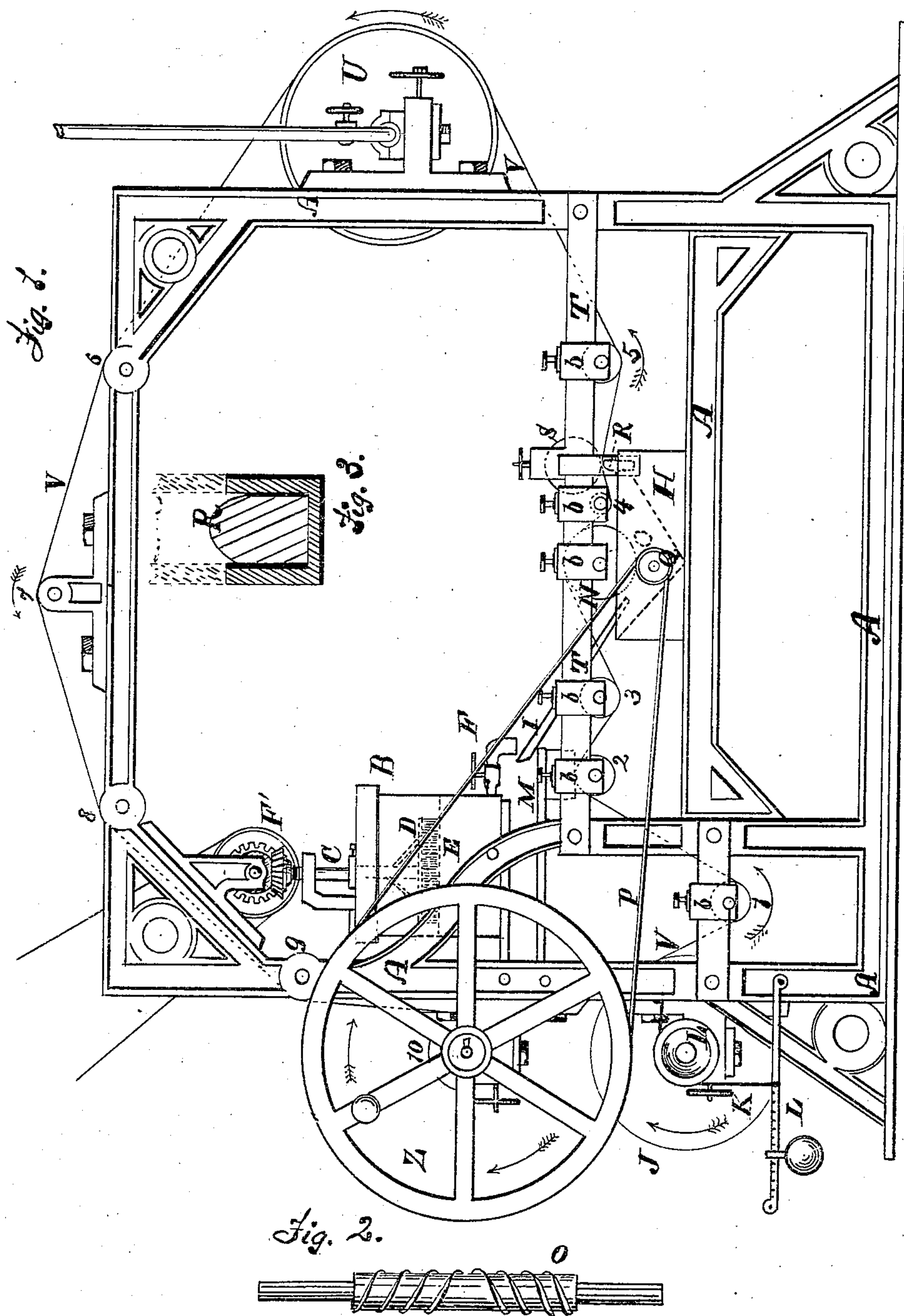


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Machines for Coating Wall-Paper with Oil Colors.

No. 153,218.

Patented July 21, 1874.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

ANTHONY GOTH AND CARL WOLLMUTH, OF BETHLEHEM, PENNSYLVANIA.

## IMPROVEMENT IN MACHINES FOR COATING WALL-PAPER WITH OIL-COLORS.

Specification forming part of Letters Patent No. **153,218**, dated July 21, 1874; application filed June 8, 1874.

*To all whom it may concern:*

Be it known that we, ANTHONY GOTH and CARL WOLLMUTH, both of Bethlehem, in the State of Pennsylvania, have invented a new and useful Machine for the Manufacture of Oil-Colored Wall-Paper; and we do hereby declare the following to be a full, clear, and precise description of the same, so as to enable those skilled in the art to which it appertains to make and use the said machine, reference being had to the accompanying drawings, which exhibit the construction of our machine, and form part of this our specification.

Of these drawings, Figure 1 is a side elevation of our machine, showing the entire device either by solid or broken lines. Fig. 2 is a side elevation of the rotary stirrer, and Fig. 3 a side section of the smoothing-bar and its cushion-roller.

