Dec. 19, 1933. R. H. MONEY 1,939,914

REFRIGERATOR CONSTRUCTION

Filed July 26, 1930 3 Sheets-Sheet 1

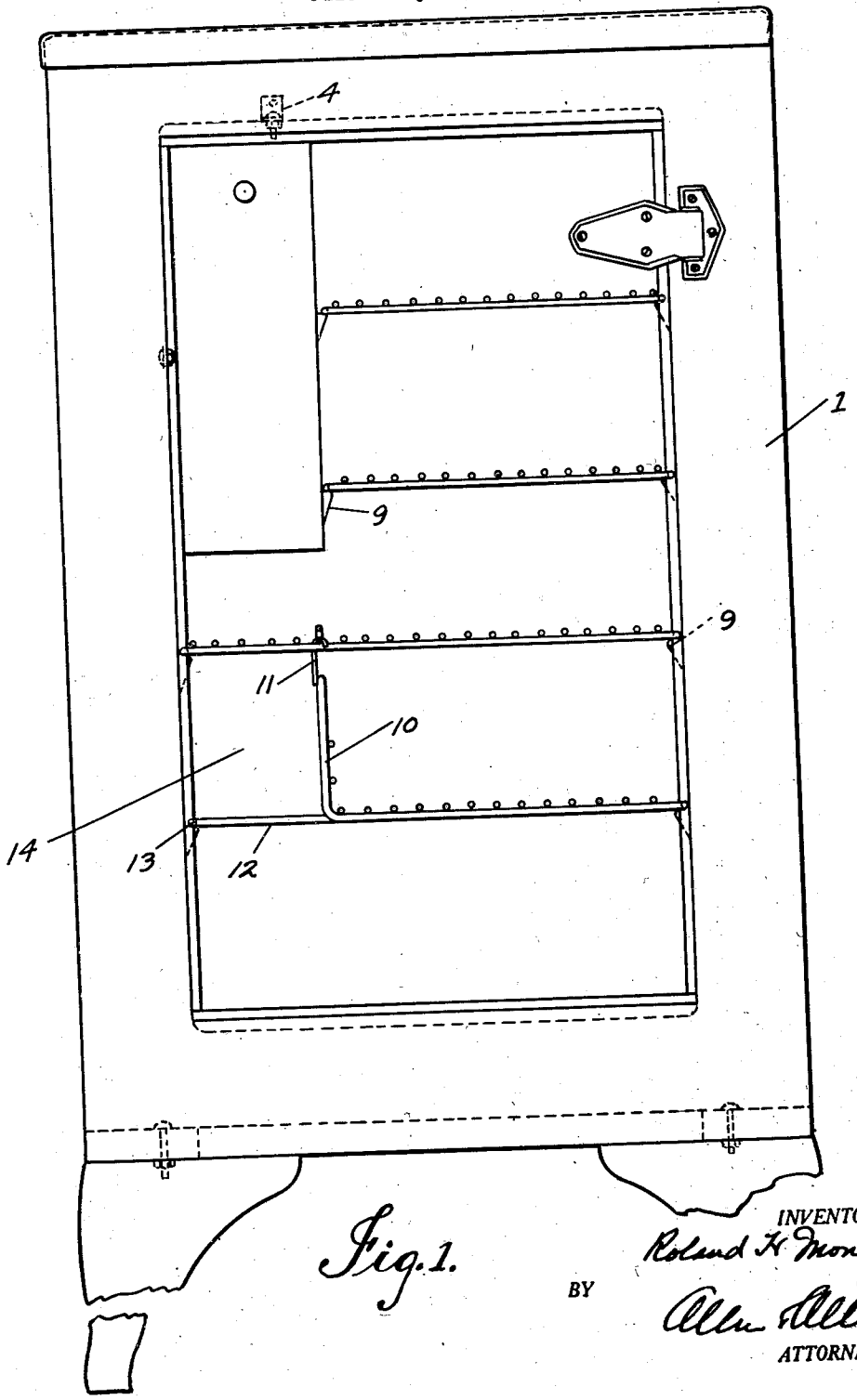

Fig. 1.

INVENTOR.
Roland H. Money
BY
ATTORNEY.

