PORTABLE SPA WITH INTERCHANGEABLE OVERLAY PANELS

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ABSTRACT

The present invention is directed to a portable spa comprising a shell having a plurality of seats and an arrangement of water jet assemblies. At least one overlay panel is removably secured to a portion of the shell by the jet assemblies, wherein the jet assemblies extend through both the overlay panel and the shell. In one embodiment, the overlay panel is secured to an upper portion of a seat. The upper portion of the seat has a receiver that is recessed from the outer surface of the seat and cooperatively dimensioned with the overlay panel. The jet assembly comprises a stem that extends through a shell opening and a panel opening. Each jet assembly includes a sealing element that engages the panel and the shell to seal the shell opening. The jet assembly also includes a securing element that provides a clamping force to secure the overlay panel against the shell. In an installed position, the overlay panel is secured against the receiver and the seat by at least one jet assembly that extends through both the panel and the shell.
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CROSS-REFERENCE TO RELATED APPLICATIONS

Pursuant to 35 U.S.C §120, this application claims the benefit of U.S. Provisional Application No. 60/860,728 which was filed on Nov. 22, 2006.

FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

TECHNICAL FIELD

The invention relates to a portable spa featuring interchangeable and colored overlay panels secured to the spa shell by a jet assembly. More specifically, the invention provides a portable spa or hot tub with overlay panels that are removable secured to a portion of the shell, such as a seat, by the jet assembly that extends through both the shell and the panel.

BACKGROUND OF THE INVENTION

Portable spas, or hot tubs as they are also referred to, are well-known and can be found in both residential and commercial settings. Most portable spas include an arrangement of seats, such as recline, captain’s and waterfall seats, and an array of jets, such as directional, deep tissue, bullet, pulsing, and oscillating jets. While such conventional portable spas provide some benefits, they nevertheless have certain limitations. For example, the spa includes a shell that is thermoformed from an acrylic sheet, which may be colored. Once the shell is fabricated, neither the manufacturer nor the end-consumer can effectively alter the shell’s color. Over time, the spa owner may become dissatisfied with the color of the shell and the overall spa. Thus, the long-term aesthetic appeal of conventional spas is limited.

The present invention is directed to provide the limitations of conventional portable spas discussed above and other problems, and to provide advantages and aspects not provided by prior portable spas. A full discussion of the features and advantages of the present invention is deferred to the following detailed description, which precedes with reference to the accompanying drawings.

SUMMARY OF THE INVENTION

The present invention is directed to a portable spa featuring interchangeable and colored overlay panels secured to the spa shell by a jet assembly. More specifically, the invention provides a portable spa or hot tub with overlay panels that are removable secured to a portion of the shell by a jet assembly that extends through both the shell and the panel. In this manner, the portable spa provides a modular approach to the attachment and removal of overlay panels. This capability enables a spa owner or service technician to switch overlay panels as desired, thereby increasing the aesthetic appearance of the spa.

According to an aspect of the invention, an overlay panel that is secured to an upper portion of a seat by at least one jet assembly. The upper portion of the seat includes a receiver that receives the panel in a substantially flush fit with the surrounding portions of the seat. The panel has a plurality of openings, wherein each opening is cooperatively positioned with a shell opening and cooperatively dimensioned with a jet assembly to allow for its reception. In an installed position, the jet assembly extends through both the panel and the shell for securing of the overlay panel to the shell.

According to another aspect of the invention, the jet assembly includes a stem with a water inlet connectable to a water supply conduit, and an air inlet connectable to an air supply conduit. The stem extends through the overlay panel and terminates with a water outlet. An adjustable discharge nozzle, including a bezel, allows for adjustment to the pattern and volume of water discharged from the outlet. The jet assembly further includes a securing element that releasably couples the overlay panel to the shell. The securing element comprises a locking nut and a retaining ring. To facilitate a water-tight seal amongst the overlay panel, the shell and the jet assembly, the jet includes a gasket or seal. The gasket includes an inner lip, an outer lip, an annular channel there between, and a projection segment extending from the inner lip. In an installed position, the channel resides within the panel opening, the inner lip resides between the panel and the spa shell, and the projection segment extends into the shell opening.

Other features and advantages of the invention will be apparent from the following specification taken in conjunction with the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

To understand the present invention, it will now be described by way of example, with reference to the accompanying drawings in which:

FIG. 1 is a perspective view of the portable spa of the invention, showing multiple seats having an overlay panel secured by jet assemblies;

FIG. 2 is a perspective view of a seat of the portable spa of FIG. 1, showing the seat having an overlay panel secured by jet assemblies;

FIG. 3 is a perspective view of seat of the portable spa of FIG. 1, showing the overlay panel exploded from the seat;

FIG. 4 is a front perspective view of a first embodiment of the overlay panel of the invention, showing the overlay panel having a first arrangement of openings that each receive a jet assembly;

FIG. 5 is a front perspective view of a second embodiment of the overlay panel of the invention, showing the overlay panel having a second arrangement of openings that each receive a jet assembly;

FIG. 6 is a front perspective view of a third embodiment of the overlay panel of the invention, showing the overlay panel having a third arrangement of openings that each receive a jet assembly;

FIG. 7 is a cross-section of the portable spa of the invention, showing an installed position wherein the overlay panel is secured to a seat by a jet assembly having a securing element and a sealing element;

FIG. 8 is a perspective view of a sealing element of the portable spa of the invention; and,

FIG. 9 is a side view of the sealing element of the portable spa of the invention.

