US 20250262557A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2025/0262557 A1**

**Warner** (43) **Pub. Date: Aug. 21, 2025**

(54) **BOUNCING TOY WITH PLUSH EXTERIOR**

(71) Applicant: **Ty Inc.**, Westmont, IL (US)

(72) Inventor: **Ty Warner**, Westmont, IL (US)

(21) Appl. No.: **19/182,808**

(22) Filed: **Apr. 18, 2025**

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 18/583,565, filed on Feb. 21, 2024.

**Publication Classification**

(51) **Int. Cl.**

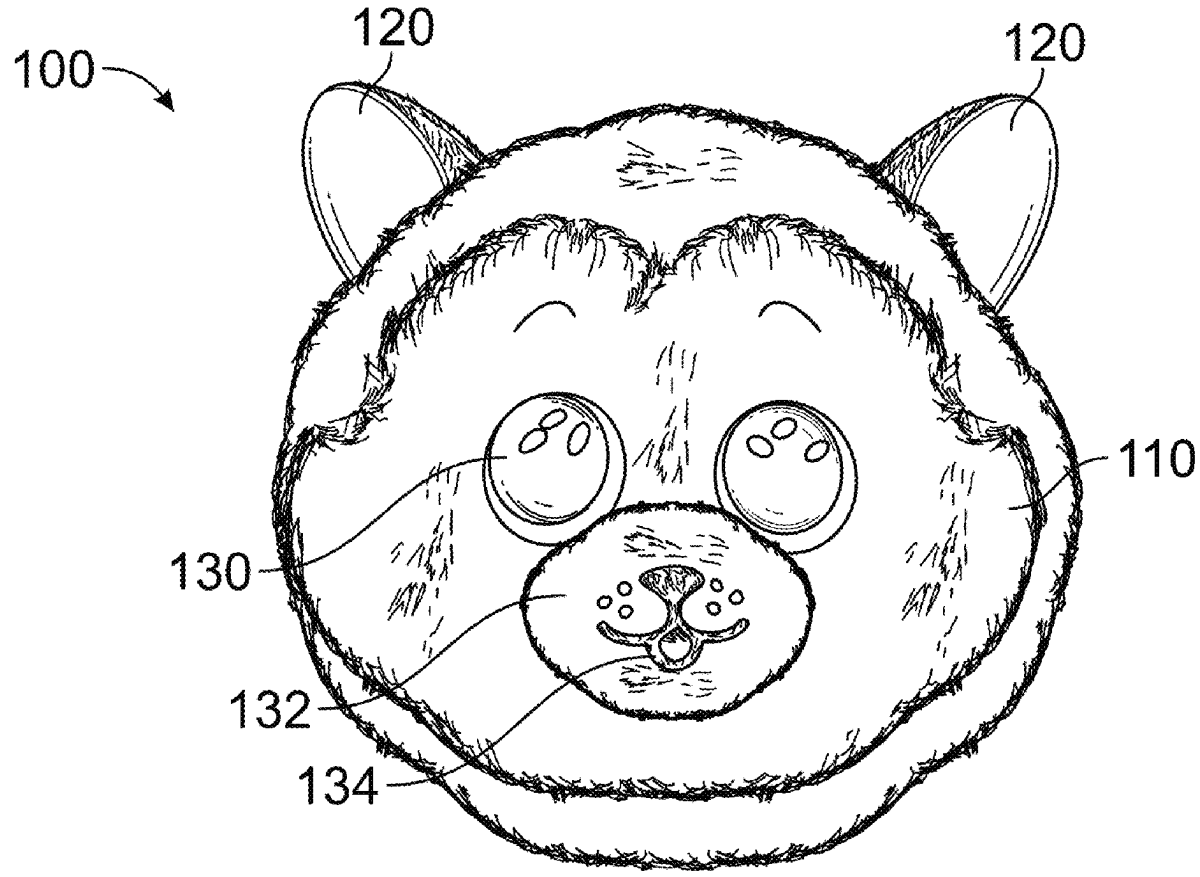
| | |
|---|---|
| ***A63H 3/00*** | (2006.01) |
| ***A63H 3/02*** | (2006.01) |
| ***A63H 3/36*** | (2006.01) |
| ***A63H 9/00*** | (2006.01) |
| ***C08J 9/36*** | (2006.01) |
| ***C08L 75/08*** | (2006.01) |

(52) **U.S. Cl.**

CPC ..... ***A63H 3/003*** (2013.01); ***A63H 3/02*** (2013.01); ***A63H 3/36*** (2013.01); ***A63H 9/00*** (2013.01); ***C08J 9/36*** (2013.01); ***C08L 75/08*** (2013.01); *C08J 2375/08* (2013.01); *C08J 2483/04* (2013.01); *C08L 2203/14* (2013.01); *C08L 2207/324* (2013.01)

(57) **ABSTRACT**

The present application relates to a toy comprising an internal ball structure comprising a highly resilient material capable of significant bouncing off a hard surface, a plush fabric skin configured to cover the internal ball structure such that the plush fabric exterior does not significantly impact or dampen the ability of the internal bouncing ball structure to bounce when impacting a surface.



