

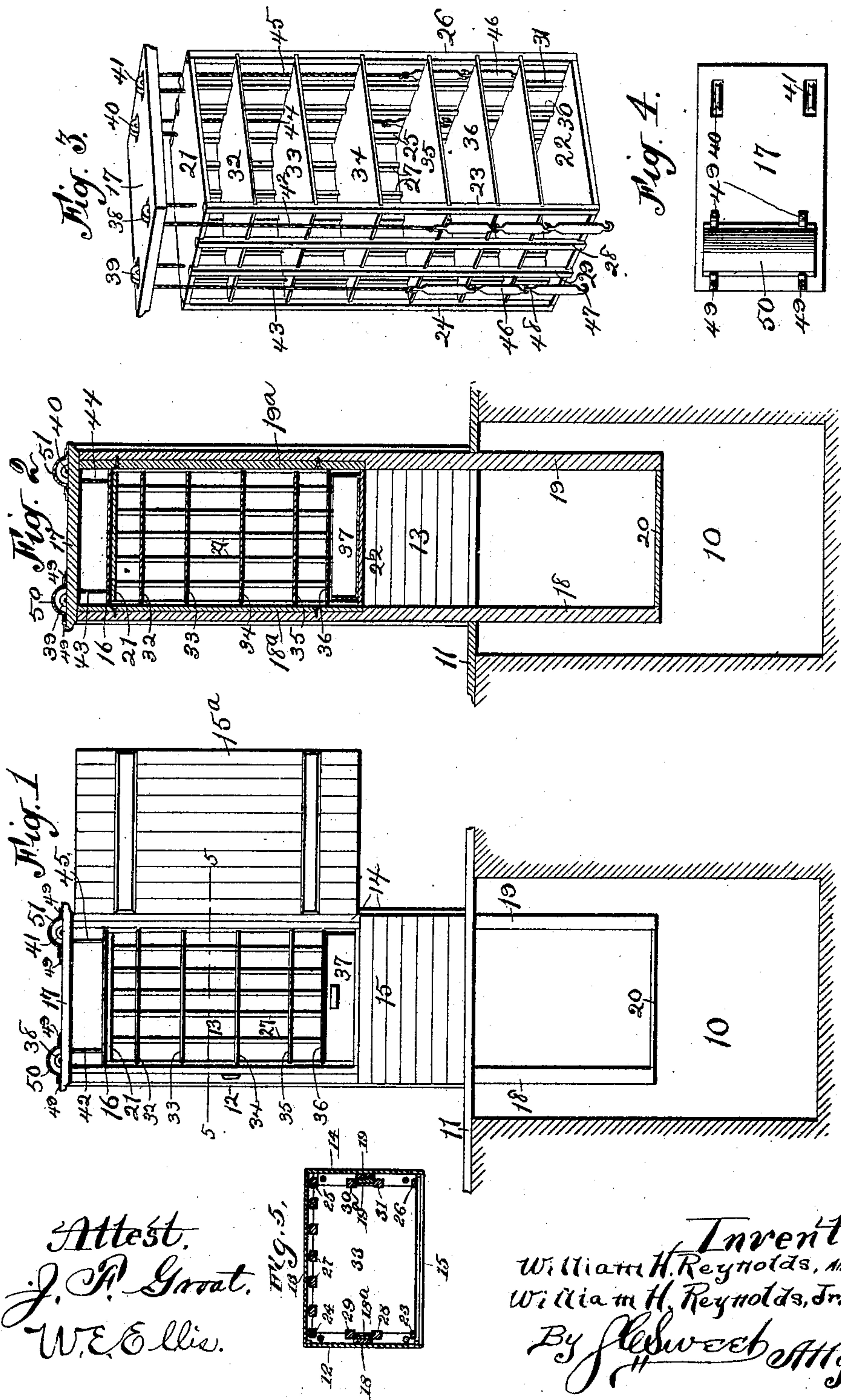
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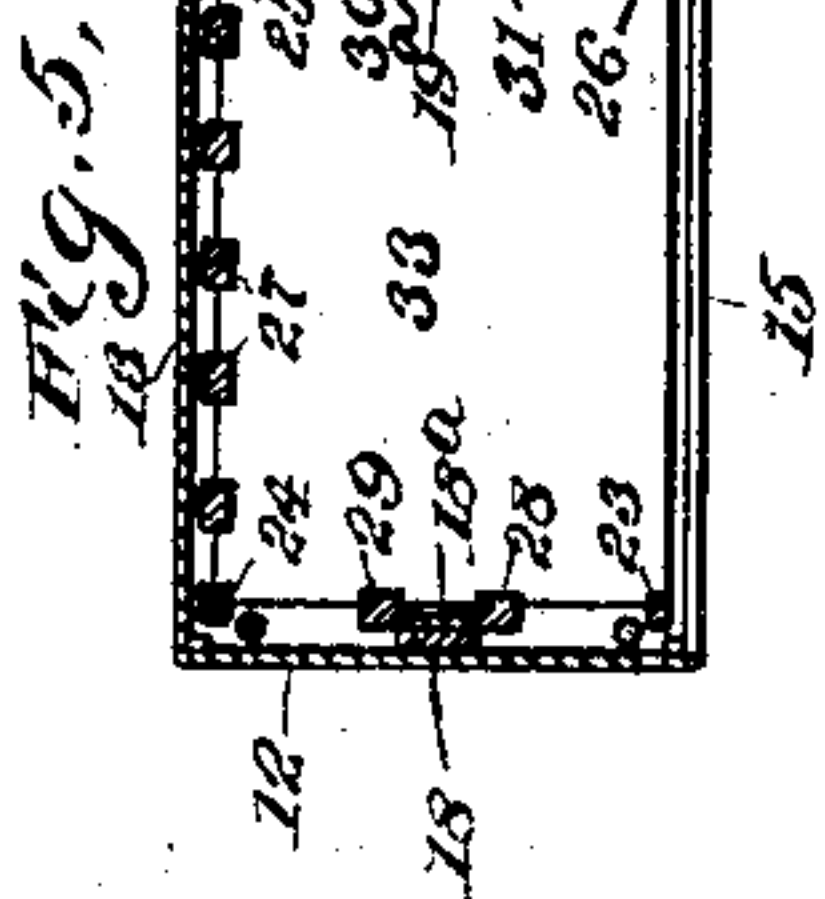
W. H. REYNOLDS & W. H. REYNOLDS, JR.
SUBTERRANEAN REFRIGERATOR.

