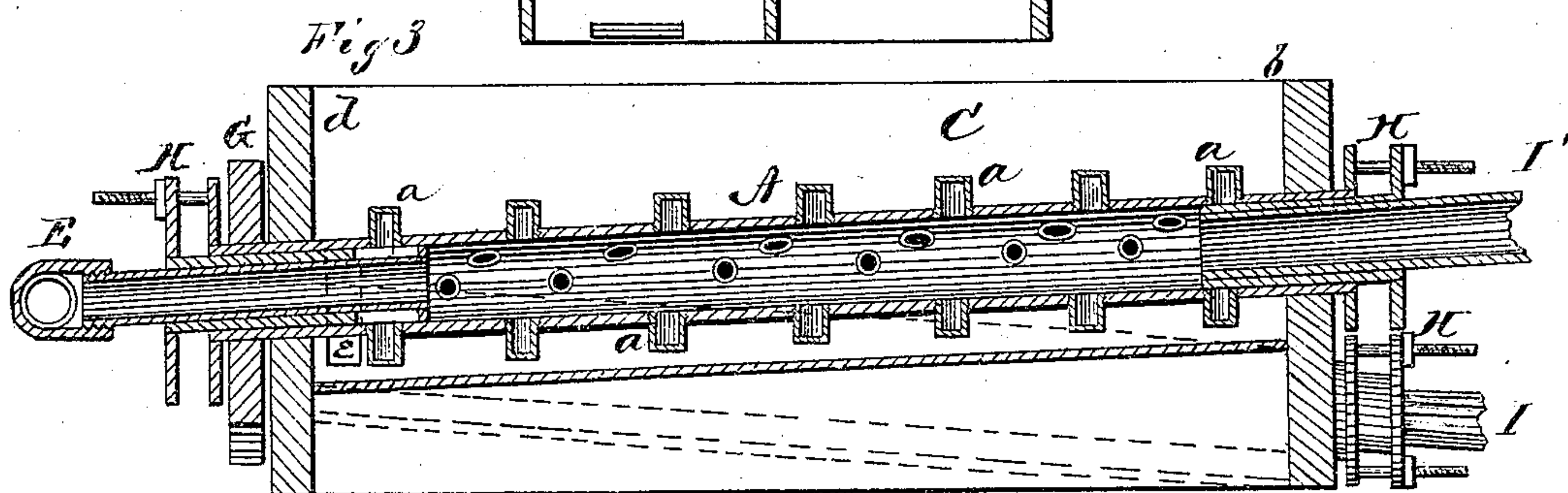
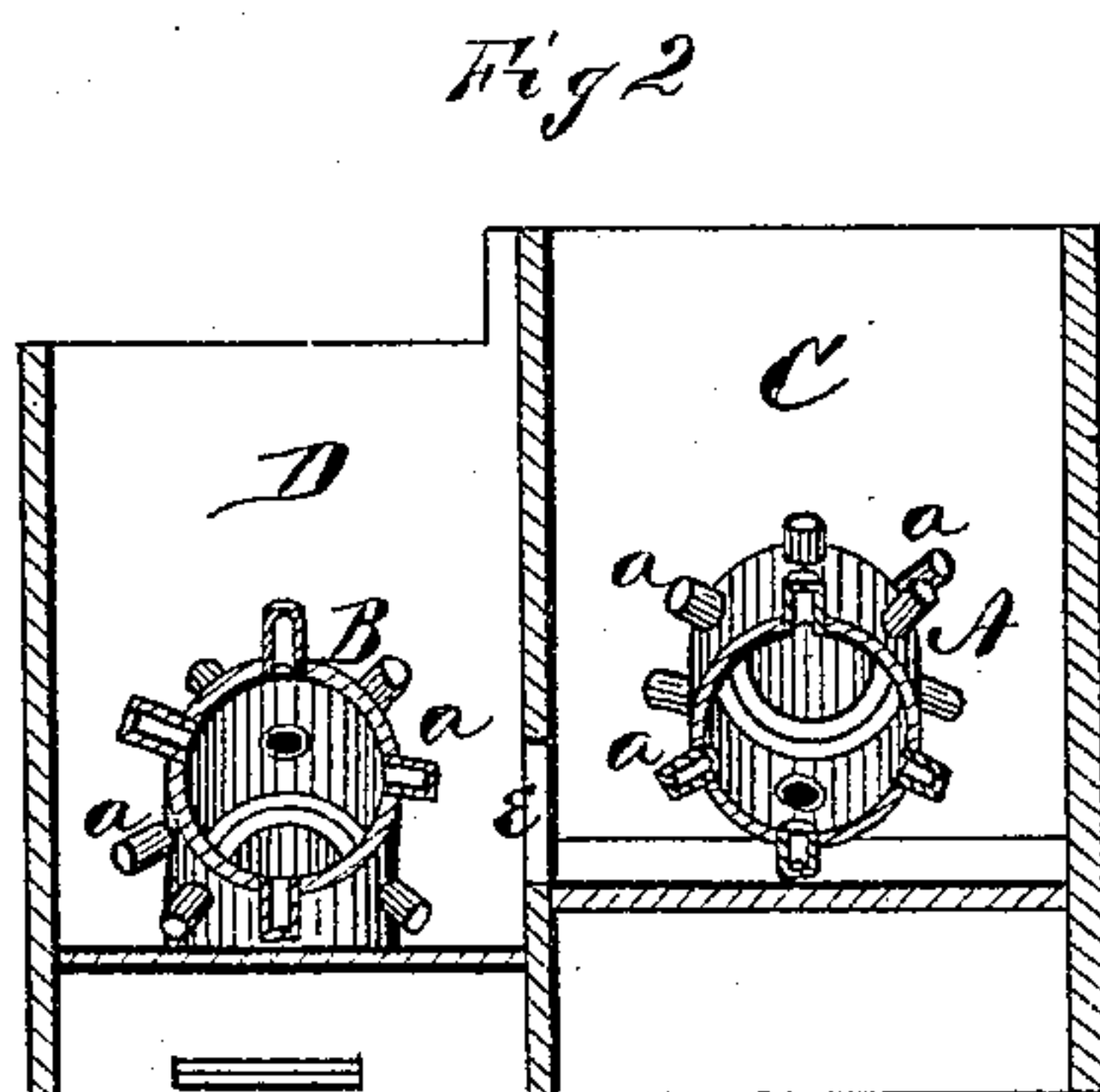
