(No Model.) 3 Sheets—Sheet 1.

A. S. WEAVER.

GRINDING MILL.

No. 256,935. Patented Apr. 25, 1882.

Fig. 2.

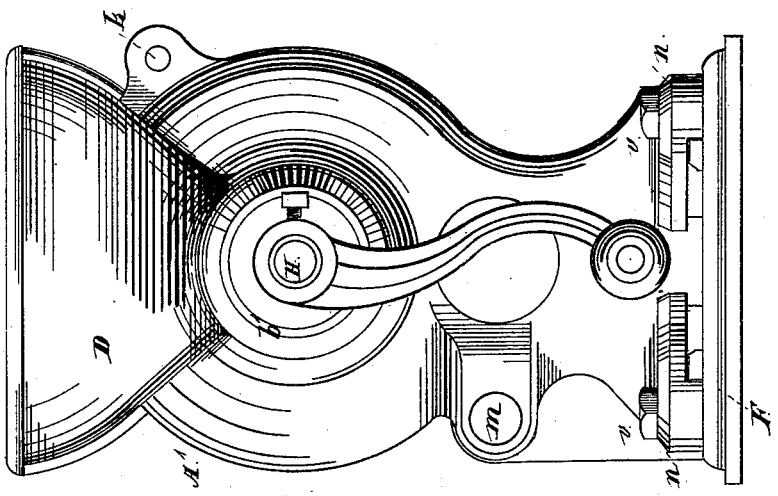
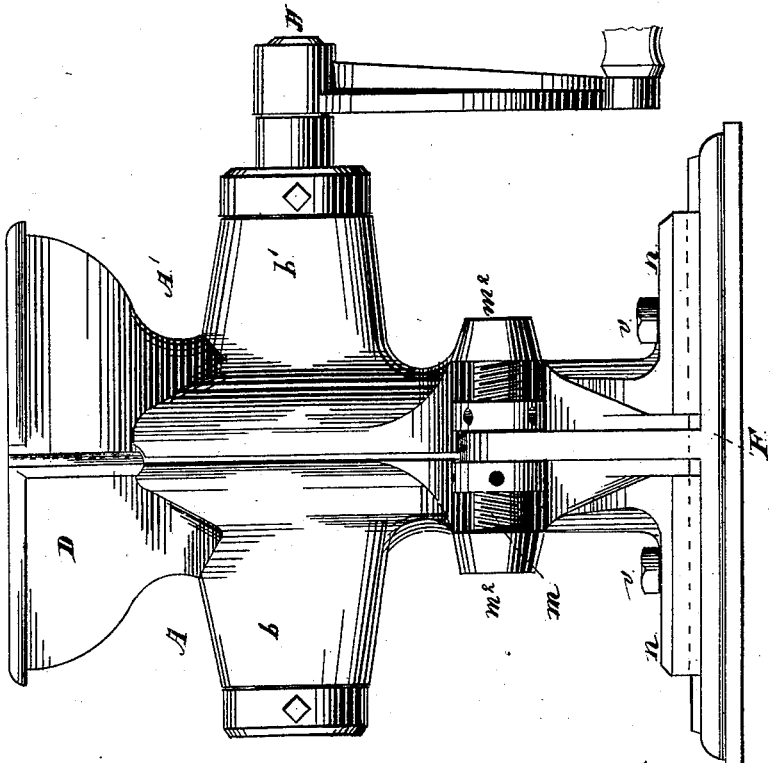


Fig. 1.



Witnesses:
A. W. Bond.
H. T. Brown.

Inventor:
Andrew S. Weaver
By Hart & Bond Attys.

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A. S. WEAVER.

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Fig. 4.

