

No. 625,958.

Patented May 30, 1899.

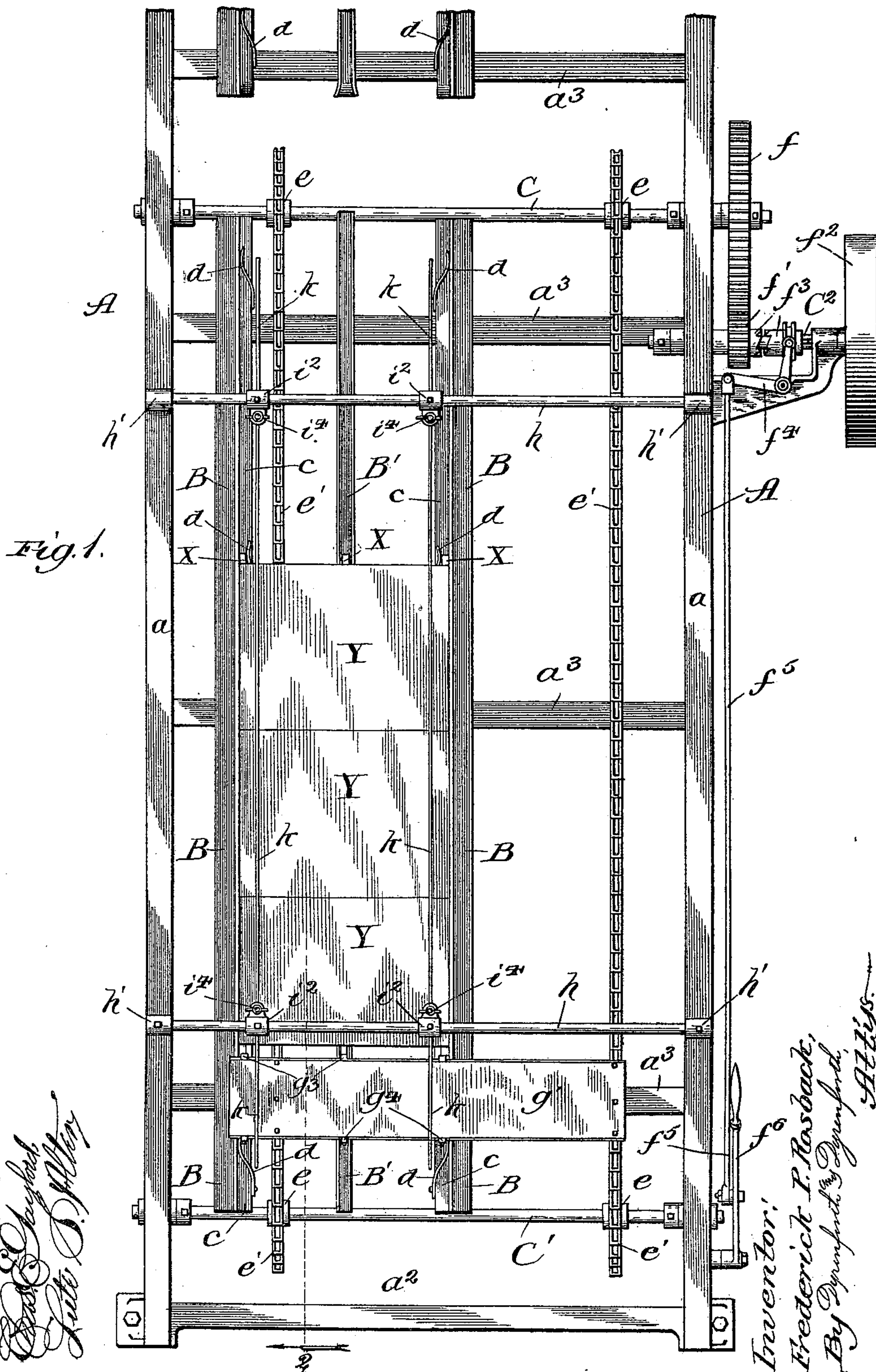
F. P. ROSBACK.

