

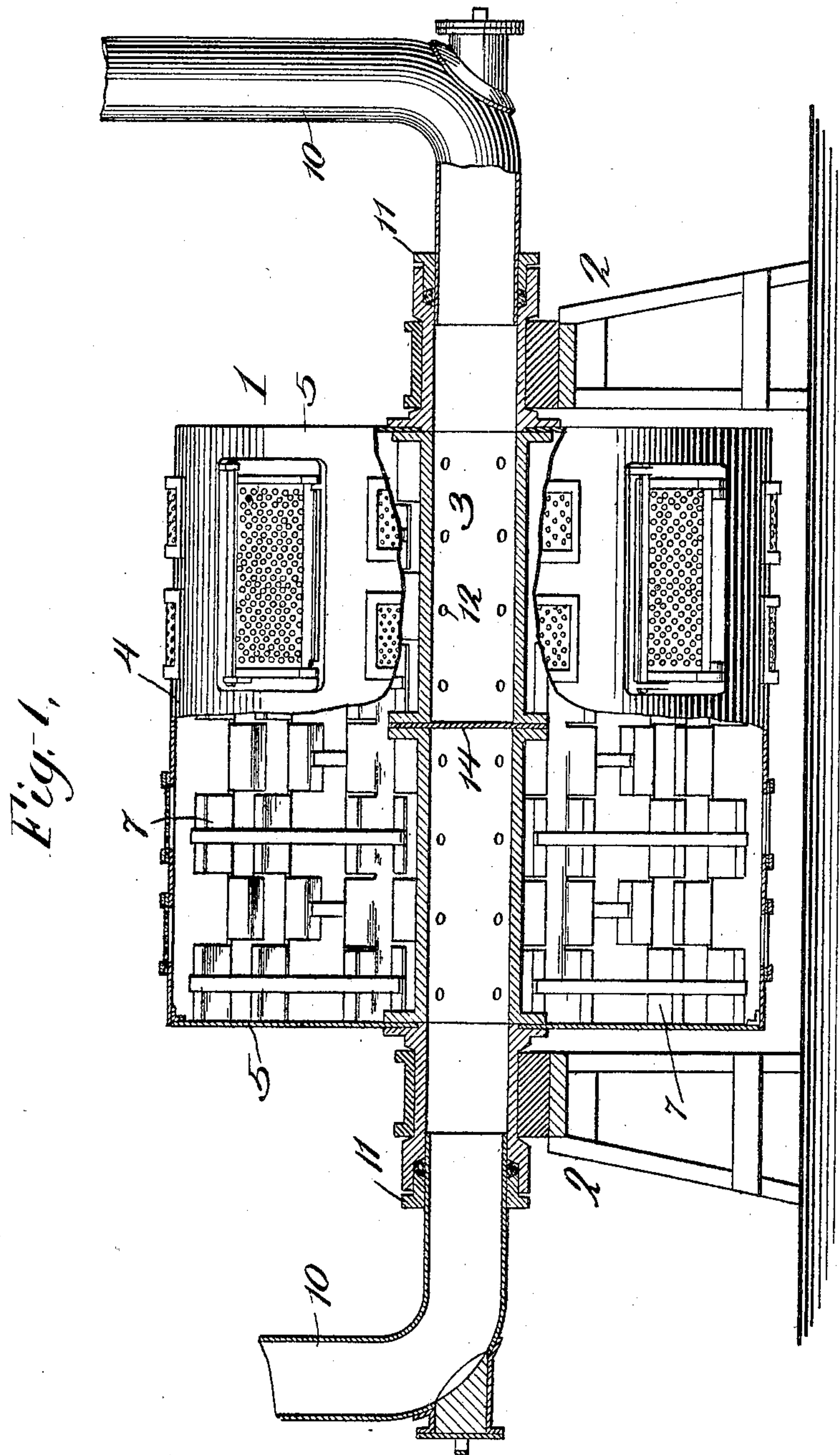
No. 803,055.

PATENTED OCT. 31, 1905.

D. GORDON.
COFFEE DRIER.

APPLICATION FILED JAN. 10, 1905.

2 SHEETS—SHEET 1.



WITNESSES:
Harry Goss,
Harold Crocker

INVENTOR
Douglas Gordon
BY
Chapin Raymond Marble
his ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 2.

