H. H. BEACH.

APPARATUS FOR CURING GRAIN.

No. 190,809. Patented Mav 15, 1877.

Fig: 2.

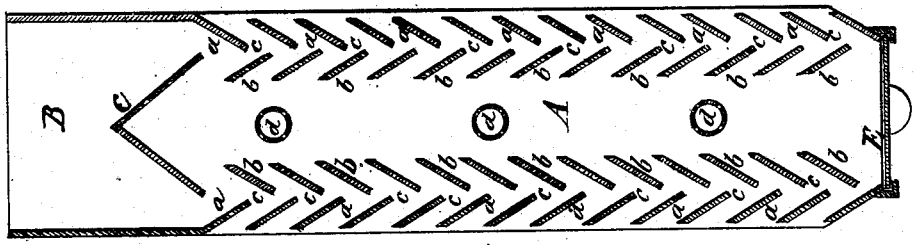
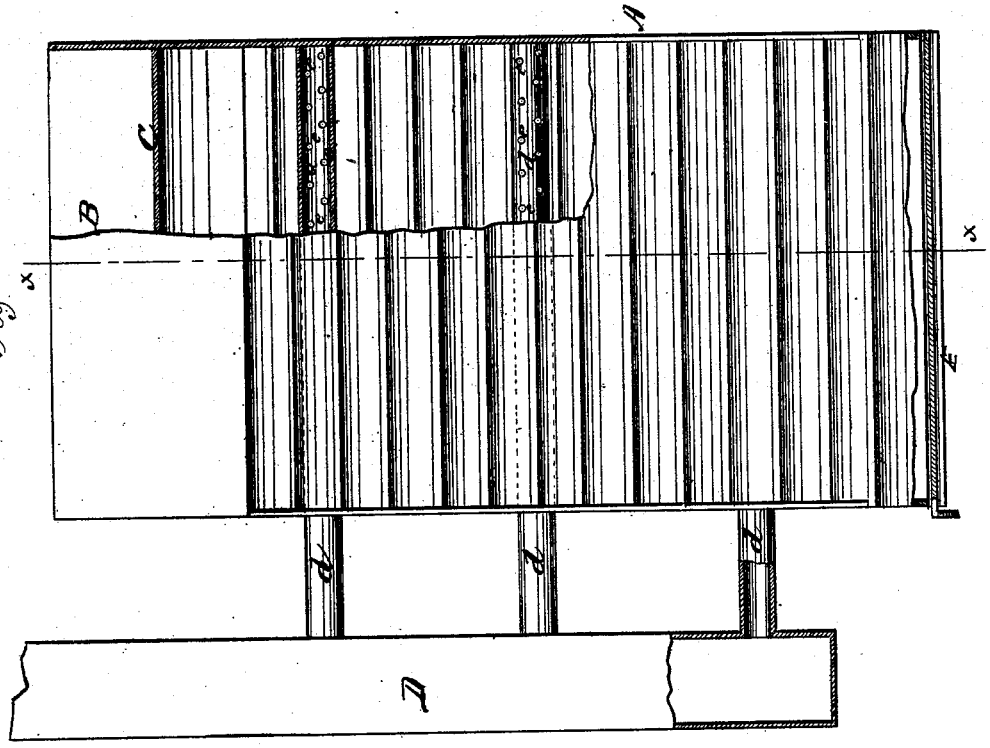


Fig: 1.



Witnesses:

A. L. Wattenberg

W. Lovell

Inventor:

Henry H. Beach

per Munn & Co.

Attys

UNITED STATES PATENT OFFICE.

HENRY H. BEACH, OF ROME, NEW YORK, ASSIGNOR TO WILLIAM H. SMITH, OF URBANA, ILLINOIS.

IMPROVEMENT IN APPARATUS FOR CURING GRAIN.

Specification forming part of Letters Patent No. **190,809**, dated May 15, 1877; application filed November 7, 1876.

To all whom it may concern:

Be it known that I, HENRY H. BEACH, of Rome, in the county of Oneida and State of New York, have invented a new and Improved Apparatus for Curing Grain; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention is in the nature of an apparatus for curing grain; and the invention consists in an apparatus for cooling grain, (after it has been subjected to heat for the purpose of expelling moisture,) consisting of a trunk with two of its sides composed of a series of plates parallel, but fixed at reverse angles, the trunk having closed ends with a series of perforated pipes passing through it, the pipes opening into the trunk of an exhaust-blast, substantially as described.

In the accompanying sheet of drawings, Figure 1 is a side view, partly in section, of my invention, and Fig. 2 an end view in vertical section.

Similar letters of reference indicate like parts in the several figures.

Grain, after it has been exposed to the drying process for the purpose of expelling its inherent moisture, would be seriously injured if packed in its heated state; therefore, to overcome this difficulty, I pass the grain through a trunk, A. This trunk stands vertically, and may be of any desired size. Two of its sides are closed, and two of them fitted with parallel plates *a* and *b*. These plates, although parallel, are placed at different or reverse angles, (see Fig. 2,) and a space, *c*, is left between the edges of the several plates. The upper end of the trunk is provided with a receptacle, B, and within this receptacle is placed a separator, C. Through the trunk A, passing from one closed side to the other, is a series of pipes, *d*. These pipes are provided with perforations *e*, and they extend to, and open into, the trunk D of an exhaust-fan. The lower end of the trunk A has a gate or valve, E, fitted to it.

My apparatus being constructed substantially as above described, its operation is as follows: The grain is put into the receptacle B, and its volume is divided or spread by the separator C; thence it descends by gravity, striking the first of the plates *a*, which deflects it from a straight course, and leading to the surface of the second plate, *b*, and so on, alternately, from plate to plate, through the whole series of deflectors, arranged on each side of trunk, (leaving an air-space in the center of the trunk,) until the grain finds exit out of the bottom of the trunk, where its flow is regulated by the gate or valve E. As the grain descends and passes from each deflecting-plate to the other, it is divided into two comparatively thin strata of grain. An exhaust-fan now operating at the upper end of the air-trunk D, the external air is drawn through the spaces *c*, between the plates *a* and *b*, through the grain, and finally through the perforations *e* in the pipes *d*. The air in this way being forced through the stratum of grain, carries off the heat and effectually cools the grain by the time it has passed through the trunk.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A grain-cooling apparatus the sides of the trunk of which are formed of plates arranged at different angles, constituting deflectors through which the grain descends, leaving an air-space in the interior of the trunk, through which passes a series of perforated pipes closed at one end, and with their open ends passing into the trunk of an exhaust-fan, substantially as and for the purpose shown and described.

HENRY H. BEACH.

Witnesses:
H. L. WATTENBERG,
M. LOVELL.