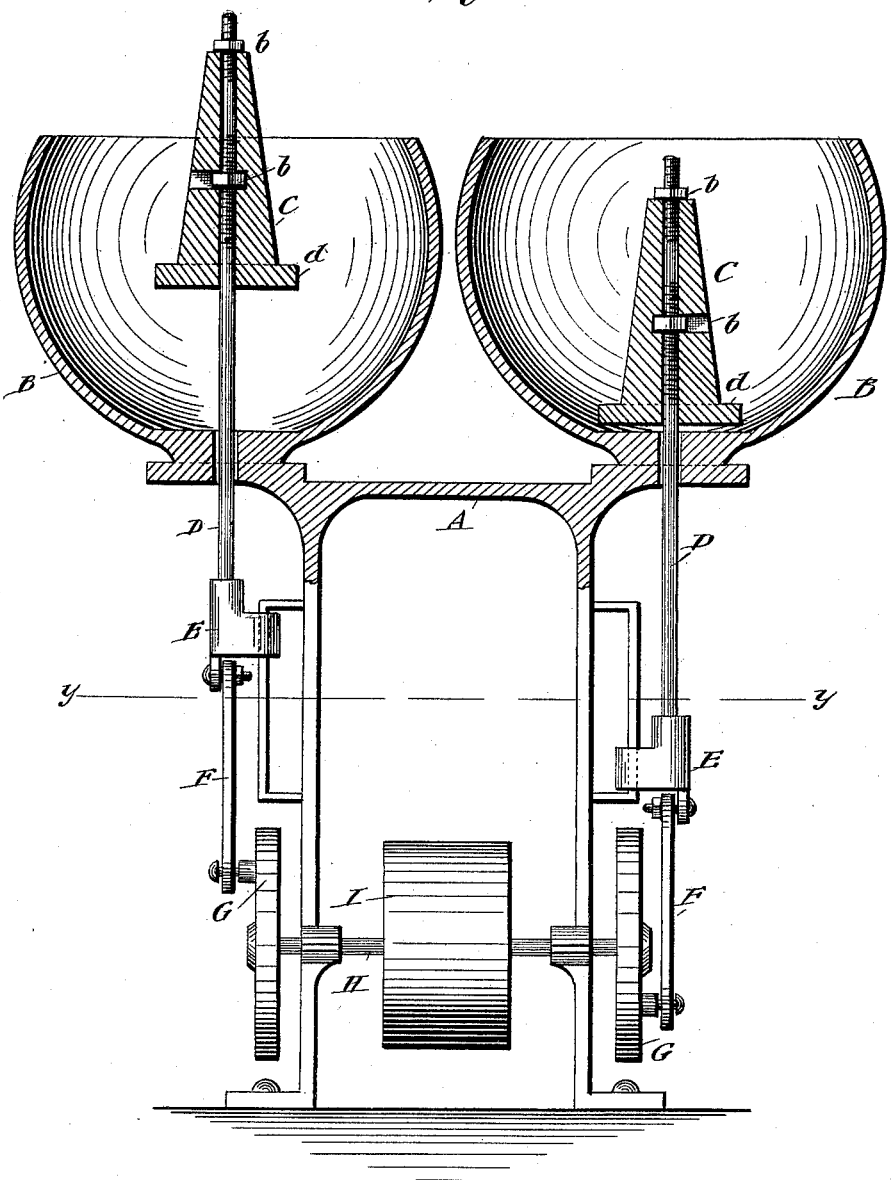
(No Model.) 2 Sheets—Sheet 1.

# N. B. TILTON.

## MILL BOOT OR PESTLE.

No. 422,661. Patented Mar. 4, 1890.

*Fig. 1.*




WITNESSES:

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INVENTOR

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(No Model.) 2 Sheets—Sheet 2.

# N. B. TILTON.

## MILL BOOT OR PESTLE.

No. 422,661. Patented Mar. 4, 1890.