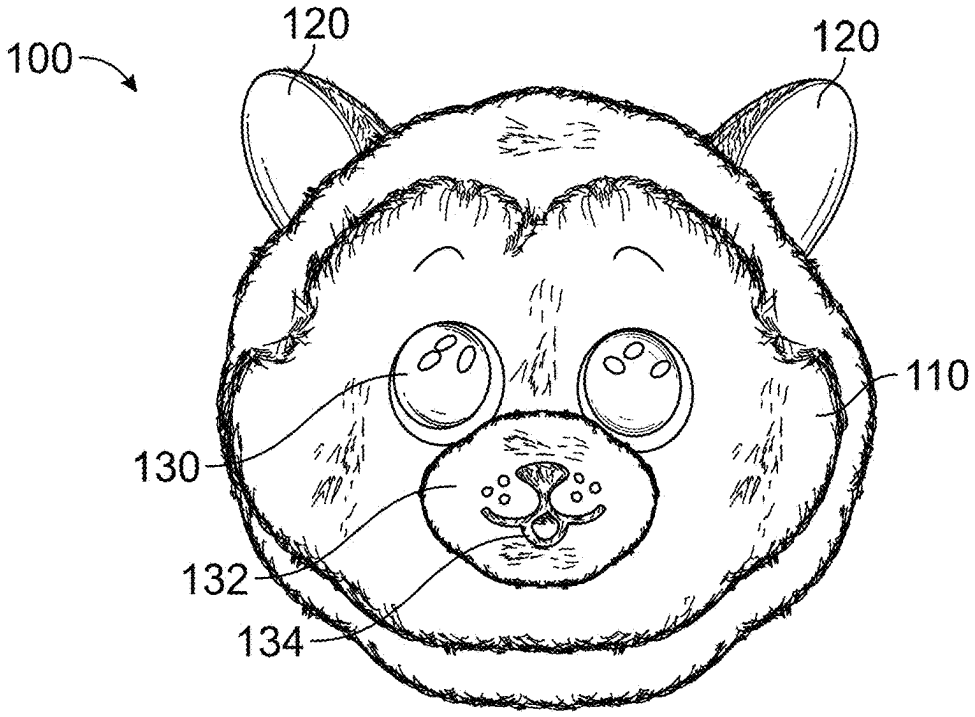



FIG. 1

FIG. 2

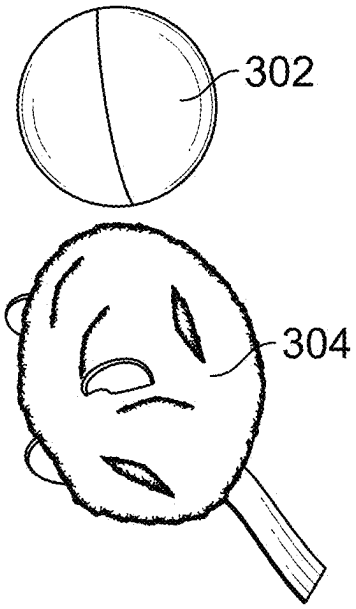



FIG. 3A

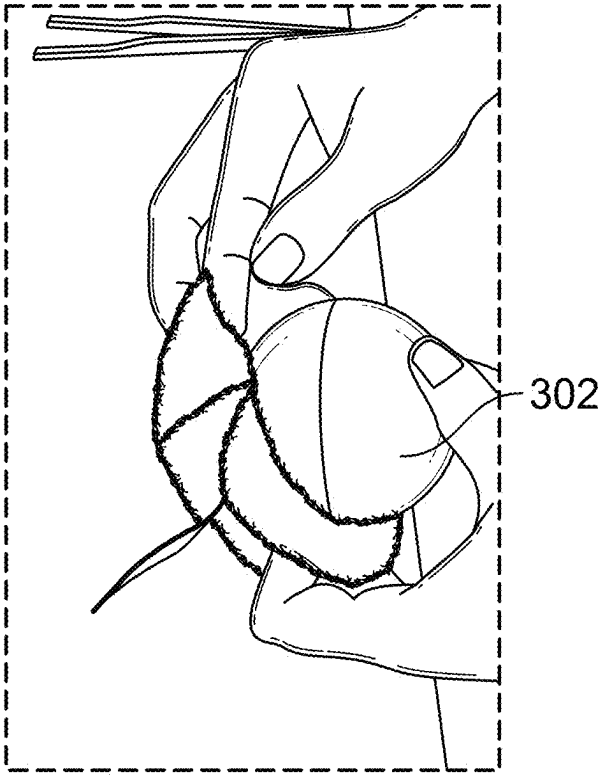



FIG. 3B

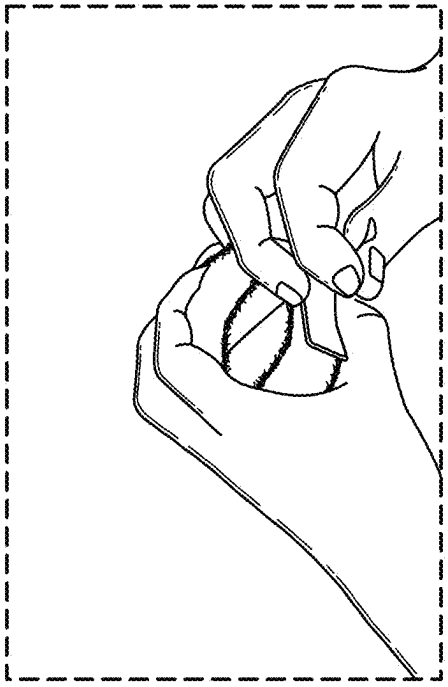


FIG. 3C

