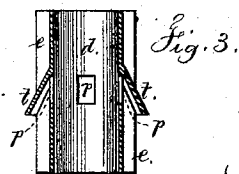
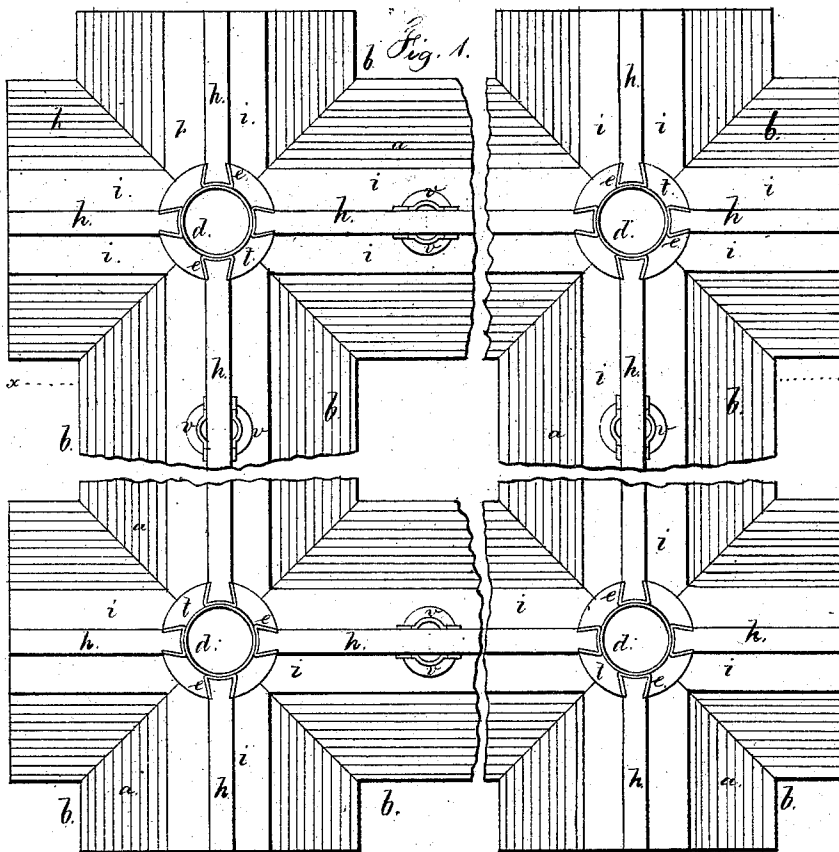
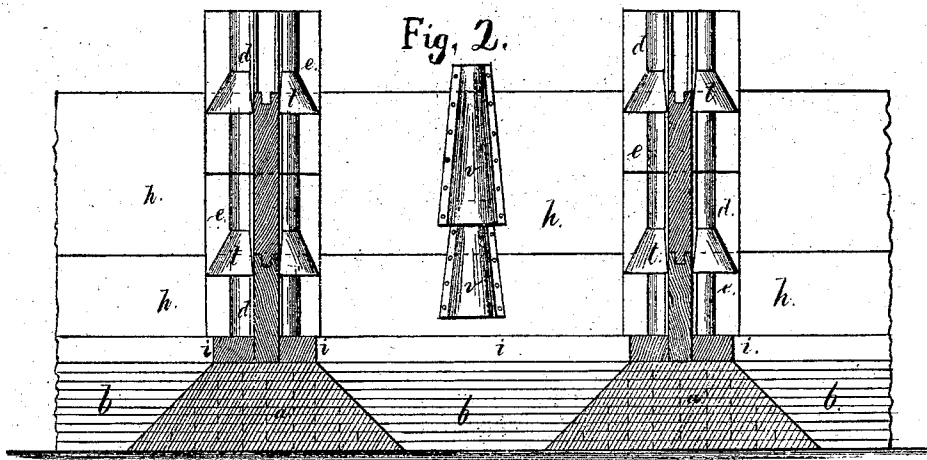


L. S. CHICHESTER.
Improvement in Grain Bins.

No. 125,169.

Patented April 2, 1872.



Witnesses

Chas. H. Smith
Geo. A. Walker

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UNITED STATES PATENT OFFICE.

LEWIS S. CHICHESTER, OF BROOKLYN, NEW YORK, ASSIGNOR TO CHARLES F. CHICHESTER, OF SAME PLACE.

IMPROVEMENT IN GRAIN-BINS.

Specification forming part of Letters Patent No. 125,169, dated April 2, 1872.

To all whom it may concern:

Be it known that I, LEWIS S. CHICHESTER, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Grain-Bins; and the following is declared to be full and exact description of the same.

