

(No Model.)

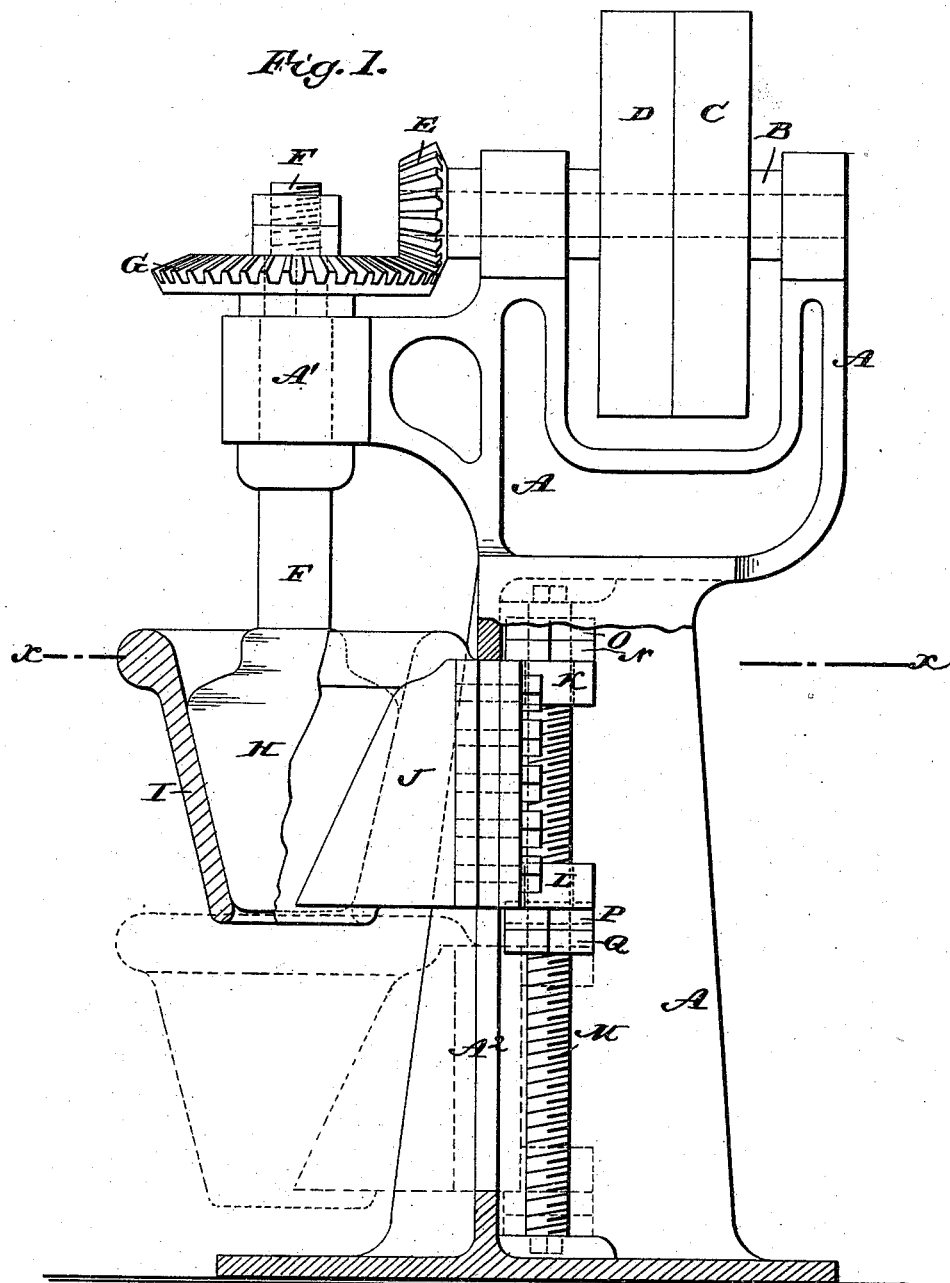
T. R. JOHNSTON.

2 Sheets—Sheet 1.

INK MILL.

No. 383,576.

Patented May 29, 1888.



WITNESSES:

Wm. Beyer
Witness

INVENTOR:

T. R. Johnston

BY

Munn & Co

ATTORNEYS.

(No Model.)

