

(No Model.)

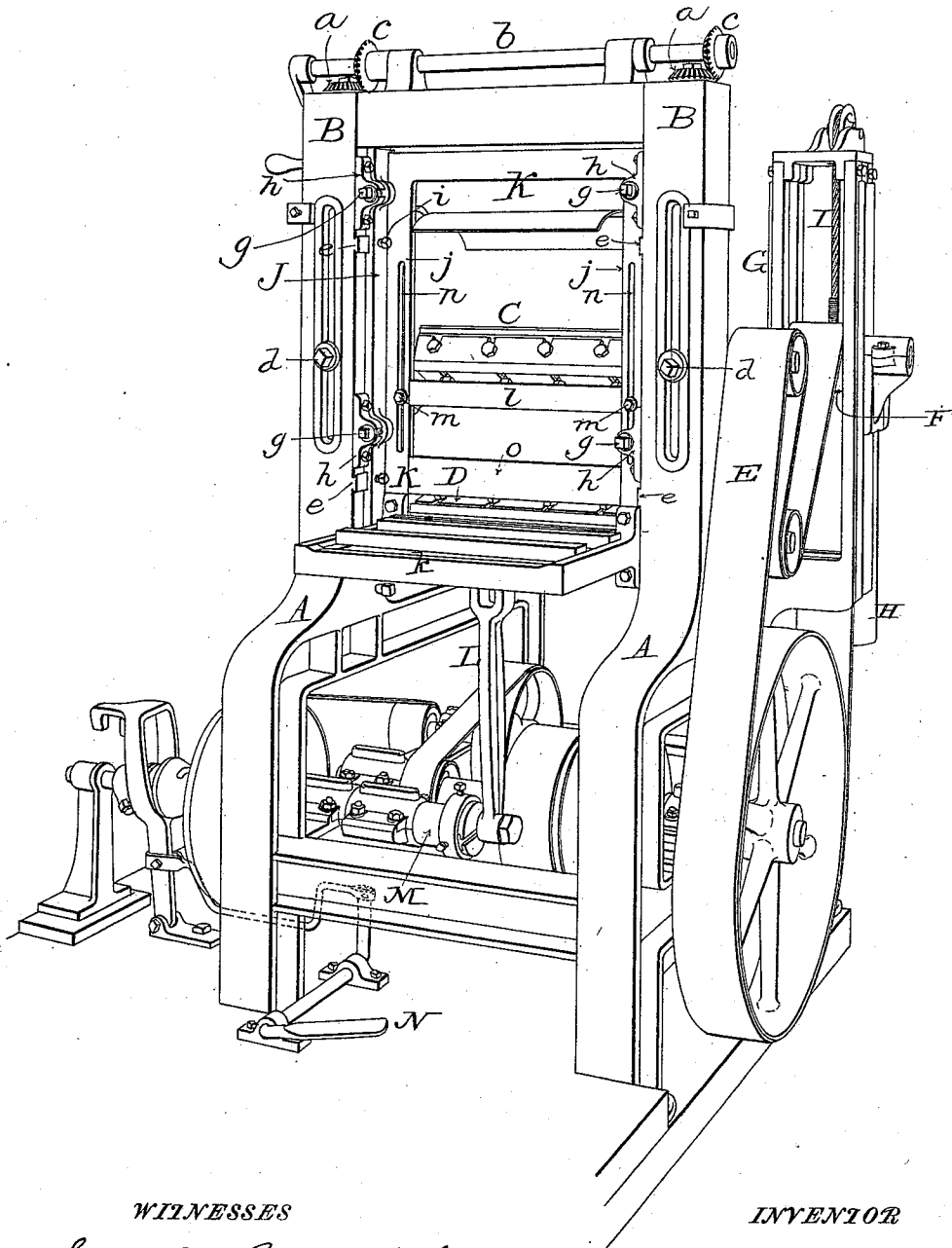
2 Sheets—Sheet 1.

R. SCHLEICHER.
BOX TRIMMING MACHINE.

No. 532,915.

Patented Jan. 22, 1895.

Fig. 1.



