March 9, 1954 H. T. GOODWIN 2,671,661

GRIP FOR GOLF CLUBS AND THE LIKE AND METHOD OF MAKING THE SAME

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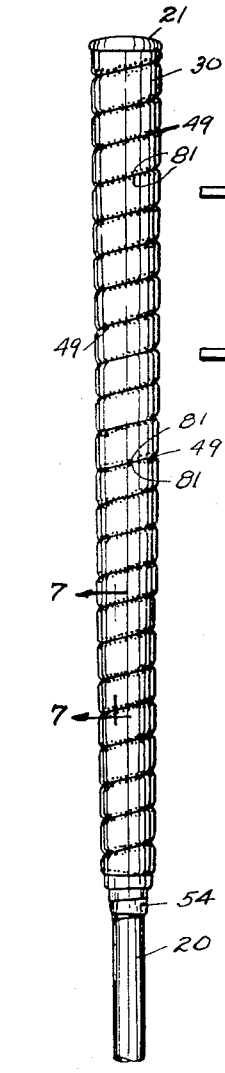


FIG-1

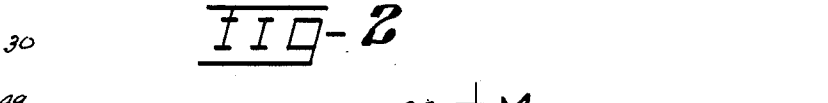


FIG-2

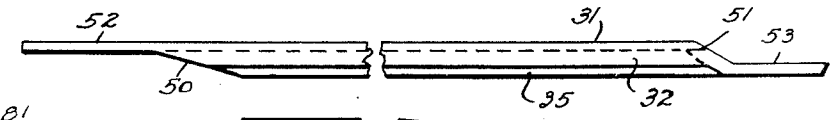


FIG-3

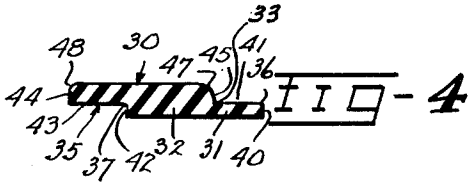


FIG-4



FIG-5

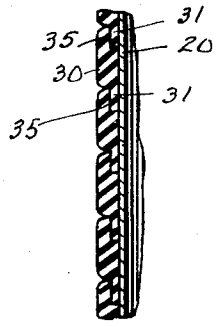


FIG-7

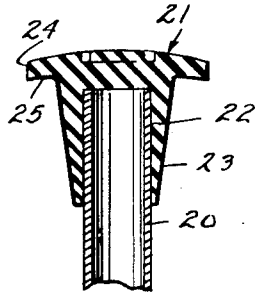


FIG-6

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GRIP FOR GOLF CLUBS AND THE LIKE
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FIG-11

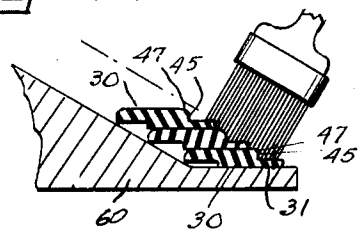
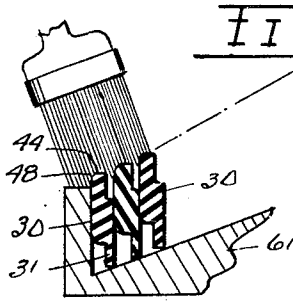


