G. N. ANNAN.

GRINDING MILL.

No. 81,725. Patented Sept. 1, 1868.

Fig. 1.

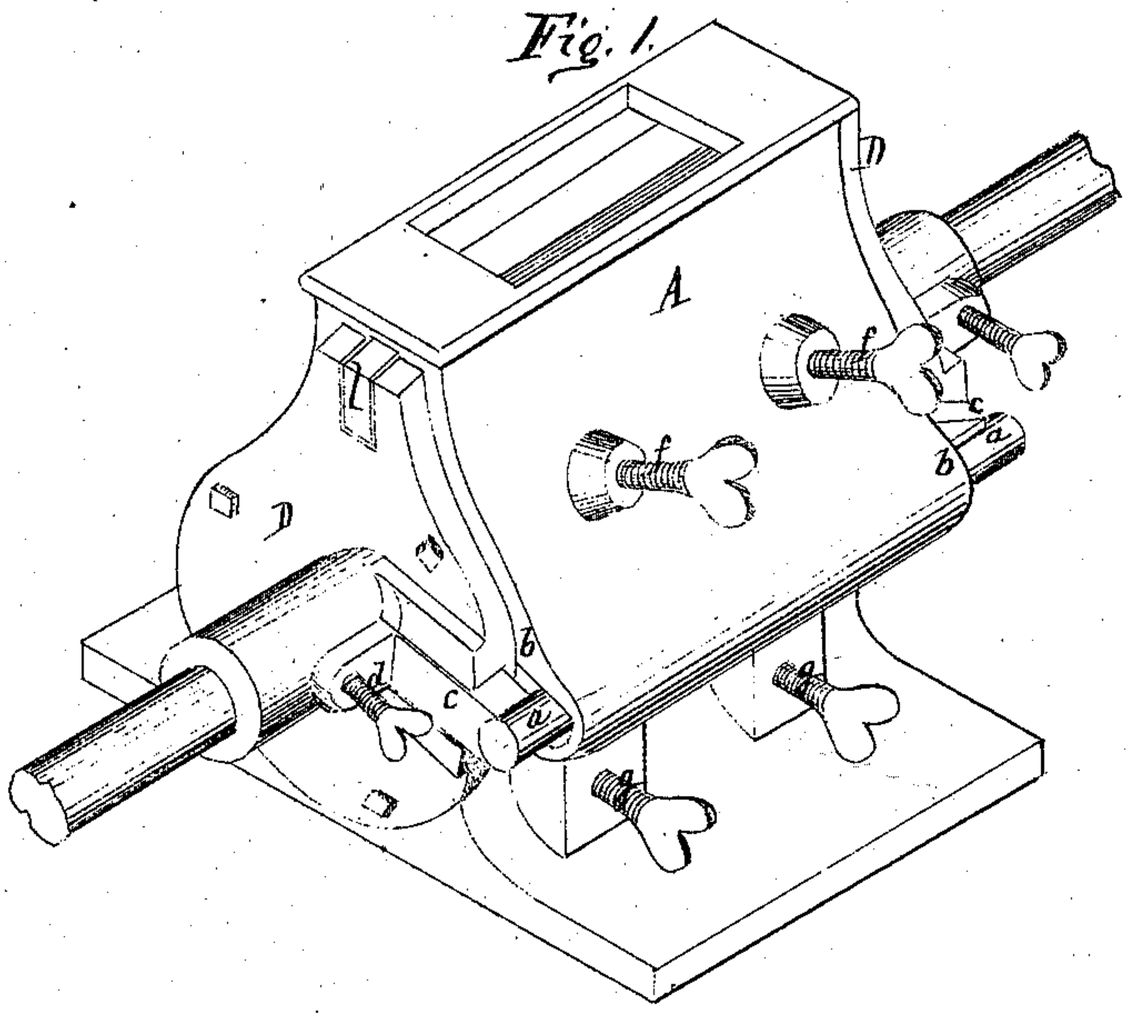


Fig. 2.

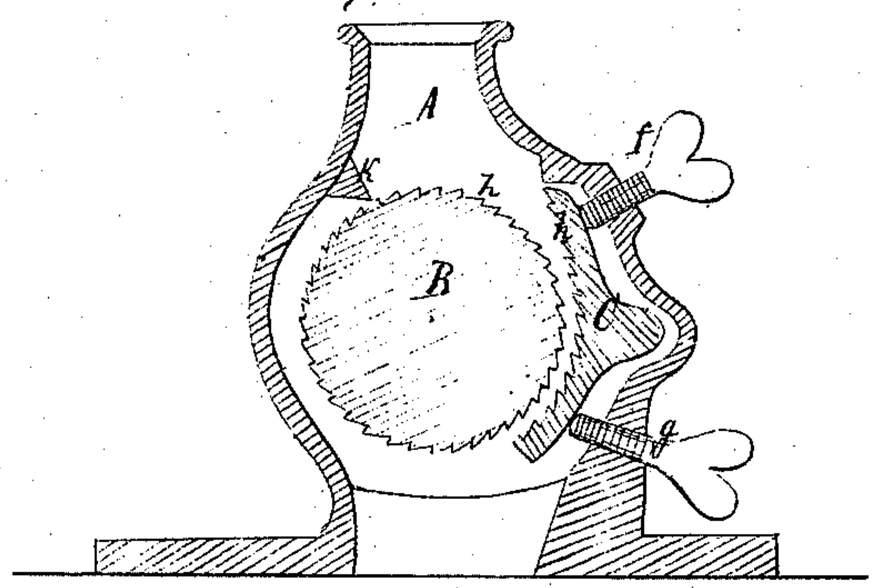
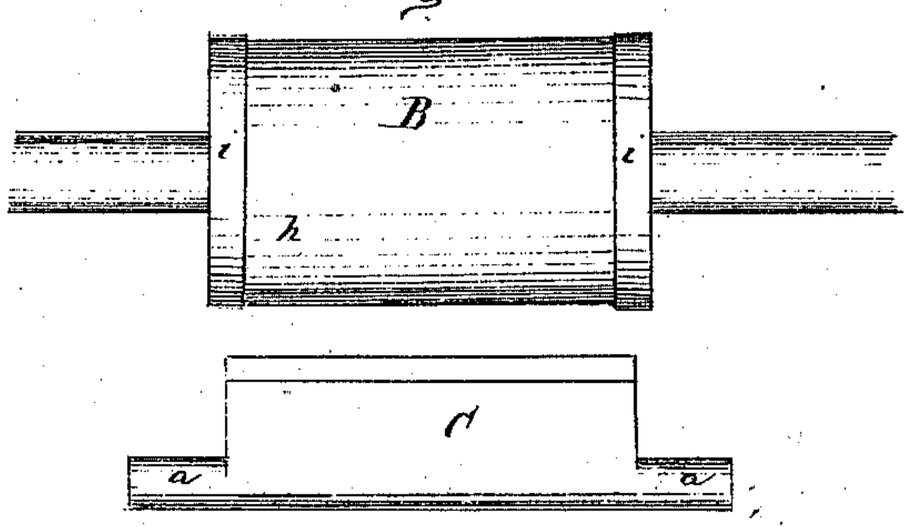