*Fig. 2.*

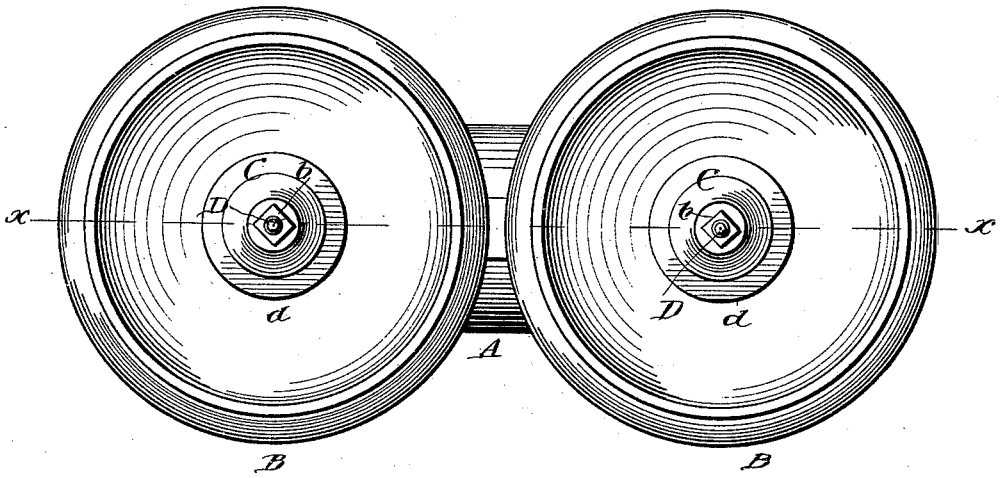
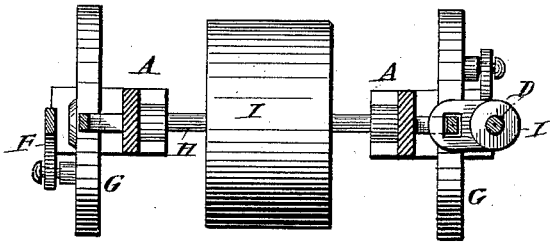



*Fig. 3.*



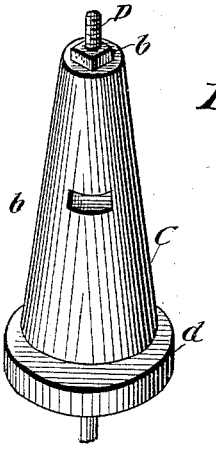




*Fig. 4*

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# UNITED STATES PATENT OFFICE.

NATHANIEL B. TILTON, OF SAVANNAH, GEORGIA.

## MILL BOOT OR PESTLE.

SPECIFICATION forming part of Letters Patent No. 422,661, dated March 4, 1890.

Application filed March 26, 1889. Serial No. 304,594. (No model.)

*To all whom it may concern:*

Be it known that I, NATHANIEL B. TILTON, of Savannah, in the county of Chatham and State of Georgia, have invented a new and useful Improvement in Mill Boots or Pestles, of which the following is a full, clear, and exact description.

This invention relates to boots or pestles driven by power and mainly designed to be used in mills for pounding rice; and the invention consists in a novel construction of the boot or pestle, substantially as hereinafter described, and pointed out in the claims, whereby the rice or grains thereof are more perfectly agitated and made to clean one another and packing of the same with or by the pestle is avoided.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a mainly sectional elevation, on the line *x x* in Fig. 2, of a double-pestle rice-mill with my improved boot or pestle applied. Fig. 2 is a plan view of the same; Fig. 3, a horizontal section upon the line *y y* in Fig. 1. Fig. 4 is a view in perspective of one of my improved boots or pestles and stem thereof in part.

A indicates the frame of a rice-pounding mill having two mortars B B, with a vertically-reciprocating boot or pestle C for each. The pestle is provided with a longitudinal bore and a lateral intersecting aperture.

D D are the stems by which the pestles are carried, and on which they are adjustable up or down by means of nuts *b b* fitting screw-threads on the stems, to regulate the pounding action of the pestles. These stems D D, which work through the bottoms of the mortars, are connected below with sliding cross-heads E E, which in their turn are reciprocated up and down by connecting-rods F F, worked by cranks G G on a shaft H, that is rotated by a wheel or pulley I. The cranks G G are set opposite to each other, so that as the one pestle is moved up the other pestle is moved down, and vice versa, thereby producing a balancing action of the pestles.

Each pestle C is provided at or near its base with an externally-surrounding flange *d*, having a flat upper face which, serves the purpose as the pestle rises of taking up the rice from the bottom of the mortar, and as the pestle moves up and down of keeping the rice in such motion that the grains will clean one another and the rice will not pack with the boot or pestle. As in working two pestles, as described, the one rising while the other is filling, the balance of the pestles will not be interfered with by the lifting and agitating action on the rice of the flanges of the pestles, and said flanges, besides having the effects before stated, admit of the boots or pestles being worked faster.

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

1. In a rice-mill, a conical pestle having an annular ring or flange, the upper face of which is flat and at right angles to the longitudinal center or axis of the pestle, substantially as set forth.

2. In a rice-mill, a conical pestle having an integral annular flange *d* at its base, the upper face of the flange being at right angles to the longitudinal center or axis of the pestle, substantially as set forth.

3. In a rice-mill, a conical pestle formed with a longitudinal bore, a lateral opening intersecting the same, and an integral flange *d* around its base, and having a flat upper face at right angles to said bore, substantially as set forth.

NATHANIEL B. TILTON.

Witnesses:
M. NAUGHTIN,
HENRY WETHERHORN.