DETAILED DESCRIPTION

While this invention is susceptible of embodiments in many different forms, there is shown in the drawings and will herein be described in detail preferred embodiments of the invention with the understanding that the present disclo-
sure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to the embodiments illustrated.

[0021] FIGS. 1-7 depict a portable spa 10 including a spa shell 15 in a ready to use state, meaning filled with sufficient amount of water. The shell 15 includes a number of overlay panels 20, an array of jet assemblies 25, and plurality of seats 30. Each overlay panel 20 is secured to a portion of the shell 15 by at least one jet assembly 25 that extends through both the shell 15 and the panel 20. Depending upon the configuration of the spa 10, there are different types of seats 30, including recline/recumbent, captain’s and waterfall seats, and there are a variety of jets 25, such as directional, deep tissue, bullet, pulsing, and oscillating jets. In the embodiment of FIGS. 1-7, the overlay panels 20 are secured to an upper portion of the seat 30, which corresponds to the area where the spa user’s torso rests against. However, the overlay panel 20 may be secured to other portions of the shell 15, including a lower portion of the seat 30, which corresponds to the area where the spa user’s legs rest against. In another embodiment, the shell 15 is configured to have an overlay panel 20 secured to both the upper and lower portion of the seat(s) 30.

[0022] The shell 15 further includes a foot well 35 and a water filter assembly 40 residing behind a protective grill 42. The shell 15 is supported by a support frame that comprises a plurality of horizontal frame members and vertical frame members to which the various operational components that are utilized to operate the spa 10 are coupled. These operational components generally include an ozonator, an electrical connection interface, a control panel, a heater assembly, and at least one pump. The control panel includes a microprocessor for operational control of the spa, including the components. These components reside in a cavity defined between the support frame and the shell 15. In general terms, the pump supplies water to the jet assemblies 25 through a line or conduit and a manifold.

[0023] The spa 10 includes multiple seats 30 having an upper portion 45 and a lower portion 50, wherein the upper portion 45 includes a receiver 55 cooperatively dimensioned with the overlay panel 20 for its reception. Thus, the receiver 55 serves as the mounting base or interface area for the overlay panel 20. As mentioned above, the overlay panel 20 may be mounted to other areas of the shell 15 whereby the receiver 55 may be located in other shell areas as well (for example, the leg portion of a seat 30 can include a receiver 55). Referring to FIG. 3, the receiver 55 includes an outer lip 56a and an inner lip 56b, wherein a ridge arrangement 56c is formed there between. As shown in FIGS. 2 and 3, the receiver 55 is located below the removable head rest cushion 57 that can be interchanged or swapped along with the panel 20, such that the cushion 57 and the panel 20 are color coordinated. The receiver 55 includes a primary or central surface 58 (see FIG. 3) that is recessed from the outer surface 30a of the seat 30. The shell 15, including the seats 30 and the receiver 55, include an array of blanks that are ported during the manufacturing process to create a shell opening 17 for insertion of the jet assembly 25. Accordingly, an arrangement of openings 17 reside within the receiver 55, while another arrangement of openings 17 are located in other portions of the shell 15 and seat 30, external to the receiver 55.

[0024] FIGS. 1, 2 and 7 show the overlay panel 20 in an installed position P1, wherein the jet assemblies 25 secure the panel 20 to the seat 30. Each jet 25 extends through both the panel 20 and the shell 15 in the installed position P1. The panel 20 has a plurality of openings 22, wherein each opening 22 is cooperatively positioned with a shell opening 17 and cooperatively dimensioned with the jet 25 to allow for its reception. Referring to FIGS. 2-6, the panel 20 has various sized openings 22 that define an arrangement of opening 22 to accommodate the different sized jets 25. For example, the openings 22 can be from 2-5 inches in diameter, and different sized openings 22 can be in the same panel 20 (as shown in the Figures). The panel 20 includes a recessed flange 23 around the opening 22 to aid with the insertion and/or positioning of the jet assembly 25. Further, the panel 20 has a peripheral lip 24 along its periphery. Although the panel 20 is shown with a width that tapers from top to bottom, the dimensions of the panel 20 may vary. However, because the panel 20 is joined to the shell 15, the panel 20 preferably has a configuration that is consistent with the configuration of the receiver 55. The overlay panel 20 is substantially flush with the seat surface 30a, such that there are no intrusive seams or ridges which may diminish the enjoyment and comfort of the spa 10. The overlay panel 20 may be formed from the same material, such as acrylic, used to form the shell 15.