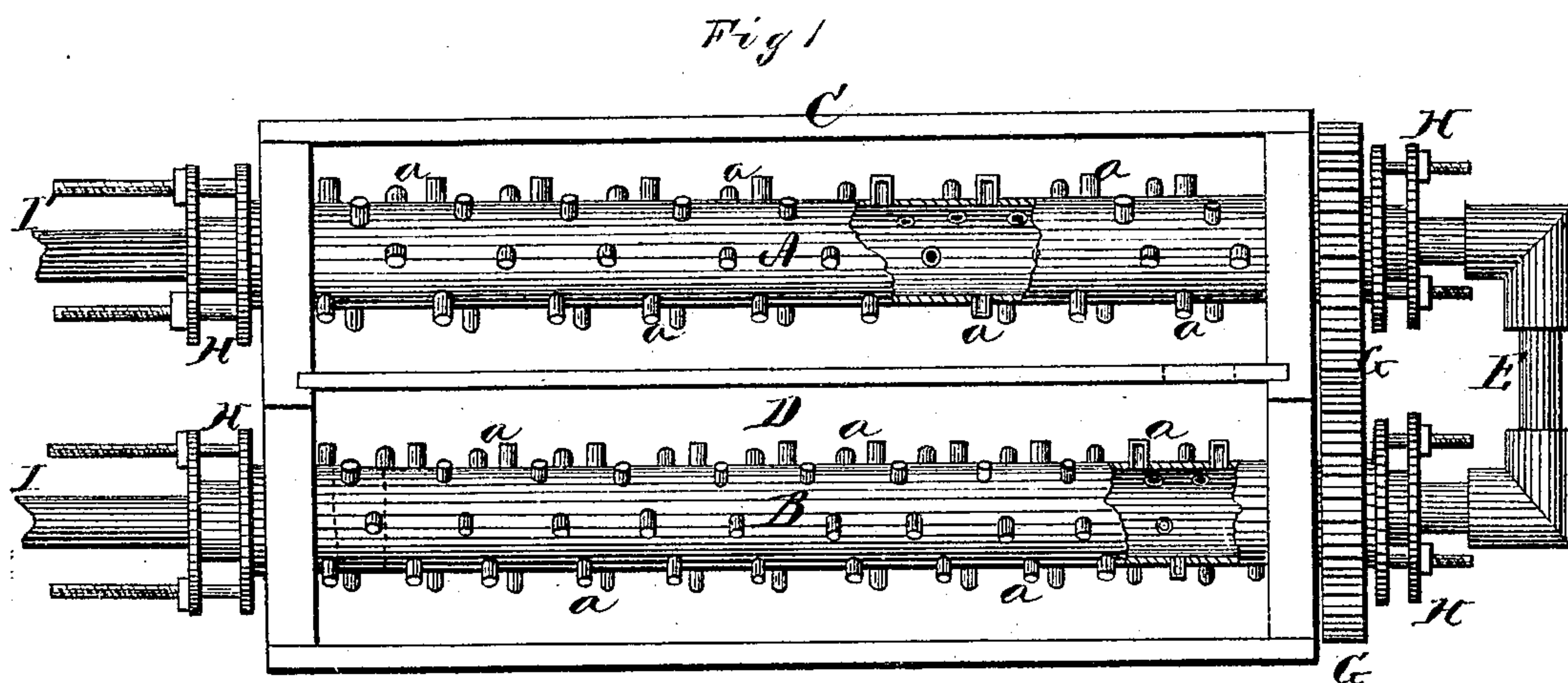


