ABSTRACT

The invention relates to a custom-fitting, asymmetric ballet shoe with a shell (9) and liner (13) that enables the dancer to stand en pointe and perform the extreme movements required by ballet choreography with minimal discomfort, pain, and injury to the foot caused by the various aerial ballet maneuvers called for by both traditional and modern choreography. The shoe of the present invention is designed to redistribute the dancer's weight and the ground force reactions associated with dancing en pointe evenly across the toes while translating some of the force away from the distal aspect of the dancer's toes to the rest of the foot. The shoe has a removable cosmetic cover (18) to enable, inter alia, the color and design to be varied according to costume design and the cover's replacement when the fabric is worn, thereby extending the useful life of the remainder of the shoe.
Ballet Pointe Shoe

Field of the Invention

[0001] This invention relates to the field of footwear, and particularly, to dance shoes, and more particularly, to custom-fitting, asymmetric ballet pointe shoes.

Background of the Invention

[0002] In ballet, movements include dance steps inspired by running, jumping, leaping and physical exertion by a soloist or an interaction between two or more individuals. The end result is a remarkably punishing regimen of movement being associated with virtually any ballet performance. Not surprisingly, the pursuit of perfection in ballet goes along with a remarkably high incidence of strain and injury. Indeed, the problem is so serious that few dancers are able to practice their profession into middle age.

[0003] The demands of ballet create significant possibilities of strains and injury to a dancer’s feet. While much of a dancer’s training is devoted to exercises that strengthen the muscles and tendons of the dancer’s feet, there is an ever-present discomfort, pain, and risk of injury inherent in the art of ballet. Almost half the injuries in ballet are to the foot and occur when ballerinas dance on the tip of their toes, that is “en-pointe.” In this position the leg and toes are approximately vertical to the dance surface (i.e., perpendicular to the floor). The dancer’s technique or “line” in the pointe position is an imaginary vertical, longitudinal, straight line extending from the tip of the toe through the center of the toe platform and up the leg. This “line” is considered ideal for balance during ballet dancing.

[0004] Fatigue of muscles crossing the metatarsal-phalangeal joints is thought to be a causal factor of the foot problems experienced by ballet dancers. Tendonitis of flexor hallucis longus, acute intrinsic muscle spasm, and repetitive muscle strain injuries at midfoot are common in ballerinas and occur when maneuvering to the pointe position. Fatigue also is thought to be a major factor in fractures to the phalanges, metatarsals, and sesamoid bones as acute fractures usually occur towards the end of a day when the feet of the dancer are very tired.

[0005] In addition, although the pointe shoe is made with a firm toe box platform at the tip of the shoe providing a firm flat surface on which the dancer balances, serious problems are created by the fact that the toe line of the individual is seldom straight or regular or perpendicular to the ideal vertical line along the dancer’s leg. The result is unequal weight distribution across the tips of the dancer’s toes. Unequal weight distribution may result in extreme discomfort or pain to the dancer. In many cases permanent injury in the nature of toe contractures known as hammertoes, or other serious toe disfigurement, results from undue stress. The uneven weight distribution and excessive pressure on the weight-bearing toes also results in a number of foot health problems such as stress-induced toe buckling or bending, blisters, skin irritation, painful corns, stress fractures, bunions (a bony enlargement of the big toe joint), and ingrown toenails to mention a few.

[0006] In addition to the aforementioned health problems, the unequal weight distribution may cause the dancer’s feet to tilt to one side or “sickle out” through lack of balance, resulting in poor technique or “line” in the pointe position. It is common for a ballet dancer to suffer constant pain, discomfort, and disfiguration of the toes in order to compensate for this natural imbalance of pressure on the toes in the pointe position in an effort to maintain acceptable technique or “line.”

