

No. 655,015.

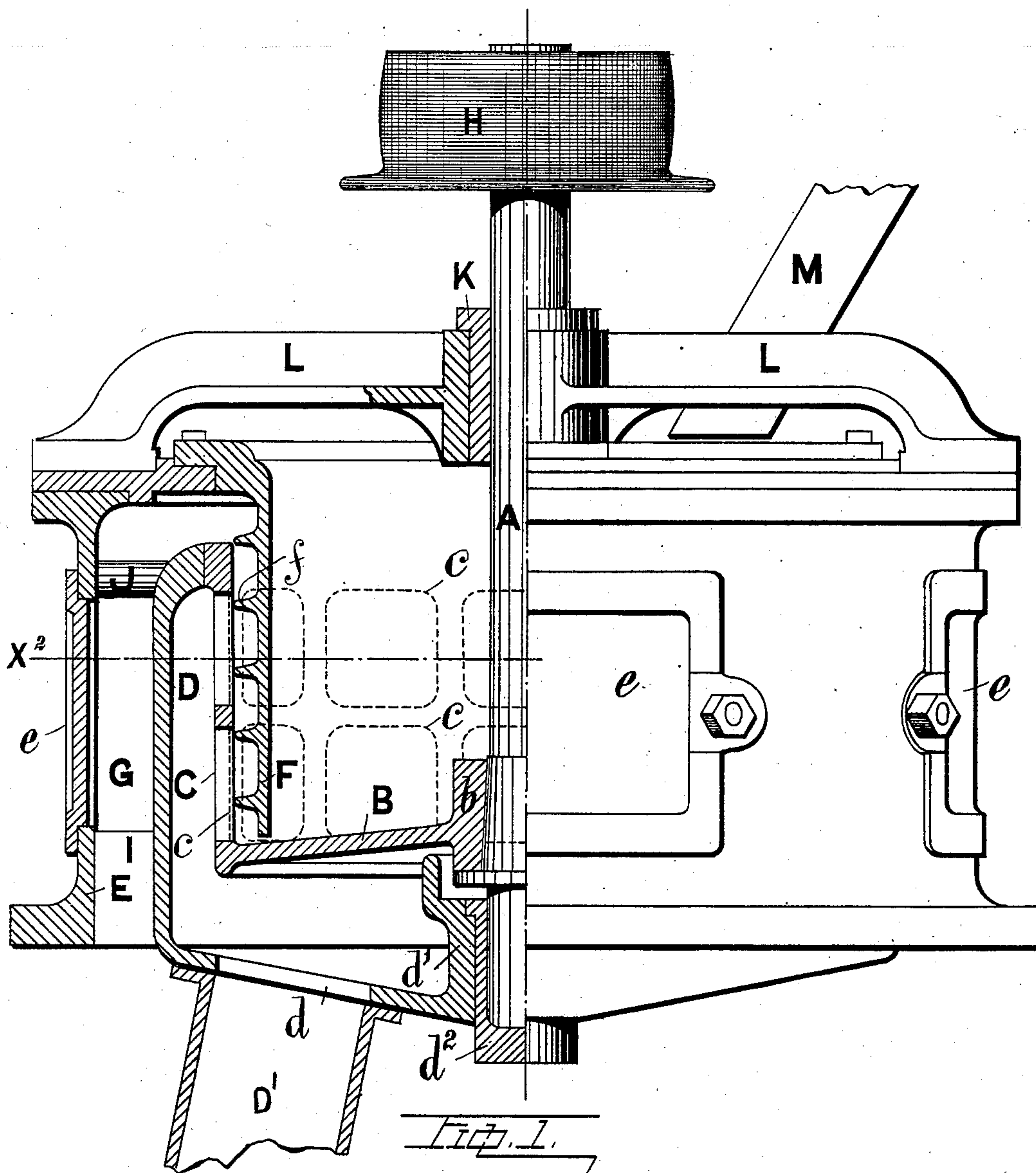
Patented July 31, 1900.

