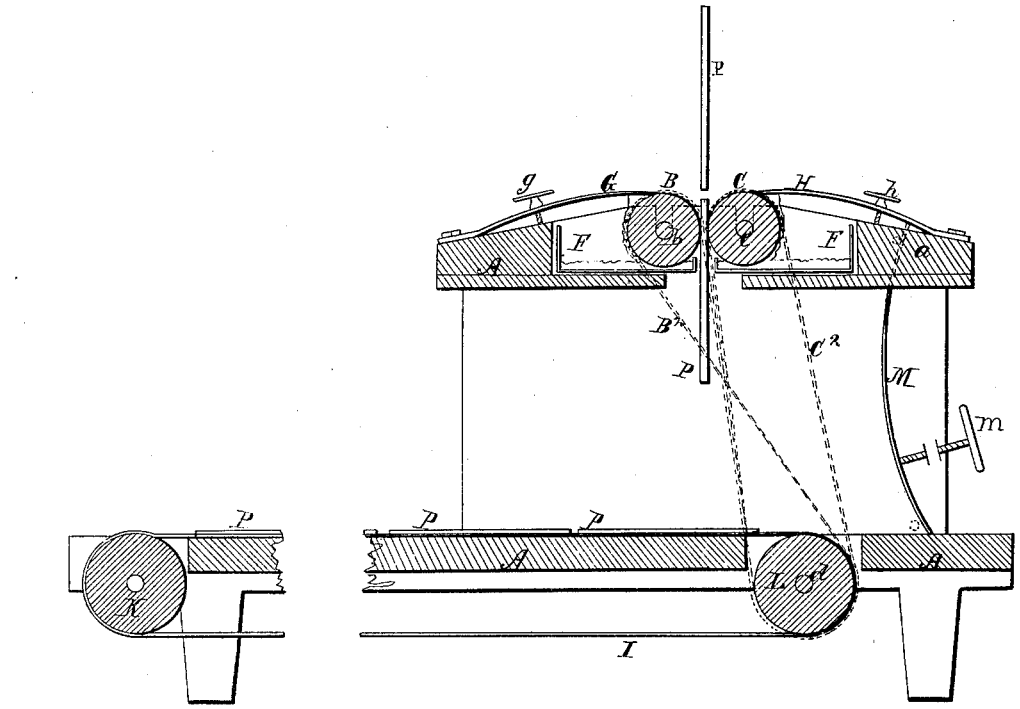
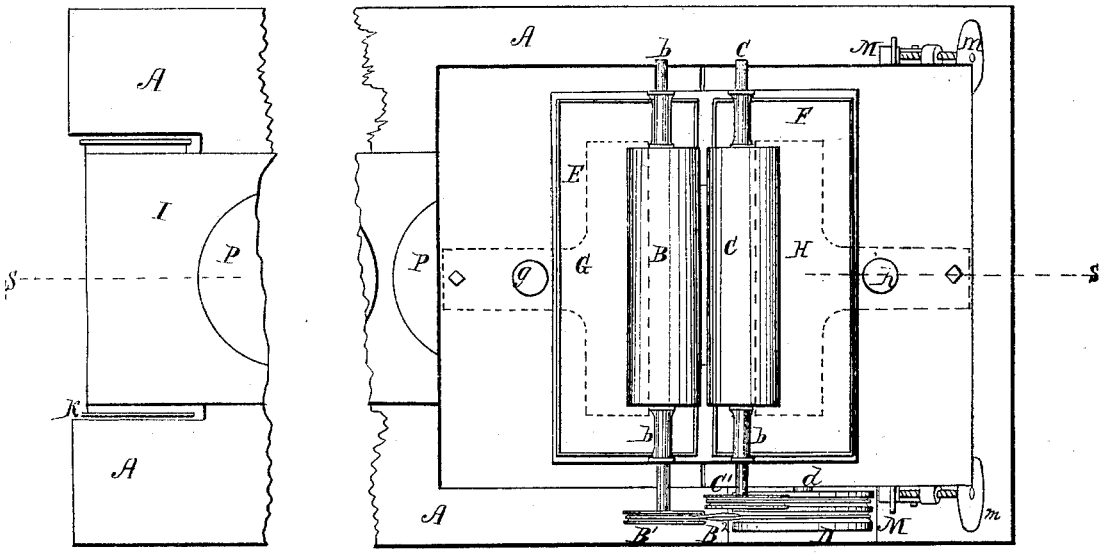
L. L. Martin,

Varnishing Machine,

No. 45,673, Patented Dec. 27, 1864.





Witnesses.
D. W. Stetson
L. A. Crum

Inventor.
L. L. Martin
by Thomas D. Stetson
Atty

UNITED STATES PATENT OFFICE.

LEVI L. MARTIN, OF WARSAW, NEW YORK, ASSIGNOR TO HIMSELF AND HORACE THAYER, OF SAME PLACE.

VARNISHING-MACHINE.

Specification forming part of Letters Patent No. **45,673**, dated December 27, 1864.

To all whom it may concern:

Be it known that I, LEVI L. MARTIN, of Warsaw, in the county of Wyoming, in the State of New York, (at present employed in the box-head manufactory of HORACE THAYER, in said Warsaw,) have invented a certain new and useful Machine for Varnishing Box Heads and for analogous operations; and I do hereby declare that the following is a full and exact description thereof.

My machine is intended more immediately for applying a varnish to box-heads. These heads are disks of wood intended for the tops and bottoms of the blacking-boxes described in the patent issued to HORACE THAYER, dated June 21, 1864, but my machine may be used to apply analogous varnish, colored or uncolored, or to apply paint, sizing, or other fluid or semi-fluid matter to one or both faces of various other articles—such as photographs, book-covers, veneers, blind-slats, panels, and even boards and planks, and other flat or nearly flat articles having faces that are plane and parallel, or nearly so.

