



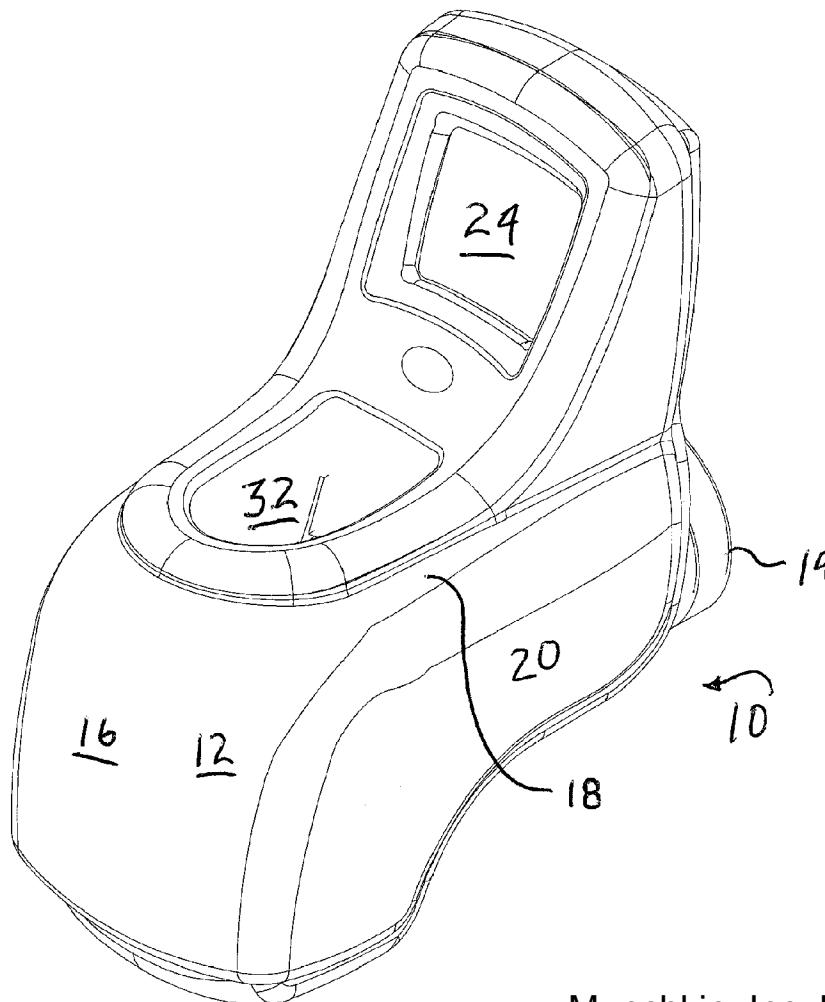
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(19) **United States**(12) **Patent Application Publication****Thorne et al.**(10) **Pub. No.: US 2007/0130688 A1**(43) **Pub. Date: Jun. 14, 2007**(54) **SECURE, IMPACT RESISTANT, TOOL FREE
ATTACHING BATH SPOUT COVER****Publication Classification**(75) Inventors: **Henry F Thorne**, West View, PA (US);
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WEXFORD, PA 15090 (US)**(57) **ABSTRACT**(73) Assignee: **THORLEY INDUSTRIES, LLC**, Pitts-
burgh, PA (US)(21) Appl. No.: **11/560,871**(22) Filed: **Nov. 17, 2006****Related U.S. Application Data**(60) Provisional application No. 60/750,279, filed on Dec.
14, 2005.

