

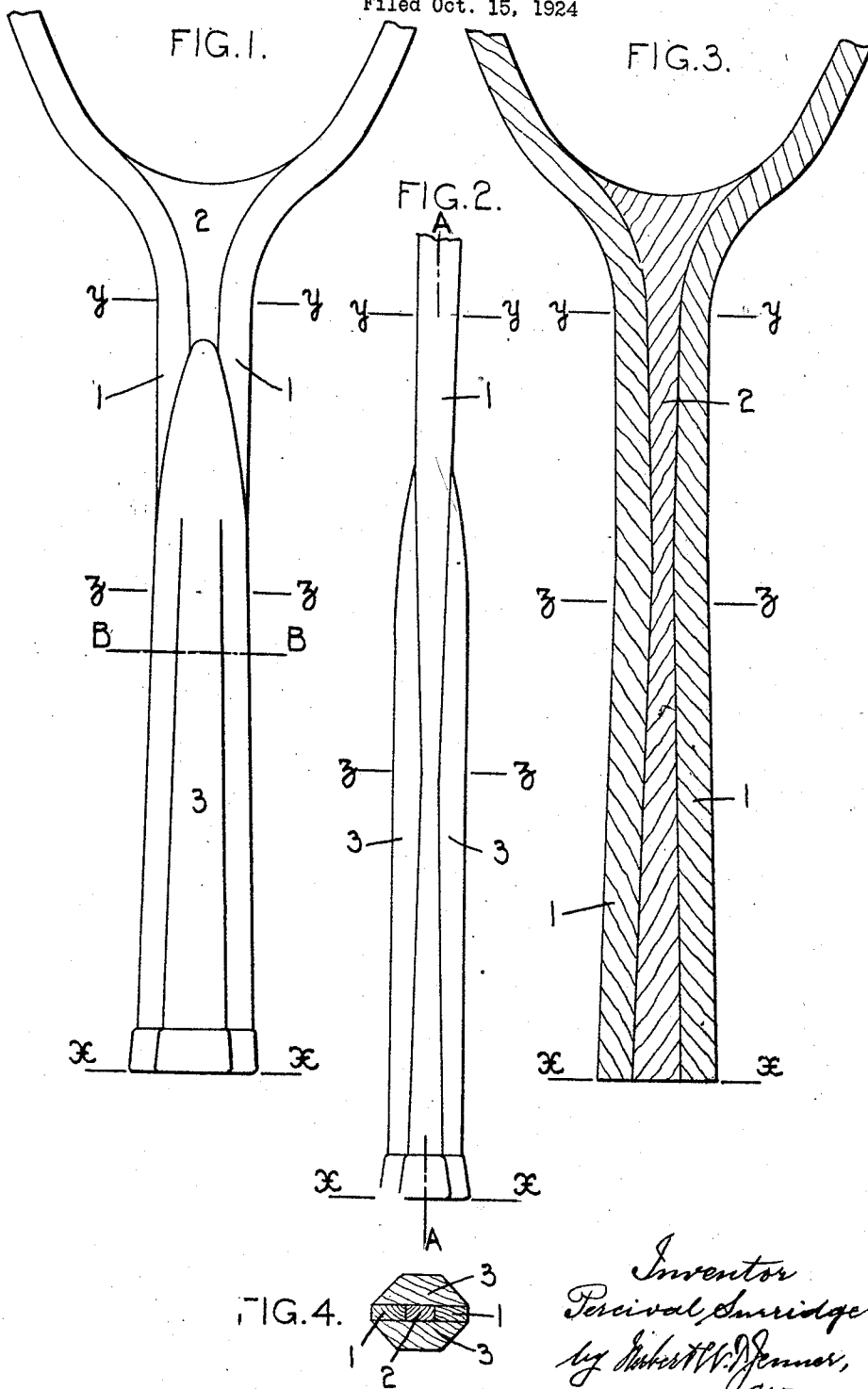
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TENNIS RACKET

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UNITED STATES PATENT OFFICE.

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TENNIS RACKET.

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To all whom it may concern:

Be it known that I, PERCIVAL SURRIDGE, a subject of the King of Great Britain, residing at London, England, have invented certain new and useful Improvements in Tennis Rackets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to lawn tennis and like rackets, and has for its object to provide an improved construction of the handles of such rackets whereby the balancing of the racket is effected in the construction of the handle itself and without the addition thereto or insertion therein of lead or other metal which has heretofore been usual for the purpose of giving the proper or required "balance" to the racket.

The advantages of a nicely or properly balanced racket are well known to tennis players, and the construction of the handle portion of a tennis racket according to this invention is such as to enable the weight of the wood or other material of which the handle is made to be so distributed, in the process of constructing or forming the handle, as to ensure or obtain the nicest or most desirable balancing effect.

In tennis rackets as heretofore constructed the extensions of the bent ash frame or head of the racket, (which extensions form portions of the handle), are so formed that they taper gradually, in the direction transversely to the plane of the frame, from the shoulder or inner end of the frame to the outer or butt end of the handle so that the cross-section of these extensions gradually decreases towards the said outer or butt end at which the cross-section of the wood is smallest, the intermediate or filling piece or wedge of wood situated between the said extensions being similarly tapered; further the two side pieces which are secured, for instance glued, to the sides of the said extensions and of the said intermediate or filling piece, are formed with an opposite taper on their inner faces so that each of these side pieces, which make up the complete handle, gradually decreases in thickness from the outer or butt end of the handle towards the opposite or inner end, i. e. towards the frame or head of the racket.