FEED DEVICE FOR BOX BLANK MATERIAL.

(Application filed Feb. 4, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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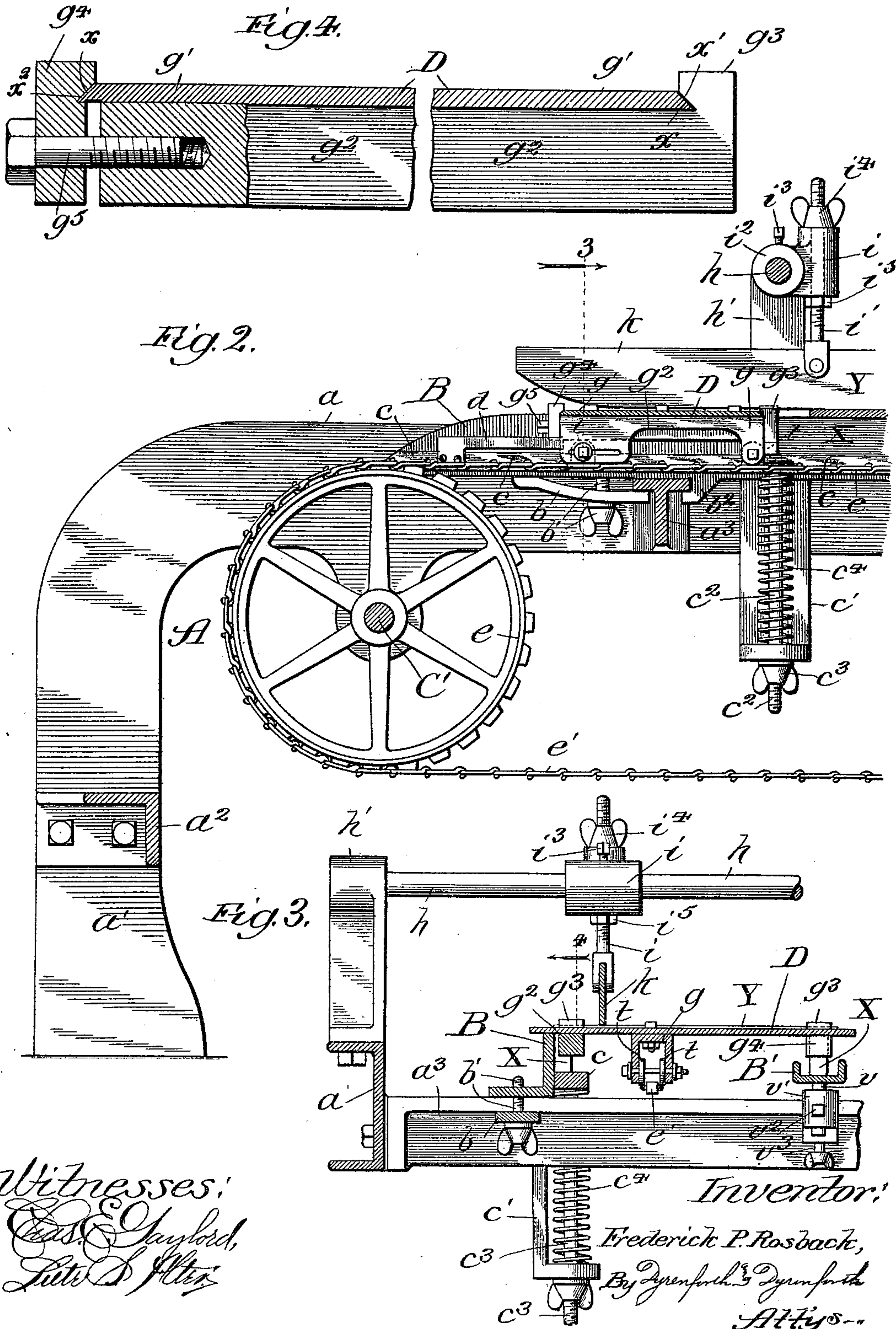
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2 Sheets—Sheet 2..