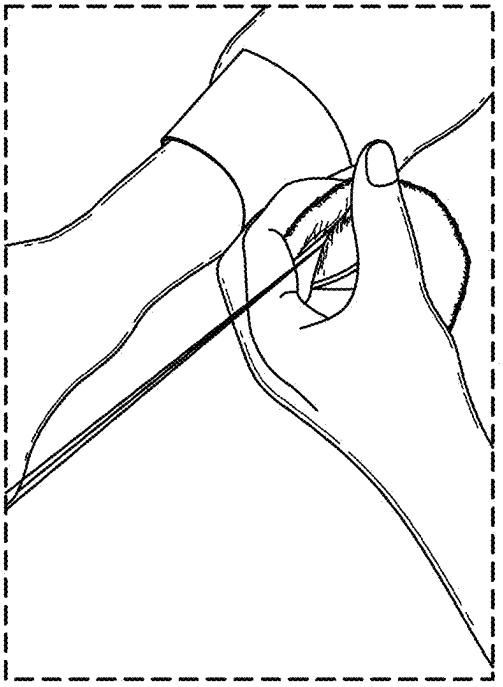


FIG. 3D

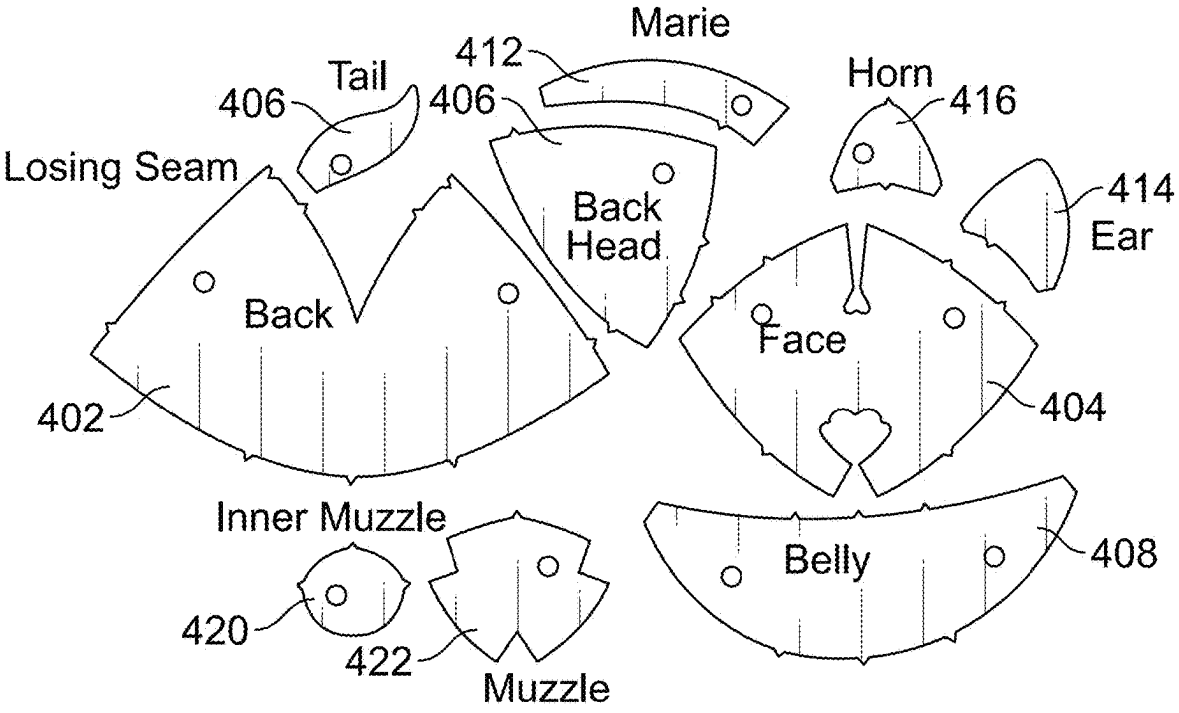

Marie
412
Tail
406
406
Horn
416
Losing Seam
Back
Head
414
Ear
Back
Face
402
404
Inner Muzzle
Belly
408
420
422
Muzzle

