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(54) **A freezing/cooling device with holding element for condenser**

(57) Invention relates to a cooling/freezing device which comprises a heat insulated cabinet (10) with a substantially flat rear wall (12); a condenser (20) provided at the rear wall (12) in a spaced manner; at least one handle (30) secured on the rear wall (12) at a vicinity of the condenser (20). At least one holding element (36) is extending from the handle (30) to the condenser (30) to attach condenser (20) to the handle (30).

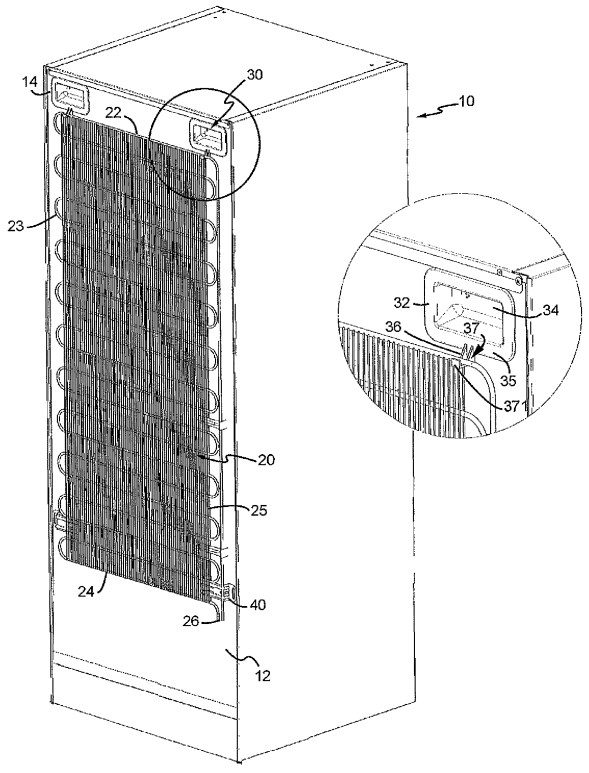

Fig. 1

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Description

TECHNICAL FIELD

[0001] The present invention relates to freezing/cooling devices, particularly for usage in houses, with a fixation mechanism which provides hanging of a planar condenser to a rear wall.

KNOWN STATE OF THE ART

[0002] In freezing/cooling devices with a conventional condenser where a pipe with transverse folding forms a planar structure and which is joint with longitudinal wires which increases the heat transfer surface thereof, the condenser is fixed to the rear wall of the device in a parallel and distanced manner. Thus, air flow is provided which provides efficient heat transfer between the rear wall and condenser.

[0003] In order to provide the fixation of the condenser to the rear wall, a holding element is fixed to the rear wall in an adjacent manner. The fixation part on the holding element is fixed to a pipe of the condenser extending orthogonally or horizontally. Pluralities of holding elements can be provided in pluralities of positions on the rear wall.

[0004] In the US patent US3990262, holding elements in clip form are illustrated which are used for fixation of a conventional condenser to the rear wall of a refrigerator. The holding elements are fixed to a space on the rear wall of the refrigerator by means of a screw. The holding elements carry the condenser and they prevent the movement of the condenser.

BRIEF DESCRIPTION OF THE INVENTION

[0005] The object of the invention is to provide a multifunctional holding piece which provides the connection of the condenser in conventional planar form to the freezing/cooling device rear wall.

[0006] Another object of the invention is to facilitate the fixation of conventional condenser holding elements to the freezing/cooling device rear wall.

[0007] In order to realize the abovementioned objects, the present invention is a cooling/freezing device, particularly used in houses, comprising a heat insulated cabinet with a substantially flat rear wall; a condenser provided at the rear wall in a spaced manner. In a preferred embodiment of the present invention, there is at least one handle secured on the rear wall at a vicinity of the condenser and there is at least one holding element which is extending from the handle to the condenser to attach condenser to the handle. Thus, a user can carry the cabinet by means of the handle during transportation and on the other hand, while cooling is being realized, the handle carries the condenser.

[0008] In a preferred embodiment of the present invention, the holding element is integral to the handle. Thus, for instance in the plastic injection mould, the formation of both the handle and the holding element carrying the condenser can be realized simultaneously.

[0009] In a preferred embodiment of the present invention, holding element is having a hook by which a pipe of the condenser is received. In this case, for instance the pipe of the condenser can carry the condenser by being received by the hollow surface formed by the hook.

[0010] In a preferred embodiment of the present invention, the holding element is disposed at a vicinity of the upper end of the condenser. By means of this, the holding element can carry the weight of the condenser in a balanced manner.

