E. E. LAROCQUE.

TENNIS RACKET.

APPLICATION FILED AUG. 7, 1915.

1,173,588.

Patented Feb. 29, 1916.

2 SHEETS—SHEET 1.

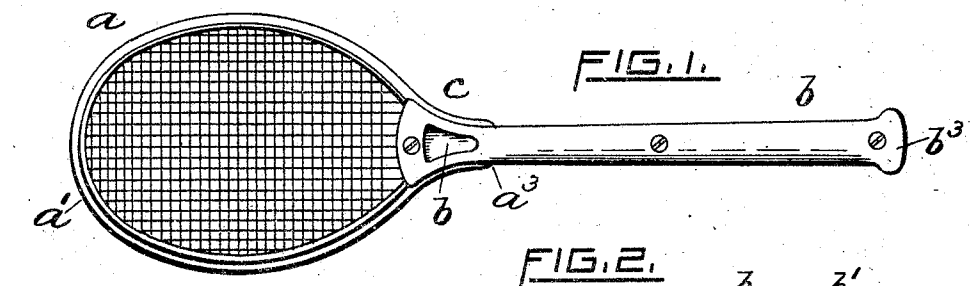


FIG. 1.

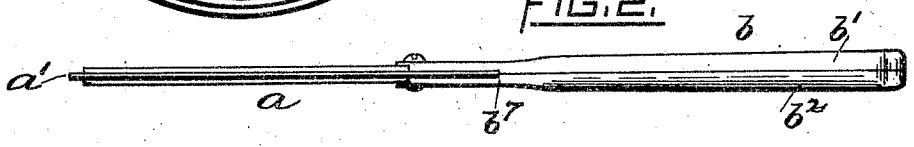


FIG. 2.

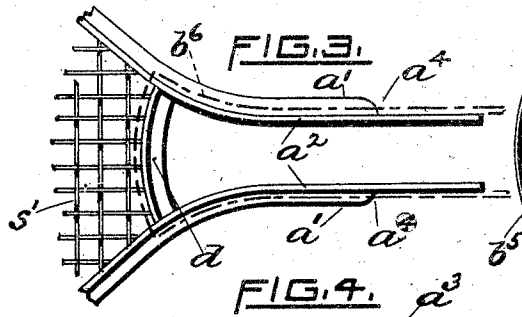


FIG. 3.

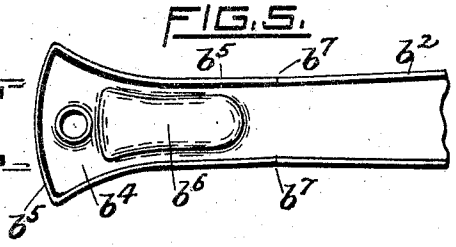


FIG. 5.

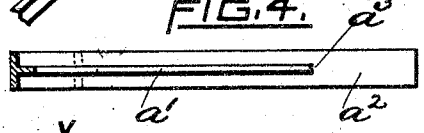


FIG. 4.

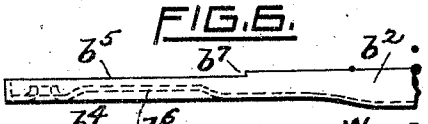


FIG. 6.

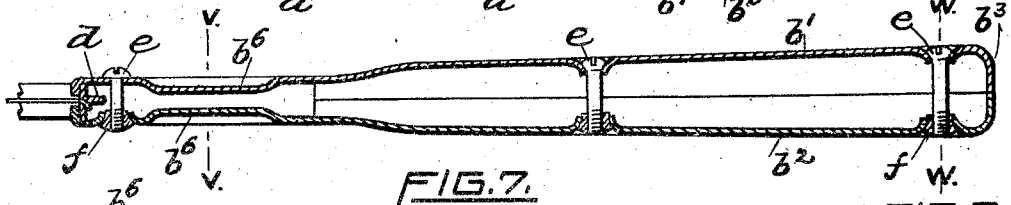


FIG. 7.

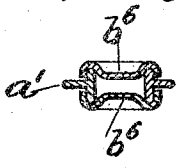


FIG. 8.

