C. D. WOODRUFF.

Grain Bin.

No. 94,265. Patented Aug. 31, 1869.

Fig. 1

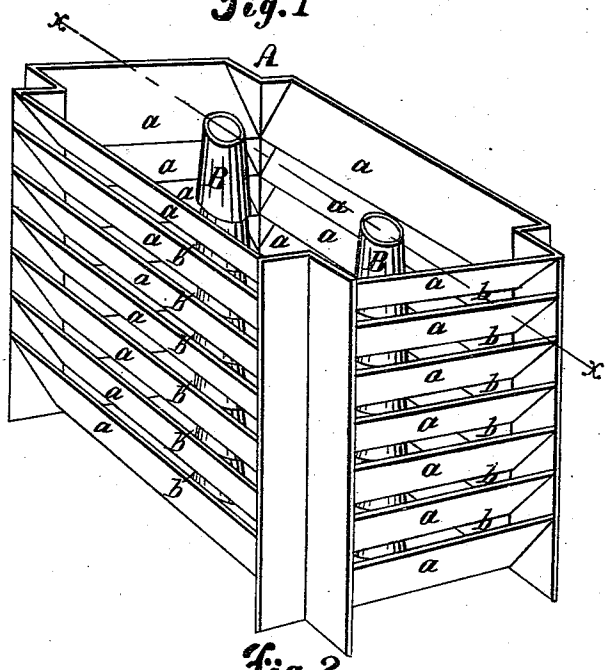
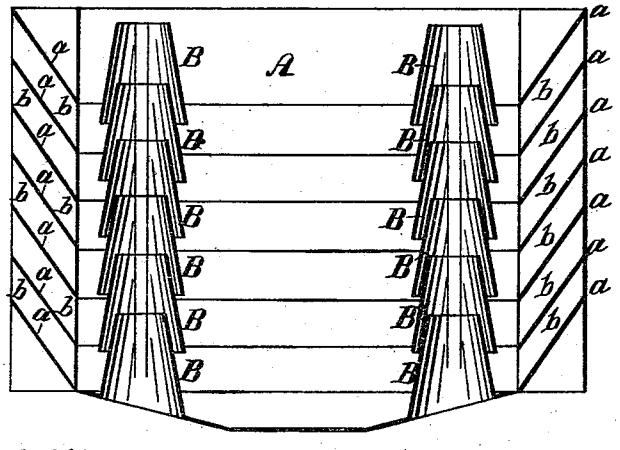


Fig. 2



Witnesses;

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John Slater.

Inventor.

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Per Attorney.

Thos. S. Sprague.

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United States Patent Office.

CHAUNCEY D. WOODRUFF, OF TOLEDO, OHIO, ASSIGNOR TO HIMSELF AND WILLIAM KRAUSS, OF SAME PLACE.

Letters Patent No. 94,265, *dated August* 31, 1869.

IMPROVEMENT IN GRAIN-BINS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, CHAUNCEY D. WOODRUFF, of Toledo, in the county of Lucas, and State of Ohio, have invented a new and useful Improvement in Bins for Storing Grain; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification.

Figure 1 is a perspective view of my invention.

Figure 2 is a vertical section, on the line *x x* in fig. 1.

Like letters indicate like parts in each figure.

This invention has for its object the construction of bins for storing grain in elevators or buildings, so arranged that the air can have free access to the grain in the bin, thereby preventing and obviating the tendency to heat which prevails in grain when stored in bins of ordinary construction.

The invention consists in constructing the sides and ends of the bin of boards, plank, or any other appropriate material, secured to proper timbers, and suitably braced to withstand the pressure of the grain within the bin, said boards being secured to the timbers at such an angle, and overlapping and underlapping each other, that the grain will not fall or be forced upward through the spaces left between said boards for the admission of air to the grain. The lower edges of the boards form the bottom of the angle already described, and project outward and upward, over and underlapping each other, as shown in fig. 2.

The invention also consists of a suitable device for admitting one or more currents of air through the bottom of the bin, upward through the grain to or nearly to the top of the bin.

In the drawing—

A represents a bin, whose sides are constructed of boards, plank, or other appropriate material, *a*, secured to the corner-posts or timbers, at any desired angle, (the lower part of said boards forming the inner side of the walls of the bin, as shown in fig. 2,) provided that such angle must be sufficient, that with the under and overlapping of said boards, as hereinbefore mentioned, the pressure of grain within the bin will not force any of said grain upward through the spaces *b*, left between said boards for the purpose of letting the heat in the grain pass off, and of admitting air to the grain.

B is a series of conical-shaped cylinders, so arranged and secured to each other that the base of the upper encloses the top of the under ones, and overlap them far enough to prevent the grain being forced through the spaces left between said cylinders, as shown in fig. 2.

This series of cylinders forms an air-pipe, and is secured to the bottom of the bin, immediately over a proper opening in the same, for the admission of air.

The air-pipe should extend to the top of the bin, and as many of them as may be deemed necessary may be constructed in each bin, the required number varying with the size of the bin, and the quantity and quality of the grain to be stored.

It is a well-known fact, that grain stored in considerable quantities, even if well dried before being stored, is apt to heat, sometimes deriving moisture in the bins. The design of this invention is to furnish ready and easily-accessible ducts for carrying off the heated and moistened air which is generated in the grain, and of creating a draught for that purpose, by means of the above-described construction of the bin and air-pipes, while, at the same time, fresher and cooler air from the outside will replace the heated air which has passed off.

I do not desire to confine myself to the construction of the air-pipes, as described above, for a tube might be used for the same purpose, said tube being perforated, and suitable caps secured over said perforations, so that the grain could not gain access to the interior of the tube; or any other convenient and known form might be employed in the construction of these air-pipes.

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

The grain-bin A, in combination with the tubes B within said bin, and extending from the bottom thereof, when constructed, arranged, and operating as and for the purpose aforesaid.

CHAUNCEY D. WOODRUFF.

Witnesses:

JAS. I. DAY,

H. F. EBERTS.