club, one side of which is rounded, as at 2, in the usual way and is provided with an insertion of metal 3 to add necessary weight thereto.

4 designates the face or striking side of the head, which is flat and has the corrugations or roughness, as shown in Fig. 2.

5 designates a piece of hard material—such, for example, as fiber—which is secured to the lower portion of the face and is designed to protect the lower edge of the face from indentation or chipping.

6 is the neck or extended portion of the head. This portion is cut on a taper, as indicated by 7, to provide a side-splice joint by which the head, or rather the neck of the head, is secured to the shaft 8 or body portion of the club. This tapering cut 7, it will be seen, is in a plane on an angle to the width of the head, or is approximately parallel to the face or striking-surface 4 of said head, as shown in Fig. 1, so that the edges of the grain of the wood will appear as in Fig. 5 when looking on the surface of said cut. It will also be seen from Figs. 1 and 3 that the spliced end of the neck lies on the side of the face or striking-surface of the head and that the end of the shaft is on the opposite side. The said shaft will therefore withstand the force of the jar due to the impact of the head with a ball. The splice cut 7^a of the shaft 8 is also cut on a taper in a similar manner to the splice end of the neck of the head, so that when looking on the surface thereof the edges only of the grain will appear. In other words, the edges of the grain in both the head, the neck thereof, and the shaft run parallel with each other, so that the club when united by the splice has the edge of the grain extending in the same directions throughout and parallel to the face of the head. An attempt to illustrate this has been made in Figs. 3, 4, and 5. The splice between the shaft and the head is assembled in the usual way known to those skilled in the art and is wrapped with a suitable quality of twine 9, so that the club becomes practically one integral piece. The whipping of twine may be dispensed with, however, as it is not absolutely necessary to the joints. From a point about midway of the spliced joint to the handle one side of the club has a flat surface, as at 10. This flat surface 10, which extends substantially throughout the length of the shaft, is on the side opposite the face or striking-surface 4 of the head. The opposite side 11 is of a rounded or oval form. The handle or grip portion 15 is substantially rectangular in cross-section, as shown in Fig. 8, in order to enable a firm grip of the hand, and is wrapped with a suitable material 12.

In assembling the head and shaft in the above-described manner the grains of the wood comprising both lie parallel. Consequently the entire club acts in unison and the full force of the edge-grain spring of both

materials is obtained, and, further, a stronger joint between the head and the shaft is obtained. For example, the force applied to the head in striking a ball is sustained by the lower or spliced end of the shaft, which prevents any possible loosening of the joint. The resiliency throughout the entire club is enabled to distribute symmetrically and proportionately in both the head and shaft, and the full power of every quick and nervous vibration is met or is distributed throughout said club. Whether the point of impact is on the heel 12, the center 13, or the toe 14 it does not interfere with the necessary resiliency of the shaft. In other words, the shaft throughout its length always goes back and comes forth with the circle or sweep made in striking, regardless of the point of impact between the face of the head and the ball. The side splice between the head and shaft also enables the end of the shaft to be nearer the lead or weight 3. The flat surface 10 and the rounded or semi-oval surface 11 of the shaft also distribute very materially the spring and weight, both thus contributing to make a perfect-balanced club. By splicing the head and the shaft in the manner described the grains of both parts lie parallel, and the edges of said grain lie parallel with the face of the head, which very materially increases the transverse strength of the joint between the head and the shaft. The spring in the neck is thereby brought closely to the point of impact, which is desirable, for the reason that the jar of the head, due to the impact with a ball, is more quickly transferred to the shaft, and said shaft is thereby made to more quickly receive the vibrations due to such impact, and such vibrations are distributed more evenly throughout the club. By making the shaft of this cross-sectional shape the oval side 11 will have the effect of pulling, while the flat side 10 will exert an influence contrary thereto, thereby combining to distribute the strain throughout the center of the club.

Referring, further, to the cross-sectional view, Fig. 7, it will be observed that the flat surface 10 of the shaft is on that side which is opposite the face of the head, while the oval or rounded side 11 is on the face side 4 of said head. This is an important feature of the construction, for the following reasons: In making a swing with the club in striking a ball the rounded or oval surface acts to control and retard the bend in the shaft. This is due to there being more material on that side of the shaft viewed from the longitudinal center of said shaft. The excess of material on said oval side will also have the effect of quickly bringing the shaft of the club to its normal or straight position at the time the impact is made with the ball. With clubs now commonly in use in making a swing to strike a ball as said club approaches the point where the impact is made with the ball the shaft is in advance of the head—in other words, the head lags behind the shaft at the time of impact, the hands of the player being in advance of the head when the impact is made; but with the present club these objections are overcome. The object of the square end constituting the grip is to obtain the vibrations from end to end of the shaft in an equally-distributed manner. It also makes the club lighter at the grip, and therefore concentrates the greatest weight at the head. By making the grip of the club rectangular in cross-section the covering placed thereon is prevented from slipping under the grasp of the hand in making a swing thereof and the muscles of the arm are not required to respond to shifting positions of the hands. In other words, there is a uniformity in the positions of the hands and the muscles of the arm, which is due to the permanent position of the covering on the grip.

I do not desire to limit myself to the formation of a side-splice joint between the shaft and a wooden head, as it may be desirable to connect a metallic head with the shaft by means of a side splice.

Having described my invention, I claim—

1. As a new article of manufacture, a golf-club, the head and shaft portions of which are united by a side splice, the side of the shaft lying parallel with the face of the head being rounded or semi-oval in cross-section.

2. A golf-club, the head and shaft portions of which are united by a side splice, the side of the shaft which is parallel with the face or striking side of the head, being rounded or semi-oval in cross-section, and the opposite side of said shaft being flat.

3. A golf-club, the head and shaft portions of which are united by a side splice, the edge of the grain of the wood comprising the shaft lying in planes at right angles to the width of the head, the side of the shaft lying on the face side of the head being rounded or semi-oval in cross-section, and the opposite side of said shaft being flat, so that an excess of material lies throughout the shaft on that side nearest the face of the head, viewed from the longitudinal center of said shaft, substantially as and for the purposes specified.

4. A golf-club, the head and the shaft portions thereof being united by a side splice, the neck of the head being on the face side of said head, the grain of the wood comprising the shaft, head and neck portions lying parallel, one side of said shaft having a flat surface, and the opposite side having a rounded or semi-oval surface.

5. A golf-club, the head and shaft portions thereof being united by a side splice, the splice being opposite the face or striking-surface of said head, the side of the shaft which lies on the face or striking side of the head being semi-oval or rounded in cross-section, and the opposite side of said shaft being flat, the grain of the wood comprising both the shaft and the head portions extending in parallel directions.

6. A golf-club, the shaft and head portions of which are united by a side splice, the splice end of the shaft being on the side opposite the face or striking-surface of the head, the shaft above the splice being flat on one side and semi-oval or rounded on the other, the flat surface being on the side opposite the face or striking-surface of the head, and the handle or grip portion being rectangular in cross-section.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. MATTERN.

Witnesses:

R. J. McCARTY,

JOHN McGREGOR.