A slip on, securely fastened, tool free attaching, impact resistant bathtub spout cover includes an impact resistant body adapted to receive the spout for a bathtub therein, and at least one attaching strap coupled to the body at a rearward end of the body, wherein the strap is adapted to be secured around the spout. The body may include a substantially open bottom. The body may also include a high friction surface adjacent the spout and has at least 2 square inches of contact between the spout and the spout cover when installed. The body may further include a diverter valve access opening therein adapted to allow access to and operation of a diverter valve of the spout when the spout cover is installed. The strap may be an adjustable type strap with a buckle.



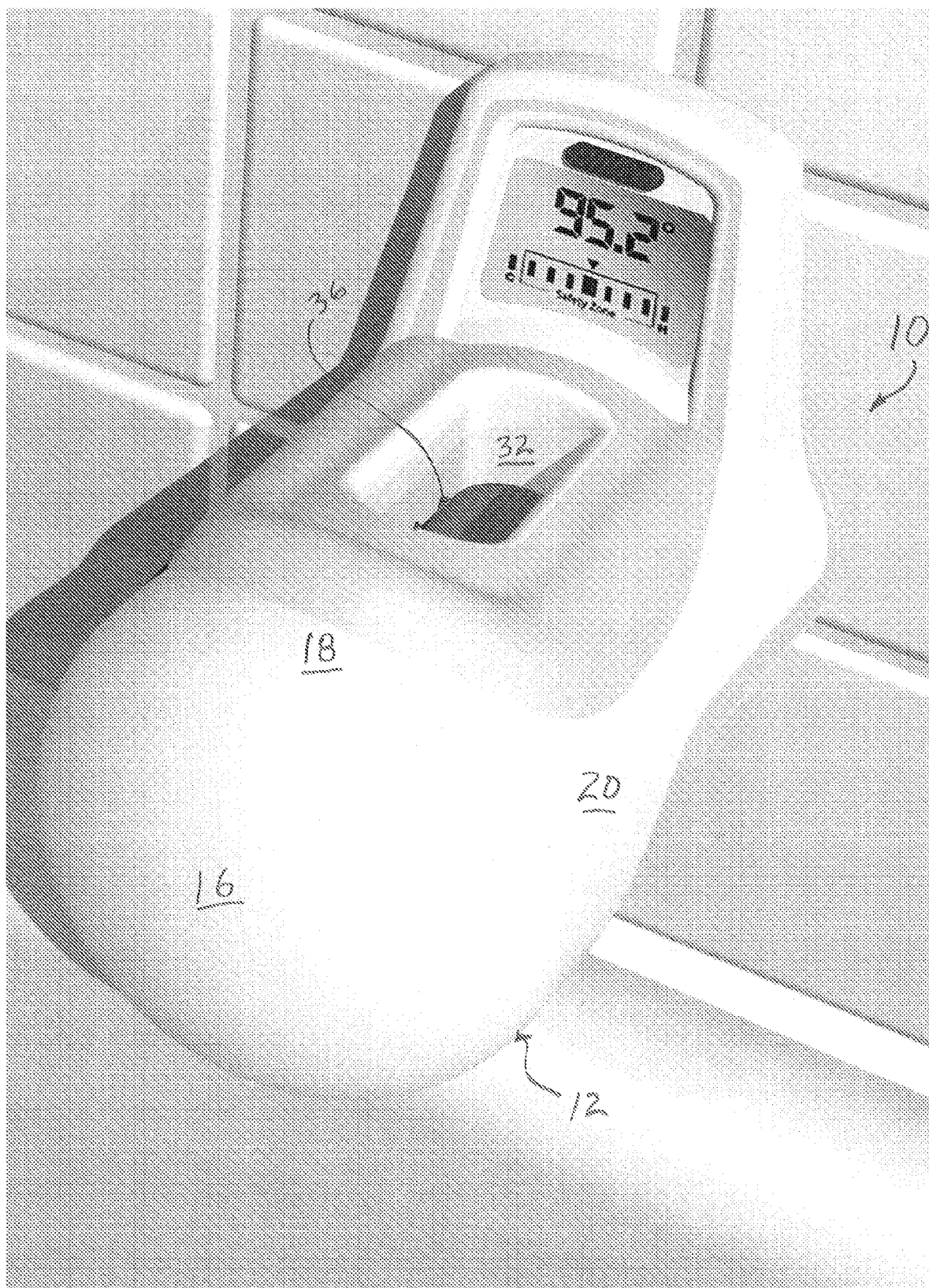
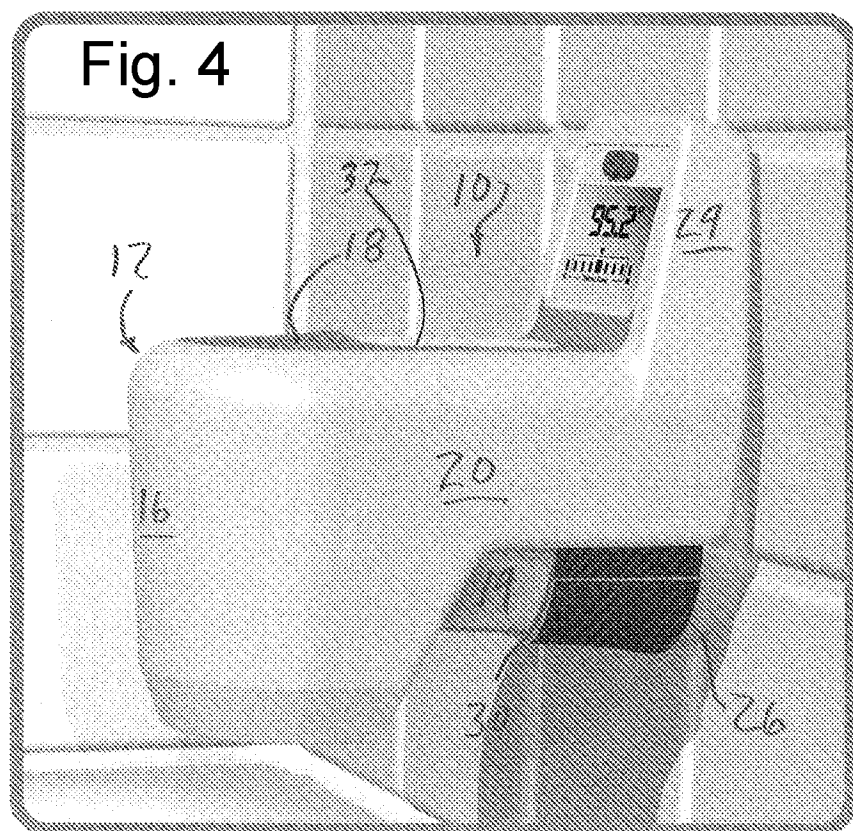
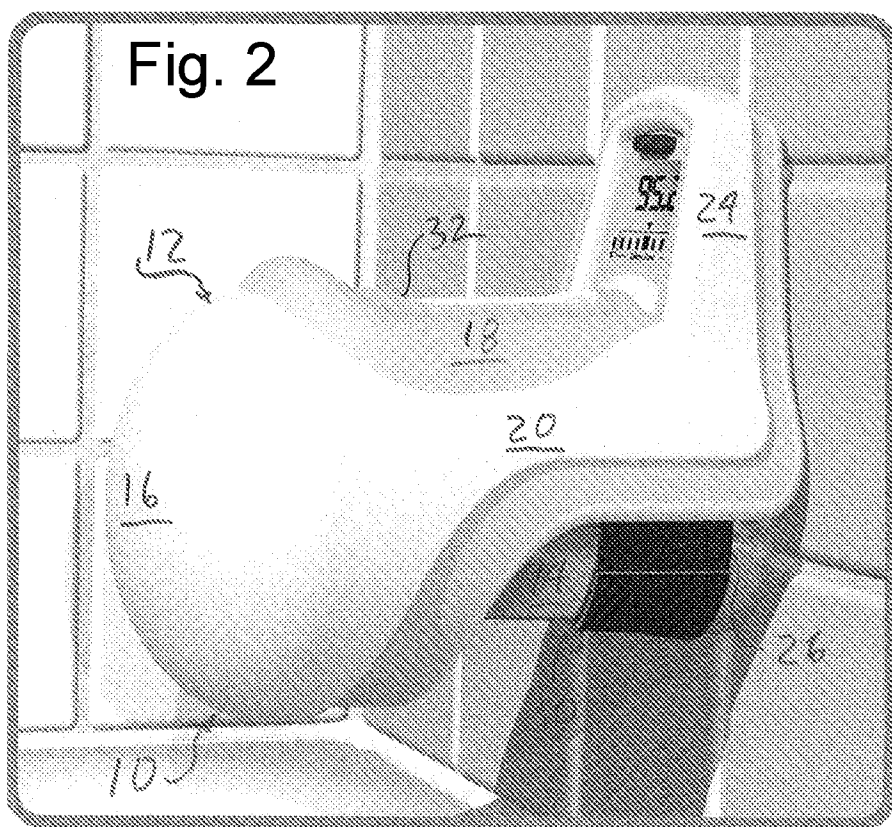