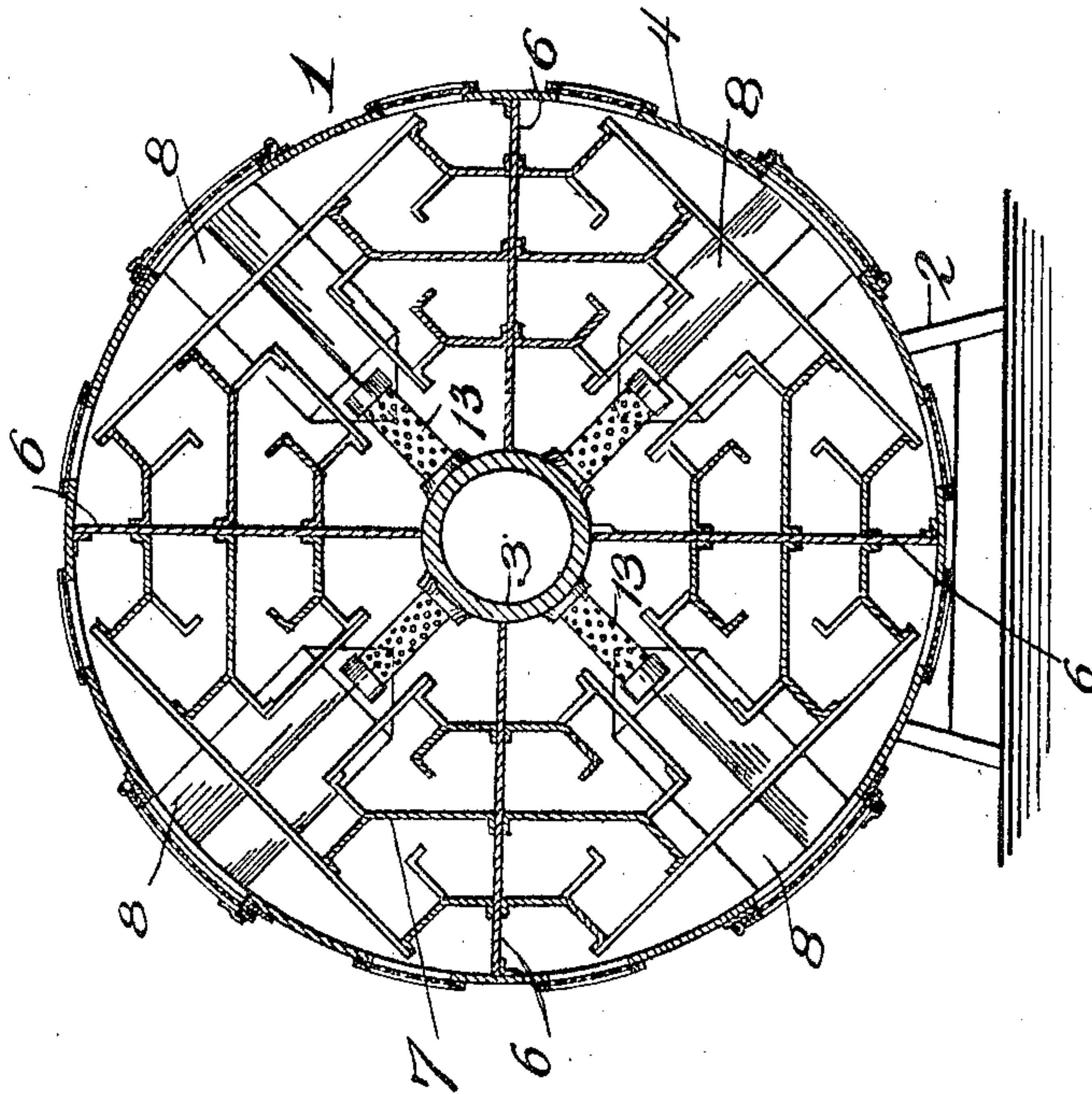
