

J. M. BLAISDELL.
Refrigerators.

No. 153,307.

Patented July 21, 1874.

FIG II

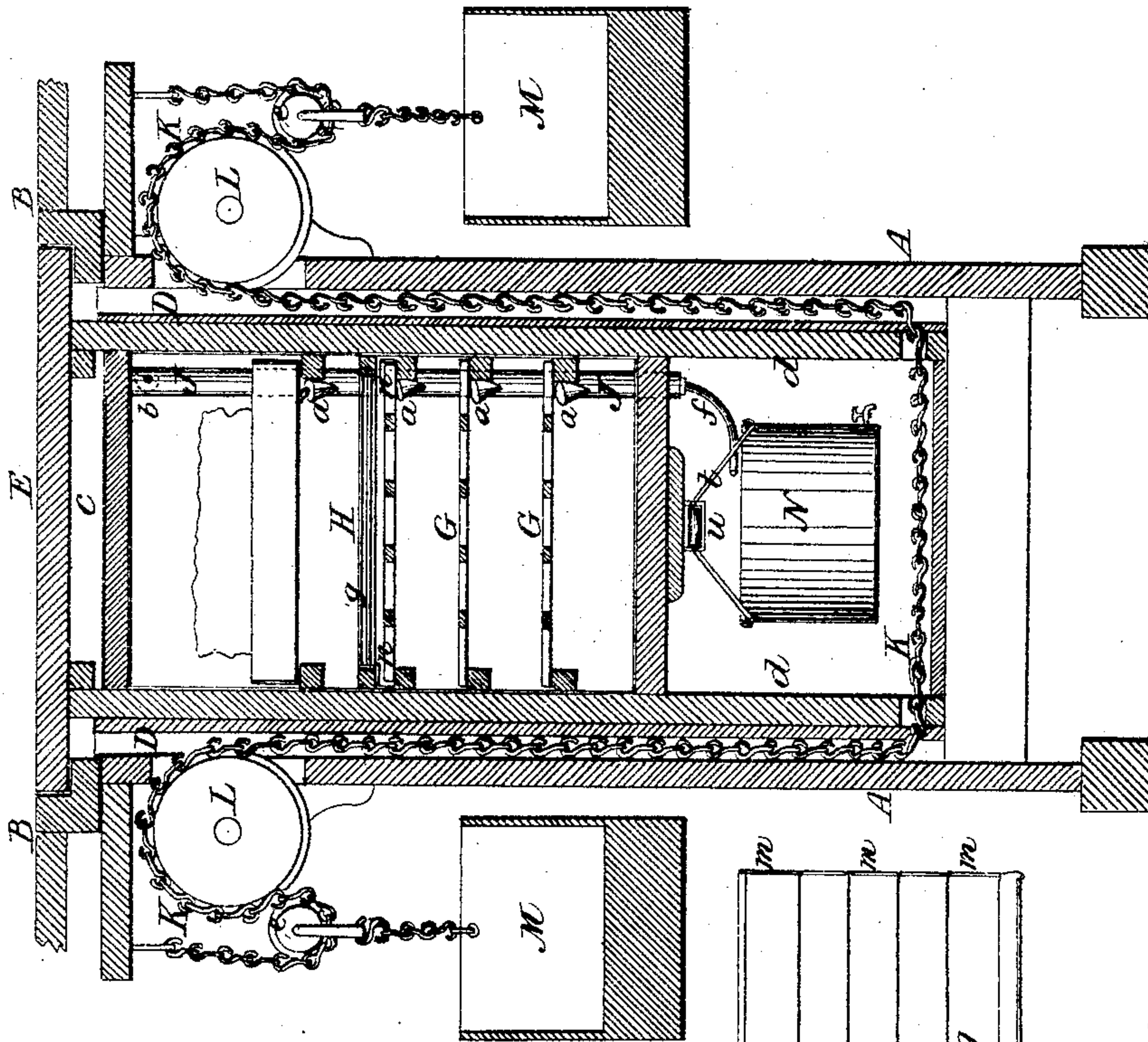


FIG I

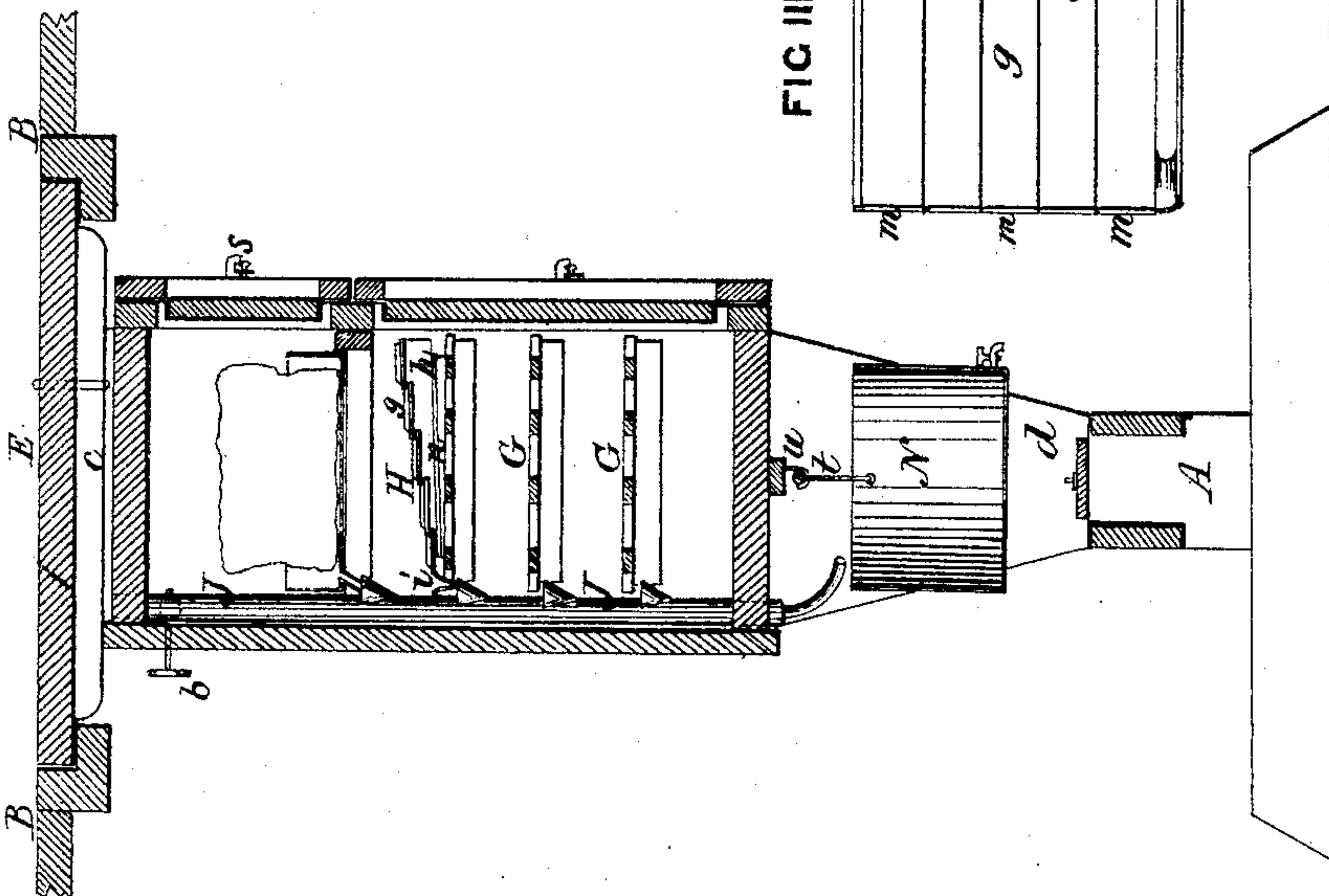