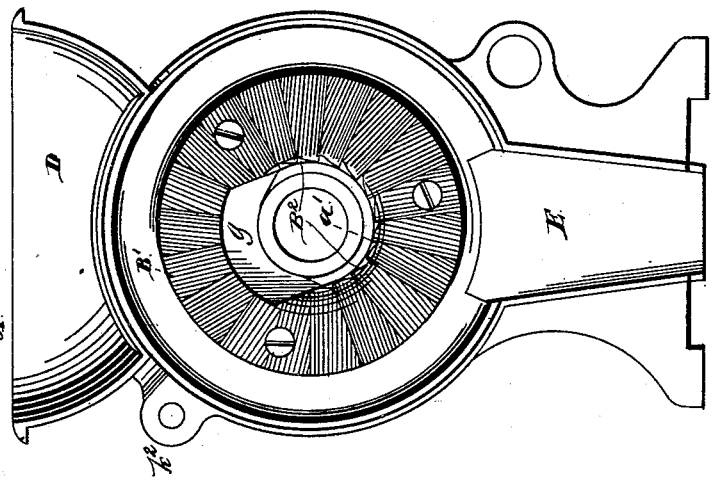
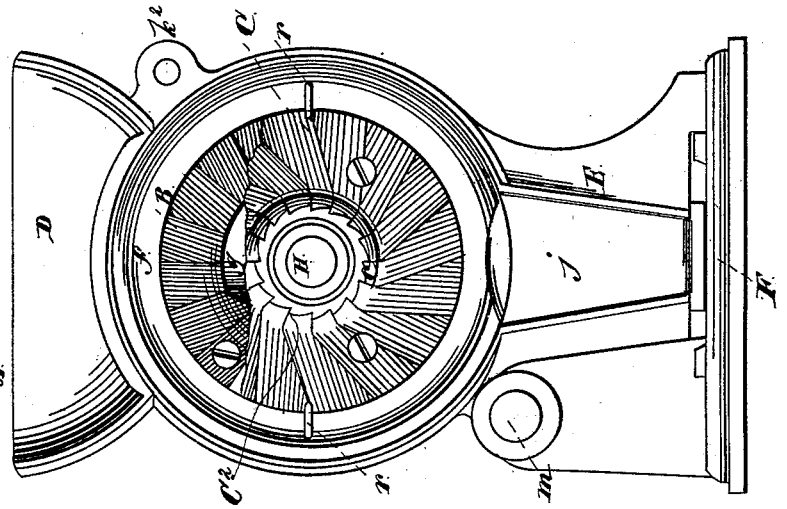


Fig. 3.



Witnesses:
C. W. Bond
H. L. Burns.

Inventor:
Andrus S. Weaver
By West & Bond Attys

(No Model.) 3 Sheets—Sheet 3.

A. S. WEAVER.

GRINDING MILL.

No. 256,935. Patented Apr. 25, 1882.

Fig. 5.

