MULTICOMPARTMENT LOCKING ASSEMBLY

ABSTRACT: An elongated housing having a plurality of aligned doors capable of sliding in a horizontal position to open and close various compartments of the housing. A locking assembly capable of simultaneously locking all of the doors in the closed position. If desired, some doors can be maintained in the unlocked position while cooperating with an inwardly extending ledge for maintaining the compartment closed.
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This invention relates to a housing having a plurality of aligned doors with a locking assembly for simultaneously locking all of the doors. Frequently, operators using elongated refrigerated boxes having a plurality of sliding doors therein, desire to lock all of the doors. Providing each of the individual doors with a locking assembly is not only expensive, but it is inconvenient in keeping up with all of the keys for the individual doors. It is also desirable that an operator can lock some of the doors preventing access to certain of the compartments, while allowing other doors to be unlocked. The doors that remain unlocked should be able to be closed, preventing cold air from escaping from the refrigerator box. In many states when such multipartment boxes are used for cooling various types of drinks it is often desired that on particular days and after certain hours of other days that the compartment in which alcoholic beverages are maintained be locked, preventing access thereto.

Accordingly, it is an important object of the present invention to provide a multipartmental- door locking assembly having a plurality of doors with a locking assmblg wherein, all of the compartments can be simultaneously locked.

Another important object of the present invention is to provide a refrigerated box which has a plurality of multipartsments and doors with a locking assembly wherein a metal to metal contact is prevented so as to minimize condensation around the locking assembly.

Another important object of the present invention is to provide a multipartmentalized locking assembly which has a plurality of sliding doors with a locking assembly which permits some of the doors to be locked, while allowing others to be in a partially closed position but unlocked.

The construction designed to carry out the invention will be hereinafter described, together with other features thereof.

The invention will be more readily understood from a reading of the following specification, and by reference to the accompanying drawings forming a part thereof, wherein an example of the invention is shown and wherein:

FIG. 1 is a perspective view illustrating a multipartment box, with parts broken away, to show a locking assembly associated therewith.

FIG. 2 is a cross-sectional view taken along line 2-2 of FIG. 1, illustrating a sliding door in a partially closed position resting on a ledge for maintaining the refrigerated air within the box.

FIG. 3 is an enlarged sectional view taken along line 3-3 of FIG. 1, illustrating a portion of the locking assembly and, in particular, an actuating member and a cam which rotates the actuating member to lock the doors and

FIG. 4 is an enlarged fragmentary view illustrating the cam and actuating member forming part of the locking assembly.

The drawing illustrates a multipartmentalized locking housing A having a plurality of sliding doors B for providing access to respective compartments of the housing A. Each of the doors B is carried by the housing A for allowing the doors to move from a closed position to an open position. A locking assembly is provided for said housing that is capable of simultaneously locking all of the doors B in a closed position against a main body portion of the housing. The locking assembly includes an elongated rod C extending across the housing adjacent each of the doors B. Bracket means are carried on the main body of the housing A for journaling the elongated rod C for permitting the rod to rotate therein. A retaining member D is carried by each of the doors B adjacent the elongated rod C. A plurality of latching members E are spaced along the rod adjacent a respective portion of the housing. An actuating member F is carried by the rod in fixed relationship therewith. A cam G is rotatably carried by the housing A for engaging the actuating member F when rotated in one direction to rotate the elongated rod C, and the latching members E into engagement with the retaining members D for locking the doors B in a closed position. An inwardly extending ledge H which extends across the front portion of the housing perpendicular to the direction of the movement of the doors B is provided for supporting a front portion of the doors while in a partly closed position. In both the closed and partially closed position refrigerated air is prevented from escaping from the housing.

The multipartmental housing is rectangular in shape, and is formed by sidewalls 10 and 11 which are joined by end walls 12 and 13, respectively. A raised portion 14 extends the length of the housing and approximately one-half way across the top so that the doors 14 can slide out of the compartment. Each of the walls has an inner wall 15a, which is spaced from the outer wall 15 through 13, respectively, so that insulation can be carried therebetween. As can be seen in FIGS. 1 through 3, the sidewall 10 inclines upwardly and inwardly as at 16 and terminates in a downwardly extending vertical wall 17. Adjacent the bottom of the vertical wall 17 is a ledge H which extends inwardly for supporting an inner end of the door B. It is also noted that insulation material 15 is carried between the spaced walls 18 and 19, respectively, of the door.