Now according to the present invention

the frame extensions and the intermediate or filling piece or pieces or wedges which together constitute the inner, main or "heart" portion of the handle, are of greatest thickness or cross-section,—in the direction transversely of or at right angles to the frame or strung head of the racket,—both at the extreme outer or butt end of the handle and at the inner end or shoulder of the frame or head, the wood or material of which the said extensions and wedges are formed being tapered or curved on their opposite sides from the said butt end and from the opposite or shoulder end towards the mid-length of the handle so that the wood gradually decreases in thickness in the said direction from both the outer or butt end and the inner or shoulder end of the handle towards the centre or mid-length of the handle, it may be to a position or line midway between the outer and inner ends of the handle. Further the said frame extensions and/or the intermediate or filling pieces or wedges between these extensions may be so formed that, in the direction of the horizontal plane of the racket head or frame, there is a gradual increase in width of the handle from a point or line between the inner end and the outer or butt end of the handle to the outer end thereof so that at the extreme outer or butt end the handle is of increased or maximum thickness or width in the direction of the horizontal plane of the frame or head of the racket.

The two side pieces, which may as usual be glued to the sides of the aforesaid frame extensions and of the wedge piece or pieces between these extensions, may be formed on their inner and wider sides to conform to the hereinbefore mentioned curving or tapering of the said frame extensions and intermediate wedge pieces; for instance each of the said side pieces may be curved or tapered on its inner face towards each end of the piece so that from a predetermined position or transverse line between the ends of the said piece it gradually decreases in thickness towards its opposite ends which are of reduced or minimum thickness. Further each of the said side pieces may be shaped on its opposite longitudinal edges or narrower sides to conform to the hereinbefore mentioned shaping of the frame extensions and wedge piece by which the width or thickness of the handle gradually increases,

in the direction of the plane of the frame or head of the racket, towards the outer or butt end of the handle.

By suitably cutting or forming the several pieces that go to make up the complete handle, i. e. the frame extensions, wedges or filling pieces and side pieces, the thickness and weight of the wood or material can be nicely adjusted or distributed at the outer or butt end of the handle and towards the mid-length of the handle so as to give the required "balance" to the racket.

In the accompanying illustrative drawing, Figs. 1 and 2 show, in front and side elevation respectively, the handle of a lawn tennis racket embodying the invention.

Fig. 3 is a longitudinal section corresponding to the line A A of Fig. 2, and

Fig. 4 is a transverse section corresponding to the line B B of Fig. 1.

As can be clearly seen from the side elevation, Fig. 2 of the drawing, the frame extensions 1 and the intermediate or filling pieces or wedges 2, which together form the inner or "heart" portion of the handle, are of greatest thickness at the extreme outer or butt end x of the handle and at the point y adjacent to the inner end or shoulder of the frame or head, the wood or material of which the said extensions and wedges or filling pieces are formed being tapered or curved on their opposite sides from both ends towards a point z about mid-length of the handle so that the said wood or material gradually decreases in thickness towards the point z . It will also be seen that the two side pieces 3 are formed on their inner and under sides to conform to the curving or tapering of the said frame extensions 1 and intermediate filling or wedge pieces 2 so that they are thicker at the point z than at the extreme outer or butt end x of the handle.

The section, Fig. 3, in the horizontal plane of the racket head or frame shows that the intermediate or filling pieces 2 are gradually reduced in width towards the mid-point z , the said intermediate or filling piece be-

ing wider at the butt end x of the handle than at the part y adjacent to the shoulder so that the widest part of the handle is at the said butt end x .

By cutting or forming the several pieces constituting the handle in the manner described the thickness and weight of the wood or material are so nicely adjusted or distributed as to obtain the desired "balance" without the necessity of any of the heretofore usual lead or other metal insertion.

Modifications in the details of construction or arrangements above described might be made without departing from the invention.

What I claim is:—

1. In a tennis racket, a frame having handle extensions the adjacent sides of which taper towards their upper and lower ends and which are widest at their said ends, a filling piece tapered to fit between the said sides, and side pieces secured over the front and rear sides of the said extensions and filling piece.

2. In a tennis racket, a frame having handle extensions, and a filling piece secured between the adjacent sides of the said extensions, the front and rear sides of the said extensions and filling piece being tapered towards their upper and lower ends and being thickest at their said ends, and side pieces tapered to fit over the front and rear sides of the said extensions and filling piece.

3. In a tennis racket, a frame having handle extensions the adjacent sides and the front and rear sides of which all taper towards their upper and lower ends and which are widest and thickest at their said ends, a filling piece tapered to fit between the adjacent sides of the extensions and having its front and rear sides tapered to correspond with the front and rear sides of the extensions, and side pieces tapered to fit over the front and rear sides of the said extensions and filling piece.

In testimony whereof I affix my signature.

PERCIVAL SURRIDGE.