FIG III

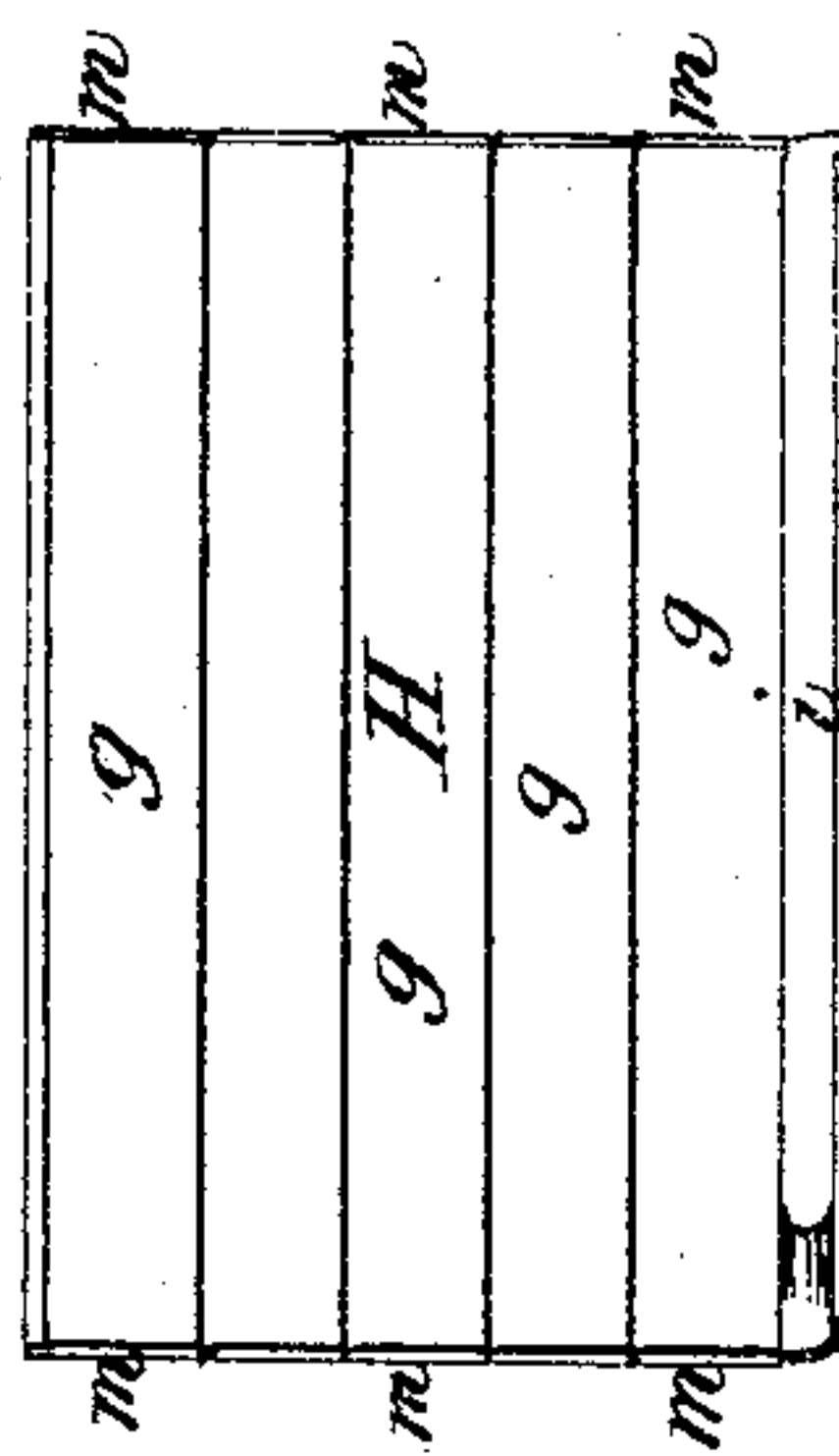
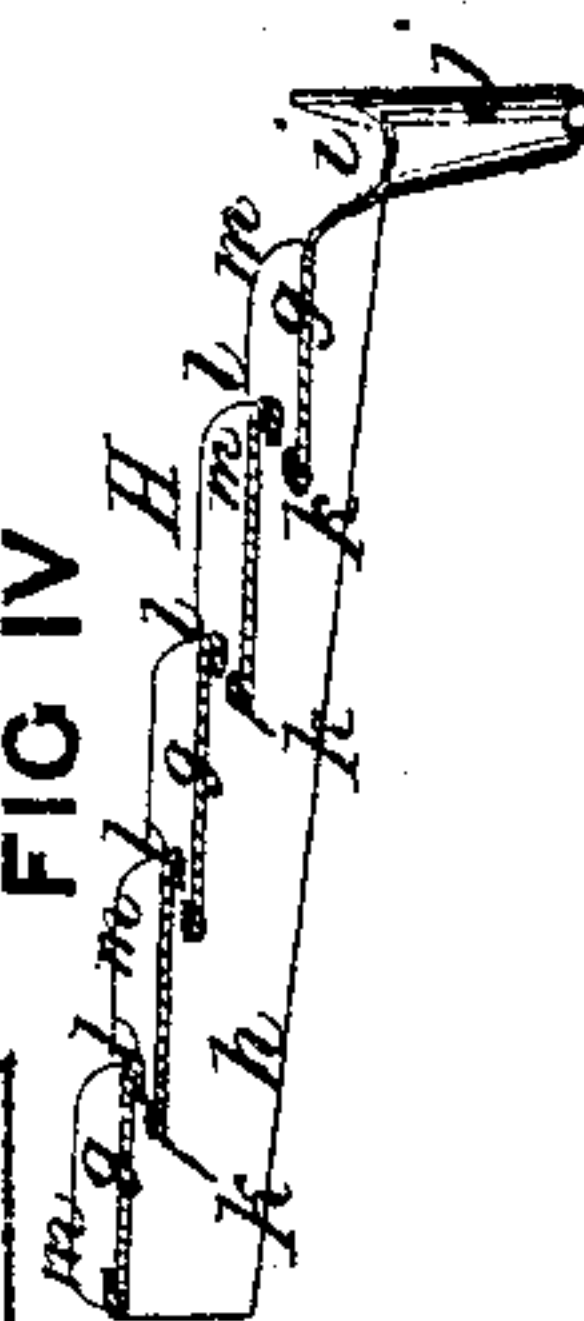


