C. E. BENADE.

BALANCING AND ROCKING MILLSTONE.

No. 189,014. Patented April 3, 1877.

Fig. 1.

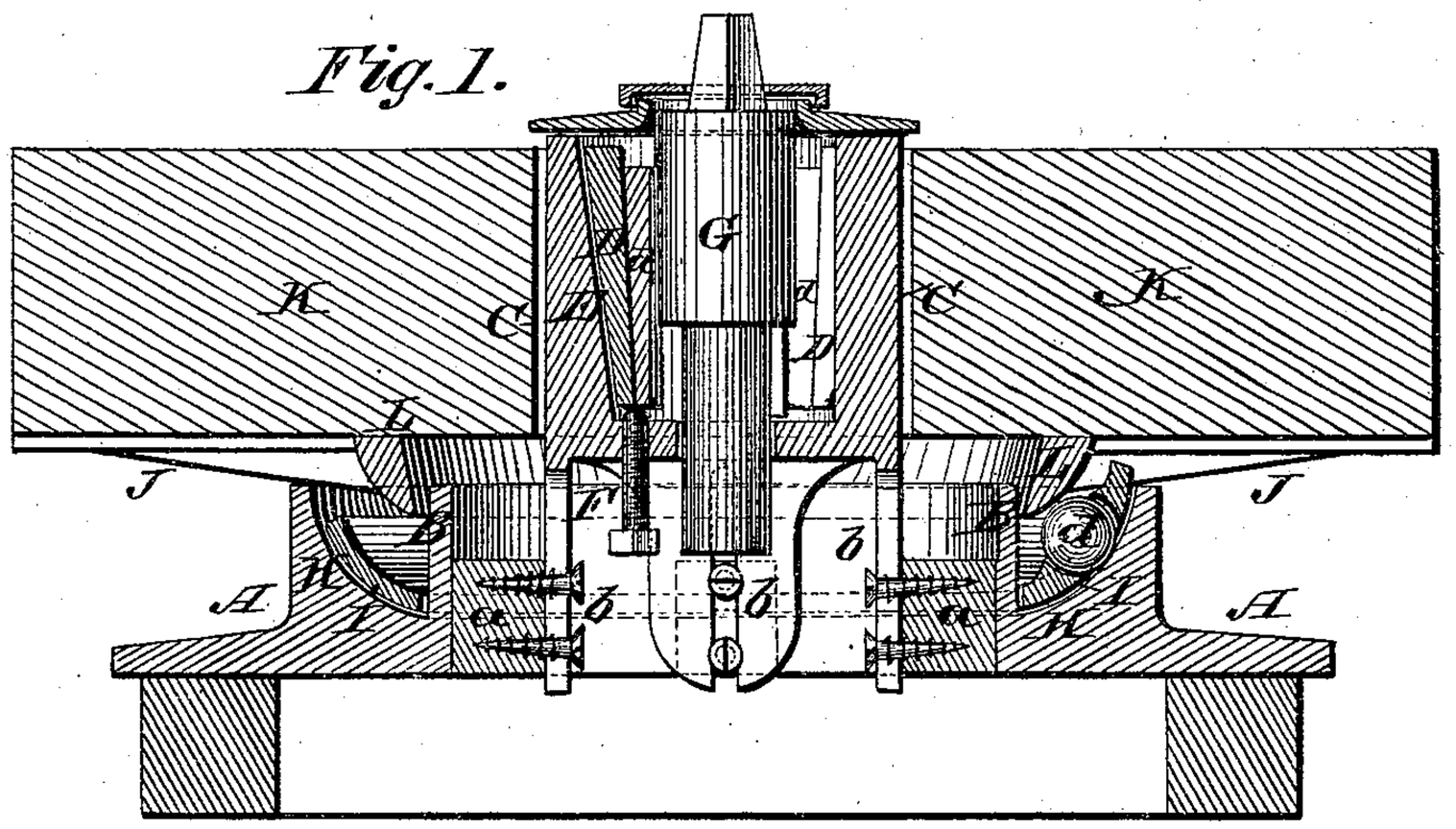

Fig. 2.

