United States Patent [19]

Gold

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[54] **DEVICE FOR USE IN PRACTICING TENNIS STROKES**

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[52] **U.S. Cl.** ..... **273/29 A**

[51] **Int. Cl.** **A63b 69/38**

[58] **Field of Search** .... 273/29 A, 26 R, 26 A, 26 E, 273/33, 200 R, 200 B, 202, 204, 206, 184 R, 185 D, 207; 272/60 A

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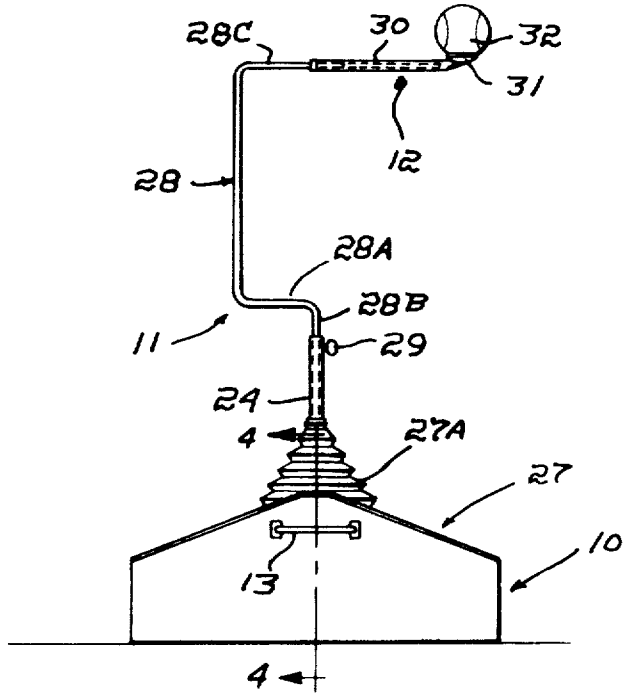
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Primary Examiner—Richard C. Pinkham
Assistant Examiner—T. Brown

[57] **ABSTRACT**

A device for use in practicing tennis strokes has a base to which a support is connected to swing in any direction relative thereto from a normal position. A resilient ball holder is secured to the free end of the support and extends laterally relative to the base and lengthwise of the path of a practice stroke but is sufficiently flexible to collapse under the impact of the racket without significant resistance while transmitting force to the support to cause it to swing out of the path of the racket. The device may be used in the practice of serves or return strokes and in the former case, it must be positioned with the support horizontal and at a sufficient height. The ball may be permanently secured to the holder or supported by a cup to be driven therefrom.

