(No Model.)

2 Sheets—Sheet 1.

J. F. SMALL.

BOX BORDERING MACHINE.

No. 544,446. Patented Aug. 13, 1895.

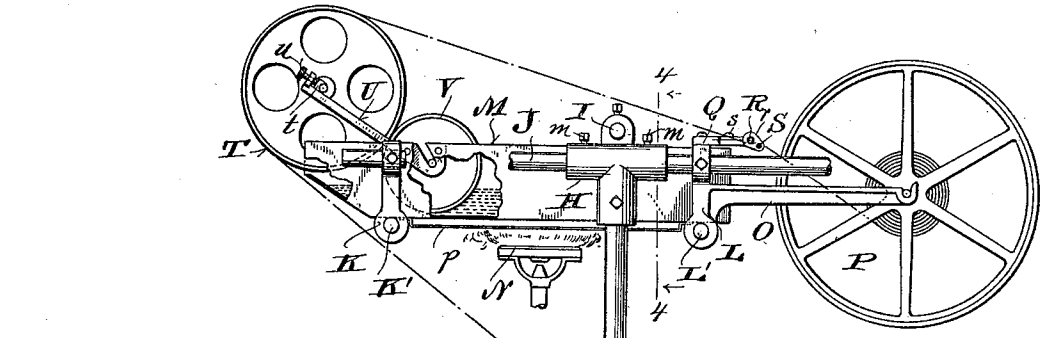

Fig. 1.

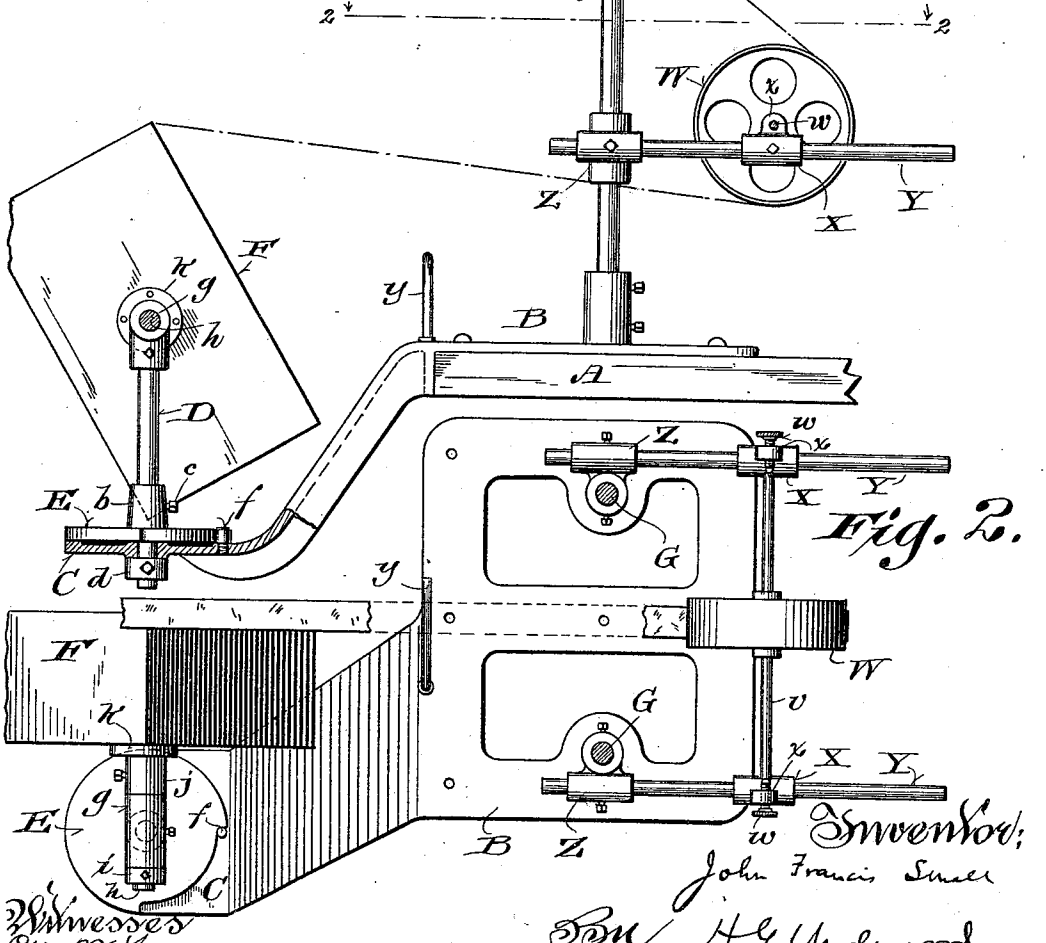

Fig. 2.