FIG. 4

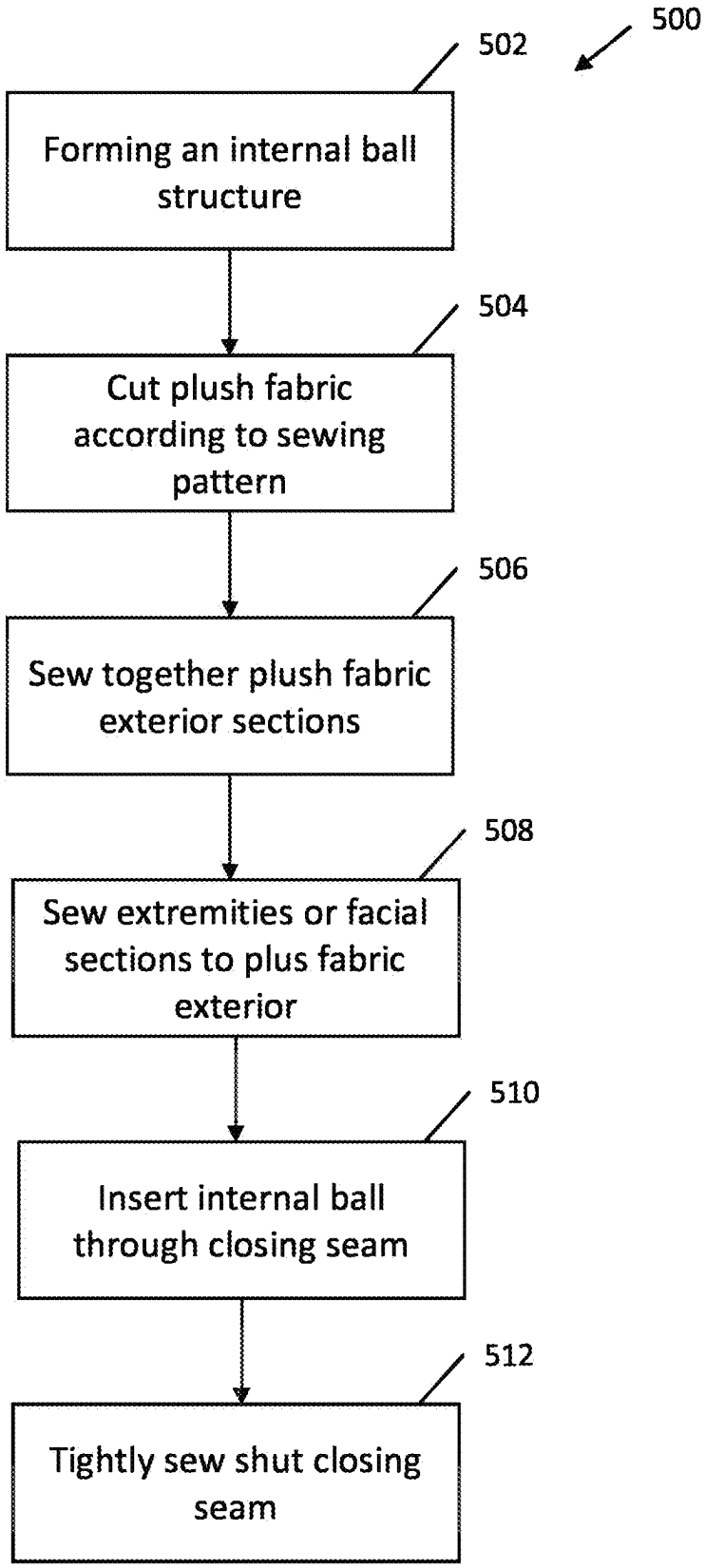

500
502
Forming an internal ball structure
504
Cut plush fabric according to sewing pattern
506
Sew together plush fabric exterior sections
508
Sew extremities or facial sections to plus fabric exterior
510
Insert internal ball through closing seam
512
Tightly sew shut closing seam

FIG. 5

# BOUNCING TOY WITH PLUSH EXTERIOR

## CROSS-REFERENCE TO RELATED APPLICATIONS

**[0001]** This application claims priority to U.S. patent application Ser. No. 18/583,565, filed on Feb. 21, 2024, entitled "BOUNCING TOY WITH PLUSH EXTERIOR," currently pending, the entire disclosure of which is incorporated herein by reference.

## FIELD

**[0002]** The present invention relates generally to plush toys. More particularly, the present invention relates to a bouncing toy with a plush exterior.

## BACKGROUND

**[0003]** Conventional bouncing balls typically have a smooth and hard exterior. For example, the "Super Ball", disclosed in U.S. Pat. No. 3,241,834, is an extremely resilient, rigid ball or sphere. The Super Ball is capable of a high bounce due to the highly compressed polybutadiene rubber. While these balls bounce well, the exterior of the Super Ball is smooth and plain.

**[0004]** Conventional plush toys are also known. An example of a spherical, plush toy is the Ty Beanie Ballz® line of plush toys, sometimes called Ty Puffies®. These plush balls have a soft, fluffy exterior and generally include a fun character face. Beanie Ballz® are tossable and soft, but they do not meaningfully bounce because they are filled with stuffing material similar to a stuffed animal. Other plush toys exist, but none of these plush toys sufficiently bounce to provide the fun and enjoyment of conventional bouncing balls.

