

Oct. 9, 1923.

1,469,766

R. S. BLAIR

NONSLIPPING DEVICE

Filed March 24, 1919.

Fig. 1.

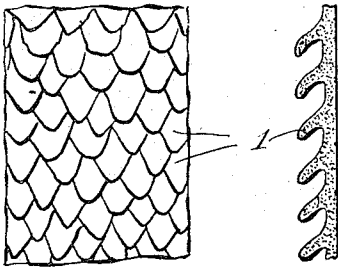


Fig. 2.

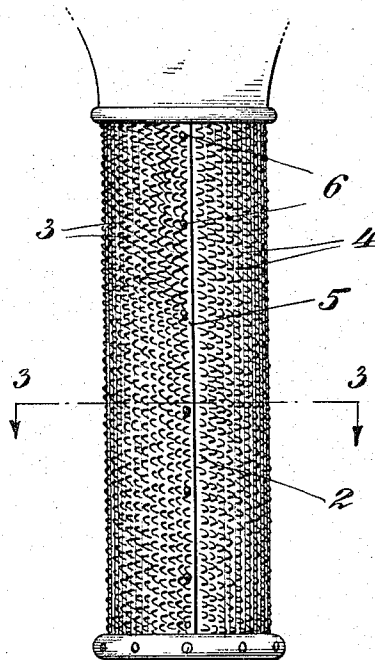


Fig. 3.

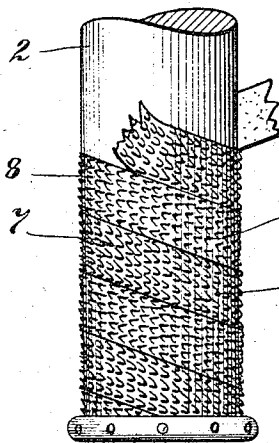
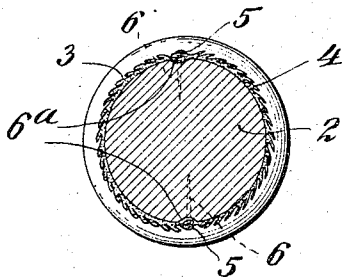


Fig. 4.

Fig. 6.

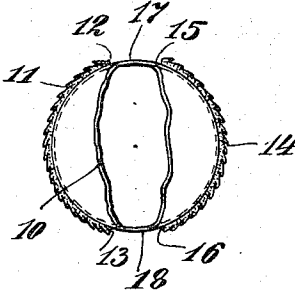
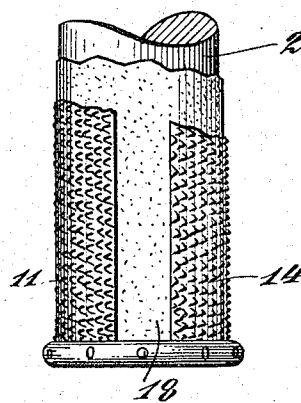


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT S. BLAIR, OF SOUND BEACH, CONNECTICUT.

NONSLIPPING DEVICE.

Application filed March 24, 1919. Serial No. 284,620.

To all whom it may concern:

Be it known that I, ROBERT S. BLAIR, a citizen of the United States, and resident of Sound Beach, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Non-Slipping Devices, of which the following is a specification.

This invention relates to implements and with regard to its more specific features to implements of the type employed in certain games, such as tennis.

One of the objects is to provide a tennis racket which shall secure improved control by the player over the ball.

Another object is to provide a handle for a tennis racket or the like which will afford a secure grip under all conditions and without great effort.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims:

In the accompanying drawings wherein are shown one or more of various possible embodiments of the several features of this invention,

Figure 1 is a magnified view of a piece of my covering element shown both in elevation and in cross section.

Fig. 2 is a fragmentary side view of a tennis racket showing my improved form of handle.

Fig. 3 is a sectional view taken along line 2—2 of Fig. 1.

Fig. 4 is a view of a handle showing a modified form of my invention.