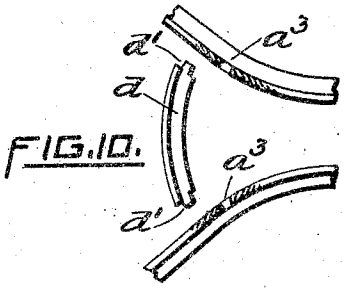


FIG. 10.

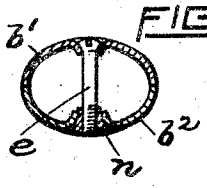


FIG. 9.

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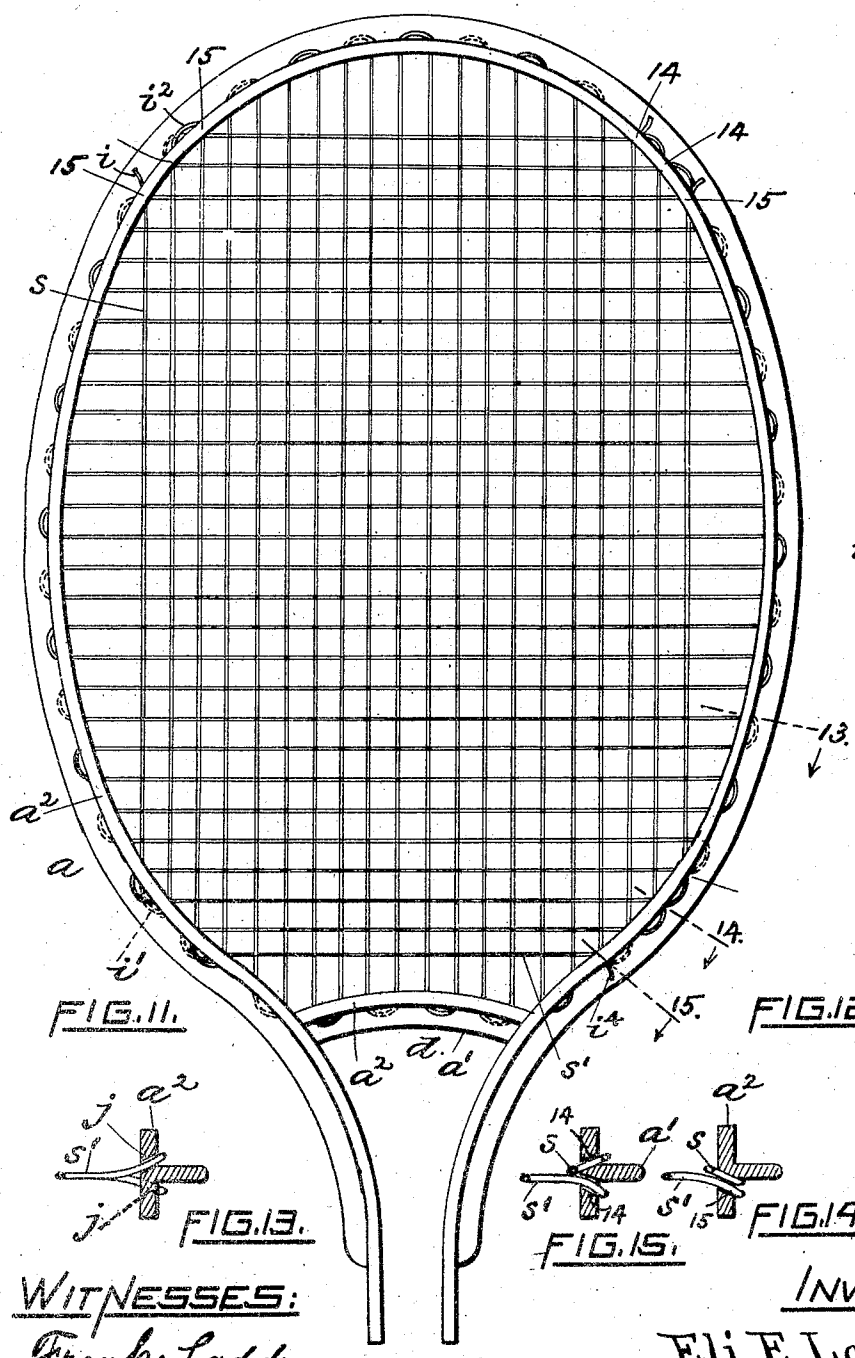


FIG. 11.