WITNESSES

Sidney P. Hollingsworth
Chas B. Birdine

INVENTOR

ROBERT SCHLEICHER

by his Attorneys
Wodges Lane,

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

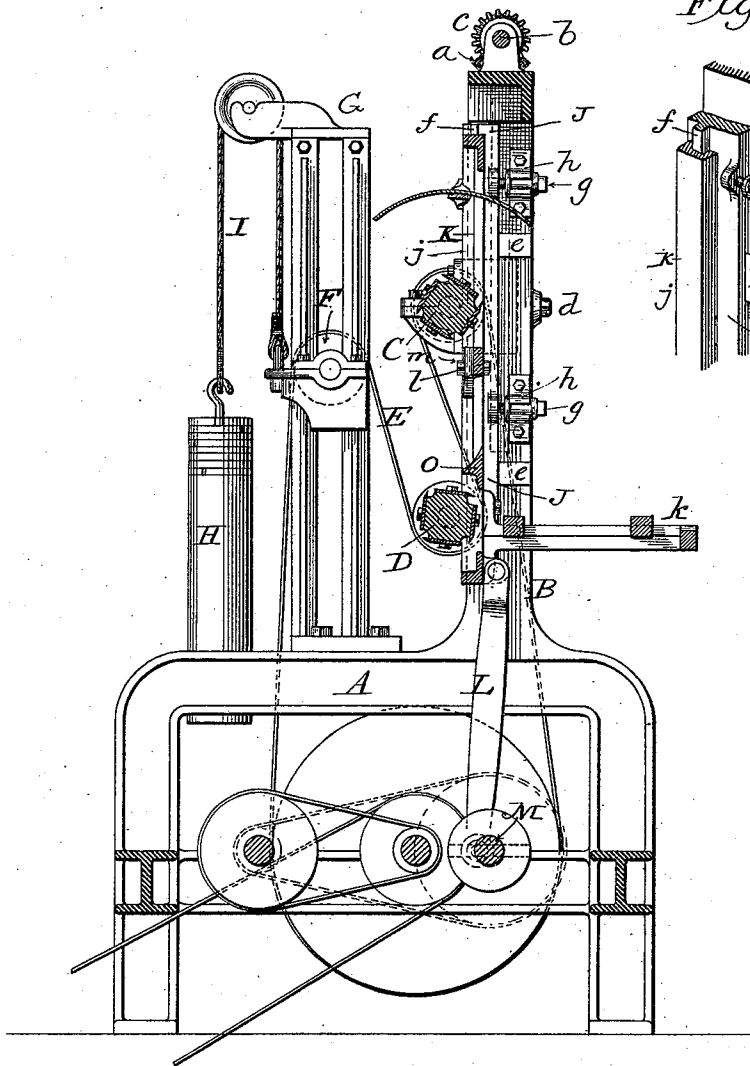
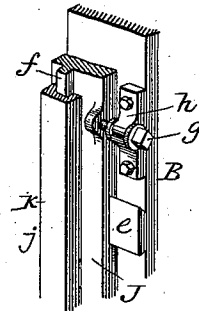


Fig. 3



Witnesses,

Shirley P. Hollingsworth
 Celo, Burdine

Inventor;

ROBERT SCHLEICHER
by his attorneys,
Wodgett Lons,

UNITED STATES PATENT OFFICE.

ROBERT SCHLEICHER, OF LOUISVILLE, KENTUCKY.

BOX-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 532,915, dated January 22, 1895.

Application filed September 28, 1894. Serial No. 524,400. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SCHLEICHER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Box-Trimming Machines, of which the following is a specification.

My invention relates to machines employed in the manufacture of boxes, and has reference more particularly to a machine for cutting off or dressing the projecting tenons at the corners of the box, it being usual in manufacturing boxes to allow the tenons to project beyond the sides of the box at the corners.

In the drawings,—Figure 1 is a perspective view of my improved machine; Fig. 2, a vertical sectional view from front to rear; and Fig. 3, a perspective sectional view of the adjusting guides for the sash.

The main frame is susceptible of considerable variation in form, but that shown in the drawings is found to be well adapted to the purposes in view. This frame comprises the side pieces A A each of which has an upright hollow post B, the said side frames or pieces A A being suitably braced and connected to form a rigid and unyielding frame.

Journaled in suitable boxes on the uprights or posts B B are the rotary cutters C and D; the upper cutter C being adjustable upon or relatively to the posts, while the lower cutter D is carried in bearings which are fixed relatively to the main frame. The upper cutter is adjusted by means of screws (not shown) engaging the boxes or bearings, and having at their upper ends the bevel gears *a* which are rotated in unison by means of a cross shaft *b* carrying similar gears *c*, as is usual in many classes of machinery; the boxes and cutter being held in their adjusted positions by means of bolts *d* passing through slots in the uprights or posts.

