

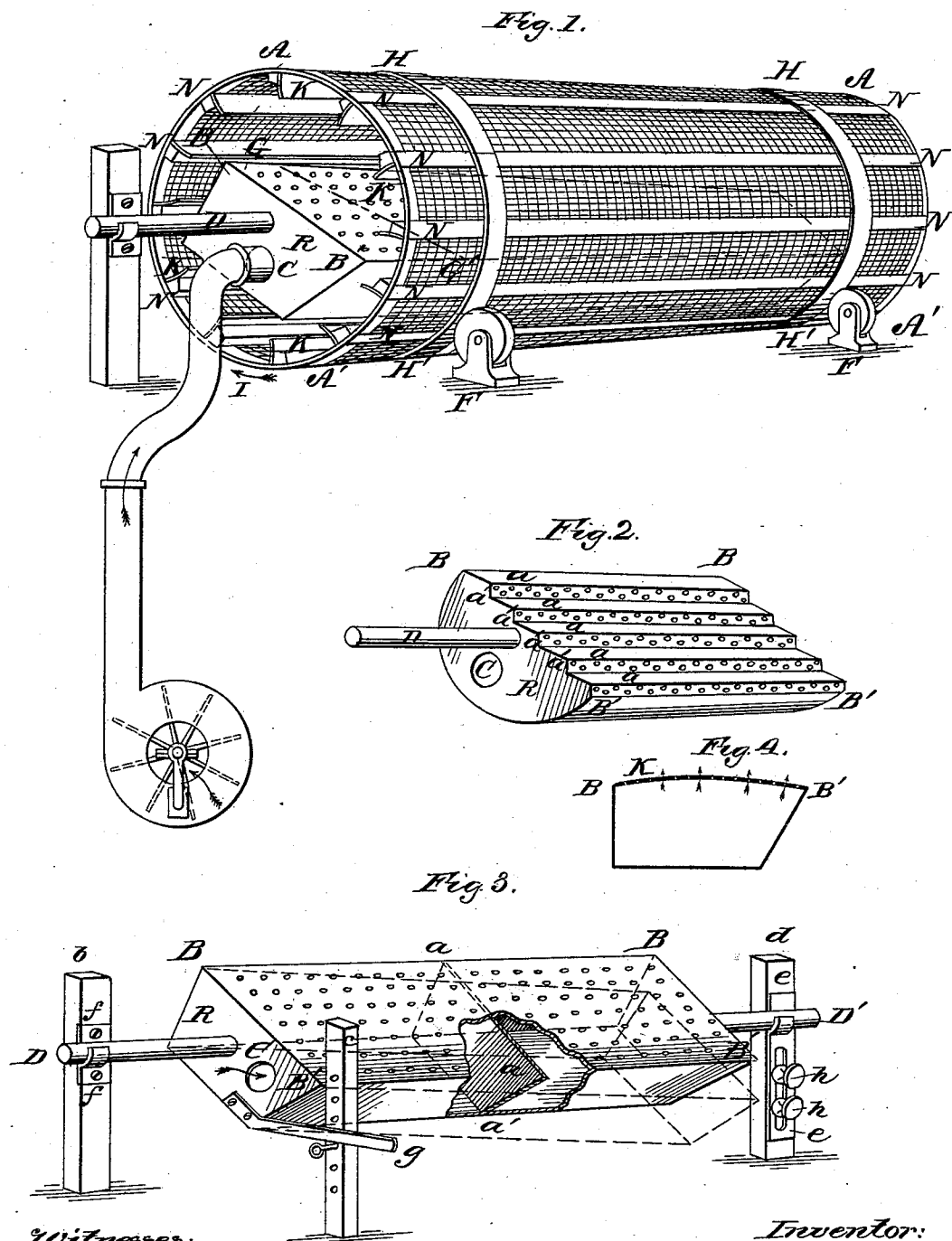
(No Model.)

E. H. SAWIN.

MACHINE FOR DRYING GRAIN, &c.

No. 299,683.

Patented June 3, 1884.



Witnesses:

Henry L. Washburn.
R. H. Finchell

Inventor:

Edward H. Sawin

UNITED STATES PATENT OFFICE.

EDWARD H. SAWIN, OF GARDNER, MASSACHUSETTS.

MACHINE FOR DRYING GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 299,683, dated June 3, 1884.

Application filed December 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. SAWIN, a citizen of the United States, residing at Gardner, in the county of Worcester and State of Massachusetts, have invented a new and useful Machine for Drying, Cooling, or Cleaning Grain, Sugar, and other Similar Products, of which the following is a specification.

