S. K., G. W. & J. A. PAIGE.

Box-Machine.

No. 163,237. Patented May 11, 1875.

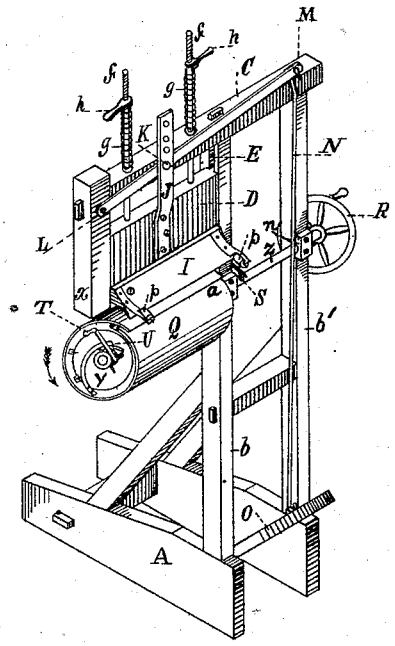

Fig. 1.

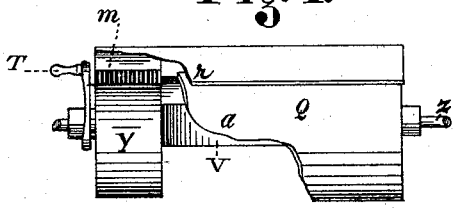

Fig. 2.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN BOX-MACHINES.

Specification forming part of Letters Patent No. **163,237**, dated May 11, 1875; application filed March 1, 1875.

To all whom it may concern:

Be it known that we, SAM. K. PAIGE, GEORGE W. PAIGE, and JEREMIAH A. PAIGE, of Henniker, in the county of Merrimack, State of New Hampshire, have invented a certain new and useful Improvement in Box-Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which our invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an isometrical perspective view; and Fig. 2 a sectional side elevation, showing the construction of the drum or cylinder.

Like letters of reference indicate corresponding parts in the different figures of the drawing.

Our invention relates to that class of box-machines which are designed for manufacturing round or cylindrical boxes, and consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a simpler, cheaper, and more effective device of this character is produced, than is now in ordinary use.

In the drawing, A represents the body or frame-work of the machine, which is provided with the uprights *b b'*, having the cross-head C, to which is framed the vertical bar *x*. Journaled at *n* in the uprights there is a horizontal shaft, *z*, provided at one end with the wheel R, and carrying at its other the drum or cylinder Q. This drum is composed of two annular heads, *y*, and a body of hard elastic sheet metal, preferably rolled brass, and is evolute in form, having longitudinal shoulders *m*, at which point the distance from the periphery to its axis or the shaft *z* is greatest, and from which point around the drum, in the direction of the arrow, the diameter gradually decreases to the base of the shoulder, where it is least. The sheet-metal covering projects slightly over the shoulder, forming a lip, as shown at *r*, and from the shoulder around the drum, in the direction of the arrow, to a point nearly opposite the shoulder, it is firmly attached to the heads *y*, leaving the end *a* free. The upright *b* above the cylinder Q, and the bar *x*, are provided with grooves E on their contiguous sides, forming ways or runlets for the vertically-arranged sliding stock D. This stock is provided with two rods, *f f*, fitted to work in holes through the cross-head C, and around these rods are arranged spiral springs *g g*, which act expansively against the head, and set-screws *h h*, to keep the stock D from contact with the drum Q when the machine is not in operation. A presser-bar, I, is attached to the lower side of the stock, being curved on its under face to correspond with the curvature of the drum, and to the outer edge of the bar there are fitted two friction guide-rollers, *p p*. Pivoted at one end to the bar *x* there is a horizontal lever, L. This lever is also jointed at K to the arm J connected with the stock D, and at M to the rod N connected with the treadle O. Journaled longitudinally in the heads *y* at one side of the shaft *z*, and immediately under the free end *a* of the metallic covering of the drum, there is a shaft (not shown) having at its outer end the crank T, and supporting the interiorly-arranged cam or eccentric *v*. This cam is so disposed on the shaft that when the crank T is turned it will be brought against the inner surface of the end *a*, forcing it outwardly against the lip *r*, under which it extends, a spring-catch, U, being attached to the head *y*, for retaining the shaft in position when so turned.

In the use of our improved machine the veneer or blank from which the body of the box is to be formed has one of its edges or ends inserted beneath the lip *r* and against the shoulder *m*. The crank T is then turned to move the cam *v* against the inner side of the end *a*, forcing it outwardly and firmly grasping the blank between the end *a* and lip *r*, the crank being secured by the spring-catch U. The presser-bar I is then depressed and kept in forcible contact with the blank or veneer by means of the treadle O, the wheel R at the same time being turned to revolve the drum in the direction of the arrow. As the drum revolves, the blank will be wound or wrapped closely and smoothly around the same, being firmly held down by the presser-bar until its free end is nearly reached, when the machine

is stopped and the ends of the blank joined by means of nails or tacks driven through the same against the metallic covering of the drum by which they will be headed or clinched. After the box is properly nailed, the crank T is turned back, disconnecting the cam *v* from the end *a*, which immediately contracts or springs inwardly, reducing the diameter of the drum, and freeing the box so that it may be removed in a manner which will be readily understood by all conversant with such matters without a more explicit description.

It will be obvious that the machine may be adapted to the manufacture of boxes of any required size by merely changing the drum and presser-bar.

Having thus explained our invention, what we claim is—

In a box-machine, substantially such as described, the presser-bar I combined to operate with the drum Q, substantially as and for the purpose set forth.

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