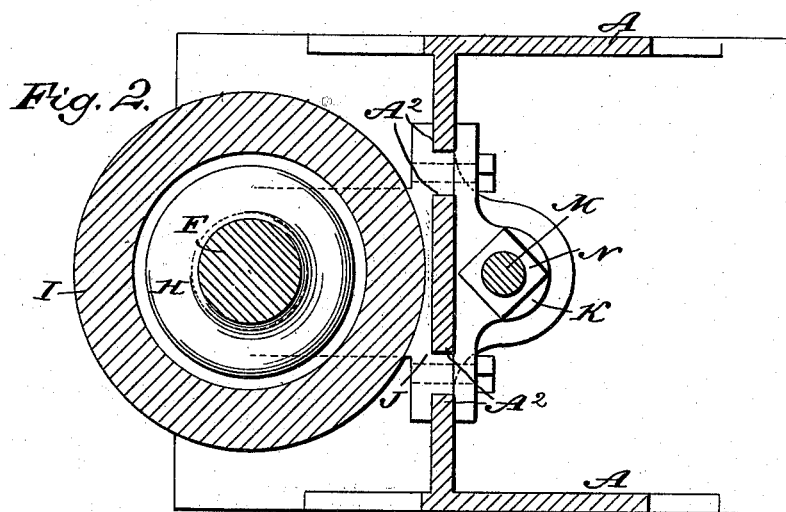
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WITNESSES:
M. Meyer
C. Schuyler

INVENTOR:
T. R. Johnston
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UNITED STATES PATENT OFFICE.

T. RUDDIMAN JOHNSTON, OF EDINBURGH, SCOTLAND.

INK-MILL.

SPECIFICATION forming part of Letters Patent No. 383,576, dated May 29, 1888.

Application filed March 29, 1887. Serial No. 232,856. (No model.)

To all whom it may concern:

Be it known that I, T. RUDDIMAN JOHNSTON, of Edinburgh, Scotland, have invented a new and Improved Mill for Grinding Ink, &c., of which the following is a full, clear, and exact description.

My invention has reference especially to mills used for grinding printing-ink, pigments, &c., and has for its object to provide new and useful improvements therein, whereby the better grinding of the ink is secured, the several parts of the mill are rendered easily accessible for cleaning purposes, and the amount of attendance necessary with mills at present in use is greatly reduced.

To this end the invention consists in the construction, combination, and arrangement of parts, as hereinafter fully described, and particularly pointed out in the claim.

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 both the figures.

Figure 1 is a side elevation, partly in section, of an ink-mill embodying my improvements. Fig. 2 is a sectional plan view of the same on the line *x x* of Fig. 1.

In the form of mill illustrated a driving-shaft, B, is journaled in suitable bearings in the upper part of the frame A of the machine, and carries fast and loose pulleys C and D, respectively. A bevel-gear, E, is fixed on the end of the shaft B and engages with a bevel-gear, G, fixed on the vertical shaft F, which is journaled in a bracket, A', on the frame A and carries at its lower end the grinder H. The surface of the grinder H is conical or tapering, and the grinder is adapted to rotate within a correspondingly-shaped bottomless pot, I, the inner concave surface of which is thus concentric with the outer convex surface of the grinder.

The grinding-pot I is attached to a vertically-adjustable bracket, J, mounted to slide in guides A² on the frame of the machine, and provided with upper and lower eyes, K and L, which slide on a vertical screw, M, fixed to the frame.

Adjusting and jam nuts N O and P Q work

on the screw M against the eyes K and L, respectively, so that the grinding-pot may be accurately adjusted with respect to the grinder to reduce the ink, &c., to any desired degree of fineness; or the pot may be completely withdrawn from the grinder, as indicated in dotted lines in Fig. 1, to permit both to be readily cleaned.

In all cases the substance to be ground is introduced into the pot at the top, the grinder being reduced on top accordingly. The substance passes between the two moving concentric surfaces, which are adjusted to bear against each other with the desired pressure, receives a continuous rubbing action as it travels from the top to the bottom of the pot, and thence falls into the receptacle provided therefor. The passage of the ink is controlled by the pressure given to the grinding-surfaces, so that any amount of reduction can be obtained in one passage of the ink through the mill. A constant supply may be given to the grinding-pot by means of a hopper suitably arranged, so as to render all attendance unnecessary.

The grinder and pot are represented as being of metal, the former being hollow when of large size; but they may be made of any other suitable material or indented in accordance with the substances to be acted upon.

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

The combination, with the frame A, provided with vertical guides A² at one side, a vertical screw, M, within the frame adjacent to said guides, and the bracket A' above said guides, of the vertical shaft F, journaled in said bracket and having a grinder, H, on its lower end, the grinding-pot I, provided with a bracket, J, working in said guides, eyes K L on said bracket and sliding freely on the screw M, and the nuts on said screw for adjusting the position of the grinding-pot, substantially as set forth.

T. RUDDIMAN JOHNSTON.

Witnesses:

OSCAR MALMROS,

U. S. Consul.

HUGH C. PEACOCK.