H. CUTLER.
Grain-Drier.

No. 203,004. Patented April 30, 1878.

Fig: 2.

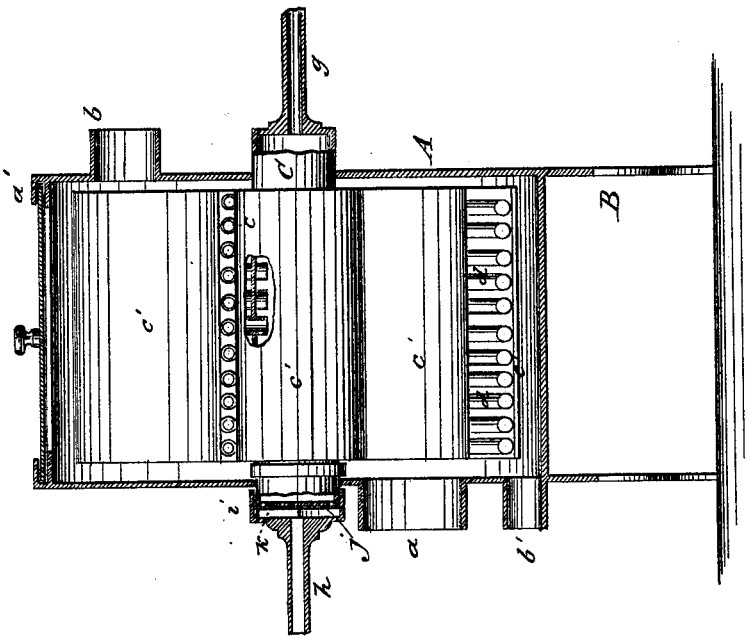
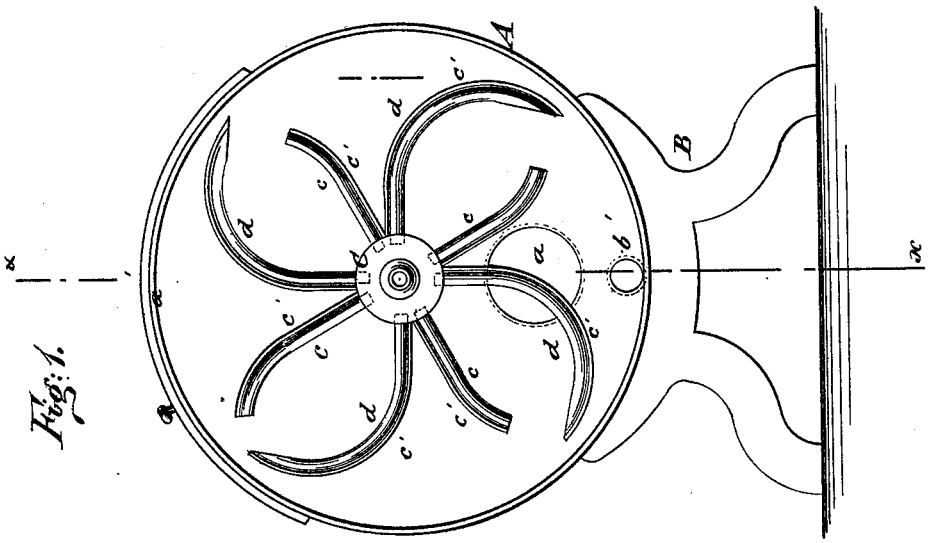


Fig: 1.



WITNESSES:

Chas. Nida.
C. Sedgwick

Fig: 3.

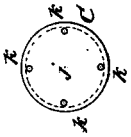


Fig: 4.

INVENTOR:
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UNITED STATES PATENT OFFICE.

HENRY CUTLER, OF WILBRAHAM, ASSIGNOR TO HIMSELF, CHARLES F. CUTLER, GEORGE E. CUTLER, AND BENJAMIN T. THOMPSON, OF FRAMINGHAM, MASSACHUSETTS.

IMPROVEMENT IN GRAIN-DRIERS.

Specification forming part of Letters Patent No. **203,004**, dated April 30, 1878; application filed January 30, 1878.

To all whom it may concern:

Be it known that I, HENRY CUTLER, of Wilbraham, in the county of Hampden and State of Massachusetts, have invented a new and Improved Grain-Drier, of which the following is a specification:

Figure 1 is an end elevation of my improved grain-drier, having the head of the cylinder removed. Fig. 2 is a vertical section. Figs. 3 and 4 are detail views of the water-discharging device at the end of the tubular shaft.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

Referring to the drawing, A is a cylinder resting on supports B, and provided with the hot-air-supply pipe *a* and the air-exhaust pipe *b*, also with an opening, *a'*, in the top for feeding the cylinder and for the escape of steam driven off from the grain. It is also provided with a grain-discharge spout, *b'*.

A hollow shaft, C, is provided with hollow curved arms *c* or *d*. The inner ends of these arms project a short distance into the tubular shaft to prevent the return of the water of condensation to the arms.

The arms *c d* may be placed so close together as to be capable of lifting the grain, or they may be placed a small distance apart, and a sheet-metal backing, *c'*, may be attached to them.

The tubular shaft C is provided with a small supply-pipe, *g*, and discharge-pipe *h*, the latter being attached to a cap, *i*, that is fitted to the tubular shaft. The discharge end of the tubular shaft is stopped by a head, *j*, in which, at its periphery, there are four small apertures, *k*, which lead to compartments *l* in the cap *i*, said compartments being formed by four radial partitions *m*. The water discharged through the apertures *k* into the cap *i* is carried upward by the partitions *m* and delivered to the discharge-pipe *h*.

The grain or other substance to be dried is placed in the drum A, and a current of hot air is forced into the supply-pipe *a*, or is drawn in by the application of a vacuum-fan to the exhaust-pipe *b*, or both forcing and exhausting fans may be used. Steam is admitted to the tubular shaft C, which is constantly rotated. The lower portion of the drum A may be made hollow, or it may consist of a series of pipes for receiving hot air or steam.

In my improved drier the grain is subjected to the combined action of the current of hot air and the steam-heated radial pipes, and is rapidly dried without danger of burning.

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

1. A grain-drier having air-pipes *g h* and steam-pipes projecting from a hollow shaft, said steam-pipes being curved and arranged close together to lift the grain from the hot metallic surface and expose it to a current of air, as and for the purpose specified.

2. The combination, with the cylinder A, having pipes *a b*, arranged as described, of the hollow shaft C, having tubular arms, pipes *g h*, cap *i*, apertured head *j*, and the compartments *l*, formed by the partitions *m*, as and for the purpose specified.

HENRY CUTLER.

Witnesses:
E. H. CUTLER,
S. E. BAKER.