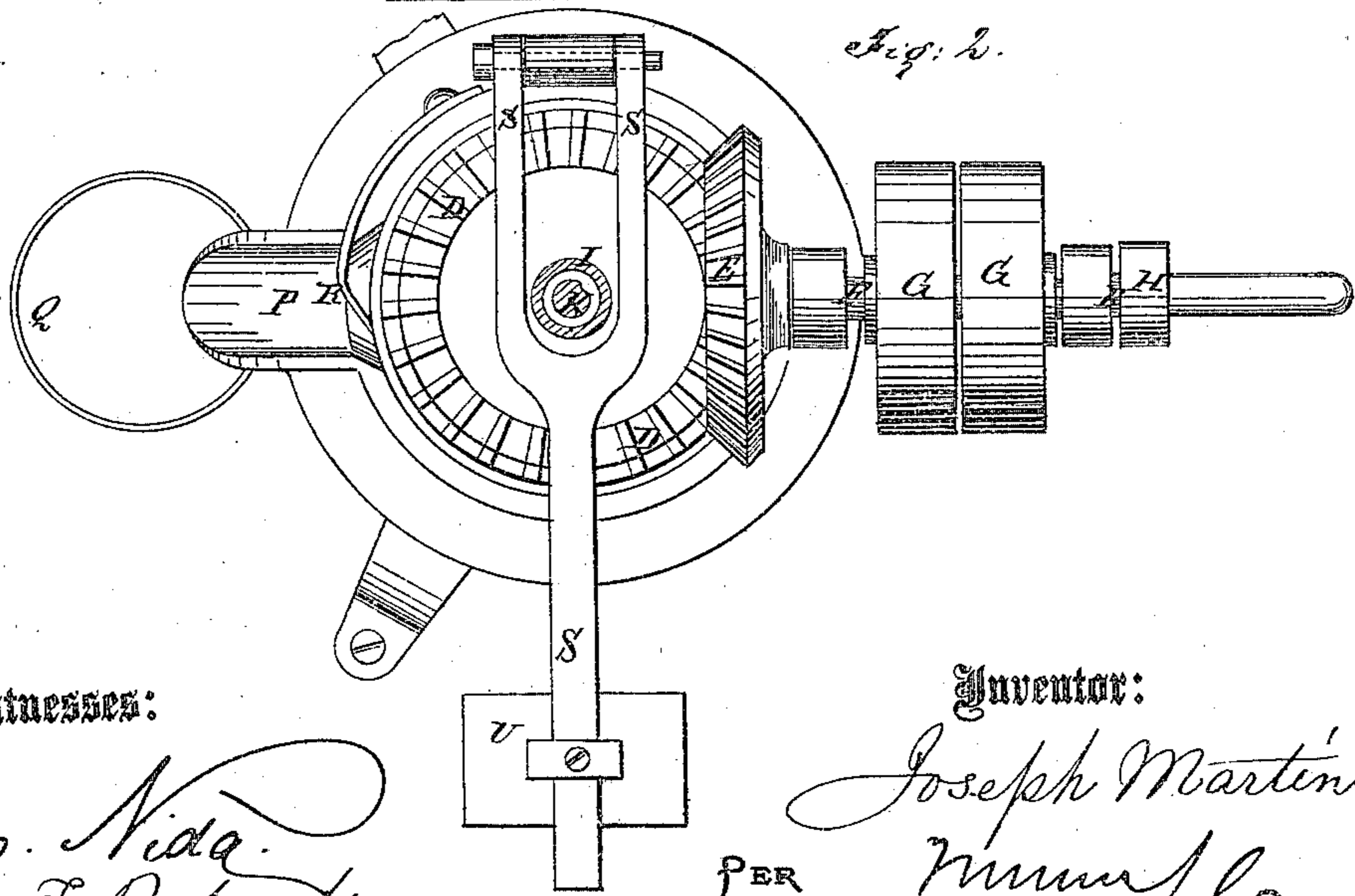
