United States Patent [19]

Sperling

[11] **3,865,290**

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[54] **TENNIS BALL HOLDER**

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[52] **U.S. Cl.** ..... **224/5 D,** 24/245 B, 24/248 GC

[51] **Int. Cl.** **A45f 5/00**

[58] **Field of Search** ..... 224/5 D, 26 R, 26 B; 24/3 F, 3 R, 248 R, 248 FS, 248 GC, 248 HE, 248 PC, 248 SL, 90 C, 245 R, 245 B, 245 FF, 245 L, 245 A, 245 F, 245 D; 264/92

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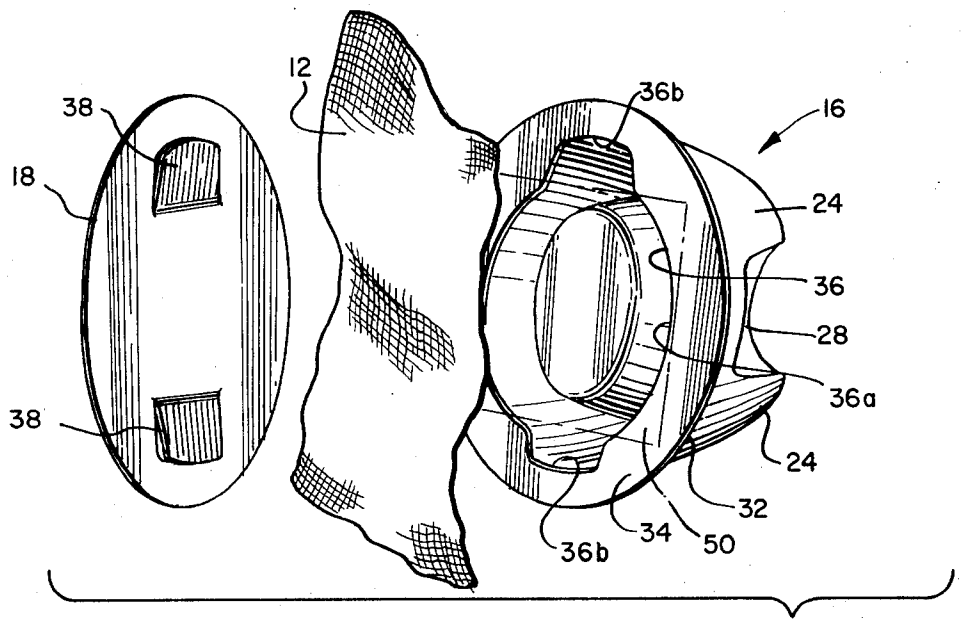
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Assistant Examiner—Joseph J. Rolla
Attorney, Agent, or Firm—Cecari and McKenna

[57] **ABSTRACT**

A tennis ball holder is comprised of a lightweight, vacuum-formed, concave plastic shell having a plurality of fingers which grip the ball to retain the ball within the shell. The rear wall of the shell is generally flat and contains a keyhole. In use, the holder is placed with its rear wall against the outside of the player's clothing at a convenient place. Then a flat plate is positioned underneath the clothing opposite the holder. The plate has a key arranged to project into the keyhole along with the fabric and lock there so as to securely anchor the holder and the ball contained therein to the player's clothing, freeing his hands for play.