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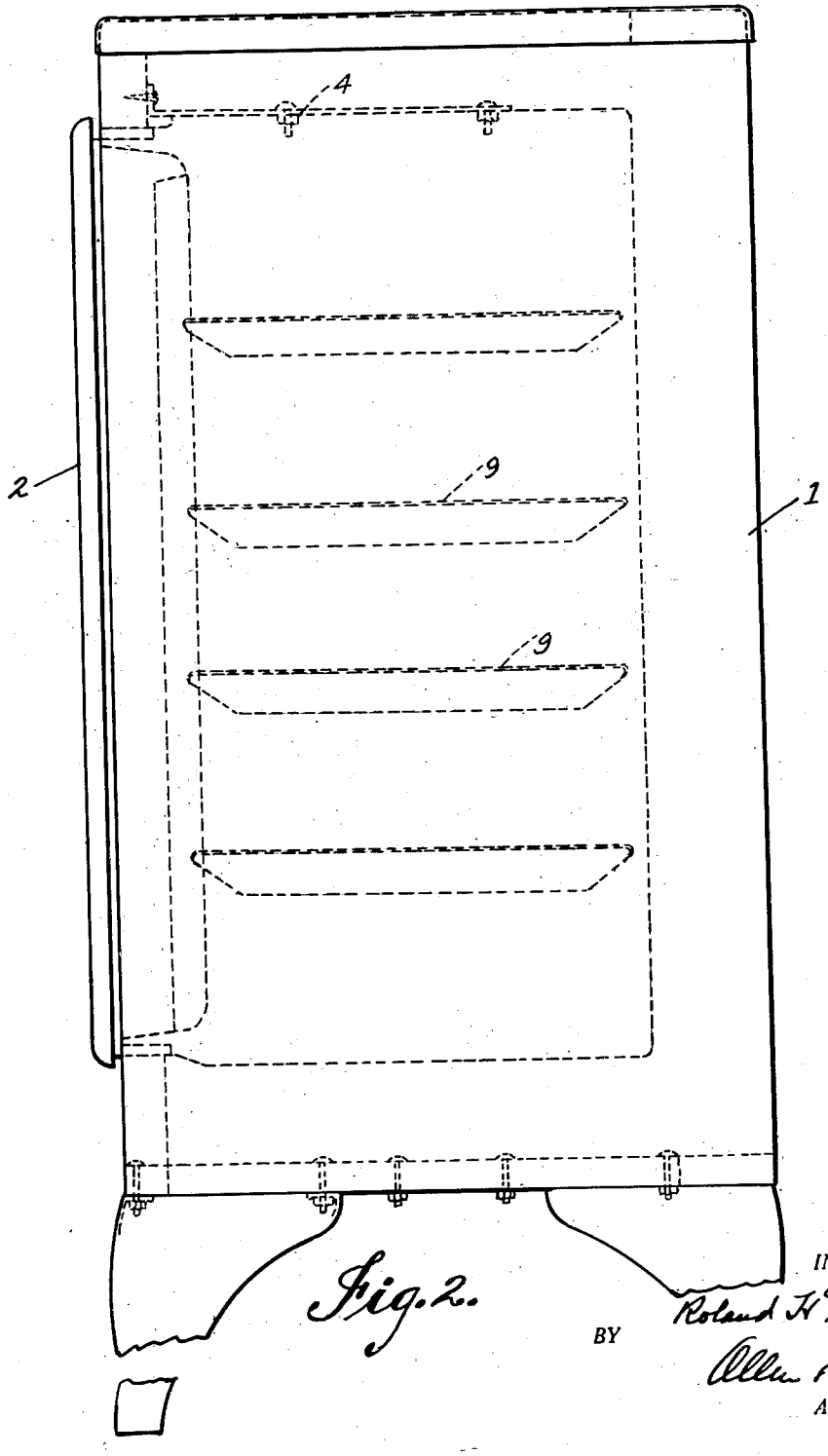

Fig. 2.

INVENTOR.
Roland H. Money
BY
Allen Allen
ATTORNEY.