[0007] The pointe shoes themselves do offer some support but quickly breakdown and lose their beneficial characteristics, often ready to be discarded after one performance. The design and materials of the ballet slipper used by a dancer generally have been unchanged since the original conception of such “pointe shoes.” The traditional blocked ballet slipper is made by hand on a last, using layers of fabrics, cardboard, paper, or leather saturated with glue to form a reinforced toe box joined to a leather or cardboard shank. A reinforcing stiffener frequently is included in the shank. Usually the outer sole is made from leather. An outer fabric or “upper” is sewn to the sole and usually gathered in pleats under the toe. The connection between the toe and sole is not easy to manufacture and can come loose after prolonged use. This type of slipper is labor intensive and expensive to produce, although some improved casting methods have been developed to speed the laminating steps, for example as disclosed in U.S. Pat. No. 4,453,966 to Terlizzzi.

[0008] Moreover, the traditional ballet slipper requires extensive breaking-in before it is comfortable for use. Typically, a ballerina will break in the slipper by manually flexing it, applying force by way of slamming the slipper in a door or bashing it with a hammer, or soaking it in warm water or alcohol. It can take as much as three hours to prepare a single pair of slippers for a performance if they have been manufactured using an epoxy or other durable glue as a laminate. Once the slipper is broken in, it will have an extremely short useful life, usually no more than twenty to forty-five minutes during a performance. The short useful life is attributable to the deterioration of the toe box and or shank caused by the rapid breakdown of the glue used to form the laminates of the toe box. The breakdown can be accelerated by perspiration that occurs during energetic dancing. Once the shank and/or toe box have deteriorated, the slipper is useless because there will be no support for the dancer.

[0009] A further problem encountered with the traditional ballet slipper is that the outer cover (typically a satin material) is slippery and can contribute to skids and falls when the ballerina is rising to the pointe position. The ballerina usually will darn the toes of the slipper and rub the tips in resin to minimize the chances of slipping. Nevertheless, falls do occur.

[0010] Ballet shoes have not kept pace with the technical demands of ballet choreography. Ballet dancers’ pointe shoes must fit very snugly in order to provide the support required for toe dancing. The stiff toe box that encases the toes must firmly hug the metatarsals to hold the foot in place when the dancer stands in the pointe position. If the shoe is too wide or too loose the foot will slide unrestrained down into the box, causing all the dancer’s weight to be focused on the tips of her longest toes, resulting in pain as well as potentially contributing to problems such as arthritis, bunions, hammer toes, calluses, claw toe deformities, stress fractures, and bruised or lost toenails. However, the pointe
shoe also must be wide enough at the metatarsal to allow the foot to spread out when landing from jumps and when passing through the position known as “demi-pointe” in transition from normal stance to en pointe.

[0011] There exists a clear need for the development of footwear adapted to enable dancers to achieve all of the extremes in movement ballet choreography demands. The present invention satisfies such a need. The invention herein disclosed relates to a customized ballet shoe that enables the achievement of such dance steps while eliminating the pain, deformity, and injury associated with such movements by redistributing the dancer’s weight and the forces of landing off of the distal aspect of the toes, as well as by absorbing the shock when a dancer is in pointe position, while at the same time improving the dancer’s technique.

SUMMARY OF THE INVENTION

[0012] The present invention provides ballet shoes comprising a shell and a liner. The shell includes a shank and a toe box. The toe box has an inner surface and an outer surface. The liner is shaped to conform to the three-dimensional topography of the dancer’s toes and substantially fill the space between the toes of the dancer and the inner surface of the shell. In preferred embodiments, the shell is molded from thermoplastic and the liner is a dense closed cell foam. In certain embodiments, the ballet shoes of the invention include a cover.

[0013] The shoe of the present invention redistributes the dancer’s weight and the ground force reactions associated with dancing en pointe evenly across the toes while translating some of the force away from the distal aspect of the dancer’s toes to the rest of the foot. The present invention thus distributes the vertical forces exerted upon the foot of a dancer en pointe in an orthopaedically improved manner.