Fig. 1



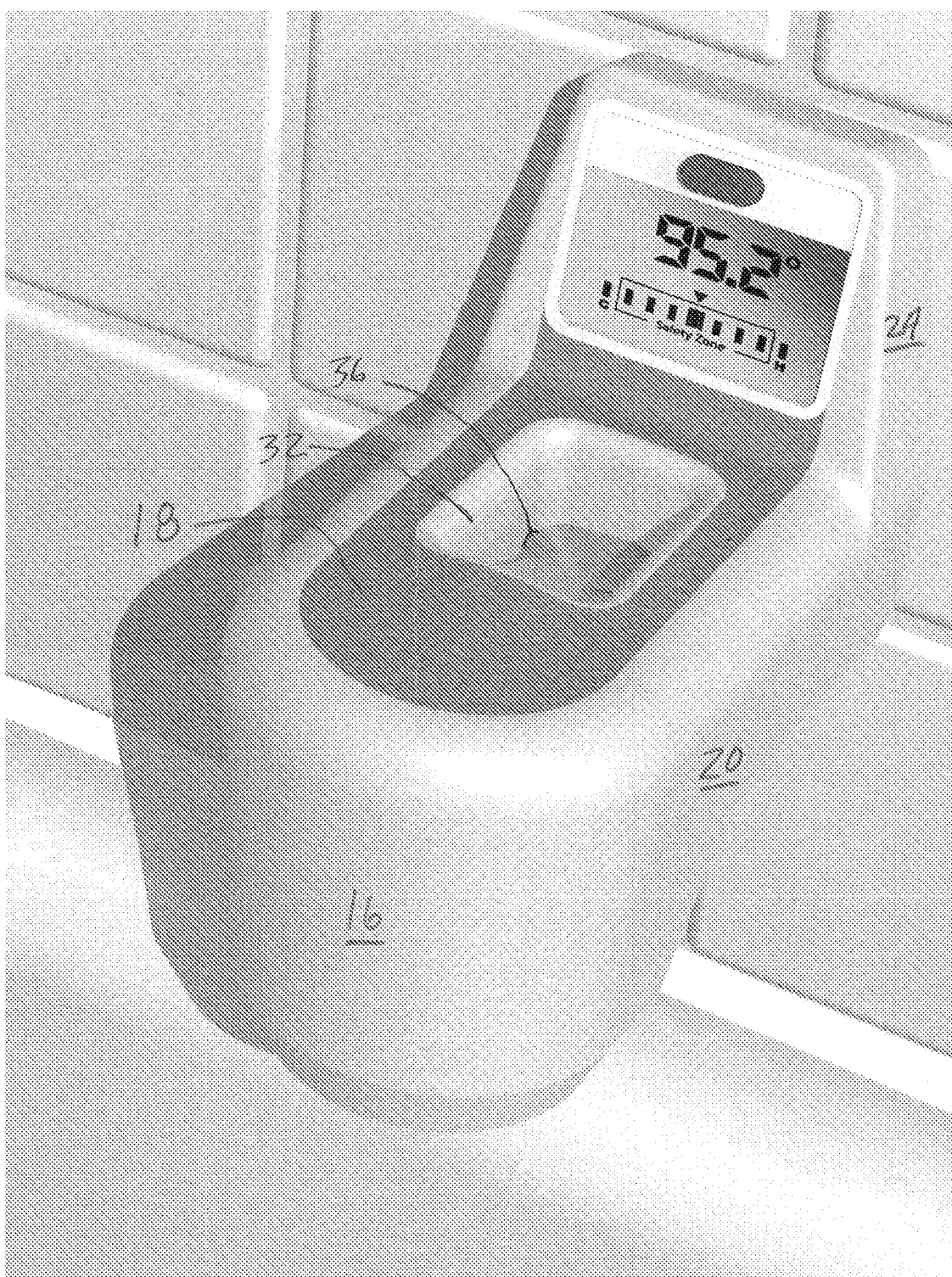


Fig. 3

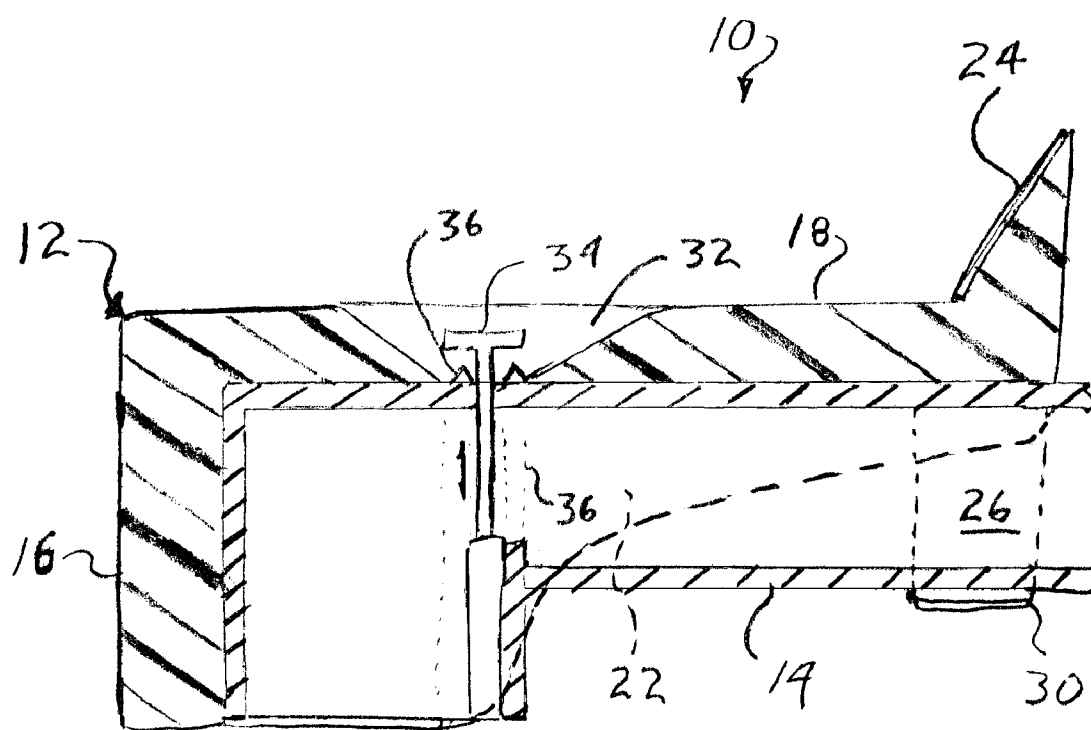
