

[54] **TENNIS BALL HOLDER**

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[51] Int. Cl. .... **A45c 11/00**

[58] Field of Search ..... **224/5 R, 5 D, 5 A,**  
**224/5 B, 26 R, 25 R; 24/3 D, 3 E**

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[57] **ABSTRACT**

A holder for elastically gripping a tennis ball and capable of being secured to an article of clothing is described. In a preferred embodiment the holder may be bent from wire in the form of a pair of loops for holding the ball and a pair of U-shaped portions for nipping or crimping an article of clothing, such as a belt or the like.

**8 Claims, 7 Drawing Figures**

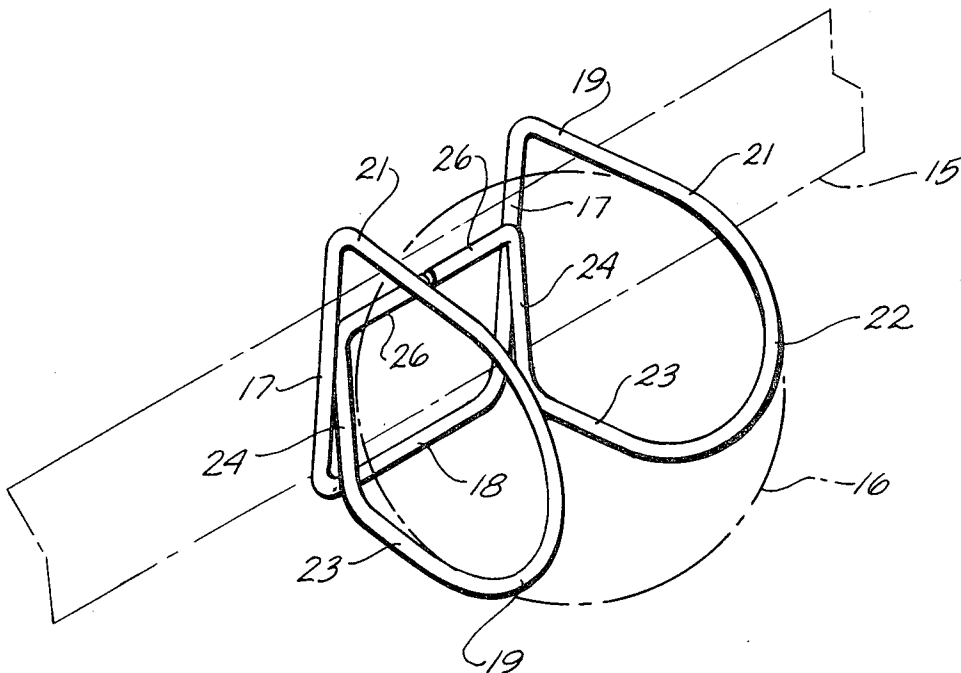


FIG. 1

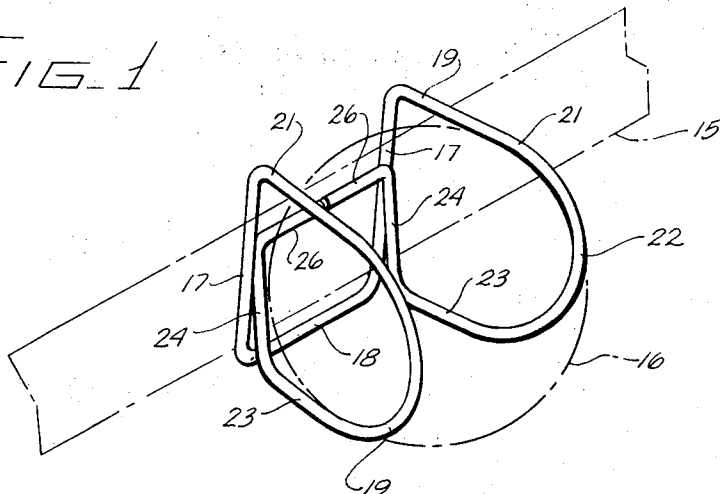


FIG. 2

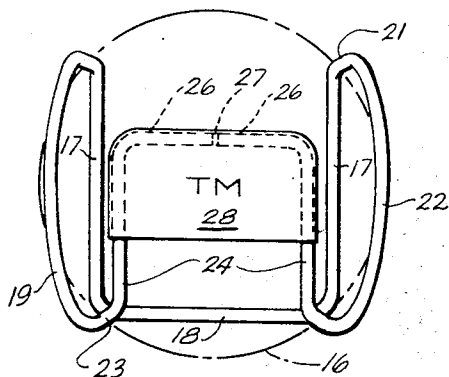


FIG. 3