[0014] Also provided are methods for manufacturing a ballet shoe of the invention. In one embodiment, these methods include production of a negative cast taken of the lower forefoot of the dancer en pointe while a balance sustaining environment surrounds the dancer’s foot. The dancer’s downward vertical force is distributed throughout the balance sustaining environment allowing the dancer to position herself en pointe without requiring her to modify her natural toe position. The negative cast is then used to create a liner for the ballet shoes of the invention. Toe disfiguration that the dancer experiences while en pointe with traditional pointe shoes will not be present in a mold created using a balance sustaining environment.

[0015] The present invention also provides a removable cosmetic cover for the ballet shoe. Thus, a single shell can be used with an assortment of covers and the useful life of the shell of the ballet shoe is extended. The color and design of the cover can be varied according to costume design.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1. A front view of an embodiment of a ballet shoe in accordance with the invention.

[0017] FIG. 2. A front view of an embodiment of a shell of a ballet shoe in accordance with the invention.

[0018] FIG. 3. (A) A front view of an embodiment of a liner of a ballet shoe in accordance with the invention. (B) A top partial cross-sectional view of a dancer’s foot in an embodiment of a ballet shoe in accordance with the invention.

[0019] FIG. 4. A side cross-sectional view of an embodiment of a ballet shoe in accordance with the invention as worn by a dancer standing en pointe.

DETAILED DESCRIPTION OF THE INVENTION

[0020] The present invention will now be illustrated further with respect to the drawings. Although the description and drawings are made with reference to a ballet shoe, it is to be understood that the present invention encompasses any pointe shoe.

[0021] The primary cause of foot problems experienced by ballet dancers when en pointe is the fact that the line across the distal tips of the dancer’s toes is neither straight nor at right angles to a longitudinal centerline of the dancer’s foot. Consequently, the entire vertical force of the dancer’s weight is usually concentrated in the one or two longest toes of the foot, resulting in extreme discomfort if not pain and injury to the dancer’s foot. The dominant human foot type has the second toe longer than the first toe. Thus, when a dancer is in pointe position, the weight commonly is concentrated on the big toe and the adjacent toe. This is not always the case, though, there being a wide variation in the configuration of toes among humans.

[0022] Referring now to FIGS. 1-4, a ballet shoe [3] in accordance with the invention comprises shell [9] having a toe box [10] with an inner surface [11] and an outer surface, each surface having a top surface, a left side surface, and a right side surface. Preferably, toe box [10] is formed from a high temperature plastic, such as, but not limited to, polyethylene or polypropylene. High temperature plastics are very durable and do not require replacing, thereby reducing the total cost of footwear over the lifetime of the dancer’s career. Toe box [10] protects the toes, helps contain the phalanges, and translates the forces away from the distal aspect of the toes and onto other parts of the foot.

[0023] A shank [12] is joined to toe box [10]. Shank [12] is preferably a full shank that is sized to extend backward from toe box [10] for a distance equal to the length of the dancer’s foot. However, a half shank or three-quarters shank also may be utilized within the scope of the invention. In a preferred embodiment, shank [12] is formed from either carbon-graphite fiber, a flexible plastic, or durable leather. It is understood that a different material that provides the essential dynamically supportive function is still within the scope and spirit of the invention. The ground reaction forces that are translated to the plantar aspect of the foot will be conveyed through this shank.


[0025] A toe platform [4] at the distal surface of toe box [10] provides a flat surface for the dancer’s maneuvers en pointe. Ground reaction forces will translate through toe platform [4] and along shell [9] to be borne not only by the toes but also by both the dorsal and plantar aspects of the foot.
FIG. 3A illustrates a liner [13] of the present invention. FIG. 3B illustrates liner [13] as applied to a dancer’s foot in the pointe position within a ballet shoe. As illustrated, liner [13] substantially fills the space between the ends of the toes and the inner surface [11] of toe box [10], conforming substantially to the three dimensional surface topography of a dancer’s foot. Liner [13] contains the phalanges and provides substantial contact with the phalanges for better weight distribution. In one embodiment, the liner [13] includes an optional liner insole [14]. The optional liner insole [14] can extend backward for a distance equal to or less than the length of the dancer’s foot. During the preswing phase of a normal gait, the big toe must contend with most of the body’s weight as the body shifts its weight from the stance foot onto the opposite limb. Since the big toe normally handles more force than the other toes, liner [13] is designed to redistribute relatively more weight onto the big toe and away from the other toes.

