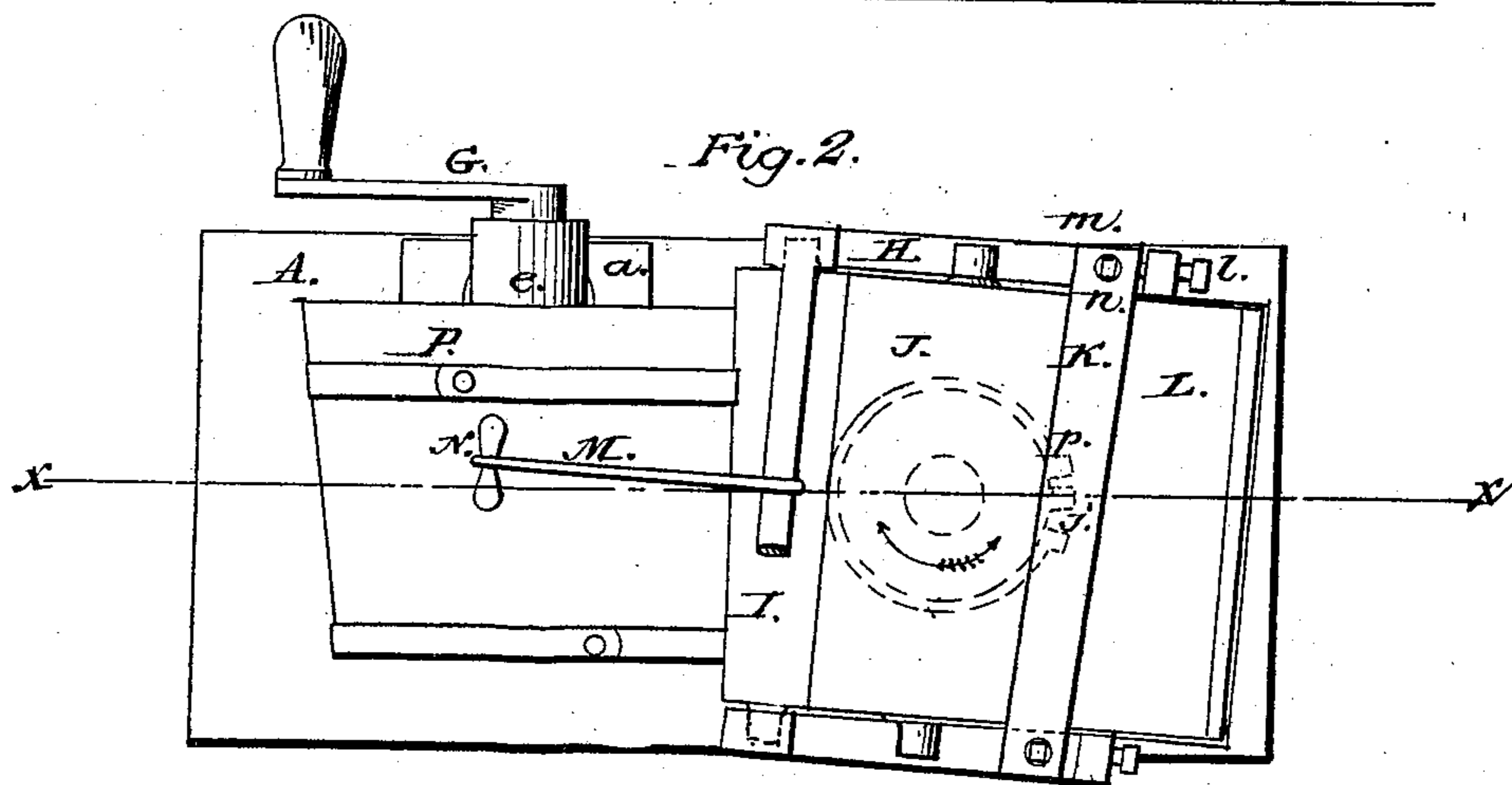
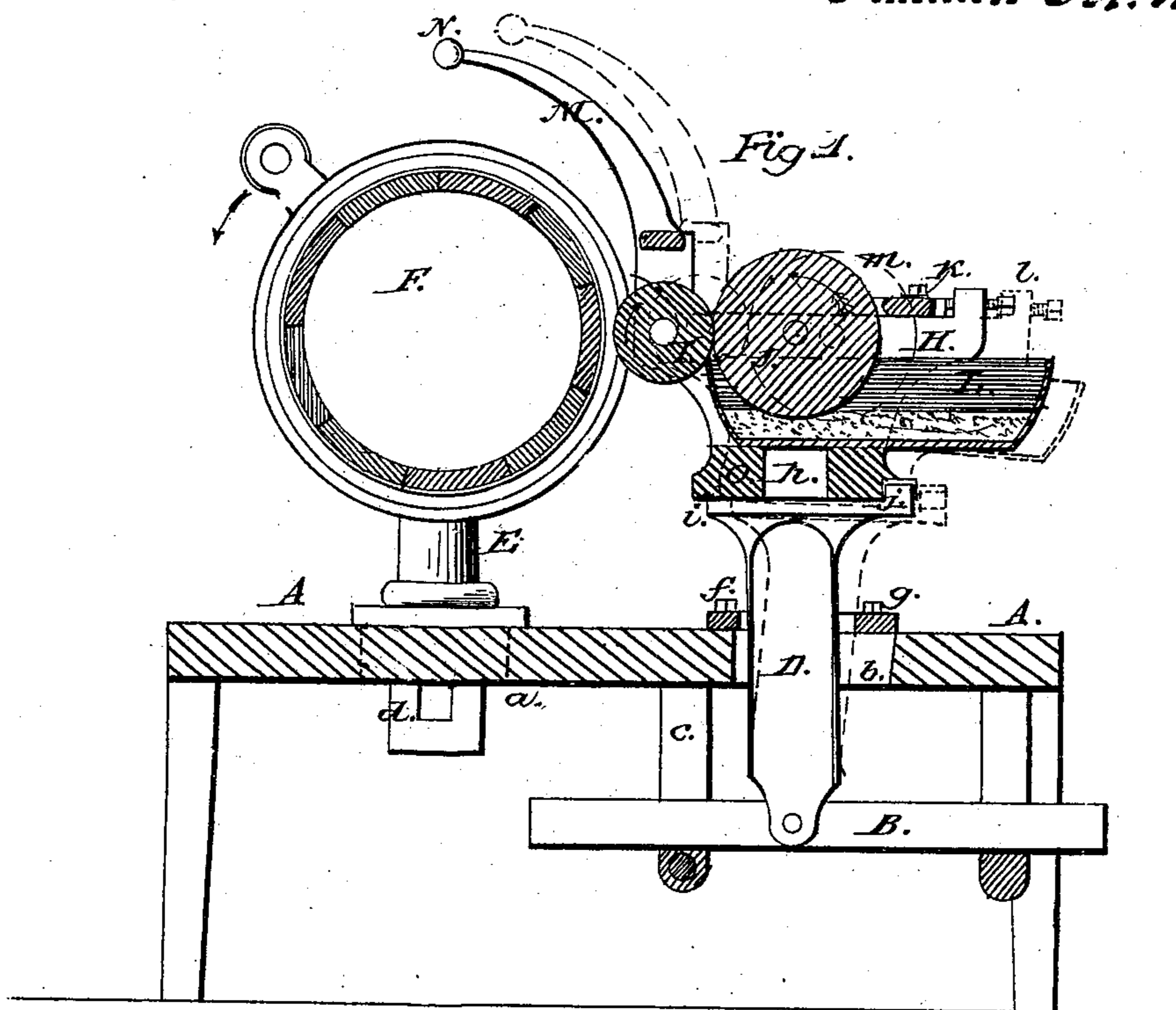