FIG-12



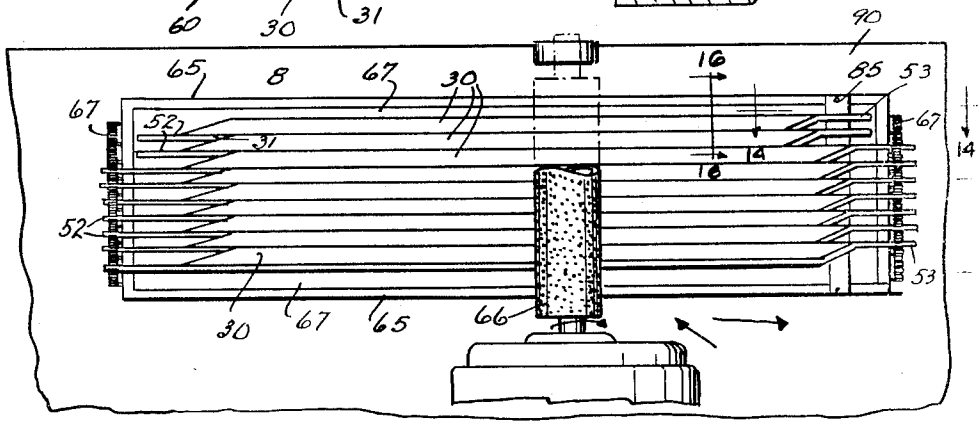


FIG-13

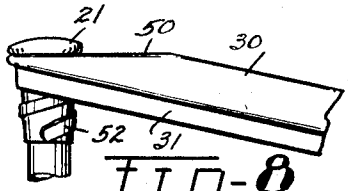


FIG-8

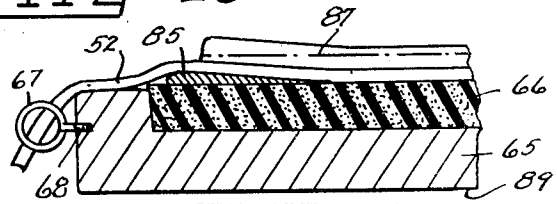


FIG-14

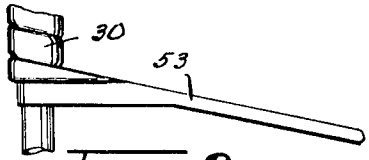


FIG-9

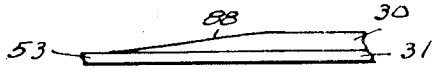


FIG-15

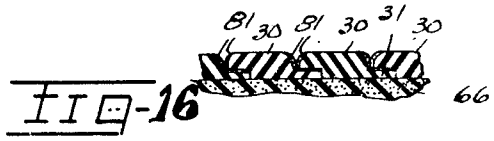


FIG-16

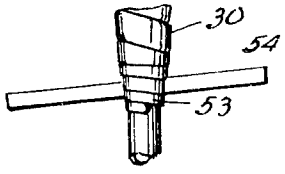


FIG-10

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UNITED STATES PATENT OFFICE

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GRIP FOR GOLF CLUBS AND THE LIKE AND METHOD OF MAKING THE SAME

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Application June 22, 1950, Serial No. 169,681

6 Claims. (Cl. 273—81)

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This application is a continuation in part of my copending application filed July 12, 1949 and assigned Serial No. 104,227.

The present invention relates to improvements in grips for golf club shafts and the like and to an improved method of making the same. The invention is more particularly concerned with the provision of a grip having an improved gripping surface, and which may be readily applied to the club shaft. These, therefore, are the general objects of the present invention.

A more specific object of this invention is to provide a grip for a golf club shaft which may be readily manufactured and which may be readily applied to a club shaft without the use of a cement between the club shaft and the grip, and which when applied will facilitate the holding of the shaft.

Another object of this invention is to provide a preformed strip of stretchable, resilient material, such as rubber, which may be wrapped spirally about the shaft of a golf club or the like and which may be so wrapped as to eliminate or avoid the use of an adhesive material between the shaft and the strip and yet which will not slip relative to the shaft when in use.

Another object is to provide a grip for a golf club or the like having the advantages above mentioned, which may be readily used as a replacement for existing grips, and which will be attractive in appearance and provide a satisfactory "feel."

