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C. A. OVENSHIRE

HANDLE STRUCTURE FOR TENNIS RACKETS

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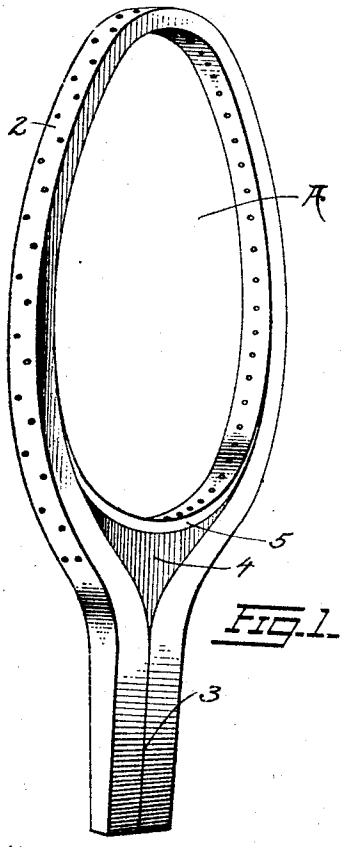


Fig. 1.

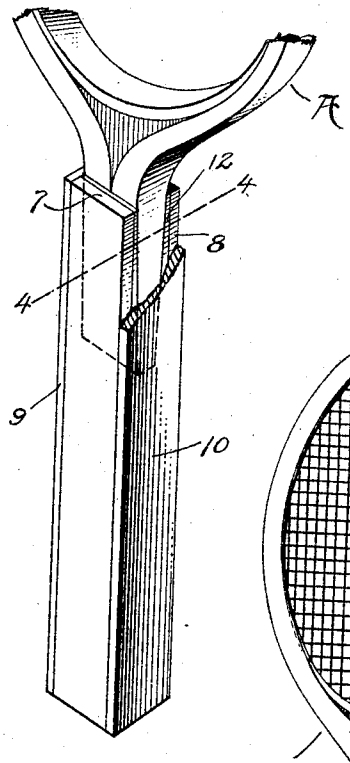


Fig. 3.

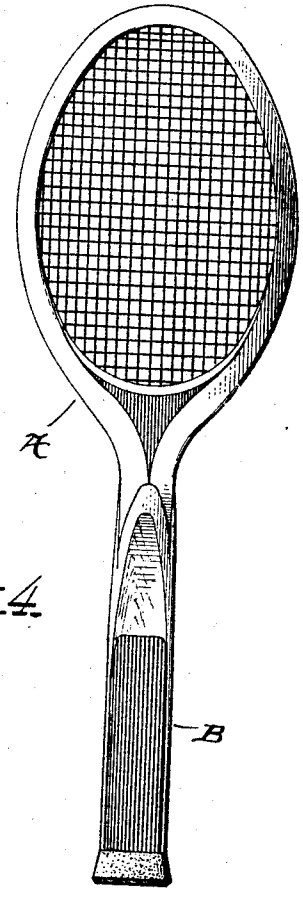


Fig. 5.

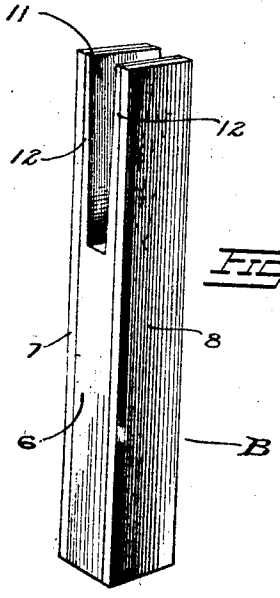


Fig. 2.

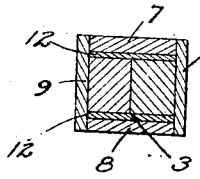


Fig. 4.

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UNITED STATES PATENT OFFICE.

CLYDE A. OVENSHIRE, OF BERKELEY, CALIFORNIA, ASSIGNOR TO CALIFORNIA BY-PRODUCTS COMPANY, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

HANDLE STRUCTURE FOR TENNIS RACKETS.

Application filed March 11, 1924. Serial No. 698,546.

To all whom it may concern:

Be it known that I, CLYDE A. OVENSHIRE, a citizen of the United States, residing at Berkeley, county of Alameda, and State of California, have invented new and useful Improvements in Handle Structures for Tennis Rackets, of which the following is a specification.

This invention relates to a tennis racket and especially to a handle structure therefor.

The object of the present invention is to generally improve and simplify the construction and operation of tennis rackets, and especially to reduce vibration in the handle of the racket to a minimum.

I accomplish this object by constructing the racket of two sections, a head and a handle section, and by so securing the handle to the head that vibrations set up by the springs or hoop of the head are damped or reduced to a negligible factor by transmission through a succession of various materials.

One form which my invention may assume is exemplified in the following description and illustrated in the accompanying drawings, in which—

Fig. 1 is a perspective view of the hoop or head portion in the rough state.

Fig. 2 is a perspective view of the handle portion in the rough state.

Fig. 3 is a perspective view showing the handle attached to the head and during that stage of construction where it is still in the rough state.

Fig. 4 is a cross-section on line 4—4.