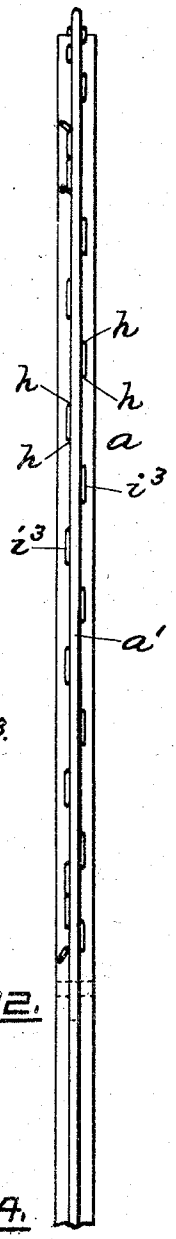


FIG. 12.

FIG. 13.

FIG. 15.

FIG. 14.

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ELI E. LAROCQUE, OF ATTLEBORO, MASSACHUSETTS.

TENNIS-RACKET.

1,173,588. Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed August 7, 1915. Serial No. 44,137.

To all whom it may concern:

Be it known that I, ELI E. LAROCQUE, a citizen of the United States, residing at the city of Attleboro, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Tennis-Rackets, of which the following is a specification.

This invention relates to improvements in lawn-tennis rackets, and the object of my invention is to provide the frame and handle made wholly of metal and joined together at the throat in a manner to render these parts interchangeable, in order to permit replacing of a new rim or frame in case of breakage, and to give additional strength in the construction of the throat to enable the racket to withstand the strain of the blows upon a ball.

A further object in view is to provide a novel arrangement of lacing the string or gut, in a manner to equalize the strain of the lacing upon each side face of the rim or frame.

In the accompanying two sheets of drawings, wherein like reference characters indicate like parts, Figure 1 is a face view of a racket embodying my improvements. Fig. 2 is an edge view of the racket. Figs. 3 and 4 are a plan and edge view respectively of the free end portion of the rim. Figs. 5 and 6 are similar views, illustrating the box head portion of one of the halves of the handle. Fig. 7 is a central longitudinal section edgewise of the handle and throat portion of the racket. Fig. 8 is a cross-section, taken on line *v*.—*v*. of Fig. 7. Fig. 9 is a similar section, taken on line *w*.—*w*. of Fig. 7. Fig. 10 is a detail view, showing the manner of attaching the bridge-piece to the frame. Fig. 11 is a face view of the frame and its bridge member, showing the manner of stringing the same. Fig. 12 is an edge view of the frame. Figs 13, 14 and 15 are cross sections of the frame, taken in lines 13, 14 and 15 respectively, in Fig. 11.