W. ROWLANDSON.
CENTRIFUGAL MACHINE.

(Application filed Feb. 8, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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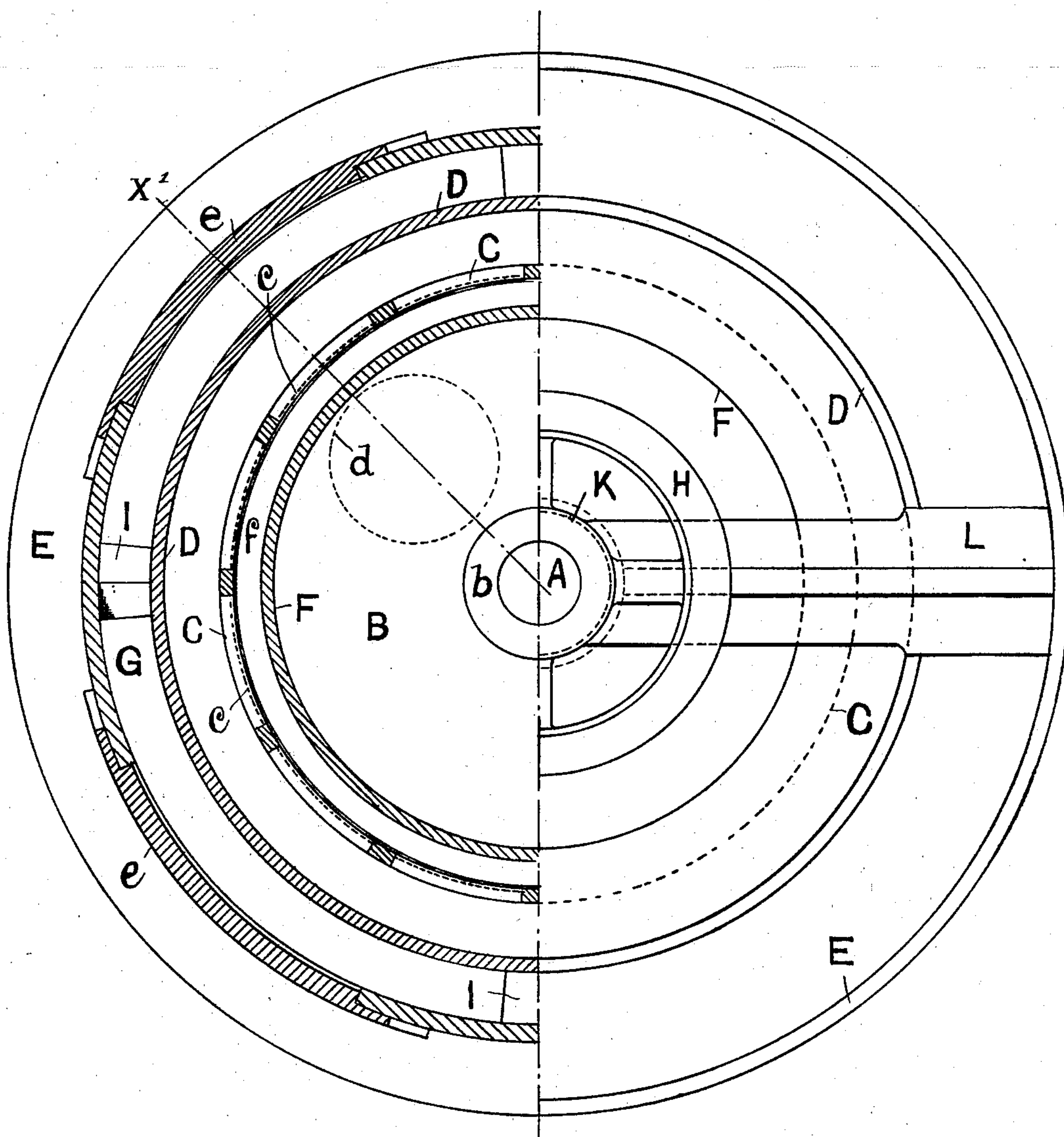


Fig. 2.

Witgesses

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UNITED STATES PATENT OFFICE.

WILLIAM ROWLANDSON, OF LIVERPOOL, ENGLAND.

CENTRIFUGAL MACHINE.