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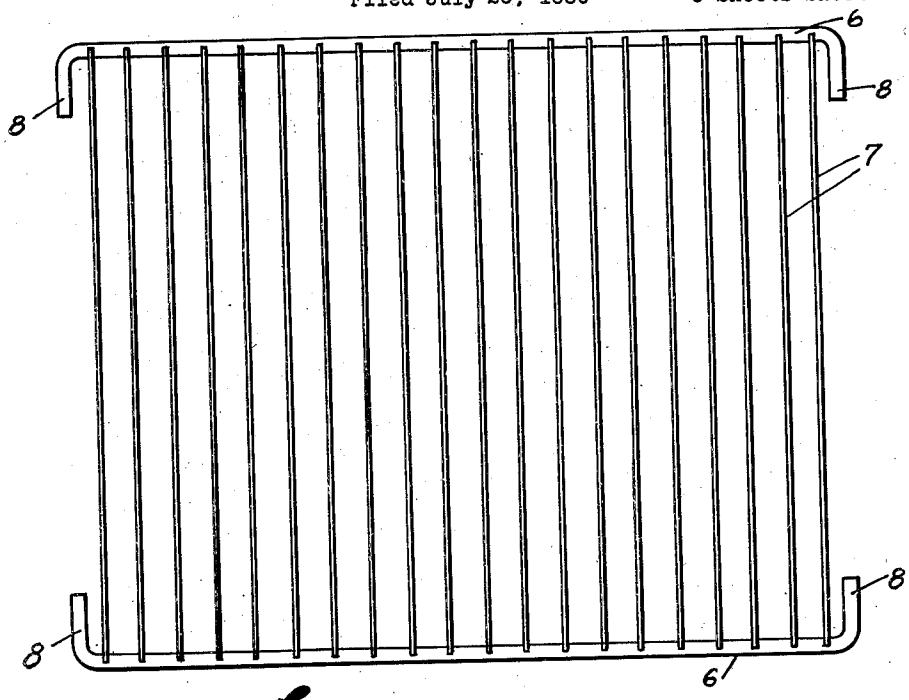

Fig. 3.

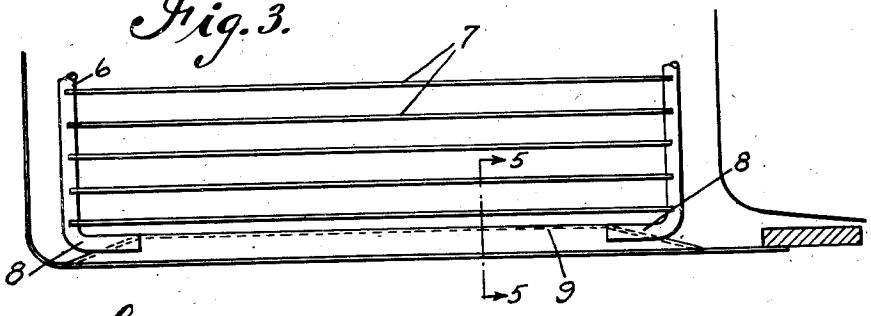

Fig. 4.

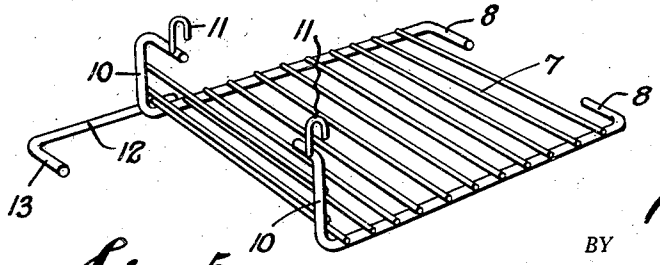

Fig. 5.

INVENTOR.
Roland H. Money
BY
Allen Allen
ATTORNEYS

Patented Dec. 19, 1933

1,939,914

UNITED STATES PATENT OFFICE

1,939,914

REFRIGERATOR CONSTRUCTION

Roland H. Money, Cincinnati, Ohio, assignor to The Crosley Radio Corporation, Cincinnati, Ohio, a corporation of Ohio

Application July 26, 1930. Serial No. 470,915

2 Claims. (Cl. 211—153)

My invention relates to refrigerator construction and particularly to the construction of the casings for housing electrical refrigerating apparatus.

In standard electrical refrigeration practice, it has been customary to provide a cabinet which houses the refrigerating apparatus and the freezing and storage compartments, and to then insert suitable insulation material between the inner shell and the outer casing of the refrigerator. The food compartments are ordinarily formed by metal shelves consisting of side supporting bars with spaced bars extending across between the supports on which the food receptacles are placed. For supporting the side supporting bars, hooks or lugs have, in the past, been welded to the sides of the inner shell of the unit. These hooks are difficult to clean and require the extra expense of securing them to the walls of the casing. Further, the installation of the hooks not only does not strengthen, but weakens the tendency of the walls of the inner shell to buckle and warp during the enameling process.

It is one of my objects to provide a stamped out inner shell having reinforcing ribs which greatly lessen the weight of material necessary for the shell construction, which ribs will support the food trays. It is further my object to provide stamped out reinforcing shelf supporting ribs which may be readily cleaned, and which will thus allow the refrigerator to be kept fresh and sweet. Another object, in the provision of my inner shell of stamped metal, is to greatly reduce the cost of manufacture at the same time retaining the strength which would be present if heavier gauge metal, unreinforced, were to be employed.