Another object of the present invention is to provide an improved grip for golf clubs, tennis rackets and the like which will provide a resilient and cushioning effect and, at the same time, eliminate contortion or movement of the gripping surface relative to the club shaft or handle. Further, the present invention provides a grip which will minimize or permit the control of the grip "torque," a factor which in the past has made resilient grips undesirable.

A further object of the present invention is to provide an improved method of manufacturing a grip for the handles or shafts of golf clubs, tennis rackets and the like which will facilitate the provision of multi-colored grips.

Another object of the invention is the provision of an improved method of manufacturing a grip which may readily be applied to existing shafts or handles, and which will result in the provision of a grip having an improved gripping surface.

According to the present invention there is provided a grip for golf clubs or the like comprising, an elongated strip of stretchable, resilient rubber composition or rubber-like material having an elongated flange extending outwardly along one longitudinal edge thereof having its bottom surface substantially flush with the body of the grip, and having an elongated channel extending inwardly from and along the other longitudinal bottom edge thereof and adapted to receive the flange when the grip is wound spirally about a shaft or handle.

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Further according to the present invention, there is provided a grip for golf clubs or the like comprising, an elongated strip of resilient, stretchable rubber composition or rubber-like material having a hardness of from thirty-five to fifty-five as measured by a Shore "A" durometer, and having a mechanically roughened external gripping surface.

Further according to the present invention, an integral elongated stretchable rubber strip having an elongated flange extending outwardly along one longitudinal edge thereof with its bottom surface substantially flush with the body of the grip together with an elongated channel extending inwardly from and along the other bottom longitudinal edge thereof and adapted to receive the flange when spirally wound about a shaft or the like, is molded of a rubber-like composition, the molded strip is then stretched and while so stretched its upper surface is subjected to the action of an abrasive material to roughen its surface.

Further according to the present invention, the body portion of the molded strip has its upper edges beveled, which surfaces are coated with a thin coating of paint of a color differing from that of the body of the strip and the upper surface of the strip is then subjected to the action of an abrasive to roughen the upper surface of the strip and remove any color adhering thereto.

In the drawings, Fig. 1 is a fragmentary view of a gold club shaft provided with the improved grip of this invention; Fig. 2 is a plan view of the preformed strip of stretchable, resilient material which forms the improved grip; Fig. 3 is a bottom view of the strip illustrated in Fig. 2; Fig. 4 is a sectional view of the strip, the plane of the section being indicated by the lines 4—4 in Fig. 2; Fig. 5 is a fragmentary section similar to Fig. 4 but on a greatly enlarged scale; Fig. 6 illustrates an improved club cap or tip piece for use in connection with the improved grip; Fig. 7 is a fragmentary section through the wound shaft, the plane of the section being indicated by the lines 7—7 on Fig. 1; Fig. 8 is a view of the club shaft and illustrates the manner in which the winding

of the strip may be started; Fig. 9 is a fragmentary view of a club shaft and illustrates the manner of winding of the strip as it nears completion; Fig. 10 is a view similar to Fig. 9, illustrating the strip completely wound and ready to be secured in place; Figs. 11 and 12 are views illustrating the coating of the longitudinal edges of the molded strips with color; Fig. 13 is a view illustrating the improved methd of roughening the upper surface of the molded strips and removing the color coating from such surface; Fig. 14 is a fragmentary sectional view through the apparatus shown in Fig. 13, the plane of the section being indicated by the lines 14—14 on Fig. 13; Fig. 15 is a fragmentary side elevation of the roughened strip; and Fig. 16 is a sectional detail, the plane of the section being indicated by the lines 16—16 on Fig. 13.

The invention has been illustrated in the drawings as applied to a conventional steel golf club shaft 20. These shafts are tubular and are tapered, sometimes in graduated section, toward the lower end of the shaft to which a head, not shown, is affixed in the usual manner. Generally the upper end of the tubular shaft is closed by a cap having a button-like tip provided with a plug portion which is driven into the open end of the shaft. This tip provides an abutment for the grip. Such tips or plugs remain in place due to their drive fit, or are cemented, pinned or otherwise secured to the club shaft.