FIG IV



WITNESSES

J. H. Rutherford
John E. Laing

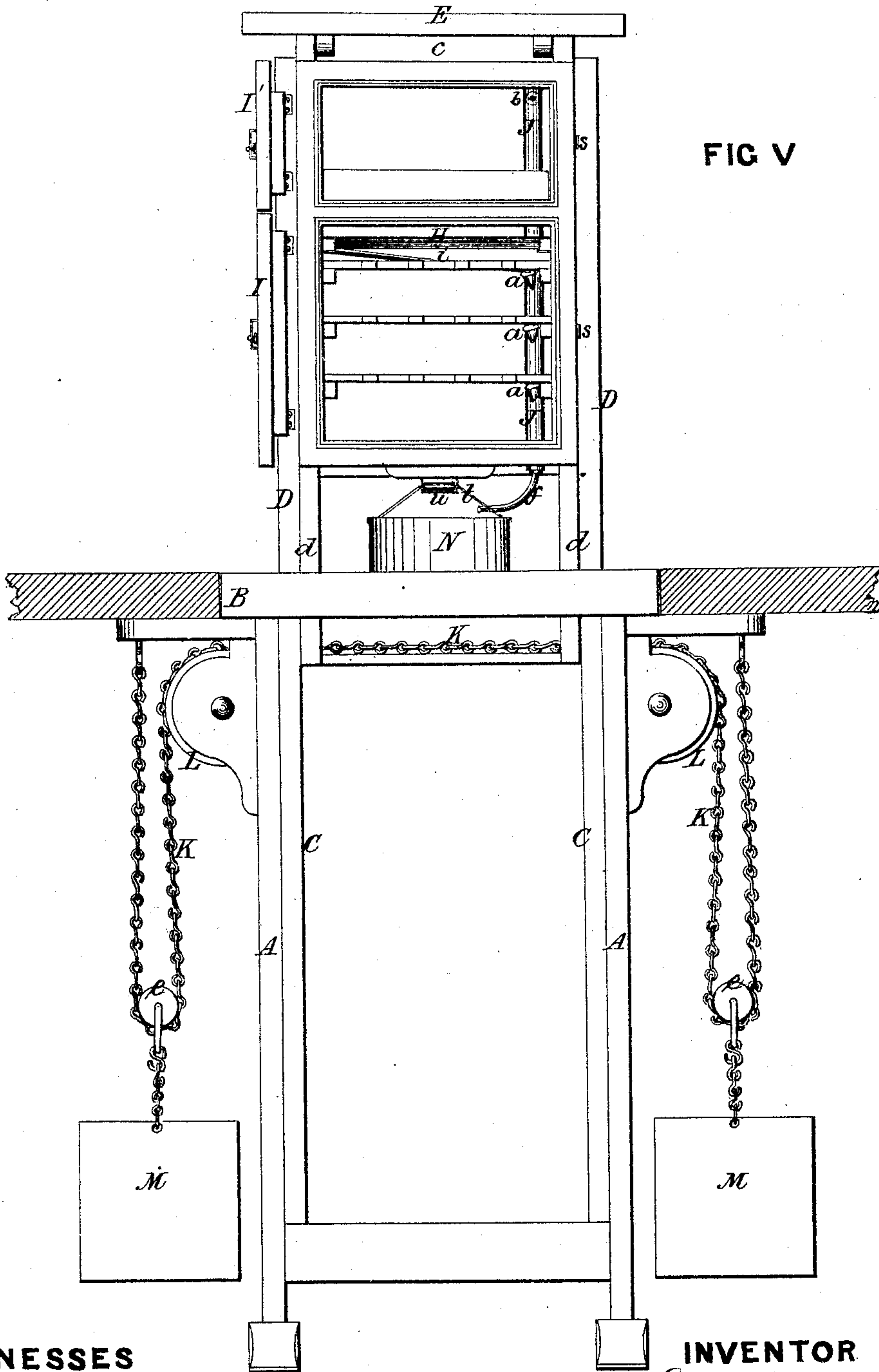
INVENTOR

John M. Blaisdell
by Johnson and Johnson
his Attorneys

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UNITED STATES PATENT OFFICE.

JOHN M. BLAISDELL, OF SANBORNTON, NEW HAMPSHIRE.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **153,307**, dated July 21, 1874; application filed June 5, 1874.

To all whom it may concern:

Be it known that I, JOHN M. BLAISDELL, of Sanbornton, in the county of Belknap and State of New Hampshire, have invented certain new and useful Improvements in Elevating Refrigerator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

My present invention is an improvement upon a refrigerating-cupboard, patented to me January 16, 1872; and the novel features of the present invention consist in means for maintaining the balance of the elevator in using ice. This I effect by combining with the elevator and its rising and falling weights a suspended receiver and holder for the water from the melting ice, so that the exact weight of the ice will be transferred from the top of the elevator to the suspended holder at the bottom, and in this way always keep the elevator at a balance, or nearly so, as, if twenty pounds of ice be used as the balance, the water therefrom is collected and made the means to give the elevator the same weight to balance that of the movable weights of the chains which connect the elevator with the fixed frame.

In my patent aforesaid this can only be effected by the use of additional weights in the weight-boxes; and as these weight-boxes are in the cellar it is found inconvenient at all times to reach them, and even then the balance would be imperfect, as the weight of the ice would be constantly diminishing. My present improvement, therefore, avoids this difficulty by using the water from the ice to maintain the balance which is so necessary in raising and lowering the elevator. Also, of a removable stepped pan for collecting the vapors, provided with edge ribs on alternate sides of the zinc slats, to strengthen them and prevent the water from dripping over their edges, and an inclined trough at the rear of the series of slats and mounted upon ways, whereby it may be withdrawn and cleaned and readily inserted in place to form a junction with the ventilating-pipe, the dry air from

which, in entering the refrigerator, is caused to impinge upon the vapor-collecting slats, and thereby aid in keeping them dry.

In the accompanying drawings, Figure 1 represents a vertical cross-section of an elevator refrigerating-cupboard embracing my invention; Fig. 2, a similar view at right angles thereto; Figs. 3 and 4, top and sectional views of the stepped vapor-collector; and Fig. 5, a front elevation with the refrigerating-elevator raised.