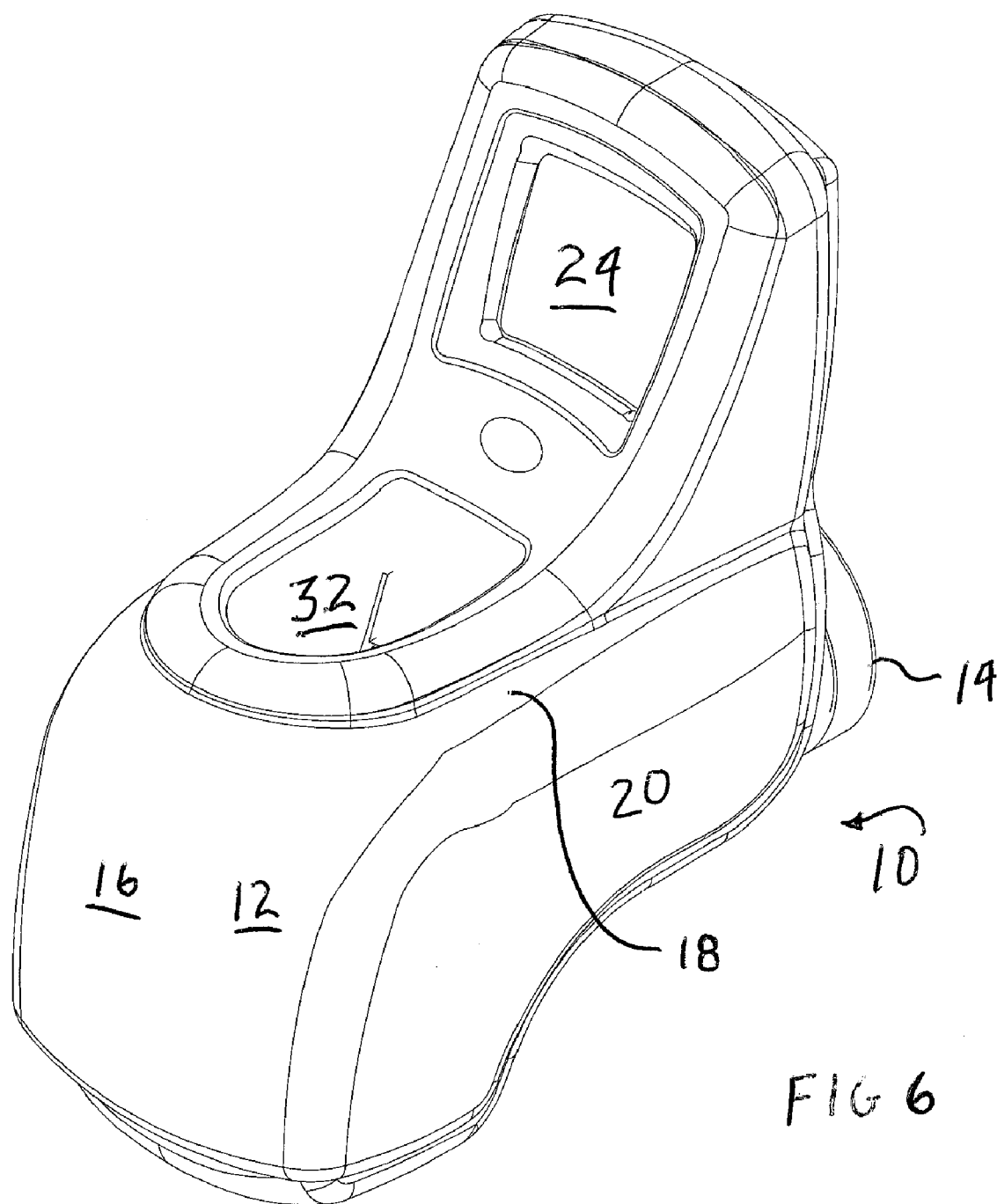
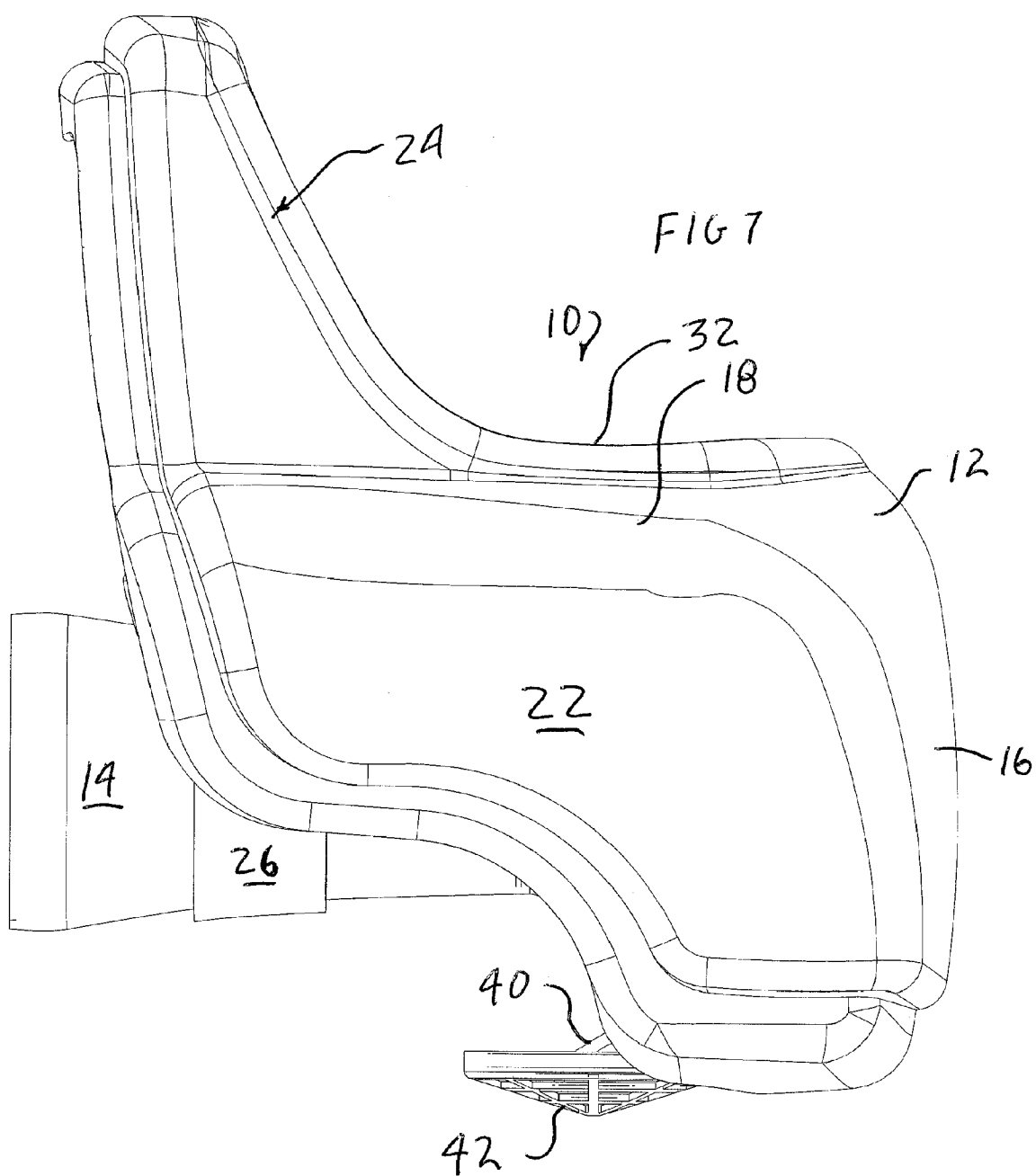
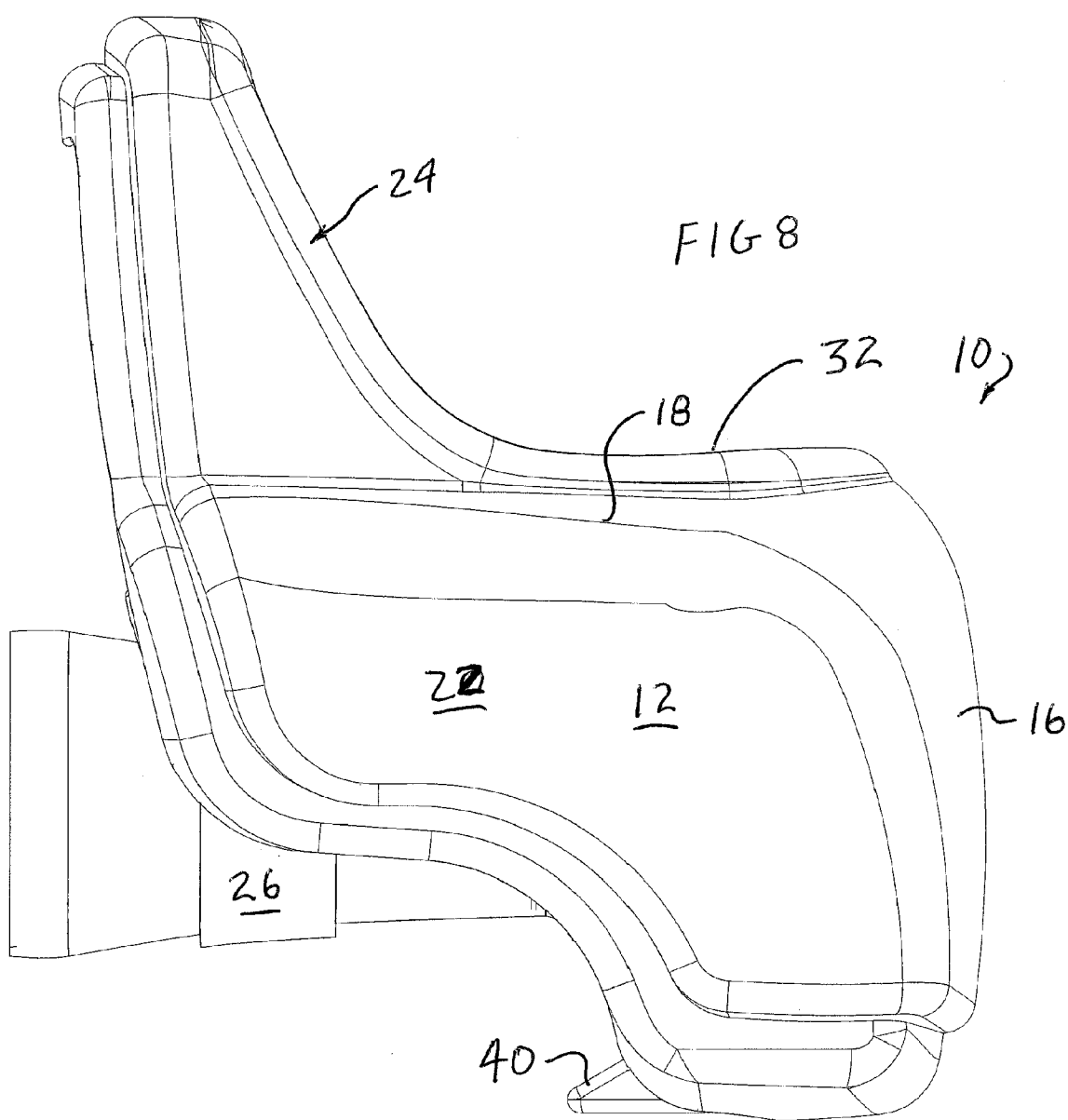


