(No Model.)

J. W. HUSSEY.

POLISHING AND VARNISHING MACHINE.

No. 376,198. Patented Jan. 10, 1888.

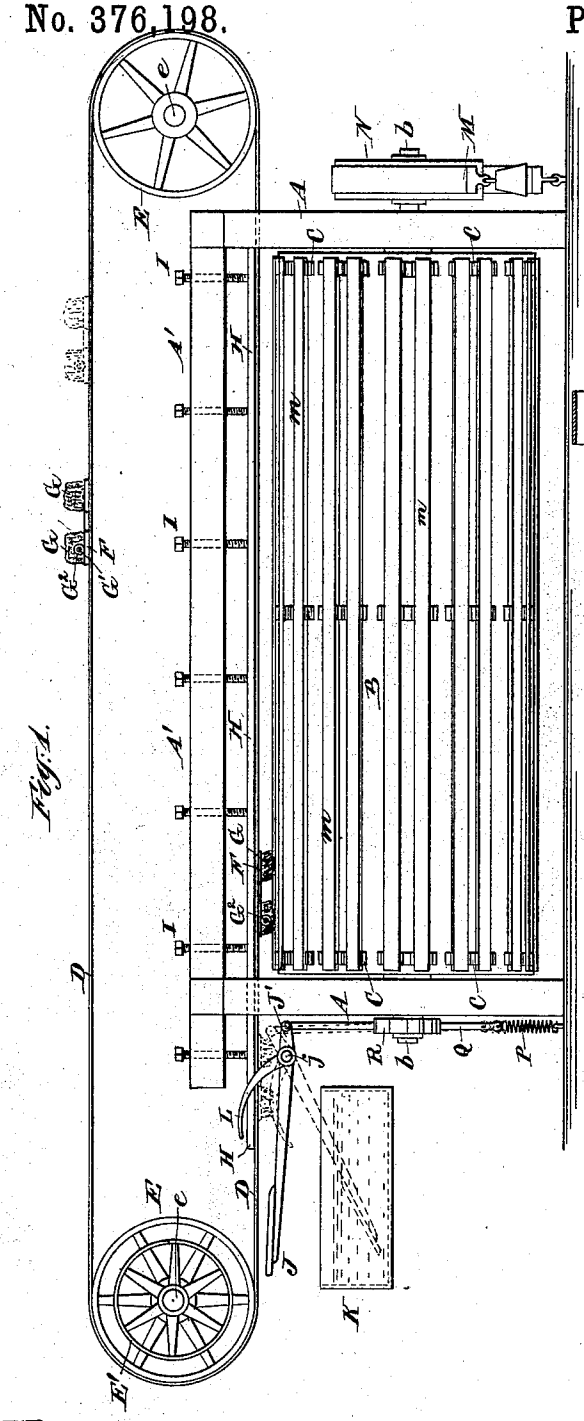


Fig. 1.

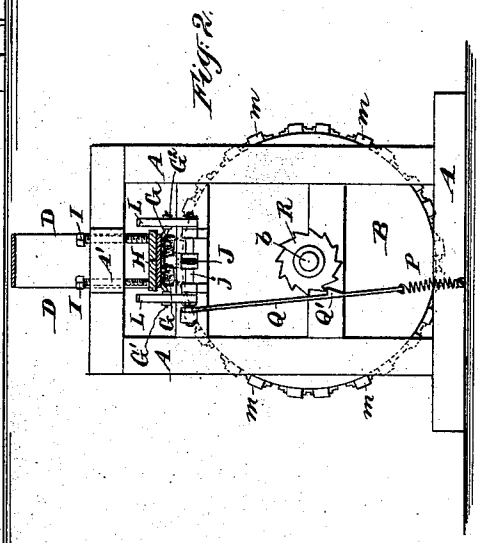


Fig. 2.

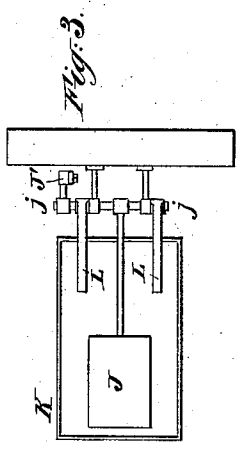


Fig. 3.

Witnesses:
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by his attorney
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UNITED STATES PATENT OFFICE.

JOHN W. HUSSEY, OF BROOKLYN, NEW YORK.

POLISHING AND VARNISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 376,198, dated January 10, 1888.

Application filed July 2, 1887. Serial No. 243,225. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HUSSEY, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Polishing and Varnishing Machines, of which the following is a specification.

My improved machine is intended more particularly for applying shellac and analogous quick-drying varnishes to wood moldings. I will describe it as thus applied; but it may be used with advantage in applying any quick-drying material which requires to be applied many times with a considerable interval of time between.

In the application of varnish to moldings by hand it is common to lay two or more on a bench side by side and walk back and forward, rubbing one at a time with a bunch of cotton waste saturated with the varnish, traversing one way with the pad rubbing on one molding and returning with it rubbing on another. I attain the same general effect with the same proper delays for the material to dry. I mount the strips of molding on a horizontal drum of sufficient length, which is rotated step by step. I prefer to mount two moldings side by side and to treat the two at once, using two pads traversing abreast or nearly abreast of each other. The pads are mounted on an endless belt, which traverses the length of the drum and something more, passing around a pulley at each end and receiving a fresh supply of varnish at short intervals. I provide means for adjusting the pressure at different points in the length.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a side elevation, and Fig 2 is an end view. Fig. 3 is a plan view of a portion.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A is a fixed frame-work, of wood or other suitable material, certain portions of which will be designated, if necessary, by additional marks, as A'.