9 Claims, 7 Drawing Figures



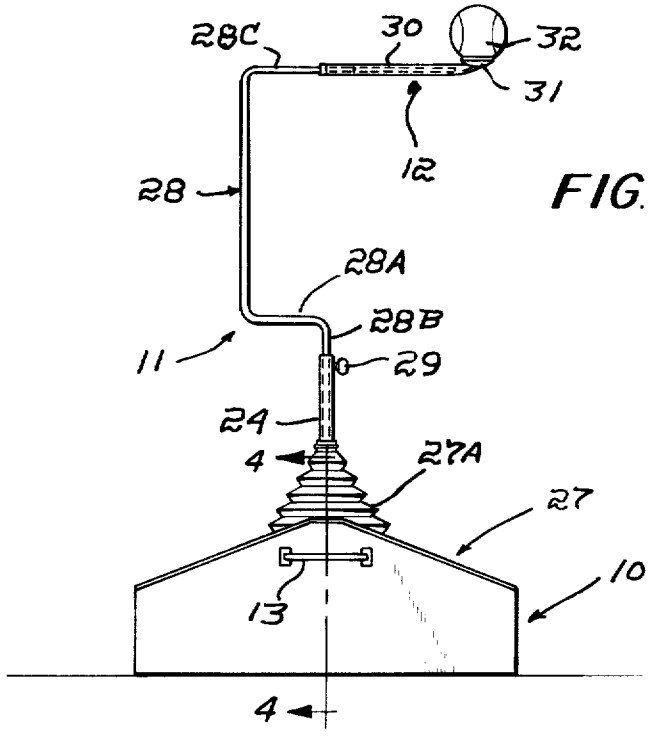


FIG. 1

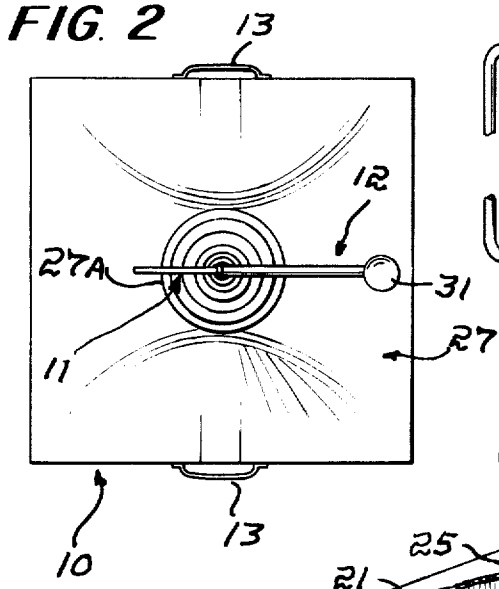


FIG. 2

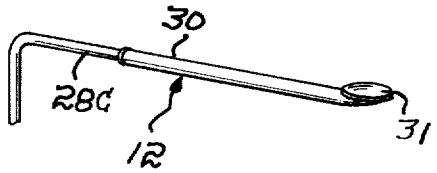


FIG. 3

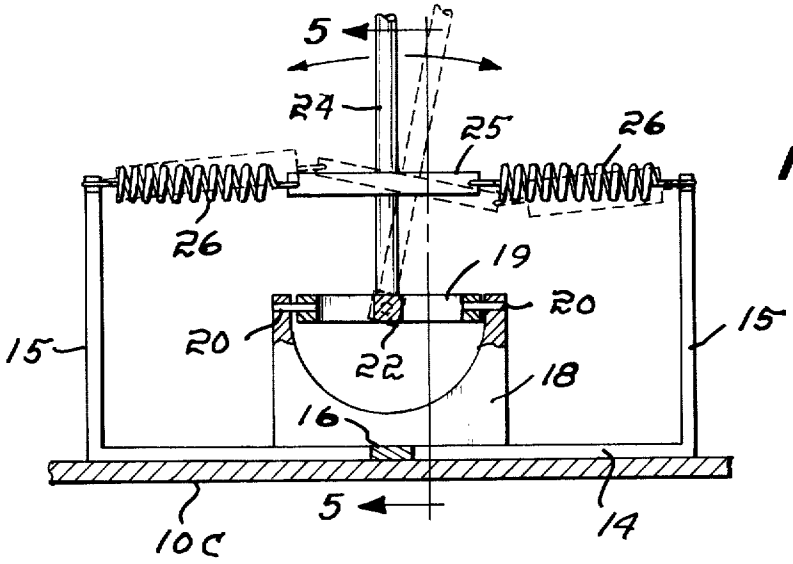


FIG. 4

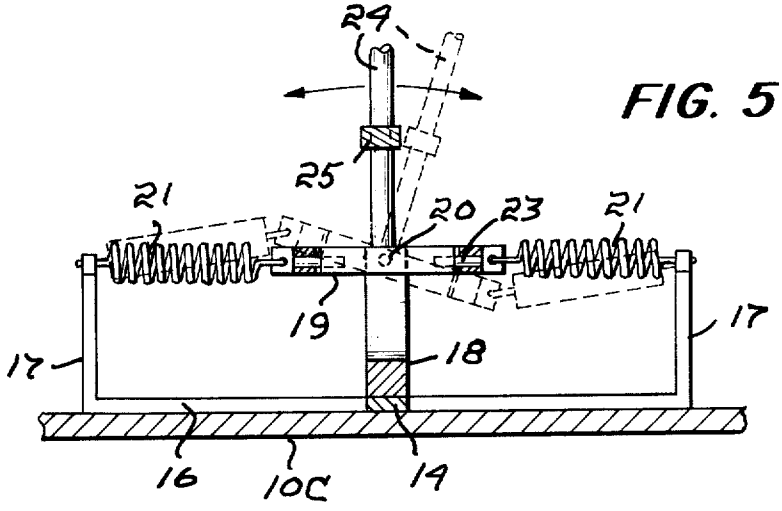


FIG. 5

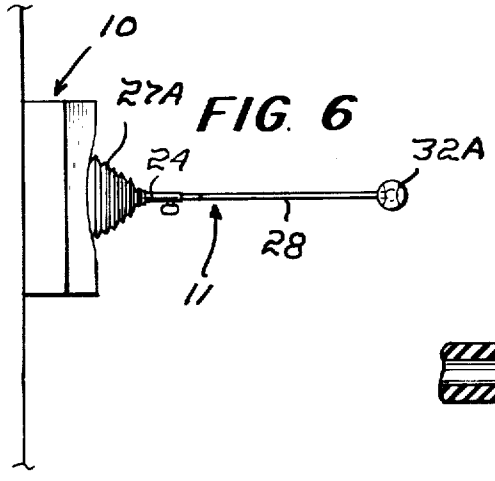


FIG. 6

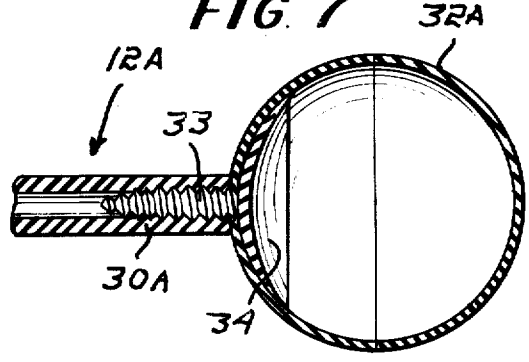


FIG. 7

DEVICE FOR USE IN PRACTICING TENNIS STROKES

BACKGROUND REFERENCES

U.S. Letters Pat. No. 2,272,765
U.S. Letters Pat. No. 2,976,041
U.S. Letters Pat. No. 3,731,926

BACKGROUND OF THE INVENTION

Tennis requires that a player be able to properly meet a ball whether serving or returning it and, in the latter case, either with a fore or backhand stroke and regardless of the level required by the path of the ball relative to the player.

Devices have been proposed for use by a tennis player by himself in practicing strokes. Such devices consist, in general, of a support holding a ball in an appropriate position and yieldable by the impact of the racket when the ball is hit. The ball may either be secured to the support or free to be driven therefrom.

As far as I am aware, such devices do not sufficiently eliminate resistance to the racket as it meets the ball or interference with the follow through to make practice with such proposed devices suitably effective.

THE PRESENT INVENTION

The general objective of the present invention is to provide a device for use in practicing various tennis strokes in which the ball support will not offer significant resistance to the racket when the ball is struck or interference with the follow through.

In accordance with the invention this objective is attained by providing such a device with a base to which the support is so connected that it may swing relative thereto in any direction. A ball holder is connected to the free end of the support and is disposed laterally to extend lengthwise of the path through which the racket is to be swung in practicing a particular stroke. The ball holder is resilient and sufficiently flexible to collapse so that it offers no appreciable resistance when the ball is struck and yet transmit sufficient force to the support to swing it out of the path of the racket as a stroke is completed

Another objective of the invention is to provide a support adapted to ensure the desired above referred-to functions, an objective attained by forming a support with a first section that has a universal type of connection with a base and a U-shaped section having a depending leg slidably connected to the first section with the upper arm of said upper section having the ball holder removably attached thereto.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, a preferred embodiment of the invention is shown and