Fig. 5







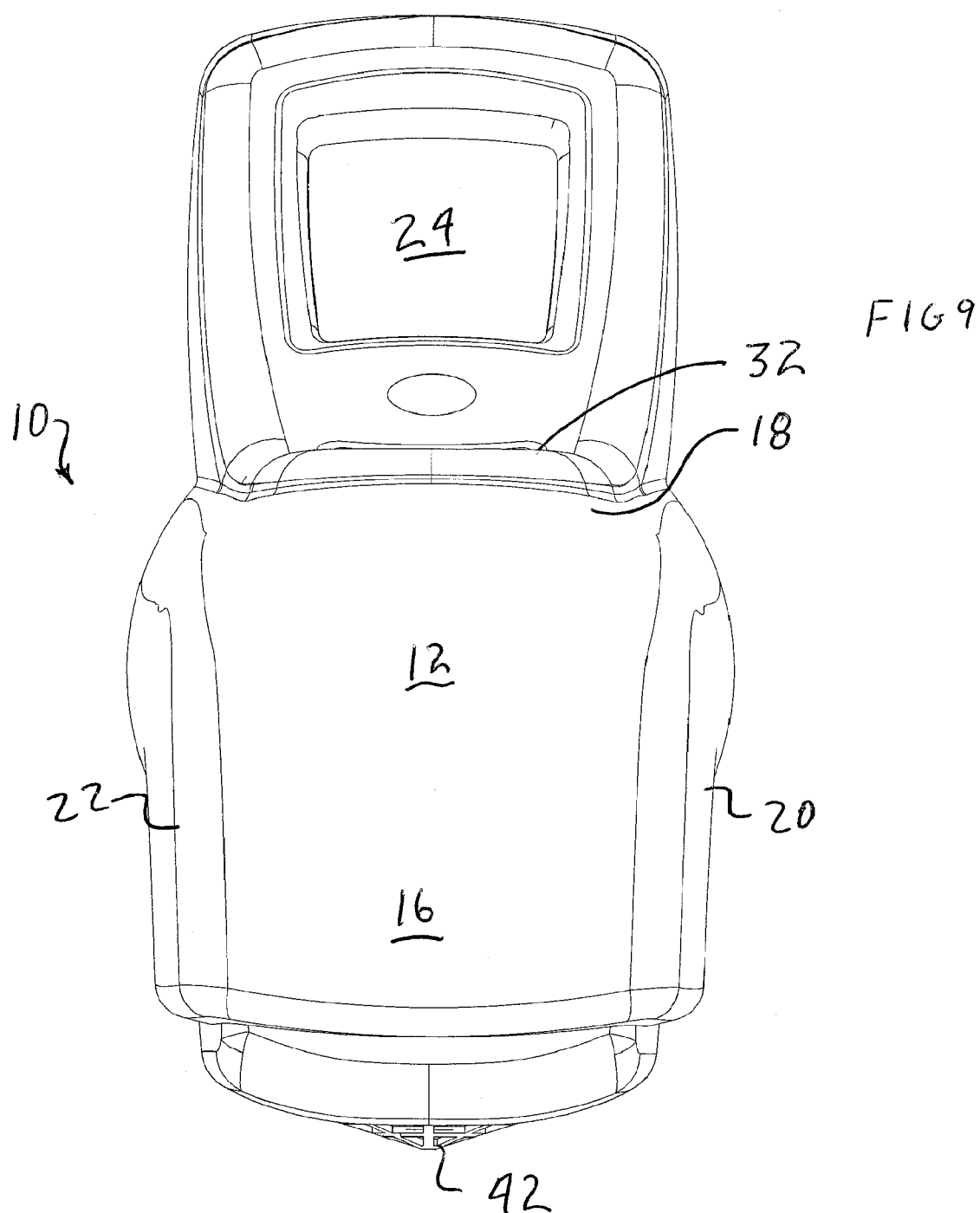


FIG 10

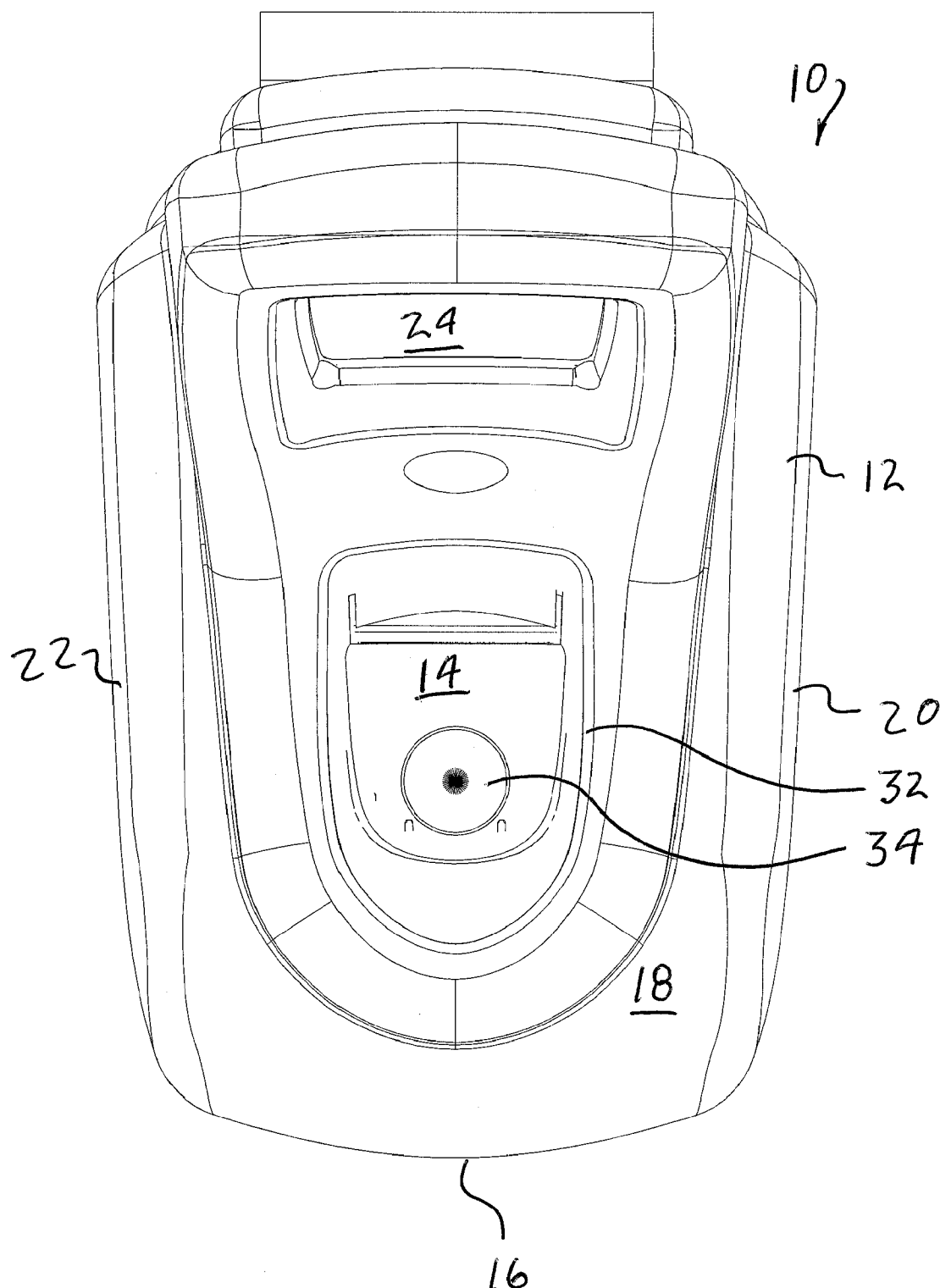
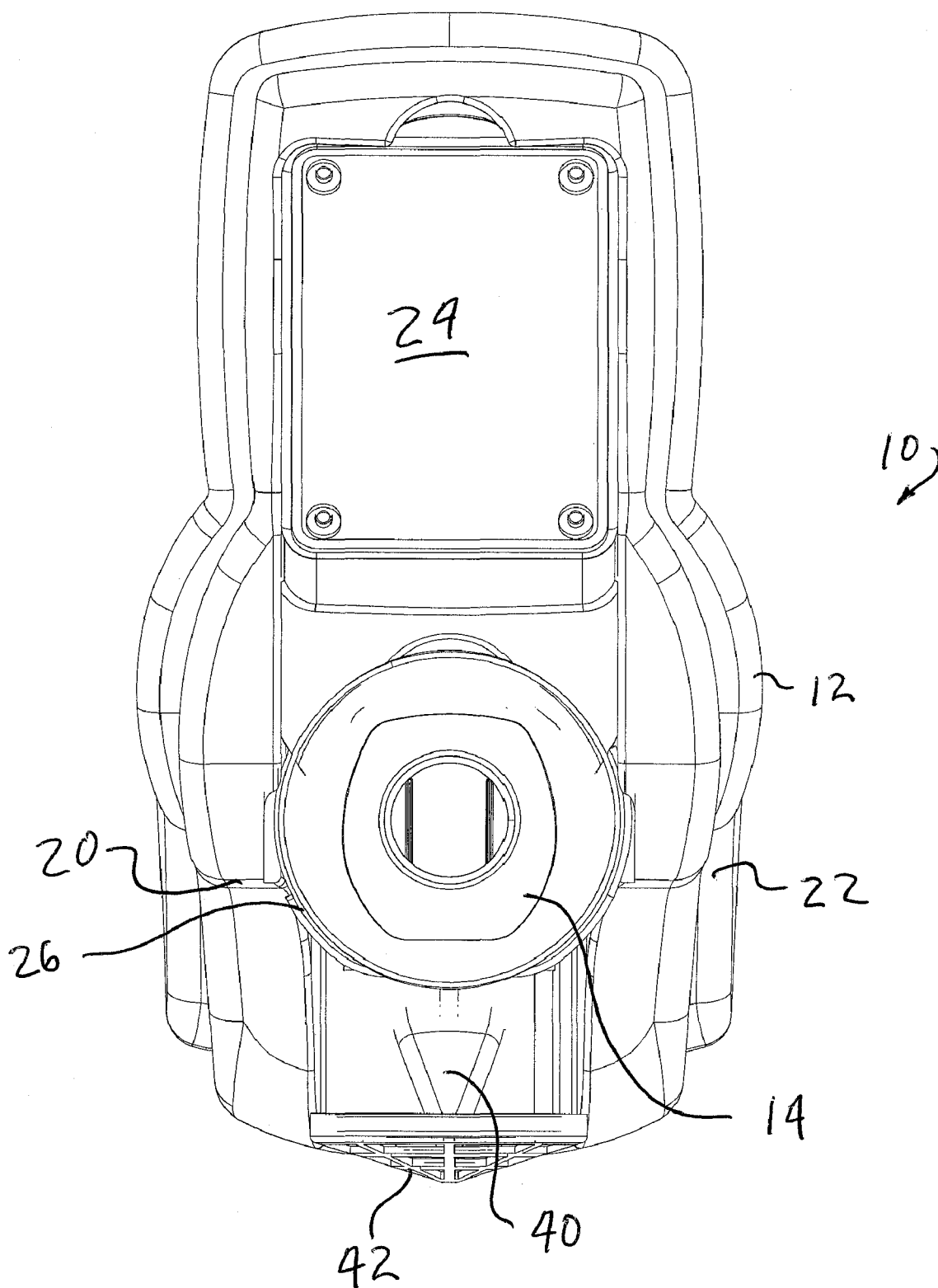


