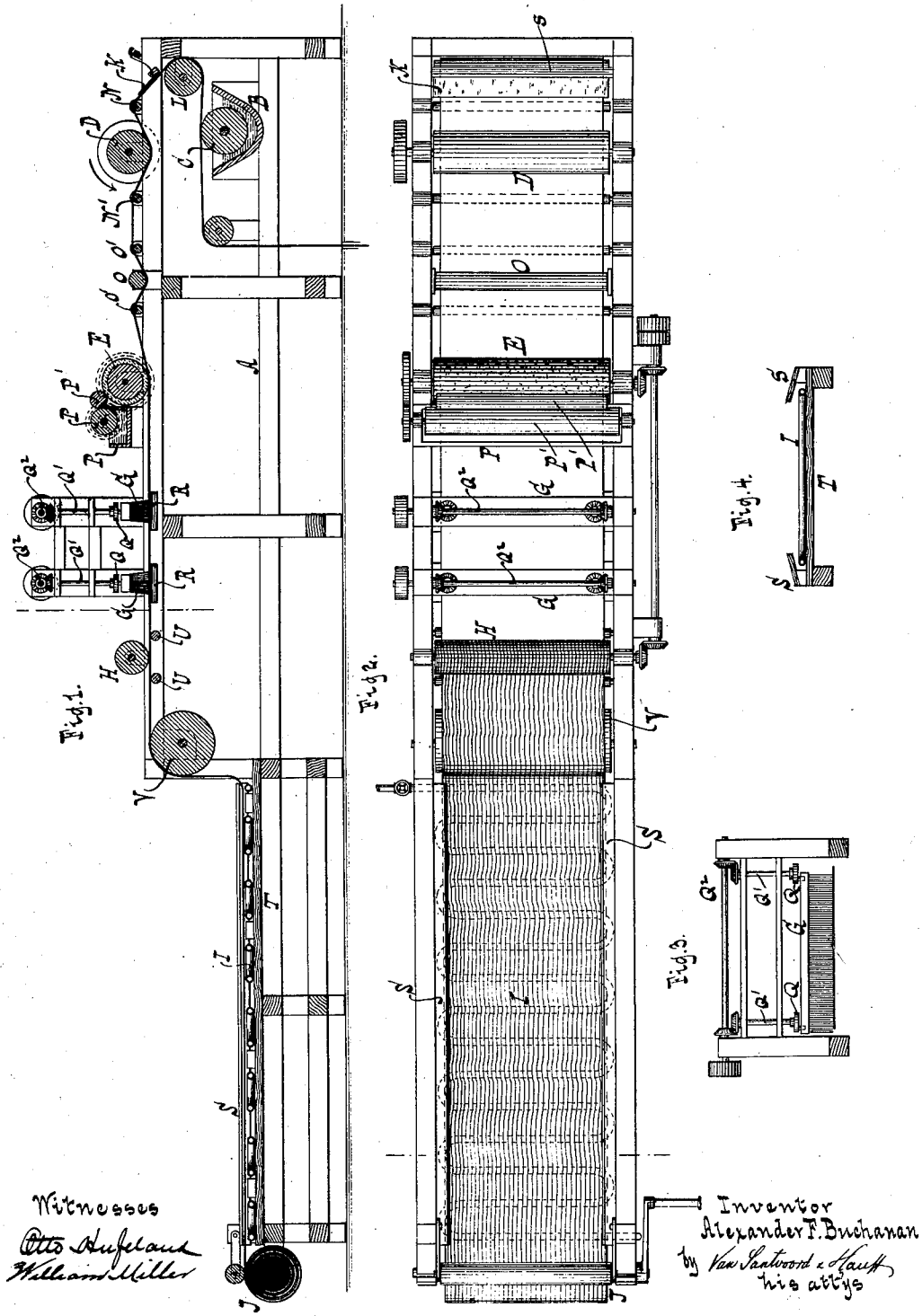
(No Model.)

