JABEZ BURNS.

Improvement in Grain-Driers.

No. 115,431. Patented May 30, 1871.

Fig. 1.

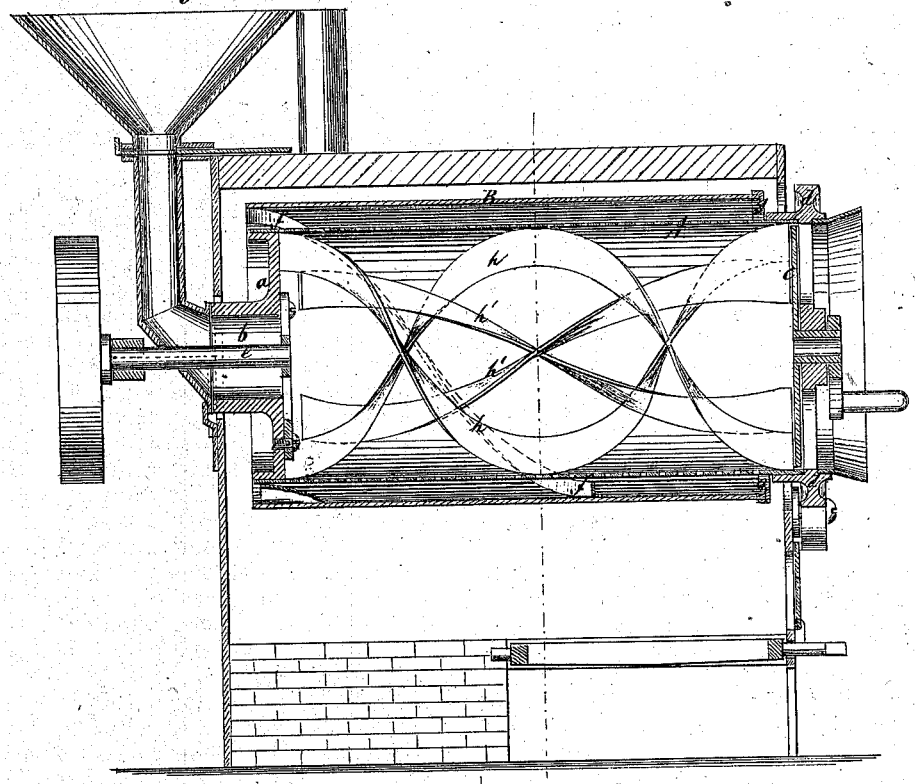
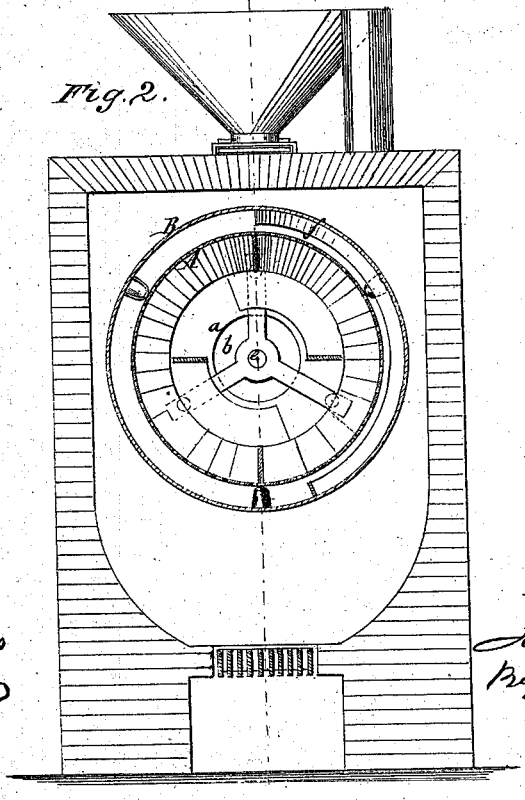


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JABEZ BURNS, OF NEW YORK, N. Y.

IMPROVEMENT IN GRAIN-DRIERS.

Specification forming part of Letters Patent No. 115,431, dated May 30, 1871; antedated May 26, 1871.

To all whom it may concern:

Be it known that I, JABEZ BURNS, of the city, county, and State of New York, have invented a new and Improved Apparatus for Drying Grain and other Materials; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a longitudinal section of this invention. Fig. 2 is a transverse section of the same.

Similar letters indicate corresponding parts.

This invention relates to an improvement on an apparatus which I have described in Letters Patent granted to me October 18, 1864, and numbered 44,704.

My present improvement consists in the arrangement of a jacket containing an internal spiral flange, in combination with a perforated cylinder containing a double internal flange, and provided with a supply and discharge opening; both the jacket and perforated cylinder being capable of being revolved in such a manner that the dust mixed with or disengaged from the grain or other material to be roasted or dried will readily discharge through the perforations of the inner cylinder into the jacket, whence the same is discharged by the action of the internal flange, while, at the same time, by means of the air-space formed between the jacket and the internal cylinder, the heat is uniformly distributed all around the internal cylinder, and the operation of drying or roasting can be conducted without danger of scorching or charring any portion of the grain or other material.

In the drawing, the letter A designates a cylinder, which is made of perforated sheet metal or of wire netting, and provided at one end with a head, *a*, having a central opening, *b*, through which the material to be treated is introduced, while the other end of said cylinder is provided with a head, *c*, having two openings which can be opened or closed, and which, when open, allow the contents of said cylinder to discharge. In the interior of the cylinder A are two spiral flanges, *h h'*, running in opposite directions, and causing the material under treatment to travel back and forth throughout the length of the cylinder, as fully described in my Letters Patent No. 44,704.

Said cylinder is placed over a suitable furnace, its discharging end being supported by a rim, *d*, on the head *c*, which rim rests upon friction-rollers, while the receiving end of the cylinder is supported by a shaft, *e*, extending through the central opening *b* of the head *a* and resting in suitable bearings, as indicated in Fig. 1. On the outer end of this shaft may be mounted a pulley or cog-wheel, to impart to the cylinder the required rotary motion. The perforated cylinder A is surrounded by a jacket, B, made of sheet metal, and provided in its interior with a spiral flange, *f*, fitting close on the inner cylinder, and serving to retain the jacket and the cylinder in a concentric position. That end of the jacket B next to the discharging-head *c* is provided with an internal flange, *g*, fitting closely to the circumference of the perforated cylinder; but the opposite end of the jacket is left open, and as the jacket revolves with the cylinder the dust, which passes through the meshes or perforations of said cylinder, is caused by the spiral flange *f* to discharge through the open end of the jacket. In practice the dust thus discharged is made to pass down into the furnace or fire-place, so that it will be consumed, thereby preventing it from causing annoyance to the workmen.

Another great advantage of this apparatus is, that by the jacket the heat of the fire is prevented from coming in direct contact with the internal cylinder, and, by the air-space formed between said jacket and cylinder, the heat is uniformly distributed round the cylinder, so that the material to be dried or roasted is not liable to be scorched or charred. Furthermore, the heat being retained by the air-space, a considerable saving in fuel and in time is effected.

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

The jacket B, provided with an internal spiral flange, in combination with the perforated cylinder A, containing flanges *h h'*, and capable of being revolved together with the jacket, substantially as set forth.

JABEZ BURNS.

Witnesses:

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