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# UNITED STATES PATENT OFFICE.

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## FEED DEVICE FOR BOX-BLANK MATERIAL.

SPECIFICATION forming part of Letters Patent No. 625,958, dated May 30, 1899.

Application filed February 4, 1899. Serial No. 704,478. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK P. ROSBACK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Feed Devices for Box-Blank Material, of which the following is a specification.

My invention relates to an improved feed device which I have devised more especially for use (though I do not limit my invention thereto) in the manufacture of boxes formed from blanks composed of sheet-wood or veneer, carrying on one side, at suitable intervals apart, parallel longitudinally-extending cleats and on the opposite side wires coincident with the cleats, the cleats, sheet, and wires being fastened together at intervals, as with staples driven through the sheet into the cleats and over the wires to straddle them.

The object of my invention is to provide an improved device for feeding the wooden sheets and cleats in their proper relative positions thereon and delivering them to a suitable machine for performing the stapling operation preparatory to the further operation of step-mitering the cleats, thereby to finish the blank and adapt it to be folded into box form.

Referring to the accompanying drawings, Figure 1 is a broken top plan view of my improved feed device; Fig. 2, a broken longitudinal section taken at the line 2 on Fig. 1, viewed in the direction of the arrow and enlarged; Fig. 3, a section taken at the line 3 on Fig. 2 and viewed in the direction of the arrow; and Fig. 4 a broken section taken at the line 4 on Fig. 3, viewed in the direction of the arrow and enlarged.

A is the frame, represented as composed of two parallel side bars  $a$ , terminating at their ends in supporting-legs  $a'$ , between which they are braced by cross-bars  $a^2$  and cross-girders  $a^3$ , shown as T-rails, extending at intervals between the side bars.

B B are the outer cleat-guides, formed, preferably, of angle-iron bars, and B' is an intermediate cleat-guide formed, preferably, of a channel-iron bar, the number of cleat-guides B' to be provided being in accordance with the number of intermediate cleats employed in the box-blank construction. Only

one of the intermediate cleat-guides is shown in the present device to adapt it for feeding box-blanks, provided with two outer cleats and one intermediate cleat. These cleat-guides are supported to extend parallel with the sides of the frame across the girders  $a^3$ , and they are relatively adjustable. The guides B B are each fastened to a girder where it crosses the same by a curved clamp-bar  $b$ , bearing at its opposite ends, respectively, against the base of a cleat-guide and the under side of the top of the adjacent girder and fastened by a thumb-screw  $b'$ , passing through it between its ends into the horizontal base of the guide B. To steady and position the guide B, a clip  $b^2$ , projecting from its base, engages with the opposite side of the head of the girder. By loosening the screws  $b'$  the guides B may be moved on their supports  $a^3$  to any desired distance apart, at which they are secured by tightening the screws. The intermediate cleat-guide B', the top of which is below the upper edges of the guides B, has stems  $v$  depending from its base at intervals coinciding with the girders where they carry sliding sockets  $v'$ , through which the stems pass vertically, being held therein by set-screws  $v^2$ , and the sockets are fastened by thumb-screws  $v^3$ , bearing against the under side of the top of the adjacent girder. On loosening the screws  $v^3$  the guide B' may be moved to any desired position relative to the outer guides B, where it is secured by tightening these screws.

At the inner side of each guide B it is supplemented by a bed-rail  $c$ , yieldingly supported from underneath to bear against the inner side of the guide and with its upper side normally on a level with the upper side of the base of the guide B'. The yielding support for each rail  $c$  is provided at intervals thereon and comprises a bracket  $c'$ , depending rigidly from the base of the guide B below the planes of the girders  $a^3$ , a stem  $c^2$  depending from the base of the bed-rail through the foot of said bracket and held by a nut  $c^3$ , screwed on the lower projecting end of the stem, and a spring  $c^4$ , confined around the stem between the bracket-foot and base of the rail. At intervals along the inner sides



of the rails *c* are fastened clamp-springs *d* to bear at their free ends normally against the inner sides of the guides B.