Witnesses
Geo. W. Young
N. E. Oliphant

Inventor:
John Francis Small
By H. G. Underwood
Attorney

(No Model.) 2 Sheets—Sheet 2

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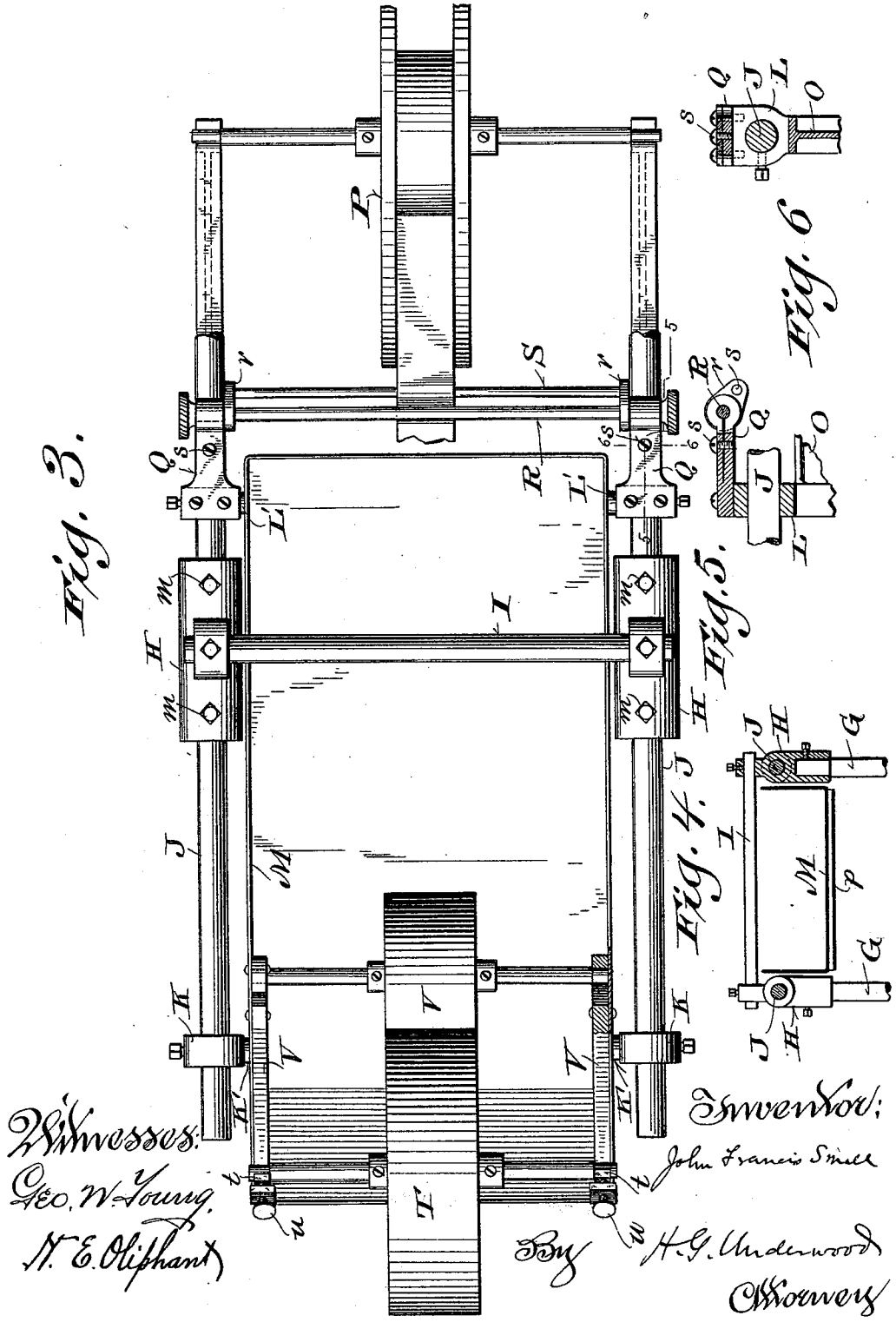

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6

Witnesses:
Geo. W. Young.
N. E. Oliphant

Inventor:
John Francis Small
By H. G. Underwood
Attorney

UNITED STATES PATENT OFFICE.