5 Claims, 4 Drawing Figures



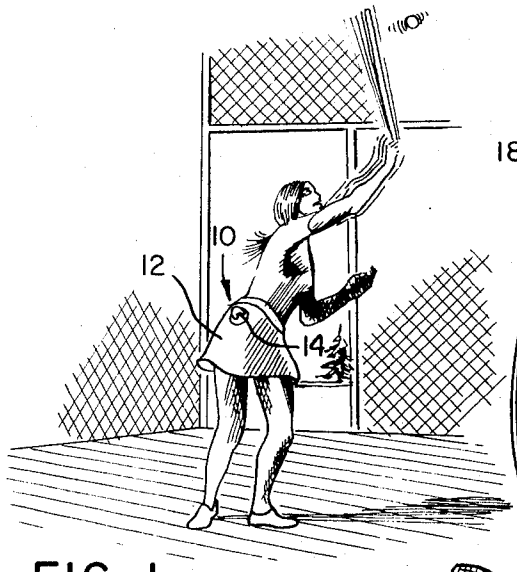


FIG. 1

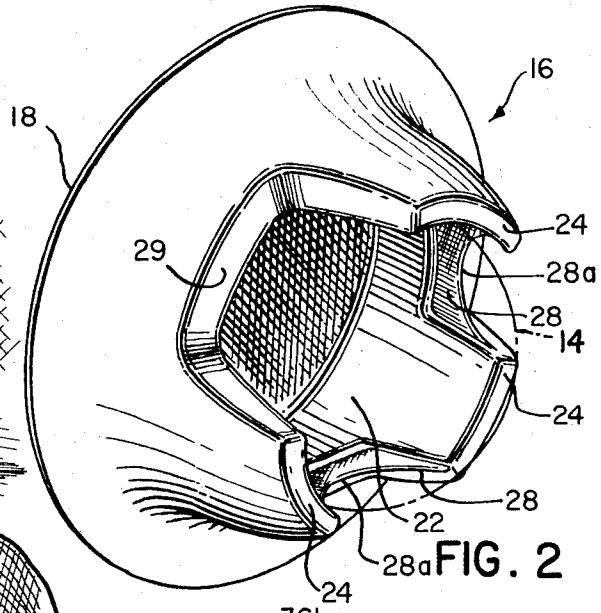


FIG. 2

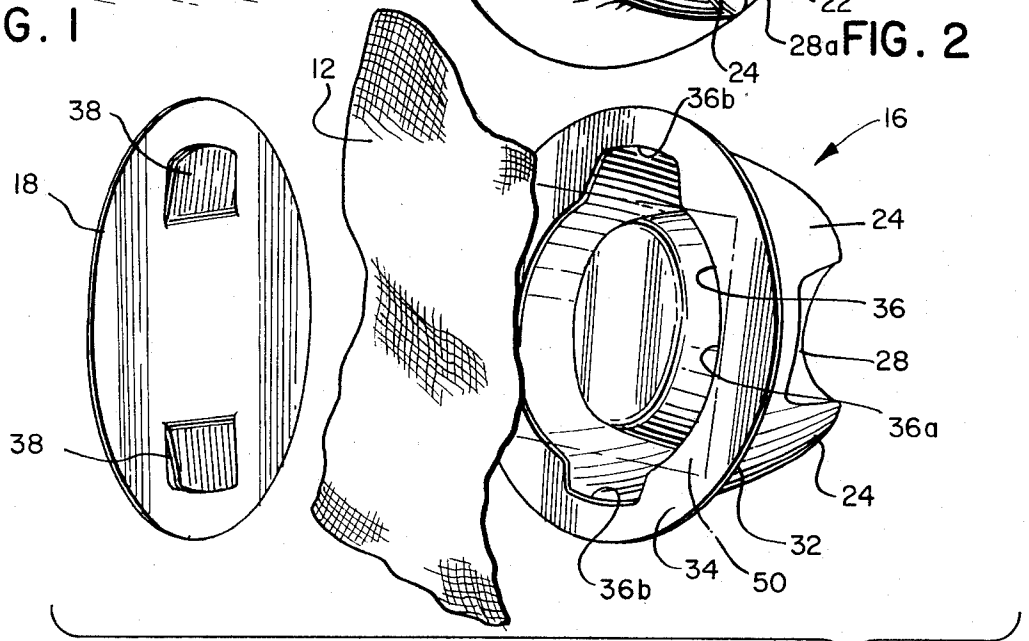


FIG. 3

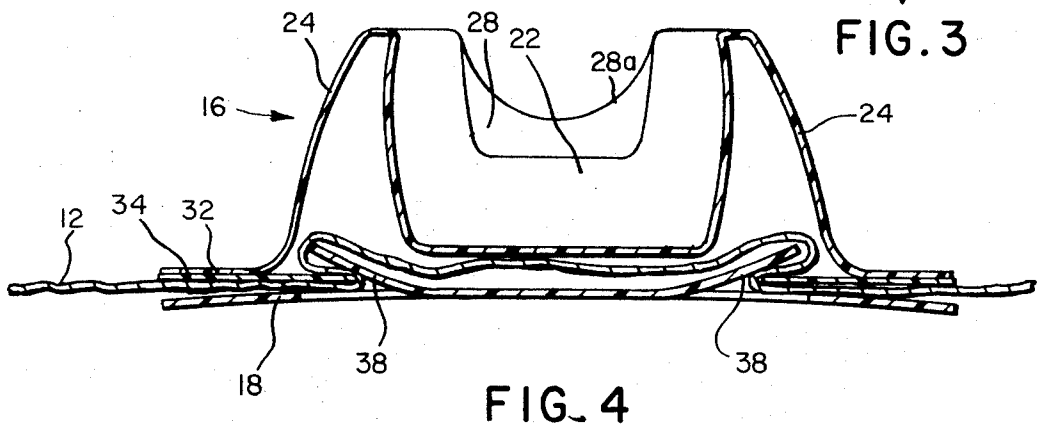


FIG. 4

TENNIS BALL HOLDER

BACKGROUND OF THE INVENTION

This invention relates to a tennis ball holder. It relates more particularly to a ball holder which can be removably attached to the player's clothing.

Ball holders of this general type are not new. Typical ones are shown, for example, in U.S. Pat. Nos. 2,548,330, 2,661,129 and 3,497,118. Invariably, these holders are designed to be attached to the player's belt. Therefore, some men, and most women, whose playing uniform does not normally include a belt or pockets cannot use these prior holders and must hold the balls in their hands.

Some conventional ball holders are disadvantaged also because they are relatively bulky and heavy, being molded with relatively thick walls. Consequently, they flop about and tend to distract the player's attention from the game. Other prior holders do not retain the ball as securely as they might, with the result that the movements of the player tend to dislodge the ball from the holder, thereby interrupting the game.

SUMMARY OF THE INVENTION

An object of the present invention is to provide a ball holder which can be removably attached to the player's outside clothing.

Another object of the invention is to provide a ball holder which is very lightweight so that it does not discomfort or distract the player wearing it.

A further object of the invention is to provide a holder of this general type which very securely retains the balls despite very sudden movements of the player during the game.

Yet another object of the invention is to provide a ball holder which can be securely anchored to the player's clothing.

Another object of the invention is to provide a ball holder of this type which is very inexpensive to make.

Other objects will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the following detailed description, and the scope of the invention will be indicated in the claims.

In general, the subject ball holder is comprised of a very lightweight, vacuum-formed shell. The front face of the shell is concave to accommodate the curvature of a tennis ball and a plurality of fingers disposed around the concave face project out from the face and resiliently grip the ball when it is in the holder. The shell also has thin-walled webs extending between at least three of the aforesaid fingers. The webs which will be described in more detail later firmly grip the ball, thereby preventing the ball from being dislodged even though the holder is shaken violently by the wearer.

The rear wall of the ball holder is generally flat and contains a keyhole. A separate flat plate coacts with the shell to anchor the holders to the player's clothing. The plate forms a key which is inserted into the keyhole in the shell when the plate is placed flush against the rear wall of the shell and oriented at a selected angle relative to the shell. However, when the plate is rotated to another angle relative to the shell, the key becomes

locked in the keyhole, thereby securing the plate to the shell.

