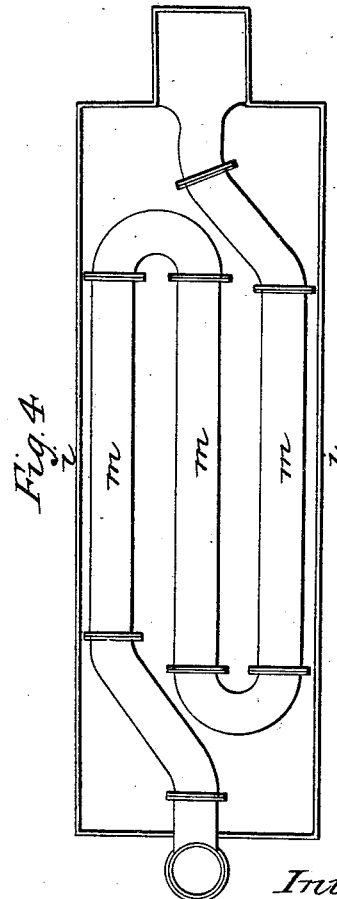
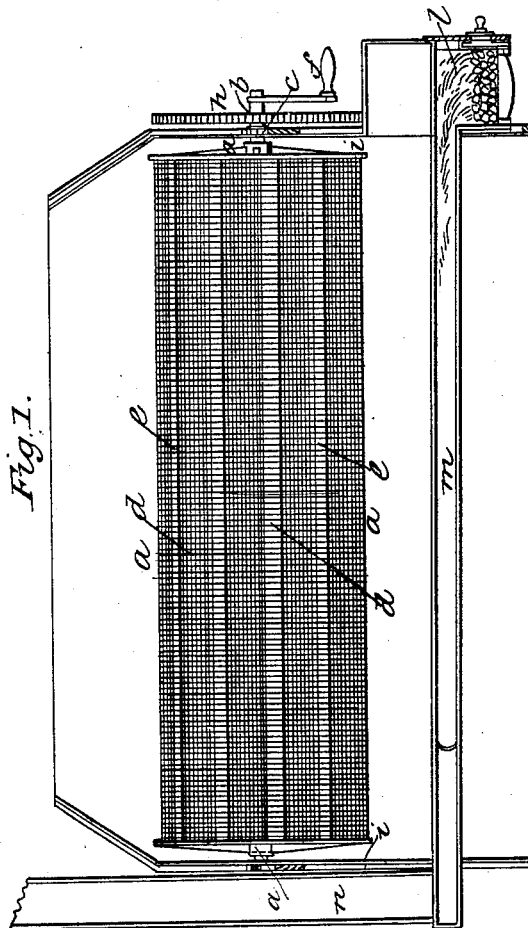
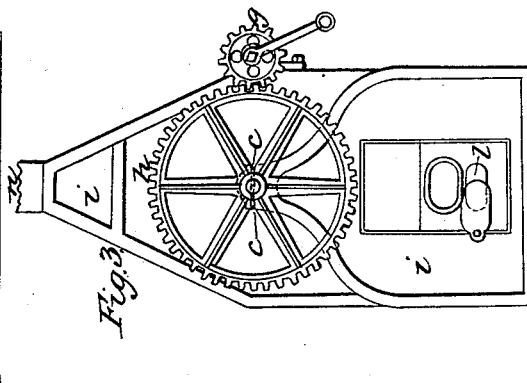
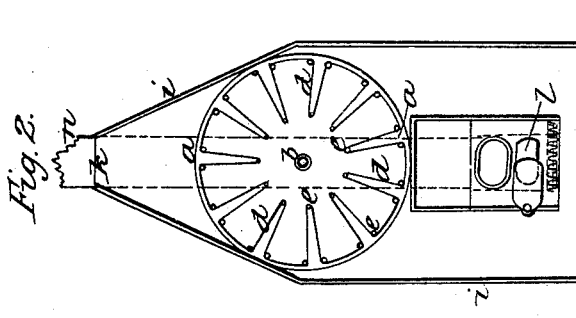


R. ELSE.
Grain Drier.

No. 1,286.

Patented Aug. 14, 1839.



Witnesses:
Wm. H. Watson

Inventor:
R. Else
J. P. Huchings his attorney
Newton Perry his agent

UNITED STATES PATENT OFFICE.

RICHARD ELSE, OF THE COUNTY OF MIDDLESEX, GREAT BRITAIN.

MACHINE FOR DRYING GRAIN.

Specification of Letters Patent No. 1,286, dated August 14, 1839.

To all whom it may concern:

Be it known that I, RICHARD ELSE, a subject of the Queen of Great Britain, and now residing at 56 Gower street, in the county of Middlesex, in the said Kingdom, have invented or discovered a new and useful invention of certain Improvements in Apparatus or Machinery for Drying Corn, Grain, and Seeds; and I do hereby declare that the following is a full and exact description thereof.

