R. K. ENT.

Millstone Balance.

No. 197,023. Patented Nov. 13, 1877.

Fig. 1.

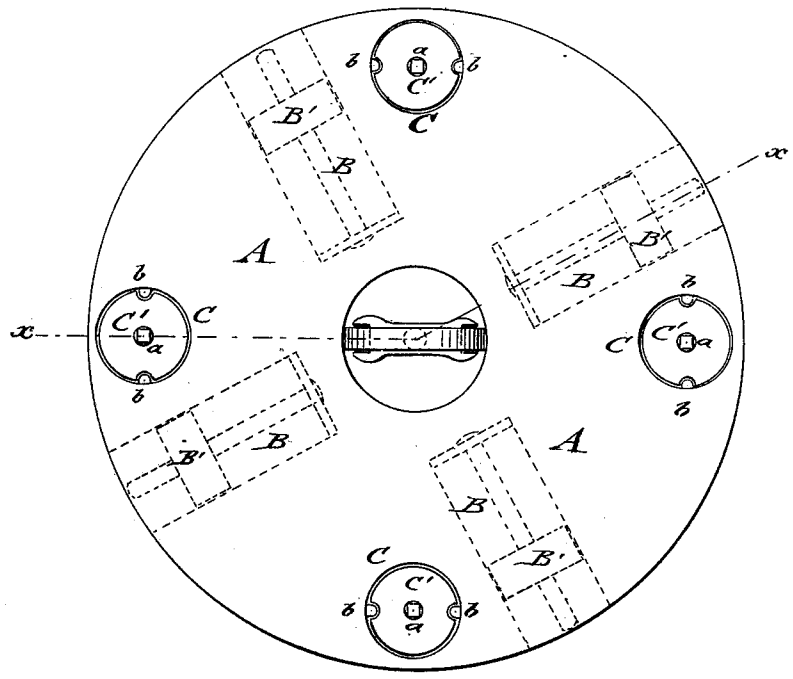
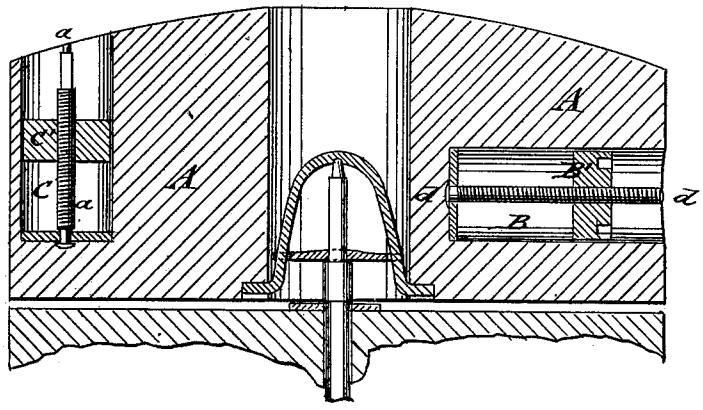


Fig. 2.



WITNESSES:

E. Wolff

J. N. Jacksborough.

INVENTOR:

R. K. Ent.

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

RALPH K. ENT, OF NORTH TOPEKA, KANSAS.

IMPROVEMENT IN MILLSTONE-BALANCES.

Specification forming part of Letters Patent No. **197,023**, dated November 13, 1877; application filed September 22, 1877.

To all whom it may concern:

Be it known that I, RALPH K. ENT, of North Topeka, in the county of Shawnee and State of Kansas, have invented a new and Improved Millstone-Balance, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, and Fig. 2 a vertical central section on line *x x*, Fig. 1, of my improved millstone-balance.

Similar letters of reference indicate corresponding parts.

This invention relates to an improved millstone-balance, by which the running as well as the standing balance may be adjusted without one interfering with the other, and thereby a millstone kept always in perfect balance with little trouble.

The invention consists of a millstone having a number of horizontal tubes and adjustable weights for the standing balance, and a similar number of vertical tubes and weights for the running balance.

Referring to the drawing, A represents a millstone, that is supported on the spindle in the customary manner, and provided, preferably, with four horizontal tubes, B, and weights B′, and with four vertical tubes, C and C′.

The tubes B are arranged radially to, and at uniform distance from, the axis of the stone and each other, and the tubes C also at equal distance from the axis of the stone and from each other.

The weights C′ of the vertical tubes C are adjusted by means of a center screw-post, *a*, turned by a key, the weights being prevented from turning by concaved grooves at diametrically opposite points, sliding on convex ribs *b* of the tubes.

By adjusting the weights higher or lower in the vertical tubes, the stone is readily adjusted when out of running balance.

The horizontal weights B′ turn on fixed center screw-post *d*, by means of a fork-shaped driver, inserted into holes of the weights. By setting the weights nearer to or farther from the center of the stone the standing balance is accurately obtained.

The adjustment of the weights of the running balance does not interfere in the least with the adjustment of the standing balance, so that the millstone may be made to run with great facility with a true running and standing balance.

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

A millstone having a number of symmetrically-arranged horizontal guide-tubes with adjustable weights, and a separate number of symmetrically-arranged vertical guide-tubes and adjustable weights for adjusting the standing and running balance of the stone without one interfering with the other, substantially in the manner and for purpose set forth.

RALPH K. ENT.

Witnesses:
W. S. BROWN,
R. G. MARTIN.