

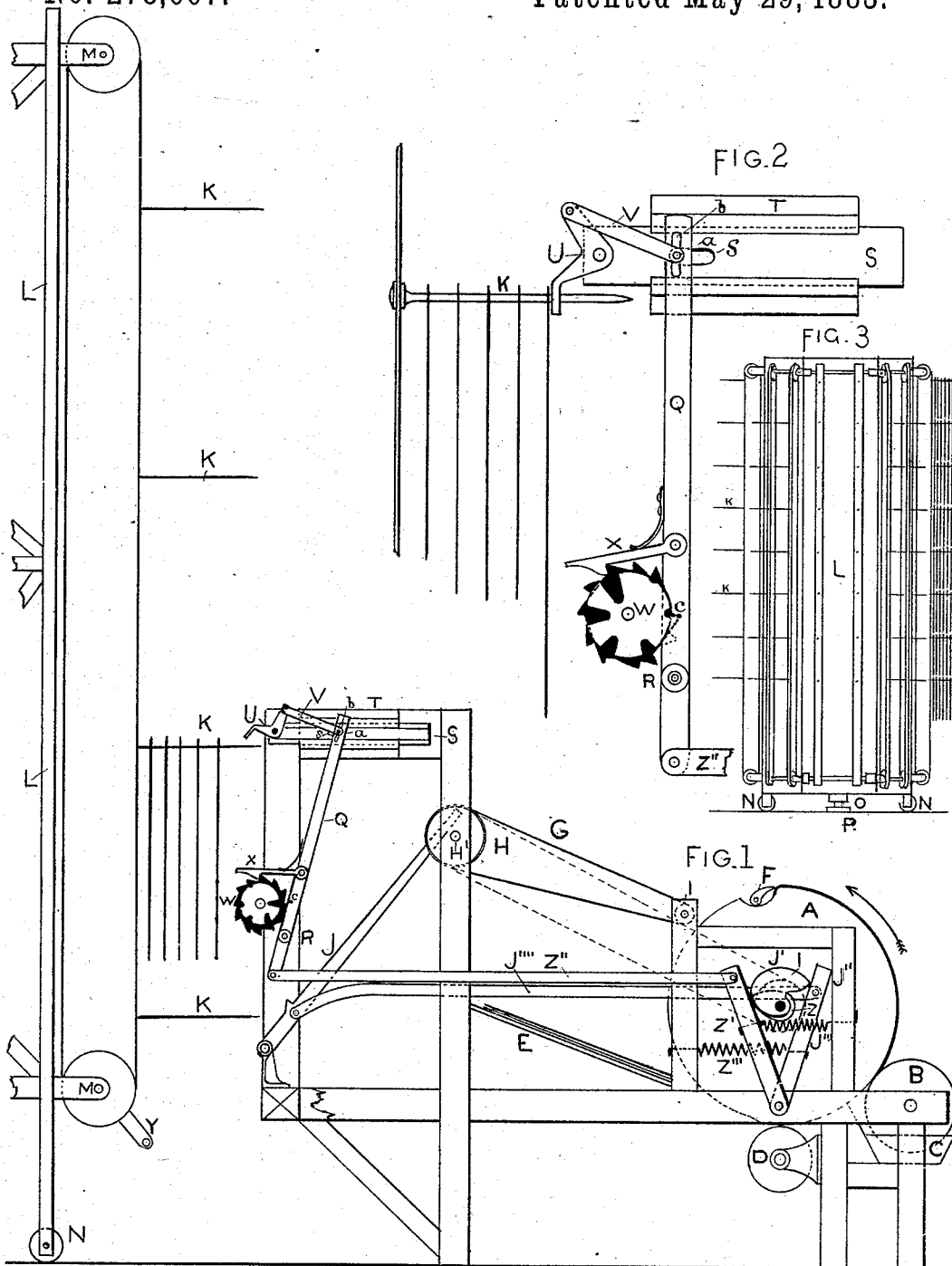
(No Model.)

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AUTOMATIC HANGING-UP ATTACHMENT FOR LABEL VARNISHING
MACHINES.

No. 278,607.

Patented May 29, 1883.



WITNESSES

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MAX SCHMIDT AND CARL RAHSSKOPFF, OF SAN FRANCISCO, CALIFORNIA.

