May 7, 1935. C. BENTLEY 2,000,316

RACKET

Filed June 23, 1930

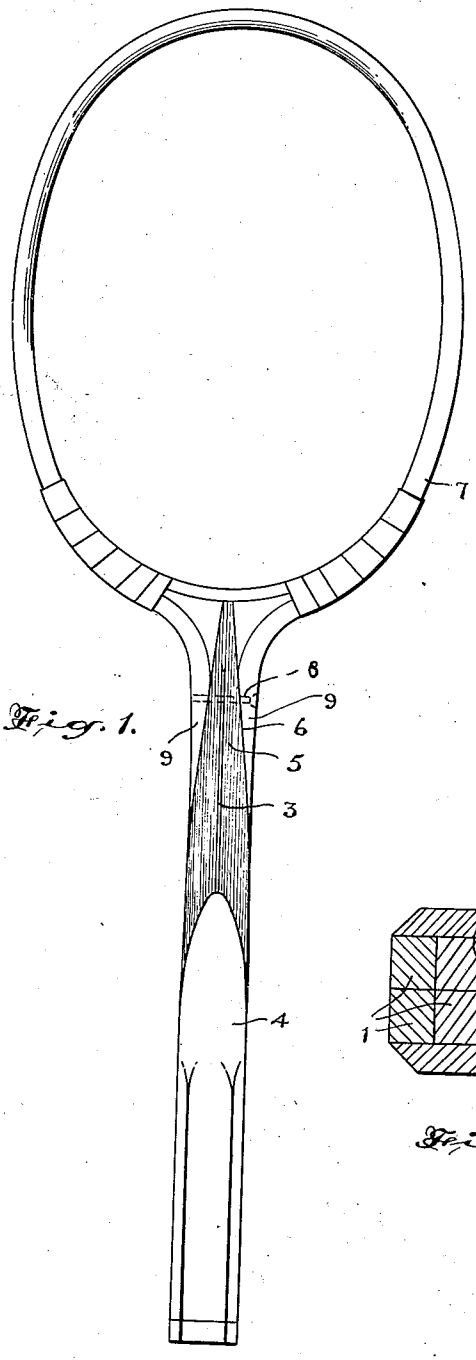


Fig. 1.

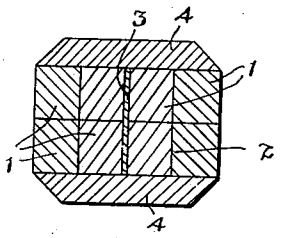


Fig. 3.

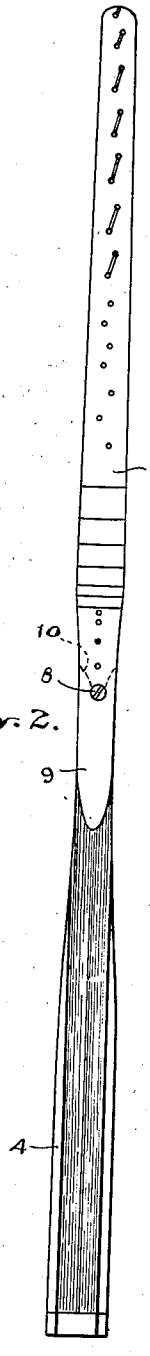


Fig. 2.

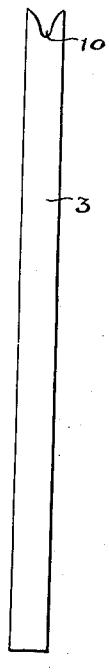


Fig. 4.

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2,000,316

RACKET

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3 Claims. (Cl. 273—73)

The principal objects of this invention are to enhance the snap or speed of delivery of a ball or "bird" when struck by a racket and to provide a handle structure for rackets which will be capable of withstanding the excessive strains imparted thereto and which will be exceptionally light in weight.

The principal feature of the invention consists in the novel construction of the racket handle with a main core of a light resilient fibrous material such as rattan or cane whereby lightness and flexibility is obtained and in associating with the said core a flexure control strip of a suitable stiff fibrous material such as vulcanized fibre disposed in angular relation to the playing face of the racket to control and limit the flexibility of the cane core and accelerate its return to normal equilibrium.