The dominant human foot type has the second toe longer than the big toe. This present problems for the pointe dancer as the longer, second toe is in a position to absorb more ground reaction forces than the other toes since it contacts the ground first when en pointe. This situation causes stress fractures of the second metatarsals. For dancers with longer second toes, liner [13] of the present invention has a build-up [16] under the big toe; thus, the big toe contacts the ground slightly before the second toe and bears more of the force. Build-up [16] and/or relief [17] at the distal ends of the other toes also helps distribute the weight more evenly across the five toes. Liner [13] also is designed to translate some force away from the distal aspect of the toes, through shell [9], to the rest of the dancer’s foot.

Shell [9] can be designed to be symmetrical along its longitudinal axis allowing the same shell to be used for the dancer’s left or right foot. The symmetrical shell can accommodate the asymmetrical shape of the dancer’s foot with build-up of the liner [13] to substantially fill the space between the ends of the toes and the inner surface [11] of the symmetrical shell. In another embodiment, shell [9] can be designed to be asymmetrical along the longitudinal axis such that the shell is dimensioned to accommodate either the left or right foot of the dancer. Asymmetrically shaped shells are preferably designed to reduce the amount of build-up required for liner [13]. Preferably, shell [9] further comprises a pattern [21] for diffusing the dancer’s downward vertical forces. The pattern [21] is a build-up of material on the outer surface of the toe box [10] to modify the contact area of the shoe with the floor when the dancer is en pointe. In a preferred embodiment, the pattern [21] of an asymmetrical shell is configured to give the shell a substantially symmetrical appearance. Preferably, the pattern [21] is made from a resilient and durable foam or rubber material, such as, but not limited to, crepe. Crepe is widely used for the bottoms and innersoles of sport, casual, and work shoes.

The physical properties of liner [13] material are an important feature of the invention. Cushioning the toes reduces the stress and minimizes the risk of injury while making it more comfortable for the dancer by minimizing the pain of dancing en pointe. The cushioning also muffles noise so that the sound of the shoe contacting the floor will be minimized and the aesthetic aspect of the dance can be preserved.

It is essential that the liner material be dimensionally stable once molded and cured such that there is no flowing or substantial distortion of liner [13], particularly when the foot is disposed in the pointe position. The liner material must also be sufficiently yielding to prevent discomfort. Preferably, the liner is made from foam. The inventor has discovered that dense foams, such as, but not limited to petite, in particular provide excellent support for distributing and sustaining the vertical forces (e.g., dancer’s weight) evenly across all toes with the big toe getting the weight of about twice the other toes, while offering sufficient amount of cushioning so as to prevent the discomfort otherwise experienced from hardened substances. The foam is preferably closed celled. Dense closed cell foam liners of the present invention are very durable and easy to clean. Dense closed cell foam liners do not absorb perspiration, thereby allowing easy maintenance of proper foot hygiene. The liner [13] can be made from other materials having the desired characteristics of resiliency, non-absorption, and the capability of being molded to a three dimensional shape, such as, for example, a rubber material. Liner [13] can be replaced if it gets worn or if the dancer’s foot changes shape.