Referring to the drawings, the racket consists of the rim —*a*—, of the usual contour as shown, and detachable handle —*b*—, and these parts are constructed of metal, preferably aluminum, to afford strength and lightness in weight of the racket. The rim or frame —*a*— is T-shaped in cross-section and has its central web —a^1— outwardly-projecting and in a plane axially of the handle, and at the point of throat —*c*— of the racket the end portions of the rim curve inwardly and rearwardly in parallel separated relation, as at —a^2, a^2— in Fig. 3. At the throat point —*c*— of the frame the latter is provided with opposed openings —a^3— (Fig. 10,) to receive the lugs —d^1— integral of a bridge-piece —*d*—, which is of like size and shape in cross-section as the rim. The tension of the transverse strings or guts —s^1— hold the bridge-piece —*d*— in place upon the rim. The handle —*b*— is hollow and oval-shaped in cross-section, as seen in Fig. 9, and is struck up to provide two halves —b^1, b^2—, which are secured together by screws —*e*— in engagement with beveled nuts —*f*—. The widest part of the oval stock —*b*— is flatwise of the frame —*a*—. From the heel end —b^3— the handle tapers slightly to a box head —b^4—, which conforms in outline with the separated free end portion of the frame and its bridge-piece —*d*—. When the halves —b^1, b^2— are together the wall —b^5— of each box head overlies the outer face of the respective cross flanges —a^2— of the frame and bridge-piece —*d*—, in the relative position indicated by broken line in Fig. 3. Each box head —b^4— has a depression made in its bottom, as at —b^6— in Fig. 8, in order to keep the free end portions of the rim in parallel relation, and a shoulder —b^7— is left by each side wall —b^6— of each head, so that when the halves —b^1, b^2— inclose the free end portion of the frame, the said shoulder will abut the ends of the central web —a^1— of the latter, as at points —a^4, a^4— in Fig. 3. Having the throat —*c*— constructed as described, a very rigid connection is had between the frame and handle, and at the same time permits an interchange of parts whenever one or the other becomes damaged, and to disassemble the parts for compactness in carrying or for shipment.

Referring to Fig. 11, the frame —*a*— and bridge-piece —*d*— have equi-spaced holes formed through their cross flanges —a^2— to receive the stringing of the racket, and these holes are arranged in staggered pairs at each side of the central web —a^1—, as at points —*h*, *h*— in Fig. 12.

The course taken by the vertical string —*s*— is from the point —*i*— (Fig. 11), to the bottom of the frame where it loops at one side of the said web, as at —i^1—, thence to the top of the frame where it loops at the other side of said web, as at —i^2—, and

so on alternately throughout the frame and bridge-piece; each turn or loop —i^3— being formed in staggered formation at each side of the web —a^1—. From the point —i^3— the horizontal string —s^1— takes a similar course as for the string —s—, to form its loops —i^3— in alternate arrangement. The holes to receive the strings incline toward the net, as shown at —j, j— in Fig. 13, and in order to avoid overlying of the strings, at their points of loop, I provide intersecting holes 14, in order to separate the loop of each string, in the manner shown in Fig. 15. Having the strings —s, s^1— made to loop independent of each other, as described, equalizes the strain of the net upon each side face of the frame. Furthermore, the frame and bridge being constructed of metal which is T-shaped in cross-section, the tensile strength of the frame is reduced to a minimum and lightness afforded to the part of the racket. By my construction and arrangement of parts I provide a take down racket whereby the handle is made independent of the strings, so that when the parts are disassembled the frame may be easily threaded in the manner stated.

What I claim and desire to secure by Letters Patent is,—

1. A tennis racket consisting of a frame, a bridge-piece, and both said parts T-shaped in cross-section, holes formed through the cross flange of both said parts and arranged in staggered pairs at each side of the central web of the same, said frame having free portions extending from the bridge-piece in parallel separated relation, to form a throat portion of the racket, a hollow handle made in like halves and having opposed struck up heads, forming the other portion of the throat, to close over upon the outer face of the cross flanges of said frame and said bridge-piece, and means for securing together the halves of the handle.

2. A tennis racket consisting of a frame and bridge-piece, and both said members having equi-spaced holes formed through their cross flanges and arranged in staggered pairs at each side of the central web of each member, to permit threading the said members in the manner described, and the free portions of said frame in parallel separated relation, a hollow handle divided longitudinally into like halves having heads designed to close over upon the outer face of the cross flanges of the free portions of said frame and cross flange of said bridge-piece, and means for securing together the halves of the handle.

3. A tennis racket consisting of a frame and bridge-piece, each T-shaped in cross-section, and both said members having equi-spaced holes formed through their cross flanges and arranged in staggered pairs at each side of the central web of the latter, in order that each string of the net may form a separate loop, at the points of each pair of holes, and thereby equalize the strain of the net upon each side face of the frame.

In testimony whereof I affix my signature in presence of two witnesses.

ELI E. LAROCQUE.

Witnesses:
C. L. HANNIGAN,
PETER C. CANNON.