C and C' are rotary shafts journaled in the sides *a* of the frame, near its opposite ends, and carrying sprocket-wheels *e e* in pairs, about which extend endless chains *e' e'*, the whole forming an endless carrier. On the shaft C is a gear-wheel *f*, meshing with a pinion *f'* on a stub drive-shaft C<sup>2</sup>, suitably journaled, as shown in Fig. 1, and carrying a belt-pulley *f*<sup>2</sup> and a clutch *f*<sup>3</sup>, having its loose member engaged by one end of a bell-crank *f*<sup>4</sup>, the other end of which is connected with a rod *f*<sup>5</sup>, extending along the frame A to its front portion, where it is connected with an operating-handle *f*<sup>6</sup>, turning of which in one or the other direction ships or unships the clutch. The pulley *f*<sup>2</sup> is belted to a line-shaft or the like and rotates constantly.

The more important feature of my improvement consists in a cleat-pusher D, carried by the endless chains *e'* to advance the cleats, with the sheet-wood material upon them, uniformly and positively to the delivery end of the feed device. This cleat-pusher, as shown, involves the following-described construction: On each chain *e'* is fastened, as shown of one of the chains, to ears *tt* thereon, a yoke-shaped channel-bar *g*, and on the outer edges of these bars is fastened, near their ends, to extend between the chains and bear on the guides B, a plate *g'*, beveled along its forward and rear edges, as represented at *xx* in Fig. 4. At intervals across the base of the plate *g'* extend push-bars *g*<sup>2</sup>, in number corresponding with the number of cleat-guides, with which they should coincide. Each push-bar terminates at its forward end in an upward-projecting head *g*<sup>3</sup>, containing at its angle of junction with the body of the bar a beveled groove *x'* to receive and confine the correspondingly-beveled forward edge of the plate *g'*. The rear beveled edge of the plate fits into correspondingly-beveled grooves *x*<sup>2</sup>, provided in bearings *g*<sup>4</sup>, one of which is provided at the rear end of each push-bar and through which a bolt *g*<sup>5</sup> is passed into the respective bar *g*<sup>2</sup>, as shown in Fig. 4. Thus the push-bars are confined or clamped between the heads *g*<sup>3</sup> and bearings *g*<sup>4</sup> upon the base of the plate *g'*, and they may be readily moved to adjust them into respective desired coincidence with the cleat-guides B B' upon loosening the bolts *g*<sup>5</sup>.

Means are also provided to hold down against the cleats and prevent buckling or disarrangement of the sheet material imposed thereon, as hereinafter described. The means referred to are shown as involving the following-described construction: In bearings *h' h'*, fastened in pairs to the side bars *a* of the frame A, at opposite sides of its transverse center, are supported rigidly rods *h h*. On these rods are slidingly supported at their sleeve portions *i*<sup>2</sup> and fastened in their adjusted positions by set-screws *i*<sup>3</sup>, passing

through the sleeve portions, vertical socket-pieces *i*, through which depend threaded stems *i'*, shown sustained by wing-nuts *i*<sup>4</sup> on their upper projecting ends and held to resist upward rise, preferably, by nuts *i*<sup>5</sup> on their lower projecting portions. Each pair of the stems *i'* carries a presser-bar *k*, in the form of a thin metal bar having its end portions rounded at their lower edges, as shown in Fig. 2, the bar extending parallel with and adjacent to a cleat-guide B.

The guides B B' may terminate just beyond the shaft C or may there be only interrupted, as represented in Fig. 1, to permit the passage of the pusher device toward its return movement in the travel of the endless chains.

