Claims:

1. Apparatus for charging a heat exchange unit secured within a can for receiving a food or beverage to be cooled, said heat exchange unit having compacted adsorbent material therein, with a gas under pressure comprising:

a cooling tunnel;

a source of refrigerant connected to said cooling tunnel to maintain the temperature inside said cooling tunnel at approximately five degrees Celsius;

a conveyor bed for receiving a plurality of cans having said heat exchange unit therein movably positioned within said cooling tunnel;

a plurality of gassing head cylinders positioned to simultaneously engage at least a portion of said heat exchange units to inject a gas under pressure into said at least a portion of said heat exchange units to be adsorbed by said compacted adsorbent material;

a source of gas under pressure connected to said plurality of gassing head cylinders; and

said gassing head cylinders being connected to said at least a portion of said heat exchange units and injecting gas under pressure therein for a predetermined period of time sufficient to fully charge said at least a portion of said heat exchange units with adsorbed gas under pressure and said conveyor bed with said gassing head cylinders connected to said heat exchange unit is maintained stationary within said cooling tunnel for said predetermined time.

2. Apparatus as defined in Claim 1 wherein said source of refrigerant is liquid carbon dioxide.

3. Apparatus as defined in Claim 2 wherein said gas under pressure is carbon dioxide.

4. Apparatus as defined in Claim 3 wherein said conveyor bed is moved through said cooling tunnel and said gassing head cylinders are connected only to said at least a portion of said heat exchange units and injecting said carbon dioxide gas while being moved for said predetermined period of time.

5. A method of charging adsorbent material contained within a heat exchange unit comprising:

providing a plurality of containers for received a food or beverage to be cooled;

providing a plurality of heat exchange unit (HEU) cans containing a compacted adsorbent material therein;

assembling an HEU can with each container;

inserting the plurality of assembled containers into an enclosed area;

attaching a source of carbon dioxide (CO_2) gas under pressure to each HEU and continuously injecting CO_2 gas into said HEU for a predetermined period of time for adsorption thereof by the adsorbent material;

continuously flowing a refrigerant through said enclosed area to remove heat generated by the exothermic reaction of adsorption of the CO_2 gas for a predetermined period of time to permit complete adsorption of the CO_2 gas by said adsorbent material; and

removing said source of CO_2 gas from each HEU.

6. A method as defined in Claim 5 wherein the pressure of said CO_2 gas is approximately 15 bars.

7. A method as defined in Claim 6 wherein said predetermined time is between 20 and 30 minutes.

8. A method as defined in Claim 7 wherein the refrigerant is liquid CO_2 and said enclosed area is maintained at approximately five degrees Celsius.

Claims:

1. Apparatus for charging a heat exchange unit secured within a can for receiving a food or beverage to be cooled, said heat exchange unit having compacted adsorbent material therein, with a gas under pressure comprising:

a cooling tunnel;

a source of refrigerant connected to said cooling tunnel to maintain the temperature inside said cooling tunnel at approximately five degrees Celsius;

a conveyor bed for receiving a plurality of cans having said heat exchange unit therein movably positioned within said cooling tunnel;

a plurality of gassing head cylinders positioned to simultaneously engage at least a portion of said heat exchange units to inject a gas under pressure into said at least a portion of said heat exchange units to be adsorbed by said compacted adsorbent material;

a source of gas under pressure connected to said plurality of gassing head cylinders; and

said gassing head cylinders being connected to said at least a portion of said heat exchange units and injecting gas under pressure therein for a predetermined period of time sufficient to fully charge said at least a portion of said heat exchange units with adsorbed gas under pressure.

2. Apparatus as defined in Claim 1 wherein said source of refrigerant is liquid carbon dioxide.

3. Apparatus as defined in Claim 2 wherein said gas under pressure is carbon dioxide.

4. Apparatus as defined in Claim 3 wherein there is a gassing head cylinder for each can having a heat exchange unit therein positioned on said conveyor bed and said conveyor bed with said gassing head cylinders connected to said heat exchange units is maintained stationary within said cooling tunnel for said predetermined time.

5. Apparatus as defined in Claim 3 wherein said conveyor bed is moved through said cooling tunnel and said gassing head cylinders are connected only to said at least a portion of said heat exchange units and injecting said carbon dioxide gas while being moved for said predetermined period of time.

6. A method of charging adsorbent material contained within a heat exchange unit comprising:

providing a plurality of containers for received a food or beverage to be cooled;

providing a plurality of heat exchange unit (HEU) cans containing a compacted adsorbent material therein;

assembling an HEU can with each container;

inserting the plurality of assembled containers into an enclosed area;

attaching a source of carbon dioxide (CO_2) gas under pressure to each HEU and continuously injecting CO_2 gas into said HEU for a predetermined period of time for adsorption thereof by the adsorbent material;

continuously flowing a refrigerant through said enclosed area to remove heat generated by the exothermic reaction of adsorption of the CO_2 gas for a predetermined period of time to permit complete adsorption of the CO_2 gas by said adsorbent material; and

removing said source of CO_2 gas from each HEU.

7. A method as defined in Claim 6 wherein the pressure of said CO_2 gas is approximately 15 bars.

8. A method as defined in Claim 7 wherein said predetermined time is between 20 and 30 minutes.

9. A method as defined in Claim 8 wherein the refrigerant is liquid CO_2 and said enclosed area is maintained at approximately five degrees Celsius.