The present invention contemplates the use of the improved cap 21, shown in Fig. 6. The cap 21 comprises a tubular or cup-like portion 22 into which the upper end of the shaft projects. The cup-like portion is tapered as at 23 and its upper end is closed and provided with an outwardly extending flange 24 which provides an abutment 25 against which the upper end of the grip may seat. The cap 21 is preferably made of a rubber composition or rubber-like material and its flange 24 is sufficiently large in diameter to permit it to be trimmed to suit the user after the grip has been applied.

The improved grip comprises an elongated molded strip 30 of rubber or other stretchable, resilient, rubber-like material having a hardness of from thirty-five to fifty-five as measured with a Shore "A" durometer, and which, when stretched, provides sufficient friction to assist in retaining the strip on the shaft. The strip 30 is preferably molded and is provided with a substantially longitudinal flange 31 which extends the entire length of the strip. The under surface of the flange is contiguous or flush with the under surface of the body portion 32 of the strip. The flange 31 is materially thinner than the body portion 32 of the strip and forms substantially a right angle with the body portion of the strip, as indicated at 33 in Fig. 4.

The bottom of the body portion 32 of the strip 30 is provided with a longitudinal undercut or groove 35 which extends along the longitudinal edge thereof opposite the flange 31. The dimensions of this groove are identical with those of the flange 31, and when the grip is spirally wrapped about the shaft the groove will overlie the flange and be completely filled thereby. The outer corners 36 of the flange and the inner corners 37 of the groove are both substantially ninety degrees. Thus when wrapped spirally about the shaft as shown in Figs. 1 and 10 the surfaces 40 and 41 of the flange abut the surfaces 42 and 43 respectively of the groove and prevent relative movement of the strip axially of the shaft 2. The outer upper corners 47 and 48 of the body portion 35 are rounded and coact to provide a spiral groove 49 when the strip is wound about the shank.

The ends of the body portion 32 of the strip are beveled as shown at 50 and 51. The angle of this bevel is such that when the strip 30 is spirally wound about the shaft the beveled surface 50 lies in a plane normal to the axis of the shaft 20 thus enabling it to abut the shoulder 25 of the cap 21. The other beveled surface 51 lies in a similar plane so as to facilitate fastening thereof to the shaft as indicated in Figs. 7 and 8.

The flange 31 extends some distance to either end of the body portion 32 as shown at 52 and 53. The end 52 of the flange 31 is comparatively thin, and may be wrapped about the portion 23 of the cap 21, as shown in Fig. 8, until the beveled portion 50 engages the flange 25 of the cap whereupon the strip is spirally wound about the cap and shaft, thus securing the upper end of the grip to the cap and the cap to the club shaft 20.

The strip 30 is stretched as it is wound so that it tightly engages the shaft and is wound with the groove 35 at the top and the flange 31 toward the bottom of the shaft. Thus the tensioned portion of the strip overlying the flange 31 will retain the strip in position on the shaft. This, together with the abutting edges heretofore mentioned, prevents any creeping or relative movement between the strip and the shaft and avoids the necessity of using cements or adhesives as has been the custom in the past.

When the strip is completely wound the extension 53 of the flange 31 is wound about the shaft and, as indicated in Fig. 10, is wrapped with a band of adhesive tape 54 or is bound with twine at its lower end in the usual manner to form a complete grip as shown in Fig. 1.

In manufacturing the improved grip, a plurality of individual strips 30 of rubber-like composition are molded in the usual manner. These strips, as molded, are somewhat greater in height than the thickness desired for the finished product.