In use, the shell is placed with its flat rear wall against the outside of the player's clothing at an appropriate place. A suitable location is on the back hip on the side opposite the serving hand. Then the plate is slid under the clothing and positioned opposite the shell. The plate is oriented relative to the shell so that the key, along with the overlying clothing fabric, can be pressed into the keyhole. Thereupon, the plate is rotated relative to the shell to lock the plate to the shell on opposite sides of the fabric. This securely anchors the holder to the player's clothing whereupon a tennis ball can be press-fit into the shell between its fingers. The resilient fingers and connecting webs grip the ball and prevent its dislodgement despite very violent movements of the player during play.

Since the holder is vacuum-formed from very lightweight plastic, it is hollow and can have very thin walls. For the same reason, it can be manufactured very inexpensively with a minumum amount of plastic resin. Thus, its weight is not sufficient enough to annoy the player. Also, the part of the holder contacting the player's body has a flat, smooth surface. Consequently, it causes no discomfort to the player.

While we are describing a holder for a single tennis ball, it should be understood that the holder can be shaped and arranged as desired to accommodate more than one tennis ball or to retain one or more spheres of a different size such as golf balls, squash balls or the like.

BRIEF DESCRIPTION OF THE DRAWING

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

FIG. **1** is a perspective view of a ball holder made in accordance with this invention being worn by a tennis player;

FIG. **2** is a similar view on a much larger scale showing the ball holder in great detail;

FIG. **3** is an exploded perspective view on a slightly reduced scale showing the shell and plate portions of the ball holder separately; and

FIG. **4** is a sectional view showing the shell and plate in their locked condition when in use.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now to FIG. **1** of the drawing, the subject ball holder indicated generally at **10** is shown affixed to a player's tunic **12.** The holder is arranged to retain a single tennis ball, thereby freeing both of the player's hands to play with the other ball of the set of two balls which is customarily used.

Turning now to FIGS. **2** and **3,** the holder **10** is comprised of a hollow, generally conical shell **16.** The shell is vacuum-formed of a suitable lightweight plastic such as high impact polystyrene. Thus, its walls can be thin while still being quite stiff. The front face **22** of shell **16** is concave with its radius of curvature being comparable to that of ball **14.** Shell **16** is also formed with three hollow fingers **24** distributed around face **22.** Fingers **24** project out beyond face **22** and their interior sidewalls are curved in conformance with the curvature of face **22** and ball **14.** Fingers **24** are quite resilient so

that they grip the ball **14** when it is press-fit into shell **16.**

Still referring to FIGS. **2** and **3,** desirably also shell **16** is formed with two thin-walled webs **28** stretching between the three fingers **24.** These webs are angled in slightly toward the center of face **22** and they have relatively sharp edges **28***a* which engage and grip ball **14** when it is placed in the holder. The fingers **24** and the webs **28** suffice to retain the ball within the holder even though the holder is shaken rather violently as the player maneuvers on the court. The web is omitted between two of the fingers leaving an opening at **29** so that the player can inseet his finger into the holder through the opening to pry the ball **14** loose when the ball is needed.

As alluded to previously, there are definite advantages in terms of cost and ease of manufacture of making shell **16** by a vacuum-forming process. However, this places certain constraints on the shape of the shell. More particularly, in order to be able to remove the finished shell from the vacuum forming mold, the inner and outer surfaces of the shell and particularly its fingers **24** must diverge from front to back. This means that the inner surfaces of the fingers **24** must splay apart. This constraint id directly contrary to the condition that should prevail in order to securely retain a ball in the holder. While the lateral curvature of the fingers does serve to compensate somewhat for the divergent fingers by providing side edges on the fingers to grip the ball, it is the webs **28** with their convergent sharp gripping edges **28***a* which coact with the fingers to securely retain the ball in the holder.