In the accompanying drawing, Figure 1 is a plan view of a racket showing my improved form of handle.

Figure 2 is an edge view of the racket.

Figure 3 is an enlarged cross sectional view through the racket handle.

Figure 4 is an elevational view of the fibrous strip.

In the manufacture of tennis, badminton and squash rackets it is desirable that the weight of the rackets be reduced to the very minimum without sacrificing that springy snap which is required to effect a quick return of the ball or other object played with.

Both of these desirable results have been enhanced by constructing the body of the handle so as to include sections of a light and exceptionally resilient material in the form of cane or rattan which has a very tough and resilient fibrous and longitudinally porous structure.

In the construction herein shown a plurality of strips 1 of cane are squared and jointed together to form the main core 2 of the racket handle and a thin flat flexure control strip 3 of a suitable stiff fibrous material such as vulcanized fibre is built into the core centrally of its width and extending in a plane intersecting the plane of the playing face of the racket. Facing strips 4 of a suitable light wood are jointed and secured to the wider faces of the core to complete the body of the handle which is grasped in the hand of the player. These facing strips are tapered off toward the upper or lighter end of the handle to expose the cane core.

The reduced end of the handle, which is cut down to the cane structure, has the narrower or side edges tapered to form a wedge portion 5 which is fitted into the V-shaped notch 6 formed in the jointed base portion of the loop 7.

A screw or rivet 8 is preferably inserted through the ends 9 of the loop 7 and the tapered end 5 of the handle core and engages the bottom of the notch 10 which is preferably formed in the small end of the fibre strip 3, or if the fibre strip is continued to the end of the tapered portion of the built-up cane portion of the screw or rivet will pass through the centre of said strip. In either case the screw or rivet serves to securely anchor the end of the fibre strip in the cane structure.

The jointed strips of the fibrous cane are thoroughly united into a unitary core structure, each cane having its own natural resistance to stress, and the natural resiliency of the cane core accelerated by the presence of the central strip 3 ensures a very rapid reaction to a blow which produces a very sharp rebound of the object striking the racket.

The stiffening element in the form of the vulcanized fibre strip 3 may not be required in heavier tennis rackets but in lighter rackets it will permit the structure to be reduced to the smallest cross-sectional area while retaining the maximum strength. Further the fibre strip 3, being of extreme toughness and strength compared to the cane core structure, forms a positive means for limiting the bending of the cane structure past a desired flexure or fracture point and obviates objectionable "whipping".

What I claim as my invention is:—

1. In a racket, the combination with a bow portion, and a handle embraced by the terminal ends of said bow and extending therefrom, said handle having a reduced cane core portion subject to flexing stresses, of a thin flat flexure-control strip incorporated solely within the handle, said control strip being confined at one end in the base end of the handle and intersecting the plane of the racket face and extending longitudinally of the handle and bridging said reduced cane core portion and confined at its other end between the said terminal ends of the bow for the purpose of restricting flexture of said reduced cane core portion in a direction transversely of the face of the racket, said flexure control strip being entirely clear of the bow portion so as not to interfere with the natural flexibility and desired lightness of the bow.

2. In a racket, the combination with a handle having a plurality of strips of cane forming a flexible core with a tapered end, a bow having tapered ends embracing the tapered end of said

core, and a fastener extending through the respective tapered ends of said core and bow, of a thin strip of vulcanized fibre confined solely in the handle between said cane core strips and clear of the bow in a plane intersecting the plane of the face of the bow, said fibre strip commencing at the free end extremity of the handle and having its other end terminating between the tapered ends of the bow and anchored to said fastener, and being for the purpose of controlling the inherent freedom of said cane element and accelerating the return of the handle to equilibrium on striking a ball.

3. An improved racket handle of the type composed mainly of light flexible fibrous material, characterized by the incorporation with said flexible fibrous material, of a control element of a relatively tougher and resilient character of flat strip form being disposed transversely of and inserting the plane of disposition of the racket bow and extending longitudinally of the handle from the grip end and terminating in the bow region for the purpose of controlling the inherent undesired tortional and lateral bending freedom of the flexible fibrous material and to accelerate the return of the handle to a state of equilibrium on striking the ball.

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