

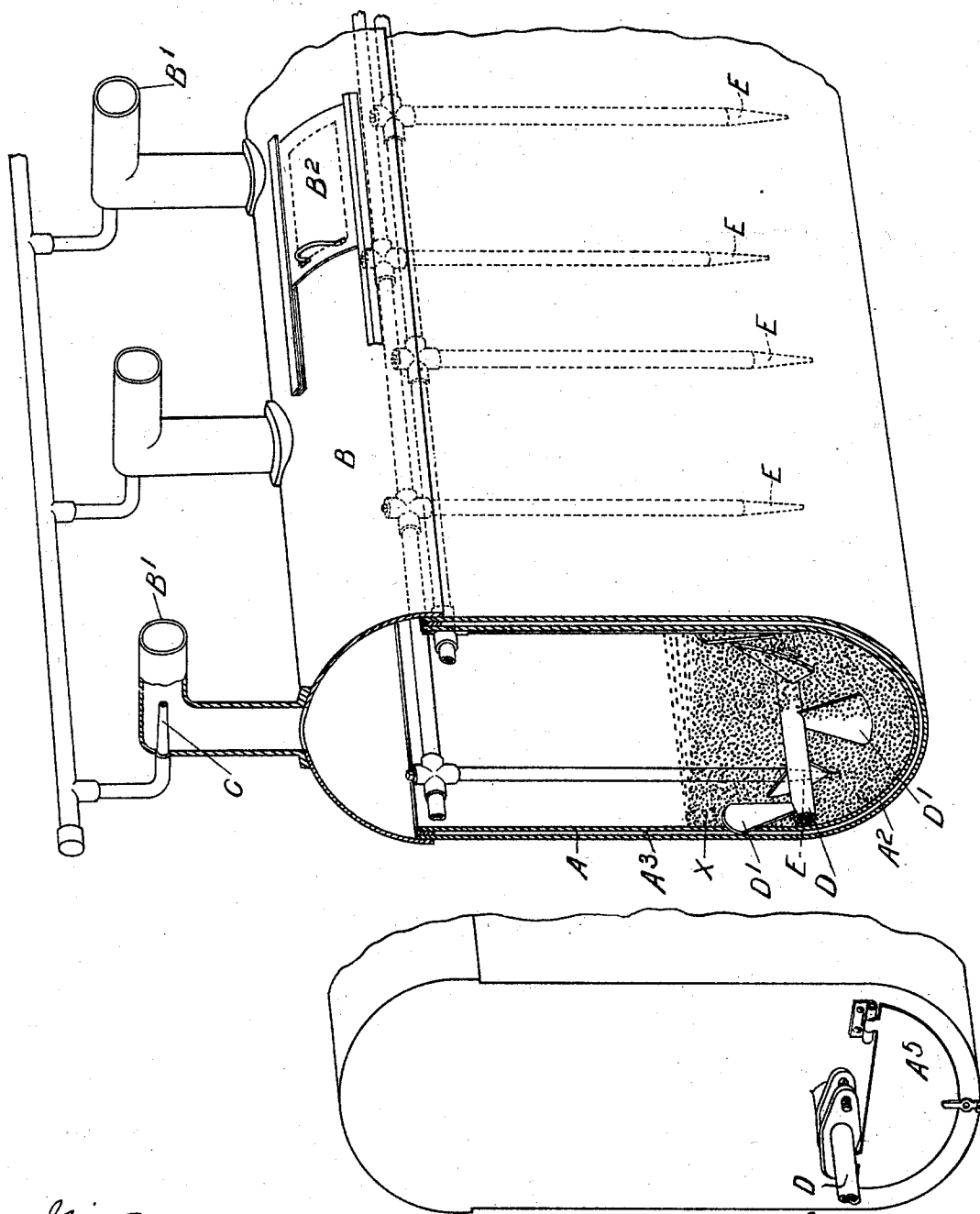
No. 637,903.

Patented Nov. 28, 1899.

J. C. W. STANLEY.
APPARATUS FOR DRYING WHEAT, &c.

(Application filed June 2, 1898.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN CHARLES WILLIAM STANLEY, OF LONDON, ENGLAND.

APPARATUS FOR DRYING WHEAT, &c.

SPECIFICATION forming part of Letters Patent No. 637,903, dated November 28, 1899.

Application filed June 2, 1898. Serial No. 682,367. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHARLES WILLIAM STANLEY, a subject of the Queen of England, residing at London, England, have invented certain new and useful Improvements in Apparatus for Drying Wheat, Brewers' Grains, Fish Guano, or other Substances, of which the following is a specification.

This invention relates to apparatus in which various materials—such, for example, as wheat, brewers' grains, or fish guano—are dried or similarly treated.

The operation may be carried on in any convenient vessel, the chief point of this invention lying in the fact that compressed air or other drying agent is delivered into the matter under treatment by means of nozzles or jets which enter the material in a downward direction.

The accompanying drawing is a perspective view, partly in section, of one form of drier embodying this invention.

A is a vessel of suitable dimensions, preferably a deep and somewhat narrow trough of considerable length, having a rounded bottom A^2 and adapted to be heated by steam or by the direct application of fire or by other means in a jacket A^3 . The vessel A is closed at the top by a cover B, which may be removable, if desired, and means are provided for withdrawing the steam and vapor produced in the operation of the apparatus. One convenient means is that illustrated and comprises steam jets or nozzles C, which act as ejectors in outlet-pipes B' , leading out of the top of the cover B.

In the rounded bottom A^2 of the apparatus is placed a worm conveyer D, having the worms divided into separate vanes D' , so as to turn over and stir up and mix the material as well as to draw it along.

The material is inserted into the apparatus through a sliding door B^2 in the cover B. When the operation has proceeded for a sufficient time, the material is discharged at an opening A^5 at the bottom of the vessel A.

Nozzles or jets E are provided, which enter the material in a downward direction. Through these nozzles E compressed air or other drying agent may be delivered into the mass of material under treatment. It is found to be of great importance that the nozzles E should point in a downward direction, as otherwise the orifice soon becomes choked or closed by the material in the vessel. The nozzles E may be conveniently placed between the sets of vanes on the worm conveyer D; but they may be otherwise disposed, if desired. The air entering by the nozzles may be heated as well as compressed. Besides assisting in mixing and drying the material, the air mixes also with the steam given off from it while under treatment, and thus the resulting fumes forced out at the exit-pipes B' can be burned, so as to prevent the emission of any offensive odors from the apparatus.

Although this invention is herein described only in connection with a drier comprising one trough, it is obvious that the downward-pointing nozzles or jets E may be applied to many other forms of drying apparatus—such, for example, as one comprising a series of troughs in one vessel connected by cross-passages, the material being circulated continuously in the troughs and passages.

I claim—

In a drier, the combination with a vessel, one end of which is provided with a door at the bottom, and the top is provided with a removable door and a series of outlet-pipes, a worm conveyer journaled longitudinally of the vessel adjacent to the bottom, and above the door, a series of downwardly-projecting jets upon each side of the conveyer, and an ejector in each outlet-pipe.

In testimony whereof I have hereto set my hand in the presence of the two subscribing witnesses.

JOHN CHARLES WILLIAM STANLEY.

Witnesses:

ALFRED J. BOULT,
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