W. N. COSGROVE.

GRINDING-MILLS.

No. 195,349. Patented Sept. 18, 1877.

Fig 1

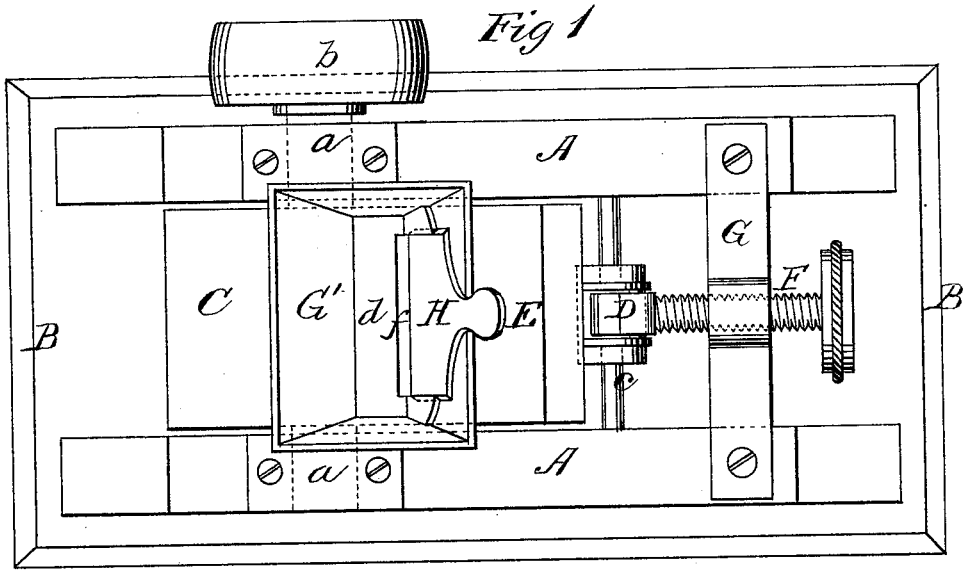
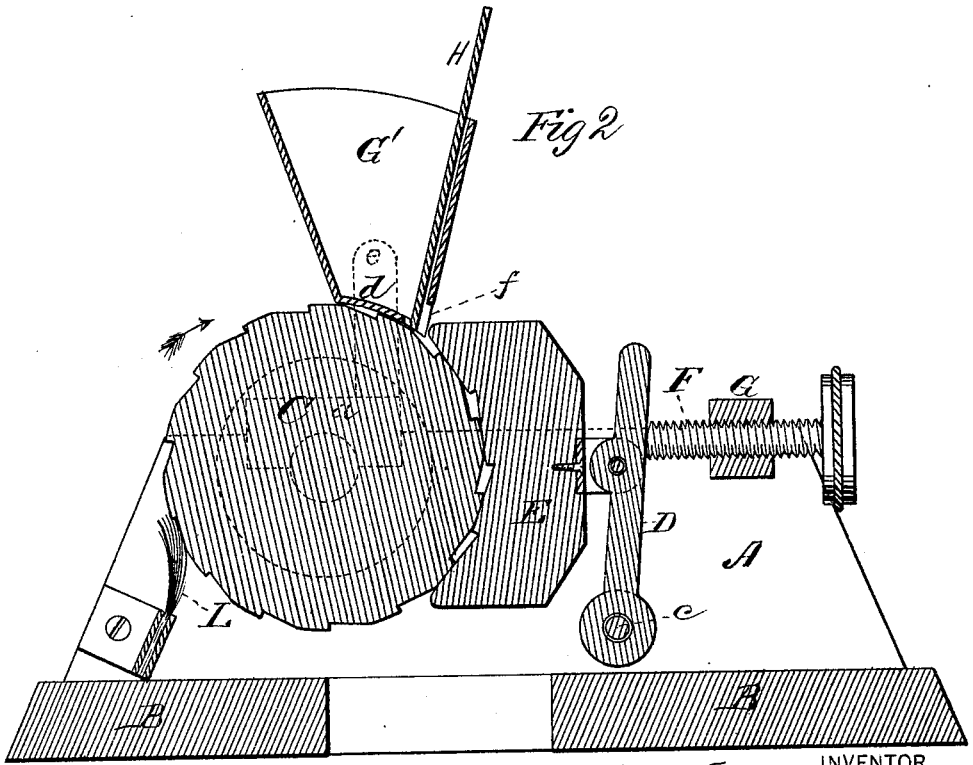