B is a horizontal drum mounted on a shaft, *b*, and provided with clamps C, which will take a sufficiently firm hold of the strips of molding extended lengthwise on its surface. These strips of molding, *m*, come of various widths; but the lengths are usually approximately uniform, varying but little from twelve feet. The end clamps, therefore, may be mounted and fixed permanently. There may be any desired number of clamps adapted to take hold of the moldings at intermediate points in the length.

D is an endless belt, of leather or other suitable material. It runs over the drums E E, mounted on shafts *e e*, supported in fixed bearings. One is rotated by a pulley, E', and a belt driven by a steam-engine or other suitable power (not shown) to communicate a continually-traversing motion to the belt.

F F are clamps riveted or otherwise fixed on the belt, and each carrying a handful of cotton waste or other suitable material to serve as pads G to apply the varnish.

H H are flexible strips of wood or other suitable material, arranged to be pressed gently on the inner or back face of the belt, while the pads carried by the latter are traversing the length of a molding.

I I are screws inserted through a rigid member, A', of the framing. By turning these adjusting-screws I I each strip H may be depressed more or less at different points, thus correspondingly regulating the pressure of the pads.

J is a lifter turning on a center, *j*, and allowed, when depressed, to dip in a quantity of varnish kept at proper consistency and in proper quantity in a tank, K. This lifter is raised at each passage of a pad, and applies a small quantity of varnish thereto. The varnish becomes diffused through the mass of the pad during the idle return movement of the latter, and each pad is kept supplied with the proper quantity of varnish, so as to apply it smoothly and uniformly the whole length of each molding.

The drum B may carry twelve or more sets of clamps, C C, and consequently corresponding pairs of moldings. The drum is turned by a step-by-step motion, and turns at each interval after each pair of pads has performed its work on one pair of moldings, so as to present the next pair of moldings in position to receive the action of the next pair of pads. Thus the pads succeed each other, traversing

the length of the drum, and the drum, by its partial rotation, presents different moldings at each traverse.

The speed of the machine may be varied according to the weather. It is important that the varnish shall become either entirely dried or materially thickened on the moldings during the interval between one treatment and the next.

The drum may be of any size and carry any number of pairs of moldings. I have shown it as carrying twelve pairs.

The pairs traverse step by step around the drum, and when any given pair is again presented for treatment the previous coat is sufficiently dry. The step-by-step movement of the drum B is derived from the continuous movement of the belt D. The belt carries at the proper points two cross-pieces of iron or steel, G′, on the overhanging ends of which are mounted rollers G^2.

L L are lever-arms fixed on a rocking shaft, *j*, which is supported in fixed bearings on the frame-work. (See Fig. 3.) So soon as the rollers G^2 have passed the levers L the shaft *j* is turned again into its original position by the tension of the spiral spring P acting on the rod Q, which rod is provided with a catch, Q′, on its side, adapted to engage with the teeth of a stout ratchet-wheel, R, fixed on the shaft *b*. When the shaft *j* is liberated, the contraction of the spring P depresses the rod Q and moves the catch Q′ down past a tooth of the ratchet R. At the next passage of the rollers G^2 past the levers L the lifter J′ is rocked, the shaft *j* is partially turned, and the rod Q forcibly elevated. This, by the action of the catch Q′ against the tooth of the ratchet R, turns the latter, and consequently the attached drum B, sufficiently to effect one step of the revolution. The brake-strap M, acting on the pulley N, keyed on the other end of the shaft *b*, serves to hold the drum in the position in which it is left. There are two of the sets of rollers G^2, one corresponding to each set of pads, so there are two of the partial rotations of the drum and two passages of the pads along the entire length of corresponding sets of moldings for each complete revolution of the belt D. The rocking motion of the shaft *j*, thus derived from the continuous rotation of the belt, also effects another important end by presenting to the pads at each revolution a fresh supply of varnish. The lever J, fixed on the shaft *j*, carries on a long arm (see Figs. 1 and 3) a plane plate of metal. At each depression of the lever J this plate is immersed in a vessel of varnish, K. When the rollers G^2 have passed the levers L, and allowed the parts to resume their original position, the plate on the long arm of the lever J by this motion lifts a sufficient quantity of the thin varnish and presents it in the proper position to be wiped off by the pads. Each pad is thus supplied with a just sufficient quantity of fresh varnish. The varnish thus received is spread and diffused on a pad in its passage back, so that it is in the right condition when it is next presented to the moldings.

Modifications may be made in the details without departing from the principle or sacrificing the advantages of the invention.

Instead of the clamps F F the cotton pads G G may be confined by various other means, or the cotton waste may be replaced by other devices—as brushes.

I claim as my invention—

1. In a varnishing-machine, the drum B, means for revolving the same, and the clamps C, carried by said drum and adapted to hold moldings, combined with a belt, D, running transversely to the motion of the drum, and pads G, carried by said belt, substantially as and for the purpose specified.

2. The reservoir, the drum B, means for rotating the same, and the clamps on said drum for holding moldings, combined with the belt D, the pads G thereon, and the lifter J, alternately dipping in the reservoir of varnish and being presented to the pads for automatically supplying varnish to the pads, substantially as herein described.

3. In a varnishing-machine, the drum B, means for rotating the same, and the clamps C on said drum, combined with the belt or carrier D, pad G, operated thereby, the flexible pressure-strip H, adjusting-screws I I, varnish-tank K, and the lifters J J, all arranged for joint operation, as herein specified.

In testimony whereof I have hereunto set my hand at New York city, this 29th day of June, 1887, in the presence of two subscribing witnesses.

J. W. HUSSEY.

Witnesses:
H. A. JOHNSTONE,
M. F. BOYLE.