My improvements consist in the adaptation of what may be termed a rotary "lantern" cylinder or drum made or constructed in a peculiar manner of skeleton framework and woven wire gauze or other reticulated fabric or network for drying corn, grain, and seeds (placed within it) by means of hot air passed through the interstices of the cylinder as it revolves, the interior of such cylinder being furnished with reticulated ledges of wire gauze or open work fabric for the purpose not only of turning the grain over but also of allowing the steam or vapor evolved from the grain under operation to escape freely.

In the accompanying drawing Figure 1 represents the longitudinal appearance of the cylinder or drum formed as a lantern, its outer case or inclosing box with the furnace and flues below being in section to show their construction more clearly; and Fig. 2 is a cross section of the same taken vertically; Fig. 3 is an end view and Fig. 4 a horizontal section showing the fireplace and flues.

The rotary cylinder or drum consists of strong iron or other framework *a a* with its disk ends properly secured on the axis or shaft *b b*, in this instance extending throughout the cylinder and turning in proper bearings *c c* on the framework or stands of the outer casing. In the periphery of the cylinder or drum any desired number of openings *d d d* are made in the direction of its axis and in each of these openings an open wedge-formed recess is produced inward about half way toward the axis by stretching the wire (or reticulated cloth) over the longitudinal perch rods or bars *e e e* which constitute the essential longitudinal parts of the framework and may be formed as fixed, or permanent rods, or mov-

able frames or panels fitting into the skeleton framework.

It is unnecessary to describe the manner of making such wire gauze or reticulated cloth or other woven fabric or the manner of attaching it to the skeleton framework of the "lantern" cylinder, as these matters are well understood, the wire gauze or reticulated fabric being stretched over the longitudinal rods or placed in separate frames or panels and securely fastened in the cylinder.

The cylinder or drum is mounted upon its axle extending its whole length or upon short pivots fixed in the bosses of the disk or end parts of the cylinder which pivots turn in the bearings in the outer casing and it may be made to revolve by a winch handle *f* on the axle of the pinion *g* taking into the toothed wheel *h* on the axis *b* or by any other suitable means the rotary speed being regulated according to circumstances.

The openings into the cylinder for introducing and discharging the grain are preferred to be made in the periphery longitudinally and wire gauze doors of reticulated fabric must be fitted closely but to open and close with facility. The mode above stated and shown in the drawing is considered the best for constructing the cylinder but if any other mode be adopted embracing the reticulated ledges and recesses it will be considered to involve the principles of my invention. The cylinder may be constructed of any metal or metals or other material which an experienced workman should consider best adapted for the purpose.

Having now described my invention I proceed to show the manner of carrying the same into operation. The cylinder is to be placed in any stove or kiln or other convenient situation in which the heat necessary for drying corn, grain or seeds can be obtained and the doors being opened the corn, grain or seeds intended to be dried is to be introduced into the cylinder until it is about half filled; the doors being then closed the cylinder is made to revolve slowly on its axis or pivots and is kept in that rotary action the corn, grain or seeds continually falling over and sliding from one ledge to another until it has become thoroughly dried.

The peculiar construction of the cylinder

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particularly of the reticulated ledges causes the corn, grain, or seeds to be more uniformly exposed to the heat of the kiln or hot air passed through it and also allows the steam more readily to escape than in any other apparatus heretofore applied to that purpose.

The drawing represents one mode of adapting the furnace to the cylinder.

10 *i i* is the outer casing inclosing the cylinder and *h h* the exit aperture at the top part for the hot air steam or vapor arising from the grain.

15 *l* is the fireplace or furnace, *m* the flues passing backward and forward for the purpose of more effectually giving out the heat, and *n* the chimney for the exit of smoke.

On a charge of grain being dried the same is discharged through the doors in the cylinder onto a chute or inclined plane placed under the cylinder a part of the casing being removed for this purpose.

20 Lastly I wish it to be observed that the peculiar feature of novelty or improvement

which I claim to have invented in apparatus 25 or machinery for drying corn, grain, or seeds is—

The lantern or skeleton cylinder or drum covered with wire work or reticulated fabric and having reticulated ledges for turning 30 over the corn, grain, or seeds and allowing the steam evolved during the operation of drying to escape freely whether the said drum be made perfectly cylindrical or polygonal and whether covered with wire gauze 35 or perforated plates of metal or other material and in whatever manner the same may be mounted and made to revolve provided the same be made available to the purposes of drying corn, grain, or seeds. 40

In witness whereof I, the said RICHARD ELSE, have hereunto set my hand this tenth day of October in the year of our Lord one thousand eight hundred and thirty-eight.

RICHARD ELSE.

Witnesses:

MICHL. ELWIN,
MILES BENEX.