

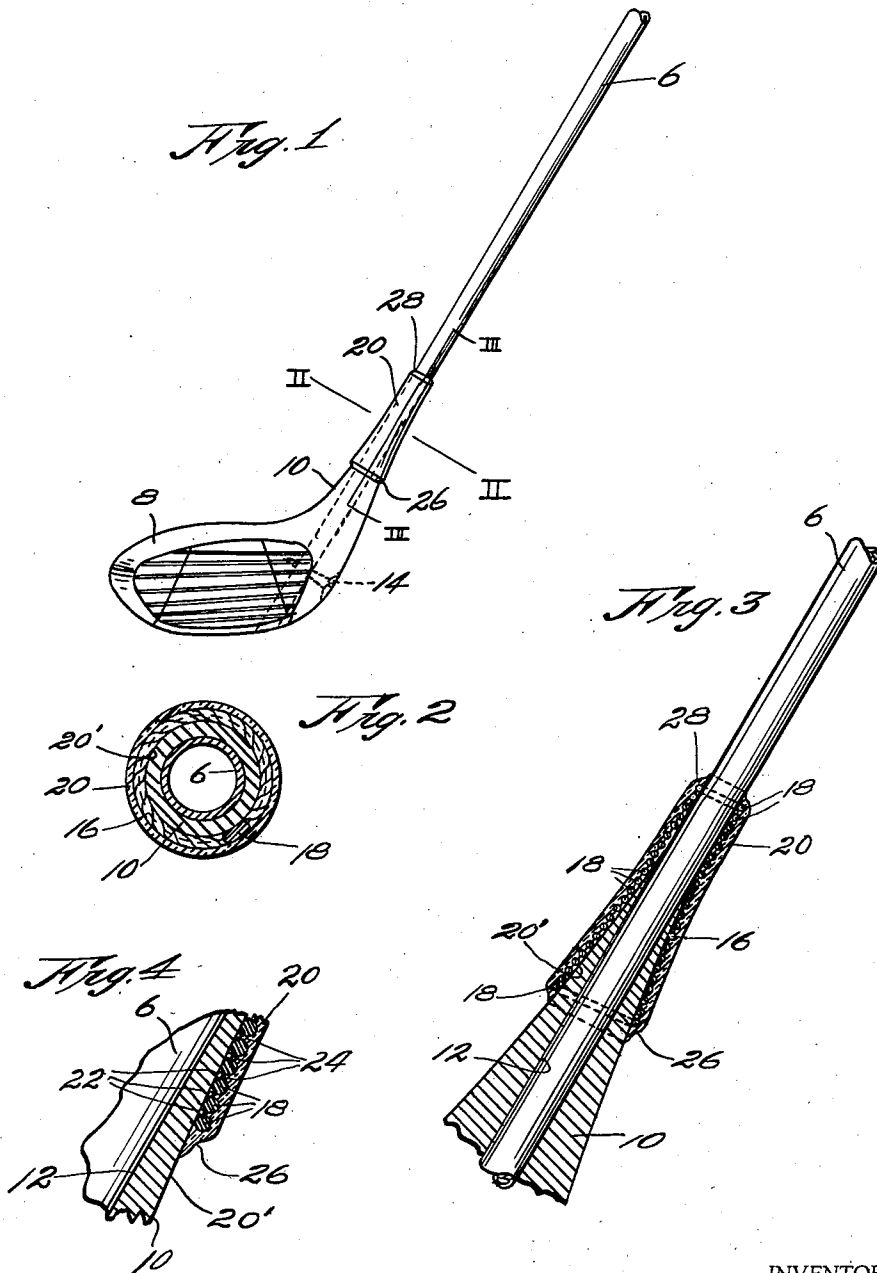
April 16, 1935.

K. SMITH

1,997,889

GOLF CLUB AND METHOD OF MANUFACTURING SAME

Filed Oct. 19, 1931



INVENTOR,
Kenneth Smith.

BY
Harvey & Hamilton,
ATTORNEYS.