Another object is the provision of a unique bottom shelf support which provides clearance so that a bottle such as may be used for milk or other liquid, and which is taller than the spacing between the shelves, may be conveniently placed in the refrigerator in upright position.

As in prior manufacture, the buckling of unreinforced side walls of refrigerator shells, due to the high heat of the enameling treatment, has caused very heavy losses in scrap, it is an object of my invention to minimize scrap losses by so reinforcing the walls of the inner shell that high loss due to buckling is avoided.

The above and other objects to which reference will be made in the ensuing disclosure, I accomplish by that certain combination and arrangement of parts of which I have shown a preferred embodiment.

Referring to the drawings:—

Figure 1 is a front elevation of a refrigerator employing my invention, with the door removed, but with one of the hinges illustrated.

Figure 2 is a side elevation of the refrigerator.

Figure 3 is a plan view of one of the shelves.

Figure 4 is a detail horizontal sectional view showing the ribbed construction.

Figure 5 is a perspective view of the lower shelf.

The refrigerator illustrated has the usual outer cabinet 1 with a door indicated at 2 which exposes the contents of the box. The door is fastened to the opening in the box with hinges one of which is indicated at 3 in Figure 1. The inner shell of the box is rectangular and consists of a casing having back, side and top and bottom walls with the front of the casing open. The usual method of mounting the inner shell within the outer casing is indicated at 4 with lugs which have bolts passing through them which secure the mounting lugs to lugs extended from the inner surface of the outer casing. Between the inner and outer casing insulating material is inserted in accordance with standard practice.

The shelves or trays are composed of end supporting bars 6 having spaced rods 7 extended across between them. Preferably the supporting bars have their ends bent around as indicated at 8, and the bent ends seat on stamped ribs 9 which are stamped out of the sheet metal of which the sides of the inner shell are formed prior to the enameling process, so that the ribs, in addition to preventing excessive scrap, due to warping and bending of the metal sheets due to the high temperature of the enameling process, support the food shelves.

The ribs preferably extend clear across the surface of the plates forming the inner shell, so that in cleaning, a rag may be employed to wipe them off, and, due to the gradual curve of the shape of the ribs, there is little likelihood of the enamel cracking and thus inducing rust corrosion.

The lower shelf, as best shown in Figure 5, has the ends of the side supporting bars bent upwardly, as indicated at 10, and hooks 11 are welded or soldered to the ends to engage over one of the rods of the shelf above. A bar 12 is welded to the bar 6 on one side, and the end of the bar 12 is bent around as indicated at 13 to seat on one of the ribs. This provides a clearance space 14 for receiving milk bottles or other articles which are taller than the space between the shelves.

The construction illustrated avoids all neces-

sity of welding hooks or lugs to the metal of the sides of the shell. The stamping out of the shelf supporting ribs, in a small household type refrigerator, enables me to employ twenty gauge sheet metal instead of about sixteen gauge, which is usually employed. Considering the saving of ten to fifteen percent of the scrap loss, this enables me to produce an inner shell at about half the usual cost, which, considering the increased efficiency of the construction, is a saving of no mean importance.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A shelf comprising bars, and wires with their ends rigidly secured to the bars at intervals therealong, each bar having an end part bent at right angles to its main intermediate part and extending toward the bent end part of the other bar, said bent end portions being adapted to rest on an elongated ledge, the opposite end parts of said bars being bent upward from said main intermediate part and having hooks on their upper ends to engage a more upwardly located shelf, and wires with their ends secured to said upwardly bent parts, forming a wall on the shelf.

2. A shelf comprising bars, and wires with their ends rigidly secured to the bars at intervals therealong, each bar having an end part bent at right angles to its main intermediate part and extending toward the bent end part of the other bar, said bent end portions being adapted to rest on an elongated ledge, the opposite end parts of the bars being bent upward from said main intermediate part and having hooks on their upper ends to engage a more upwardly located shelf, and wires with their ends secured to said upwardly bent parts, forming a wall on the shelf, and a bar with one end rigidly attached to the main intermediate part of one of the aforementioned bars and forming a prolongation thereof past its upwardly bent portion, with its outer end part bent at right angles in the same direction as the first mentioned bent end part of said one bar, to rest on an opposite ledge and form a spacing and bracing means to maintain said shelf on the first mentioned ledge in cooperation with the hooking of said shelf on the more upwardly located shelf.

ROLAND H. MONEY.