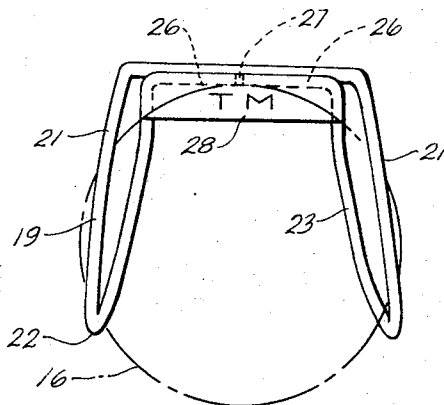
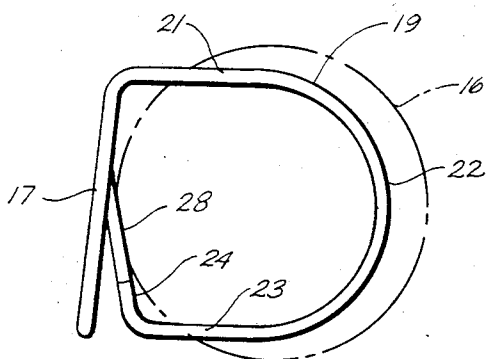


FIG. 4



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FIG. 5

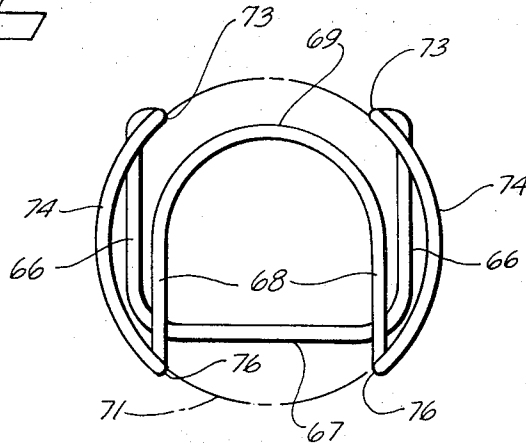


FIG. 6

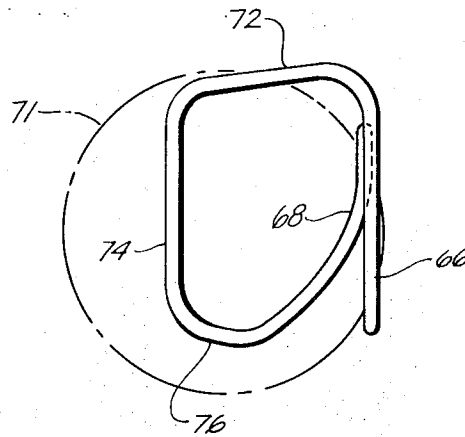
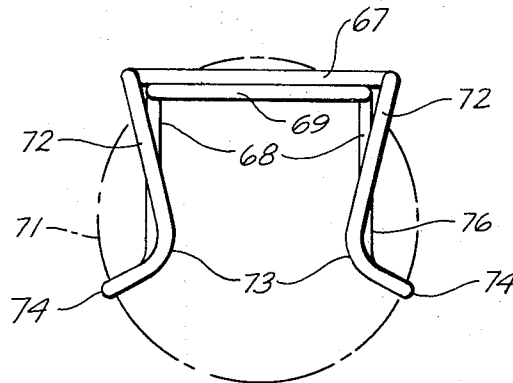


FIG. 7



## TENNIS BALL HOLDER

## BACKGROUND

In tennis the person serving typically carries a pair of balls so that if he faults on the first attempt at service he can immediately serve the second ball. On the other hand, if the first service is in play the second ball, which is typically carried in the player's hand, is surplusage and may tend to interfere with the player's game. Thus, for example, a player may wish to have both hands on the racket at the time of a back hand or net shot and the extra ball is in the way.