AUTOMATIC HANGING-UP ATTACHMENT FOR LABEL-VARNISHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 278,607, dated May 29, 1883.

Application filed September 5, 1882. (No model.)

To all whom it may concern:

Be it known that we, MAX SCHMIDT and CARL RAHSSKOPFF, residents of San Francisco, State of California, have invented an Improved Automatic Hanging-up Attachment for Label-Varnishing Machines, which facilitates the handling of the freshly-varnished sheets in placing them on the drying-frames, of which the following is a specification.

Our invention relates to all machines, whether varnishing, printing, sizing, or other kind, which produce a wet surface on sheets of paper or other material needing to be dried by hanging up the said sheets a distance apart on frames for the purpose of drying them.

The principal application which we propose to make of our invention will be to a label-varnishing machine, and we will confine our description here to its relation with that particular machine; but it will be understood the invention may be applied wherever useful.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of our device related to a varnishing-machine and a drying-frame. Fig. 2 is a detail of a portion of our device constituting the automatic adjuster, and Fig. 3 gives an elevation of a drying-frame.

In all the figures of the drawings like letters refer to like parts.

In Fig. 1 we have shown the varnishing-machine, omitting such details as need not be described.

A is the main cylinder, revolving in the direction shown by the arrow.

B is the varnishing-cylinder, dipping in the varnishing-trough C.

D is the supporting and smoothing roller.

E is the feeding-board, from which single sheets are fed from a pile into the machine.

F are the grippers, which, being open, close to grip the sheet fed from the pile at one point, and, being closed, open to deliver it on the carrying-tapes at another point above.

The carrying-tapes G are simply endless bands, as many as may be necessary, according to the width of the sheet passing over the pulleys H and I, motion being conveyed from the shaft of cylinder A by a belt passing over a pulley on the shaft H'.

J is the fly-frame, such as is common on printing-presses, where it is used to receive the printed sheets from the printing-cylinder

to deliver them on a pile on the receiving-table. In this instance we use it to receive the sheets from the carrying-tapes and to flap them over to impale them on the spikes K of the drying-frame. It is operated by the cam J' on the main cylinder-shaft, which presses back the lever J'', and at a point suddenly releases it to allow it to be quickly returned by the action of the spring J''', the lever J'' being connected to the fly-frame by the rod J''', transmitting its motion thereto.

The drying-frame L is a light wood hexagon frame as high as convenient, and each side as wide as is necessary to accommodate the sheets to be dried. At the bottom and top of each of the six sides (there may be more or less sides, as preferred) there is a cross-shaft, M, with pulleys thereon, as many as needed, two on each shaft being ordinarily enough. Each pulley above connects with the pulley immediately below it by an endless belt, cord, or chain, or a single wide belt passing over wide-faced pulleys, top and bottom, may be found better. Projecting from these belts are long sharp-pointed wires or spikes, say, a foot long and about an inch or so farther apart vertically than the length of the sheet to be dried—that is, if the sheet is twenty-four inches long the wires should be twenty-five inches apart vertically. Horizontally the distance of these wires where but two are used to carry a sheet may be from three to six inches less than the width of the sheet. If the sheet is very wide, three wires may be used. The drying-frame stands on rollers N, so as to be conveniently moved about, and a vertical pintle, O, in the exact center, underneath the frame, may be inserted in a suitable step, P, fastened in proper position on the floor to insure that the frame will occupy its exactly-proper position with relation to the other machinery, and upon which it may be revolved to change sides to the fly-frame. Stops or marks should be also placed on the floor to indicate when a side of the frame is square with the varnishing-machine, which it must always be when our device is operating. Any mark or stop will do. We have bored a hole at a measured point in the floor, and another through a measured point in the bottom timber of each of the sides of the drying-frame, so that a pin dropped through any of these holes in the frame and into the

hole in the floor will bring the frame square to its work. It is not necessary to show this in the drawings.

The manner of attaching the wire pins to the belts may be by providing a collar on the pins in front of the belt and riveting a head on the back, a washer being provided to rivet against, after the fashion of ordinary belt-riveting. Any other suitable way will answer.

