June 24, 1941. T. D. STOW 2,247,072

TENNIS STROKE PRACTICE DEVICE

Filed Feb. 5, 1940

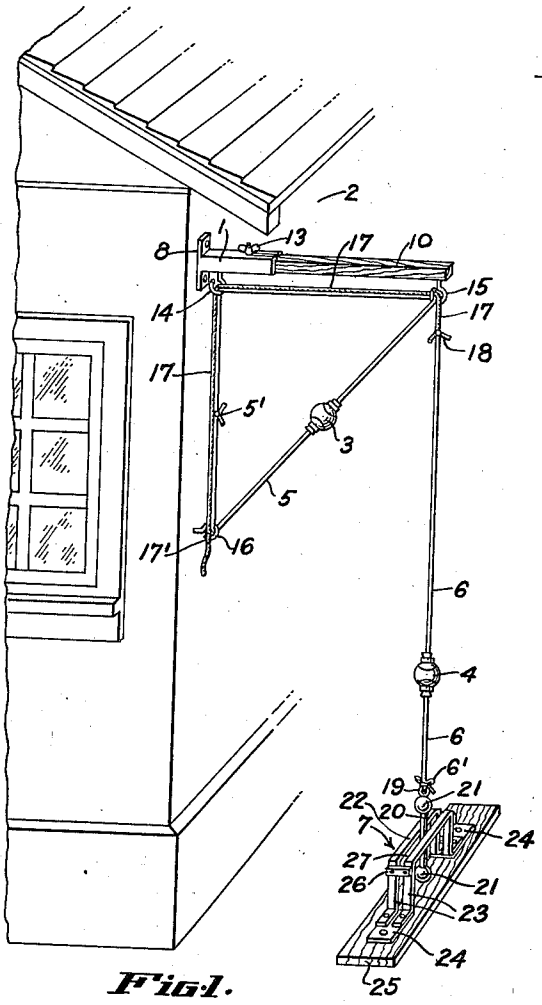


Fig. 1.

Fig. 2.

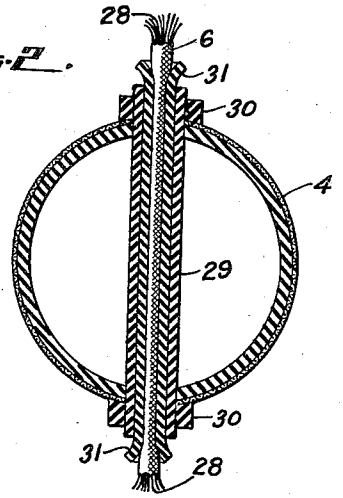


Fig. 3.

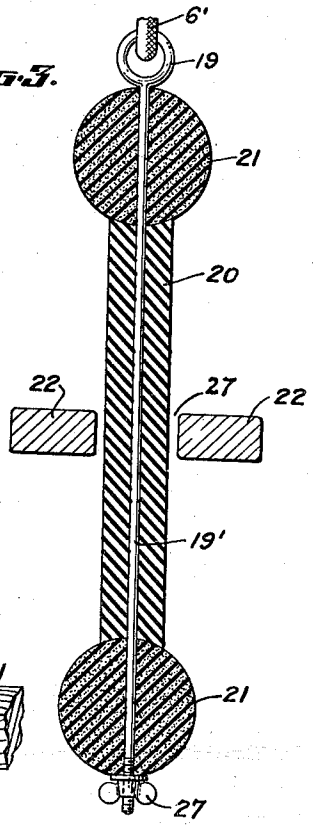
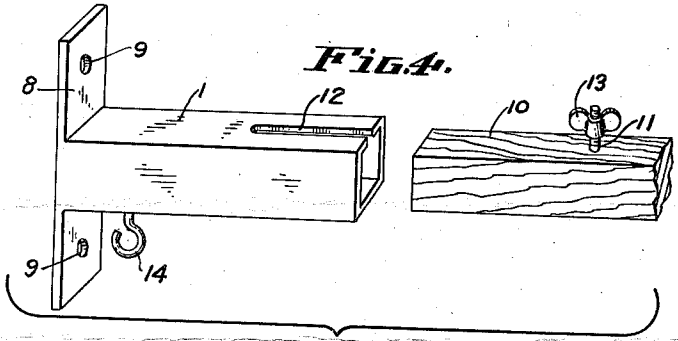


Fig. 4.



INVENTOR.
THOMAS D. STOW
BY J. C. Burned
ATTORNEY.

