J. FITZGERALD.

2 Sheets—Sheet 1.

Flour Mill.

No. 4,089.

Patented June 25, 1845.

Fig. 1

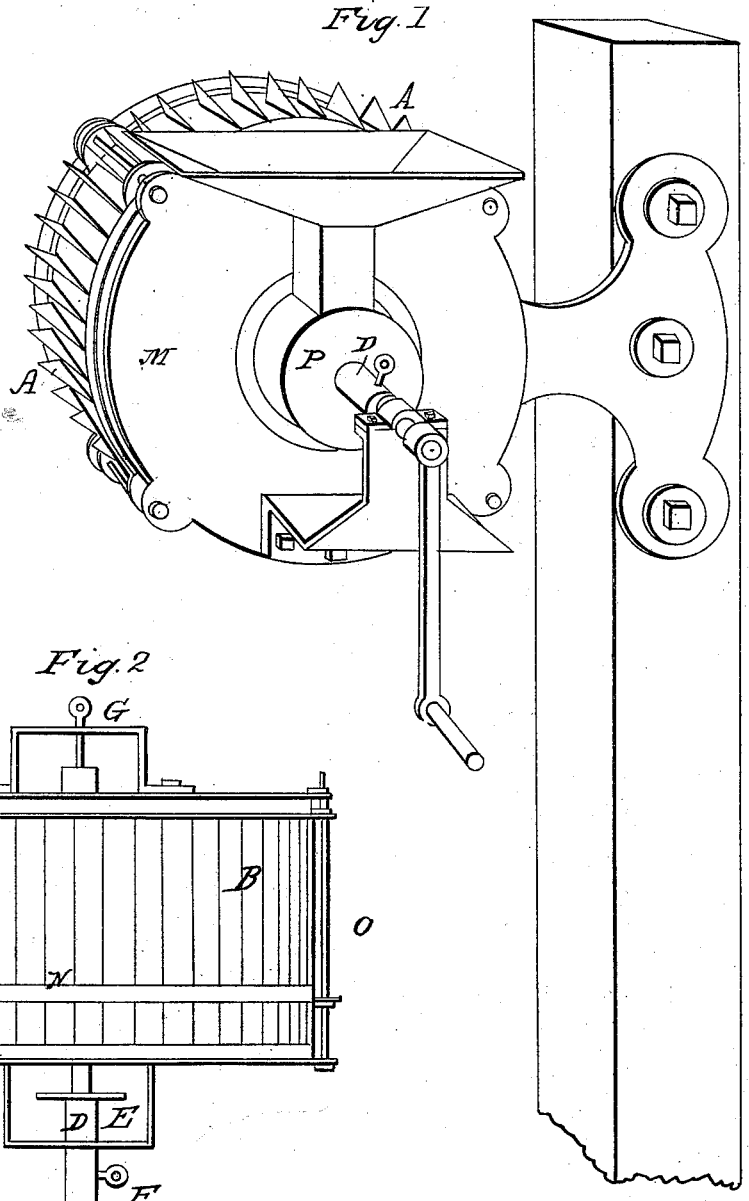
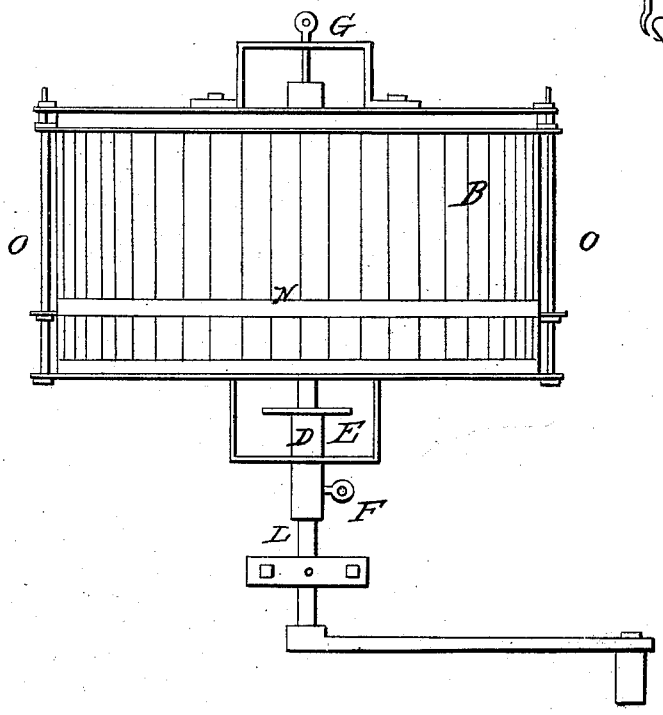


Fig. 2



N. PETERS. Photo-Lithographer. Washington, D. C.

J. FITZGERALD.

2 Sheets—Sheet 2.

Flour Mill.