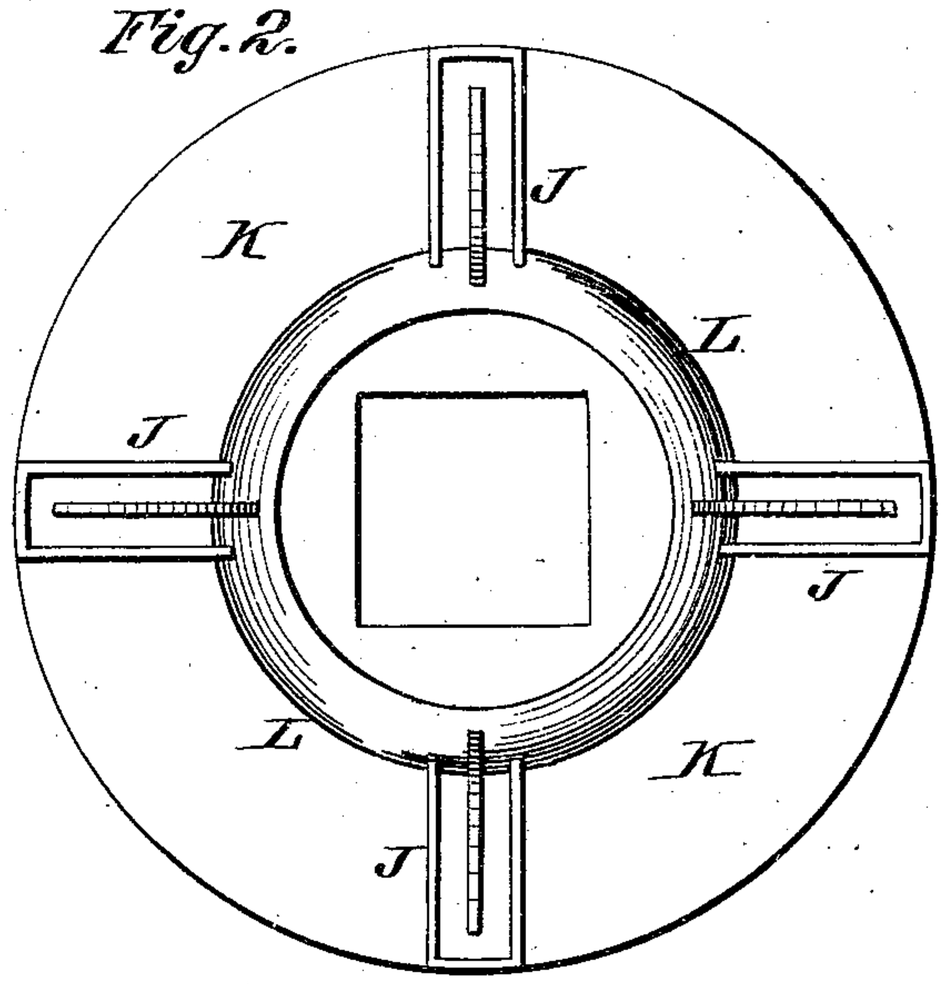

Fig. 3.

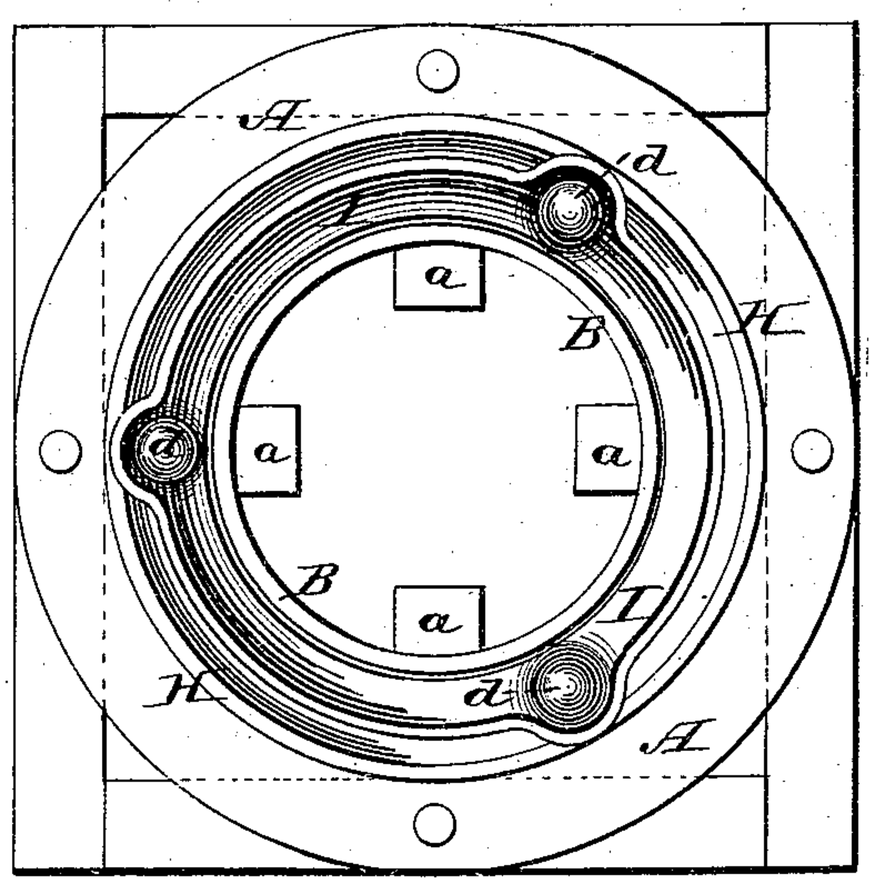

Fig. 6.