W. H. Berger,
Graining Machine.

No. 95,760.

Patented Oct. 12. 1869.



WITNESSES:
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WILLIAM H. BERGER, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 95,760, dated October 12, 1869.

GRAINING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM H. BERGER, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Graining and Ornamenting Hollow Ware; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to machines for graining and ornamenting hollow ware; and

It consists in mounting the die or printing-roller, with the apparatus for supplying it with coloring-matter, in the same frame, and then mounting the frame on a post, arranged to vibrate or rock, so that it may have two motions, one a rotatory motion on the post, and the other a vibratory motion with the post.

It also consists in applying a scraper, with cloth facing to the distributing-roller, and in operating the printing and distributing or other rollers by friction, as hereinafter explained.

In the drawings—

Figure 1 is a vertical section of my machine, on the line *x-x* of fig. 2, and

Figure 2 is a top plan view, with a part broken away.

In constructing my machine, I make a table or bench, A, of suitable height and dimensions, and cut therein two slots or openings, *a* and *b*, as shown in the figures, and in the slot *a* mount a post, E, having a stem long enough to project through the table, and receive a key, *d*, or other suitable device for wedging and holding it firmly in position, and also to allow the post to be adjusted laterally in the slot, when desired.

The upper end of the post E, I provide with a journal-box, *e*, or other suitable bearing, and mount therein a short shaft having a chuck, F, of the desired shape and dimensions, for receiving the pail, tub, or other article, P, to be grained or ornamented, attached to one end, and to the other a crank-handle, G, for operating it.