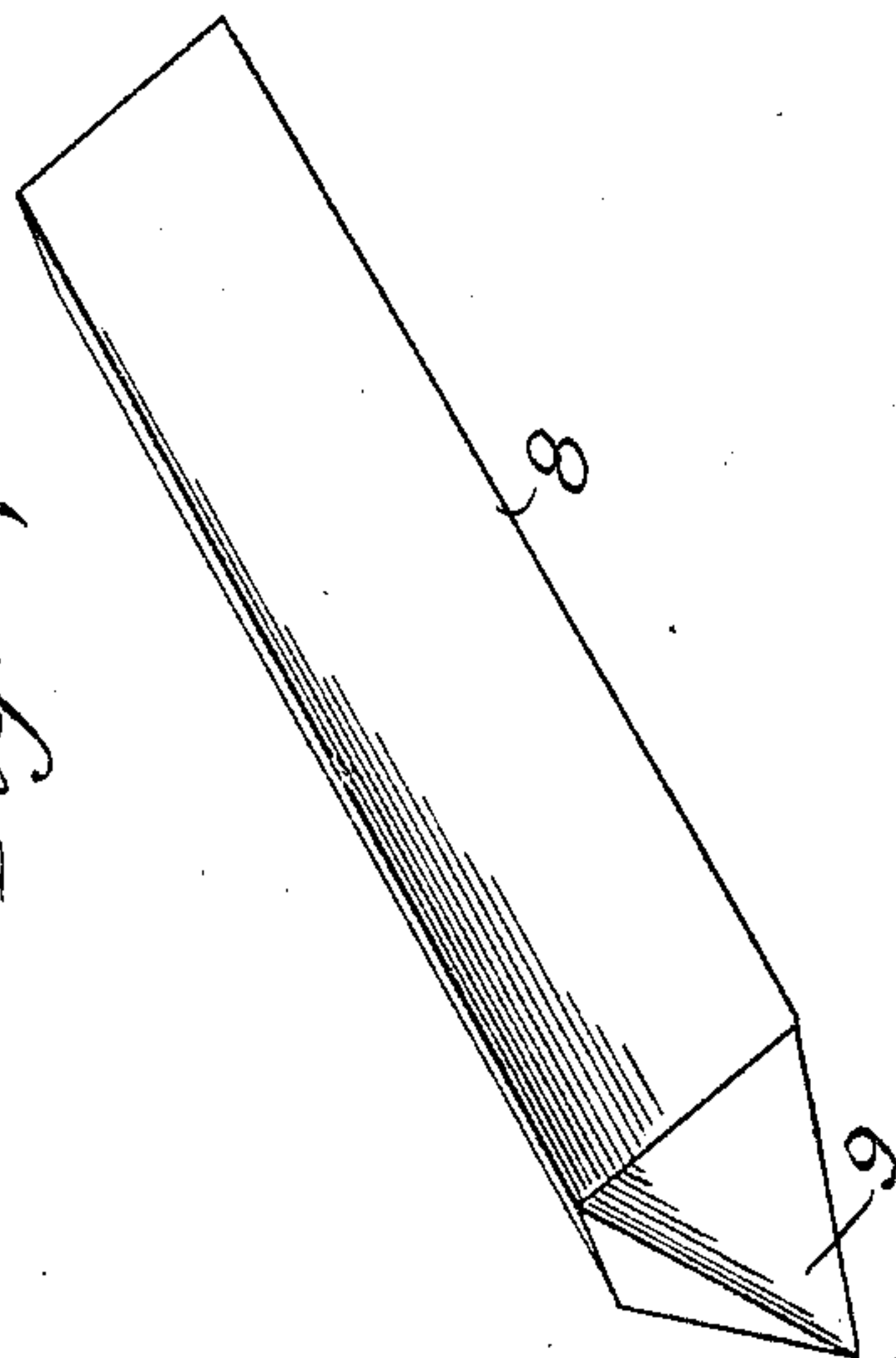


