dominant door and carries a feature (e.g., a lip) 240 that prevents opening of the other door 28B when the dominant door is closed. In such a situation, the supplemental lock may lock only the dominant door. The exemplary implementation places the supplemental lock 230 as an electronically or electrically actuated mechanism adjacent the existing or baseline catch to supplement the existing catch by locking the handle and/or rod in addition to the latching provided by the catch.

[0060] Alternative supplemental locks may replace the existing or baseline catch and serve the function thereof in addition to the safety functions described below.

[0061] An exemplary supplemental lock 230 is in wireless communication with the controller and, therefore, includes its own battery and electronics (e.g., including a wireless receiver) and an actuator 250 (FIG. 6) for shifting a locking member 252 (e.g., a pin) between a locking condition and an unlocking condition (unlocking or retracted shown in solid line in FIG. 6 with locking or extended in broken line). By having its own battery, separate from the main battery 66, operation of the supplemental lock can be assured even if the main battery discharges (as is often the case where the container sits unused and disconnected from external power). For this purpose the battery may be a long life disposable battery such as an alkaline battery. For similar reasons, this battery or similar batteries may power the detector 232, other associated safety equipment, and the controller 234 as is discussed further below.

[0062] Exemplary actuators include servomotors or solenoids and may be formed for worm drive, gear drive, linear drive, or the like. An exemplary locking condition is an extended condition extending through apertures in the handle and catch. An exemplary unlocking condition is a retracted condition.

[0063] As a practical matter, the controller is more likely to be in hardwired communication with the detector rather than wireless communication. The controller may conveniently be located in the equipment box in reasonable wiring proximity to a detector in the box. The controller may have its own battery 258 (FIG. 5). Similarly, a detector wirelessly coupled to the controller may have its own battery and radio electronics. There may be multiple detectors coupled to a given controller.

[0064] Upon detection of the presence of the refrigerant (or a threshold level thereof) by the detector, the controller may cause the supplemental lock 230 actuator 250 to shift the locking member 252 from its unlocking condition to its locking condition. One or more of several unlocking options are possible, including: unlocking when the detector no longer detects threshold refrigerant; unlocking in response to a user-entered override (e.g., via a

CLAIMS

1. A refrigerated transport system (20) comprising:

a body (22) enclosing a refrigerated compartment and comprising:

a pair of side walls (22C, 22D);

a top (22A);

a bottom (22B); and

one or more doors (28A, 28B);

a refrigeration system (30) comprising:

a charge of refrigerant;

a compressor (36) for driving the refrigerant along a refrigerant flowpath (34);

a first heat exchanger (38) along the refrigerant flowpath and positioned to reject heat to an external environment in a cooling mode; and

a second heat exchanger (42) along the refrigerant flowpath and positioned to absorb heat from the refrigerated compartment in the cooling mode;

a detector (232) for detecting leakage of the refrigerant; and

a locking mechanism (230; 300) having a first condition locking the doors and a second condition allowing opening of the doors and coupled to the detector, the locking mechanism comprising a locking member that is driven by its own weight to shift from the first condition to the second condition, and the locking mechanism being coupled to the detector to shift from the second condition to the first condition responsive to detection by the detector of the refrigerant outside the refrigerant flowpath.

2. The refrigerated transport system of claim 1, further comprising:

a dilution gas source (602) coupled to the detector.

3. The refrigerated transport system of claim 2, wherein:

the dilution gas consists essentially of nitrogen.

4. The refrigerated transport system of claim 2, further comprising:

an automatic valve (612) coupled to control flow from the dilution gas source (602).

5. The refrigerated transport system of claim 4, wherein:

the dilution gas source is coupled via the automatic valve (612) to one or more outlets (610) positioned along an equipment box duct.

6. The refrigerated transport system of claim 4, wherein:

the dilution gas source comprises a cylinder (604) having a first outlet and a second outlet;

a first said automatic valve is positioned to control flow from the first outlet and a second said automatic valve is positioned to control flow from the second outlet.

7. The refrigerated transport system of claim 4, further comprising:

a controller (64; 234) coupling the detector to the automatic valve (612) to control flow from the dilution gas source (602).