**[0005]** In view of the above, there is a continuing, ongoing need for improved plush toys.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0006]** FIG. **1** illustrates a bouncing plush toy according to an embodiment;

**[0007]** FIG. **2** illustrates various character or animal designs that can be included on a bouncing plush toy according to an embodiment;

**[0008]** FIGS. **3**A through **3**D illustrate a method for forming the bouncing plush toy according to an exemplary embodiment;

**[0009]** FIG. **4** illustrates a sewing pattern for forming a bouncing plush toy according to an embodiment;

**[0010]** FIG. **5** illustrates a method of manufacture for the bouncing ball toy according to an exemplary embodiment.

## DETAILED DESCRIPTION

**[0011]** While this invention is susceptible of an embodiment in many different forms, there are shown in the drawings and will be described herein in detail specific embodiments thereof with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention. It is not intended to limit the invention to the specific illustrated embodiments.

**[0012]** Embodiments disclosed herein can include a bouncing ball toy with a plush fabric exterior. The plush fabric exterior can be formed over an internal bouncing ball structure such that the plush fabric exterior does not significantly impact or dampen the ability of the internal bouncing ball structure to bounce when impacting a hard object. The interior ball structure may comprise highly resilient materials and provide significant bounce and liveliness after impacting a hard object. Indeed, the interior ball structure can provide ample bounce and liveliness even when surrounded by the plush fabric exterior such that the bouncing ball toy with the plush fabric exterior still provides fun and enjoyment in bouncing the ball.

**[0013]** In some embodiments, the plush fabric exterior can include fabric or other fibers that provide a fur-like texture on the bouncing ball toy. The plush fabric may comprise a pile to give the plush fabric a raised or fuzzy surface. The pile may give the plush fabric the fur-like texture. In some embodiments, the pile length can be 3-50 mm in length, but the pile length can be any length. In one embodiment, the pile length can be 5 mm in length because longer pile lengths may affect bounce. In some embodiments, the pile length of the plush fabric exterior can depend on the character or animal depicted by bouncing ball toy. According to another embodiment, plush fabric exterior can include sewn on facial features, such as eyes, muzzles, and mouths, and sewn on extremities, such as ears, whiskers, legs, or arms. In an embodiment that includes facial features and extremities, the facial features can be formed using stiff fabrics, such as cotton, polyester, or nylon thread, to generate a hard surface after weaving so that the facial features do not significantly impact bouncing. In an embodiment having extremities, the extremities may comprise soft and pliable fabric that does not affect bouncing of the bouncing ball toy.

**[0014]** Embodiments of the bouncing ball toy disclosed herein can provide a multi-functional experience for a child or other user. The bouncing ball toy can provide a soft, plush toy experience on the surface while also bouncing like a bouncy ball during play, thereby adding extra fun and experience for a user of the bouncing ball toy. In some embodiments, the bouncing ball toy can include animal, cartoon, or other faces on the balls to make the toy pleasing in appearance and appeal to children. Moreover, the plush fabric may include the pile described above to generate a three-dimensional fiber having the appearance of fur to make the toy cuddly and fun to hold without bouncing.

**[0015]** The embodiments of the bouncing ball toy with the plush fabric exterior disclosed herein can be spherical in shape according to any diameter, but in a preferred embodiment, the bouncing ball toy can be small enough to be grippable by a child (e.g., 5-10 cm in diameter). However, other diameter sizes are envisioned (e.g. 10 inches in diameter, approximately the size of a kickball).

**[0016]** The plush fabric exterior is attached to the interior ball structure in a manner that does not significantly affect bounce or liveliness. Even when covered with the plush fabric, the bouncing ball toy with the plush exterior can bounce off a hard surface 55-70% of a height dropped (e.g., dropping the ball from a height of 3 feet can result in a bounce of two feet). In some embodiments, the bouncing ball toy can bounce off a hard surface with 50-75% of the bounce that the interior ball structure can bounce without the plush exterior. The impressive bouncing performance of the bouncing ball toy may be generated by the combination of an internal ball structure comprising a highly resilient material, such as polyurethane, and careful attachment of the plush fabric exterior to the internal ball structure to ensure

a tight fit without wrinkles or air bubbles between an exterior surface of the internal ball structure and the plush fabric exterior.

**[0017]** FIG. **1** illustrates a bouncing plush toy with a plush fabric exterior **100** according to an embodiment. As shown, the bouncing plush toy **100** can include a plush fabric exterior **110**, extremities **120**, and facial features **130-134** formed on the plush fabric exterior. According to an exemplary embodiment, the bouncing ball toy **100** can resemble an animal or other cartoon character. The embodiment illustrated in FIG. **1** depicts a bouncing ball toy **100** having a husky dog character with ear extremities **120** and facial features **130-134**, which include eyes **130**, a snout **132**, and a mouth **134**. Other characters or animals can be depicted using different plush fabric colors, different extremities, and different facial features, as shown in FIG. **2**. In addition, the various characters and animals can include plush fabric exteriors having different pile lengths.

