CLAIMS

What is claimed is:

1. An ice dispensing system for delivering a selected quantity of ice to a user, the system comprising:
    one or more ice producing machines; and
    an ice transferring subsystem comprising an ice container and an ice dispensing channel, the ice transferring subsystem being configured to:
        vertically move the ice container to reach a selected ice producing machine selected from the one or more ice producing machines for subsequently receiving ice from the selected ice producing machine and depositing the received ice into the ice container;
        vertically move the ice container loaded with the ice to reach the ice dispensing channel;
        unload the ice from the ice container to the ice dispensing channel for delivering the ice to the user; and
        in vertically moving the ice container to reach the selected ice producing machine, adjust a vertical position of the ice container so as to adjust an inner depth of the ice container allowable for storing the ice, wherein the inner depth is determined such that a predicted load of ice carried by the ice container under the determined inner depth is the selected quantity of ice.

2. The system of claim 1, wherein the ice transferring subsystem further comprises:
    a belt for vertically moving the ice container, the ice container being connected to the belt; and
    a motor for driving the belt.

3. The system of claim 2, wherein the ice transferring subsystem further comprises:
    a first wheel and a second wheel positioned higher than the first wheel, the belt being engaged with the first and second wheels and being rotatable synchronously with rotation of each of the first and second wheels, the first

wheel being coupled to the motor such that the motor is arranged to indirectly drive the belt.

4. The system of claim 3, wherein:
   each of the first and second wheels is a gear; and
   the belt is a geared belt.

5. The system of claim 1, wherein the ice container is a bowl.

6. The system of claim 1, wherein the ice container is rectangular in shape.

7. The system of claim 1, wherein the ice transferring subsystem further comprises:
   one or more light detecting modules each for detecting whether a bulk of accumulated ice in the ice container has a height reaching the determined inner depth, each of the one or more light detecting modules~~an individual light detecting module~~ comprising a light source and a photodetector.

8. The system of claim 7, wherein the light source is a light emitting diode (LED) or a laser diode.

9. The system of claim 1 further comprising:
   one or more ice transferring slides configured such that ice generated by the selected ice producing machine slides along a respective ice transferring slide to drop into the ice container.

10. The system of claim 9, wherein the one or more ice transferring slides include a multi-input single-output slide for collecting ice individually from plural ice producing machines and dropping the collected ice into the ice container.

11. The system of claim 9, wherein the respective transferring slide comprises:
   an outlet for outputting the ice received from the selected ice producing machine to the ice container; and
   a plurality of bendable fingers located at the outlet for decelerating the ice before dropping into the ice container.

12. The system of claim 11, wherein the plurality of bendable fingers is made of rubber or silicone rubber.

13. The system of claim 2, wherein the ice transferring subsystem further comprises:
an extended arm rigidly attached to the belt and pivotally connected to the ice container such that the ice container is indirectly, rotatably attached to the belt.

14. The system of claim 2, wherein the ice transferring subsystem further comprises:
a platform on which the ice container is fixed; and
an extended arm rigidly attached to the belt and pivotally connected to the platform such that the ice container is indirectly, rotatably attached to the belt.

15. The system of claim 2, wherein:
the ice transferring subsystem further comprises a hinge, an extended arm and a knob;
the ice container is divided into an upper part and a lower part, the upper part being attached to the belt through the hinge such that the upper part is rotatable about the hinge, the lower part being rigidly attached to the belt such that the lower part is not rotatable, the upper part being hollow for storing ice, the upper part having an opening on a bottom side of the upper part to thereby allow the ice to be unloaded through the opening, the lower part being used for blocking the opening when the upper and lower parts are aligned;
the knob is located around an inlet of the ice dispending channel; and
the knob, the extended arm and the ice container are arranged such that when the extended arm and the ice container are upwardly moved by the belt and when the extended arm is blocked by the knob, the upper part is rotated about the hinge to reveal the opening, causing the ice loaded in the upper part to be unloaded into the inlet of the ice dispensing channel through the opening.

16. The system of claim 1, wherein the ice transferring subsystem further comprises:
a strip mounted on the ice container; and
a switch configured to be triggered by the strip, the switch being installed at a location defining a reference start-up level for the ice container, whereby the

ice container is determined to be located at the reference start-up level when the strip triggers the switch.

17. The system of claim 16, wherein the switch is a mechanical switch.

18. The system of claim 16, wherein the switch is a photoelectric switch.

19. The system of claim 18, wherein the strip is made of plastic.

20. The system of claim 1, wherein the ice transferring subsystem further comprises one or more ultraviolet (UV) light sources arranged to irradiate the ice container for discouraging pathogen incubation inside the ice container.

21. The system of claim 1 further comprising:

a control and power module for controlling the system and supplying electrical power thereto.

22. The system of claim 1 further comprising:

one or more computing processors for controlling the one or more ice producing machines and the ice transferring subsystem.

23. The system of claim 22, wherein the one or more computing processors are housed in a control and power module used for controlling the system and supplying electrical power thereto.

24. The system of claim 1 further comprising:

a shaved ice machine for shaving ice into crushed form, the shaved ice machine having an ice-receiving slide for receiving ice, and an ice-discharging slide for outputting ice in crushed form;

wherein the ice transferring subsystem is further configured to:

after the ice received from the selected ice producing machine is deposited into the ice container, vertically move the ice container to reach the ice-receiving slide and unload the ice from the ice container to the shaved ice machine via the ice-receiving slide; and

vertically move the ice container from the ice-receiving slide to reach the ice-discharging slide for allowing the ice in crushed form to be deposited from the shaved ice machine into the ice container before the ice container is vertically moved to reach the ice dispensing channel.

25. The system of claim 1, wherein the ice transferring subsystem is formed with a plurality of individual ice dispensing channels for delivering the ice to different locations, the ice dispensing channel being user-selectable and being selected from the plurality of individual ice dispensing channels.

26. The system of any of the preceding claims, wherein:

the ice transferring subsystem is further configured to:

in vertically moving the ice container loaded with the ice to reach the ice dispensing channel, elevate the loaded ice container from the selected ice producing machine to the ice dispensing channel when the selected ice producing machine is positioned lower than the ice dispensing channel, thereby allowing the user to conveniently procure the ice from the ice dispensing channel without a need to install the selected ice producing machine at a higher position than the ice dispensing channel in utilizing gravity for ice delivery;

and

at least one of the one or more ice producing machines is lower than the ice dispensing channel in position.

~~27. An ice dispensing system for delivering a selected quantity of ice to a user, the system comprising:~~

~~one or more ice producing machines; and~~

~~an ice transferring subsystem comprising an ice container and an ice dispensing channel, the ice transferring subsystem being configured to:~~

~~vertically move the ice container to reach a selected ice producing machine selected from the one or more ice producing machines for subsequently receiving ice from the selected ice producing machine and depositing the received ice into the ice container;~~

~~vertically move the ice container loaded with the ice to reach the ice dispensing channel;~~

~~unload the ice from the ice container to the ice dispensing channel for delivering the ice to the user; and~~

~~in vertically moving the ice container loaded with the ice to reach the ice dispensing channel, elevate the loaded ice container from the selected ice producing machine to the ice dispensing channel when the selected ice producing machine is positioned lower than the ice dispensing channel, thereby allowing the user to conveniently procure the ice from the ice dispensing channel without a need to install the selected ice producing machine at a higher position than the ice dispensing channel in utilizing gravity for ice delivery;~~

~~wherein at least one of the one or more ice producing machines is lower than the ice dispensing channel in position.~~