A. F. BUCHANAN.

MACHINE FOR DECORATING OIL CLOTH.

No. 299,732. Patented June 3, 1884.



Witnesses
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UNITED STATES PATENT OFFICE.

ALEXANDER F. BUCHANAN, OF MONTROSE, NEW YORK.

MACHINE FOR DECORATING OIL-CLOTH.

SPECIFICATION forming part of Letters Patent No. 299,732, dated June 3, 1884.

Application filed February 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER F. BUCHANAN, a citizen of the United States, residing at Montrose, Westchester county, New York, have invented new and useful Improvements in Machines for Decorating Oil-Cloth, of which the following is a specification.

My invention relates to machines for graining, marbling, or otherwise decorating oil-cloth, and especially cloth which has received one or more "daub coats," so called, of oil-color. In the process of decorating such cloth a ground-color of distemper or oil is put on it, over the daub coats, when the last of such coats has thoroughly dried, this color being "rubbed in" to diffuse the particles into which it has a tendency to separate, due to the presence of the oil of the daub coats. Then, while the ground-color is in a wet state, the desired ornamentation is produced, either by displacing the ground-color or by blending therewith and with each other a series of colors of different shades, and subsequently displacing the whole. The color or colors are then dried and the finishing-coat of oil and varnish being now put on the cloth is ready for use.

Heretofore the operation of putting on and rubbing in the ground-color, and of ornamenting, whether by displacing the ground-color or blending and displacing additional colors, have been performed by hand, the cloth being left stationary while successive portions of it are under treatment; and the object of my invention is to furnish a mechanical means whereby such operations may be performed in the proper order without intermission, the result being a saving of time and labor and the production of an article of superior quality. This object I have accomplished by the novel combinations of parts hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of my machine. Fig. 2 is a plan or top view thereof. Figs. 3 and 4 are detail views of parts.

Similar letters indicate corresponding parts.

The letter A designates the machine-frame, supporting a trough, B, which contains what I have termed the "ground-color," and in which is mounted a roller, C, for applying such color to the oil-cloth. D indicates a roller for rubbing in the ground-color; E, a roller for applying to the oil-cloth what I have termed the "top color;" G G, blending-brushes; H, a pattern-roller, and I a steam-coil forming a drier.

In the example shown the ground-color roller C is plain; but, if desirable, it may be grooved to apply the ground-color in stripes; and in that case two or more such rollers may be used for producing stripes of different colors.

The web of oil-cloth is conducted through the machine in proper relation to the several parts, and is wound on a spindle, J, whence it receives a continuous motion.

Intermediate of the ground-color roller C and rubbing-in roller D, or at any other suitable point, is arranged a wiper, K, which acts on the face of the traveling web, to remove any cotton or other fibers which may have adhered to such face by its contact with the back of the web, this wiper being a strip of flannel or other suitable material attached to a cross-piece, *o*, on the machine-frame. For presenting the web to the wiper K it is conducted over rollers L N, one of which, together with a second roller, N′, also serves to support the web under the rubbing-in roller D. The operation of the rubbing-in roller D is to exert a friction on the face of the web; and to this end it should be coated with emery or other similar substance, and geared to receive a rapid motion in an opposite direction to the movement of the web. It will be noticed that the wiper K also has a tendency to rub in the ground-color, and consequently it is a useful adjunct to the rubbing-in roller. After the web leaves the rubbing-in roller D it is exposed to the action of a spreader, O, whereby the ground-color upon the web is disposed in an even layer, this spreader being a cross-bar on the machine-frame, and the web being supported under it by means of rollers O′ O′. The web now passes under the top-color roller E, which is supplied with the desired color from a trough, P, by means of feed-rollers P′, and which is constructed to apply the color in an irregular pattern, as in spots, or in a defined pattern, as in imitation of wood-graining.