**[0018]** Referring again to FIG. **1**, the bouncing ball toy **100** can be spherical in shape. The plush fabric exterior **110** can include a pile (e.g. 5-40 mm) giving the plush fabric a three-dimensional sense that can emulate fur of the animal character depicted by the extremities **120** and the facial features **130-134**.

**[0019]** The extremities **120** may be sewn to the plush fabric exterior **110** at the base of the plush fabric exterior **110** or beneath the pile pf the plush fabric exterior **110**. In other words, the extremities may not attach to the fibers forming the pile of the plush fabric exterior **110**. The extremities **120** can comprise a soft and pliable fabric so as not to impact bouncing of the bouncing ball toy **100**, such as causing the bouncing ball to carom unexpectedly or ricochet off the extremities **120**. The extremities **120** may be cut separately using a stencil or other guide and sewn using thin, but stiff threads. Again, the thread is chosen so as not to dampen or impact bouncing of the bouncing ball toy **100**. In some embodiments, the extremities **120** may comprise a plush fabric having a shorter pile length than the plush fabric exterior **100**. In most embodiments, the extremities may not attach to the plush fabric exterior via glue or other adhesive as these materials may affect consistent bouncing of the bouncing ball toy.

**[0020]** In some embodiments where the bouncing ball toy **100** comprises facial features, the facial features may be embroidered into the fabric. In other embodiments, the facial features may be screen printed directly onto the fabric. Said facial features may comprise eyes, a nose, a mouth, freckles, eyelashes, eyebrows, facial hair including a mustache or a beard, cheeks, chin, lips, teeth, or any combination thereof.

**[0021]** The bouncing ball toy **100** includes an internal ball structure, not seen in FIG. **1** because the plush fabric exterior **100** can completely cover the internal ball structure. Referring to FIG. **3**A, the internal ball structure **302** can be seen with a plush fabric skin **304** (formed by a sewing profile described later with reference to FIG. **4**). The plush fabric skin **304** may comprise the plush fabric exterior **110**, the extremities **120**, and the facial features **130-134** described with reference to FIG. **1**. That is, the skin **304** can be fully formed before stuffing the skin **304** with the internal ball structure **302**. The skin **304** may be spherical in shape and may have a pocket for accepting the internal ball structure. The closing seam, when open, can provide an opening into the pocket before the closing seam is closed to cover the internal ball structure, and the closing seam may have substantially the same length as the diameter of the internal ball structure. As shown in FIG. **3**B, the internal ball structure **302** is inserted, or stuffed, into the plush fabric skin **304** through an unsewn seam **306** in the plush fabric skin **304**. The plush fabric skin **304** has a size and shape that corresponds with the diameter of the internal ball structure **302**, and the plush fabric skin **304** can fit tightly over the internal ball structure. In addition, the seam **306** in the plush fabric skin **304** can be the substantially the same length as the diameter of the internal ball structure **302**.

**[0022]** As shown in FIG. **3**C, the seam **306** is closed tightly over the internal ball structure, and, as shown in FIG. **3**D, the seam can be tightly sewn closed using stiff thread and by stretching the plush fabric skin **304** over the internal ball structure **302** to minimize wrinkles in the plush fabric skin **304** that may dampen or substantially hinder the ability of the internal ball structure **302** to provide bouncing enjoyment. To prevent wrinkles, air bubbles, or any other hinderances to tight wrapping of the plush fabric skin **304** over the internal ball structure **302**, the plush fabric skin **304** may include relatively few patterns and a relatively long sewing seam. In one embodiment, the seam **306** may be the same or substantially the same length as the diameter of the internal ball structure **302**. In addition, a sewing pattern (shown in FIG. **4**) must be very accurate on arc length and symmetrical.

**[0023]** In some embodiments, the plush fabric skin **304** may attach to the internal ball structure **302** without glue or other adhesive because glue may dampen bouncing. Moreover, to ensure bouncing, a sewing margin while sewing the seam must be even. In addition, the seam **306** must be sewn very tightly, with stiff thread, and with sufficient force by any sewing workmanship to ensure tight fitting of the plush fabric skin **304** over the internal ball structure **302**.

**[0024]** In some embodiments, the internal ball structure **302** may comprise polyurethane to provide a highly resilient structure that bounces off hard objects. In one embodiment, the polyurethane material may comprise toluene diisocynate and polyether polyol. Other elements could be included in the polyurethane material including tin octoate, silicone oil and color cream. In a preferred embodiment, a polyurethane material of the internal ball structure **302** may comprise a chemical composition according to Table 1. Variations of the chemical composition of Table 1 are contemplated within the present invention.

TABLE 1

| Chemical Name | CAS Number | Percentage |
|---|---|---|
| Toluene Diisocyanate (TDI) | 26471-62-5 | 74% |
| Polyether Polyol (PPG) | 90031 1-6 | 23% |
| Tin Octoate | 30110-0 | 1% |
| Silicone Oil | Nil | 1% |
| Color Cream (PM-433) | Nil | 1% |

**[0025]** However, any highly resilient materials are envisioned for the internal ball structure **302**, including stiff rubbers or other highly resilient polymers. In some embodiments, the internal ball structure **302** may comprise foam, but the foam internal ball structure **302** may not provide sufficient bouncing response for some applications. In such embodiments, the internal ball structure **302** may comprises a low-density foam.