The object of my invention is to dry, cool, or clean grain, sugar, and other similar products by passing them repeatedly through hot or cold air, used separately or in connection; and I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a detailed view of the entire machine. Fig. 2 is an end view of an air-box having an irregular upper surface. Fig. 3 is a view of the mechanism which may be used for the adjustment of the air-box, and also shows the partition. Fig. 4 is an end view of air-box having a convex upper surface.

Similar letters refer to similar parts in these several views.

A A A' A' represent a cylinder made by the flat rings H H', joined by the straight pieces N N, which are fastened to the inside of said rings, and made of any suitable material and placed at any desired distance apart. The spaces between the pieces N N are covered with wire-netting, or any suitable material more or less perforated, the perforations being large enough to permit the escape of air, but not so large as to let through the material being treated.

F F are rolls or trucks between and upon which the cylinder revolves, similar rolls or trucks being placed opposite F F.

K are shelves, made of any suitable material and shape, placed on the inside of the cylinder, and running lengthwise through the cylinder, and supported by the pieces N N.

R is an air-box, the upper surface of which is more or less perforated, and is flat, as in Fig. 1, (represented by the lines B B' B',) or curved, as in Fig. 4, or, as in Fig. 2, is broken, as represented by the lines a a', and wholly or partly perforated.

D is the shaft, supported by the hooked plate f upon the post b, which holds the box in place, the other end of the box being held by a simi-

lar shaft and hooked plate, e, upon the post d, the plate e being slotted at the lower end, so that by loosening the bolts h it can by screw or lever be moved up or down, and by so doing raise or lower that end of the air-box R.

C is the opening through which air passes into the box R, and a similar opening is also at the other end of the box.

In operating my machine, the box R can be turned by the lever G, so as to make the angle of the upper surface, B B', any that may be desired, and by raising or lowering the end of the box supported by shaft D the angle of the side B B may be inclined as desired. I do not, however, confine myself to this particular mechanism for adjusting the box R. The box R does not turn with the cylinder A A A' A', and is only moved to change the angle or inclination of the upper surface as may be desired. If a sufficient inclination cannot be given by raising or lowering that end of the box supported by the shaft D, then one end of the entire machine can be raised or lowered.

If different kinds of air are used at the same time, the box R can be divided by partition, as desired, as shown in Fig. 3 by the dotted lines a a'.

The manner of operating my machine is as follows: The material to be treated enters the upper end of the cylinder A A', as at I. The cylinder, revolving on trucks F F by means of any suitable mechanism, carries the material upon the shelves K until it reaches the point above G, when it is spilled upon the inclined upper surface, B B', of the air-box R. The material, in passing over the upper surface, B B', passes through air—cold, warm, or artificially dried—introduced at C, and also, if desired, at the end opposite C, to the inside of the air-box, and which passes through the perforations in the upper surface of the air-box. The air, after it passes through the box, escapes from the cylinder, at the ends, or through the spaces between the pieces N N, if perforated. One end of the air-box R being lower than the other, the material treated does not pass straight across the upper surface, B B', but diagonally, as shown by the dotted lines G G'. Therefore, as it drops from the lower edge, at G, upon the shelves K, it is again carried around by the revolution of the cylinder and

again spilled upon the surface of the air-box at a point each time farther removed from the upper end of the machine until it drops out of the machine at the lower end. By making the angle of the side B B' greater or less, the material passes over the upper surface of the air-box faster or slower, and by changing the elevation of the end supported by the shaft D' greater or less time is taken for the material to pass through the machine.

Having described my invention and its operation, what I desire to claim and secure by Letters Patent is—

1. An air-box, as R, adjustable sidewise and endwise in relation to the cylinder A A' at any desired angle, and having the perforated surface B B B' B', substantially as described, and for the purposes specified.

2. An air-box, as R, adjustable sidewise and endwise in relation to the cylinder A A' at any desired angle, with the upper surface, B B B' B', broken, as at a a', more or less perforated, substantially as described, and for the purposes specified.

3. A revolving cylinder, as A A', in combination with an adjustable air-box, as R, substantially as described.

4. The cylinder A A', with the shelves K, rings H H', and trucks F F', in combination with the air-box R, inlet C, and also at the end opposite C, and the perforated surface B B B' B', adjusted with a partition for the use of different kinds of air at the same time, substantially as described, and for the purposes specified.

5. The cylinder A A', rings H H', trucks F F', shelves K, and the perforated spaces between the straight pieces N N, in combination with the air-box R, surface B B B' B', shaft D, support f, inlet C, and also at the end opposite C, and the mechanism whereby the end supported by the shaft D is raised or lowered, substantially as described.

EDWARD H. SAWIN.

Witnesses:

A. H. WASHBURN,
HENRY L. WASHBURN.