Some players have therefore developed a practice of disposing of the second ball by dropping or throwing it after the first service. In some instances the player throws the ball into the net so as to have both hands free and still retain the ball within the general playing area. This latter technique of disposing of the extra ball is particularly distracting to an opponent attempting to return a service since both balls are traveling towards him. It is therefore desirable to provide means for a tennis player to retain a second tennis ball, either to leave his hand free during first service or after the first service is successfully completed.

## BRIEF SUMMARY OF THE INVENTION

Therefore, in practice of this invention according to a presently preferred embodiment there is provided a ball holder having a base, means for fastening the base to an article of clothing and means secured to the base for elastically gripping a ball with sufficient force to hold the ball against the principal body accelerations encountered in an athletic game, and insufficient to prevent easy hand insertion and withdrawal of a ball.

## DRAWINGS

These and other features and advantages of the present invention will be appreciated as the same becomes better understood by reference to the following detailed description of a presently preferred embodiment when considered in connection with the accompanying drawings wherein:

FIG. 1 illustrates in perspective a wire ball holder constructed according to principles of this invention as mounted on a person's belt;

FIG. 2 is a front view of the holder of FIG. 1;

FIG. 3 is a top view of the holder of FIG. 1;

FIG. 4 is a side view of the holder of FIG. 1;

FIG. 5 is a front view of another wire ball holder constructed according to principles of this invention;

FIG. 6 is a side view of the ball holder of FIG. 12; and

FIG. 7 is a top view of the ball holder of FIG. 12. Throughout the drawings like numerals refer to like parts.

## DESCRIPTION

FIG. 1 illustrates in perspective a wire ball holder constructed according to principles of this invention, in a size appropriate for holding a tennis ball. As illustrated in this embodiment, the holder is clipped over a belt 15, shown in phantom in FIG. 1. Also shown in phantom in FIG. 1 is a tennis ball 16 gripped by the tennis ball holder. FIGS. 2, 3, and 4 show the tennis ball holder in front, top, and side views, respectively. It should be recognized, however, that the nomenclature front, back, top, bottom, and side as used in this description are merely for purposes of exposition and that

in some arrangements the tennis ball holder may be oriented in other directions. It will also be recognized that as the description progresses it may be stated that various parts are bent or twisted relative to other parts and that these are intended only as statements of relative position rather than necessarily limiting the mode of forming employed in manufacturing a tennis ball holder.

The tennis ball holder in FIGS. 1 to 4 is bent from wire, such as, for example, one-eighth inch diameter aluminum wire which is sufficiently soft to be readily formed in the described geometry and has an appropriate elasticity for gripping a tennis ball with sufficient force to resist the principal body accelerations encountered in a game of tennis without being so stiff as to significantly inhibit the hand insertion and withdrawal of a tennis ball from the holder. Other wire sizes and materials can be used to hold a ball against the accelerations of the body in an athletic game. The wire tennis ball holder has a first U-shaped portion formed of a pair of substantially straight, nearly vertical legs 17 interconnected by a straight bight 18. This U-shaped portion has the bight 18 at the bottom, and the legs 17 extending upwardly and slightly forwardly from the bight as best seen in FIG. 4. In this embodiment, the legs 17 are at substantially a right angle to the bight 18 so as to be parallel to each other, however, variations from this angle can be employed as desired.

Connected at the upper end of each of the legs 17 is a wire loop 19 each of which preferably has a straight portion 21 approximately normal to the legs 17 and extending forwardly from the plane of the U-shaped portion. The loop then has an approximately semicircular portion 22 terminating in another straight portion 23 at the lower part of the tennis ball holder. The arc of the semicircular portion 22 is preferably part of a small circle of a sphere of the radius of the tennis ball, that is, a line formed by the intersection of a plane and the sphere where the plane does not pass through the center of the sphere. It is also preferred that the two loops 19 diverge somewhat from each other, as best seen in FIGS. 2 and 3, so that they are relatively closer together near the U-shaped rear portion of the tennis ball holder and relatively further apart in the semicircular portion 22 of the loop, which may be considered as the forward portion of the tennis ball holder.