The doors B ride on opposed tracks 20 which are supported on dividers 21 extending from the front wall 10 of the housing rearwardly to the backwall. The tracks 20 adjacent each end of the housing is supported on the end walls 12 and 13, respectively.

It is desired to provide a locking assembly wherein all of the doors B can be locked simultaneously. The locking assembly includes a plurality of spaced brackets 22 which are attached to the inner wall 11a by any suitable means, such as screws 23, and has inwardly extending flanges 24 with holes therein for accommodating grommets 25. The rod C is journaled within these grommets for allowing such to rotate. A retaining member D is carried on the bottom wall 19 of each of the doors and includes a channel shaped portion 25 which is secured to the door B by means of a bolt 26 extending therethrough and the door into a handle 27 carried on top of the door for opening and closing the door. Integral with one side of the channel 25 is a horizontal flange 28 which terminates in a downwardly and rearwardly inclined member 29 which cooperates with the latching member E for locking the door in the closed position illustrated in FIG. 3. The latching member includes an upwardly and forwardly inclined member 30 which is integral with said actuating member F. The actuating member includes a lift plate 31 which has one end fixed to the rod C, as by welding or any other suitable means, and the other end extending outwardly therefrom. The end of the lift plate 31 which is attached to the rod, is bent around the rod and is integral with one end of an outwardly extending inclined member 32. As can be seen in FIGS. 3 and 4, the inclined member 32 extends downwardly and has one side 33 sloping off therefrom. Such is to permit the cam G to engage a sloping portion 33 to rotate the rod C in the counterclockwise direction as looking into the drawing in FIG. 3. When the cam G is rotated in the clockwise direction it engages a lifting plate 31 and rotates the rod C in the clockwise direction as looking into the drawing in FIG. 3 raising the latching mechanism into engagement with the retaining member D.

The cam G is elongated with rounded ends so that the outermost rounded end 34 is allowed to engage the sloping surface 33 on the inclined member 32. The other end of the cam member G has a hole therein through which a nonmetallic bolt 35 passes to secure the cam member G to a nonmetallic extension 36. The bolt 35 extends through the extension 36 and is screwed into an end of a tumbler assembly 37. The tumbler assembly 37, in turn, has threads on its outer perimeter so that such can be screwed within a nonmetallic sleeve 38 engaging an outwardly extending flange 39 which fits flush with the inner wall 11a of the housing. It is noted that the tumbler extends through the insulation 15 in the housing and out the outer wall 11, and is secured thereto by a retaining plate 40. The inner end of the tumbler assembly 37 rotates as the key 41 is turned, causing the cam member G to rotate therewith to either latch
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3. The housing as set forth in claim 1, wherein said actuating member includes a lift plate having one end fixed to said rod and the other end extending outwardly therefrom and an outwardly extending inclined member having one end fixed to an side of said rod from said lift plate, and said cam being positioned between said lift plate and said inclined member for engaging said lift member when rotated in one direction to rotate said rod in one direction and to engage said inclined member when rotated in the opposite direction to rotate said inclined member and said rod in the opposite direction for locking and unlocking said doors.

4. A multicompartment housing having a plurality of aligned doors for providing access to respective compartments of said housing, each of said doors carried by said housing for allowing said doors to move from a closed position to an open position, a locking assembly for said housing capable of simultaneously locking all of said doors in said closed position against a main body portion of said housing, said locking assembly including an elongated rod extending across said housing adjacent each of said doors, said housing carrying said elongated rod permitting said rod to rotate therein, a retaining member carried by each of said doors adjacent said elongated rod, a plurality of locking members said actuating member including a lift plate having one end fixed to said rod and the other end extending outwardly therefrom an actuating member carried by said rod and a cam rotatably carried by said housing for engaging said left plate when rotated in one direction to rotate said elongated rod and said locking members into engagement with said retaining members for locking said doors in said closed position.

5. The multicompartment housing as set forth in claim 3, wherein said cam is carried on one end of a nonmetallic extension within said housing, said other end of said extension is carried by a tumbler assembly capable of being rotated by a key, said tumbler assembly being carried within a wall of said housing extending through said housing to the outside thereof only allowing said nonmetallic extension to extend within said housing, whereby a metal to metal relationship is avoided through said nonmetallic extension and said tumbler assembly minimizing condensation.