(No Model.)

A. WEISS & E. F. W. KUNZE.

SHOW CASE AND ICE BOX.

No. 455,915. Patented July 14, 1891.

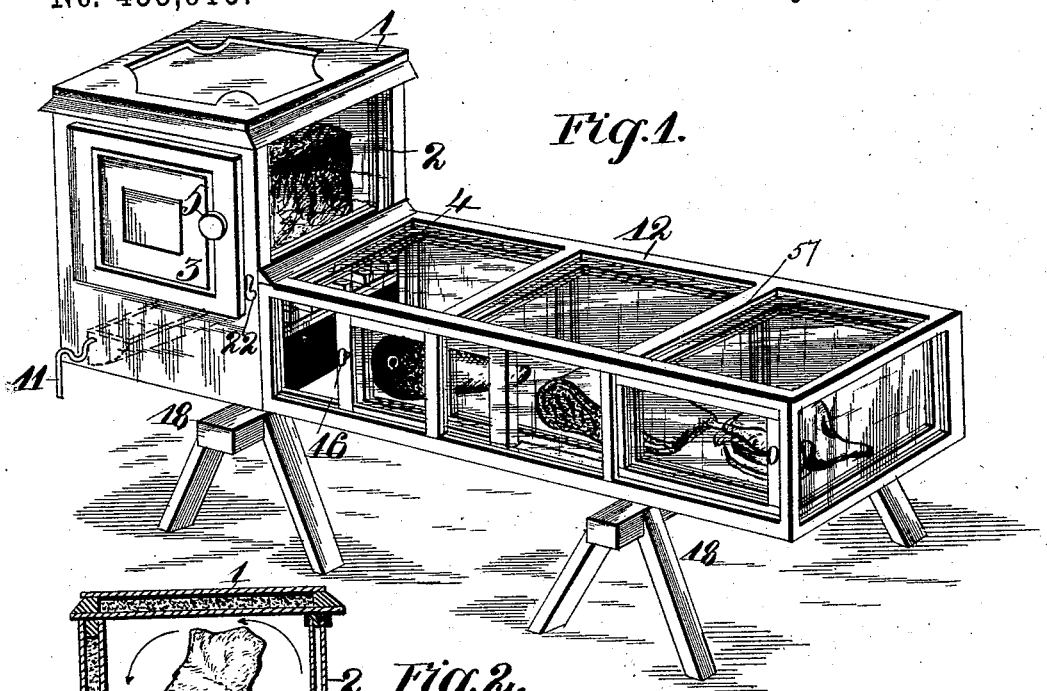

Fig. 1.

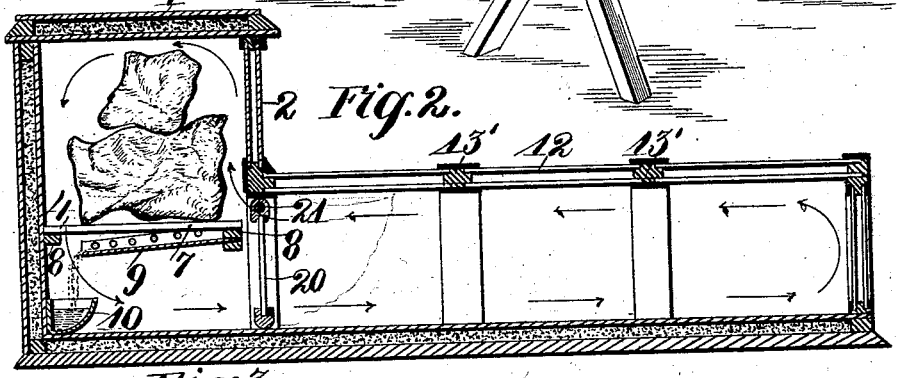

Fig. 2.

Fig. 3.

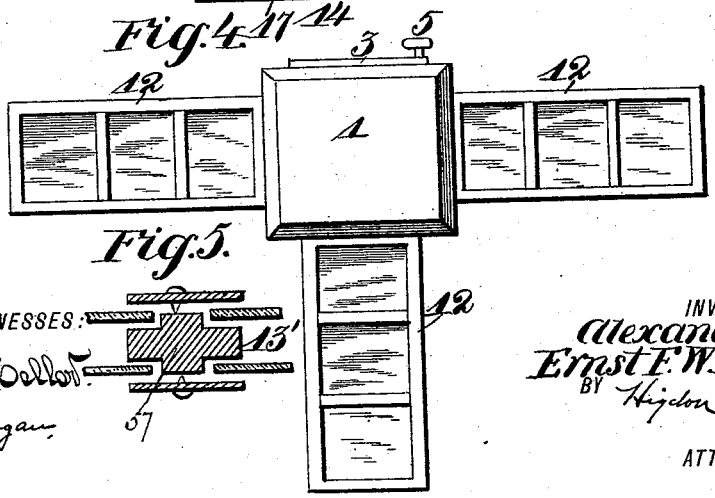

Fig. 4.

Fig. 5.

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ALEXANDER WEISS AND ERNST F. W. KUNZE, OF ST. LOUIS, MISSOURI.

