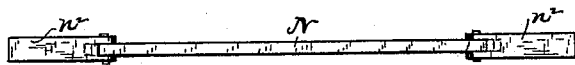
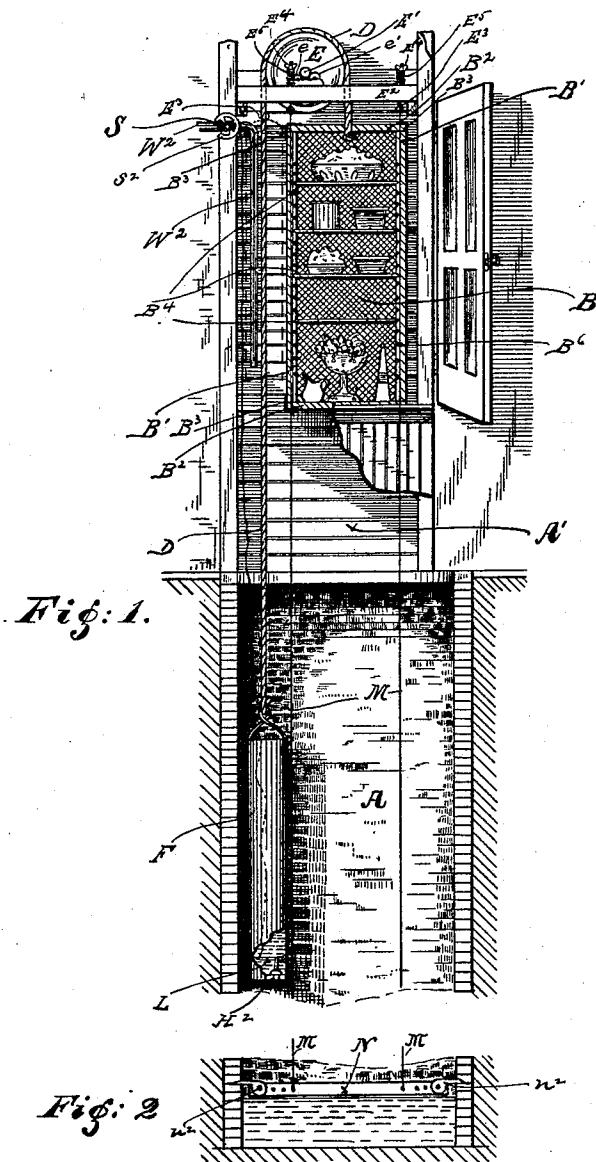


(No Model.)

H. R. ALLEN & J. A. MINTURN.
REFRIGERATOR.

No. 461,378.

Patented Oct. 13, 1891.



Witnesses:

Frank C. Chamber.
Walter W. Jarvis.

Fig. 3.

Inventors:

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UNITED STATES PATENT OFFICE.

HORACE R. ALLEN AND JOSEPH A. MINTURN, OF INDIANAPOLIS, INDIANA.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 461,378, dated October 13, 1891.

Application filed June 9, 1890. Serial No. 354,810. (No model.)

To all whom it may concern:

Be it known that we, HORACE R. ALLEN and JOSEPH A. MINTURN, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Refrigerators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in an apparatus for the care and preservation of fresh meats, fruit, vegetables, and other perishable articles.

The object of the invention is to provide a low temperature which may be inexpensively maintained, without the use of ice, at a uniform degree during all seasons of the year, so that articles placed therein will be sufficiently cool for safe-keeping in summer and protected from freezing in winter.

The invention consists in certain peculiarities in the construction, arrangement, and combination of the various parts, substantially as hereinafter described, and particularly pointed out in the subjoined claims.

In the drawings, Figure 1 represents a well, a cupboard above the same, our cage operating therein, and the mechanism for raising and lowering said cage. Fig. 2 is a vertical section of the bottom of the well, showing the means for securing the wire guides. Fig. 3 is a detail in plan view of the same.

A is a well located at any convenient place, preferably within easy access from the kitchen. It is excavated in the usual manner and is curbed and preferably plastered on the inside to prevent earth-worms and insects from dropping therein. The depth of the well may vary according to circumstances, it being always desirable to go to a depth sufficient to reach a permanent supply of water. In localities, however, where the water-supply is more than twenty feet below the surface it is not advisable to go deeper, as the earth at that depth is not affected by the surface temperature, and it has been found that a uniform temperature, adapted admirably to refrigerating purposes, is attained. This temperature is even more sat-

isfactory in its results than that attained by the use of ice, being perfectly uniform and not sufficiently cold to be injurious, which seems to be the case with ice, as provisions kept thereon will spoil with more than usual rapidity when removed therefrom, whereas the temperature as here described has been found to be sufficiently low for refrigerating purposes and without the injurious results attending the use of ice.

The well will terminate at the top in a small cupboard or closet A', preferably built integral with the walls of the kitchen to form a permanent and solid support for the attachment and suspension of the cage and operating mechanism. It is provided with a door.

The cage B is of any desired construction that will insure the requisite strength. In the construction here shown the four corner-posts B' are secured to end sections B² by overlapping L-irons B³, which are bolted thereto. The cage is covered on both sides and the back with woven wire to prevent articles on the shelves from being pushed off into the well. These shelves B⁴ are to hold the provisions, and are movably secured to the corner-posts of the cage by the notches B⁶, in order that they may be raised or lowered at will to meet the demands for space required by the produce placed thereon.