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Fig. 6

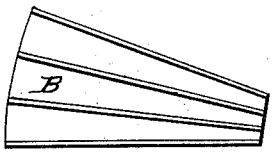


Fig. 7

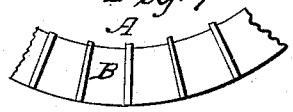


Fig. 8

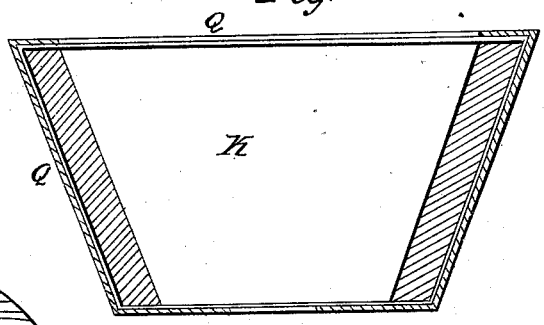


Fig. 9

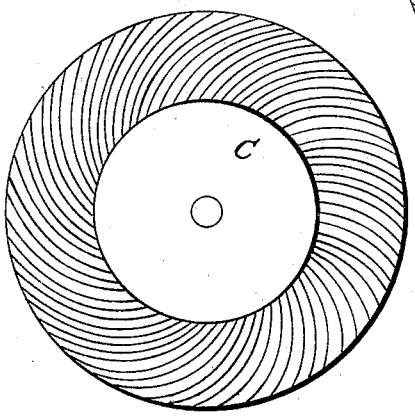
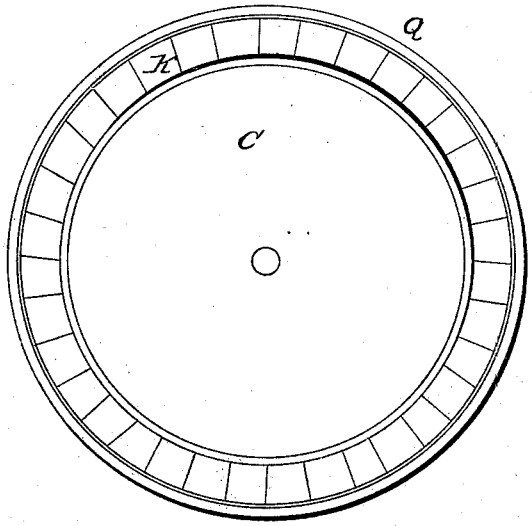


Fig. 10



N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JESSE FITZGERALD, OF NEW YORK, N. Y.

MILL FOR GRINDING COFFEE, &c.

Specification of Letters Patent No. 4,089, dated June 25, 1845.

To all whom it may concern:

Be it known that I, JESSE FITZGERALD, of the city, county, and State of New York, have invented a Mill for Grinding Various Materials; and I hereby declare that the following is a full and exact description.

The mill consists of a bur stone (monolith) cone, running in a female cone made of bur stone chips or small pieces, when intended for grinding certain materials and, when for certain other articles, running in a female cone formed of cast iron segments between which are set edges of steel or other metal.

To enable others to make and use my invention I proceed to describe its construction and operation, reference being had to three sheets of drawings hereunto annexed and making part of this specification.

Figure 1 perspective view of the mill as it is generally arranged, that is fixed upon an upright post. Fig. 2 view of the top. Fig. 3 cross section of the mill. Fig. 4 section showing the method of feeding. Fig. 5 the segments and steel plates. Fig. 6 the same, with the plates set between the segments. Fig. 7 end of part of the female cylinder. Fig. 8 section of the female cylinder when made of bur stone. Fig. 9 the cone of bur stone. Fig. 10 the larger end of the cones of bur stone.

The mill works on a horizontal axis. A band wheel is generally placed where a crank is seen in the drawing Fig. 1. It is for grinding all kinds of grain, coffee, spice, drugs, &c.

The cone is made of bur stone or a similar material. The novelty of the mill consists chiefly in the female cones and the feeding apparatus.

The female cone of bur stone is thus made: An external cone is made of cast iron and within this is laid the small pieces of bur stone, (about the size of a walnut,) in cement. The waste chips of bur stone are generally used for this purpose. The stone is thus held on the principle of the arch and by the confinement of the cast iron case, firmly in its place and may thus be used until nearly worn out with use.

The segment female cone is made of pieces of cast iron (B Figs. 5 and 3) laid together and held by hoops. The ends of the segments being also held by their fitting into the heads of the outer cone (M). Between these segments are placed strips of steel plate (A Figs. 3 and 5) hinged at the smaller inner diameter of the cone and extending outside of the outer cone. See Figs. 1 and 3. A hoop (N Fig. 2) is arranged to be screwed up, by nuts on the rods, O, Fig. 2. So that as fast as the steel plate wears by the grinding process the hoop, N, is forced up by the screws and thus sets in the steel plates. By this means also the mill can be set to grind the different materials required.

The hopper is peculiar. There is a large cavity at the bottom of it of a circular shape, see Fig. 1, P, through the center of which passes the shaft L. Upon the shaft and in this cavity is the gage, E, see Figs. 2, 3, 4, which is a circular disk, fitting into an opening in the head of the outer cone. This gage, E, is set upon the end of a collar, D, which is made to slide upon the shaft, L, and held in position by the set screw, F. This collar, D, being movable the gage E is set as near to the circular opening into the mill as desirable and thus as much or as little grain admitted as desirable and this amount will be regular, the gage being continually revolving in the mass of the grain in the cavity of the hopper and preventing a stagnation of it.

What I claim as my invention and desire to secure by Letters Patent is—

1. Making the external cone in segments, having adjustable metallic teeth or grinders, A, between them, the said teeth being adjusted by the means above described, or any other substantially the same.

2. The regulating the admission of the grain to the mill by means of the revolving gage E, as above described.

JESSE FITZGERALD.

Signed in the presence of—

ISAAC DETHERIDGE,

NILL GRAY.