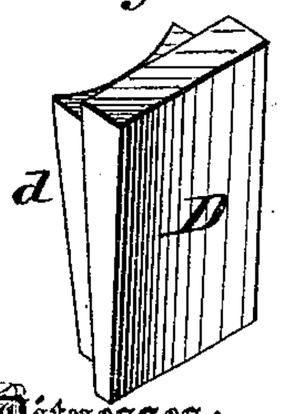

Fig. 4.

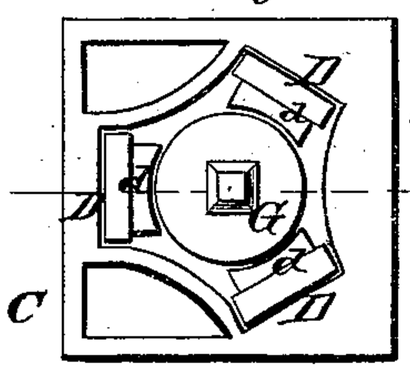

Fig. 5.

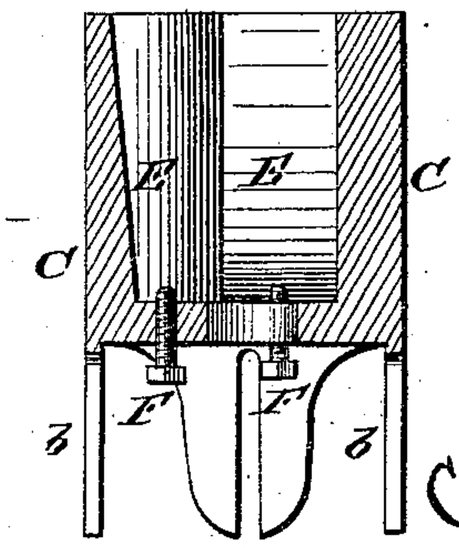

Fig. 7.

Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES E. BENADE, OF YORK, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND JAMES KELL, OF SAME PLACE.

IMPROVEMENT IN BALANCING AND ROCKING MILLSTONES.

Specification forming part of Letters Patent No. **189,014**, dated April 3, 1877; application filed March 13, 1877.

To all whom it may concern:

Be it known that I, CHARLES E. BENADE, of York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Millstone-Frames; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the setting of millstones in flouring-mills; and it consists in the construction and arrangement of devices whereby the bed-stone becomes so balanced that it conforms to the movement of the upper stone, causing a rocking motion of the bed-stone without interfering with the rotation of the spindle or allowing dust or flour to pass below the bed-stone, all as hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a central vertical section. Fig. 2 is a bottom view of the bed-stone. Fig. 3 is a plan view of the bed-plate. Fig. 4 is a plan view of the bush. Fig. 5 is a section of the same. Figs. 6 and 7 are details.

A represents the annular bed-plate, provided with suitable bolt-holes for fastening the same. B is the inside upwardly-projecting flange of said bed-plate. On this flange are cast four lugs, *a*, to support the bush C, said bush being cast with four vertically-slotted legs, *b*, by which the bush is bolted to the lugs *a* with two bolts through the slot in each leg, which admits of the bush being raised and lowered to suit any thickness of bed-stone. Within the bush are followers D, of cast-iron, working on inclined planes E, and adjusted up and down by means of screws F, as shown. Each follower D is provided on its face with packing *d*, made of suitable vulcanized fiber. G is the spindle of the upper or runner stone. Around the flange B, in the top of the bed-plate A, is formed an annular depression, having one side perpendicular—namely, that side which is formed by the outside of the flange B—while the other side is made one-fourth of a circle, it being formed of a concave flange, H, concentric with the flange B. In the concave H is then placed a cast-iron ring, I, made to conform to the concave, and in this ring are circular openings to receive balls *d*. The openings in the loose ring I are intended to keep the balls in position, at the same time allowing them to move slightly, as said openings should be of slightly larger diameter than the balls. The ring, also lying loose, adjusts itself to any motion required.

K is the bed-stone, to the under side of which is cemented a cast-iron spider, J. This spider has a convex circular flange, L, the curvature of which is about one-fourth of a circle; and this convex flange rests upon the balls *d*, causing an oscillating motion of the bed-stone as it comes in contact with the runner.

By means of these devices the bed-stone is automatically made to conform to the movement of the upper stone by the rocking motion of the bed-stone without interfering with the rotation of the spindle.

By the construction of the bush the followers will adapt themselves to the spindle, keeping it tight and in position, by simply loosening the screws F.

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

1. The bush C, provided with slotted legs *b*, and adjustably attached to the lugs *a* on the flange B of the bed-plate A, substantially as and for the purposes herein set forth.

2. In a run of millstones, the combination of the bed-plate, the bed-stone, and a series of balls, interposed between the stone and plate, to cause a rocking motion of the bed-stone, for the purposes herein set forth.

3. The combination of the bed-plate A, having concave flange H, the loose ring I, with balls D, and the bed-stone K, having spider J, with convex flange L, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CHARLES E. BENADE.

Witnesses:

MARCUS CARROLL,

JOHN J. WEAKLEY.