



# United States Patent Office.

ROBERT A. HARRIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND B. S. HARRIS, OF SAME PLACE.

Letters Patent No. 61,734, dated February 5, 1867.

## IMPROVED REFRIGERATOR.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT A. HARRIS, of Philadelphia, Pennsylvania, have invented an Improvement in Refrigerators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists of a refrigerator constructed in the peculiar manner, fully described hereafter, for the purpose of thoroughly chilling the air before it circulates through the several chambers, and in contact with the articles of diet contained therein.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation. On reference to the accompanying drawing, which forms part of this specification—

Figure 1 is a vertical section of my improved refrigerator with the lid raised.

Figure 2 a transverse vertical section on the line 1-2 fig. 1; and

Figure 3 a front view with the lid closed.

Similar letters refer to similar parts throughout the several views.

The refrigerator consists, as usual, of a deep box, with front *a*, back *b*, ends *d d'*, and bottom *e*, made of two thicknesses of wood, with intervening air spaces; there being, in front, openings to which the double doors *A* are adapted, and the whole being supported on suitable legs *f f*. A lid, *B*, also made double, is hinged to the back *b*, and this lid, as well as the interior of the refrigerator, is lined, as usual, with thin zinc or galvanized iron. Within the box, near the upper end of same, is a chamber, *D*, for receiving the ice which rests on a grating, *h*, situated a short distance above the bottom, *i*, of the said chamber, in which a channel, *j*, is formed for a purpose described hereafter. A partition, *k*, extends from the under side of this channel to the bottom of the box, the latter being thus separated into two main compartments, *E* and *F*, across which extend any desired number of gratings, *m m*, for receiving the dishes or other vessels containing articles of diet. The two compartments *E* and *F* communicate with each other through holes, *p p*, in the partition, *k*, near the bottom of the box; and the ice-chamber, *D*, communicates with the compartment *F* through a narrow opening at one end of the channel *j*. The end, *q*, of the ice-chamber *D* is perforated with a number of holes, so that the said chamber can communicate with a small compartment, *G*, having a grated bottom, *t*; this compartment being intended for the storage of butter, milk, &c. Air is admitted to the space between the two thicknesses of wood which compose the sides and ends of the box, at the point *x*, (fig. 2,) or at any other point at or near the bottom of the box, the air passing upwards and through a valved opening, *v*, into the ice-chamber above the ice, through the body of which the air passes, in the direction of the arrows, through the opening *n*, into the compartment *E*, or through the perforations in the end, *q*, of the ice-box *G*, into the compartment *F*, through the gratings, *m*, of which the cold air passes to the bottom of the said compartment, and thence through the holes *p* in the partition *k*, into the compartment *E*, upwards through the latter, and through the gratings *m* in the same to the exit opening *y*. Whatever water drips from the ice finds its way into the channel *j*, and thence through the vertical pipe *H* into any suitable receptacle, *I*, placed beneath the refrigerator. It will be seen that the air admitted from below must first pass through the mass of ice, and be thereby thoroughly chilled before it can circulate through the several compartments, in the direction pointed out by the arrows, and hence that the contents of the refrigerator must be maintained in the desired cool state. Whatever air passes through the narrow opening *n* into the compartment *F*, has first to pass through the ice, and then over the iced water in the channel *j*, and must be thoroughly chilled before it passes, in a thin stream, to the said compartment *F*. It is important that butter and milk should be maintained at the lowest temperature; hence the perforations in the end, *q*, of the ice-chamber; directly through which the frigid air passes on to the contents of the compartment *G*.

I claim as my invention, and desire to secure by Letters Patent—

The combination of the ice-chamber *D*, its opening *v*, and perforated end *q*; the compartments *G* and *F*, the channel *j*, at the bottom of the ice-chamber, and the opening *n*; the whole being arranged as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

R. A. HARRIS.

Witnesses:

C. B. PRICE,  
JOHN WHITE.