B. A. WING.

Bolt Feeder.

No. 100,094. Patented Feb. 22, 1870.

Fig. 1

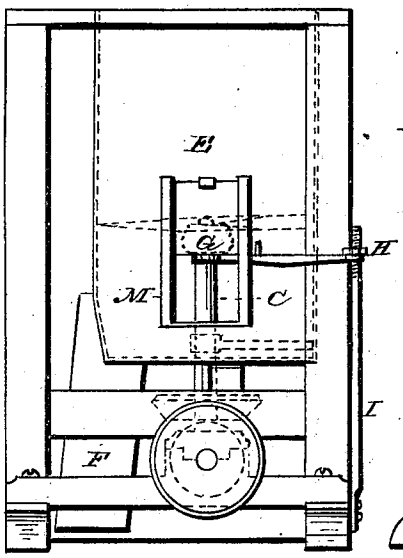



Fig. 2

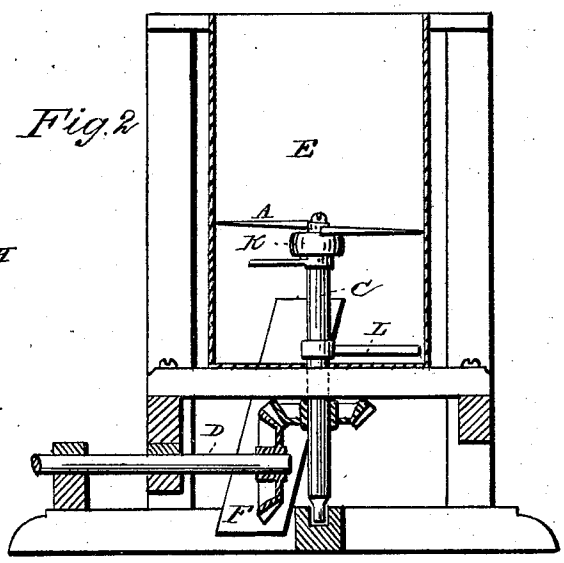



Fig. 3

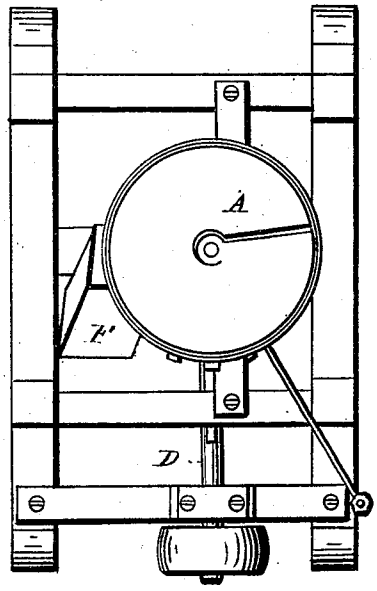



Fig. 4

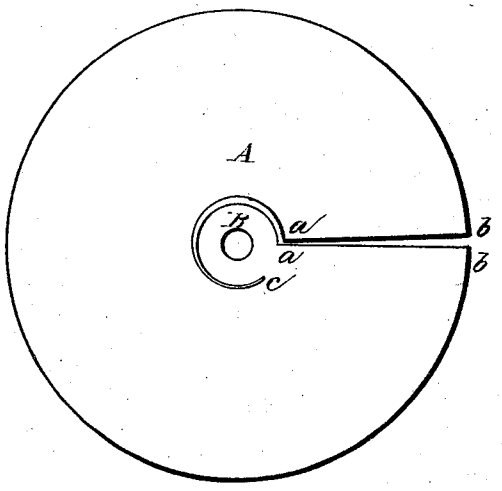
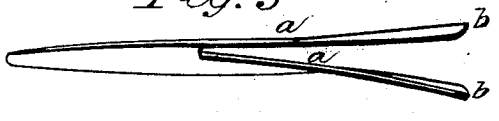



Fig. 5




Witnesses

H. Van Fleet

Eli Wise

Inventor

B. A. Wing

# United States Patent Office.

BENJAMIN A. WING, OF GALESBURG, MICHIGAN.

*Letters Patent No.* 100,094, *dated February* 22, 1870.

## IMPROVEMENT IN BOLT-FEEDERS FOR MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, BENJAMIN A. WING, of Galesburg, in the county of Kalamazoo, in the State of Michigan, have invented a new and improved Bolt-Feeder for Mills; and I do hereby declare that the following is a full and exact desciption thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Figure I represents a side view;

Figure II, a vertical section;

Figure III, a plan;

Figures IV and V, the principal part of the invention in one-half of natural size.

My invention consists of a circular steel plate, A, in which an incision, *a b*, Fig. IV, is made in the direction of the radius, and about to five-sixth of its length. Then starting from the end *a* of this incision, a circular cut, *a c*, is made, reaching about as far as three-quarters of the circumference. This being done, the plate is bent into a helical shape, (see Fig. V,) the circumference forming a spiral line, the inclination of which is measured by the distance *b b* between the end points.

A hole, B, is bored in the centre of the disk, and it is screwed to the vertical shaft C, which is moved by means of the horizontal shaft D by the machinery of the mill.

The spiral plate A is surrounded by a cylinder, E, which it divides into an upper and a lower compartment. If the upper compartment be filled with meal and the machine put to work, the effect will be similar to that of a screw of Archimedes. The upper edge of the screw-shaped disk will gradually cut off from the meal over it, and make it pass into the lower compartment, whence it will fall in a regular stream through the discharge-spout F into the bolt.

The opening *a a b b*, Fig. V, through which the meal passes from one compartment into the other, may be varied by means of the following arrangement:

A lever, G H, having its fulcrum in the wall of the cylinder E, and provided on both ends with a horizontal eye, can be screwed down on the end outside of the cylinder by means of a nut on the bar I, which is fastened to the frame. At the same time, the inside end will go up, the eye having same play on the shaft C, and by pressing under a ring of hard wood, K, which lies tight under the plate A, it will close partly the opening *a a b b*, which will reopen by elasticity when the nut is loosened.

An arm, L, is fastened to the upright shaft a little over the bottom of the cylinder, for the purpose of scraping off the meal from the bottom, so that it will fall through the discharge-spout into the bolt.

For the purpose of removing obstructions under the feeder, a door, M, has been made in the lower part of the cylinder, large enough for a man to get in with his hand.

The advantage obtained by this kind of feeder is double; first, the greatest possible regularity in feeding; and second, self-regulation in as far as when the bolt is turning more rapidly, the feeder, which is driven by the same machine, will increase its velocity, and the meal will be fed quicker.

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

1. In the bolt-feeder here shown, the helical metallic plate A, in combination with the cylinder E, when said parts are constructed and arranged to operate as herein shown and described.

2. In combination with the above, the ring K and regulating device G H I, when arranged to operate as herein shown and set forth.

BENJAMIN A. WING.

Witnesses:

ELI WISE,

R. S. VAN VLIET.