W. J. DEMUTH.
Grain-Driers.

No. 150,002.

Patented April 21, 1874.



WITNESSES.
A. L. Curran,
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Alexander Mator

By

Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM J. DEMUTH, OF MATTOON, ILLINOIS.

IMPROVEMENT IN GRAIN-DRIERS.

Specification forming part of Letters Patent No. **150,002**, dated April 21, 1874; application filed November 13, 1873.

To all whom it may concern:

Be it known that I, W. J. DEMUTH, of Mattoon, in the county of Coles and in the State of Illinois, have invented certain new and useful Improvements in Machines for Drying Grain, Meal, and Malt; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a machine for drying grain, meal, malt, &c., by steam, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view, Fig. 2 a transverse vertical section, and Fig. 3 a longitudinal vertical section, of my machine.

A and B represent two hollow iron tubes of any suitable length and diameter, provided with a number of small tubes, *a a*, inserted in the larger pipes by means of screw-threads, and tapping the bore of the large pipes, but having their outer ends closed by any suitable means to prevent the escape of the steam. The small tubes *a a* may be round, flat, or any other desired shape, and set in spiral shape on the large pipes A B, so as to serve as a screw or conveyer to move the articles to be dried from one end of the boxes in which they are placed to the other. The conveyers thus constructed are placed in open boxes C and D, and connected at one end by a curved or angular steam-pipe, E, and are further connected together and rotated by means of cog-wheels G G, one of the conveyers being connected with the engine or other convenient power to be easily rotated. The large tubes or pipes A B are provided at their ends with stuffing-boxes H H, to confine the steam from

passing out from the steam-pipes while the machine is making a rotary motion, and while conveying steam to the drier, and from it and out of the building. I represents the steam-pipe which conducts the steam from the engine or boiler to heat the conveyers, and I' is the pipe conveying the steam away from the conveyers. The pipes A B, with their smaller tubes *a a*, may be heated by exhaust steam from the engine, or by steam direct from the boiler.

The grain, meal, or other articles to be dried is poured into the box C at the end *b*, and carried by the conveyer A *a* to the end *d* of said box, where it passes through the aperture *e* into the box D, and is carried back by the conveyer B *a* to the other end of said box, where it passes out of the machine dried. The pipes A and B are laid inclined in opposite directions, and they, as well as the small pipes *a a*, are heated by the steam passing through, as above described. The small pipes *a a* act as shovels, and stir the grain or other articles, thoroughly heating it, and exposing it continually to the open air, as the tops of the boxes are open, allowing the moisture to pass off freely.

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

The rotating pipes A and B, provided with hollow spirally-arranged arms *a a*, which are closed at their outer ends, forming conveyers, placed, respectively, in boxes C and D, and inclined in opposite directions, for the purpose of drying grain or other articles by steam, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of October, 1873.

WILLIAM J. DEMUTH.

Witnesses:

GEO. W. LYNN,

H. P. COPPAGE.