Fig. 5 is a fragmentary view of a tennis racket handle showing a still further modified form of my invention, and

Fig. 6 is a sectional view of the covering element shown in Fig. 5.

Similar reference characters refer to similar parts throughout the different views of the drawings.

As conducive to a clear understanding of my invention, it may briefly be noted that, more particularly in tennis rackets, it is desirable to provide a handle which shall effectively resist rotation within the player's hand, which rotation is likely to occur with

consequent objectionable deflection of the ball, particularly when the ball is struck near the rim of the racket.

Referring now to the drawings, I have shown in Fig. 1, a view on a greatly enlarged scale of the covering material with which I prefer to surround my handle. This covering material is formed of the skin of a shark, or similar substance. Such skin has on its outer surface horny spine-like portions 1, extending therefrom, and all inclined in one direction. These spiny portions are minute in the order of .01 inch in length, being thus barely visible to the naked eye, and they cover the shark skin with considerable density as indicated in Fig. 1. It is thus apparent, that the shark skin has a "nap" permitting ready passing of the hand thereover in one direction, but offering considerable resistance to such stroking in the opposite direction.

Referring to Figs. 2 and 3 of the drawings, I have shown one application of my novel covering to the handle 2. I prefer to employ two rectangular strips of shark skin, each of a width somewhat more than one-half the circumference of the handle, and a length equal to that of the grip of the handle, said strips having their spines inclined in the direction of the width. These strips are placed around the handle 2, as shown in Fig. 2, with the spines on one strip extending in a clockwise direction circumferentially of the handle, as shown at 3, and those on the other strip extending in the opposite direction, as shown at 4. The adjoining sides of the strips are preferably overlapped as shown at 5, and secured to the handle by means of tacks or the like, as shown at 6, and sunk in longitudinal recesses 6a.

Referring now to Fig. 4, I have shown partially applied to better reveal the construction, another embodiment of my invention, in which I provide two long and narrow strips of my shark skin, having the spines preferably extending in a longitudinal direction. I wind one of these strips about my handle, helically as shown at 7, the pitch of the helix being preferably substantially equal to twice the width of the strip. I also wind the second strip 8 about the handle helically between the turns of the first strip, but with the spines 9 extending in a direction opposite to the spines 7 on strip 7. The strip 8 is thus made to cover the helical portion left exposed on the handle after strip

7 is applied. The two strips of skin may be secured to the handle in any desired manner, as for instance by cementing.

Referring now to the embodiment of the invention shown in Figs. 5 and 6, I have shown at Fig. 6 the cross section of a conventional form of rubber covering for tennis racket handles, indicated by the numeral 10. I prefer to cement two strips of shark skin similar to those employed in Figs. 2 and 3, upon the rubber covering 10, a strip 11, being cemented at its edges to rubber covering 10 as shown at 12 and 13, and a similar strip 14 being similarly cemented as shown at 15 and 16. The cemented edges of the two shark skin strips 11 and 14, are preferably spaced from each other, leaving uncovered rubber portions 17 and 18. The shark skin strips 11 and 14, have their spines extending in opposite directions, in a manner similar to the arrangement shown in Figs. 2 and 3.

My covering unit shown in Fig. 6 is slipped over the end of the racket handle in the usual manner. The inner rubber element 10 will readily stretch to snugly embrace the exterior of the handle, and to contact the entire interior surface of shark skin elements 11 and 14, said shark skin elements thus coming into firm contact with the handle, without stretching or breaking.

In the use of any of the forms of handle disclosed, if torque should be applied to the racket, tending to rotate the handle within the player's hand, as by striking a ball non-centrally thereof, approximately one half of the shark skin spines on the covering will effectively oppose such rotation. If the torque should be applied in the opposite direction, the spines on the other strip of shark skin would oppose rotation. Thus the player secures superior control of his ball.