In a preferred embodiment, each liner [13] is made to fit an individual dancer’s foot. According to an embodiment of the present invention, molding and fitting of liner [13] requires that each foot be cast in a casting material, such as, but not limited to, calcium alginate or plaster of paris, to make a negative impression mold. The mold then is filled with a casting material to make a positive impression cast. A metal rod may be inserted into the cast before it sets so the cast can be held in a vice during fabrication of the shoe. When the positive impression cast has dried fully, the liner is formed directly on the positive mold. The liner material may be heat sensitive and require heating on the positive mold of the foot to get a substantial contact with the phalanges. The liner is molded on the positive mold of the foot to provide three-dimensional cushioning for the toes and a soft insole for the plantar aspect of the foot. A liner is made for each foot to go into each ballet pointe shoe. Although the foregoing method steps have been described relative to the molding of a single liner, liners for both feet may be fabricated simultaneously since both feet are usually involved in the pointe position and simultaneous fitting may be more convenient.

A preferred method of manufacturing further comprises molding the liner [13] while the dancer positions herself en pointe. A balance sustaining environment surrounds the dancer’s foot during the molding process. The balance sustaining environment allows the dancer to position her foot as if she was positioned en pointe on a hard surface, such as a dance floor. Unlike the planar surface of a dance floor, however, the balance sustaining environment contacts a substantial portion of the dancer’s foot and distributes the dancer’s downward vertical force throughout the balance sustaining environment. This allows the dancer to position herself en pointe without requiring her to modify her natural toe position. Toe disfiguration that the dancer experiences while en pointe with traditional pointe shoes will not be present in a mold created using a balance sustaining environment.

The balance sustaining environment should offer sufficient support and be compatible with the molding process. Any particular solid, such as, but not limited to
sand, that offers sufficient support to distribute and sustain the vertical forces of a dancer en pointe and does not interfere with the molding process may be used to create a balance sustaining environment. Preferably, the particulate solid used for the balance sustaining environment has flow characteristics that allow it to conform to the three-dimensional topographical contours of the dancer’s foot, but it is firm enough to support the dancer. The inventor has discovered that sand in particular provides an excellent balance sustaining environment. Preferably, the depth of the sand is sufficient to cover a portion of the dancer’s lower leg.

Preferably, a thin layer casting material is used when molding with a particular solid to create a balance sustaining environment. In a preferred method, an elastized stocking is placed over the thin layer casting material during the casting process to help contain and apply pressure on the casting material. The use of a thin layer casting material helps capture the contours of the dancer’s foot while the dancer is in a weight bearing and balance sustaining environment. It is preferred that the thin layer casting material be integrated with reinforcement material for added strength and easier application when using a thin layer casting and sand to create a balance sustaining environment. Preferred materials, such as, but not limited to plaster elastomeric splinting bandages, provide a strong thin layer casting that does not interfere with the balance sustaining environment and are easy to work with. The elastized stocking applies pressure to the splinting bandages to assist them in capturing the contours of the dancer’s foot. Further, a plastic bag can be used over the thin casting material and elastized stocking to create a barrier from the sand.

It will be understood that the ballet shoe in accordance with the invention is asymmetric relative to the longitudinal axis of the foot. The asymmetry can be camouflaged by adding a build-up of material on the outside of the shells, including, but not limited to, a patten. It will be further understood that the right and left shoes of each pair are different from each other, i.e., transposed with respect to the longitudinal plane, but generally symmetrical to each other.

In a preferred embodiment, a cosmetic cover [18], having both an inner layer [2] and an outer layer [20], as shown in FIGS. 1 and 4, encloses shell [9] and liner [13]. Cosmetic cover [18] fits snugly over shank [12] and toe box [10]. Preferably, inner layer [2] sewn into it an opening [1], preferably under a dancer’s heel, into which opening the proximal end of shank [12] and optional liner insole [14] may be inserted, thereby sandwiching shank [12] and optional inner insole [14] between inner layer [2] and outside [15] of cosmetic cover [18], thereby allowing for increased motion between the components of the ballet shoe of the instant invention and thus increased flexibility. In one preferred embodiment, inner layer [2] is made of cotton material. In another embodiment, inner layer [2] is made of material capable of wicking moisture away from the dancer’s foot to the exterior of cosmetic cover [18].