UNITED STATES PATENT OFFICE

1,997,889

GOLF CLUB AND METHOD OF
MANUFACTURING SAME

Kenneth Smith, Kansas City, Mo.

Application October 19, 1931, Serial No. 569,650

4 Claims. (Cl. 273—80)

This invention relates to the art of manufacturing golf clubs and the primary object of the same is to provide a new article and the method of constructing the same whereby a stronger, neater and more durable club is produced.

One of the salient features of this invention lies in the production of a unique shield for the whipping of a golf club located at the zone of connection between club head and shaft.

A still further object of the instant invention is the contemplation of improvements in golf club construction which are directed toward the production of an extremely strong reinforcement where golf shaft and head interconnect, which reinforcement presents a beautiful appearance to lend an appealing touch to the club where heretofore the most unsightly portion thereof was located.

Another object of the invention is the provision of a shield for the whipping of a golf club which serves not only to maintain said whipping in position against slipping and longitudinal displacement, but also to maintain the plurality of cord coils constituting said whipping in the relative position occupied when this unique shield was positioned.

Many minor objects of the invention, together with the steps taken while practicing the method, will appear during the course of the following specification, referring to the accompanying drawing, wherein:

Figure 1 is a side view of the lower portion of a golf club embodying the invention.

Fig. 2 is a cross section through the zone of connection between club head and shaft, taken along line II—II of Fig. 1.

Fig. 3 is an enlarged, fragmentary, longitudinal, central section through the zone of connection, taken on line III—III of Fig. 1, and,

Fig. 4 is a still greater enlarged, fragmentary, detailed view of a portion of the zone of connection.

In describing the golf club and method of producing the same, reference will be made to those specific details of construction shown in the drawing. Like reference characters will be used throughout the specification to designate similar parts of the club illustrated.

While the features of the invention might be embodied in structures of various characters, they are peculiarly adapted for use in connection with the whipping of the well known golf club, two of the essential parts thereof being shaft 6 and head 8. Head 8 projects into a neck 10 and has formed therein an opening 12 to tele-

scopically receive shaft 6 when the two parts are assembled. In some instances a screw 14 is passed through head 8 and the received end of shaft 6 to secure rigidity and, as shown in Fig. 3, neck 10 tapers to progressively approach substantially the same diameter as shaft 6 as the uppermost end of neck 10 is approached. That portion of shaft 6 and neck 10 on each side respectively of the end of neck 10 is best designated as the zone of connection between head and shaft. It is at this zone that reinforcement is usually required and the common practice is to provide a whipping 16 of hemp cord or similar material which is produced by winding the cord about that part of neck 10 and shaft 6 forming the said zone of connection. Successive coils of cord 18 constitute the whipping 16, and in view of the inclined annular face 20' which forms a part of the zone of connection, it is desirable to provide some means for precluding movement on the part of whipping 16 longitudinally of the assembly.

When whipping 16 is left exposed it is not uncommon for the same to receive a blow with sufficient force to sever one of coils 18. This destructive action causes a loosening of whipping 16 and in most instances a displacement of the same to such an extent that an entire new whipping must be applied.

To fulfill one of the very important features of this invention, there is provided a shield 20, preferably formed of celluloid or similar substance having a nitrocellulose base. This shield 20 is molded over whipping 16 after it is in a semi-plastic condition and in sheet form, such condition being attained through the medium of suitable solvents such as acetone and amylacetate.

The method of handling and applying shield 20 will hereinafter be made clear through the use of the term celluloid or any other material susceptible of description by Webster's definition of celluloid which is "a substance composed essentially of soluble gun cotton and camphor—". In practice it has been found that a solution consisting of fifty percent acetone and fifty percent amylacetate is the best solvent for use when treating the celluloid shield 20 immediately prior to molding the same in position over the zone of connection. In carrying out the method, the sheet of celluloid which is to form shield 20 is immersed in the aforementioned solvent of acetone and amylacetate until the sheet becomes gelatinous without losing its formation as a sheet. The celluloid is next hung to allow surplus sol-

vent to flow therefrom, after which, and immediately prior to molding the celluloid about whipping 16, the sheet is again dipped in the solvent for a very short time. After so treating the sheet of celluloid it is wrapped about whipping 16 and caused to overlap itself. The sheet is wide enough to project beyond whipping 16 and over that portion of shaft 6 and neck 10 immediately adjacent the end coils 18 of whipping 16.

