

UNITED STATES PATENT OFFICE.

JOSEPH P. BUCKINGHAM, OF CHICOPEE, MASS., ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE A. DENISON AND OLIVER M. HAMILTON, OF SAME PLACE.

IMPROVEMENT IN PAPER-BOX MACHINES.

Specification forming part of Letters Patent No. 194,289, dated August 31, 1877; application filed November 27, 1876.

To all whom it may concern:

Be it known that I, JOSEPH P. BUCKINGHAM, of Chicopee, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Machine for Scoring Paper-Box Blanks, of which the following is a specification:

My invention has for its object to make scorings by removing a portion of the stock, and thereby producing a scoring wider than the ordinary compressed score, and one suitable for making boxes having the scorings upon the inside; and the invention consists of two ordinary rollers or rotary cutters, and mechanism for adjusting them to work together for producing a single score, in the manner hereinafter described.

In the accompanying drawings, Figure 1 is a front elevation, partly in vertical section, of a machine for scoring blanks for paper boxes, which embodies my invention. Fig. 2 is a side elevation of the same; and Fig. 3 is a horizontal section of the same on line *x x* of Fig. 1.

The mechanism herein described is designed to be attached to any ordinary machine for cutting and scoring blanks for paper boxes. Any of the machines now in use may be employed, and it is deemed unnecessary to describe them further than to say that, in order to be adapted for use with my improvements, the machine should have a feed-roller, a revolving cylinder, or other bed capable of being moved under the cutters, and a cross-bar, upon which the cutters can be secured and adjusted from side to side.

In the drawings, A designates a segment of this ordinary revolving cylinder, and B the cross-bar. As in ordinary machines, single cutters working against the periphery of the cylinder B may be employed to cut the paper through at desired points, and sever it into blanks of the proper size.

In the ordinary machine the scoring-cutters are the same as the others, and set the same, only not so near the cylinder.

I employ two of these rotary cutters, C C, set angular in V form, with their peripheries

meeting or adjacent to each other, as shown in Fig. 1, and at a distance from the cylinder equal to the thickness designed to leave the stock at the bottom of the score.

For each pair of cutters C C two frames, D D, are placed upon the cross-bar B, and coupled together by means of the adjusting-screw *a*, provided with set-nut *b*, whereby the frames D D may be adjusted and held at a greater or less distance from each other. The pair of frames and cutters, when adjusted in relation to each other by means hereinafter described, may be set at any desired point on the cross-bar B, and held in their position by means of the set-screws *c c*.

At the rear of the frames D D are two vertical shafts, E E, passing through clamping-sockets F F, provided with screws *d d*. The upper ends of said shafts E E are reduced and threaded, and pass through lugs *e e*. By loosening the screws *d d* the shafts may be twisted or turned within the clamping-sockets, and also raised or lowered to any desired point. Set-nuts upon the reduced and threaded portion of the shafts E E, at the upper and lower sides of the lugs, together with the screws *d d* and clamping-sockets, hold the shafts firmly in their position when set.

The lower ends of the shafts E E are provided with transverse sockets G G and set-screws *f f*, in which sockets are the cutter-heads H H. The sockets and screws enable the cutters C C to be set and held at different angles to each other. As a means of further security the outer ends of the cutter-heads H H are coupled together by means of a bolt and nut, *g*, passing through smaller heads *h h* screwed into the ends of the cutter-heads H H.

By the various adjustments above described the cutters can not only be raised and lowered, but spread apart, twisted, and turned in the several sockets, so as to be set at almost every conceivable angle to adapt them to cutting different qualities of stock, and when so adjusted, rigidly secured together, and set at the desired point on the cross-bar.

Paper is presented to the cutters by feeding it into the machine over the bed or cylinder,

when each cutter cuts one side of a **V**, the pair taking out a portion of the stock, and leaving a **V**-shaped scoring in the blank of such a character that it may be formed into an angle with the scoring on the inside, thereby leaving the outside corner smooth.

Any number of pairs of cutters may be placed on the cross-bar to make as many scorings at one time as desired.

I claim as my invention—

1. The pair of rotary cutters **C C**, set in **V** form, with their peripheries adjacent to each other at bottom of the **V**, and acting together to make a single score, substantially as described.

2. The combination of the cutters **C C**, cutter-heads **H H**, and sockets **G G**, having the

same axial line as the heads **H H**, and provided with fastening mechanism, substantially as described, and for the purpose set forth.

3. The combination of cutters **C C**, cutter-heads **H H**, sockets **G G**, shafts **E E**, and clamping-sockets **F F**, substantially as described, and for the purpose set forth.

4. The combination of cutters **C C**, cutter-heads **H H**, sockets **G G**, shafts **E E**, clamping-sockets **F F**, frames **D D**, and adjusting-screw *a*, substantially as described, and for the purpose set forth.

JOSEPH P. BUCKINGHAM.

Witnesses:

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