[0011] In a preferred embodiment of the present invention, a free end of the hook is bent to upper direction. This situation prevents the removal of the condenser pipe part from the hook in an easy manner, which can occur in case of a vibration or in case of an intervention.

[0012] In a preferred embodiment of the present invention, the handle is having a body plugged to a cavity on the rear wall in a steady manner. In this case, the handle is fixed to the rear wall so as to carry the condenser.

[0013] In a preferred embodiment of the present invention, the handle is having a flange which is surrounding the cavity. The flange carries the holding element and prevents the insulation material output from the cavity at the rear wall.

[0014] In a preferred embodiment of the present invention, one end of the holding element is connected to lower section of the flange. This lower section can be for instance the flange. Thus, the holding element is prevented from blocking the handle, and the access to the handle is facilitated.

[0015] In a preferred embodiment of the present invention, the holding element is aligned horizontally at center of the handle. In this case, the handle can distribute the condenser load, the holding element transfers, in both directions in an equal manner.

BRIEF DESCRIPTION OF THE FIGURES

[0016] The additional characteristics and the advantages of the subject matter invention can be obtained from the exemplary embodiments giving reference to the accompanied figures.

[0017] In Figure 1, the rear perspective view of a refrigerator with a conventional condenser with a representative embodiment of the subject matter holding element is given.

[0018] In Figure 2, the perspective view of a holding element used in Figure 1 is given.

THE DETAILED DESCRIPTION OF THE INVENTION

[0019] In Figure 1, the perspective view of a planar rear wall (12) of a heat insulated refrigerator cabinet (10) with a holding element (36) is given. There is one each mutual handle (30) at the parts close to the corner at the

upper part of the rear wall (12). At the lower alignment of the handles (30), there is an upper end (22) of a condenser (20) which is positioned at the rear wall (12) in a distanced manner.

[0020] The condenser (20) comprises a planar convoluted section (23) of a pipe; one each inlet/outlet (26) provided at the ends thereof; and rods (25) extending orthogonally on the convoluted section (23). The inlet/outlet (26) exists at one lower end (24) of the condenser (20) and it is connected to the other cooling mechanism (not illustrated in the figure).

[0021] The handle (30) forms a groove (34) which extends towards the cabinet (10) from the rear wall (12) and which provides grasping by hand. The handle (30) has a prismatic form whose corners are rounded.

[0022] In Figure 2, the handle (30) and a cavity (14) existing on the rear wall (12) on which the handle (30) seats is illustrated in a zoomed manner. A body (39) with a hollow reservoir form so as to provide the groove (34) of the handle (30) is seated into the cavity (14) from the outer surface thereof. The body's (39) end facing outwardly is bent in a parallel manner to the rear wall (12) and it forms a flange (32). In the middle part of the lower section of the flange (32), a holding element (36) extending downwardly is provided. The holding element (36) comprises a hook (37) with a free end (371) bending upwardly. The hook (37) has a form similar to a J. There is one each ribs (38) which extends outwardly from the fixed end of the hook (37) and which forms a lateral wall similar to a triangle to the flat part of the hook (37).

[0023] The handle (30) with the holding element (36) is produced as one piece by means of plastic injection. The handle (30) seats firmly inside the cavity (14); and it stays fixed against stresses because of the relation of the holding element (36) with the condenser (20). The holding element (36) carries the condenser (20) it grasps from the upper end (22) and the lower holding element (40) which exists at the lower end (24) and which is directly fixed to the rear wall (12) prevents the movement of the condenser (20) from the lower part thereof. The cross section of the contact of the holding element (36) to the handle (30) is kept at a size so as to meet the condenser (20) weight. Moreover, the rib (38) decreases the downward bending of the hook (37). The holding element (36) transfers the condenser (20) weight to the cavity (14) by means of the handle body (39). In production, handles (30) are fixed inside the cavity (14) in the cabinet (10), and the inner side of the cabinet (10) is filled by insulation layer. Thus, the condenser (20) can be hung from the upper end thereof to the handle (30) which firmly engages to the cavity (14). Afterwards, the lower holding elements (40) fix the condenser (20) to the rear wall (12) from the bottom end thereof (24). In the application illustrated in the figures, the condenser (20) covers a great part of the rear wall (12) by means of the planar structure thereof.

[0024] The rib (38) has a triangular form with a downward inclination towards the inner face of the hook (37) from the handle (30). Thus, when the pipe at the upper end (22) of the condenser (20) is left inside the holding element (36) by the operator, it directs the pipe towards the free end (271) of the hook (37) and provides the pipe so as to contact with the free end (371) inside the hook (37). The length of the part of the hook (37) which extends between the free end (371) and the rib (38) and which is above the pipe is essentially equal to or greater than the diameter of the condenser (20) pipe.