8. The refrigerated transport system of claim 1, further comprising:

a first valve (340) along the refrigerant flowpath and a second valve (341) along the refrigerant flowpath and coupled to the detector.

9. The refrigerated transport system of claim 8 wherein:

the first valve and the second valve are normally closed valves coupled to the detector to close responsive to detection by the detector of the refrigerant outside the refrigerant flowpath.

10. The refrigerated transport system of claim 1, further comprising:

a battery-powered ventilation fan.

11. The refrigerated transport system of claim 1, further comprising:

a first electric fan (50) positioned to drive an air flow across the first heat exchanger; and

a second electric fan (52A, 52B) positioned to drive a recirculating air flow from the refrigerated compartment across the second heat exchanger.

12. The refrigerated transport system of claim 1, further comprising:

a battery (258), distinct from a battery (66) of a main controller (64), if any, and coupled to the detector.

13. The refrigerated transport system of claim 1, wherein:

a refrigerant charge of the refrigeration system has a flammability classification of at least mildly flammable.

14. The refrigerated transport system of claim 1, being a refrigerated intermodal shipping container wherein:

the one or more doors comprise a pair of hinged doors at a first end of the body; and

the refrigeration system is mounted in an equipment box at a second end of the body opposite the first end.

15. The refrigerated transport system of claim 1, wherein:

the detector comprises a non-dispersive infrared sensor.

16. A refrigerated transport system (20) comprising:

a body enclosing a refrigerated compartment and comprising:

a pair of side walls;

a top ;

a bottom; and

one or more doors;

a refrigeration system comprising:

a charge of refrigerant;

a compressor for driving the refrigerant along a refrigerant flowpath;

a first heat exchanger along the refrigerant flowpath and positioned to reject heat to an external environment in a cooling mode; and

a second heat exchanger along the refrigerant flowpath and positioned to absorb heat from the refrigerated compartment in the cooling mode;

a detector for detecting leakage of the refrigerant; and

a locking mechanism:

having a first condition locking the doors and a second condition allowing opening of the doors;

coupled to the detector coupled to the detector to shift from the second condition to the first condition responsive to detection by the detector of the refrigerant outside the refrigerant flowpath; and

comprising:

a plurality of locking bars mounted for respective rotation about respective central vertical axes;

a plurality of handles, each mounted to a respective associated one of said locking bars, each handle having a locked condition corresponding to a locked condition of the respective associated locking bar;

a locking member shiftable between a locking condition and an unlocking condition, in the locking condition preventing shifting of the handle from the locked condition to the unlocked condition; and

an actuator for shifting the locking member between the locking condition and the unlocking condition and coupled to the detector.

17. The refrigerated transport system of claim 16 wherein:

the locking member locking condition is an extended condition and the locking member unlocking condition is a retracted condition.

18. The refrigerated transport system of claim 17 wherein:

the locking mechanism further comprises, for at least one of the handles, a releasable catch for holding the handle in the locked condition; and

in the extended condition, the locking member blocks release of the catch.

19. A refrigerated transport system comprising:

a body enclosing a refrigerated compartment and comprising:

a pair of side walls;

a top;

a bottom; and

one or more doors;

a refrigeration system comprising:

a charge of refrigerant;

a compressor for driving the refrigerant along a refrigerant flowpath (34);

a first heat exchanger along the refrigerant flowpath and positioned to reject heat to an external environment in a cooling mode; and

a second heat exchanger along the refrigerant flowpath and positioned to absorb heat from the refrigerated compartment in the cooling mode;

a detector for detecting leakage of the refrigerant; and

a locking mechanism:

having a first condition locking the doors and a second condition allowing opening of the doors;

coupled to the detector coupled to the detector to shift from the second condition to the first condition responsive to detection by the detector of the refrigerant outside the refrigerant flowpath; and

comprising a supplemental lock within the compartment.

20. The refrigerated transport system of claim 19 wherein:

the supplemental lock has a falling bar locking member and an actuator for releasing the locking member to rotate downward under the weight of the locking member.