Fig 2



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM N. COSGROVE, OF FARIBAULT, MINNESOTA, ASSIGNOR OF ONE-FOURTH HIS RIGHT TO ISAAC M. FULLER, OF SAME PLACE.

IMPROVEMENT IN GRINDING-MILLS.

Specification forming part of Letters Patent No. **195,349**, dated September 18, 1877; application filed August 4, 1877.

To all whom it may concern:

Be it known that I, WILLIAM N. COSGROVE, of Faribault, in the county of Rice and State of Minnesota, have invented a new and valuable Improvement in Grinding-Mills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top view of my improved grinding-mill, and Fig. 2 is a longitudinal vertical section thereof.

This invention has relation to improvements in mills for grinding grains; and the nature of the invention consists in combining with a stone mounted horizontally in suitable cheek-blocks, a vertically-vibrating concave, an adjusting-screw for regulating the fineness of the ground product, and a brush for sweeping off the meal or flour which may have adhered to the stone, all as hereinafter more fully set forth.

In the accompanying drawings, the letter A designates two spaced cheek-blocks rigidly secured to or forming a component part of a base, B. C represents a transversely corrugated or ribbed stone of cylindrical form, having its bearings in the cheek-blocks A, and confined therein by trunnion-plates *a*. This stone is rotated by means of a pulley-wheel, *b*, and suitable belting, communicating with a suitable motor, or by other well-known means. D represents a vertically-vibrating lever, fulcrumed at *c* to the base B, to which, at or near the center of its length, is hinged, in any suitable manner, a concave, E, the curvature of which corresponds to that of the stone, and which, like the said stone, may be transversely ribbed or corrugated.

By forcing the concave into a more or less close contact with the stone, the grain comminuted between the same will be more or less fine, as the case may be. This adjustment is attained by means of a screw, F, extending through a preferably metallic brace, G, connecting blocks A, and bearing against the lever D. By setting up this screw, the concave is forced toward the stone, its joint on the lever allowing its concave face to conform in its changed position to the convexity of the stone, so that their frictional surfaces are in contact with each other, or concentric to each other throughout their whole extent. By this means the grain passing between the stone and concave is evenly and properly ground. In the act of grinding, the stone rotates in the direction of the arrow, the flour or meal being discharged at the lower part of the concave, through a suitable opening in the base, into a receptacle provided therefor.

G′ represents a hopper of any suitable form, having an inclined bottom, *d*, and sustained upon standards *e* rigidly secured to the cheek-blocks above the stone. The discharge-opening *f* of the hopper is at the junction of the hopper-wall and the lower end of the inclined bottom *d* aforesaid, directly over the dividing-line of the stone and concave, and its width, and consequently its capacity for delivering the grain to the grinding devices above-described, is regulated by means of a sliding gate, H, arranged after the manner of a sash in guides upon the wall of the hopper. As the stone rotates, any ground material which may have adhered to the stone is swept off by a brush, L, projecting upward from the base, with its bristles in contact with the periphery of said stone.

It will be observed that the stone and concave may be made of any of the usual materials, and that they may be either ribbed, corrugated, or roughened, or left perfectly plain, as I may elect.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the upright cylindrical stone C, of the vibrating lever D, the upright concave E, and the adjusting-screw F, bearing on the said lever, as and for the purpose shown and described.

2. The combination, with the cheek-blocks A, upright wheel C, and concave E, of the vibrating lever D, hinged to said concave, the adjusting-screw F, and brush L, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM N. COSGROVE.

Witnesses:

E. S. BALDWIN,

I. M. FULLER.