10 After the sheets are hung by the fly-frame they are pushed farther on the wires by an automatic adjuster, which operates to place the sheets, as they are received, a certain space apart on the wires until the whole length of the wires is occupied. Generally the sheets

may be hung, say, half an inch apart, and from six to a dozen on the wires, (each pair.)

The adjuster is composed of the upright vibrating lever Q, having its fulcrum on the frame of the machine at R, the slide or cross-bar S, supported in its guide-frame T, the bell-crank U, with its connecting-link V, the ratchet and stop wheel W, and the spring-pawl X, the whole being operated, like the fly-frame, by a cam, Z, on the main cylinder-shaft, throwing forward the lever Z' to communicate its motion through the connecting-rod Z'' to lower end of lever Q, the spring Z''' acting to return the parts back to their normal position. The bell-crank U must have its forward end elevated out of the way of the last sheet hung up, or it would strip it off the wires upon its return. Therefore we make a slotted hole in the slide-bar S, at s, to allow the pin a, which passes through the link V, lever Q, and into the bar S to travel an inch or so forward and act simply to pull over the bell-crank before it commences to move the slide-bar, which it does when it reaches the end of this slot.

To accommodate the change from the vibratory motion of the lever Q to the reciprocating motion of the slide-bar, we slot the lever Q at b. The lever Q, and all thereto attached, moves back always to the same point—viz., that which shall bring the forward end of the bell-crank even with the point of the hanging-up wires. It does not, however, make its vibration always the same distance forward. This variation is produced by the ratchet and stop wheel W, the pawl X, and the stop-pin c. The stop-wheel, which may be cast solid with the ratchet-wheel, is indented with six indentations, varying in depth, so that when the stop-pin c, which is so placed as to always enter some one of these indentations, reaches the bottom thereof the lever Q will be stopped from further forward motion, and the bell-crank point, which straddles the hanging pins, will only advance a corresponding distance, so that it will push forward the sheets on the wires a less distance every stroke it makes. The stop-wheel is revolved approximately one-sixth of a revolution at every stroke (so as to bring the several indentations opposite the pin c) by the pawl X engaging with the ratchet-wheel

and dragging it around on the back-stroke. The point to which the cam moves the lever Q back is always the same; but, as there is a little difference in the distances the spring forces it forward, the ratchet-teeth should be close together to insure the pawl engaging without slip. We have shown the ratchet-wheel black in the drawings to make it contrast with the stop-wheel.

The stop-wheel may be made cam-shaped, and it will do as well. Its exact shape will be a matter to be calculated in accordance with the distance apart the sheets are to be placed, and the relative radius of the arc swept by the stop-pin c and the bell-crank.

Although we do not show them in the drawings, it would be well to cast cheeks on the cams to clasp the sides of the levers Z' and J'' to keep them from playing sidewise; or suitable guides may be made for them.

The operation is as follows: The sheets are fed into the grippers at the lower end of the feed-board. They are then carried around between the main cylinder and the smoothing-roller, thence past the varnishing-roller upward, to be delivered on the carrying-tapes, which feed them onto the fly-frame. At the proper moment this frame flaps forward and sticks the sheets on the pins. Then comes the adjusting device and pushes each sheet forward until it approaches within half an inch of the belt in front of its immediately-preceding sheet. The drying-frames are set in position, as before described. When a set of wires are filled the set following are brought up to place by turning the crank Y on the lower pulley-shaft. When the whole frame is filled it is moved away and another takes its place.

What we claim as our invention, and desire to secure by Letters Patent, is as follows:

1. The combination, with the hanging-up wires K, of the bell-crank U and its operating parts, substantially as herein described, and for the purpose set forth.

2. The combination of the fly-frame J and its operating parts, the carrying-tapes G, the bell-crank U and its operating parts, and the hanging-up wires K, as and for the purpose described.

3. In combination with a drying-machine, as herein described, the automatic adjuster, consisting of the lever Q, with its fulcrum at R, ratchet and stop wheel W, pawl X, bell-crank U, link V, slide S, and guide T, the whole operated substantially as and for the purpose described.

4. The polygon drying-frame L, revolved on pivot O, and having the endless belts studded with the hanging-up wires K, passing over the pulleys at the top and bottom of each side of said frame, substantially as and for the purpose described.

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