The cutters C and D are driven by a single belt E, and in order to compensate for the adjustment of the cutter C, the belt is passed over a pulley F, mounted in a frame or stand G, where there is a weight H, which, acting through the connection I and pulley F, keeps the belt tight. Motion is imparted to the belt

E by means of the gearing shown. This, however, needs no explanation here, as it is susceptible of much variation, and forms no part of my invention.

On the inner faces of the posts B B are horizontal ways or projections *e*, upon which fit the upright bars J, said bars being provided with transverse grooves on one face to receive the ways *e*, and with a vertical rib *f* on the opposite face to fit into and guide the vertically reciprocating frame carrying the box.

Screws *g* swiveled in lugs *h* on the posts B B, engage the bars J and move them and the frame carried thereby, toward and from the cutters upon the ways or projections *e*; the bars being held against possible accidental movement by means of set screws *i*.

The vertically reciprocating frame or table K upon which the box is supported comprises the upright bars *j j*,—grooved to receive the rib *f* of bars J,—and connected at top and bottom; the horizontally projecting table or shelf *k* at the lower end of the bars *j j*; an adjustable and removable cross-bar *l*, the latter being provided with clamping bolts *m m* which pass through slots *n* in the bars *j* and hold the cross bar in its adjusted positions; and finally, a fixed cross bar *o*.

Frame K is connected by pitman L with a crank shaft M, whereby the frame is reciprocated periodically, once at each complete revolution of the shaft. A lever N under the control of the operator, serves to throw a clutch into and out of action, so that after the frame has been carried up and down, the shaft is disconnected and remains at rest.

When a box is placed upon the frame K it is pushed inward against the cross bars *l* and *o*, but as the upper cutter is above the projecting tenons at the upper corner, and the lower cutter is below the tenons at the lower corner, the cutters cannot cut off the corners. If, however, the frame K be raised, the upper cutter will act upon and cut off the tenons at the upper corner of the box, the cutter turning or cutting upwardly. The frame on returning, or moving downward, brings the tenons at the lower corner of the box against the lower cutter which turns or cuts downwardly. The upper cross bar *l* will be adjusted to correspond with the size of box; but where very

small boxes are being trimmed, the cutters will be brought so close together as to require the removal of said cross bar.

The machine is found to work well in practice, for at each throw of the reciprocating table the tenons projecting beyond the side are dressed off at the two corners almost simultaneously and in a very short time.

The cross bar *o*, or the two cross bars *l* and *o*, form a stop or abutment for the box, which latter is prevented by said bar or bars from projecting inward too far toward the cutters; and by adjusting the guides *J* of the frame *K*, the machine is adapted to making cuts of different depths, for in some boxes the projecting ends of the tenons are longer than in others. By these means the finishing of the corners flush with the sides is insured.

The machine might be arranged in a horizontal instead of a vertical position, in which case the cutters would be in the same horizontal plane.

What I claim is—

1. In a box trimming machine, the combination with a main frame provided with a pair of rotating cutters arranged one above the other; of a reciprocating box-supporting frame at one side of both cutters and movable past the latter.

2. In a box trimming machine, the combination with a main frame; of a pair of rotating cutters; a table arranged in such relation to the cutters that a box supported upon said table shall have its corners projecting inward but between the respective cutters, and means for moving the table upward and downward to present the box corners to the cutters.

3. In a box-trimming machine, the combination with a main frame; of the rotating cutters; a reciprocating frame or sash movable past the latter; guide bars *J J* carried by the

main frame and supporting the sliding sash at one side of both cutters; and means for adjusting said bars toward and from the cutters, whereby the boxes to be trimmed may be caused to project to a greater or less extent inward between the cutters.

4. In a box trimming machine, the combination with a main frame; of the cutters mounted therein; and a reciprocating frame provided with cross bars *o* and *l*, the latter being adjustable and removable.

5. In a box trimming machine, the combination with a main frame, of a pair of rotating cutters mounted therein, and a reciprocating frame moving substantially parallel to the common plane of the axes of the cutters, substantially as shown and described.

6. In a box trimming machine, the combination with a main frame; of two cutters; means for rotating the cutters in opposite directions; and a reciprocating frame at the same side of both cutters and movable past the latter, whereby the cutters are caused to act upward and downward upon the two corners at one side of the box.

7. In a box trimming machine, the combination with a main frame provided with a pair of rotating cutters; of a table arranged at one side of both cutters and in such relation thereof that a box supported upon said table shall have its corners projecting inward between the respective cutters; and means for moving the table to present the box corners to the cutters.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ROBERT SCHLEICHER.

Witnesses:

C. C. MENGEL, Jr.,

ARTHUR L. MUSSELMAN.