

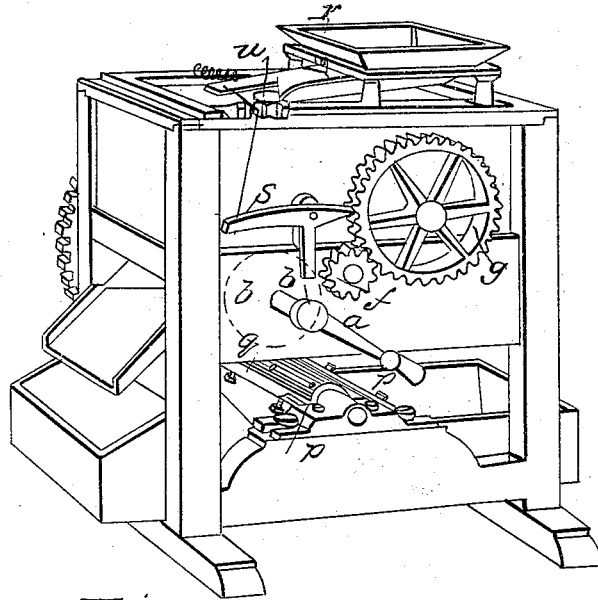
J. C. & C. B. BALDWIN.

Grain Mill.

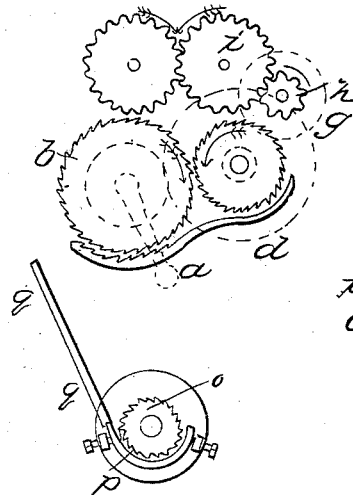
No. 1,199.

Patented June 26, 1839.

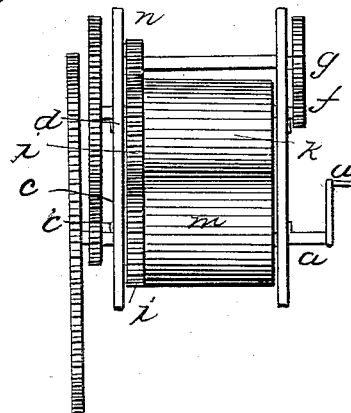
*Fig. 1,*



*Fig. 2.*



*Fig. 3,*



# UNITED STATES PATENT OFFICE.

JOS. C. BALDWIN, OF AUGUSTA COUNTY, AND C. B. BALDWIN, OF BOTETOURT COUNTY,  
VIRGINIA.

## MILL FOR GRINDING AND CRUSHING CORN.

Specification of Letters Patent No. 1,199, dated June 26, 1839.

*To all whom it may concern:*

Be it known that we, JOSEPH C. BALDWIN, of Augusta county, and CYRUS B. BALDWIN, of Botetourt county, both of the State of Virginia, have invented a new and useful improvement in machinery for crushing and grinding corn and cob for stock and corn and other grains for stock and family use, which machine as improved by us we denominate "the corn and cob crusher and grinder;" and we do hereby declare that the following is a full and exact description thereof, reference being had to the drawing which accompanies and makes a part of this specification.

Figure 1 is a perspective view of this machine; Fig. 2, an end view of the driving and grinding wheels divested of the frame work and casing; Fig. 3, a top view of a part of the interior of the machine, showing the two crushing cylinders and a part of the gearing.

Where the same parts are represented in either of the figures they are designated by the same letters.