(Application filed Oct. 9, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM H. REYNOLDS AND WILLIAM H. REYNOLDS, JR., OF AGENCY,
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SUBTERRANEAN REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 671,564, dated April 9, 1901.

Application filed October 9, 1899. Serial No. 733,120. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. REYNOLDS and WILLIAM H. REYNOLDS, Jr., citizens of the United States of America, and residents of Agency, in the county of Wapello and State of Iowa, have invented a new and useful Subterranean Refrigerator, of which the following is a specification.

The object of this invention is to provide improved means for preserving food at a comparatively low temperature in a convenient and readily-accessible manner without the use of ice or similar mediums.

Our invention consists in the construction, arrangement, and combination of elements, hereinafter set forth, pointed out in our claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a front elevation of the complete device mounted as required for practical use. Fig. 2 is a vertical section of the device mounted as required for practical use. Fig. 3 is a perspective of the cage or elevator cupboard.

In the construction of the device, as shown, the numeral 10 designates a well or other excavation normally covered by a platform 11, in which is formed an aperture of sufficient size and such shape as to accommodate the elevator cage or cupboard in entering or leaving the excavation. A cupboard or casing formed of a left side 12, back 13, right side 14, and front 15, is fixed to and rises from the platform 11, surrounding the aperture in the platform. This casing or cupboard is made about six feet in height and is constructed of posts and sheathing in any practicable manner, and the front 15 thereof is made in two sections, the lower section being about two feet in height and fixed and the upper section filling the remainder of the front and formed as a door 15^a, hinged to the right side 14. The door may be provided with any desired form of latch or lock attaching to the left side 12 of the casing. A stationary shelf 16 is fixed in and transversely of the upper portion of the casing or cupboard, at a little distance below the top thereof, and it is the function of this shelf to receive and retain temporarily any vessels of food preparatory to the elevation of the cage and deposit there-

of therein, and at the same time said shelf serves to partition the cage from the roof and prevent the top of the cage from bumping the roof in its ascent. A cap-plate or roof 17 is provided for the casing and is removable and replaceable relative thereto, being made to extend beyond the sides, front, and back of the casing and loosely mounted on the upper end thereof. The cap-plate or roof is made removable and replaceable and loosely mounted on the top of the casing in order that it may expand and shrink under changes of temperature and humidity without affecting the walls of the casing and may be removed readily for cleansing and for the thorough ventilation of the casing above the shelf 16. When the roof is removed, the cage should be raised and held in the casing and the weights also raised to slacken the cables. Guide-bars 18 19 are mounted vertically within and fixed to the centers of the sides 12 14 of the casing and depend therefrom into the well or other excavation 10 to the desired depth. The lower end portions of the guide-bars are connected by a bottom bar 20, and it is the function of this bottom bar to steady the guide-bars and serve as a stop to limit and determine the downward movement of the cage. The upper portions of the guide-bars are provided with removable and replaceable sections 18^a 19^a, fastened thereto by screws and of such thickness as that when the sections are removed the cage may be removed forwardly from the casing. The elevator-cage is formed with top and bottom pieces 21 22, preferably made of wood and connected by corner-pieces 23 24 25 26, back strips 27, and guide-strips 28 29 30 31. The guide-strips 28 29 30 31 are vertical and are arranged in pairs on opposite edges of the top and bottom pieces and spaced apart in the pairs a distance approximating to the width of one or the other of the guide-bars 18 19, located therebetween. Horizontal notches are formed in the strips and corner-pieces of the cage, and sheet-metal shelves 32 33 34 35 36 are mounted horizontally in said notches and spaced apart to receive and retain food or vessels of food. The shelf 36 is spaced apart from the bottom 22 of the cage, and a sheet-metal pan or receptacle 37 is slidingly mounted in the space. It is