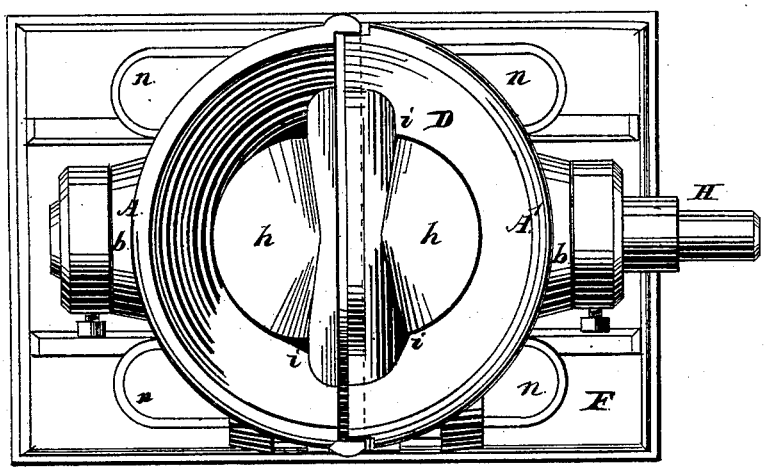
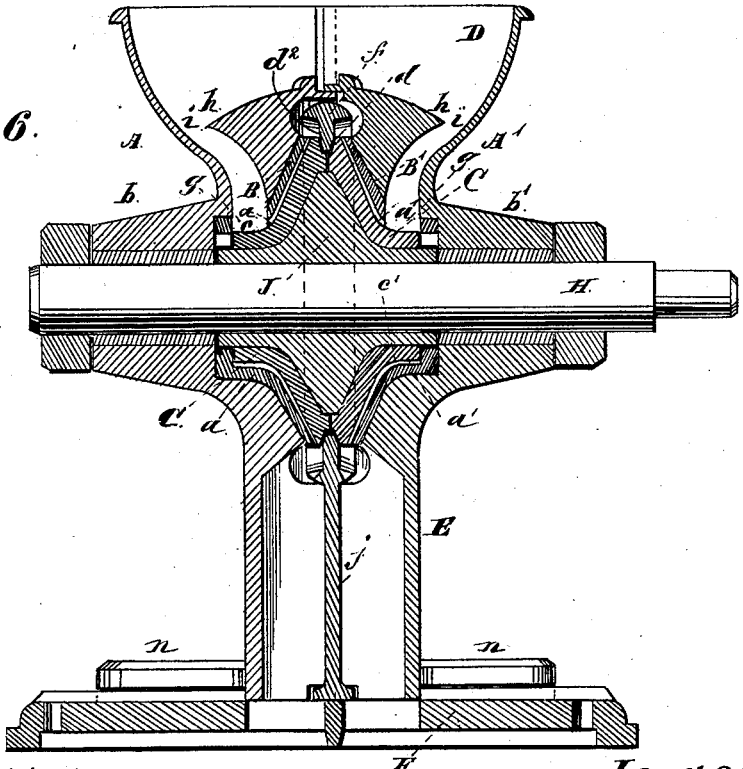


Fig. 6.



Witnesses:
A. W. Bond
L. L. Bruns.

Inventor:
Andrus S Weaver
By West & Bond Attys.

UNITED STATES PATENT OFFICE.

ANDRUS S. WEAVER, OF JOY, NEW YORK, ASSIGNOR TO CHARLES H. MORSE, OF CHICAGO, ILLINOIS.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 256,935, dated April 25, 1882.

Application filed April 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, ANDRUS S. WEAVER, residing at Joy, in the county of Wayne and State of New York, and a citizen of the United States, have invented a new and useful Improvement in Grinding-Mills, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation; Fig. 2, a side elevation. Figs. 3 and 4 show the inside of the two halves of the mill. Fig. 5 is a top view; Fig. 6, a longitudinal vertical section.

This invention relates to grinding-mills especially adapted for grinding grain; and it consists in the combination and organization of parts, as hereinafter fully described and illustrated.

In the drawings, A A′ represent the two parts of the case, which may be of cast metal. They are substantial duplicates of each other, except that the edge of one overlaps the other a little to make a closer joint.

B B′ are stationary grinding-rings secured upon the inside of A A′, adapted to receive these rings, which said grinding-rings are beveled, as shown. These rings are respectively provided with the hub-like extensions *a a′*, the inner faces of the hubs of said grinding-rings being provided with coarse grooves B^2.

C is a movable grinding-ring secured upon a shaft, H, which is in bearings *b b′* formed with the case. Both faces of this ring C are provided with a grinding-surface corresponding with the grinding-surfaces of the two rings, B B′. This ring C also has hub-like extensions *c c′*, provided with coarse grooves c^2. This central grinding-ring may be made in two parts, secured together or to a suitable center-piece, or may be made whole. *d* is a groove in the extreme outer edge of C. When C is made whole this groove may be omitted.

f is an annular ring, which encircles the grinder C and forms a division or partition between the two chambers. As herein shown, the grinder C is composed of two parts, secured to a core, J, that is fixed upon the rotary shaft H. Each part or half of this grinder has an annular recess so formed that when the two halves are brought together, as in Fig. 6, the circumferential channel *d* (shown in said figure) will be formed. The ring *f*, which is secured to or formed with the partition *j*, is made with an inner flange, d^2, which is received in the channel *d* of the rotary grinder, thus dividing the chamber within which the grinders are located, and also dividing the outlet-passage, E, for the purpose presently set forth.