Fig. 5 is a front view of the finished racket.

Referring to the drawings in detail, A indicates, in general, the head portion of a racket and B the handle. The head consists of a hoop 2 constructed of ash or a similar material. The hoop consists of a single strip of ash which is bent upon a form to obtain the desired shape and which is glued or otherwise secured to the lower ends as indicated at 3. The head is also provided with a throat section 4 and a segmental section 5 by which the throat is covered.

The ash strip from which the hoop is formed is in this instance four feet in length. This should be particularly noted as most rackets constructed in the usual manner require ash strips not less than five feet six inches in length. This represents a great saving in material and expense as the shorter strips are easier to secure than the five foot six inch strips.

The handle is in this instance constructed of five different sections, a center section 6, two side sections 7 and 8, and two end sections 9 and 10. The sections 6, 7 and 8, are first glued together and the upper end is then grooved out as indicated at 11, the groove being slightly tapered to form a glue joint. The ends of the hoop indicated at 3 are adapted to be inserted in the groove 11 and they are similarly tapered to cooperate therewith.

When the head has been shaped and glued, as shown in Fig. 1, and the handle B has been prepared as shown in Fig. 2, it is only necessary to assemble the sections by applying glue to the ends 3 and the faces of the groove 11. The sections are then assembled and the two end sections 9 and 10 are then glued and applied. The ends 3 are thus completely covered, first, by the thin sections of wood indicated at 12 which form a part of the center section 6. They are then covered by the side sections 7 and 8, and finally by the end sections 9 and 10. The racket as a whole is then placed in a clamp until the glue is set and hardened, and the handle, together with the hoop or head section, is then rounded off and finished and is finally strung as indicated in Fig. 5.

From the foregoing it can be noted that the head is secured to the handle by means of the ends 3 and the groove in the upper end of the handle provided for their reception, and that the connection between the two sections is obtained by a glue joint, and it is further reinforced by the end sections 9 and 10, which are also glued and applied. This is of particular importance as this particular method of assembling the head and handle reduces vibrations in the handle to a minimum.

Vibrations in the handle are also quite severe, particularly if the tennis ball is struck by one side of the racket with a forcible blow; the vibrations being, in some instances, so severe as to almost wrench the racket from the hand of the player. This

is not only annoying but it is also detrimental to good playing as return and service plays cannot be played with the same amount of force and confidence as would be possible where vibrations are practically eliminated. Such vibrations are substantially eliminated in this case as the vibrations set up by the hoop or the strings of the head cannot be transmitted to the handle proper without passing through a succession of materials. For instance, vibration of the strings would, first of all, be transmitted to the hoop 2 and the end sections 3. Vibration would then have to pass through the glue joint formed between the end sections and the handle section, and the vibration would there be re-transmitted to six separate glued sections of wood, to-wit, the upper sections 12 of the center section 6, the side sections 7 and 8, and the end sections 9 and 10.

By so transmitting the vibration it becomes damped and reduced to such an extent as to be practically negligible. This reduction of vibration is one of the important features of the present invention, but another important feature is the reduction in material and the cost of manufacture.

It should be remembered that in practically all rackets constructed today, the hoop 2 is carried down the full length of the handle; in fact, the main portion of the handle is formed from the extended ends of the hoop. Such extension of the wood carries the vibrations directly to the handle, and it also increases the length of the ash strip from which the hoop and handle are formed. Four foot strips are sufficient for the structure shown in the present application, while five foot six inch strips are required with the usual structure. The cost of hard wood of this character is proportional to its length and as one and one-half feet in length is saved on each ash strip employed in this structure, a considerable saving in cost is first obtained. Secondly, it is found that it is possible to set the handle absolutely straight by using the construction here illustrated, whereas, the handles of other rackets frequently assume a slight incline, due to defects in the wood or bending of the frame, and as such defects cannot be corrected after the hoop and handle have been formed and glued, they must either be discarded or sold as inferior grades. This objection is entirely overcome by the present construction as any disalignment between the head and the handle can be taken care of when they are assembled.

While certain features of the present invention are more or less specifically illustrated, I wish it understood that various changes in form and proportion may be resorted to within the scope of the appended claims. I similarly wish it understood that the materials and finish of the several parts employed may be such as the experience and judgment of the manufacturer may dictate or various uses may demand.

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

1. A tennis racket comprising a head and handle section, said head being formed of a hoop bent to form the head and the ends of the hoop being joined and extended to form an extension, and said handle consisting of a center section provided with a central recess for the reception of the joined hoop extensions and forming a glue joint therefor, and means for covering the hoop extensions and the glue joint.

2. A tennis racket comprising a head and handle section, said handle consisting of a center section having a recess formed in its upper end, an extension on the head adapted to be inserted in the recess and secured by a glue joint, and a pair of front and rear sections secured to the handle and overlapping the glue joint to reinforce the same.

3. A tennis racket comprising a head and handle section, said head being formed of a hoop bent to form the head, and the ends of the hoop being extended to form an extension, and said handle consisting of a center section provided with a recess for the reception of the hoop extension and forming a glue joint therefor, and a pair of front and rear sections secured to the handle and overlapping the glue joint to reinforce the same.

CLYDE A. OVENSHIRE.