REFERENCE NUMBERS

[0025]

10	Cabinet
12	Rear wall
14	Cavity
20	Condenser
22	Upper end
23	Convoluted section
24	Bottom end
25	Rod
26	Inlet/Outlet
30	Handle
32	Flange
34	Groove
35	Flange
36	Holding element
37	Hook
371	Free end
38	Rib
39	Body
40	Lower holding element

Claims

1. A cooling/freezing device comprising a heat insulated cabinet (10) with a substantially flat rear wall (12); a condenser (20) provided at the rear wall (12) in a

spaced manner; at least one handle (30) secured on the rear wall (12) at a vicinity of the condenser (20) **characterized in that** at least one holding element (36) is extending from the handle (30) to the condenser (30) to attach condenser (20) to the handle (30).

2. A cooling/freezing device according to claim 1, wherein the holding element (36) is integral to the handle (30).

3. A cooling/freezing device according to any one of the preceding claims, wherein holding element (36) is having a hook (37) by which a pipe (27) of the condenser (20) is received.

4. A cooling/freezing device according to claim 3, wherein the holding element (36) is disposed at a vicinity of the upper end (22) of the condenser (20).

5. A cooling/freezing device according to claim 4, wherein a free end (371) of the hook (37) is bent to upper direction.

6. A cooling/freezing device according to any one of the preceding claims, wherein the handle (30) is having a body (39) plugged to a cavity (14) on the rear wall (12) in a steady manner.

7. A cooling/freezing device according to claim 6, wherein the handle (30) is having a flange (32) which is surrounding the cavity (14).

8. A cooling/freezing device according to claim 7, wherein one end of the holding element (36) is connected to lower section of the flange (32).

9. A cooling/freezing device according to claim 6, wherein the holding element (36) is aligned horizontally at center of the handle (30).