The upper part of the case forms a hopper, D, from which the grain or other article to be ground passes to the outside of the two fixed grinders B B′ and through openings *g g* in the hub-like extensions *a a′*, being delivered between the extensions on the inner and outer grinding-rings. A portion of the hopper on the inside is covered by the wings *h*, bearing spaces *i* for the passage of the grain. To prevent clogging, the grain-passages gradually enlarge below the points *i*, as shown in Fig. 6.

E is the outlet-passage, which, as shown, is divided by the partition *j*, which is cast upon the ring *f*.

The two parts of the case are held together by means of a bolt, *k*, passing through ears k^2 that are formed upon the two portions A A′ of the case, and a right-and-left-hand screw, *m*, arranged to work through lugs m^2 which are formed upon said parts A A′, by means of which bolt and screw the mill can be adjusted so as to grind fine or coarse.

The case is secured to a base, F, by means of bolts *v*, which pass through flanges or feet *n* and through slots in the base F.

On each side of the outer edge of the grinder C, I have placed two projections or pins, *r*, which serve the purpose of scrapers to prevent the meal from becoming clogged in the said chambers. These scrapers are secured in the periphery of the rotary grinder C, and, as illustrated by Fig. 3, the pins move along the sides of the flange d^2 of ring *f*, their outer ends being within the said ring, so as not to touch the inner side thereof.

The operation is as follows: The article to be ground is admitted into the hopper D, from which it passes through the openings *g* in the hub-like extensions upon the fixed grinders B B′ and falls upon extensions $c^2 c'$ upon the in-

ner double grinder, C, and will then be carried between the inner and outer hub-like extensions, *a a' c c'*, and will be cracked and broken. Passing then between the main portions of the grinders, it will be ground and will be delivered into such spaces or chambers within the lower portion of the two-part casing as are not occupied by the grinders, and from such spaces or chambers the meal will pass into the divided passage E.

The two sides of the mill are separated from each other, and two different articles could be ground at the same time, if desired, being kept separate in the hopper and the delivery-tubes being suitably arranged.

Two or more of these mills can be arranged side by side and be driven by a single shaft. Any suitable power may be used.

The ring *f*, which separates the two chambers from each other, and the partition *j* in the discharge-passage E, may be omitted from all mills which are not designed to grind and separately deliver two different articles at the same time.

The wings or projections *h h* in the hopper can be conveniently cast with the two parts of the case, one on each part. These parts *h h* are desirable. They support the body of the grain in the hopper; but a sufficient quantity can pass through the passages *i*, below which the openings enlarge, and thereby clogging is prevented without the use of agitators.

The shaft H may be extended to receive a driving-pulley, and the outer end of such shaft beyond the pulley may be supported by an arm suitably secured to the base F and provided with a bearing.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination, in a grinding-mill, of the two parts A A', composing the casing, with the outer stationary grinding-rings B B', respectively connected with said two parts of the casing, and formed with hubs having grinding-faces and the inner rotary grinder, C, composed of two parts, each formed with a hub having a grinding-surface, substantially as described.

2. The combination, in a grinding-mill, of the rotary shaft with the grinder C, having a circumferential groove, *d*, and provided with scrapers *r*, the ring *f*, having a flange, d^2, received into said groove, the partition *j*, dividing the delivering-passage, and the grinding-rings B B', said members being constructed and organized substantially as and for the purpose described.

3. The combination, in a grinding-mill, of the two-part casing A A', having the wings *h*, arranged within the hopper substantially as set forth, with the stationary grinding-rings B B', having hubs *a a'* and openings *g*, and the rotary grinder C, all constructed and arranged substantially as and for the purpose specified.

ANDRUS S. WEAVER.

Witnesses:
E. A. WEST,
O. W. BOND.