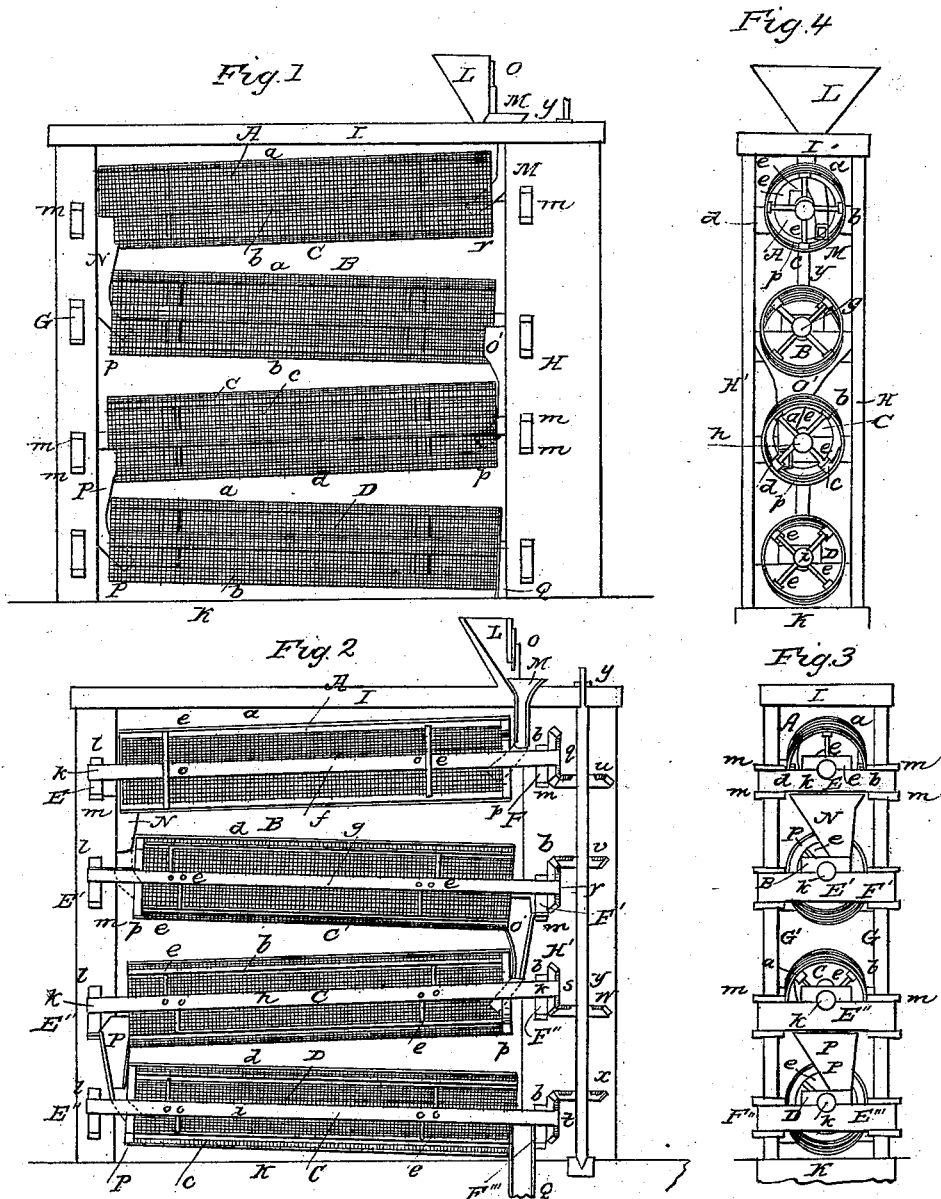


W. W. ALLCOTT.

Grain Drier.

No. 4,774.

Patented Sept. 26, 1846.



UNITED STATES PATENT OFFICE.

WM. W. ALLCOTT, OF BOSTON, MASSACHUSETTS.

KILN-DRYING GRAIN.

Specification of Letters Patent No. 4,774, dated September 26, 1846.

To all whom it may concern:

Be it known that I, WILLIAM W. ALLCOTT, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Apparatus for Drying Grain, Seed, or Various other Matters; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a front elevation, Fig. 2 a vertical, central and longitudinal section of my said apparatus. Fig. 3 is a transverse section taken through the journals and boxes or bearings of the adjacent ends of the respective rotating wire gauze cylinders to be hereinafter described. Fig. 4 is a transverse and vertical section taken through the middle part of the mechanism.

A, B, C, D, Figs. 1, 2, 4 denote four hollow cylinders, placed the one above the other, each being composed of woven wire or wire gauze, or other suitable material or materials, secured to long bars *a, b, c, d*, arranged with respect to each other and attached to arms *e, e*, &c., projecting from one of four long central shafts *f, g, h, i*, as seen in the drawings.