FIG. 1 is a side view of the device;

FIG. 2 is a top plan view thereof;

FIG. 3 is a perspective and partly sectioned view of the device on a substantial increase in scale;

FIG. 4 is a section, on the scale of FIG. 3, and taken approximately along the indicated line 4—4 of FIG. 1;

FIG. 5 is a section taken along the line 5—5 of FIG. 4;

FIG. 6 is a view of the device mounted on a vertical support and as seen from the position of a player when practicing a serve; and

FIG. 7 is a fragmentary and partly sectioned view on a substantial increase in scale of a ball attached to the flexible stem of the device.

THE PREFERRED EMBODIMENT OF THE INVENTION

The tennis stroke practice device illustrated by the drawings, consists of a base, generally indicated at **10**, a support, generally indicated at **11**, and a ball holder, generally indicated at **12** in FIGS. 1–5 and at **12A** in FIG. 7.

The base **10** has a square box including ends **10A** provided with handles **13** and which are downwardly inclined from their central portions to the level of the box sides **10B**. A first member **14** having upwardly disposed ends **15** and a second member **16** have somewhat shorter, upwardly turned ends **17** are secured to the box bottom **10C** at right angles to each other.

An upwardly disposed U-shaped holder **18** is secured to the member **14** and centrally of the box and a ring **19** is secured by pivots **20** to the holder **18** with the pivot axis lengthwise of the member **14**. The ring **19** is held substantially parallel to the box bottom **10C** by diametrically opposed springs **21**, each secured to the ring **19** and to the appropriate one of the ends **17**. A mount **22** is supported diametrically within the ring **19** by pivots **23** with the pivot axis defined thereby at right angles to that of the pivots **20**. The mount **22** has the centrally located tubular post **24** of the support **11** secured thereto which post extends upwardly through a keeper **25** connected by springs **26** to the ends **15**. In practice, the post **24** is rigid. A cover generally indicated at **27** is marginally secured to the box and is sufficiently full to provide a central crown **27A** in the form of a tapered bellows through which the post **24** extends and to enable the post **24** to swing relative to the base **10** through an arc of 360°. In practice, the cover material is Neoprene or other comparable elastomeric material.