**[0026]** In embodiments where the internal ball structure **302** comprises low-density foam, the bouncing ball toy **100** may bounce less than embodiments where the internal ball structure **302** comprises a polyurethane. However, embodiments comprising low-density foam may be advantageous in some applications where it is desirable that the internal ball structure **302** is relatively softer than embodiments comprising polyurethane, such as indoor use.

**[0027]** Advantageously, such embodiments may have less impact force because of the low-density foam, resulting in less damage if the bouncing ball toy **100** strikes a breakable surface, such as a wall, or if the bouncing ball toy **100** inadvertently strikes a human. Further, when the bouncing ball toy **100** comprises an internal ball structure **302** comprising low-density foam, the bouncing ball toy **100** can also be "squished", "squeezed", or compressed to some degree, such that the toy **100** can be used as stress-relief tool. The bouncing ball toy **100** may be configured to bounce 50-75% of the height the internal ball structure **302** would bounce without the plush fabric skin **304**. It is contemplated that a variety of low-density foams can be suitable materials for the internal ball structure **302**. In one embodiment, the low-density foam can comprise polyether polyols, silicone oil, catalyzer, methylenediphenyl diisocyanate, and a polymer of adipic acid with 1,4-butanediol, 1,2-ethylene glycol, and 1,2-methylenebis (4-isocynanatobenzene). For example, the internal ball structure may comprise a chemical composition according to Table 2. Variations of the chemical composition of Table 2 are contemplated within the present invention.

TABLE 2

| Chemical Names | CAS No. | EC No. | Concentration |
|---|---|---|---|
| Polyether polyols | 9003-11-6 | 942-261-1 | 77.2% |
| Silicone oil | 28323-47-9 | 691-116-6 | 2% |
| Catalyzer | 167693-36-9 | — | 0.8% |
| Methylenediphenyl diisocyanate | 26447-40-5 | 247-714-0 | 19.4% |
| Polymer of adipic acid with 1,4-butanediol, 1,2-ethlene glycoo, and 1,1-methylenebis (4-isocyanatobenzene) | 27083-55-2 | 618-689-7 | 0.6% |

**[0028]** In some embodiments, the plush fabric **110** may comprise XTM fabric. The XTM fabric may include fibers of 5 mm pile length and 450 grams/yard. However, any plush fabric is envisioned for the plush fabric **110**.

**[0029]** The plush fabric skin **304** can be formed by a sewing pattern **400** shown in FIG. **4**. The sewing pattern **400** can include a plurality of sewing pattern sections the result in a spherical skin. The sewing pattern **400** can include plush fabric exterior sections, including a back section **402**, a face section **404**, a back head section **406**, and a belly portion **408**. The plush fabric exterior sections **402-408** are sewn together to form the plush fabric exterior **110**. Notable the back section **402** includes the closing seam **306** along a side of the back section described above. The sewing pattern **400** shown in FIG. **4** is exemplary, and other sewing patterns are envisioned based on the character or animal depicted by the bouncing ball toy **100**.

**[0030]** In addition to the plush fabric exterior sections **402-408**, the sewing pattern **400** can include extremity sections, including a tail section **410**, a mane section **412**, an ear section **414**, and a horn section **416**. The number and types of extremity sections **410-416** can depend on the character or animal depicted by the bouncing ball toy **100**.

**[0031]** Further still, the sewing pattern **400** can include facial feature sections, such as inner muzzle section **420** and muzzle section **422**. The muzzle section **422** may cover and overlap with the inner muzzle section **420** so that the muzzle or snout can be slightly raised over the plush fabric exterior **110**, giving the appearance and sensation of a small nose or snout. The combination of the inner muzzle section **420** and muzzle section **422** may be sufficiently hard so as not to overly dampen the bouncing of the bouncing ball toy.

**[0032]** FIG. **5** illustrates a method of manufacturing **500** the bouncing ball toy of the exemplary embodiments described herein. As shown in FIG. **5**, the method **500** may include forming the internal ball structure in step **502**. In some embodiments, the internal ball structure is pre-formed and purchased or formed using known methods. Additionally, the method **40** may include cutting a plush fabric according to a sewing pattern, such as the sewing pattern illustrated in FIG. **4**, in step **504**. In step **506**, the plush fabric exterior sections may be sewn together to form the plush fabric exterior **110**. A stitcher or machine may leave open the closing seam **306** as part of the sewing step **506**. The method may further include sewing any extremities or facial features into the plush fabric exterior or any unsewn portions of the plush fabric exterior to form the plush fabric skin **304** in step **508**. Subsequently, the internal ball structure **302** is inserted into the plush fabric skin **304** through the closing seam **306** in step **510**, and subsequently the closing seam is tightly sewn shut in step **512**. The plush toy skin **304** may be stretched over the internal ball structure as the closing seam is sewn shut to ensure no wrinkles when the plush toy skin **304** covers the internal ball structure **302**.