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TENNIS STROKE PRACTICE DEVICE

Thomas D. Stow, Berkeley, Calif.

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8 Claims. (Cl. 273—29)

This invention relates to practice devices for the development of tennis technique, and has for its principal object such a device which will be simple and effective for the purpose, adaptable for short, medium, and tall pupils, and for every type of stroke, and such a device in which objectionable back and forth oscillations of the ball after hitting is largely dampened out, so that another stroke may be taken at the ball almost immediately after a heavy drive. Other objects and advantages of the invention will appear in the following description and accompanying drawing.

In the drawing:

Fig. 1 is a perspective view showing my improved tennis stroke practice device mounted on the side wall of a building for use.

Fig. 2 is a cross section of the practice tennis ball showing the means employed for mounting it on the rubber cord.

Fig. 3 is a longitudinal section of the oscillation dampener.

Fig. 4 is an enlarged perspective view showing the arm supporting bracket and detachable arm.

Briefly described the device includes a suspending bracket 1 for attaching to the side of a post or building 2 at an elevated position and suspending two practice tennis balls 3 and 4 on elastic cords 5, 6 in such a manner as to accommodate drives, or volleys on one ball and overhead strokes, serves, and smashes on the other, both balls being adjustable along their elastic cords to suit the height of the particular player or the type of stroke being practiced, and the driving practice ball particularly being provided with oscillation dampening means 7 so that even after a hard driving stroke the ball will almost at once quiet down for another stroke.

In the drawing the bracket 1 is shown as a hollow, horizontally projecting socket member having a wall plate 8 with holes 9 for bolting to a wall or post, and the socket member is formed to receive a detachable arm 10 carrying a projecting threaded stud 11 which slides into a groove 12 in the socket, and is secured in place by a wing nut 13.

Rigidly secured to the under side of the socket or arm is a large eyebolt or screw eye 14, and at the end of the arm is another similar eyebolt or screw eye 15, and at about an equal distance from eyebolt 14 measured downwardly along the wall 2 is another screw eye or eyebolt 16. Elastic cord 5 passes through ball 3 and the three eyelets in the form of a triangle and has its ends tied or otherwise secured together as at 5' in a manner to bring the knot against the wall 2.

Also passing through eyes 15, and 14 and fixedly tied or secured at one end to eye 16 as at 17' is a cord or rope 17 tied at its other end as at 18 to the upper end of elastic cord 6 which passes vertically downward through ball 4 and is secured at 6' to an eyelet 19 at the upper end of a dumbbell-like device 20 which hangs freely in a slot 27 between a pair of spaced bars 22 formed with upright legs 23 secured to a shoe 24 at each end in turn secured to a base plate 25 which lies upon the ground and may be of wood, or of metal to give it weight, or be spiked in place if desired, though this is generally unnecessary. The legs 23 are preferably tied together at the upper ends as by small plates 26 and the height of the legs is such as to permit the dumbbell 20 to always swing clear of the plate 25. This may be assured by adjusting the knot 17'. The slot 27 extends parallel to the wall 2 from which the bracket arm 10 projects at right angles.

The dampener member or dumbbell-like device 20 is preferably of rubber and with the balls 21 at its ends made of a good tough grade of sponge rubber and the assemblage is held together by a light rod 19' passing through, the upper end of which rod is formed with the eyelet 19 and the lower end is threaded and fitted with a wing nut 27.

The elastic cords 5 and 6 are preferably made of a large number of elastic rubber strands 28 enclosed in a suitable woven cover on the nature of the enclosures of a flexible electric cord, and the balls 3 and 4 are adjustably held in place in the manner shown in Fig. 2 wherein 29 is a tube, preferably of firm rubber (though it may be of metal or other material) passing through the ball 4 and projecting at both ends and surrounded by a pair of washers 30, which are preferably of rubber and cemented in place or they may be nuts screwed on tube 29 if the latter be of metal, or plastic. Within the rubber tube 29 is a soft rubber tube 31 which projects somewhat beyond tube 29 and is preferably held in place by a slight coating of rubber cement pressed upon it at the time it was inserted in the outer tube 29. The bore or hole extending through the inner rubber tube 31 is of a size somewhat smaller than the normal diameter of the elastic cord 6 so that the elastic cord is compressed to smaller diameter over that portion of it embraced by the tube 31 and immediately expands to its normal size at both ends of the tube as indicated in Fig. 2. By this means the

balls 3 and 4 will never become displaced on their elastic cords 5 and 6 no matter how hard a blow is given them with the racket. In order to shift either ball up or down on its elastic cord, it suffices to stretch the cord with the hands on both sides of the ball so as to reduce its diameter, and at which time the ball may be slid along the thus reduced diameter to any point desired and when the elastic cord is relaxed again it will swell up at opposite ends of tube 31 to firmly lock the ball in place as previously described, and indicated in Fig. 2. Ball 3 may also be adjusted by shifting cord 5 through the eyelets. Since the joints between the ball and the tube may be made air tight with cement, gas under pressure may be introduced into the ball if desired, though I have not found it necessary.