The semi-plastic condition of the sheet now forming shield 20 and the presence of the solvent causes a fusing together at the overlapped portions of the sheet and a perfect molding to form shield 20. The pressure applied is sufficient to force a part of the shield material into the interstices 22 formed between the individual coils 18 of whipping 16. Corrugations or inwardly extending projections 24 enter between coils 18 and adhesively affix themselves securely to the whipping 16. This adhesive fixation is likewise set up at the extended portions 26 and 28 respectively which bond themselves securely to neck 10 and shaft 6 respectively.

Applying shield 20 is done by hand. The graceful curve which is desired at this zone is preserved and after the celluloid shield 20 returns to its original hardness, rigidity is set up to the extent that the club at this point is securely bonded together by shield 20 which completely encases whipping 16, maintains the individual coils 18 of whipping 16 in their original relative spaced relation, precludes longitudinal movement because of the adherence of extensions 26 and 28 to neck 10 and shaft 6 respectively. The hemp cord forming whipping 16 produces a padding effect beneath celluloid shield 20 of sufficient resiliency to overcome blows which might be received by shield 20 when the club is in use. The relation between shield 20 and whipping 16 likewise precludes destruction of shields 20 in the event the same is subjected to blows.

After shield 20 is molded and adhesively affixed as just set down, same is allowed to thoroughly set, after which a "dressing down" may take place either through the use of a fine file or suitable abrasive such as sand or emery paper. Obviously, celluloid of any suitable color might be employed to further enhance the appearance of the assembly and the length of shield 20 might be varied as it becomes necessary to vary the amount of whipping 16.

Manifestly, in practicing this invention it is unnecessary to provide any other adhesive material to maintain wrapping 16 in position and while the corrugations or projections 24 are shown in Fig. 4 to enter interstices 22 by a short distance, in practice it will be found that such projections will extend entirely to the surface of

neck 10 or shaft 6 as the case might be to even further bind together the parts. The ends of shield 20 at projections 26 and 28 may be rounded off in extremely neat fashion whereby to avoid any abrupt offsets or ridges.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. The steps in the method of making a golf club which comprises applying a whipping to the zone of connection between club head and shaft with the coils thereof in spaced relation; immersing a sheet of hardened plastic material in suitable solvent to render the same gelatinous without losing its form as a sheet; wrapping the so treated sheet of plastic material about the said whipping with two marginal edges thereof in overlapped relation; and then applying pressure to said material to force portions of the same into a portion of the space between the coils of the whipping, with a remaining portion of the sheet forming a hard protective layer of substantial thickness over the whipping, whereby the said sheet of plastic material is fused together along the overlapped marginal edges and the inner whipping-engaging face partially circumscribes each coil of the whipping.

2. The steps in the method of making a golf club which comprises applying a fibrous, resilient whipping to the zone of connection between club head and shaft; immersing a sheet of nitrocellulose base material in a solvent bath to render the same plastic; deforming the so treated sheet by wrapping the same about the said whipping with the marginal edges thereof in overlapped relation; applying pressure to said sheet to force portions of the same between the coils of the whipping with a remaining portion thereof forming a protective layer of substantial thickness over the whipping and allowing the material to harden.

3. A golf club comprising a telescopically joined head and shaft, a whipping along the zone of connection between the head and shaft comprising a fibrous, resilient, spirally wound cord, and a relatively hard shield bonded to said whipping with portions thereof extending into the spaces between the coils of the whipping and being bonded thereto but spaced a distance from the underlying surface of head and shaft whereby the shield is maintained spaced therefrom with the whipping forming a cushion under the shield.

4. A golf club as set forth in claim 3, wherein the ends of the shield are extended beyond the ends of the whipping and said ends of the shield are intimately bonded respectively to the head and shaft.

KENNETH SMITH.