**[0033]** The bouncing ball toy with the plush fabric exterior solves the problems over the prior art because the bouncing ball toy with the plush fabric exterior provides both a fun and engaging bouncing ball that includes interesting, soft, and cuddly exterior, thereby providing a multifunctional toy experience.

**[0034]** Although a few embodiments have been described in detail above, other modifications are possible. For example, the steps described above do not require the particular order described or sequential order to achieve desirable results. Other steps may be provided, steps may be eliminated from the described flows, and other components may be added to or removed from the described systems. Other embodiments may be within the scope of the invention.

**[0035]** From the foregoing, it will be observed that numerous variations and modifications may be effected without departing from the spirit and scope of the invention. It is to be understood that no limitation with respect to the specific system or method described herein is intended or should be inferred. It is, of course, intended to cover all such modifications as fall within the spirit and scope of the invention.

**1**. A stress relief toy comprising:

an internal ball structure comprising a compressible low-density foam; and

a fabric covering configured to cover the internal structure, the fabric covering comprising at least one fabric extremity and at least one facial feature.

2. The stress relief toy of claim 1, wherein the toy bounces 50-75% as high as the internal ball structure bounces without the fabric covering.

3. The stress relief toy of claim 1, wherein the fabric covering comprises a plush fabric exterior with a pile of 3 mm to 50 mm.

4. The stress relief toy of claim 1, wherein the fabric covering is a solid color, patterned, tie dyed, or any combination thereof and configured to resemble an animal, a cartoon character, or other iconography.

5. The stress relief toy of claim 1, wherein the toy has a diameter of 5 centimeters to 25 centimeters.

6. The stress relief toy of claim 1, wherein the fabric covering is stretched and sewn shut to completely cover the internal ball structure.

7. The stress relief toy of claim 1, wherein the facial feature comprises eyes, a nose, a mouth, freckles, eyelashes, eyebrows, embroidered into the fabric.

8. The stress relief toy of claim 1, wherein the extremity comprises an arm, leg, ear, horn, wing, antenna, or tail, or any combination thereof and wherein the plush extremities do not impact the bounce height of the toy.

9. The stress relief toy of claim 8, wherein the extremity comprises a fabric with a shorter pile than the plush fabric.

10. The stress relief toy of claim 1, wherein the low-density foam comprises a formulation that is compressible by a child's hand.

11. The stress relief toy of claim 1, wherein the low-density foam comprises polyether polyols, silicone oil, catalyzer, methylenediphenyl diisocyanate, and a polymer of adipic acid with 1,4-butanediol, 1,2-ethylene glycol, and 1,2-methylenebis (4-isocynanatobenzene).

12. A plush bouncing toy comprising:

a ball configured to bounce when the ball strikes a surface; and

a plush fabric covering comprising an exterior side and an interior side, wherein the fabric covering is configured to receive the ball into an internal pocket defined by the plush fabric covering and configured be sewn shut such that the plush fabric covering completely covers the ball, and wherein the exterior side comprises a pile of 3 mm to 50 mm

wherein the plush bouncing toy bounces 60%-75% as high as the ball without a covering.

13. The plush bouncing toy of claim 11, wherein the plush fabric covering is configured to resemble an animal, a cartoon character, or other iconography.

14. The plush bouncing toy of claim 11, wherein the ball comprises a low-density foam.

15. The plush bouncing toy of claim 13, wherein the low-density foam comprises polyether polyols, silicone oil, catalyzer, methylenediphenyl diisocyanate, and a polymer of adipic acid with 1,4-butanediol, 1,2-ethylene glycol, and 1,2-methylenebis (4-isocynanatobenzene).

16. The plush bouncing toy of claim 11, wherein the toy has a diameter of 5 centimeters to 25 centimeters.

17. The plush bouncing toy of claim 11, wherein the plush fabric covering further comprises at least one extremity sewn to the exterior side, the at least one extremity comprising arms, legs, wings, antennae, fins, tails, or any combination thereof.

18. The plush bouncing toy of claim 11, wherein the plush fabric covering further comprises at least one facial feature, the at least one facial feature comprising eyes, a nose, ears, eyelashes, whiskers, a mouth, teeth, or any combination thereof.

19. The plush bouncing toy of claim 18, wherein the facial features are embroidered onto the exterior side of the plush fabric covering.

20. A plush stress relief toy, the toy comprising:

an internal low density foam ball, wherein the ball bounces at a height;

an exterior plush fabric casing configured to cover the foam ball, the casing comprising a plush fabric having a pile of at least 3 mm, and wherein the casing is sewn shut around the foam ball;

at least one fabric extremity, the fabric extremity comprising an arm, a leg, an ear, an antenna, a horn, a tail, a fin, a wing, or any combination thereof;

at least one facial feature affixed to the exterior plush fabric, the facial feature comprising an eye, a snout, a nose, a mouth, freckles, eyelashes, eyebrows, teeth, or any combination thereof; and

wherein the toy bounces at a height that is 55-75% as high as the heigh the internal low density foam ball bounces.

* * * * *