May 12, 1942. H. W. HALL 2,282,418

PLAYING RACKET CONSTRUCTION

Filed March 1, 1940

Fig. 1.

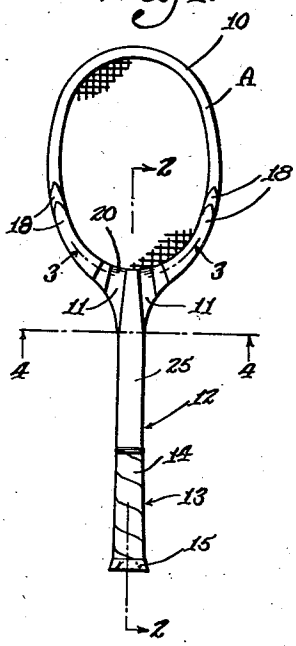


Fig. 2.

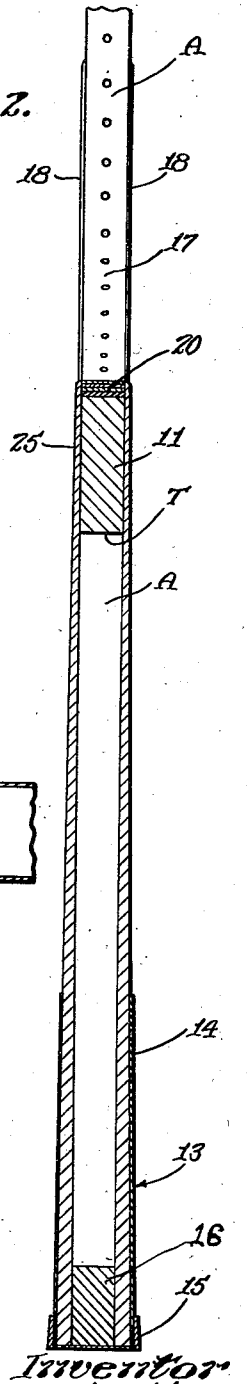


Fig. 3.

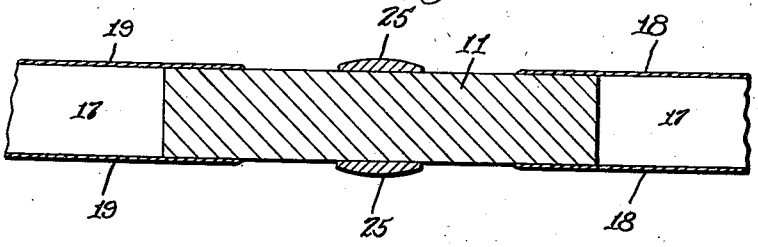
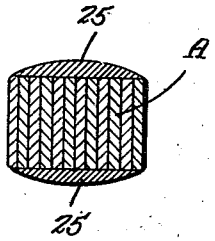


Fig. 4.



Inventor
Horace W. Hall
by Harold E. Cole
attorney

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PLAYING RACKET CONSTRUCTION

Horace W. Hall, Newton, Mass.

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11 Claims. (Cl. 273—73)

This invention relates to improved construction of playing rackets, particularly tennis rackets.

There is an increasing demand for lighter weight rackets and ordinarily they will be correspondingly weaker rackets. The supplying of this demand has resulted in an increasingly larger proportionate number of rackets broken or damaged in playing and the consequent dissatisfaction has presented a difficult problem for the manufacturer.

Accordingly it has been my principal object to provide a new construction in a light weight racket, particularly for tennis, which is stronger and more shock-resisting for its weight than those heretofore made. To accomplish this I have made many departures from orthodox playing racket construction which are disclosed herein.

The foregoing and other objects which will appear as the nature of the invention is better understood, may be accomplished by a construction, combination and arrangement of parts such as is disclosed by the drawing and specification. The nature of the invention is such as to render it susceptible to various changes and modifications, and, therefore, I am not to be limited to said disclosure; but am entitled to all such changes therefrom as fall within the scope of my claims.

In the drawing:

Figure 1 is a front elevational view of a tennis racket of my improved construction, one face of the racket being entirely shown.

Figure 2 is an enlarged sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1, and Figure 4 is a sectional view taken on the line 4—4 of Figure 1.

As illustrated, my racket consists of the usual oval bow head portion 10, the throat portion 11 just below it, and the handle portion 12 which terminates in the gripping portion 13, shown covered with leather 14 in Figure 1. At the base of said handle 12 the usual leather heel 15 is provided and a commonly used plug 16 is inserted in the interior thereof.