If the completed grip is to be made in contrasting colors, a plurality of strips are assembled as indicated in Fig. 11, so as to expose the edges 45 and the associated surfaces of the flanges 31 of each strip. As illustrated, a plurality of strips are superimposed one atop the other on a suitable support 60 in such manner that each strip covers the major portion of the upper surface of the strip therebelow. A thin layer of coloring material as, for instance, a paint having a rubber base is then applied to the exposed edges 45 and the associated beveled corners 47 of the body portions of the strips. The paint used is preferably of a type containing a liquid solvent which evaporates rapidly at room temperature and which will dry quickly. When dry the strips are restacked, as indicated in Fig. 12, on a suitable support 61 with the opposite edges 44 and their adjacent beveled corner portions 48 thereof exposed for coating in the same manner as were the edges 45. The colored coating may be applied in liquid form in any other well-known manner such as, for instance, by spraying.

After both color coatings have been applied, the upper surface 49a of each strip is subjected to the action of an abrasive to mechanically roughen the strip. The roughening operation also serves to remove any of the color coating from the top surface of the body portion 32 of the strip and provides a grip which, when wrapped on a club shaft, has the desired "feel."

The roughening operation is accomplished, as indicated in Fig. 13, where a plurality of strips **30** are shown assembled on a platen **65** with the flange of each strip seated in the recess of the next adjacent strip. This platen is passed beneath an abrasive coated roll **66** which is rotated in any suitable manner so that the surface of the roll, coacting with the strips, moves in a direction opposite to the direction of movement of the strips.

The platen **65**, as shown in Figs. 13 and 14, comprises a relatively flat supporting structure having a recess in its top which is filled with a resilient pad **66** of sponge rubber or similar material. Secured to the ends of the platen **14** are suitable retaining devices **67**. Any form of retaining device may be used which will facilitate rapid positioning of the strips on the platen, and which will retain the strips in a stretched condition. For this purpose there is shown a tightly wound coil of spring wire which is attached at various points to the ends of the platen as by pins or studs **68**. The arrangement is such that one end of the strip as, for instance the end **52**, may be placed between the coils of the spring **67** at one end of the platen, the strip stretched to elongate the body portion **32** thereof from three to ten per cent, and the other end **53** of the strip inserted between the coils of the spring **67** at the other end of the platen to retain the strip in its stretched condition with its lower surface in engagement with the sponge rubber pad **66** of the platen **65**.

It has been found that a highly satisfactory finish is obtained where the strips are stretched to elongate them approximately five per cent across a sponge rubber base or pad and while so stretched are subjected to the action of an abrasive grit of a fineness of about number twenty-four (No. 24) covering the surface of a three inch diameter roll rotating at about twenty-five hundred revolutions per minute (2500 R. P. M.) while drawing the platen slowly past the roller with sufficient pressure to remove approximately five per cent of the material from the body portion of the strip.

The supporting of the strip **30** with the flange **31** of the next adjacent strip seated in the channel **35** thereof provides a support for the entire body portion of the strip. The use of a sponge rubber pad assists materially in preventing longitudinal movement or creeping of the strip and provides a resilient support during the abrading action. The action of the abrasive material removes the mold finish surface from the grip and roughens it, leaving a series of minute projections such as indicated in the enlarged sectional view in Fig. 5. This grinding operation also removes any of the coloring material **81** which might adhere to the outer surface of the body portion of the grip, thereby leaving the coloring material only on the abutting and curved surfaces **44**, **48** and **47** visible when the grip is wrapped about a club, such coloring material being greatly exaggerated in thickness in Fig. 16.

It has been found advantageous to taper the body portion of the trailing end of the grip. To accomplish this, the platen **14** is provided with a shim **85** which extends transversely beneath the strips mounted thereon adjacent the ends **51** thereof. This shim elevates such ends above the remaining portions of the strip, and, as the strip is ground, a greater amount of material will be taken from such end portions, as is indicated by the dotted line **87** in Fig. 14. This produces a

strip decreasing in thickness adjacent its end as indicated at **88** in Fig. 15. If desired, the body portion **32** of the entire strip may be tapered by inclining the bottom surface **89** of the platen relative to its upper surface. Such a tapering of the grip would increase the normal taper of the club shaft, and may be of an amount suitable to the user.