If it be attempted to prevent the rotation of the racket within the player's hand, by providing longitudinal grooves, or the equivalent, on the surface on the handle, slippage under torque may still take place by reason of perspiration of the hand and the construction is otherwise disadvantageous. If on the other hand, it be attempted to obviate this difficulty by surrounding the handle with tape or the equivalent, then the handle is likely to adhere to the hand and prevent the ready adjustment of the racket within the hand, which is frequently desirable in playing the game.

It will thus be seen that there is herein described apparatus in which the several features of this invention are embodied, and which apparatus in its action attains the various objects of the invention and is well suited to meet the requirements of practical use.

As many changes could be made in the above construction and many apparently widely different embodiments of this inven-

tion could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In an implement of a type which in normal use may exert torsional strains upon the hand, in combination, a portion to be grasped by the hand, and a covering for said portion, having a plurality of spine like elements some extending in one direction and some in another, to resist rotation in either direction of said element.

2. In a tennis racket or the like, in combination, a handle a plurality of relatively small dull and inclined spine like members projecting therefrom, some of said members being inclined in one direction substantially circumferentially of the handle and some in the other.

3. In a tennis racket or the like, in combination, a handle, a skin like covering therefor having a plurality of relatively small dull and inclined spine like portions, substantially half of said spines being inclined to resist handle rotation in one direction and the remainder to resist such rotation in the opposite direction.

4. In a tennis racket or the like, in combination, a handle, a covering therefor of a skin having an outer surface covered with a multitude of minute pointed projections, having spines extending in directions to resist rotation of said racket within the hand in either direction.

5. A device provided with a portion extending longitudinally thereof, and a band extending about said portion and provided on its outer surface with a multitude of minute rigid projections inclined in a predetermined direction to resist slippage with respect to surrounding objects on both sides thereof.

6. In an implement of a type which in normal use tends to twist in the hand, a handle portion, and a covering for said handle portion formed of the skin of an aquatic creature characterized by an outer surface covered with a multitude of inclined pointed projections extending about said handle and adapted to engage the hand and resist said twisting action.

7. In a tennis racket, or the like, in combination, a handle, a covering therefor of a skin having an outer surface covered with a multitude of minute pointed projections, extending substantially the length of the grip of said handle, the covering on opposite sides of a longitudinal bisecting plane through said handle, having their naps in opposite circumferential directions.

8. In a tennis racquet or the like, in combination, a handle and a covering for said handle formed of the skin of an aquatic creature characterized by an outer surface
5 covered with minute projections stretched about the handle and having its edges secured thereto.

9. In a tennis racquet or the like, in combination, a handle and a covering for said
10 handle formed of the skin of an aquatic creature characterized by an outer surface covered with minute projections stretched about the handle and having its edges secured thereto and so disposed as to embed
15 the edges in the part to which they are secured.

10. An encasing device formed of a skin having a multitude of minute inclined projections on its outer surface, said skin being
20 so disposed as to incline said projections on both sides away from a predetermined line.

11. A device provided with an outer surface adapted to engage and prevent slippage with the surrounding parts, said surface
25 comprising a multitude of minute inclined bony projections on both sides of the device, the areas of projections on opposite sides of

said device being inclined in a general direction away from a line along which the edges of said areas are adjacent each other. 30

12. An enclosing member formed of the skin of an aquatic creature comprising a multitude of minute inclined bony pointed projections extending about a part and adapted to prevent slippage thereof with respect
35 to surrounding parts on both sides the projections on opposite sides being disposed in predetermined directions to resist slippage in predetermined directions on opposite sides. 40

13. An enclosing member formed of the skin of an aquatic creature comprising a multitude of a minute inclined pointed projections extending about a part and adapted to prevent slippage thereof with respect to
45 surrounding parts on both sides, the areas of projections upon opposite sides of said member being inclined in a direction away from a line along which the edges of said areas are adjacent each other. 50

Signed at New York city, in the county of New York and State of New York, this 21st day of March, A. D. 1919.

ROBERT S. BLAIR.