Sept. 2, 1930. A. E. BUHRKE 1,774,590

SOLE PLATE FOR GOLF CLUBS

Filed Dec. 9, 1927

Fig. 1.

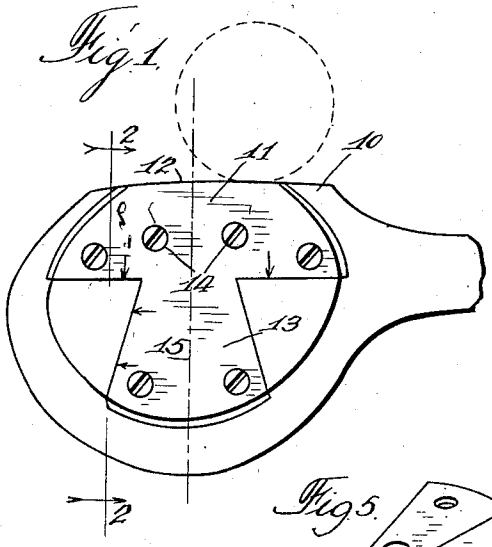


Fig. 3.

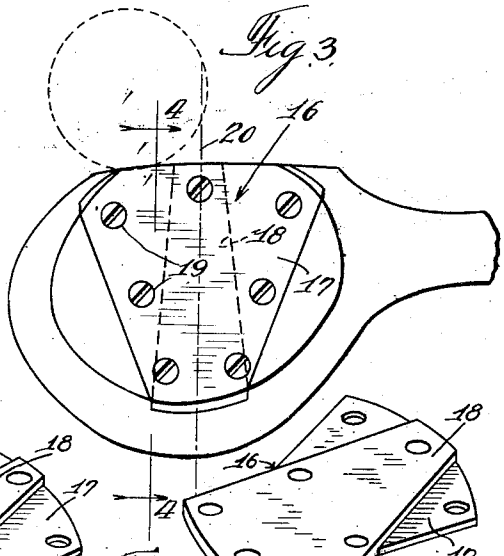


Fig. 5.

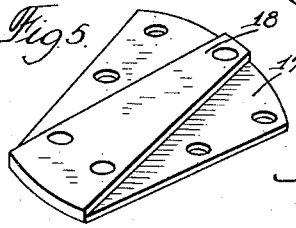
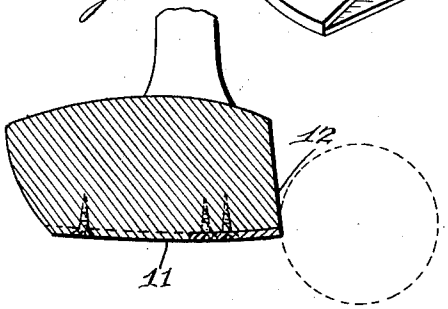


Fig. 4.

Fig. 6.

Fig. 2.



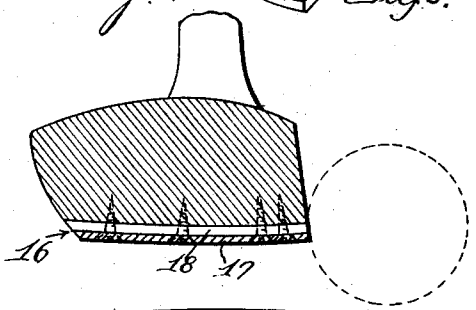


Fig. 7

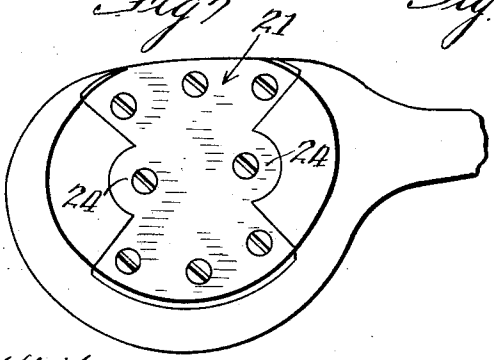
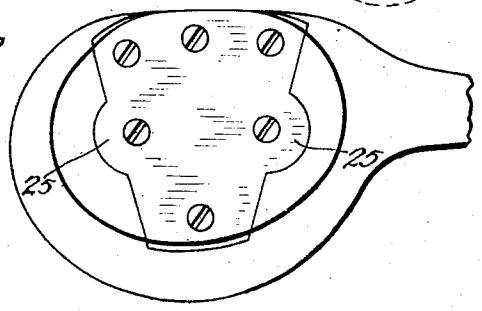


Fig. 8.