Fig. 3.



Witnesses:

Louis Bostwag
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UNITED STATES PATENT OFFICE.

GEORGE N. ANNAN, OF BUFFALO, NEW YORK.

IMPROVED GRINDING-MILL.

Specification forming part of Letters Patent No. **81,725**, dated September 1, 1868.

To all whom it may concern:

Be it known that I, GEORGE N. ANNAN, of the city of Buffalo, county of Erie, and State of New York, have invented a certain new and useful Improvement in Grinding-Mills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a perspective view of my improved grinding-mill; Fig. 2, a vertical cross-section; Fig. 3, a view of the grinding-cylinder and concave bed removed from place.

Like letters of reference indicate corresponding parts in all the figures.

My improvement belongs to that class known as "portable mills;" and the invention relates principally to an improved mode of hanging and adjusting the concave bed nearer to or farther from the grinding-cylinder by pressing outward upon the journals and inward upon the body of said bed, as hereinafter set forth.

In the drawings, A indicates the casing, B the grinding-cylinder, and C the concave bed, the cylinder and bed being situated horizontally in the casing. The concave bed is hung by journals *a a* in oblong bearings *b b* of the casing. These journals are at the ends of the bed, and situated about midway of the width, so as to produce a balance. Against the journals *a a* rest sliding blocks *c c*, dovetailed or mortised loosely into the heads D D of the casing, so as to press outward against the journals *a a* by turning screws *d d*, as clearly shown in Fig. 1. Screws *f f* and *g g*, respectively above and below, pass through the side of the casing and bear upon the four corners of the bed, pressing inward or in the direction opposite to blocks *c c*. By this arrangement of the blocks *c* pressing outward against the journals, and the screws *f g* pressing inward against the corners of the bed, I place the whole bed perfectly under control and render it adjustable to any desired place, and at the same time hold it in a fixed position—an effect, so far as I know, never before produced. The most essential feature is rendering the axis or journals adjustable in and out, whereby the opening between the cylinder and bed is adapted to grains of different sizes, and also to grinding of different degrees of fineness. In connection with this outward adjustment of the journals the inward pressure of the screws upon the four corners is also essential to prevent any rocking action, and also to set the bed in any position desired, either in or out, bodily, or one edge or one end to a greater degree than the other.

I am aware that a concave bed has before been employed having journals at the upper edge, and a single adjusting-screw pressing centrally to set the bed up to the cylinder. In such case, however, the single set-screw allows a rocking and irregular motion, which impairs the efficiency of the machine. Such is not the equivalent of my arrangement, where the inward and outward action oppose each other, thereby holding every part firm.

The cylinder and bed are provided with grinding-teeth *h h*, as shown. In order to prevent these teeth from coming in contact when set close together, I provide the ends of either the cylinder or the bed with plain rims *i i*, projecting a little beyond the teeth, against which the opposite part will strike before the teeth can engage. If desirable, these rims may be hardened to prevent wear.

Ribs *k k* are made to project over the top of the cylinder and bed to prevent the grain from passing outside of those parts. The heads D D of the casing are simply bolted fast, as shown in Fig. 1. At the top a notch is cut in each head, which fits over a lug, *l*, cast in the end of the casing. This and block *c* holding on journal *a* serve as a double lock to hold the head stationary in place, and without strain upon the screw-bolts. This mill is intended more especially for grinding feed for animals, in which case it is desirable to produce only a coarse article. In order to remove the finer particles, I design placing the mill over a box having an incline sieve or screen beneath, which will throw off the coarser part, while the fine particles pass through. This meal thus made forms a fine material for family use, and as it can be produced in small quantities at will is always fresh.

I do not claim broadly an adjustable concave bed in combination with a grinding-cylinder, for that is old; but

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

1. The combination of the blocks *c c*, pressing

outward upon the journals of the bed, and the screws *f f* and *g g*, pressing inward upon the four corners of the bed, thus opposing each other, the whole arranged as described, and operating in the manner and for the purpose specified.

2. Connecting the heads D to the ends of the case by the two locks *c l*, in addition to the ordinary screws, whereby the great strain is removed from the screws, as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEO. N. ANNAN

Witnesses:
R. F. OSGOOD,
ALBERT HAIGHT.