Each of the loops terminates at the end of the lower straight portion 23 in a generally upstanding leg 24 which is bent into a generally L-shape so as to have a base 26 on each of the upstanding legs, with the two bases 26 being substantially aligned with each other and separated by a small gap 27 at their respective ends. If desired a spot weld can be applied in lieu of the gap so that the bases 26 are joined and the holder is in effect one loop of wire. Thus, the legs 24 and bases 26 cooperate to define a second U-shaped portion that, as seen in the side view of FIG. 4, is near the rear portion of the tennis ball holder and is in a plane canted relative to the plane of the first U-shaped portion 17, 18. This second U-shaped portion formed by the legs 24 and bases 26 is also narrower than the first U-shaped portion so that the legs 24 at least partly fit between the legs 17, as best seen in the front view of FIG. 2.

In order to use the tennis ball holder hereinabove described and illustrated in FIGS. 1 to 4, the rearward and wider U-shaped portion is preferably passed downwardly behind a belt 15 or the like on a person's gar-

ment. The forward and narrower U-shaped portion formed by the legs 24 and the bases 26 passes in front of the belt, and because the two U-shaped parts are close to each other and their planes intersect, the belt is nipped or crimped therebetween so that the tennis ball holder is secured. The elasticity of the loops interconnecting the two U-shaped portions permits relative deformation and also enhances the grip on the belt. Although described with respect to a belt, it will be apparent that a similar nipping or crimping of fabric of a waistband or other article of clothing would also be accomplished when the tennis ball holder is connected thereto.

Typically, a tennis ball is about 2 1/2 inches in diameter and the center portions of the loops 22 are about 2 inches forward of the bight formed by the bases 26 forming the U-shaped portion forward of the belt. When the tennis ball holder is empty, that is, when there is no tennis ball in place, the outermost portions of the two loops 22 are about 2 inches apart (inside measure). Thus, when a tennis ball is inserted into the holder from directly in front, the two loops must elastically spread apart so as to be about 2 1/2 inches apart in order to pass the ball therebetween. After a tennis ball is in position in the holder, the loops are about 2 1/2 inch apart so as to be only slightly elastically deformed.

It will be apparent that entry of a tennis ball into the holder is most easily accomplished from almost directly in front since this portion of the wire loops is inherently further apart and must, therefore, deform less than any other portion. Further, this portion is furthest from the base formed by the two U-shaped portions so that the total deformation required in order to pass a 2 1/2 inch diameter tennis ball is least when the ball enters from directly in front. By the same token, withdrawal of the ball from the tennis ball holder is resisted with greatest force in all directions other than directly forward of the tennis ball holder. Thus, the tennis ball holder grips a tennis ball inserted therein sufficiently tightly that considerable acceleration must be applied to the ball in order to dislodge it from the holder under only its own weight. Since the tennis ball is light, the forces generated during the normal accelerations of a person's body during a game of tennis are not sufficient to dislodge the ball. The opening force between the loops is, however, sufficiently low that when it is desired to remove the ball by hand it can be gripped and withdrawn from the holder with only a very nominal force. Further, by gripping the tennis ball with a pair of loops, entry to which is easiest from the front, the tennis ball holder tends to be substantially self aligning so that a person need only press the tennis ball towards it to have the ball snap easily into place. The holder is also open at the top and the bottom a distance from the base less than the radius of the ball so that when a person reaches for a ball held therein it is quite natural to grip the ball for withdrawal from the holder.

Thus, either of two modes of use of the tennis ball holder is possible. A person may upon the first service hold a second ball in reserve in the tennis ball holder so as to throw one ball into the air for service and leave his throwing hand free in order to field any return of the service. If a second attempted service is required, he need only to reach down to his belt and withdraw the second ball and serve in it the same manner. The player may prefer to hold two tennis balls in his hand on his first service, lofting one into the air, and if the

first service is good, the second ball can be slapped into the tennis ball holder quickly and reliably without any distraction to the opposing player. In other embodiments a holder of this structure may be employed for a golf ball or other similar ball used in athletic games.