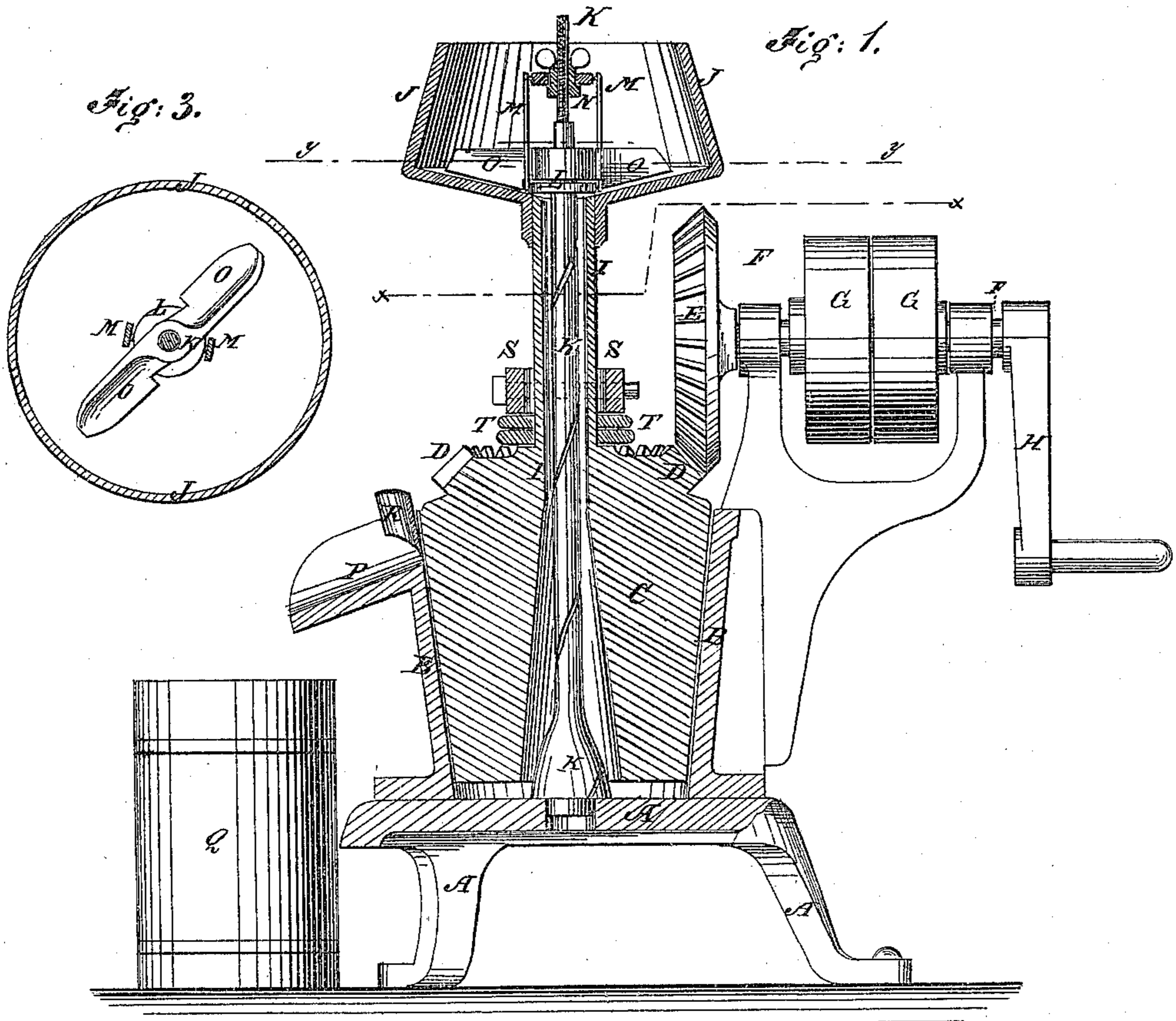