FIG 11



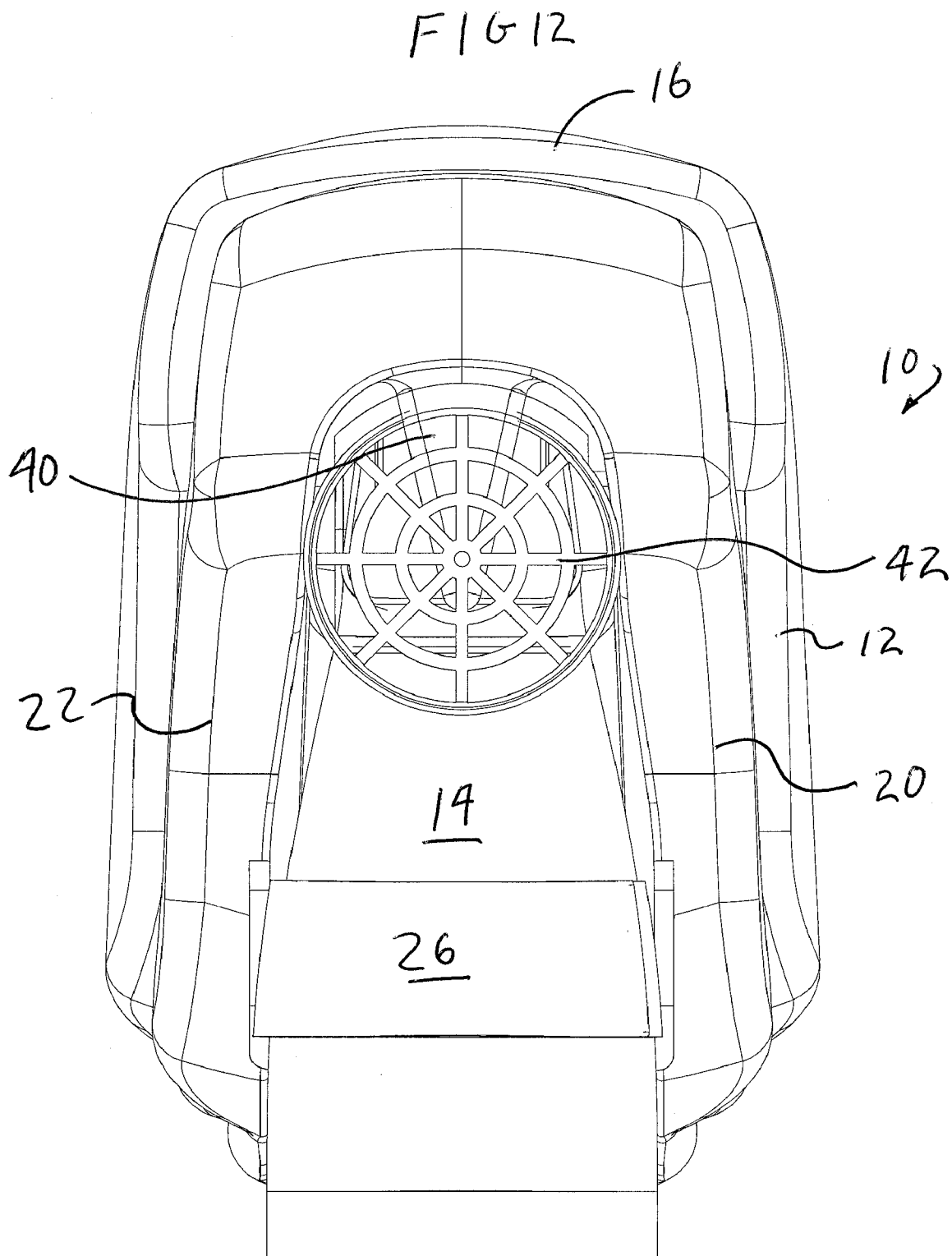
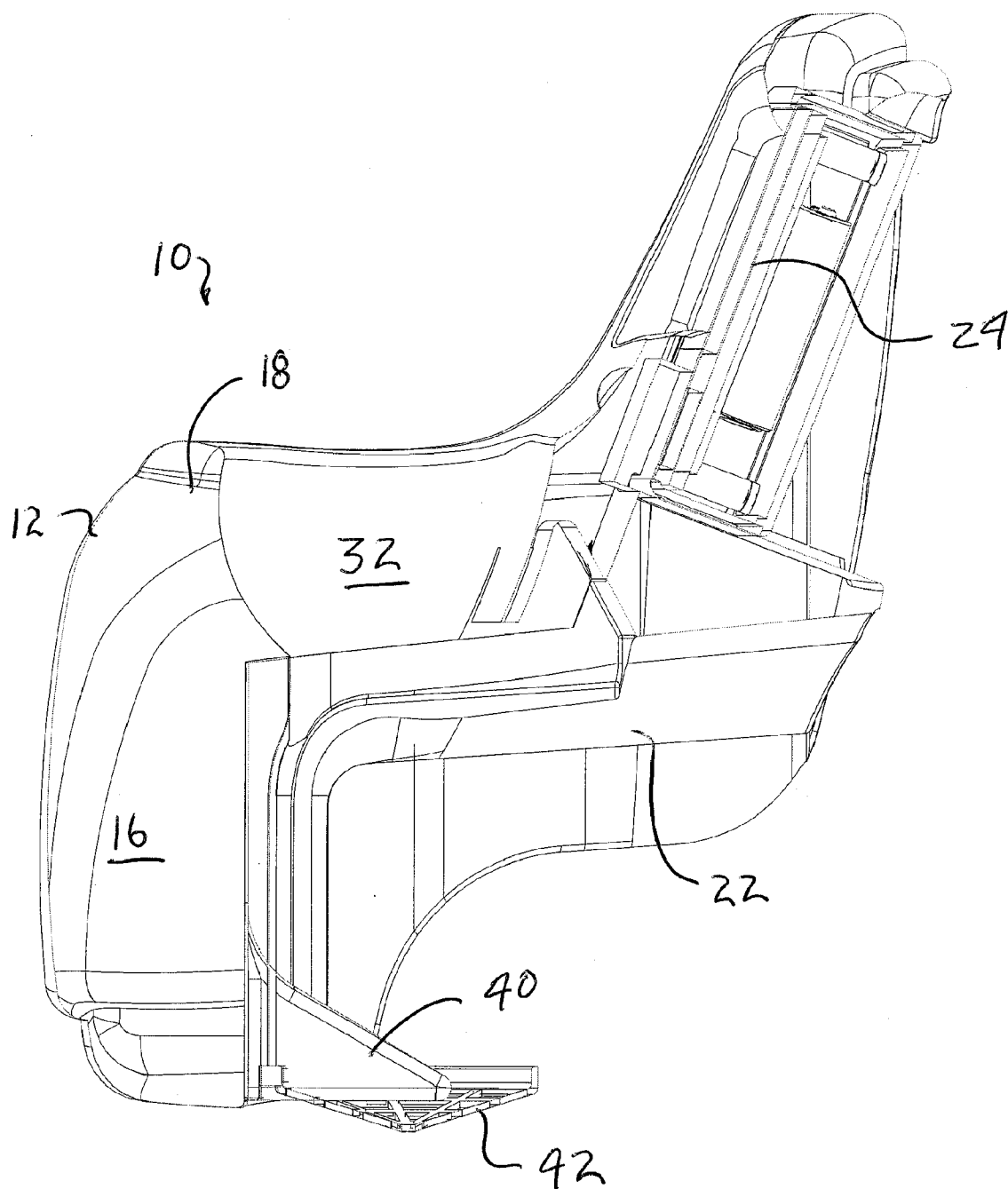


FIG 13



SECURE, IMPACT RESISTANT, TOOL FREE ATTACHING BATH SPOUT COVER

RELATED APPLICATION

[0001] This application claims the benefit of U.S. provisional patent application bearing Ser. No. 60/750,279 filed Dec. 14, 2005 and entitled "Secure Impact Resistant, Tool free Attaching Bath Spout Cover."

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to safety products for a bathtub water dispensing spout. More particularly the present invention is directed to securely fastened bathtub water dispensing spout cover designed for tool free attachment and designed to prevent impact injuries among children and elderly associated with bumping against the hard metal spouts common in bathtubs.

[0004] 2. Background Information

[0005] The bathroom represents an area of the home having a relatively higher risk of injury and, consequently many products have been designed to help minimize these risks. As noted above, the present application is directed to safety products for a bathtub water dispensing spout, and unless otherwise noted the term "spout" herein will reference a bathtub water dispensing spout, and "spout cover" references products designed to fit over existing bathtub water dispensing spouts.

[0006] Existing spout covers are typically designed to prevent impact injuries among user's, such as children, disabled and elderly, associated with bumping against the hard metal spouts common in bathtubs. The existing spout covers are, most commonly, simply soft plastic sleeves that slide over the existing spout and have an opening that generally aligns with the spout opening. The existing spout covers are often in child friendly shapes, such as the form of a whale or a duck caricature. The existing commercially viable spout covers essentially offer little more than impact resistance, when they are left in place, and a child friendly shape. The child friendly configuration can actually inhibit the safety functions by enticing the child to pull off the spout cover to play with in the bathtub and the safety function of the spout cover is, of course, lost once it is removed from the spout. An inflatable spout cover has also been developed that is inflated and slid into place; however it also suffers from the disadvantage of being generally easily removed by a child.

[0007] Spout covers lose their effectiveness for impact resistance once they are removed from the spout. Consequently, a secure attachment is be beneficial. However, consumers prefer to be able to remove a protective spout cover at some point, without significant difficulty. For example, in a shower/tub combination many spouts have a diverter valve that must be accessed to utilize the shower, and existing spout covers do not provide access to the diverter valve, thereby requiring spout cover removal prior to use of the shower. Further, consumers generally prefer to be able to remove spout covers for simple aesthetic reasons as well. Consequently, any child-proof or child resistant attachment solution must be temporary and easily removable by adults, and not by toddlers.

[0008] Spout covers will have no effectiveness for impact resistance if they are never installed onto the spout. An overly complex spout cover attachment system will result in few consumers that take the time to install the spout cover. This design consideration is adequately solved in the most common prior art designs that simply slip onto the spout, requiring no significant skill, tools or time for attaching the spout cover. Care must be taken in addressing the easy child removal problems with the prior art slip on spout cover designs that an attachment system is not created that is too complex or time consuming for users to bother to install.

[0009] In addition to the ineffectiveness of spout covers that are inadvertently pulled off, or never put on by the consumer, spout covers that remain on the store shelf are likewise ineffective. A spout cover that is deemed to be unduly expensive by the consuming public will simply stay on the store shelf, regardless of how efficient the design. Consequently the design must be cost effective from the consumer's viewpoint. Of course, what is cost effective varies greatly from consumer to consumer, but the general concept of perceived value in the product remains a critical design criterion for a successful commercial product, and hence the cost effective aspect is critical to all features incorporated into a safety bath spout cover.

[0010] Incorporating elements into a bath spout safety cover that addresses these safety issues will greatly increase the utility of the spout cover and the relative safety of the users.