The shoulder portions 17 of said racket bow head 10 are reinforced with one or more laminations 18 on each face thereof to strengthen them. An inside bow strengthening structure 20 at the base of said bow head portion 10 consists of a plurality of crescent shaped, inside reinforcing strips which extend inside said bow head across the throat portion 11 and part ways up said shoulder portions, being adhesively united together. A single piece structure 20 is sometimes used in place of said plurality of strips.

The common way of forming the basic frame A of such a racket is to take a single stick of wood, or a structure formed of a plurality of laminations of substantially the same length with an adhesive between them, and bend the structure so that the single stick or laminated structure A forms the bow head portion 10 to the outside of the said throat 11 and extends downwardly to form said handle 12 as well. When the basic bend is thus formed it is ordinarily of the same thickness throughout, and by thickness I mean the distance between the two outside faces of the racket, the thickness being shown in both Figures 2 and 3. Certain portions of said basic frame A where the stress and strain of play is greatest have to be strengthened, such as the shoulder portions, and other portions are reduced in thickness to lighten the weight of the completed racket.

In my invention a handle portion 12 of the basic structure A is tapered in thickness from about the base T of said throat portion downwardly towards the outside end of said handle 12, as illustrated in Figure 2 of the drawings.

The principal feature of my invention consists of a reinforcing palette or face lamination 25 for both faces of the racket, which extends from the base of the oval bow head portion 10 to the outside end of the racket, preferably extending over said crescent-shaped inside reinforcing structure 20 to thereby strengthen the joint between said structure 20 and said throat 11 and between the strips forming said structure 20. Said reinforcing face palettes 25 increase in thickness downwardly towards the outside end of said handle 12 until they reach said gripping portion 13 where they preferably continue on at the same thickness to the outer end of said handle 12. Commencing slightly above the base T of said throat portion 11, said reinforcing face palettes 25 taper in width towards said oval bow head portion 10, so that a part of each said palette 25 directly over said throat 11 tapers in both width and thickness in a direction towards said oval bow head portion 10.

Said reinforcing palette 25 is preferably made of a light weight wood such as bass wood, being made of a lighter weight material than is used to make said basic structure A so that the tapering reduction in thickness of the heavier material of said basic structure A is replaced by the gradual increase in thickness of the lighter weight material of said reinforcing face palette 25, with the result that a lighter weight racket results

that is so strong and shock-resistant that it can be used by hard-hitting players.

Each said palette **25** is thick enough adjacent the point T where the lower portion of the throat terminates so that it builds up the thickness of the racket at the throat to exceed the thickness of the racket at the shoulder portions **17** including the said laminations **18** on each face of the racket, as shown in Figures 2 and 3 of the drawing. With my new palettes **25** I am able to make this vulnerable part of the racket, adjacent the base of the throat, thicker, and yet produce a lighter weight racket that is stronger for its weight than any heretofore known.

It will be noted that the lower end of the shoulder laminations **18** and the sides of said reinforcing palette **25** are spaced apart. Inasmuch as no reinforcement is needed at these points these spaces serve to lighten the weight of the racket and also make it easy to clean away the adhesive that oozes out from under said palettes **25** and laminations **18** when putting them on, as a file can be drawn across these spaced portions of the racket to clear away the adhesive. The angle at the lower side edge of said laminations **18** preferably is substantially parallel with the angle of the side edges of said palettes **25** directly across.

What I claim is:

1. A playing racket comprising a basic frame embodying a bow head and handle, a throat at the base of said bow head, a portion of said basic frame handle tapering in thickness in a direction towards the outside end of said handle, reinforcing palette means exteriorly of and extending over the said handle and throat, said palette means tapering in thickness between said handle and said throat in a direction towards said bow head, said palette means being of lighter weight material than said handle portion.

2. A playing racket comprising a basic frame embodying a bow head and handle, a throat at the base of said bow head, a portion of said basic frame handle tapering in thickness between substantially the base of said throat and the point where the gripping portion of said handle commences in a direction towards the outside end of said handle, a reinforcing palette on each face of said racket exteriorly of and extending over the said handle and throat, said palettes tapering in thickness between said gripping portion point towards and over said throat, said palettes being of lighter weight material than said handle portion.