Grain has heretofore been stored in bulk in warehouses, and the same kept in large bins or rooms provided for each grade or quality of grain. Storing the grain in bins according to its grade or quality has caused great dissatisfaction among shippers, because shippers would not receive the same consignments of grain stored by them, but would have grain returned said to be of the same grade or quality as that stored by them, which returned grain frequently was of an inferior grade and a cause of loss to shippers. To meet this want vast warehouses have been constructed, divided up into bins, so that large shipments of grain could be stored separately; but these bins have been made almost wholly of wood, which involved great cost of material to make such bins of sufficient strength to sustain the grain held by them, because the sides of the bins had to be made of several thicknesses of planking. Besides this, there was considerable loss in the area of the bins, occasioned by the timbers, braces, and planking; and the ventilation of such bins was very imperfect and defective.

The object of my invention is to cheapen the cost of construction of grain-bins, and at the same time so construct them that, while being equally strong, a larger area for storing grain will be obtained within a given space than in the grain-bins heretofore constructed, and each bin will be perfectly ventilated to prevent the heating and injury from moisture.

I make use of short metal cylinders or tubes for the angles of the bins; said cylinders being placed one upon another to form columns of the desired height. These short metal cylinders are each provided with dovetail flanges to receive the dovetailed ends of planking between such cylinders to form the sides of the bins, and said cylinders are locked or kept in place by the end of one plank passing half way in the flange of one cylinder and half way in the flange of the next cylinder above. Each cylinder is provided with openings to allow vapor

or foul air to escape from the grain, and such openings are covered by a hood to prevent the grain passing into the cylinder. Short tapering tubes may also be provided at the sides of the bin for the same purpose.

In the drawing, Figure 1 is a plan view, illustrating the construction of my grain-bins. Fig. 2 is a section at the line *x x*, and Fig. 3 is a section of one of the metal cylinders.

The flooring *a* is to be of suitable thickness, and be supported by a foundation of usual character to sustain the structure to be erected thereon and the mass of grain to be held therein. In laying said flooring, the hoppers *b b* are to be formed, and the chute, through which the grain passes to the boat or car being loaded, is to be connected to the hoppers in any desired manner. *d d* are the short metal cylinders to form the columns at the angles of the bins, and said cylinders are provided with the dovetail flanges *e e* to receive the ends of the planking *h h*. The bottom of the first cylinder of each column rests upon the flooring *a*, and to keep such cylinders from being moved from their correct position I make use of the holding-strips *i i*, which surround the base of such cylinders and securely retain them in place. Said holding-strips are also at each side of the bottom planks of the bins, and prevent said planks moving laterally, and give great stability to the base of the bins. The cylinders *d d* are placed at suitable distances apart, according to the size and shape of the bins, and one upon the other, so as to form columns of the desired height, as illustrated in Fig. 2; and the tongued and grooved planking *h*, forming the sides of the bins, extends from one column to the next, the dovetailed ends of the planks sitting within the dovetail flanges *e e* upon said cylinders *d*. To lock the said cylinders and securely hold each column together, I place the planking *h* so that the respective ends of one half of a plank will be in the flanges of two adjoining cylinders, and the half in the flanges of the two cylinders immediately above them, and thus form a very firm and reliable connection of the cylinders to each other, and of the planking to the column of cylinders, it being understood that the entire column is carried up in this manner. Any desired number of bins may be formed in this manner, and the

shape of such bins may be determined at pleasure by the location of the columns, and the number and position of the flanges to receive the planking, and it will be apparent that a number of these bins can be erected with great rapidity, and will possess great strength, and that they can be constructed at much less cost than those previously made, because the requisite strength for the sides of the bins can be obtained without the expenditure of as much material as heretofore employed. Each cylinder *d* is provided with openings *p p* to allow foul air, vapors, &c., to pass from the grain-bins into said cylinder, and escape at the top of the column and at *t*. A hood surrounds the openings *p p* and prevents the grain passing into the cylinder. *v v* are short tapering tube sections, placed at the sides of the bin, with the larger part of one tube surrounding the top and smaller portion of the tube below, so as to leave an opening for the escape of foul air from the bin, and the lower ends of such tubes should project sufficiently to prevent the grain entering such tubes.

I claim as my invention—

1. A column for the angle of a grain-bin, formed of a series of metal cylinders or tubes placed one above the other, and provided with the flanges to receive the planking for the sides of the grain-bin, substantially as set forth.

2. The grain bin or bins herein described, provided with columns *d* for securing the planking, the same being arranged to break joints, substantially as and for the purposes set forth.

3. The cylinder *d* provided with the openings *p p* and hood *t*, for the purposes set forth.

4. The tapering tube sections *v v* secured to the sides of the grain-bin, for the purposes set forth.

Signed by me this 19th day of December, A. D. 1871.

LEWIS S. CHICHESTER.

Witnesses:

CHAS. H. SMITH,
GEO. T. PINCKNEY.