Witness

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UNITED STATES PATENT OFFICE

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SOLE PLATE FOR GOLF CLUBS

Application filed December 9, 1927. Serial No. 238,745.

This invention relates to sole plates for golf clubs and has special reference to a sole plate for application to the bottom of the head of a golf club in a manner which will distribute the impact of the blow and will equalize the vibration set up in the golf club head to afford a harmonious action throughout the club.

More particularly, this invention relates to a sole plate for golf clubs which sole plate is inlaid or seated in the bottom of the head of a golf club in a manner which will relieve the strain on the securing means therefor and will prevent the shifting of the position of the sole plate.

Heretofore, the usual practice has been merely to secure an overlying plate to the bottom surface of the head of the golf club, although it has been attempted to provide recesses in the bottom surface thereof to receive various forms of sole plates. However, in both instances, the shifting or twisting of the sole plate has not been prevented because of inadequate provisions in the construction, to overcome which this application is directed.

The sole plate is continually subjected to conditions whereby it is urged to twist on the bottom surface of the club, as for example, when the golf ball is "topped", that is, the lower portion of the golf club head strikes the ball, the sole plate receives the greatest portion of the impact. It is usual that the golf ball is struck off center with respect to a horizontal axis of the sole plate whereby it tends to pivot on the bottom surface of the club. Again, the sudden impact of the blow delivered by the club to the ball will tend to displace the sole plate in either a forwardly or rearwardly direction depending, of course, on the point or place of contact of the ball with the head.

One of the objects of this invention is to provide a sole plate for the bottom of a golf club head of such shape and so imbedded therein as to prevent a forward or rearward displacement of the sole plate.

Another object of this invention is to provide a sole plate of such shape and so imbedded in the bottom of the head of the golf club as to resist the tendency for the sole plate to shift its position when the impact of the blow is off-center relative to a central axis extending from the striking face to the rear edge of the club.

A further object of this invention is to provide a sole plate of such shape and so inlaid in the bottom of the head of the golf club as to distribute the vibrations caused by the force of impact throughout the golf club head.

Other objects and advantages of this invention will be apparent from the description and drawings forming a part of this specification to which latter reference may now be had for a more complete understanding of the characteristic features of this invention, in which drawings:

Figure 1 is a bottom plan view of a golf club head to which a sole plate of the type embodied in this invention is attached;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a bottom plan view of a golf club head to which a sole plate of a modified form is attached;

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a perspective view of the sole plate as illustrated in Figs. 3 and 4;

Fig. 6 is a view similar to Fig. 5 showing a further embodiment of a sole plate attached to the bottom of the golf club head; and

Fig. 7 is a view similar to Fig. 3 showing a further embodiment of a sole plate attached to the bottom of a golf club head.

Fig. 8 is a view similar to Fig. 3 showing a still further embodiment of a sole plate attached to the bottom of a golf club head.

Referring now to the drawings and particularly to Figs. 1 and 2 thereof, the usual form of golf club head 10 is shown which is preferably, although not necessarily, made of wood. The bottom surface of the golf club head is provided with a recess of a mushroom shape for receiving a sole plate 11 which conforms to the shape of the recess. The bottom surface of the sole plate is flush with the bottom surface of the golf club head, the internal edges of the sole plate seating on

the corresponding shoulders of the recess in the head. The enlarged top or head portion of the mushroom shaped sole plate is disposed adjacent the striking face 12 of the golf club head and extends a substantial distance rearwardly therefrom. A stem or shank portion 13 extends from the enlarged top or head portion rearwardly and preferably to the outer edge of the bottom surface of the golf club head. The sole plate is suitably secured in the recess provided in the golf club head by means of screws 14 or other suitable securing means.