Attached centrally to the top of the cage is a rope or cable D, which is upwardly continued to the wheel E, over which it passes, and is thence carried down to a counter-weight F, to which it is fastened, said counter-weight being a water-tank, and is hereinafter fully described. The wheel E and its shaft E' are keyed together, and the shaft turns on roller-bearings e e', of usual construction. The wheel E and its bearings are supported by the headers E², attached to the adjacent walls.

To prevent swinging and twisting of the cage and to insure its proper vertical movement, guides of some description are essential. A rigid and inflexible guide is apt to bend and interfere with the free movement of the cage, especially if the cage should be loaded heavier on one side, which is frequently the case. Iron rods or wires, as shown in the drawings, have been found to meet the requirements better than any other material.

It is obvious that tubes might be used instead of rods or wires without departing from the spirit of this invention. These pass through holes in the top and bottom of the cage and are fastened at the bottom of the well to a beam built in at the time of curbing the well or to the device illustrated in Fig. 2, which may be placed after the well is finished. In this construction N is a horizontal bar, to each end of which a finger n^2 is pivoted. These fingers are adapted to be inserted between the brick, as shown in dotted lines, Fig. 2, and are forced home into the position shown in full lines by drawing up on the bar N. The upper ends of the wires are fastened to the headers E^2 or other convenient portion of the frame-work at the top of the well. The wires are provided with means for tightening. The device here shown is an eyebolt E^3 , to the eye of which the wire is fastened and the threaded stem projected through the header E^2 , where it is engaged by the wing-nut E^4 , by which the wire is drawn taut.

E^5 is a spring interposed between the nut E^4 and the header. This spring will take up the slack in the wires as they wear loose and will also give a yielding resistance to the bar N, which will act as a stop to check the descent of the cage.

The water-tank or counter-weight F is so arranged that the water-supply pipe W^2 will be enveloped by the tank when the latter is in its elevated position, thereby allowing the flow of water into the tank to be continued without splashing for a considerable distance after the latter has begun to descend. This is important, as otherwise the quantity of water added might not be sufficient to overcome the tendency to stick fast, which is liable to occur if the counter-weight is only slightly heavier than the cage. The counter-weight tank is formed with an opening provided with a discharge-valve H^2 , which is of well-known construction and is provided with a lever L, pivoted to the side of the tank and connected to the valve-stem, as shown. The valve is opened by an upward pull on a cord attached thereto. The same cord is fastened above to the segment of a wheel S^2 in a spring-valve S in the supply-pipe W^2 , so that the valve will be opened by pulling down on the cord.

It is evident that other constructions might be used to give support to the pivotally-connected fingers, and as it is new with us to employ a device for fastening the guides in which pivotally-connected ends are forced into the wall of the well by the upward tension of the guides we therefore do not wish to limit the invention to the exact construction here shown.

We claim—

1. In a well-refrigerator, the cage, a drum above the same, and a cable secured at one end to said cage, passing over said drum, and extending downward within the well beside said cage, in combination with an elongated

water-tank secured to the lower end of said cable and formed with an opening, a valve closing said opening, means, substantially such as described, for operating said valve from the top of the well, an elongated water-pipe extending downward from the top of said well beside said cage and adapted to be entirely enveloped by said water-tank when the latter is in its uppermost position, and a spring-closing cock adapted to check the flow of water through said pipe.

2. In a well-refrigerator, the cage, a drum above the same, and a cable secured at one end to said cage, passing over said drum, and extending downward within the well beside said cage, in combination with an elongated water-tank formed with an opening, a valve closing said opening, a lever pivoted to the wall of the tank and secured to the stem of said valve, an elongated water-pipe extending downward from the top of said well beside said cage and adapted to be entirely enveloped by said water-tank when the latter is in its uppermost position, a spring-valve in said pipe provided with a handle, and a cord having one end secured to the lever of the valve within the water-tank and its other end secured to said handle, all substantially as shown and described.

3. The combination, with the well, a cupboard above the same provided with a door, a vertically-moving cage, a drum above said cage, and a cable secured at one end to said cage and passing over said drum, of a water-tank secured to the lower end of said cable and formed with an opening, a valve closing said opening, means, substantially such as described, for operating said valve from the top of the well, an elongated water-pipe extending downward from the top of said well near one side of the same and adapted to be entirely enveloped by said water-tank when the latter is in its uppermost position, and a valve for regulating the flow of water through said pipe, all substantially as shown and described.

4. In a cold-well refrigerator, the iron rods or wires M, passing through eyelets on opposite sides of the cage and secured in a substantial manner at top and bottom, in combination with a cage having movement in the direction of the length of said guides, and a spring adapted to take up the slack in said guides and afford a yielding resistance to the action of the cage.

5. The cross-bar N, adapted to engage the ends of guide-wires M and having jointed ends n^2 , adapted to be forced outwardly into the adjacent walls by the upward movement of the bar, as shown.

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

H. R. ALLEN.

JOSEPH A. MINTURN.

Witnesses:

T. F. MEANY,
E. C. ROPKEY.