[0011] Other issues to be addressed in bath spout designs are universal acceptance to the largest variety of commercially available bath spouts; minimizing germs, mold, mildew and other bacterial growth in what is commonly a warm wet environment that may be very conducive for such growths; and providing easy attachment and removal by adults. Finally it needs to be stressed that any technological solution to these issues that are incorporated into a spout cover must be cost effective solutions, or they will not be used at all.

[0012] It is the objects of the present invention to address the deficiencies of the prior art bath spout covers discussed above and to do so in an efficient cost effective manner.

SUMMARY OF THE INVENTION

[0013] It is noted that, as used in this specification and the appended claims, the singular forms "a," "an," and "the" include plural referents unless expressly and unequivocally limited to one referent.

[0014] For the purposes of this specification, unless otherwise indicated, all numbers expressing quantities of ingredients, reaction conditions, and other parameters used in the specification and claims are to be understood as being modified in all instances by the term "about." Accordingly, unless indicated to the contrary, the numerical parameters set forth in the following specification and attached claims are approximations that may vary depending upon the desired properties sought to be obtained by the present invention. At the very least, and not as an attempt to limit the application of the doctrine of equivalents to the scope of the claims, each numerical parameter should at least be construed in light of the number of reported significant digits and by applying ordinary rounding techniques.

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[0015] All numerical ranges herein include all numerical values and ranges of all numerical values within the recited numerical ranges. Notwithstanding that the numerical ranges and parameters setting forth the broad scope of the invention are approximations, the numerical values set forth in the specific examples are reported as precisely as possible. Any numerical value, however, inherently contain certain errors necessarily resulting from the standard deviation found in their respective testing measurements.

[0016] The various embodiments and examples of the present invention as presented herein are understood to be illustrative of the present invention and not restrictive thereof and are non-limiting with respect to the scope of the invention. According to one embodiment of the present invention addressing at least one of the above stated objects, a slip on, tool-free attaching, securely fastened, adhesive free, impact resistant bathtub spout cover includes an impact resistant body adapted to receive the spout for a bathtub therein, and at least one attaching strap coupled to the body at a rearward end of the body, wherein the strap is adapted to be secured around the spout. The body may include a substantially open bottom. The body may also include a high friction surface adjacent the spout and has at least 1½, and preferably at least 2, square inches of contact, and more preferably at least 5 square inches, between the spout and the spout cover when installed. The body may further include a diverter valve access opening therein adapted to allow access to and operation of a diverter valve of the spout when the spout cover is installed, and wherein the body is higher than the diverter in the lower (off—or faucet) position. Drainage grooves may be provided in the body extending from the diverter valve access opening to prevent standing water within the opening. The strap may be an adjustable type strap with a buckle.

[0017] The slip-on feature of the spout cover references the ability to slide or push the spout cover, into a final operative position, e.g. onto the spout. The tool-free attaching aspect of the spout cover references that the spout cover is constructed so that an adult operator can attach, and indeed remove, the spout cover to the spout using his hands only, using no separate tools. The spout cover is securely fastened in that when attached to the spout, the spout cover cannot easily be pulled off by small children using the bath. The spout cover is impact resistant in that it is soft or cushioned, and it is preferred if the body has a Shore hardness of at least 20 (OO scale) to be of acceptable impact resistance. There are a number of acceptable ways to form the spout cover, including forming the body from soft rubber, flexible foam, or even inflatable members.

[0018] These and other advantages of the present invention will be clarified in the description of the preferred embodiments taken together with the attached figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] FIG. 1 is a perspective top view of a bath spout cover according to one embodiment of the present invention;

[0020] FIG. 2 is a perspective side view of the safety spout cover of FIG. 1;

[0021] FIG. 3 is a perspective top view of a bath spout cover according to one embodiment of the present invention;

[0022] FIG. 4 is a perspective side view of the safety spout cover of FIG. 2;

[0023] FIG. 5 is a schematic side section view of a safety spout cover according to one embodiment of the present invention;

[0024] FIG. 6 is a perspective top view of a bath spout cover according to another embodiment of the present invention;

[0025] FIG. 7 is a side elevation view of the bath spout cover of FIG. 6;

[0026] FIG. 8 is a side elevation view of the bath spout cover of FIG. 6 with a final water guide removed for clarity;

[0027] FIG. 9 is a front elevation view of the bath spout cover of FIG. 6;

[0028] FIG. 10 is top plan view of the bath spout cover of FIG. 6;

[0029] FIG. 11 is rear plan view of the bath spout cover of FIG. 6;

[0030] FIG. 12 is bottom plan view of the bath spout cover of FIG. 6; and

[0031] FIG. 13 is a sectional side view of the bath spout of FIG. 6 with the associated faucet removed for clarity.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0032] FIGS. 1-4 illustrates two embodiments of a slip on, tool-free attaching, securely fastened, adhesive free, impact resistant bathtub spout cover 10 according to the present invention. FIGS. 6-13 illustrate in detail an embodiment of the slip on, tool-free attaching, securely fastened, adhesive free, impact resistant bathtub spout cover 10 according to the present invention. The spout cover 10 includes a foam body 12 having a soft exterior for impact resistance and user safety. Impact resistance within the meaning of this application refers to material that is softer than conventional metal or hard plastic, and will be understood by those in the child proofing art. Preferably the foam body has a Shore hardness of at least 20 on the OO scale. A wide variety of materials can be used to form the body 12 and the soft exterior, including rubber, soft plastics (low durometer plastics), and the like. Acceptable foams for the foam body 12 include closed cell expanded polyurethane, vinyl viton, silicon, neoprene or coated polyimide or polyethylene. In the illustrated embodiment the body is a closed cell foam, such as expanded polyurethane. The closed cell construction will make the body 12 non-absorbing. The non-absorbing feature is important in the bathroom environment such that no standing water is maintained by the body 12, i.e. the foam body 12 should not act as a sponge. For similar reasons the body 12 is designed to have no areas in which water can collect or pool. The exterior of the body 12 can have any desired shape, including child friendly animal shapes. The body 12 is preferably a molded one piece assembly, for ease of manufacturing.

[0033] The body 12 of the spout cover 10 is adapted to receive the spout 14, or faucet, for a bathtub therein. As illustrated in FIGS. 1-4 the spout 14 is generally extending forward from the wall essentially at the top surface of the bathtub. The spout cover 10 is not intended to cover sink faucets or shower heads, which do not present similar safety concerns. For the sole purpose of better explaining the

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construction and operation of the spout cover 10, the front of the spout 14 and spout cover 10 will be at the distal end of the spout 14 spaced from the wall, forward is the direction away from the wall, the back or rear is the end of the spout 14 and spout cover 10 adjacent the wall, rearward is the direction extending toward the wall. The left and right sides of the spout 14 and spout cover 10 are conventional once the front and back have been defined. The top or upper end and the bottom or lower ends are conventional and well understood even without the front and rear designations.

[0034] The body 12 has a front closed cell foam member 16 adapted to engage a forward end of the spout. The body 12 has a closed cell top foam member 18 attached to and extending in a rearward direction from an upper end of the front foam member 16 and adapted to engage an upper surface of the spout 14. The foam body 12 has a left side closed cell member foam member 20 attached to and extending in a downward direction from the top foam member 18 and adapted to engage at least an upper portion of a left side of the spout 14. The left side foam member 20 is further attached to the front foam member 16. In a similar fashion, the body 12 includes a right side closed cell foam member 22 attached to and extending in a downward direction from the top foam member 18 and adapted to engage at least an upper portion of a right side of the spout 14, with the right side foam member 22 further attached to the front foam member 16. The body 12 further includes a substantially open bottom between the left side foam member 20 and the right side foam member 22 at distal lower ends thereof for a substantial length of the spout 14 as shown in the figures.

[0035] The body 12 is essentially a three sided, open bottom cover around the spout 14. The body 12 should have the general shape of the spout 14 but should be flexible, or malleable, enough to be fit tightly onto a variety of spout configurations. A "thick" compressible foam construction for the members 16, 18, 20 and 22 will accommodate this, with the "thick" being relative to the general wall thickness of the spout walls. Preferably the body 12 will be at least 0.375" and preferably at least 0.6" thick. This thick compressible foam construction provides the desired impact resistance and the secure engagement with the surface of the spout 14.

[0036] The spout cover 10, as shown, also includes a temperature display 24 which will receive a temperature signal from a sensor (not shown) in the water stream of the spout 14 to quickly and easily display water temperature to the operator.

[0037] The bathtub spout cover 10 further includes one attaching hook and loop type strap 26 coupled to the body 12 at a rearward end of the body 12 as shown. The strap 26 is adapted to be secured around, i.e. encircling, the spout 14, generally as shown. The strap 26 is preferably an adjustable strap and may include a buckle 30 and hook and loop type fastener elements to secure the strap 26 once tightened, as known in the strap art. In operation the leading end of the strap 26 is fed through the buckle 30, pulled to a taut position and folded back on itself to a secured position with the hook and loop type fasteners. Other strap configurations are possible, such as an elastic band, ratchet type tightening member, a tie down strap, or the like. The secure attachment of the strap 26 is believed to increase the frictional engagement

between the body 12 and the spout 14, making premature or unintended removal of the spout cover 10 less likely.

