

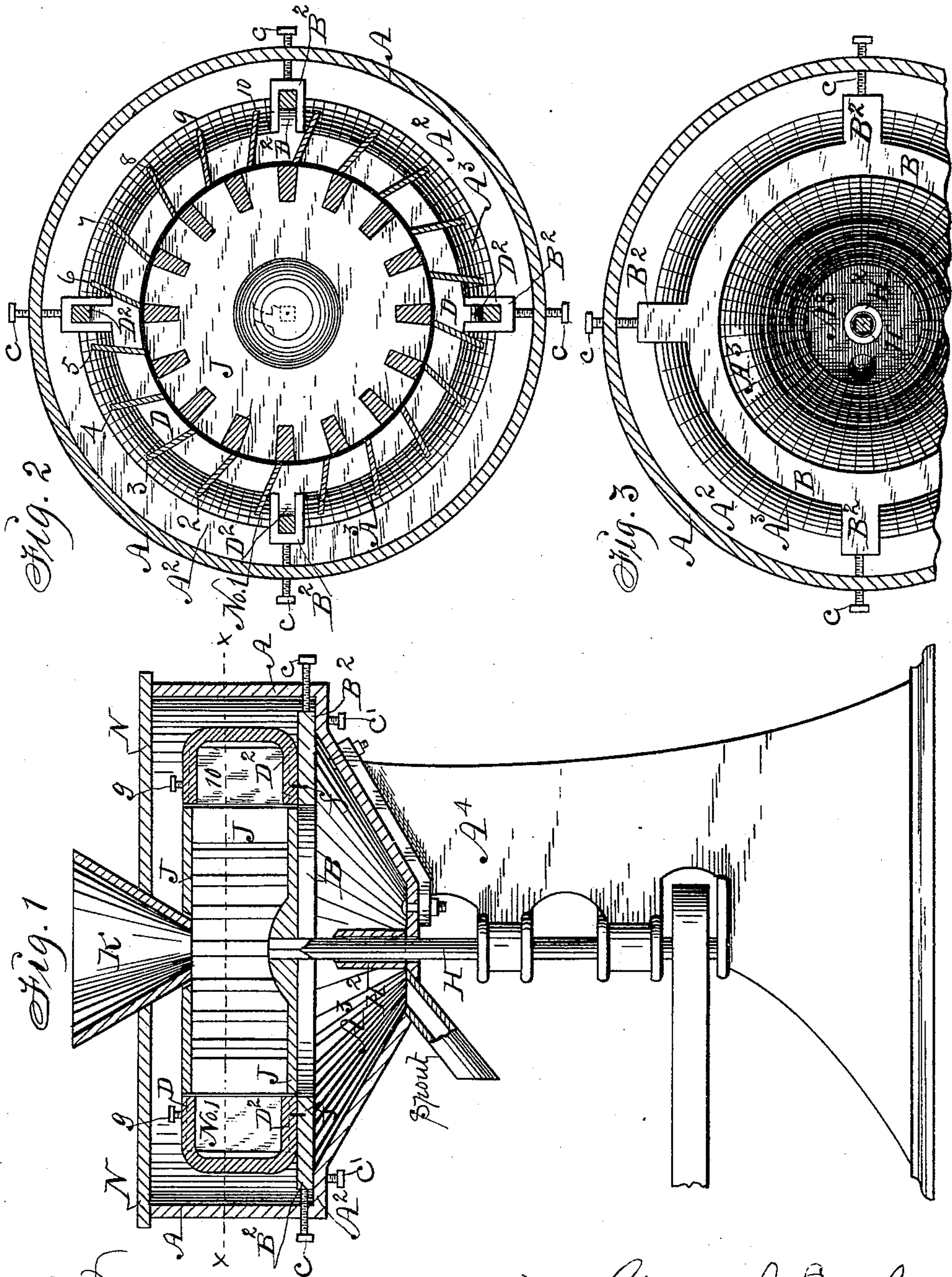
(No Model.)

G. A. ENGLE.

MILL FOR CUTTING GRAIN AND MAKING FLOUR.

No. 467,247.

Patented Jan. 19, 1892.



Witnesses:

H. J. Saukey,
R. H. Orwig,

Inventor: George A. Engle,
By Thomas G. Orwig, Attorney.

UNITED STATES PATENT OFFICE.

GEORGE ADAM ENGLE, OF BAXTER, ASSIGNOR OF ONE-THIRD TO ANDREW ENGLE, OF DES MOINES, IOWA.

MILL FOR CUTTING GRAIN AND MAKING FLOUR.

SPECIFICATION forming part of Letters Patent No. 467,247, dated January 19, 1892.

Application filed January 31, 1891. Serial No. 379,853. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ADAM ENGLE, a citizen of the United States of America, residing at Baxter, in the county of Jasper and State of Iowa, have invented an Improved Mill for Cutting Grain and Making Flour, of which the following is a specification.