Also illustrated in FIGS. 2 and 3, but omitted in FIG. 1 for purposes of clarity, is a sheet-like tab 28 extending between the upright legs 24 of the inner U-shaped portion, and preferably serving as a cap over the bases 26 so as to hide the gap 27. The tab 28 can, for example, be conveniently made by placing a preformed plastic cap over the U-shaped portion and shrinking it in place so as to tightly grip the legs 24. The tab 28 serves to hold the second U-shaped portion in position and also shield the ends of the bases 26. It serves an additional useful function in providing a surface on which a trademark or other identifying indicia can be placed in a position to be on the front surface of the person's belt and exposed when there is no ball in the holder.

In a preferred embodiment the forward and rearward portions of the base between the loops are each U-shaped with the legs approximately parallel to each other except as they are canted as best seen in FIG. 4. This provides two regions for closely nipping or crimping a garment. This can be modified, however, such as, for example, by rounding the bight portion of either or both of the U-shaped portions. Similarly, the forward portion of the base need not be U-shaped but can comprise upstanding legs as widely or closely spaced as desired. Best gripping of the tennis ball is obtained when the forward portion is narrower and between the legs of the rearward portion, but positions can be reversed in some embodiments.

The tennis ball holder hereinabove described and illustrated in FIGS. 1 to 4 is particularly well suited for use with a belt or a garment having a waistband so that the two U-shaped portions nip or crimp the fabric of the belt or waistband. Some women tennis players, however, prefer to wear a tennis dress that does not include a belt or waistband to which the wire tennis ball holder can be attached by nipping or crimping the fabric. If desired with a tennis dress, the tennis ball holder can be applied to a pocket or to a strip of fabric specially secured to the tennis dress.

FIGS. 5 through 7 illustrate in front side and top views, respectively, a wire ball holder constructed according to principles of this invention. This ball holder is highly advantageous in several respects since it may easily be hooked over a belt or the like for attachment to a person's clothing. The shape is such that a ball entering from the front is guided towards a centered position for easiest insertion into the holder. This holder also permits the ball to be in closer proximity to the body of the wearer so that it does not protrude quite as far as in some of the other embodiments hereinabove described. This arrangement may therefore be preferable to the other described embodiments. The general arrangement of the components of the wire ball holder of FIGS. 5 to 7 is similar to the arrangement illustrated in the ball holder of FIGS. 1 to 4, and, in general, the functions of the parts are similar.

The wire ball holder of FIGS. 5 to 7 comprises a first or rearward U-shaped portion formed by a pair of approximately vertical straight legs 66 interconnected by a substantially straight bight 67 at their lower ends. This U-shaped portion is adapted to fit behind a person's belt or the like when the ball holder is in use. A

second or forward U-shaped portion formed by a pair of generally upwardly extending legs 68 and an approximately semi-circular bight 69 is slightly narrower than the first U-shaped portion and spaced generally forwardly thereof. In use, the second U-shaped portion would lie in front of a user's belt so that the material forming the belt would be nipped or crimped between the first and second U-shaped portions. The legs 68 of the second U-shaped portion extend downwardly and forwardly from the bight 69 so that they lie close to the surface of a ball 71 when it is held within the holder. The forwardly extending legs 68 thus diverge at their lower end from the approximately vertical legs 66 in the first U-shaped portion so that there is a relatively wider opening at the bottom and a relatively narrower opening at the top. This tapered opening facilitates mounting the ball holder on a belt or other article of clothing.

A pair of spaced-apart ball holding loops extend forwardly from the two U-shaped portions forming the base of the ball holder and providing means for attaching it to an article of clothing. Each of the forwardly extending loops has an approximately straight portion 72 extending generally forwardly from the top of the rearward or first U-shaped portion and also slightly downwardly relative thereto. These upper straight portions 72 also converge from the rear towards the forward portion as best seen in FIG. 14 so that at their forward ends 73 the loops come in contact with the surface of a ball 71 when held within the holder.