J. MARTIN.

Mixing and Grinding Apparatus for Ink, &c.

No. 134,434.

Patented Dec. 31, 1872.



Witnesses:

*Chas. Nida.*  
*Alex F. Roberts*

Inventor:

*Joseph Martin*  
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# UNITED STATES PATENT OFFICE.

JOSEPH MARTIN, OF NEW YORK, N. Y.

## IMPROVEMENT IN MIXING AND GRINDING APPARATUS FOR INK, &c.

Specification forming part of Letters Patent No. 134,434, dated December 31, 1872.

*To all whom it may concern:*

Be it known that I, JOSEPH MARTIN, of the city, county, and State of New York, have invented a new and useful Improvement in Ink and Paint Mixer and Grinder, of which the following is a specification:

Figure 1 is a detail vertical section of my improved machine. Fig. 2 is a top view of the same, partly in section, through the line *x x*, Fig. 1. Fig. 3 is a detail horizontal section of the mixer taken through the line *y y*, Fig. 1.

My invention has for its object to furnish an improved machine for mixing and grinding printers' ink, paint, &c., which shall be simple in construction and effective in operation, mixing and grinding the ink and paint thoroughly and with much greater rapidity than is possible when the mixing and grinding are done with the ordinary appliances. The invention consists in the stationary vessel, revolving core, and induction-tube, constructed and arranged to operate in connection with each other, as hereinafter fully described; in the combination of the mixing-vessel, the valve, the cross-bar or scraper, and post with the induction-tube, revolving core, and stationary vessel; in the combination of the weighted lever with the induction-tube, revolving core, and stationary vessel; and in the arrangement of the discharge-spout and scraper, in connection with the notched upper edge of the stationary vessel and with the revolving core, as hereinafter fully described.

A is a stand to which is secured or upon which is formed a vessel, B, the interior of which is made in the form of an inverted truncated cone, as shown in Fig. 1, and which forms the outer part of the grinder. C is the inner part of the grinder, which is also made in the form of an inverted truncated cone, and which fits into the interior of the vessel B. The core C should not extend quite down to the bottom of the vessel B, space being left between the bottoms of said parts for the ink and paint to pass from the center of said part C to its circumference. Upon the top of the core C is formed or to it is rigidly attached a bevel-gear wheel, D, into the teeth of which mesh the teeth of the bevel-gear wheel E attached to the inner end of the shaft F. The shaft F revolves in bearings in brackets attached to the vessel B, or to some other suitable support. The shaft F

may have pulleys G attached to it to enable it to be driven by steam, or it may have a crank, H, attached to its outer end to enable it to be operated by hand. I is a tube, the lower end of which is connected with the upper end of the cone or part C at the upper end of a perforation that extends down through the center of the said part C. To the upper end of the tube I is attached a vessel, J, in which the ink and paints are mixed, and which I prefer to make in the shape of a truncated cone to prevent said ink and paint from spattering out. K is a rigid stationary post of a smaller diameter than the interior of the tube I and the hole through the core C, and which may be grooved spirally, if desired. The lower end of the post K is secured to the bottom of the vessel B, and its upper end projects into the mixer J. L is a valve, through which the post K passes, and which is connected by arms M with a nut, N, screwed upon the upper end of the post K, so that by turning the said nut downward the valve L will be lowered to its seat, closing the upper end of the tube I, and retaining the ink or paint in the vessel J until it has been thoroughly mixed. By turning the nut N upward the valve L will be raised, allowing the ink or paint to flow down through the tube I to the grinder. To the upper part of the post K is rigidly attached a cross-bar or scraper, O, in such a position as to be close to the bottom of the vessel J, so that the ink or paint may be thoroughly mixed before it is allowed to flow down into the grinder. The valve L moves up and down upon the post K in a recess in the lower side of the middle part of the bar or scraper O. When the valve L is raised the bar O acts as a scraper to force or guide the paint or ink into the tube L. As the ink or paint passes down through the tube I, and the perforations of the core C into the space between the bottom of the said core C and the bottom of the vessel B, it is forced by its own gravity and the centrifugal force engendered by the revolution of the core, to pass up between the outer surface of the revolving core C and the inner surface of the stationary vessel B, being thoroughly rubbed and ground during its passage. In the upper edge of the vessel B is formed a notch, in which is secured a spout, P, through which the ground ink or paint is

discharged into a receiver, Q. To the vessel B is attached a scraper, R, which is so formed as to enter the notch of the vessel B, and bear against the upper part of the revolving core C to scrape off the ink and cause it to flow into the spout P and thence into the receiver Q. S is a lever, which is slotted to receive the tube I, and is pivoted to a bracket attached to the stationary vessel B or other suitable support. The lever S rests upon one or more ring-washers, T, placed upon the tube I, and which rest upon the top of the core C. The other or free end of the lever S has a sliding weight, U, placed upon it, so that by adjusting the said weight U the core C may be forced down with any desired force to grind or rub the ink or paint more or less, as may be desired.

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

1. The stationary vessel B, revolving perfo-

rated core C, and induction-tube I, constructed and arranged to operate in connection with each other, substantially as shown herein and described.

2. The combination of the vessel J, valve L M N, cross-bar O, and post K with the induction-tube I, revolving core C, and vessel B, substantially as herein shown and described.

3. The combination of the weighted lever S U with the tube I, revolving core C, and stationary vessel B, substantially as herein shown and described.

4. The arrangement of the discharge-spout P and scraper R in connection with the notched upper edge of the vessel B and the revolving core C, substantially as herein shown and described, and for the purpose set forth.

JOSEPH MARTIN.

Witnesses:

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ALEX. F. ROBERTS.