In the slot or opening *b*, I place a post, D, and pivot its lower end to a bar, B, arranged to move longitudinally, when desired, in vertical supports *c*, which are firmly attached to the under side of the table, and in line with the slot *b*, as clearly shown in fig. 1.

The post D is made so as to vibrate in the slot *b*, and the limit of its motion may be fixed by means of the adjustable guard *f*, with its set-screw *g*. Its upper end I provide with a circular head, *h*, and projecting

shoulder *i*, having a stop, *j*, projecting outward from its periphery, as shown in dotted lines in fig. 2, and upward, as shown in fig. 1.

On the post D, I mount a frame, H, having arranged therein a die or printing-roller, I, having a plain, smooth elastic surface for painting, varnishing, &c., or a raised, figured elastic surface for graining or ornamenting the hollow ware to which it may be applied; also a distributing-roller, J, made of metal, or having a metallic surface for distributing the coloring-matter on the printing-roller; also a metallic or other suitable scraper, K, with a cloth facing, *m*, for regulating the quantity of coloring-matter on the distributing-roller and making it uniform, together with a reservoir, L, all arranged as shown in the figures.

In this arrangement the distributing-roller dips directly into the coloring-matter; yet, if desired, one or more counter-rollers may be arranged between the distributing-roller and the coloring-matter, for carrying it to the distributing-roller.

The scraper K is made adjustable by means of the set-screws *l* and *n*, as shown in both figures.

The front end of the frame H, I provide with an arm, M, curved as shown in the figures, and provided with a handle, N, for operating the frame.

The under side of this frame I provide with a socket, O, into which the head *h* of the post D enters, so that the frame may rotate easily about it, its rotation being limited by the stop *i* coming in contact with the stops *p*, as shown in dotted lines in fig. 2, or by any other suitable device.

In operating my machine, I place the pail, tub, or other article to be grained or ornamented, on the chuck F, put the coloring-material to be used in the reservoir L, and adjust the scraper-plate K; then take hold of the handle N with one hand, and swing or draw the frame H on the post D forward, till the printing-roller I comes in contact with the surface of the article on the chuck, and with the other, turn the crank-handle G, when the friction between the surfaces of the pail, or other article on the chuck, and the printing-roller, will cause the latter to revolve, and in revolving, to paint or grain, as desired, the surface of the former. At the same time the friction between the surfaces of the printing-roller and the distributing-roller will cause the latter to revolve, and thus keep the former constantly supplied with coloring-matter.

While the article is thus being painted or grained, in order that the same may be uniform and perfect, the operator, as he holds the frame forward so as to bring the printing-roller in contact with the article, can at the same time rotate the frame so that the printing-roller shall come in contact with all parts of it. As the surface of the article to be painted or or-

hamented is not always uniform, and as the chuck and printing-roller may not always have their surfaces exactly parallel, it is found impossible to do good work without this rotating motion of the printing-roller.

It is also necessary that the distributing-roller have a metallic surface, so as to be perfectly smooth, and be uniformly and evenly scraped by the metallic scraper K, with its cloth facing *m*, in order that the supply of coloring-matter to the printing-roller be even and uniform.

The post E, I make laterally adjustable, and the post D to have a greater or less limit of vibration, so as to accommodate the machines to articles of different sizes.

As soon as one article is finished, the frame H is shoved back, as shown by the red lines in fig. 1, and another article is placed on the chuck and finished, and so on. In this way it will be seen that a single person can easily and rapidly paint, grain, and ornament hollow ware.

I am aware that a machine has been made, in which the printing-roller is hung alone in journals, and swung by means of a rock-shaft, operated by a foot-lever, first against a stationary distributing-roller, for receiving its supply of coloring-matter, and then against the article on the chuck.

I am also aware that it has been suggested, that instead of having a person to paint the distributing-roller, a counter-roller might be revolved by contact

with it, so as to dip into a reservoir of coloring-material, and thus supply the distributing-roller, and that the series of painting-rolls may be connected with gear-wheels or belt, so as to be operated by the crank that turns the chuck.

I do not claim any or either of these constructions or arrangements of devices; but, having fully described my improvements,

What I do claim, and desire to secure by Letters Patent, is—

1. Arranging the printing-roller, with the apparatus for supplying it with coloring-matter, in a frame, and then swivelling this frame on a vibrating or rocking post, so that it may have rotatory and vibratory motion, substantially as herein described, and for the purpose set forth.

2. The adjustable metallic plate K, provided with a cloth facing, *m*, in combination with the distributing-roller J, constructed and arranged to operate substantially as herein described, and for the purpose set forth.

3. The post E and bar B, when constructed and arranged so as to be adjusted laterally, substantially as herein described, for the purpose of adapting the machine for graining different-sized articles, as set forth.

WM. H. BERGER.

Witnesses:

H. B. MUNN,
W. C. DODGE.