*a*, is the winch or crank for driving the machine by hand and by which a toothed cylindrical cast iron grinder *b*, Fig. 2, is set in motion. The place of this grinder is shown by the dotted lines *b*, *b*, in Fig. 1 and its end at *b*, in Fig. 2. On the other end of the shaft of this grinder is a cog wheel *c*, Fig. 3, and shown by the dotted line in Fig. 2. The wheel *c* gears into a cog wheel, the diameter of which is represented by the dotted line *d*, Fig. 2, and which is on the shaft of a second cylindrical grinder *e*, and on the opposite end of this shaft is the pinion *f*, and which pinion meshes into the cog wheel *g*. On the other end of the shaft of this cog wheel there is a pinion *h* which gears into a cog wheel *i* on the shaft of and attached to a third toothed or fluted cylinder *k*, which is one of the two cylinders placed above the grinders and called crushing cylinders, seen distinctly in the top view, Fig. 3, and marked respectively *l* and *m*. Below the largest grinding cylinder there is a concave grinding bed *n*, adapted to it and like it, having cutting teeth extending from end to end. Below the main grinding cylinder is a small cylinder *o*, *o*, two and a half or three inches in diameter, Figs. 1 and 2, made of steel and having very fine and sharp teeth running from end to end and

having a concave grinder, *p*, *p* of the same metal and fineness of teeth placed underneath it. To this the material is conducted from the grinding cylinder by means of the inclined board *q*, *q*.

A hopper *r*, is placed on the top of the machine, into which the corn or other grain intended to be ground fine is put. The shoe is kept in motion by a lever *s* having a projection *v*, on one end, worked by the cog wheel *g*. A wire runs from the other end to the shoe. The shoe is forced back to its place by a spring, connected with the other side of the shoe.

The grain passes through the whole machine. When discharged from the main grinder *6*, Fig. 1 and Fig. 2, it is conveyed by the spout, trough, or inclined board *q* to the small grinder *o*, *o*. A gate is fixed at the upper end of this trough, which will either admit or exclude the grain. This small grinder is driven by a cog wheel *t*, from the shaft of the main grinder, which works in a pinion on the shaft of the main grinder. It should perform five or six revolutions to the large grinder's one.

The ears of corn and other grain are fed between the crushing cylinders through the opening *u*, Fig. 1, which is immediately over the junction of the crushing cylinders. The arrows on the wheels and cylinders in Fig. 2 show their direction when in motion and the general size of the wheels and pinions as exhibited in the drawings will furnish an idea of the relative velocity with which the cylinders move, which, however, will admit of great variation. Thus it will be seen that the grinder *d* has a much greater velocity than the grinder *e*. Their different relative velocities are of great importance to the proper action of the machine; although some variation in this particular may be admitted, but the principle must be retained.

The teeth in the grinders are made by channels extending from end to end and forming cutting edges and in transverse sections appearing like saw teeth. Those on the crushers are deep fluted and may measure about an inch from edge to edge, those on the grinders and concave bed about one third of an inch from edge to edge. Those on the fine grinders are about eight to the inch. For an ordinary sized machine the cylinders may be nine inches long, the diameter

of the crusher cylinders seven and a half inches, the grinder *d* eight inches and the grinder *e* four inches in diameter. These sizes may be proportionately increased or  
5 diminished according to the power to be used.

The whole operation of the machine will be manifest from the foregoing description without recapitulation.

10 This machine is applicable and we intend to apply it to the crushing and grinding of various kinds of grains, &c.

We do not claim to be the inventors of toothed iron cylinders, or to be the first who  
15 have applied them to the crushing and grinding of corn and other grain; but we do claim to be the inventors of a machine for that purpose such as is herein described in

which the article to be crushed and ground is successively acted upon by crushing and 20 grinding cylinders standing in pairs the one over the other and combined with a small grinding cylinder and concave, constructed and operating substantially in the manner set forth.

JOSEPH C. BALDWIN.  
CYRUS B. BALDWIN.

Witnesses to the signature of Joseph C. Baldwin:

THOS. P. JONES,  
GEORGE WEST.

Witnesses on the part of Cyrus B. Baldwin:

W. S. KNIFFEN,  
A. C. BROWN.