The journals *k, k*, &c., of the said shafts are sustained in boxes or bearings *l, l*, &c., applied to or upon transverse bars or bearers *E, E', E'', E'''*, *F, F', F'', F'''*, extending between the posts *G, G', H, H'* of the frame which serves to sustain the mechanism. The said frame is composed of the said posts and two horizontal planks or sills, *I, K*, tenoned and mortised or otherwise properly connected together, and arranged with respect to one another as denoted by the drawings. The ends of each of the several transverse bearers *E, E', &c., F, F', &c.*, pass through the posts of said bearers, and have adjusting wedges *m, m*, &c., applied to them, all as represented in Fig. 3; the object of the said wedges being to enable a person to elevate or depress the bearer or transverse timber to which they may be applied, and thus elevate or depress in a corresponding degree the end of the shaft *f* or *g*, &c., supported by said bearer.

The upper shaft *f* together with its cylinder A, is inclined to the horizon in one direction.

The second shaft *g* and its cylinder B are similarly inclined, but in an opposite direc-

tion. The third shaft *h* and its cylinder C, are inclined in the same manner and direction as the shaft *f* and cylinder A. And lastly, the shaft *i* and cylinder D are inclined to the horizon in the same direction as the shaft *g* and cylinder B, the whole being as exhibited in Figs. 1 and 2.

L denotes a hopper placed upon the top of the framework, and opening into a pipe or conductor M, which extends into the upper end of the cylinder A. The said hopper and conductor should have a regulating slide *o*, applied to them in such manner as to enable a person to increase or diminish the size of the passage from one into the other, in order to regulate the flow of grain into the cylinder, as circumstances may require. At the opposite or lower end of the cylinder A, there is another conductor or tunnel pipe N, which is fastened to and held in position by the transverse bearer E. The lower end of the said conductor N, is curved and made to enter within the upper end of the cylinder B, and in such manner as to discharge whatever grain or other matter passes through the pipe or conductor directly into the cylinder B. Similar conductors *O' P*, are made to connect the cylinders B and C, and C and D, and are arranged and supported by the transverse bearers, as seen in Figs. 1 and 2. Each cylinder, at the end where the grain is made to enter it, should have a circular annulus or ring *p* fixed in it and to the ends of the bars *a, b, c, d*, and to the wire gauze, as seen in the drawings, the object of the same being to prevent any of the grain or other matter to be dried, from falling or dropping out of the end of the cylinder to which said ring is applied.

The respective shafts *f, g, h, i* of the cylinders A, B, C, D, have bevel gears *q, r, s, t* fixed upon them at one end of each, as seen in Fig. 2. The said gears are respectively connected with horizontal bevel gears *u, v, w, x* arranged upon a vertical shaft *y*, which, on being put in revolution around its vertical axis, by any proper means, imparts, through said gears, a rotary motion to all the cylinders A, B, C, D. If, while said cylinders are so put in revolution, grain or other matter to be dried is suffered to flow from the hopper L, into the upper end of the upper cylinder, it will be revolved within and by the cylinder, and, in consequence of the inclined position of the cylinder, will be so operated on by the action of gravity,

as to be gradually advanced or caused to move toward the opposite or lower end of the said cylinder, from whence it will fall through the spout or conductor N, and into the cylinder B.

By the rotations and counter inclined positions of the cylinder B, the said grain will be caused in a similar manner, to move toward the lower or opposite end of the cylinder B and be discharged through the conductor O' into the cylinder C. In the same way, it passes through the cylinders C and D, and is finally discharged out of the lower end of the cylinder D, through a conductor or spout Q.

The apparatus thus made and operated is to be arranged in a drying chamber, or chamber properly constructed to receive and be filled with hot air, or, instead thereof, hot air may be made to pass through the cylinders and come in contact with or be made to heat the grain or other matter in them, in any proper manner. Instead of making the cylinders of wire gauze or wire work, they may be made of sheet metal, or other suitable material, perforated or not, as circumstances may require.

Having thus described my invention, I wish it distinctly understood, that I do not intend to confine myself to the precise mode of constructing it, as above detailed, but to vary the same in such manner, as I may here-

after deem requisite, so long as I do not change its principles, new features, or novelty of action.

What I claim, is—

1. A series of two or more hollow cylinders A, B, C, D, or other proper shaped vessels, as combined, arranged, connected and operating together, and with a hot air chamber, or any proper equivalent therefor, substantially in the manner and for the purpose of acting upon grain or other matter (to be dried by exposure to heat or hot air) as above specified.

2. I also claim, the combination with the cylinders A, B, &c., or their shafts, of suitable mechanism (such as the wedges and other contrivances as above described, or any proper equivalents) by which the ends of the said shafts may be elevated or depressed in order to change the angles of inclination of the said shafts or either of them, to the horizontal, and thereby cause the grain or other matter to move faster or slower through the cylinders, according to the velocity required, during the operations of drying the same.

In testimony whereof, I have hereto set my signature, this twenty fourth day of June A. D. 1846.

WILLIAM W. ALLCOTT.

Witnesses:

R. H. EDDY,

WM. H. RICHARDSON.