[0038] The foam body 12 includes a high friction surface adjacent the spout 14 and has a relatively high area of contact between the cover 10 and the spout 10, namely a minimum of at least 1½ square inches, preferably at least 2 square inches, and more preferably at least 5 square inches of contact between the spout 14 and the spout cover 10 when installed. Preferably the foam body 12 has a static coefficient of friction on the spout 14 of at least 0.7 and more preferably at least 0.9. The body 12 is designed to essentially conform to the spout 14, whereby the area of contact between the body 12 and the spout 14 is close to the surface area of the top of the spout 14, the front of the spout 14 and the portions of the side covered by the left and right side 20 and 22. Increasing or maximizing the area of contact between the spout 14 and the body 12 will increase the frictional engagement therebetween, particularly when the strap 26 is tightened, and will securely hold the spout cover 10 in position.

[0039] The bathtub spout cover 10 according to the present invention includes a diverter valve access opening 32 in the top member 18 adapted to allow access to and operation of a diverter valve 34 of the spout 14 when the spout cover 10 is installed. The top member 18 is higher, at least at the opening 32, than the diverter valve 34 with the valve 34 in the lower (off—or faucet) position as shown. In view of the engagement between the body 12 and the spout 14, drainage grooves 36 may be as shown in FIG. 5 provided in the body 12 leading to the opening 32 to prevent standing water from accumulating in the opening 32.

[0040] The spout cover 10 of the present invention as described thereby provides a tool-free attaching system in that the operator need only slide on the spout cover 10 onto the spout 14 and tighten the strap 26 about the spout 14 when the spout cover 10 is fully engaged with the spout 14, i.e. when there is maximum contact between the body 12 and the surface of the spout 14. The tension provided by the strap 26 when secured will increase the frictional engagement between the body 12 and the spout 14, such that no further attachment component, such as adhesive, is needed. Adhesive could, of course, be used to further secure the spout cover 10 of the present invention, in that nothing in the current design prevents such use. The use of such adhesive is not required and makes removal of the spout cover 10 by the operator (an intended or authorized removal) more difficult and is generally less preferred by consumers. In this regard the present invention provides an adhesive free and tool free attachment.

[0041] Another embodiment of the present invention is to form the body 12 as inflatable sections wherein the body is slid into place in a non-inflated condition and the diverter opening 32 is aligned and then the spout cover body 12 is inflated by the operator through an accessible valve. In this embodiment the inflation pressure of the body provides the securing frictional engagement and the strap 26 will mainly keep the spout cover 10 from coming up off of the spout 14. In such an inflatable embodiment, an inflation nozzle extension can be provided for the ease of the user due to the awkward location of the spout 14 relative to inflation of the body 12.

[0042] In view of the temperature display 24 there may be a need to place a sensor (not shown) within the water flow

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to achieve accurate measurements of the water temperature. The embodiment in FIGS. 6-13 provides a water guide 40 in the form of a triangular ramp (best shown in FIG. 8). The water from the faucet 14 will engage the water guide 40 and assure that water is flowing over the sensor. Further, below the water guide 40 is a flow guide 42 that will act to effectively create a laminar water flow (i.e. prevent splatter) for a more desirable flow pattern. Other configurations for the guides 40 and 42 are of course possible.

[0043] Whereas particular embodiments of this invention have been described above for purposes of illustration, it will be evident to those skilled in the art that numerous variations of the details of the present invention may be made without departing from the invention as defined in the appended claims. For example, as noted the bath spout of the present invention is not limited to children, it can be useful for elderly or others with special needs. The scope of the present invention is intended to be defined by the appended claims and equivalents thereto.

What is claimed is:

1. A slip on, impact resistant bathtub spout cover comprising a body adapted to receive the spout for a bathtub therein, the body having

- i) a front member adapted to engage a forward end of the spout,
- ii) a top member attached to and extending in a rearward direction from an upper end of the front member and adapted to engage an upper surface of the spout,
- iii) a left side member attached to and extending in a downward direction from the top member and adapted to engage at least an upper portion of a left side of the spout, the left side member further attached to the front member,
- iv) a right side member attached to and extending in a downward direction from the top member and adapted to engage at least an upper portion of a right side of the spout, the right side member further attached to the front member, and
- v) a substantially open bottom between the left side member and the right side member at distal lower ends thereof for a substantial length of the spout.

2. The bathtub spout cover according to claim 1 further including at least one attaching strap coupled to the body at a rearward end of the body, wherein the strap is adapted to be secured around the spout.

3. The bathtub spout cover according to claim 2 wherein the strap is an adjustable strap with a buckle and hook and loop type fastener elements.

4. The bathtub spout cover according to claim 1 wherein the body is a foam body that includes a high friction surface adjacent the spout and has at least 1½ square inches of contact between the spout and the spout cover when installed.

5. The bathtub spout cover according to claim 1 wherein the top member includes a diverter valve access opening therein adapted to allow access to and operation of a diverter valve of the spout when the spout cover is installed.

6. The bathtub spout cover according to claim 5 wherein the top member is higher than the diverter valve when the diverter valve is in the off position.

7. The bathtub spout cover according to claim 5 further including at least one attaching strap coupled to the body at a rearward end of the body, wherein the strap is adapted to be secured around the spout.

8. The bathtub spout cover according to claim 7 wherein the strap is an adjustable strap with a buckle and hook and loop type fastener elements.

9. The bathtub spout cover according to claim 7 wherein the body is a closed cell foam and includes a high friction surface adjacent the spout and has at least 2 square inches of contact between the spout and the spout cover when installed.

10. A slip on, impact resistant bathtub spout cover comprising:

- A) an impact resistant body adapted to receive the spout for a bathtub therein; and
- B) at least one attaching strap coupled to the body at a rearward end of the body, wherein the strap is adapted to be secured around the spout.

11. The bathtub spout cover according to claim 10 wherein the body includes a diverter valve access opening therein adapted to allow access to and operation of a diverter valve of the spout when the spout cover is installed.

12. The bathtub spout cover according to claim 10 wherein the strap is an adjustable strap with a buckle and hook and loop type fastener elements.

13. The bathtub spout cover according to claim 10 wherein the body includes a high friction surface adjacent the spout and has at least 2 square inches of contact between the spout and the spout cover when installed.

14. The bathtub spout cover according to claim 10 wherein the body is a foam body having

- i) a front foam member adapted to engage a forward end of the spout,
- ii) a top foam member attached to and extending in a rearward direction from an upper end of the front foam member and adapted to engage an upper surface of the spout,
- iii) a left side foam member attached to and extending in a downward direction from the top foam member and adapted to engage at least an upper portion of a left side of the spout, the left side foam member further attached to the front foam member,
- iv) a right side foam member attached to and extending in a downward direction from the top foam member and adapted to engage at least an upper portion of a right side of the spout, the right side foam member further attached to the front foam member, and
- v) a substantially open bottom between the left side foam member and the right side foam member at distal lower ends thereof for a substantial length of the spout.

15. The bathtub spout cover according to claim 14 wherein the foam body is a closed cell foam and includes a high friction surface adjacent the spout and has at least 2 square inches of contact between the spout and the spout cover when installed.

16. A slip on, impact resistant bathtub spout cover comprising an impact resistant body adapted to receive the spout for a bathtub therein, wherein the body includes a diverter valve access opening therein adapted to allow access to and operation of a diverter valve of the spout when the spout

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cover is installed, wherein the body at the position of the diverter valve access opening is higher than the diverter valve in the downward off position.

17. The bathtub spout cover according to claim 16 wherein the body is a foam body having

- i) a front foam member adapted to engage a forward end of the spout,
- ii) a top foam member attached to and extending in a rearward direction from an upper end of the front foam member and adapted to engage an upper surface of the spout,
- iii) a left side foam member attached to and extending in a downward direction from the top foam member and adapted to engage at least an upper portion of a left side of the spout, the left side foam member further attached to the front foam member,
- iv) a right side foam member attached to and extending in a downward direction from the top foam member and adapted to engage at least an upper portion of a right

side of the spout, the right side foam member further attached to the front foam member, and

- v) a substantially open bottom between the left side foam member and the right side foam member at distal lower ends thereof for a substantial length of the spout.

18. The bathtub spout cover according to claim 16 further including at least one attaching strap coupled to the body at a rearward end of the body, wherein the strap is adapted to be secured around the spout.

19. The bathtub spout cover according to claim 16 further including at least one attaching strap coupled to the body at a rearward end of the body, wherein the strap is adapted to be secured around the spout.

20. The bathtub spout cover according to claim 19 wherein the strap is an adjustable strap with a buckle and hook and loop type fastener elements, and further including drainage grooves in the body extending to the diverter valve access opening.

* * * * *