The support **11** also includes a U-shaped section **28** with its lower arm **28A** provided with a depending portion **28B** disposed at right angles thereto in the plane of the section **28** and dimensioned for slidable entry within the post **24** and of sufficient length to permit the height of the section **28** relative to the base **10** to be varied through a substantial distance. The section **28** is locked in any selected vertical position by means of a set screw **29** and in practice is formed from metal rod stock.

The ball holder **12** includes a resilient, flexible section **30** and has a seat **31** either molded on or otherwise suitably secured to its free end. In practice, the margin of the seat **31** is very flexible having just enough rigidity to hold a ball **32** and its diameter is substantially less than that of the ball. The section **30** is sufficiently flexible to collapse readily when the ball **32** is hit while transmitting force to the relatively rigid support **11** to cause it to swing in whatever direction it is compelled to follow by the impact of the racket and to a sufficient extent to avoid interference with the follow through, a result assisted by the U-shape of the section **28**. In practice, the section **30** is of polyurethane and may have and desirably does have close to the minimum resilience that will ensure the return of the seat **31** to its original position after the ball **32** has been struck. The section **30**, if not tubular, has a socket formed to enable it to be a press fit on the free end of the upper arm **28C**.

In practicing return strokes, the device is usually used with the base **10** positioned on the floor or ground and the height of the section **28** is adjusted to support a ball **32** in a wanted position. The player's position is such that the path of the swing of his racket, in striking the ball **32** will include the axis of the section **30.**

While there are advantages to having the ball **32** freely supported, indoor practice or wherever space is limited requires that the ball be held captive. Reference is made to FIG. 7 whenever the ball holder **12A** is shown as including a tubular section **30A** having a screw **33A** threaded therein, the screw extending centrally outwardly through one-half of the ball **32A** and provided with a concavo-convex head **34** incorporated in and bonded in place in that ball half during the manufacture of the ball.

When the device is to be used in practicing serves, the ball holder must be disposed with its axis in the path of the racket at the considerable height a practice serve requires. The device may for that purpose be mounted overhead or, as illustrated by FIG. **6,** attached to a vertical support, for example, a wall.

I claim:

1. A device for use with a tennis racket in improving tennis strokes, said device comprising a base, a support, means connecting said support to said base to enable said support to swing in any direction relative thereto from a normal position and including resilient means yieldably biasing said support into said normal position, a resilient ball holder secured to the free end of the support and extending laterally therefrom, said ball holder being sufficiently flexible to collapse under the impact of a racket without significant resistance or interference with the follow-through of a practise stroke while transmitting force to the support to cause it to swing out of the path of said practise stroke, and said support including a substantially U-shaped section having upper and lower arms, said lower arm including a downwardly depending portion and said upper arm being connected to said ball holder.

2. The device of claim **1** and a ball secured to the holder with the support in alignment with a radius thereof.

3. The device of claim **1** in which the holder includes a ball supporting cup whose margins are sufficiently flexible to prevent any appreciable resistance to a racket when it engages and drives the ball therefrom.

4. The device of claim **3** in which the diameter of the cup is substantially less than that of a conventional lawn tennis ball.

5. The device of claim **1** in which the holder includes a ball support of substantially smaller cross sectional area than the circumference of a conventional lawn tennis ball.

6. The device of claim **1** in which the support also includes a post connected to said means, said portion and said post being interconnected to enable said ball holder to be vertically adjustable.

7. The device of claim **1** in which the ball holder has a tubular portion fitted on the free end of the upper arm of the U-shaped section.

8. A device for use with a tennis racket in improving tennis strokes, said device comprising a base, said base including a ring, a fixed holder pivotally supporting the ring at diametrically opposed points, opposing ring-levelling springs attached to the base and to the ring at diametrically opposed points spaced 90° from the pivot axis of the ring, a mount within the ring pivotally connected thereto with the pivot axis at right angles to that of the ring, and opposing springs connected to the base and to the support in vertical alignment with the pivot axis of the ring, a support secured to said mount axially of said ring, and a resilient ball holder secured to the free end of the support and extending laterally therefrom, said ball holder being saufficiently flexible to collapse under the impact of a racket without significant resistance or interference with the follow-through of a practise stroke while transmitting force to the support to cause it to swing out of the path of said practise stroke.

9. The device of claim **8** in which the base also includes a box and a cover through which the support extends and by which the support is sealed, the cover having sufficient fullness to enable said support to swing in any direction.

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