SHOW-CASE AND ICE-BOX.

SPECIFICATION forming part of Letters Patent No. 455,915, dated July 14, 1891.

Application filed November 17, 1890. Serial No. 371,702. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER WEISS, and ERNST F. W. KUNZE, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Refrigerators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to improvements in refrigerators; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claim.

In the drawings, Figure 1 is a perspective view of our invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a longitudinal section of the telescoping doors which we employ in carrying out our invention. Fig. 4 is a modification of our invention, showing a plurality of show-cases arranged around a common ice-box or refrigerator. Fig. 5 is an enlarged cross-section of the supporting-frame of the show-case, showing the manner in which the same is put together.

Referring to the drawings, 1 represents an ice-box or refrigerator, constructed of wood principally, but having one of its exposed or visible sides 2 constructed of glass or any transparent material, so that the contents of the interior of the ice-box or refrigerator can be inspected without opening the door of the same. The glass side or face 2 may form either side of the ice-box, but it is preferably situated adjacent to the show-case. Said glass face or side has double walls, and interposed between which walls is a layer or stratum of air, or any transparent non-heat-conducting material or medium. The remaining sides of the ice-box are made after the ordinary construction of refrigerating-receptacles. Said ice-box or refrigerator is provided with a door 3. Through the space which the said door incloses the ice or refrigerating substance may be inserted and placed in the interior of the said ice-box, and is there supported on ice-rack 4.

5 indicates an operating-knob, by which the door can be opened and closed at the option of the operator.

The ice-rack 4 is composed of a series of bars or strips 7, the ends of which rest on supporting-strips 8, which strips are secured on the insides of the ice-box. Situated directly beneath said ice-rack is a drip-pan or water-shed 9. Three of the sides of said drip-pan are secured to the sides of the ice-box, so as to form water-tight joints. The remaining side of said drip-pan stands ajar from the side of the ice-box to permit the water that gathers on said pan to flow off, and also to permit the cool air generated from the ice to pass out and in the show-case. The melted water that is formed from the ice flows from the drip-pan into a trough or receptacle 10, and is there retained in its liquid state until it becomes warm and then slowly emerges and finds an exit through an inverted siphon or water-trap 11.

12 represents a show-case or transparent receptacle in which the meats, eatables, &c., to be refrigerated are inclosed. Two sides, the top, and one end of said show-case are made of double glass walls, which are separated by a layer or stratum of non-conducting air, which prevents the inclosed substances from becoming heated. Any non-conducting gas may be interposed between the glass walls, such as hydrogen; or in fact any gas in its restrained state has a very small conductivity. The bottom of the show-case is also constructed with double walls, but not essentially transparent, and between the layers of said bottom some non-conducting material or medium should be interposed, such as bran, shavings, sawdust, powdered silica, dry leaves, asbestus, &c. The remaining end of the show-case is left open, and is in communication with the interior space of the ice-box or refrigerator. The cool air generated and given off from the ice, and possessing a great degree of humidity, and consequently an increased specific gravity over that of dry warm air, passes downward from the ice and permeates the interior space of the show-case. (See arrows.) The cool and humid air as it emerges from the ice-box approximately confines itself to the bottom of the show-case while the warm and dry air contained in the show-case passes along and confines itself to the top of the show-case, and is finally received in the ice-box compartment, and is there refrigerated. The sides and top of the

show-case are provided with pieces 57 cruciform in cross-section, on the outer and inner faces of the side arms of which the plates of glass are secured, leaving between them an air-space. The pieces 57 form a part of the frame of the case.

13 13 represent double wall telescoping doors, the upper and lower bars of which are provided with longitudinal grooves 50, adapted to slide upon suitable appropriate tongues 51, formed in the frame of the show-case, and also to slide in between the walls 14 of section 15 of the show-case.

16 represents operating-knobs secured to the telescoping doors 13, by which they can be moved in any desired direction.

18 represents trestles, upon which our invention is exhibited, or it may be placed or used on any support.

A plurality of show-cases can be arranged around an ice-box or refrigerator, as shown in Fig. 4.

20 represents a transparent swinging door, hung on an operating-rod 21, with a handle 22 formed on the end of said rod, so that the door can be operated from on the outside. The object of this door is to throw the inclosed space of the ice-box and show-case into communication whenever desired.

Having fully described our invention, what we claim is—

In a refrigerator, the combination, with an elevated ice-box 1, having an inclined drip-pan 9 therein, of an ice-support 4 above the said drip-pan, a laterally-disposed show-case below the top of the said ice-box and having vertical and horizontal pieces 57 in its side and top, cruciform in cross-section, and having transparent plates secured to the outer and inner faces of the side arms of the said pieces 57 and containing between them a layer of air, the said show-case communicating with the said ice-box above and below the ice-support contained therein, a sliding door for the said show-case, consisting of two thicknesses of transparent material, the said door being adapted to slide between the transparent plates forming the sides of the case, and a pivoted door within the said case adapted to break the connection between the said case and ice-box, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

ALEXANDER WEISS.
ERNST F. W. KUNZE.

Witnesses:
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