The edges of the stem portion 13 converge forwardly from the rear edge of the club and act as a means for positively positioning the sole plate in its recess. It is readily apparent that the sole plate in this manner can neither move forwardly or rearwardly upon delivering a blow to the golf ball. It is to be understood that the stem or shank portion 13 may be positioned adjacent the striking face of the club head and that the top or head portion of the sole plate may then occupy a position to the rear thereof, the results obtained therefrom being effectively the same.

By referring now to Fig. 1 of the drawing, the golf ball is ordinarily struck off-center with respect to a central axis such as is indicated by the broken line 15 in which instance the force of impact is distributed as is shown by the arrows. If the golf ball were struck by the golf club head on the opposite side of the broken line 15, the substantially horizontally pointing arrows would assume an opposite direction whereby, in either instance, the vibrations set up within the golf club head are uniformly distributed.

By referring now to Fig. 2 of the drawings, should the lower end of the club head strike the upper portion of the golf ball, it will be noted that the force of the blow is received almost in its entirety by the sole plate 11. By reason of the novel construction of the sole plate 11, the shank portion anchoring the head portion, and by reason of the internal edges of the stem of the sole plate seating on the shoulders of the recess in the head of the golf club, the force of the impact is distributed throughout the head of the golf club as described in the preceding paragraph. The screw members 14 are therefore entirely relieved of any strain accompanying the continual shock to which the golf club head is subjected, and the sole plate is relieved of the tendency to turn or pivot in its recess, which latter would cause the edge opposite that struck by the golf ball to project beyond the surface of the striking face to cut or otherwise to mar the ball on a subsequent stroke.

Referring now more particularly to Figs. 3, 4 and 5, the sole plate 16 therein shown comprises super-imposed oppositely converging portions 17 and 18. These portions are preferably formed or cast integrally of a suitable material such as aluminum or brass. The lower portion 17 of the sole plate converges rearwardly and extends from the striking face of the club to be truncated by the rear edge of the bottom of the golf club head. The upper portion 18 of the sole plate converges forwardly of the golf club head and extends from the rear edge thereof to be truncated by the striking face thereof.

The bottom of the club head is provided with a recess of a size and shape to receive the sole plate in snug engagement therewith, the latter being secured thereto by screws 19 or other suitable means. The bottom surface of the lower portion 17 of the sole plate is flush with the bottom surface of the golf club head. The impact or force of the blow is thus resisted by the converging edges of the upper and lower portions of the sole plate whereby the vibration is distributed uniformly throughout the golf club head.

By referring to Fig. 4, should the lower end of the golf club strike the upper portion of the golf ball, it will be noted that the force of the blow is received almost in its entirety by the sole plate 16, the forward edge thereof being co-extensive with the striking face, and the latter, as is usual in golf club construction, being inclined rearwardly from the bottom of the club head.

By referring now to Fig. 3 of the drawing, a golf ball is shown engaging the striking surface of the golf club head off-center relative to a central axis of the sole plate such as is indicated by the broken line 20. It is usual that the golf ball is struck off-center and the force of impact thus tends to turn the sole plate in its recess so that the opposite end of the edge striking the ball tends to project beyond the striking face. However, the particular construction herein shown prevents any turning or displacing of the sole plate by reason of the oppositely converging edges of the upper and lower portions of the sole plate. Further, these oppositely converging edges of the sole plate, by reason of their being seated against the shoulders of the recess, relieve all strain of the continual shock to which the club head is subjected from the screw members 19, the latter merely acting to hold the sole plate in the recess.

By referring now more particularly to Fig. 7 of the drawings, a sole plate 21 is therein shown wherein the oppositely converging edges occupy the same plane. The bottom of the golf club head is provided with a recess of a size and shape for receiving the sole plate 21 in snug engagement therewith, the bottom surfaces thereof being flush. The sole plate extends from the striking face or front edge of the bottom portion of the club to the rear edge thereof, the internal edges of the front portion of the sole plate converging inwardly from the striking surface

and the internal edges of the rear portion of the sole plate converging inwardly towards a substantially central point. These converging edges are interrupted by ears 24 preferably formed integrally with the sole plate.