JOHN FRANCIS SMALL, OF OAK PARK, ILLINOIS, ASSIGNOR TO HENRY GUGLER, OF MILWAUKEE, WISCONSIN, AND THEODORE POHLMANN, OF CHICAGO, ILLINOIS.

BOX-BORDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 544,446, dated August 13, 1895.

Application filed February 11, 1895. Serial No. 537,868. (No model.)

To all whom it may concern:

Be it known that I, JOHN FRANCIS SMALL, a citizen of the United States, and a resident of Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Box-Bordering Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, economical machine by which to facilitate the application of paper or other flexible bordering to cigar and other boxes, the said machine consisting in certain peculiarities of construction and combination of parts hereinafter specified with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a side elevation of the assembled parts involved in my machine; Fig. 2, a plan view, partly in horizontal section, on line 2 2 of the preceding figure; Fig. 3, another plan view of that portion of the machine above the line 2 2 in Fig. 1; Fig. 4, a detail elevation on line 4 4 of Fig. 1, with parts in section; and Figs. 5 and 6 sectional views, respectively, taken on lines 5 5 and 6 6 of Fig 3.

Referring by letter to the drawings, A represents a horizontal support for the base-plate B of my machine, and this base-plate has a depending extension terminating in a horizontal table C provided with a central bearing for a post D that is vertically adjustable in the hub *b* of a circular disk E, a set-screw *c* being employed to secure the post in adjusted position. The disk E turns on the table C, and a set-collar *d*, arranged on the post D below said table, serves to prevent the withdrawal of said post from its bearing. The disk E being provided with a concentric quarter-circle groove or notch engaged by a stop *f* on the table C, the post D and a cross-head *g* thereon may be turned ninety degrees of a circle. The cross-head of the post serves as a bearing for a spindle *h* that is held against longitudinal play by means of set-collars *i j*, the latter collar being in one piece with a plate *k* to which a block F is made fast by any suitable means, the contour of this block being the same as that of the boxes to be bordered and serving as a support for the same while the operation is being performed.

Rigidly secured in sockets on the base-plate B, by set-screws or other suitable means, are standards G provided with stationary cross-heads H, the latter having vertical ears in which a tie-rod I is rigidly secured. Adjustable in the cross-heads H are rods J, held in adjusted position by means of set-screws *m*, and other set-screws serve to hold hangers K L on said rods. The hangers K are joined by a tie-rod K′, and a similar rod L′ joins the hangers L, these tie-rods serving as supports for a paste-pan M, having a depending offset-plate *p* secured to the bottom, to thereby provide an air-space that prevents burning of the contents of said pan when a gas-burner N or other heater is employed to warm the same. Horizontal arms O extend rearward from the hangers L and are provided with vertical recesses that serve as bearings for the journals of a paper-reel P, and arranged in split screw-controlled bearing-plates Q, that also extend rearward from said hangers, is a rod R, having ears *r* engaged by another rod S, these rods being parallel and constituting a means for tensioning the draw of paper from the reel. In order to facilitate the adjustment of the tension the rod R is provided with milled heads, and the adjustment being obtained said rod is held against rotation by tightening the screws *s* in the split bearing-plates. The paper from the reel, being carried over the rod S and under the rod R of the tension device, is then turned on a pulley T, having its journals engaging recessed blocks *t* adjustable on inclined guides U rigidly secured to sides of the pan M and provided with bearing-notches for the journals of a roller V that distributes paste from said pan to the face of the pulley, the pressure of this pulley on the distributing-roll being determined by the adjustment of said blocks. As one means for adjusting the bearing-blocks *t* on the inclined guides U, I provide the outer

ends of the latter with upturned lugs that are tapped for engagement with screws *u*, upset at their inner ends in said bearing-blocks. After being turned on the pulley T the paper from the reel is carried down and turned on another pulley W, having a spindle *v* that turns on cone bearing-screws *w*, engaging ears *x*, rising from sleeves X, adjustable on rods Y that are themselves adjustable in guides Z also adjustable on the standards above specified, set-screws being employed to hold said sleeves, rods, and guides in adjusted position. After being turned on the pulley W the paper from the reel is laid on a box supported by the block F above specified, this block being manipulated by hand to draw said paper onto a box engaged therewith.