The operation is as follows: With the adjustable parts arranged according to requirement, cleats X are inserted endwise from the end of the feed device to which the shaft C' is adjacent upon the bed-rails *c*, between the clamping-springs *d* and adjacent sides of the guides B, and a cleat is similarly inserted into the intermediate channel-guide B', and sheets Y of veneer are imposed upon the cleats with their edges confined between the vertical sides of the outer guides B. The cleats and sheets are placed in position, as described, while the machine is at rest. In the inserted positions of the cleats their rear ends are in the paths of the pusher-bars *g*<sup>2</sup> of the cleat-pusher D, whereby when the machine is started, by throwing in the clutch *f*<sup>3</sup> to cause the shaft C to be turned by the constantly-rotating pulley *f*<sup>2</sup> the travel of the chains carries the cleat-pusher against the cleats and advances them to the delivery end of the feed device and with them the sheets Y, abutting one against the other. The sheets are held by the presser-bars *k* in sufficient frictional contact with the cleats, owing to the extent of the rough contacting-surfaces of the cleats and sheets, to be carried by the movement of the cleats, this frictional engagement not being lessened by the contact with the sheets of the bearing-bars *k*, because their lower contact edges are very narrow and are or become by use polished to a degree which avoids any friction resistance from them against the sheets.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a feed device for box-blank material, the combination with a frame and an endless carrier thereon, of cleat-guides supported on the frame and relatively adjustable thereon, and a cleat-pusher comprising a plate fastened to the carrier to travel with it and cleat push-bars supported on said plate and laterally adjustable thereon to coincide with said guides, substantially as described.

2. In a feed device for box-blank material, the combination with a frame and an endless carrier thereon, of outer and intermediate cleat-guides supported on the frame and relatively adjustable thereon, said outer guides having bed-rails yieldingly supported to ex-



tend along their inner sides, and a cleat-pusher comprising a plate fastened to the carrier to travel with it and cleat push-bars supported on said plate and laterally adjustable thereon to coincide with said guides, substantially as described.

3. In a feed device for box-blank material, the combination with a frame and an endless carrier thereon, of outer and intermediate cleat-guides supported on the frame and relatively adjustable thereon, said outer guides having bed-rails yieldingly supported to extend along their inner sides and carrying at intervals cleat-clampingsprings, and a cleat-pusher comprising a plate fastened to the carrier to travel with it and cleat push-bars supported on said plate and laterally adjustable thereon to coincide with said guides, substantially as described.

4. In a feed device for box-blank material, the combination with a frame and an endless carrier thereon, of cleat-guides supported on the frame and relatively adjustable thereon; a cleat-pusher comprising a plate fastened to the carrier to travel with it and cleat push-bars supported on said plate and laterally adjustable thereon to coincide with cleats on said guides, and a presser-bar device supported to bear downward against sheet material imposed on said cleats, substantially as described.

5. In a feed device for box-blank material, the combination with a frame and an endless carrier thereon, of a cleat-guide supported on the frame, and a cleat-pusher comprising a plate fastened to the carrier to travel with it, a push-bar extending across the base of said plate and having a head at one end provided with a groove in which the plate is confined

at its forward edge, and a bearing secured to the opposite end of said push-bar and containing a groove in which said plate is confined at its opposite edge, substantially as described.

6. In a feed device for box-blank material, the combination with a frame and an endless carrier thereon, of cleat-guides supported on the frame, and a cleat-pusher comprising a plate fastened to the carrier to travel with it and having beveled forward and rear edges, push-bars extending at intervals across the base of said plate and having heads at their forward ends containing grooves confining the plate at its forward edge, and bearings secured to the rear ends of said push-bars and containing grooves confining said plate at its rear edge, substantially as described.

7. In a feed device for box-blank material, the combination with a frame and an endless carrier thereon, of outer and intermediate cleat-guides supported on the frame, said outer guides having bed-rails yieldingly supported to extend along their inner sides, a cleat-pusher comprising a plate fastened to the carrier to travel with it, cleat push-bars extending at intervals across the base of said plate and having heads at their forward ends containing grooves confining the plate at its forward edge, and bearings secured to the rear ends of said push-bars and containing grooves confining said plate at its rear edge, and presser-bar devices supported to bear downward against sheet material imposed on said cleats, substantially as described.

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In presence of—

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