Fig. 3.



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UNITED STATES PATENT OFFICE.

DOUGLAS GORDON, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
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COFFEE-DRIER.

No. 803,055.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed January 10, 1905. Serial No. 240,456.

To all whom it may concern:

Be it known that I, DOUGLAS GORDON, a subject of the King of Great Britain, and a resident of Worcester, county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Coffee-Driers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

10 My invention relates to apparatus for drying grains, berries, and the like, and particularly to coffee-driers. In drying apparatus of the type herein I have discovered that a certain quantity of the berries are apt to pack
15 at the ends of the device, rotating with the cylinder, and by reason of their failure to be tumbled, as is the remainder of the material, do not get equal treatment therewith. In treatment of this material it is exceedingly
20 necessary that all the portions thereof get equal treatment, and the berries are constantly tumbled, so that they will be treated alike upon all sides. Should any parts fail to be tumbled, so as to move horizontally or
25 endwise of the machine away from the side wall, their treatment is likely to be uneven, as one portion will be subjected to the drying or heating process to a greater extent than will the other. To avoid this, I have provided
30 the ends of the tumbling-cylinder with radial projecting ribs, whereby I insure the proper movement of the berries contiguous thereto.

A further improvement consists in dividing the central air-inlet tube into two separate
35 chambers, so that air admitted at opposite ends cannot pass directly through the tube, but is deflected immediately into the tumbling-cylinder. In this form of apparatus the usual practice is to admit air at both ends
40 into the central tube, and I have found that the result of this is often to cause a greater quantity of air to enter one end of the tumbling-cylinder than the other. This follows from a variety of causes. For instance, if
45 the air-pressure on one side is a little greater than on the other or if the distributing-orifices on one side are less than the other the incoming currents will fail to meet at the center of the apparatus, but will meet and be deflected at one side thereof. By dividing the
50 tube accurately in the middle the air will be more evenly distributed, as one half of the cylinder will be fed from one side and the

other half from the other, regardless of the pressures of air or resistance offered thereto. 55 The cylinder-space is usually in open connection lengthwise, but divided widthwise into a plurality of chambers by longitudinal diaphragms.

In order that my invention may be more 60 fully understood, I will now proceed to describe an apparatus embodying the same and will then point out the novel features in claims.

In the drawings, Figure 1 is a view, partially in side elevation and partially in vertical longitudinal section, of an apparatus 65 embodying my invention. Fig. 2 is a view in central transverse vertical section thereof. Fig. 3 is a detail view of one of the end tumbling-ribs employed, showing the 70 same detached from the remainder of the apparatus.

The apparatus comprises a tumbling-cylinder 1, mounted to rotate in bearings upon suitable supports 2, and a central tube 3, constituting a means for admitting and distributing 75 air. The cylinder 1 comprises a cylindrical shell 4 and end heads 5. The interior space is divided into four chambers by longitudinal partitions 6, and the usual or any desired form 80 of tumbling-plates 7 are employed, as is common. At the interior of the end heads I have provided inwardly-projecting tumbling-ribs 8, one of which is shown in detail in Fig. 3, the said ribs being preferably of triangular 85 form in cross-section, and at their inner ends preferably tapering to a point 9, so as to prevent the clogging of material at points near the center of rotation of the tumbling-cylinder as a whole. These tumbling-ribs prevent 90 the berries or beans from hugging the end heads 5, causing them to be constantly tumbled and thrown away from the wall toward the center of the apparatus as the cylinder revolves. 95

The central tube 3 in the present instance forms the main support for the tumbling-cylinder, the ends thereof constituting trunnions therefor. At its opposite ends the said tube receives the ends of air-supply pipes 10, suitable stuffing-boxes 11 being provided for preventing leakage of air, which is usually heated 100 air under a slight pressure. The said tube at the portion within the cylinder is provided with the usual distributing air-openings 12, 105 which connect with radial perforated tubes 13,

whereby air is supplied to the interior of the cylinder. In the middle of the tube 3 I have supplied a diaphragm 14, which divides the said tube 3 into two chambers, so that air admitted from opposite ends cannot pass the center of the tube, and therefore is forced to directly enter the tumbling-cylinder. This diaphragm, as above stated, will prevent the air passing from one end of the tube to the other, so that air admitted at opposite ends will be admitted to corresponding ends of the cylinder, and therefore properly and evenly distributed. The central tube 3 is preferably composed of a plurality of flanged pipe-sections connected together at their flanged ends, as shown, and the diaphragm 14 may conveniently be a circular disk located between two of the flanged ends at the center of the device.

What I claim is—

1. In a drier, the combination with a drying-drum divided longitudinally into a plurality of chambers, said drum having end heads, tumbling-plates for tumbling the material in the several chambers, and radial tumbling-

ribs secured to the said end heads in the several chambers and arranged to deflect material from the said end heads.

2. In a drier, the combination with a drying-drum provided with tumbling-plates, of tumbling-ribs secured to the end heads of the said drum, said ribs radially disposed and substantially triangular in transverse section, substantially as set forth.

3. In a drier, the combination with a drying-drum divided longitudinally into a plurality of chambers, said drum having end heads, tumbling-plates for tumbling the material in the several chambers, radial tumbling-ribs secured to the said end heads in the several chambers and arranged to deflect material from the said end heads, and means for admitting air independently at opposite ends of the said drum to the said chambers.

In witness whereof I have hereunto set my hand this 3d day of January, 1905.

DOUGLAS GORDON.

Witnesses:

D. HOWARD HAYWOOD,
LYMAN S. ANDREWS, Jr.