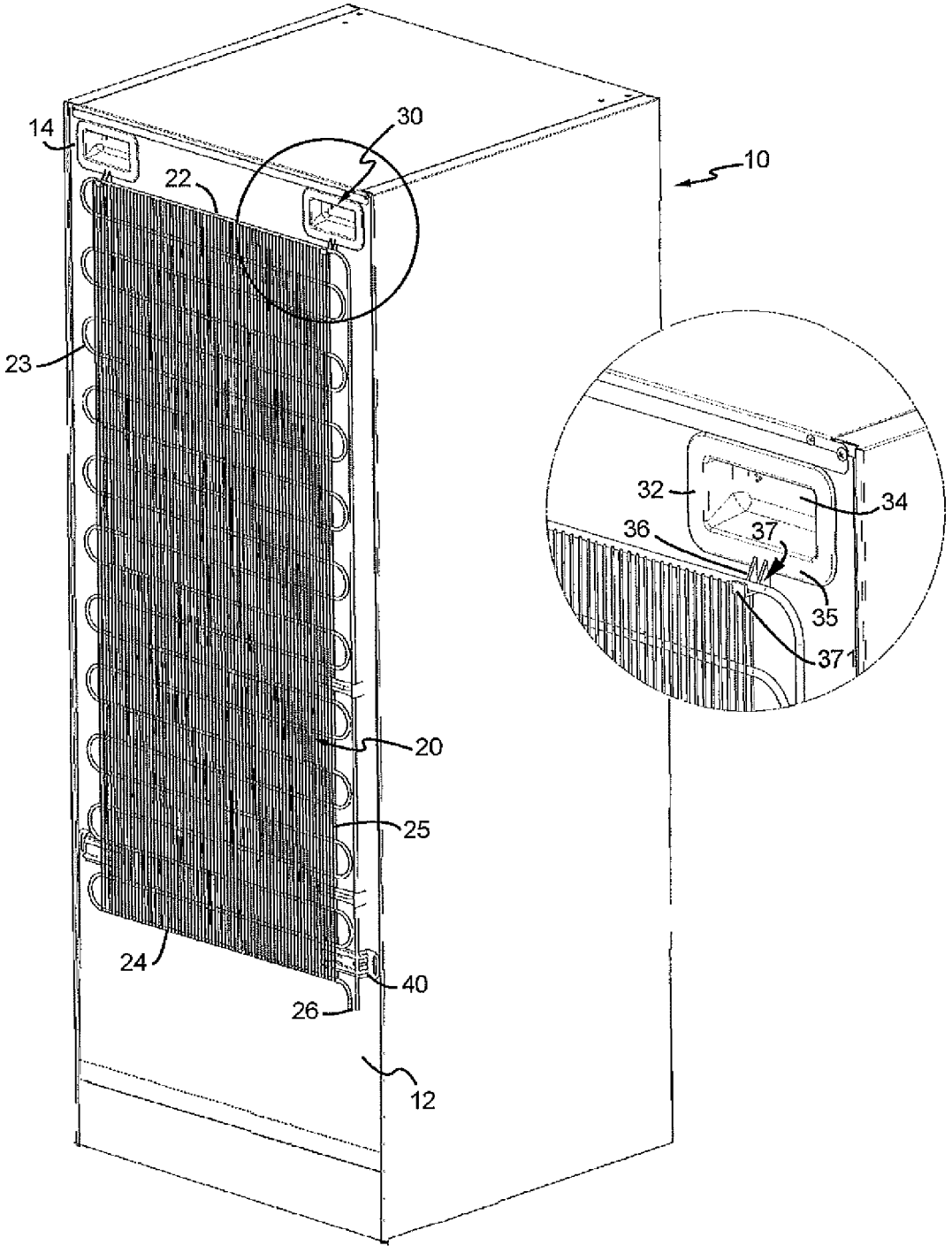

Fig. 1

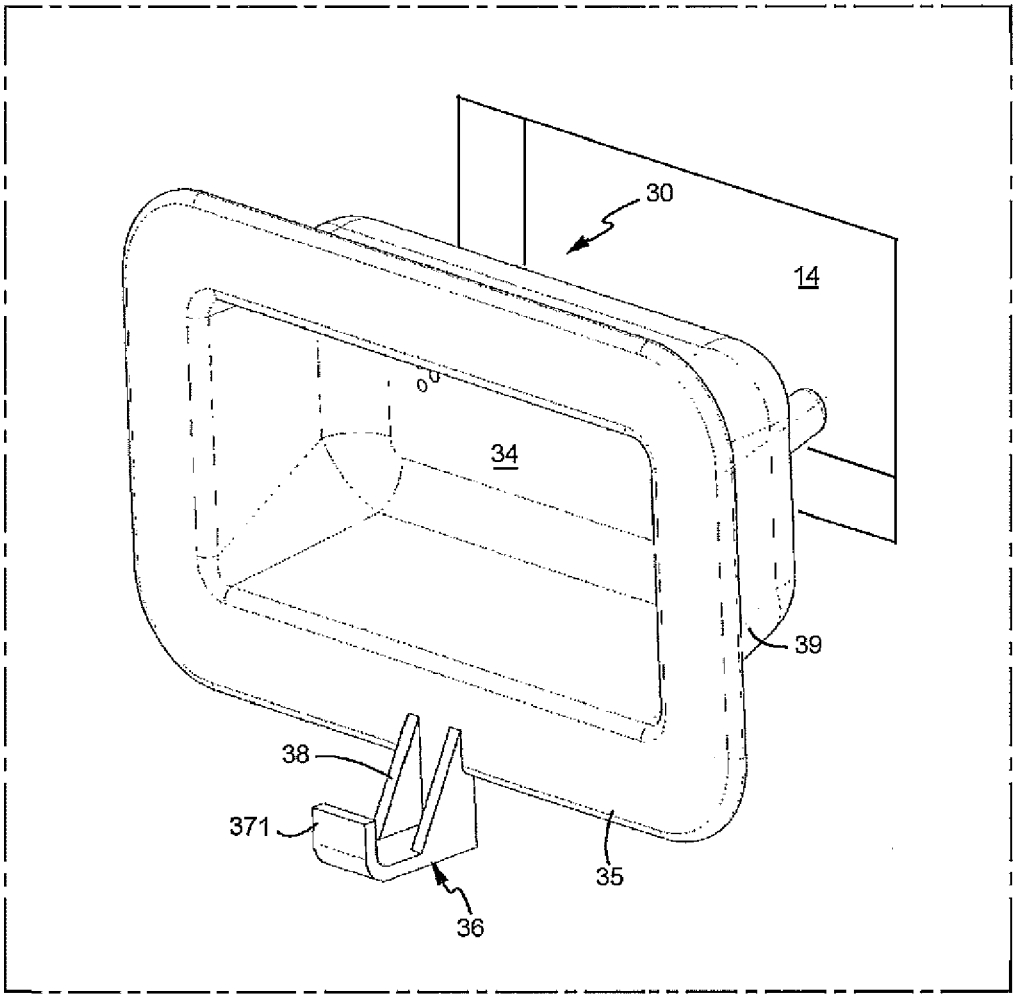

Fig. 2

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 3990262 A **[0004]**