SPECIFICATION forming part of Letters Patent No. 655,015, dated July 31, 1900.

Application filed February 8, 1900. Serial No. 4,496. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROWLANDSON, consulting engineer, a subject of the Queen of Great Britain, residing at Liverpool, county of Lancaster, England, (whose full postal address is 132 Boundary street, Liverpool,) have invented certain new and useful Improvements in Grain-Drying Machines, of which the following is a specification.

10 This invention has for its object a centrifugal machine specially adaptable for separating liquids from granulated substances. It is best described by aid of the accompanying drawings, in which—

15 Figure 1 is an elevation, partly in section; Fig. 2, a plan, also partly in section.

In the drawings, A is a vertical shaft, and B an annular disk having a sleeve *b* keyed on shaft A.

20 C is a centrifugal cage attached to plate B and covered on its inner circumference with foraminous material, as perforated steel *c*, though perforated zinc or other metal or even wire-gauze will do.

25 D is a stationary casing imperforate at the sides, but having an opening *d* and pipe D' for the escape of liquid and a flange *d'*, extending upward and carrying the step or deep bearing *d''* of the shaft A. This inner cylindrical casing D rises to a level with the rim of the open-topped cage and is turned inward at its upper margin, so as to fit to the rim on the cage.

35 E is a second or outer casing having doors *e* at intervals for cleaning purposes.

F is a stationary drum inside the cage C, and *f* one or more spiral ribs cast on drum F and of such exterior diameter as to almost, but not quite, touch the foraminous lining of cage C.

40 G is a delivery-spout for discharging the solid material.

H is a driving-pulley for central shaft A and the cage.

45 I I are triangular connecting-pieces joining the frames D and E. They are preferably four in number and made sharp at the top, so as to prevent any grain lodging on them.

50 J J are other spacing-blocks for uniting together the casings D and E above and having bolts (not shown) passing through them and the casings to hold them firmly together.

K is the upper bearing for shaft, supported in the stationary top frame L of the central chamber.

55 The drum F, the cover L, and the casing E are all firmly attached together by bolts. (Not shown.)

M is the spout for the purpose of feeding the wet material into the drum.

60 The mode of action is as follows: The cage being set in rapid motion by means of a band on pulley H or other suitable driving device, wet stuff is admitted by spout M, which falls on the plate B. This by centrifugal force passes under the lower edge of the stationary drum F and is thrown against the perforated casing *c*. The liquid portion flies out into the casing D and escapes through the hole *d*. The solid portion comes in contact with the flanges *f* and rides up them until it passes away centrifugally over the inturned upper margin of the casing D and escapes at G. The water which falls into casing D is prevented from splashing into the bearings of the shaft A, being stopped by the projecting sleeve *d'*.

I declare that what I claim is—

1. In a centrifugal machine, the combination with the cage, of an internal stationary drum F hung rigidly from a stationary support above and dipping into the cage, and having a spiral flange *f* thereon, substantially as and for the purposes described.

2. In a centrifugal machine the combination of a rotating cage, a stationary spiral guide fixed in and close to the periphery of that cage and an outer casing into which the spiral guide delivers the solid material, substantially as described.

3. In a centrifugal machine, the combination with an outer, fixed casing, and an inner, fixed casing of less diameter than the outer casing, whereby an annular delivery-outlet is provided between them, of a rotative, foraminous cage within the inner casing, said cage and inner casing being both open at the top, and the cage fitting snugly at its top within the inturned rim of the inner casing, and means within the cage for automatically elevating and discharging the solid material, substantially as and for the purpose set forth.

4. In a centrifugal machine, the combination with the outer, fixed casing E, and the inner, fixed casing D, of less diameter than

the outer casing, with a discharge-outlet G between them, of the foraminous, rotating cage C, within the casing D, and the fixed, pendent drum F, within the cage and having a spiral
5 flange on its outer face adjacent to the wall of the cage, substantially as set forth.

In witness whereof I have hereunto signed

my name, this 23d day of January, 1900, in the presence of two subscribing witnesses.

W. ROWLANDSON.

Witnesses:

G. C. DYMOND,

ALBERT C. B. HENRI.