From the above description the operation of the device is thought obvious, as it is evident to any tennis player that ball 4 may be used for any type of ground or drive stroke, and ball 3 for any overhead, smash or serving stroke, so that between these two balls variously adjusted along their respective elastic cords 5 and 6 as may be required, every possible tennis stroke may be practiced, and owing to the particular arrangement shown by the assemblage 7 the loose dumbbell-like device 20 hanging pendulously in loose limited guides 22, together with the nature of the pendulous body and its sponge rubber balls 21 at opposite ends, the motion given ball 4 by even the most powerful blow is dampened within a few moments, as the oscillations cannot be rhythmic and are very rapidly brought to a stop. It is needless to say that the same dampening arrangement may be applied to ball 3 if desired but as ball 3 is not used as often as ball 4 in practice work, it is not so important.

By having arm 10 detachable and at least eyes 14' and 16' open at one side as indicated in the drawing, the arm together with the elastic cords, balls, and dampening devices may be taken indoors during inclement weather and the arm 10 inserted in a duplicate socket 1 mounted within a building or in some protected spot, so that the apparatus may be almost instantly erected in either place. It being understood that a duplicate eyelet 16' is also left permanently in the indoor position as well as in the outdoor position.

I have tried other means of dampening the oscillations of ball 4, and find it can only be done by avoiding a fixed connection at the lower end of the flexible cord 6, as such a connection permits of a gradually decreasing rhythmic vibration to the ball after once being struck, whereas by suspending some loose object which is capable of a more or less limited motion, the rhythm is broken in such a manner that the ball comes quickly to rest. After experiments with various forms of rhythm disturbing elements, I found the dumbbell-like device shown to be very satisfactory, and at the same time to be free from noise as its construction of sponge rubber absorbs the shock and sound, and also adds no disturbing weight which might affect the value of the stroke. Instead of rubber, felt or other soft tough material may be used.

Having thus described my improved tennis practice device and the manner of its use it will be evident that modifications may be made within the spirit of the invention and as may fall within the scope of the appended claims.

I claim:

1. In a tennis practice device, a ball supported on an elastic cord in a manner adapted for striking by a player, and means depending from the elastic cord for dampening the oscillations of the ball when struck, said means including a pendulous body and retainer means formed with a slot embracing said body and extending substantially parallel to the direction of the stroke for limiting the motion of said body.

2. In the construction as set out in claim 1 said pendulous body being of elongated form with soft resilient exterior surface and enlarged at the ends.

3. In the construction as set out in claim 1 said pendulous body being of elongated form with rubber-like balls at its ends.

4. In the construction as set out in claim 1 said pendulous body being of elongated form with spronge rubber balls at its ends.

5. In a tennis practice device, a ball, an elastic cord passing through and for suspending said ball, and a soft rubber tube extending through said ball and surrounding said elastic cord and compressing said cord where it passes through the ball to retain the ball in any desired point of adjustment along said elastic cord and an outer relatively rigid tube enclosing said soft rubber tube.

6. In a structure as set out in claim 5, the relatively rigid tube surrounding said rubber tube projecting beyond opposite sides of the ball and a washer secured in place around each projecting end in contact with the ball.

7. In a tennis practice device, an elastic cord, means supporting the cord in upward extension, a ball supported at an intermediate point on said elastic cord in a manner adapted for striking by a player, and means depending from the lower end of said elastic cord for dampening the oscillations of the ball when struck, said means including a pendulous body interfering with rhythmic swinging motion of said ball when struck.

8. In a tennis practice device, an elastic cord, means supporting the cord in upward extension, a ball supported at an intermediate point on said elastic cord in a manner adapted for striking by a player, and means depending from the lower end of said elastic cord for dampening the oscillations of the ball when struck, said means including a pendulous body and retainer means formed with a guide limiting the motion of said body and thereby interfering with the rhythmic swinging motion of said ball when struck.

THOMAS D. STOW.