The frame of the refrigerating-elevator consists of two strong timbers, A A, secured to the flooring B, and extending down into the cellar or excavation beneath the dwelling, and joined by timbers to render them sufficiently firm to form ways C for guides D on the sides of a refrigerating-elevator arranged to be raised and lowered between said timbers, and when depressed to form a cover, E, for the opening within which it is fitted, flush with the flooring B, being countersunk in a recess therein. In this way the refrigerating-elevator is used beneath the floor of the dining-room. It is lined with zinc, fitted with open-bar shelves G and ice-pan H, and provided with separate doors I I' for the food-receiving compartment and the ice-box, which is arranged at the top; and a pipe, J, located in one corner, extends from the top to the bottom and is open at both ends, with openings *a* leading into each of the series of shelves for ventilation and for conducting the water from the ice-pan. The upper end of this pipe is fitted with a rubber valve, *b*, which may be closed when desired, and when open the air rises and passes out in the space *c* between the floor-cover and the ice-box. There is an extension of the sides *d* beneath the bottom of the refrigerator, and through openings in these a chain, K, passes over pulleys L arranged on the outer sides of the upper ends of the fixed timbers A, and are attached to the flooring, so as to suspend and carry weight-boxes M, by which the refrigerating-elevator is balanced, said boxes being suspended by sheaves *e*, under which the chains pass and raise and lower the weights by the raising and lowering of the elevator. This connection of the chain allows the weights to act evenly on both sides by the suspending sheaves.

In using ice, however, the weights will not effect and maintain a proper balance of the elevator, and as this is important in a heavy refrigerator I have combined therewith a receiver and holder, N, for the water suspended beneath the elevator, so as to form a connection by a curved pipe, *f*, leading from the lower end of the discharge-pipe J, so that the water from the melting ice passes into this suspended holder and is held to maintain the balance, not only during the melting of the ice, but after it has all melted away. In effecting this, say, twenty pounds of ice are used to balance the weighted boxes, and as the weight of the ice decreases the diminution is transferred to the suspended receiver in exact weight, and the weight of the ice is kept up in water to render the refrigerator easy of management at all times. In renewing the ice the water is drawn off or emptied. The condensed vapor from the warm air is collected by the zinc slats *g* arranged in a frame, *h*, in steps which lap each other, and with their frame incline back, there being spaces between the lapping edges of each pair of slats for the free circulation of the air, and to allow the collected vapors to run from one slat to the other, both from their upper and under sides, into an inclined trough, *i*, at the back, which, by a spout, *j*, connects with, and empties into, the discharging-pipe J, by which all the condensation from the vapors is carried off by the same pipe which discharges the water from the ice and ventilates the refrigerator. The upper edges of the lapped steps *g* are bent over to form ribs *k* under the lapped edges, to prevent the dripping from the upper slats running over the front edges and insure its passing back to the trough. They also prevent the sagging of the slats, and for this purpose they are also soldered together at a point in the middle of their length and stiffened by ribs *l* on their under back edges, as it is very necessary to keep these slats straight and with even surfaces. The ends of

the stepped slats are provided with lip *m*, so that the steps form a series of collecting-troughs discharging into each other and into the passing-off trough, and which may be withdrawn from its inclined ways *n* like one of the shelves and cleaned. The refrigerating-doors I I' are provided with weighted latches which fasten themselves with hooks *s* when the doors are closed.

In winter, when ice is not required, the weight-boxes are adjusted to make the balance; and, instead of boxes, the ordinary scale-weights may be used, in which the weights are put in place upon a suspending-rod.

The suspended balancing water-holder may be provided with a cock by which to draw off the water, or it may be removed and emptied, its suspending-point being made by a handle, *t*, which hooks over a hook, *u*, on the under side of the refrigerator.

I claim—

1. In a refrigerating-elevator, the combination, with said elevator, of a suspended water receiver and holder, N, the discharge-pipe J, ice-pan H, and the balancing-weights M, as and for the purpose described.

2. The removable stepped pan, provided with ribs *k l* on alternate sides of the zinc slats *g*, and an inclined trough, *i*, and spout *j* at the rear of the series of slats, and mounted upon ways *n*, as and for the purpose set forth.

3. The combination of the removable stepped pans, constructed as described, with the ventilating-pipe, with which it forms a connection, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have affixed my signature in presence of two witnesses.

JOHN M. BLAISDELL.

Witnesses:

MOSES T. RUNNELS,
ALFRED W. ABBOTT.