A curved middle portion 74 on each of the loops commences at the forward end 73 of the straight portions 72. The curved portion 74 preferably has a curvature that makes it lie along a surface of a ball 71 in the holder with at least the center portion of the curved part 74 being further from the U-shaped portions than an equator of a ball held within the holder. The equator or great circle referred to is parallel to the U-shaped portions of the base of the holder. This assures that the ball is firmly gripped by the holder without reliance on the frictional properties of the ball or holder.

The outwardly flaring and downwardly extending curved portions 74 of the loops curve into bottom portions 76 of the loops which, in turn, connect with the legs 68 of the second U-shaped portion forming the base of the ball holder. The intermediate portions 76 and at least a part of the legs 68 preferably lie along surfaces of the ball 71 when held therein.

It will be noted in the ball holder, as illustrated in FIGS. 6 and 7, that the ball may have a rearward portion 77 that extends further rearwardly than the two U-shaped portions so that it may rest directly against the body or clothing of the user. With such an arrangement, the ball is as close as possible to the user's body, and therefore protrudes least for absolute minimum interference with the user's body motions. In such an arrangement, the ball has a portion extending between the legs 68 of the forward or second U-shaped portion so that if a tab for applying a trademark or other indicia is provided, it is preferably sufficiently flexible that it does not interfere with presence of the ball. In the alternative, a temporary tab can be applied to the second U-shaped portion for bearing indicia at point of sale and which can be removed by the user if he wishes.

It will be noted in the embodiment illustrated in FIGS. 5 through 7 that the ball holder is made of a continuous loop of wire so that there is no gap at, for exam-

ple, the bight of one of the U-shaped portions. In such an arrangement, a butt weld between the ends of a length of wire is preferably made after the wire is bent to the illustrated shape, with the butt weld made along a line of symmetry in the bight of one of the U-shaped portions.

The outwardly flaring curved portions 74 of the loops are relatively further apart in their center portions and relatively closer together near their ends so that when a ball is inserted in the ball holder, there is a substantial tendency for the holder to press the ball towards a centered position. Thus, even though the ball may be pressed towards the holder with a degree of misalignment, the self-centering action provided by the curved portions 74 assures reliable insertion of the ball into the holder.

Although several embodiments of ball holder constructed according to principles of this invention have been described and illustrated herein, many additional modifications and variations will be apparent to one skilled in the art.

It will be apparent that the ball holder can be made in a variety of sizes for accommodating different types of game balls such as, for example, a golf ball. This may, for example, be desirable when the golfer has followed a ball into the rough and is unable to find a lost ball. At such time, it may be desired to drop a new ball for play, and with a ball holder as provided in practice of this invention, a ball can be readily available on a golfer's belt or the like. In the absence of such a convenience, the spare ball must be kept in a pocket in order to avoid an unnecessary trip back to a golf cart or golf bag left on the fairway. In such an embodiment, it will also be apparent that the ball holder can be attached to a strap for holding a golf bag on a cart, for example, instead of directly on an article of the person's clothing. The ball holder has, however, particular advantage in a strenuous athletic game such as tennis where rapid insertion or withdrawal of the ball from the holder is desirable, and the holder must also provide sufficient strength for holding the ball against the body accelerations involved in the athletic game without significantly hindering insertion or withdrawal of the ball from the holder.

Many other modifications and variations will be apparent to one skilled in the art, and it is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A ball holder comprising:

a base;

means for fastening the base to an article of clothing; ball gripping means at least partly spaced apart from the base a distance greater than the equator parallel to the base of a ball to be held therein;

biasing means for elastically biasing the ball gripping means together towards an empty position with sufficient force to hold a ball against the principal body accelerations encountered in an athletic game and insufficient to prevent hand insertion and withdrawal of a ball against the elastic deformation of the biasing means; and

access means for accommodating a person's finger within a distance from the base less than the equator of a ball held therein; and wherein

the ball gripping means and biasing means include a pair of spaced apart loops extending outwardly from the base;

each of the loops comprises a U-shaped portion of wire integral with the base; and wherein