An elastized strap [7] may be stitched to the throat or border [8] of cosmetic cover [18], stretching across the dancer’s midfoot, to help hold the shoe to the dancer’s foot. Elastic strap [7] may be a single loop of elastic material. Often the shoes of the present invention are sold without the elastic strap attached, which is later sewn on by the dancer if needed. A fabric lace or drawstring [5] may be threaded through a batting [6] sewn to throat [8] of cosmetic cover. The free ends of the drawstring are preferably located at or near the front end of the shoe.

Outer layer [20] of cosmetic cover [18] is made from a variety of suitable materials, including but not limited to silk, satin, or canvas. It is removable and, therefore, can be changed to match different costumes and for laundering. It is anticipated that cosmetic cover [18] will need replacing when the fabric gets worn. In contrast, when the fabric gets worn on a traditional ballet shoe, the shoes must be discarded and a new pair purchased. The instant invention allows for replacement of only cosmetic cover [18] when the fabric becomes worn; the other parts of the shoe of the instant invention, shell [9] and liner [13], are retained. Thus the present invention provides a less expensive alternative to traditional ballet shoes.


When the dancer finishes dancing, she may leave liner [13] and shell [9] inside cosmetic cover [18] or she may take them but and carry them in her pocket or store them in a safe place. The liner [13], shell [9], and cosmetic cover [18] are lightweight, compact, transportable, and easy to clean.

The present invention provides a durable ballet shoe that requires no “breaking in” and can be custom-fitted to a dancer’s foot. This is in contrast to the traditional ballet shoe, which only can be broken in with considerable time and effort, and prior art plastic ballet slippers, which cannot be broken in at all.

A preferred manner of using the ballet shoe of the present invention involves simultaneously placing the proximal end of shank [12] and optional inner insole [14] inside opening [1] of inner layer [2] of cosmetic cover [18] followed by liner [13], thereby securing the cosmetic cover [18], shell [9], and liner [13] together to minimize shear and motion during wear. The dancer then slides the foot inside the ballet pointe shoe and laces the pointe shoe in the usual manner. Shell [9] and liner [13] are now in place inside the ballet shoe and will not move out of position. With liner [13] inside the ballet pointe shoe, the dancer has better balance and weight distribution across the tips of the toes and, therefore, experiences improved dance technique.

A preferred method of manufacturing a ballet shoe in accordance with the foregoing description comprises the steps of molding a plastic shell having a shank and a toe box.
from a high temperature plastic. The method of manufacturing further comprises the steps of molding a liner from a dense foam, the liner having an insole and a build-up of material at the distal toe end conforming to the surface topography of a dancer’s foot such that the space between the ends of a dancer’s toes and the inside surface of the toe box and shank are completely filled. Preferably the molding of the custom liner uses a negative plaster mold of a dancer’s foot as a last on which the dense foam is formed to provide a custom fit. Preferably, the negative plaster mold is created while the dancer is positioned on pointe in a balance sustaining environment. In a preferred embodiment, the liner is customized to an individual dancer’s foot. Preferably, the shoe is finished by fitting a cosmetic cover having an inner and outer layer and an opening in the inner layer for the insertion of the proximal end of the shank and the liner insole and an elastic strap for holding the shoe to the dancer’s foot and by securing an outsole formed from a durable, flexible, non-slip material to the cosmetic cover that extends from the top of the toe platform of the toe box to the proximal end of the shank, thereby covering the toe platform of the toe box and the shank, or portions thereof, are covered. Batting may be sewn to the throat of the cosmetic cover and a cloth lace or drawstring run through it to help hold the shoe on the dancer’s foot. Ribbons can be added by the dancer for security or aesthetic purposes.