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

Our machine is used to produce a smooth-surfaced, flat, opaque, oil-colored wall-paper, by coating common paper used for the purpose with oil coloring matter, and rendering it thereby impervious to water.

For the better information of the public, we will proceed first to describe the construction of our machine, and, second, its mode of operation.

Our wall-paper machine consists, primarily, of any suitable frame-work, A, of wood or metal, fashioned in any fit design. Situated in the upper portion of this frame-work is the mixing-tank B, which is a cylindrical or other shaped vessel, provided with a central shaft, C, which carries a circular brush, D, resting on a horizontal partition of wire-gauze, E, dividing the tank into two compartments. To this brush is imparted a rotary motion by the bevel-gear F', located still higher up in the frame-work. The coloring matter is first fed into this tank, where, by the rotation of the brush, it is well and thoroughly mixed again. It is then, by the spigot F, drawn off, and flows down into the stirring-tank H by the gutters I. On the lower left-hand side of the frame-work is the supply-roller J, on which the paper to be coated is first rolled. This roller is set in adjustable bearings, so as to be readily movable laterally by the screw-wheel K. A

constant tension is also secured to it by the contrivance of a friction-pulley with strap passing over it, a lever, and depending weight, all as indicated by L. From the supply-roller J the paper passes down and under another roller, 1, set in adjustable bearings; then up and over roller 2, set likewise. Over this roller 2 there lies a smoothing-bar, M, which, resting on the paper and roller, serves to smooth and keep the tension regular; then under 3, and then over the coating-roller N, smooth-surfaced, wooden or metal, and rotating freely in its bearings, also movable ones. This coating-roller rests below in the stirring-tank H, wherein the paint lies, and which is formed with a double-inclined bottom, in whose deepest part the sediment collects, and wherefrom it obtains the color with which it coats the paper. This roller is made about one-half inch narrower than the paper itself, whereby a white uncolored margin of one-fourth of an inch on both sides is left for pasting and hanging purposes. Situated in the bottom of the stirring-tank is the rotary stirrer O, the same being a cylinder with right and left handed screw-threads or helical grooves, pitching outward from its center. Motion is imparted to it from the drive-wheel Z by a belt, P, going to a pulley, Q, on the end of its axle. This stirrer is located directly below the coating-roller, and in the deepest part of the tank, and flows the thoroughly-mixed compound direct against the roller, notwithstanding the latter dips in the paint itself. From the arrangement of the stirrer in the deepest part of the tank the thickening and depositing of sediment at the bottom is wholly prevented. Then the paper passes under roller 4, and then over the smoothing-bar R, against which it is pressed by the cushion-roller S, resting upon it. The smoothing-bar is a rounded surfaced piece of glass set in an adjustable metal frame, and thoroughly smooths the coloring matter on the paper, being enabled to do so by the weight of the cushion-roller resting on it. The cushion-roller itself is a simple felt-covered rubber or elastic roller of any kind, only resting at its ends in vertical slots, and rotated by the forward motion of the paper. Then the paper passes under roller 5. All these rollers, 2 3 4 5, may be set on a main



frame-piece, T, which itself may be made adjustable. From 5 the paper passes up and against a rotating steam or hot-air drum, which, being heated by any means, aids materially in the drying of the coloring matter on the paper, which then goes up on and over rollers 6, 7, 8, and 9, and is finally wrapped on the receiving-roller 10. The whole device may be driven by any motive power.

Such being the construction, the mode of operation is exceedingly simple: The paper itself is indicated by the letter V, and is drawn through the machine in the direction indicated by the arrows by the rotation of the roller 10 by the wheel Z, being in its passage coated with color by the roller N, smoothed by the smoothing-bar R and cushion-roller S, dried by the steam-drum V, and also by the air in its passage over the machine, and, finally, in a finished condition, wrapped upon the receiving-roller 10.

We are aware that various devices have been employed embodying rollers for carrying and coating, with scrapers for removing superfluous coating matter, in the manufacture of tarred paper for roofing, of lined paste-board, &c.; but we utterly fail to find any machine which at a single process, taking common paper, mixes the coloring matter, carries, coats, smooths, dries, and wraps it in a finished condition as an oil-colored wall-paper,

flat-tinted, opaque or water-proof. This is our invention, and we hold that for it we are entitled to Letters Patent of the United States.

What we claim, therefore, and desire to secure, is—

1. The combination, in a machine for the manufacture of an oil-colored wall-paper, of a series of adjustable rollers for carrying the paper, and a roller for coating it with its oil coloring matter, with the stirring-tank H, provided with a rotary stirrer, O, the adjustable smoothing-bar R, provided with a cushion-roller, S, and the drying-drum U, all operating as a single process, substantially in the manner and for the purpose specified.

2. The rotary stirrer O, in combination with the stirring-tank H and the coating-roller N, operating to stir the color and flow it against the roller, substantially in the manner specified.

3. The adjustable smoothing-bar R, in combination with the cushion-roller S, resting upon it, and operating to adjust the tension of the paper and perfect the smoothing process, substantially as specified.

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