Referring particularly to FIGS. **3** and **4,** the rear edge portion of shell **16** flares out beyond the shell forming a flange **32** around the perimeter of the shell. A flat, circular plastic piece is secured to flange **32** by a suitable adhesive cement forming a rear wall **34** on the shell. Also, wall **34** is formed with a relatively large, shaped opening **36** which functions as a keyhole as will be described presently in more detail. The keyhole opening **36** has a generally circular portion **36***a* coaxial with the shell's axis of symmetry. The opening also has two generally semicircular lobes **36***b* disposed on opposite sides of, and contiguous with, opening portion **36***a.* This keyhole opening is arranged to receive a key formed on the flexible, resilient plate **18.**

This key consists of a pair of generally semicircular tabs **38** which are positioned on opposite sides of the plate center relatively near the perimeter of the plate. Tabs **38** are formed by slitting the plate arcuately and displacing the slitted portions from the plane of the plate. The tabs **38** are sized to be received in the opening lobes **36***b* when the plate **18** is placed flush against the shell wall **34** and oriented to aLign the tabs with the lobes. When the align is rotated relative to the shell, the tabs **38** engage behind wall **34** inside the shell, thereby locking the plate to the shell.

Turning now to FIG. **4,** in use, the shell is positioned with its rear wall **34** facing the player's clothing as shown in FIG. **1.** Then the plate **18** is slid underneath the clothing until it is positioned opposite the shell. Next, the tabs **38** are aligned with the opening lobes **36***a* and pressed into the opening **36** along with the clothing fabric as shown in FIG. **4.** Then the plate **18** is rotated relative to the shell, thereby locking the tabs in place behind the rear wall **34.** The shell is now firmly anchored to the tunic **12** and the ball **14** press-fit into the shell as shown in FIG. **1** will be retained there until needed by the player.

The holder is easily removed simply by rotating the plate **18** relative to the shell until the tabs align with the opening lobes **36***b.* The shell becomes disengaged from the plate and the two parts can be removed from the tunic and stored until needed again.

In an alternate construction, the key an keyway may be shaped and arranged so that when the key is bowed, a portion of it can be inserted into the keyway. Then when the key is released, it resumes its original form so that its edges engage behind the rear wall **34** locking the key to the holder. For example, the plate **18** can be square or rectangular and the keyway opening **36** can be rectangular or circular or some other shape, making the plate sightly longer in one dimension than the opening. To release the plate from the holder, it is pulled outward at its midpoint so that it bows enough to retract its edges from the opening. A flat flexible and resilient key such as this engaged in opening **36** is indicated in dotted lines at **50** in FIG. **3.**

In all cases, if the holder is pulled outward from the tunic **12,** the plate becomes more securely locked to the holder because the fabric pressed the plate more tightly against the inside of rear wall **34.**

The subject holder can be molded in a variety of colors by a simple vacuum-forming technique which minimizes manufacturing costs and renders the holder quite strong and resilient, yet very lightweight.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above construction without departing form the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described.

I claim:

1. A ball holder comprising

A. a hollow shell

1. having a concave face arranged to resiliently receive and engage a ball,

2. being formed with a plurality of hollow, resilient fingers distributed about and projecting out from the concave face of the shell, and

3. being formed with at least two thin-walled webs stretching between at least three adjacent shell fingers, and having a generally flat rear wall,

B. means defining a keyhole in the rear wall, and

C. a flat plate arranged to be positioned flush against the rear wall, said plate constituting a key arranged to engage in the keyhole when the plate is placed flush against the rear wall so that the shell and plate can be locked together on opposite sides of a player's clothing to anchor the holder to the clothing.

2. The holder defined in claim **1** wherein the shell is a hollow, vacuum-formed plastic piece.

3. The holder defined in claim **1** wherein the plate is comprised of a key shaped so that it mates with and projects into the keyhole when the plate is oriented at a selected angle relative to the shell, said key becoming locked in the keyhole when the plate is oriented at a different angle relative to the shell.

4. The holder defined in claim 3 wherein the key is comprised of one or more tabs formed by slits in the plate, said tabs being deflectable out of general plane of the plate.

5. The holder defined in claim 3 wherein the plate is

flexible and resilient so that, when bowed, its edges can be inserted into the keyhole and, when released, its edges become locked in the keyhole.

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