In this latter described construction, the converging edges are disposed in opposite directions whereby a forward and rearward displacement of the sole plate is impossible. Also should a golf ball be struck off-center with respect to a central axis through the sole plate, the converging edges of the rearwardly disposed portion of the sole plate would prevent a turning or twisting of the sole plate. However, if the shifting of the sole plate were possible, one end of the edge of the latter would project beyond the striking surface and cut or otherwise mar the ball upon a subsequent stroke. In order to further anchor the sole plate in position on the bottom of the golf club head, the ears 24 are provided which seat against the shoulders of the recess formed to receive the same.

The sole plate of the type shown in Fig. 8 comprises a member having its internal edges converge rearwardly to be truncated by the rear edge of the club head, the forward edge of the sole plate being preferably flush with the striking face of the club. As in the previous embodiments, the bottom surfaces of the club head and sole plate are flush and means are provided for preventing a forward displacement of the sole plate. The aforesaid means comprises a pair of ears 25 projecting outside the converging edges of the sole plate. Because of the converging edges and the preferably integrally formed ears 25, either external edge may be placed in alignment with the striking face of the golf club as in all previous embodiments.

The sole plate is secured by means of screws or other suitable securing means and it is apparent in this embodiment as in the previously described embodiments that these securing means are relieved of any and all shocks received by the impact of the club on the ball whereby the screws are prevented from becoming loosened.

The construction shown in the embodiments of this invention provide an efficient and harmonious action in transmitting the vibrations received from the force of the impact throughout the golf club. Further, the sole plates are so constructed and so imbedded in the bottom of the golf club head as to prevent any twisting thereof, whereby the sole plate would project beyond the surface of the striking face of the golf club or whereby the screws would become loosened. The sole plate then is held in a positive fixed relation with the club and no displacement may be obtained from the force of impact in any direction.

While several embodiments of this invention are herein shown and described, it is to be understood that many modifications thereof may be apparent to one skilled in the art without departing from the spirit and scope of this invention and it is desired that the same shall be limited only by the scope of the appended claims and the showing of the prior art.

I claim:

1. The combination with a head for a golf club, of a sole plate imbedded in the bottom of said head whereby the bottom surfaces thereof are flush, said sole plate comprising superimposed portions having oppositely converging side edges, said edges of said superimposed portions seating against shoulders in said head to prevent a displacement in any direction and to distribute the vibration received from the force of impact uniformly throughout said head.

2. The combination with a head for a golf club, of a sole plate imbedded in the bottom of said head whereby the bottom surfaces thereof are flush, said sole plate comprising superimposed portions, one of said portions having the greatest width thereof at the forward end of said head and converging rearwardly therefrom, the other of said portions having the greatest width thereof at the rear end thereof and converging forwardly therefrom, the side edges of said portions being seated against shoulders in said head to prevent a displacement in any direction.

3. The combination with a head for a golf club, of a sole plate imbedded in the bottom surface of said head whereby the bottom surfaces thereof are flush, said sole plate comprising superimposed portions having oppositely converging edges extending from the striking face of said head to the rear edge thereof, said edges of said superimposed portions being seated against shoulders in said head to prevent a displacement in any direction.

4. The combination with a head for a golf club, of a sole plate imbedded in the bottom surface of said head whereby the bottom surfaces thereof are flush, said sole plate comprising a lower portion having the greatest width thereof adjacent the striking face of said head and converging rearwardly therefrom to be truncated by the rear edge of said head and an upper portion having the greatest width thereof adjacent the rear edge of said head and converging forwardly to be truncated by said striking face, the side edges of said portions being seated against shoulders in said head to prevent a displacement in any direction.

In witness whereof, I have hereunto subscribed my name.

ALFRED E. BUHRKE.