My machine applies the varnish, or its equivalent, by the aid of horizontal rollers mounted side by side. The articles to be varnished are introduced between a pair of elastic rollers turning in opposite directions, one or both of which is evenly covered with the varnish, and the latter is evenly applied to the surface of each article as it moves through. Provision is made for allowing articles of different thicknesses to be carried through, and for increasing or diminishing the pressure of the roller thereon. The varnish is applied to the rollers by the aid of disks or tanks supported at such elevation that the rollers are partially immersed in them, and the surplus above the desired thickness is removed by the aid of scrapers and allowed to fall back into the tanks. I so arrange the parts that even when two tanks are employed, so as to supply both rollers and varnish both sides of the article, they are not in the way so as to obstruct the motion of the articles through the space between the rollers. I can varnish articles by this means very rapidly and perfectly, and with little labor, and by the aid of a long traveling apron and of certain additional parts, to be referred to below, can dry the articles before depositing them in a pile.

To enable others skilled in the arts to which my invention pertains or is most nearly related to make and use my invention, I will proceed to describe it, by the aid of the drawings and of the letters of reference marked thereon.

Figure 1 is a vertical longitudinal section on line S S in Fig. 2, and Fig. 2 is a plan view.

Similar letters of reference indicate like parts in all the figures.

B and C are rollers of vulcanized rubber, mounted on shafts *b* and *c*, and supported in open bearings in the frame-work of the machine, as represented. Each is provided with a pulley, by the aid of which it is turned by a belt from a driving-pulley below. B′ and C′ are the driven pulleys. B^2 and C^2 are the belts, the belt B^2 being crossed. D is the pulley which gives motion to the whole. The shaft *d*, which carries the pulley D, may be turned by any convenient power.

A is the fixed portion of the framing, and *a* is a part adapted to slide freely back and forward to a limited extent thereon. The roller B is mounted on the fixed part A, and has no motion but simple rotation. The roller C is mounted on the sliding part *a*, and slides with the latter.

M M are springs adapted to press the sliding part *a* and its connections toward the fixed part, as indicated. It may be adjusted by means of screws *m*.

E and F are tanks adapted to contain varnish. They are supported on the framing, the tank E on the fixed framing A, and the tank F on the sliding frame *a*. Each is so mounted as to inclose the lower side of one of the rollers, the tank E holding up varnish to coat the surface of the roller B as it revolves, and the tank F performing a similar office for the roller C.

G and H are scrapers adjusted by screws *g* and *h*, as indicated, and each adapted to scrape the surface of one of the rollers. The scraper G may be adjusted to leave any given small thickness of varnish on the roll B, and the scraper H may be adjusted to leave a similar or a different thickness of varnish on the roller C.

It will be observed that a different character of varnish or a different color may be put on the opposite faces of the articles by put-

ting the different materials in the tanks E and F; also, that one tank, E, may be filled and the other left empty, in which case only one side of the articles will be varnished.

The operation of my machine will be easily understood. The articles P are inserted one by one between the rolls, on the upper side, either by hand or otherwise, and receive a smooth and uniform coating from one or both rolls as they pass between. They emerge on the lower side, and falling on the apron I, (which runs around the drums K and L and may be of any length desired,) they are slowly carried away, drying meanwhile, and are finally dropped. The apron is used with most success when only one side of the heads are varnished and such face is laid uppermost thereon. I frequently omit its use, varnishing thinly and dropping directly into a basket when varnishing both sides.

It will be obvious that my rolls B and C, and their corresponding tanks and scrapers, may be duplicated so as to subject the articles several times to the presence of the varnish; also, that a different varnish may be applied by each succeeding set of rolls when thus used, if desired, for any purpose; also, that the lower set or sets may be placed at right angles or at other angles to the upper set, so as to coat the edges of boards or the several sides of any polygonal forms; also, that brushes or other smoothing and wiping devices may be introduced below the rolls to even and perfect the distribution of the material.

I propose to adjust my rolls and their corresponding tanks at various distances apart by means of screws, wedges, or the like, introduced in the upright joint between the sliding and the fixed part of the framing, and to correspondingly adjust the position of the springs M M, so as to adapt a single machine to varnish a wide range of thicknesses. The yielding of the springs M M will, however, allow a considerable traverse and thus adapt the machine, without any adjustment, to varnish articles of considerably different thicknesses, as also articles presenting each in itself variations of thickness.

The fact that my rollers B and C are of rubber or equivalent elastic material is important, as otherwise the slight inequalities in the surfaces of rigid bodies would prevent the varnish from applying equally, and there might in many instances be large portions of their surfaces which would remain untouched.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. The within-described machine adapted to varnish or paint rigid articles on one or more faces by means of one or more elastic rollers, and suitable supplying means arranged relatively to each other and to the moving article being operated on, so as to apply and press the varnish or its equivalent on one or more faces of the articles passed through, substantially in the manner herein set forth.

2. In such machine, mounting the roll C and its supplying apparatus on a movable part, *a*, moving relatively to fixed part A, so as to adapt the machine to varnish articles of different thicknesses, substantially as herein specified.

3. In such machine the within-described arrangement of a roll, a tank, and a scraper, so as to take up and apply the varnish by a single operation in proper quantities, as herein set forth.

LEVI L. MARTIN.

Witnesses:
WASHINGTON MARTIN,
DENNIS CHASE.