If desirable, two or more top-color rollers may be used for applying different colors, which may be subsequently blended; and, if desirable, one of the color-feed rollers P′ may

be mounted in adjustable bearings, to permit of regulating the amount of color thereby. The blending-brushes G G act on the web at a point next to the top-color roller E, and are arranged according to the nature of the ornamentation to be produced—as, for example, for blending different colors, these brushes should receive an oscillating motion in a horizontal plane, while for blending a graining color they should receive a rotary motion on a horizontal axis, which may be at a right angle to the course of the web, or at an oblique angle thereto. Said oscillating motion of the blending-brushes may be produced by connecting thereto cranks Q on the lower ends of vertical shafts Q′, to which a revolving motion is imparted from horizontal shafts Q^2, to which they are geared; and, to support the web under the blending-brushes, beds R are arranged opposite thereto in a downward direction, these beds being preferably made adjustable to permit of varying the pressure of the brushes. It is evident that one of the blending-brushes G G may be omitted.

The pattern-roller H is used for displacing the color or colors on the web, as in veins at a point next to the blending-brushes; or it may also apply a color to the web; and in some cases, as when the top-color roller E is used for printing a defined pattern, this pattern-roller may be omitted. Rollers U U serve to support the web under the pattern-roller. The web, having now been ornamented in the desired manner, passes over a roller, V, to the steam-coil I, which is arranged in a horizontal plane; and in order to dry the web on the edges uniformly with the body thereof, deflectors S (see Fig. 4) are arranged to overlap such edges, these deflectors being fixed to a bed, T, which supports the steam-coil. By the position of the steam-coil I the color or colors on the web are not liable to run into each other, as when the web is held vertically to dry.

I am aware that in coating paper with wax the latter has been applied by felt pads, which also act to rub the wax into the paper; also, that in ornamenting paper dry colors have been deposited on paper having a coat of adhesive substance, the dry colors being distributed by brushes, then blended by a revolving brush, and, finally, pressed upon the paper by pressure-rollers; but such, however, do not constitute my invention, and are not here claimed.

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

1. The process of decorating oil-cloth which consists in first applying the ground-color, then rubbing said color into the fabric, then applying the top color, then blending the surface color, and, finally, drying the colored web, all substantially as set forth.

2. In a machine for decorating oil-cloth, the combination of the trough B for containing the ground-color, the rotating roller C for delivering the ground-color to the oil-cloth, and the revolving roller D for rubbing the ground-color into the oil-cloth, substantially as described.

3. In a machine for decorating oil-cloth, the combination of a trough, B, for containing the ground-color, the roller C for delivering the ground-color to the oil-cloth, the wiper K for removing foreign matter, and tending to rub in the ground-color, and the rotating roller D for rubbing in the ground-color, said wiper being arranged intermediate the roller for applying the ground-color, and the roller for rubbing in such color, substantially as described.

4. In a machine for decorating oil-cloth, the combination of a trough, B, for containing the ground-color, the roller C for delivering the ground-color to the oil-cloth, the revolving roller D for rubbing in the ground-color, the roller E for applying the top color, and the spreader O for spreading the ground-color prior to the application of the top color, substantially as described.

5. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, and the top-color roller or rollers.

6. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, and the pattern-roller.

7. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, the top-color roller or rollers, and the pattern-roller.

8. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, the top-color roller or rollers, and the blending-brushes.

9. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, the top-color roller or rollers, the blending-brushes, and the pattern-roller.

10. The combination, substantially as hereinbefore described, with suitable coloring devices, of the steam-coil arranged in a horizontal plane to receive the cloth as it leaves the coloring devices.

11. The combination, substantially as hereinbefore described, with suitable coloring devices, of the steam-coil arranged in a horizontal plane, to receive the cloth as it leaves the coloring devices, and the deflectors arranged to overlap the edges of the cloth upon the coil.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

ALEXANDER F. BUCHANAN. [L. S.]

Witnesses:
W. HAUFF,
CHAS. WAHLERS.