I claim:

1. A surfacing strip for wrapping about the handles of golf clubs and the like without the use of an adhesive, comprising an elongated strip of homogeneous stretchable resilient material having a hardness of from 35 to 55 as measured by a Shore "A" durometer, and having an elongated flange extending along one longitudinal edge thereof and an elongated groove along the opposite longitudinal edge thereof and adapted to receive said flange when the strip is spirally wrapped about a club handle or the like, one end of said strip increasing in thickness from the end inward of the strip.

2. The method of making a surfacing strip for wrapping about the handles of golf clubs and the like from an elongated strip of stretchable resilient material having an elongated flange extending along one longitudinal edge thereof and a recess along the opposite bottom edge thereof, comprising resiliently supporting the strip with a filler seated in the recess of said strip to support the portion of the strip thereabove, stretching the strip while so supported, and subjecting the stretched strip to an abrasive action while in the stretched condition to roughen the upper surface of the strip.

3. The method of making surfacing strips for wrapping about the handles of golf clubs and the like to form hand grips therefor from elongated strips of resilient stretchable material, each strip having a body portion with elongated flanges extending outwardly therefrom and along one longitudinal edge thereof and an elongated recess extending inwardly and along the opposite edge thereof, and the flange and recess being of the same thickness, comprising applying a color coat to the edges of the strip, positioning a plurality of coated strips on a resilient support with the flange of each strip occupying the recess of the next adjacent strip to support the body portion of such strip overlying the recess, stretching the strips to elongate them approximately five per cent, securing the ends of strips to the support to maintain the stretched condition, subjecting the upper surface of the stretched strips to the action of a rotating abrasive coated member extending across all of the strips to thereby remove any color coating from and roughen the upper surfaces of such strips and thereafter releasing the strips.

4. A surfacing strip for application to the handles of golf clubs and the like, comprising an elongated homogeneous strip of molded stretchable resilient rubber-like composition material having a hardness of from thirty-five to fifty-five as measured by a Shore "A" durometer, said strip having an elongated flange extending along one longitudinal edge thereof and a second elongated flange extending along the diagonally opposite longitudinal edge adapted to overlie the first named flange when the strip is spirally wrapped about a club shaft or the like, the exposed surface of said strip having a roughened finish coacting with the degree of hardness to provide a cushioned grip surface substantially free from slippage, the ends of said strip being cut on a bias

and each terminating in elongated anchoring portions having a width relatively narrower than the width of the major strip portion and extending generally parallel therewith.

5. A surfacing strip for winding about the shaft of golf clubs without the use of an adhesive and the like to form a hand grip, and comprising an elongated one piece narrow strip of resilient stretchable rubber-like material having a hardness of from thirty-five to fifty-five as measured by a Shore "A" durometer, and having an elongated flange along one longitudinal edge thereof and an elongated flange extending along the diagonally opposite longitudinal edges and one of which is adapted to overlie the other when the strip is spirally wrapped about a club shaft or the like, the ends of said strip being cut on a bias and each terminating in elongated anchoring portions having a width relatively narrower than the width of the major strip portion and extending generally parallel therewith.

6. A surfacing strip for wrapping about the handles of golf clubs and the like without the use of an adhesive comprising, an elongated homogeneous strip of stretchable molded rubber-like resilient material having a hardness of from twenty-five to thirty-five as measured by a Shore "A" durometer, an elongated flange extending along one longitudinal edge thereof and a recess along the opposite edge thereof, said flange and recess being of less thickness than the body of

the strip whereby when the strip is spirally wound about a club shaft or the like the recessed portion of the body will overlie the flange, the outer edges of said strip being beveled and provided with a layer of coloring material, the coloring along both edges coacting when the strip is spirally wound on a club shaft to provide an inlaid band of color in contrast to the body of the strip, the ends of said strip being cut on a bias and each terminating in elongated anchoring portions having a width relatively narrower than the width of the major strip portion and extending generally parallel therewith.

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