[0025] As shown in FIG. 7, the jet assembly 25 includes a main body portion or stem 65 with a water inlet 70 connectable to a water supply conduit 71, and an air inlet 75 connectable to an air supply conduit 76. Although shown as having a generally “L-shaped” configuration, the stem 65 can have a linear configuration. The stem 65 extends through the overlay panel 20 and terminates with a water outlet 80. An adjustable discharge nozzle 85 and a baffle 87 allow for adjustment to the pattern and volume of water discharged from the outlet 80. Thus, the stem 65 defines an internal passageway for the flow of air-injected water. The jet assembly 25 further includes a securing element 85 that helps to releasably couples the overlay panel 20 to the shell 15. Preferably, the securing element 85 resides behind the shell 15 and the panel 20 and within the cavity to provide a clamping force to the panel 20 against the shell 15. In one embodiment, the securing element 85 comprises a locking nut 90 and a retaining ring 95. In another embodiment, the ring 95 is omitted and the nut 90 engages an inner surface of the shell 15. Prior to the outlet 80, the stem 65 includes a flange 92 with an increased diameter. Preferably, the flange 92 includes external threads that engage internal threads of the nut 90. To facilitate a water-tight seal amongst the overlay panel 20, the shell 15 and the jet assembly 25, the jet 25 includes a sealing element, such as an elastomeric gasket 100 (see FIGS. 7-8a, b). As explained below, the gasket 100 is positioned between the panel 30, the shell 15 and the jet assembly 25 to seal the shell opening 17. Referring to FIGS. 7-8a, b, the gasket 100 includes an inner lip 105, an outer lip 110, an annular channel 115 there between, and a projection segment or finger 117 extending from the outer lip 110. The projection segment 177 extends transversely, preferably substantially perpendicular, from the outer lip 110. Alternatively, the projection 117 is omitted from the gasket 100.

[0026] FIGS. 1, 2 and 7 shows the spa 10 in an installed position P1, wherein the panel 20 is secured against the receiver 55 and the shell 10, namely the seat 30, by at least one jet assembly 25 that extends through there. Specifically, an outer surface 20a of the panel 20 faces toward towards an inner surface 55a of the receiver 55 and is secured in the an installed position P1 by at least one jet assembly 25. Referring to FIG. 7 and working left to right, the outlet flange 120 of the
The portable spa of claim 4, wherein the jet assembly comprises a stem that extends through a shell opening and a panel opening.

6. The portable spa of claim 5, wherein the stem includes a water inlet, an air inlet and an outlet, and wherein the inlets collectively form an internal passageway to the outlet.

7. The portable spa of claim 1, wherein the jet assembly includes a sealing element and a securing element that engages the shell to secure the overlay panel in an installed position.

8. The portable spa of claim 7, wherein the sealing element comprises an inner lip, an outer lip, and a channel positioned between the inner and outer lips.

9. The portable spa of claim 8, wherein in the installed position, the inner lip resides between a flange of the jet assembly and the panel, and the outer lip resides between the overlay panel and the shell.

10. The portable spa of claim 8, wherein in the installed position, the channel resides within a panel opening to receive the panel.

11. The portable spa of claim 8, wherein the sealing element further comprises a projection that extends from the outer lip, the projection being received within a shell opening in the installed position.

12. A portable spa comprising:
   a shell having a plurality of seats and a plurality of water jet assemblies;
   at least one overlay panel; and,
   wherein in an installed position, at least one water jet assembly extends through both the overlay panel and the shell to removably secure the panel to the shell.

13. The portable spa of claim 12, wherein the overlay panel is secured to a recessed receiver of a seat, wherein the receiver is cooperatively dimensioned with the overlay panel.

14. The portable spa of claim 12, further comprising a securing element that provides a clamping force against the shell to secure the overlay panel in the installed position.

15. The portable spa of claim 12, further comprising a sealing element including an inner lip, an outer lip, and a channel positioned between the inner and outer lips.

16. The portable spa of claim 15, wherein in the installed position:
   the inner lip resides between a flange of the jet assembly and the panel;
   the channel resides within a panel opening to receive the panel; and,
   the outer lip resides between the overlay panel and the shell.

17. The portable spa of claim 16, wherein the sealing element further includes a projection that extends from the outer lip, the projection being received within a shell opening in the installed position.

18. A portable spa comprising:
   a shell having a plurality of seats and an arrangement of water jet assemblies;
   an overlay panel;
   a securing element; and,
   wherein in an installed position, at least one water jet assembly extends through both the overlay panel and the shell for engagement with the securing element to removably secure the panel to the shell.

19. The portable spa of claim 18, wherein the overlay panel is secured to a recessed receiver of a seat, wherein the receiver is cooperatively dimensioned with the overlay panel.
20. The portable spa of claim C1, wherein the securing element comprises a nut that engages an outer surface of the shell in the installed position.

21. The portable spa of claim 20, further comprising a sealing element including an inner lip, an outer lip, and a channel positioned between the inner and outer lips.

22. The portable spa of claim 21, wherein in the installed position:

   the inner lip resides between a flange of the jet assembly and the panel; the channel resides within a panel opening to receive the panel; and,

   the outer lip resides between the overlay panel and the shell.

23. The portable spa of claim 22, wherein the sealing element further includes a projection that extends from the outer lip, the projection being received within a shell opening in the installed position.

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