the function of the pan or receptacle 37 to receive, retain, and preserve ice for occasional use at table or dairy, and by holding said ice in the lowermost part of the cage in the well or excavation preserve the same against rapid melting and waste when the cage is in its lowermost position in the well, it being understood, however, that the pan may be employed as a containing vessel generally. The cage is so located in the casing that the guide-strips thereon embrace and slidingly engage the guide-bars 18 19 and direct the vertical movement of the cage. Sheaves 38 39 40 41 are mounted in slots in the cap-plate or roof 17 of the casing, and ropes 42 43 44 45 are run over said sheaves. One end portion of each of the ropes is fastened to the corners of the top piece 21 of the cage and run through holes in the stationary shelf 16 and the remaining ends of the ropes depend from the sheaves within the spaces between the guide-strips and the corner-pieces of the cage and are supplied with weights. The weights for the ropes of the elevator are formed in sections 46, of cast metal, each of the sections having a hook 47 on one end and an eye 48 on the other end, whereby the sections may be hooked together in series to the extent necessary to provide the desired degree of weight to balance the elevator. Thus also when the elevator-cage is to be lightly loaded one or more of the sections of weights may be removed from the ropes, so that the cage and its load may be balanced at all times. Clips 49 are arranged in rows on the upper face of the cap-plate or roof of the casing, and sheet-metal caps 50 51 are slidingly mounted in said clips and arched over the sheaves and their slots to protect the roof against leakage. The caps 50 51 may be removed and replaced readily by hand to provide access to the sheaves and ropes.

By constructing the cage of strips and shelves spaced apart and from the casing we provide for a free circulation of air through and about the cage and among the food vessels, the slots in the roof also providing for ventilation.

By constructing the cage of notched strips and sheet-metal shelves loosely mounted in the notches thereof we are enabled to remove said shelves readily and conveniently for cleansing and repairs when the same is necessary.

We claim as our invention—

1. The combination of the casing arranged for location over a well, the guide-bars there-

on arranged to depend within the well, a roof loosely mounted on the casing, sheaves in said roof, ropes on said sheaves, weights on ends of said ropes, a cage mounted in the casing and attached to the ends of the ropes opposite the weights, a shelf or partition fixed transversely of the casing between the upper end of the cage and the loosely-mounted roof, guide-strips on the cage embracing the guide-bars on the casing and a door in the casing.

2. The combination of the casing arranged for location over a well, the guide-bars thereon arranged to depend within the well and formed with removable and replaceable sections in their upper portions, the bottom bar fixed to and connecting the lower ends of the guide-bars, a roof loosely mounted on the casing, sheaves in the roof, caps over the sheaves, ropes on said sheaves, weights and a cage depending from said ropes and in balanced relation with each other, guide-strips on the cage embracing the guide-bars and a door in the casing.

3. The combination of the platform having an aperture and arranged for location over a well, a casing mounted on said platform, the guide-bars in said casing, formed with removable sections and depending through the aperture of the platform, a roof mounted on said casing, sheaves in said roof, cables on said sheaves and depending in the casing, a cage on said cables, balancing-weights on said cables, guide-bars on the cage embracing the guide-bars of the casing, the cage being of less length than the casing and partitioned from the roof thereof, and a door in said casing, substantially as described.

4. The combination of the casing, the guide-bars on either side thereof and arranged to extend downward within a well, a cross-bar connecting the lower ends of the guide-bars, each of the guide-bars being provided with a removable and replaceable section in its upper portion, a cage of skeleton form constructed of corner-strips, top and bottom pieces and intermediate shelves and guide-bars projecting laterally from said cage and arranged to embrace the guide-bars of the casing, a stationary shelf in the upper portion of the casing above the cage and means for balancing said cage and its contents.

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