My invention consists in the construction, arrangement, and combination of a rotating grain-distributor, a concentric cutter-holder, an adjustable cutter-holder support, and an inclosing case with a frame or stand, and driving mechanism, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical transverse central section of my mill. Fig. 2 is a horizontal sectional view of the mill through the line xx in Fig. 1. Fig. 3 is a top view of the frame or base of the mill and an adjustable ring adapted to support the cylinder containing the cutters.

A is a cylindrical case that has a continuous horizontal flange A^2 and a hopper A^3 connected with the flange at its inner and lower edge.

A^4 is a frame or stand fixed to the bottom of the case as required to produce a base adapted to support the cylinder and cutters.

B is a flat ring that has integral radial arms B^2 adapted to overlap and slide upon the flange A^2 of the case. Set-screws c , passed horizontally through the case and into the arms B^2 , serve as a means to adjust the ring horizontally, and screws c' , extended upward through the flange A^2 , serve to adjust the ring vertically.

D is a skeleton-frame or cylinder open at its top and bottom and circumference corresponding in diameter with the ring B. It also has radial arms D^2 at its base adapted to overlap the arms B^2 of the ring. Dowel-pins f , projecting upward from the arms B^2 , enter corresponding perforations in the arms D^2 to connect the cylinder and ring so that they can be jointly adjusted relative to the mill-spindle and grain-distributor operated within the cylinder.

1 2 3 represent a series of cutters similar in form to plane-bits extended horizontally through radial openings in the top and bottom

rings of the cylinder D and adjustably fastened thereto by means of set-screws g , extended down through the top of the cylinder to engage the top edges of the cutters, or in any suitable way so that the cutters can be set in or out relative to the inside face of the cylinder.

H is the mill-spindle, and J is a grain-distributor fixed to its top to rotate in concentric position within the cylinder D and close to the cutting-edges of the cutters adjustably and detachably fixed to the cylinder. The distributor J has a partially-closed top, a series of vertical slots in its wall to allow the grain to pass outward and to come into contact with the sharp edges of the cutters, and a hopper K in the center detachably connected with its open top. The closed bottom of the distributor has a cone at its center, upon which the grain falls from the hopper to be spread by means of the cone in equal proportions as required to throw it outward regularly by centrifugal force as the spindle and distributor are rotated.

N is a cover detachably connected with the top of the case A.

In the practical operation of my invention the grain fed through the hopper is thrown violently outward from the rotating distributor and against the cutting-edges of the cutters and by the motion of the distributor pressed against the sharp edges of the cutters, so that particles of each grain will be successively cut off and thus reduced and all the grain comminuted without rubbing or grinding to reduce and pulverize the grain; and as the particles are cut off they pass outward through the radial openings in the cylinder and into the case, from which they drop into a receiver under the mill.

To cut grain for feed, I draw the cutters outward to increase the space between their sharp edges and the blunt edges of the radial vertical openings in the rotating distributor J, and to make fine flour I move them inward to diminish the spaces, and when desired I pass the product through the mill several times.

I claim as my invention—

1. In a mill for cutting grain and making flour, a skeleton frame or cylinder composed

of a bottom circular plate or ring having radial grooves in its top surface to admit the lower edges of horizontally-projecting cutters, a mating top plate having corresponding
5 grooves in its under side to admit the top edges of the same cutters, and coinciding radial arms or projections extending outward and rigidly connected by means of vertical bars or posts, in combination with a horizontally and vertically adjustable support and
10 a rotating grain-distributor, for the purposes stated.

2. In a mill for cutting grain and making flour, a case having an annular inwardly-extending flange at its bottom, a ring having
15 radial arms adapted to overlap said flange, screws extended vertically through said flange to engage said arms, screws extended horizontally through the case to engage the same
20 arms, and a cylinder or frame having radial cutters supported and carried by said adjustable ring, arranged and combined to operate in the manner set forth, for the purposes stated.

25 3. In a mill for cutting grain and making flour, a cylindrical case having an opening in its top adapted to admit grain and a flange extending horizontally inward at its bottom, a ring having radial arms adjustably connected with the said flange, a circular frame,
30

having cutters extending radially, attached to the said ring, a mill-spindle extending upward through the center of the case and the ring, and a grain-distributor fixed to the top of the spindle, arranged and combined to
35 operate in the manner set forth, for the purposes stated.

4. A mill for cutting grain and making flour, comprising a stand adapted to support a case having an opening at its bottom and a
40 mill-spindle in concentric position with the case, a circular rotating grain-distributor, having a closed bottom, an opening in the top, and vertical radial slots in its circumference, fixed to the top of the spindle, a ring adjustably connected with the bottom of the case
45 and adapted to support and carry a cylindrical frame carrying cutters, a cutter-carrier consisting of a skeleton frame having radial grooves in the top face of its bottom and coinciding grooves in the bottom face of its top,
50 cutters fitted in said grooves and detachably fastened therein, and a hopper connected with the top and center of the case, arranged and combined to operate in the manner set
55 forth.

GEORGE ADAM ENGLE.

Witnesses:

D. R. MANN,

W. M. THOMPSON.