3. A playing racket comprising a basic frame embodying a bow head and handle, a throat at the base of said bow head, a portion of said basic frame handle tapering in thickness in a direction towards the outside end of said handle, a reinforcing palette on each face of said racket exteriorly of and extending over the said handle and throat, said palettes tapering in thickness between said handle and towards and over said throat and tapering in width over a portion of said throat towards said bow head, said palettes being of lighter weight material than said handle portion.

4. A playing racket comprising a bow head, handle, and throat at the base of said bow head, reinforcing means inside said bow head and extending over and beyond said throat, a reinforcing palette on each face of and extending from substantially the extremity and exteriorly of said handle over and beyond said throat, and over said reinforcing means, said palettes tapering in thickness from a portion of said handle towards and over said throat, said palettes tapering in width over said throat in a direction towards said bow head.

5. A playing racket comprising a bow head, handle and throat at the base of said bow head, reinforcing laminations on the shoulder portion of each face of said racket, a reinforcing palette on each face of and extending from substantially the outside extremity and exteriorly of said handle to and over said throat to the bow head lower, curved extremity thereof, portions of said palettes tapering in thickness from a portion of said handle towards and over said throat, a portion of said palettes over said throat tapering in width in a direction towards said bow head, the side edges of said palettes being spaced from the lower side edges of said shoulder reinforcing laminations.

6. A playing racket comprising a basic frame embodying a bow head and handle, a throat at the base of said bow head, reinforcing means inside said bow head and extending over and beyond said throat, a handle portion of said basic frame tapering in thickness from a point adjacent the base of said throat and the point adjacent where the gripping portion of said handle commences in a direction towards the outside end of said handle, a reinforcing palette on each face of said racket and extending from substantially the outside end of said handle to and over said throat and reinforcing means, said palettes being exteriorly of said handle and tapering in thickness between substantially said gripping portion point towards and over said throat and tapering in width over a portion of said throat towards said bow head, said palettes being made of lighter weight material than said handle portion.

7. A playing racket comprising a basic frame embodying a bow head and handle, a throat at the base of said bow head, reinforcing laminations on the shoulder portions of each face of said racket spaced apart, reinforcing means inside said bow head and extending over and beyond said throat, a handle portion of said basic frame tapering in thickness from a point adjacent the base of said throat and the point adjacent where the gripping portion of said handle commences in a direction towards the outside end of said handle, a reinforcing palette on each face of said racket and extending from substantially the outside end of and covering all of the face of said handle and extending to and over said throat and reinforcing means, said palettes being exteriorly of said handle and tapering in thickness commencing at substantially said gripping portion point and continuing over said throat and tapering in width over a portion of said throat to said reinforcing means whereby only part of said throat is covered by said palettes, said palettes being made of lighter weight material than said handle portion, the side edges of said palettes being spaced from the lower side edges of said shoulder reinforcing laminations.

8. A playing racket comprising a bow head, handle and throat at the base of said bow head, reinforcing laminations on the shoulder portions of each face of said racket, a reinforcing palette on each face of said racket exteriorly of and extending on said handle and over said throat to the base of said bow head, said palettes being of lighter weight material than the said handle is made of, said palettes tapering in thickness over said throat in a direction towards said bow head,

the maximum thickness of said racket, including said palettes, at a point adjacent the base of said throat being greater than the maximum thickness of said racket at its shoulders including said reinforcing laminations.

9. A playing racket comprising a basic frame embodying a bow head and handle, a throat at the base of said bow head, a portion of said handle tapering in thickness in a direction towards the outside end of said handle, reinforcing laminations on the shoulder portions of each face of said racket, a reinforcing palette on each face of said racket exteriorly of and extending on said handle and over said throat to the base of said bow head, said palettes tapering in thickness between said handle and said bow head, and covering part of said throat only, said palettes being of a lighter weight material than said handle, the maximum thickness of said racket, including said palettes, at substantially the base of said throat being greater than the maximum thickness of said racket at its shoulders including said reinforcing laminations.

10. A playing racket comprising a basic frame embodying a bow head with a throat at the base thereof produced of relatively heavy and strength giving material, a handle having a major outer grasping portion of relatively light-weight material with side cheek portions thereof extending inwardly and over the area of the throat, the basic frame having a handle portion of the same strength giving material extending a substantial distance from the throat outwardly into the handle and embraced by said cheek portions.

11. A playing racket as set forth in claim 10 wherein the side cheek portions of the grasping handle are tapered from the relatively large cross-section of such handle to the area of the throat.

HORACE W. HALL.