B. M. NYCE.

Granary.

No. 50,267. Patented Oct. 3, 1865.

Fig: 1

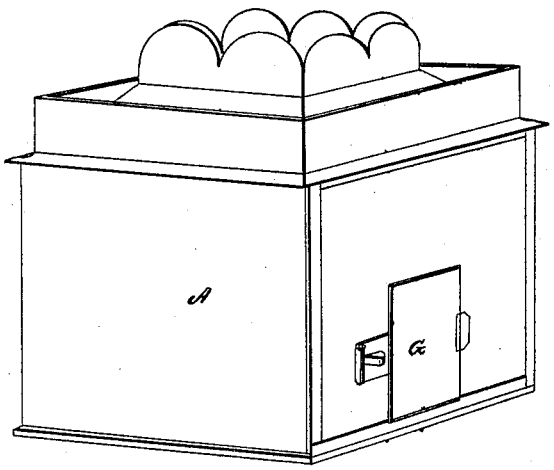


Fig: 2.

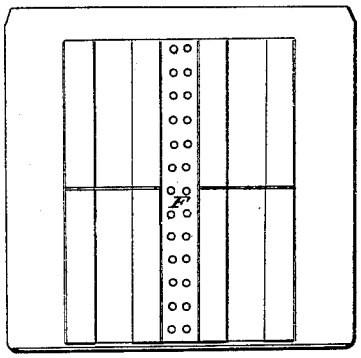


Fig: 3.

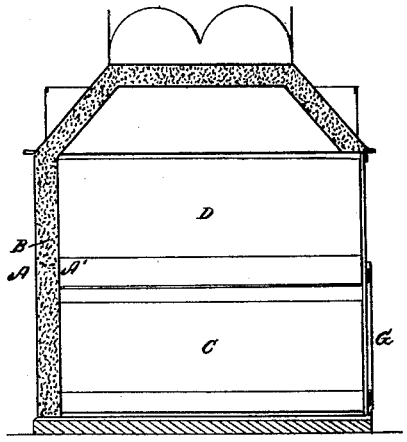
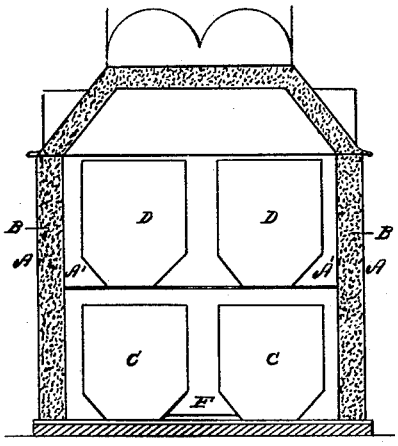


Fig: 4.



Witnesses.
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A. W. McClelland.

Inventor:
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UNITED STATES PATENT OFFICE.

B. M. NYCE, OF CLEVELAND, OHIO.

IMPROVEMENT IN GRANARIES.

Specification forming part of Letters Patent No. **50,267**, dated October 3, 1865.

To all whom it may concern:

Be it known that I, BENJAMIN M. NYCE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Granaries for Storing and Preserving Grain, &c; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a ground plan, and Figs. 3 and 4 are vertical sections.

Like letters refer to like parts in the several views.

My invention relates to utilizing the hygroscopic salt commonly known as "waste bittern" or "old pickle," now a refuse from salt-works, for absorbing the moisture eliminated from grain, &c.

In order to accomplish my purpose I construct a granary of dimensions suitable to the quantity of grain to be stored.

The walls A may be either single or double, as at A A′. Each of these should be as nearly air-tight as possible and impervious to moisture. The space B between the walls should be filled with some dry poor conductor, as sawdust, cut straw, or fine shavings, &c., for the purpose of keeping up a uniform temperature in the interior of the building. The ground floor should be made air-tight by covering it with a series of coats of roofing-cement or other substance that is impervious to air or moisture. If the walls are made of wood, no crevices should be left at the bottom, where they join the foundation, for the admission of air or moisture. The walls may be made of brick or stone, but in either case they should be made air-tight and impervious to moisture; or, if desired, the walls can be made of iron. The roof should also be made double, and possess the same properties for the exclusion of air and moisture as the side walls. The doors G should be made to shut as nearly air-tight as possible, and shut upon some kind of elastic packing. In short, the whole interior of the building or granary should be without ventilation, and the walls, roof, and floor impervious to moisture.

The floor should be an exact level, with the edges raised three or four inches, so that it will hold a liquid, and pipes should be introduced, with stop-cocks for drawing off the accumulated moisture when condensed.

The granary may be divided into two or apartments, one above the other; but each floor should be constructed of material that is impervious to water, and so formed that a liquid could accumulate to the depth of three or four inches.

The grain-bins are represented in Figs. 3 and 4 in tiers, one above another, as seen at C C D D. These should be provided with means for ventilating into the interior of the granary by pipes, wire-cloth, open top, &c.

The bottom of each bin may be contracted into a narrow base, so as to give as large a surface as possible for spreading out the hygroscopic salt upon the surrounding floor, or the bins may be elevated a few inches from the floor, thus increasing the space for the absorbent. The bins being filled with grain or other like products, the bittern is spread evenly over the floor to the depth of two or three inches. Elevated walks F are placed above the floor between the bins. In addition to or independent of the distribution of the absorbent upon the floor, shallow troughs may be placed in the upper portions of the room, and the bittern placed therein. When all this has been completed the door should be closed tightly, and thus the interior of the room is cut off from the daily changes of the atmosphere without, and the exhalations of moisture from the grain will be taken up by the absorbent, and this exhalation will continue until the entire mass of grain in the granary is reduced to a uniform degree of dryness.

In very cold, dry weather the door of the granary may be opened and the whole temperature of the room, including the grain in the bins, reduced to the lowest degree reached by the air without. The granary then by being closed will preserve nearly the same temperature during the succeeding summer, which low temperature, together with the great dryness obtained and preserved by means of the bittern, used as hereinbefore stated, will prevent any tendency to decay or injury to the grain; and it is obvious that grain of any kind—flour, meal, or other substance—can be thus kept for an

indefinite period by the means hereinabove set forth.

I do not confine myself to the preservation of grain only by the use of the waste bittern, but also for fruits and vegetables, when utilized for this purpose in fruit-houses constructed substantially as described in patents granted to me November 2, 1858, and March 19, 1861.

I also embrace in this invention so arranging the interior of the hold of ships and other water-craft, or any portion thereof, that grain, fruit, or other substances may be exposed to the absorbing action of bittern in the same manner set forth in relation to the construction and operation of the hereinbefore-described granary.

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

So constructing and arranging granaries and other buildings for similar purposes whereby they are adapted to the employment or utilizing of waste bittern from salt-works within air-tight walls, substantially as described.

BENJN. M. NYCE.

Witnesses:
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