[0044] It is to be understood that even in the numerous characteristics and advantages of the present invention set forth in the foregoing description and examples, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes can be made to detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A ballet shoe for distributing the vertical forces exerted upon the foot of a dancer when the dancer is on pointe in an orthopaedically improved manner comprising:
   a shell comprising a shank and a toe box, said toe box having an inner surface and an outer surface; and
   a liner shaped to substantially fill the space between the toes of the dancer and said inner surface of said shell, said liner conforming to the three-dimensional topography of the dancer’s toes.
2. The shoe of claim 1 wherein the liner further conforms to the portion of the forefoot of the dancer surmounting the lower portions of the metatarsal bones of the foot.
3. The shoe of claim 1 wherein said three-dimensional topography is attained when the foot is on pointe in an orthopaedically acceptable conformation.
4. The shoe of claim 1 wherein said liner is an orthopaedically acceptable foam.
5. The shoe of claim 1 wherein said liner is a dense closed cell foam.
6. The shoe of claim 5 wherein said foam is pelite.
7. The shoe of claim 1 wherein said shank is disposed to support at least a portion of the plantar surface of the foot.
8. The shoe of claim 7 wherein said shank supports the arch of the foot short of the heel.
9. The shoe of claim 1 wherein said toe box and said shank are integral.
10. The shoe of claim 1 wherein said toe box and said shank are molded.
11. The shoe of claim 1 wherein said toe box and said shank are molded from thermoplastic.
12. The shoe of claim 11 wherein said thermoplastic is polyethylene or polypropylene.
13. The shoe of claim 11 wherein said shank form a unitary structure.
14. The shoe of claim 1 wherein said vertical forces are substantially uniformly transmitted to at least the lower portions of the metatarsal bones of the foot.
15. The shoe of claim 1 further comprising a cover for said toe box portion of said shell, said cover being adapted for enveloping the heel of the dancer.
16. A ballet shoe cover comprising:
   a resilient outsole;
   a portion adapted for enclosing a toe box of a shell, said shell comprising a toe box and a shank; and
   a portion enclosing the heel of a dancer.
17. The cover of claim 16 further comprising an inner layer and an outer layer.
18. The cover of claim 17 wherein said inner layer includes an opening for inserting said shank.
19. The cover of claim 16 wherein said toe box further comprises a toe platform, wherein said resilient outsole extends to cover said toe platform.
20. The cover of claim 16 wherein said resilient outsole is leather.
21. The cover of claim 16 further comprising a strap or ribbon.
22. The cover of claim 16 further comprising a lace or drawstring.
23. A method for making a ballet shoe comprising:
   providing a shell comprising a toe box and a shank, said toe box having an inner surface and an outer surface, said toe box being capable of holding the forefoot of a dancer including at least a portion of the foot surmounting the lower portions of the metatarsal bones thereof; and
   providing a liner to fit within said toe box of said shell, said liner being foam molded to substantially fill the space between the toes of the dancer and said inner surface of said shell, said liner being shaped to conform to the three-dimensional topography of the dancer’s toes and to hold the toes of the dancer in an orthopaedically acceptable conformation.
24. The method of claim 23 wherein said molding is performed upon a negative cast taken of the lower forefoot of the dancer while in a balance sustaining environment effective to attain the three-dimensional topography of the toes when the foot is on pointe in an orthopaedically acceptable conformation.
25. The method of claim 24 wherein said balance sustaining environment is a particulate solid.
26. The method of claim 25 wherein said particulate solid is sand.
27. The method of claim 23 wherein said liner is a dense closed cell foam.
28. The method of claim 27 wherein said foam is pelite.
29. The method of claim 23 further comprising providing a cover for said toe box portion of said shell, wherein said cover is adapted for enveloping the heel of the dancer.
30. The method of claim 29 wherein said cover is replaceable.
31. The method of claim 29 further comprising providing a plurality of said covers.
32. The method of claim 31 wherein said covers vary aesthetically.
33. The method of claim 32 wherein said covers vary in color.
34. The method of claim 29 wherein said cover further comprises a resilient outsole.

35. The method of claim 23 wherein said toe box and said shank form a unitary structure.
36. The method of claim 23 wherein said toe box and said shank are molded from thermoplastic.
37. The method of claim 23 wherein said shell is selected from a standard set of shells.

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