the base comprises a first U-shaped portion of wire having the bight of the U at the top and the ends of the legs of the U at the bottom; and a second U-shaped portion having the bight of the U at the bottom and the ends of the legs at the top, the width of the second U-shaped portion being greater than the first U-shaped portion and the bight of the second U-shaped portion being adjacent the open end of the first U-shaped portion, the first U-shaped portion being at least partly forward of the second U-shaped portion and sufficiently close thereto for nipping or crimping an article of clothing if passed therebetween for forming the means for fastening the base to an article of clothing, the pair of loops extending forwardly of the U-shaped portions, each of the loops interconnecting a leg of the first U-shaped portion with a leg of the second U-shaped portion.

2. A ball holder as defined in claim 1 wherein each of the U-shaped portions of wire forming the loops comprises a curved central portion extending in a direction generally forwardly of the base.

3. A ball holder as defined in claim 1 wherein the U-shaped portion of each of the loops comprises a curved central portion having a principal curvature extending in a direction approximately parallel to the base.

4. A ball holder comprising:

a first loop;

a second loop spaced apart from the first loop a distance sufficient to hold a ball with sufficient force to hold the ball against the principal body accelerations encountered in an athletic game;

means interconnecting the first and second loops and cooperating therewith for elastically deforming an amount sufficient to receive a ball between the loops; and

means for attaching the means for interconnecting to an article of clothing; and wherein

the upper end of each loop is connected to a generally rearward portion of the means for attaching and the lower end of each loop is connected to a generally forward portion of the means for attaching, said rearward and forward portions forming means for nipping or crimping an article of clothing therebetween;

the generally rearward portion of the means for attaching comprises a U-shaped member having a first leg connected to one loop and a second leg connected to the other loop at their respective upper ends; and

the generally forward portion of the means for attaching is narrower than the U-shaped portion so as to fit at least partly between the legs thereof.

5. A ball holder as defined in claim 4 wherein the generally forward portion of the means for attaching

comprises a U-shaped member having a first leg connected to one loop and a second leg connected to the other loop at their respective loop ends.

6. A wire tennis ball holder comprising:

a U-shaped portion having a bight and a pair of legs; a center portion between the legs of the U-shaped portion and sufficiently close thereto for nipping or crimping a fabric or the like if passed therebetween; and

a pair of spaced apart side loops extending away from the U-shaped portion, each of the loops interconnecting a leg of the U-shaped portion with a part of the center portion, the loops in cooperation with the center portion and the U-shaped portion being sufficiently elastically deformable for holding a tennis ball therebetween against the principal body accelerations encountered in a game of tennis and also for permitting hand insertion and withdrawal of a tennis ball; and wherein

the center portion comprises a second U-shaped portion in a plane at least partly forward of the first U-shaped portion in the direction of extension of the loops, the bight of the second U-shaped portion being adjacent the open end of the first U-shaped portion.

7. A wire tennis ball holder comprising:

a U-shaped portion having a bight and a pair of legs; a center portion between the legs of the U-shaped portion and sufficiently close thereto for nipping or crimping a fabric or the like if passed therebetween; and

a pair of spaced apart side loops extending away from the U-shaped portion, each of the loops interconnecting a leg of the U-shaped portion with a part of the center portion, the loops in cooperation with the center portion and the U-shaped portion being sufficiently elastically deformable for holding a tennis ball therebetween against the principal body accelerations encountered in a game of tennis and also for permitting hand insertion and withdrawal of a tennis ball; and wherein

the center portion comprises a second U-shaped portion in a plane at least partly forward of the first U-shaped portion in the direction of extension of the loops, the bight of the second U-shaped portion being adjacent the open end of the first U-shaped portion; and

the first and second U-shaped portions are each substantially planar and the plane of the second U-shaped portion is canted relative to the plane of the first U-shaped portion, the second U-shaped portion being narrower than the first U-shaped portion and having the bight at least partly between the legs of the first U-shaped portion.

8. A tennis ball holder as defined in claim 7 wherein the legs of the second U-shaped portion are substantially parallel to each other; and further comprising a sheet-like tab extending between the legs of the U-shaped portion for bearing indicia.

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