The swivel connection of the block F with the table C permits of the box being turned from time to time to change direction of the paper applied thereto. Hence it will be seen that a continuous strip of said paper may be laid in two directions on said box, one direction being horizontal and the other vertical, it being understood that bordering is applied to all the corners of cigar and other boxes, either as a means to cover joints or impart finish, or both. The bordering-strip being laid along a horizontal corner on one side of the box, continued rotation of the supporting-block will bring an end of said box opposite the strip, and so on from end to side or side to end; but when it is desirable to change to a vertical corner of the box the post D and disk E are given the possible quarter turn to carry said block and box therewith. After this quarter turn of the supporting-block rotation of the latter will draw the bordering onto horizontal corners of the box until it is again desirable to border a vertical corner.

As a support for the free end of the paper when boxes are being changed on the rotatable box, I employ a vertical bracket *y* on the base-plate of the machine.

The adjustment of the pulley W will generally serve to give the paper time to stretch and soak up the paste; but this time may be increased or diminished beyond the ordinary limits by an adjustmentof the rods J in the cross-heads H of the standards G above specified.

In matters of mechanical detail the machine herein specified may be somewhat varied without departure from the construction and arrangement of the essential elements of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A machine for applying flexible bordering to boxes, the same having a box-support capable of continuous rotation on one axis and a rotary adjustment on another axis at right angles to the one aforesaid, said machine being organized to include a paste-applying mechanism, a tension-device for the flexible material as the latter comes from a reel, and a supporting pulley for said material intermediate of the paste-applying mechanism and the box-support.

2. A machine for applying flexible bordering to boxes, the same comprising a rotatable box-support in swivel-connection with the machine-base, standards on the base, cross-heads on the standards, rods adjustable in the cross-heads, hangers depending from the rods, tie-rods connecting the hangers in pairs, a paste-pan supported on the tie-rods, reel-supports and a tension-device carried by the rear hangers, a distributing-roller journaled in the paste-pan, a paste-pulley opposing the distributing-roller, and another pulley intermediate of said paste pulley and box-support.

3. A machine for applying flexible bordering to boxes, the same comprising a rotatable box-support in swivel-connection with the machine-base, standards on the base, guides adjustable on the standards, rods adjustable in the guides, sleeves adjustable on the rods, a pulley having a spindle carried by the sleeve, a paste-pan supported from the upper ends of said standards, a distributing-roller journaled in the pan, another pulley opposing the distributing-roller, a tension-device in rear of the paste-distributing mechanism and suitable reel-supports in rear of the tension-device.

4. A machine for applying flexible bordering to boxes, the same comprising a box-support consisting of a post having its bearings in the machine-base and provided with a cross-head, a disk fast to the post and provided with a quarter circle groove or notch engaging a stop on said base, a plate provided with a spindle having its bearing in the cross-head, and a box-fitting block made fast to the plate; a paste-pan supported above the aforesaid base, suitable reel-supports, a tension-device, a paste-distributing roller, a paste-pulley opposing the roller, and another pulley intermediate of the box-support and paste-pulley.

5. A machine for applying flexible bordering to boxes having its base provided with a depending extension terminating in a horizontal table, and a box-support that is rotatably adjustable on the table and capable of continuous rotation on an axis at a right angle to the axis of adjustment; the machine being organized to include a paste-applying mechanism, suitable reel-supports, a tension-device, for the flexible material as it comes from a reel, and a supporting pulley intermediate of the paste-applying mechanism and box-support.

6. A machine for applying flexible bordering to boxes having its base provided with a vertical bracket, a depending extension adjacent to the bracket terminating in a horizontal table, and a box-support that is rotatably adjustable on the table and capable of continuous rotation on an axis at a right angle

to the axis of its adjustment, the machine being organized to include a paste-applying mechanism, suitable reel-supports, a tension-device for the flexible material as it comes from a reel, and a supporting pulley intermediate of the paste-applying mechanism and box-support.

In testimony that I claim the foregoing I have hereunto set my hand, at Chicago, in the county of Cook and State of Illinois, in the presence of two witnesses.

JOHN FRANCIS SMALL.

Witnesses:
MAX LAAGE,
RICHARD H. FINK.