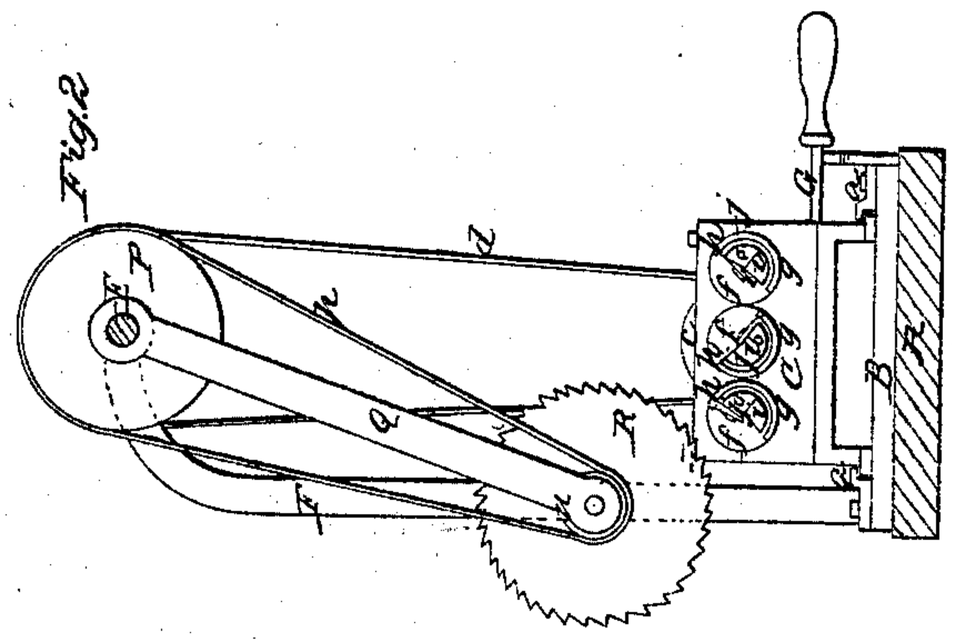
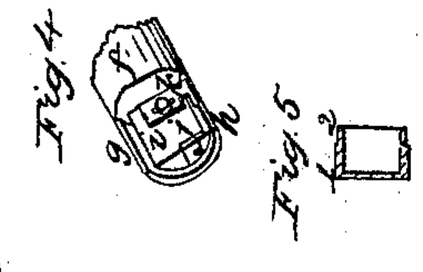
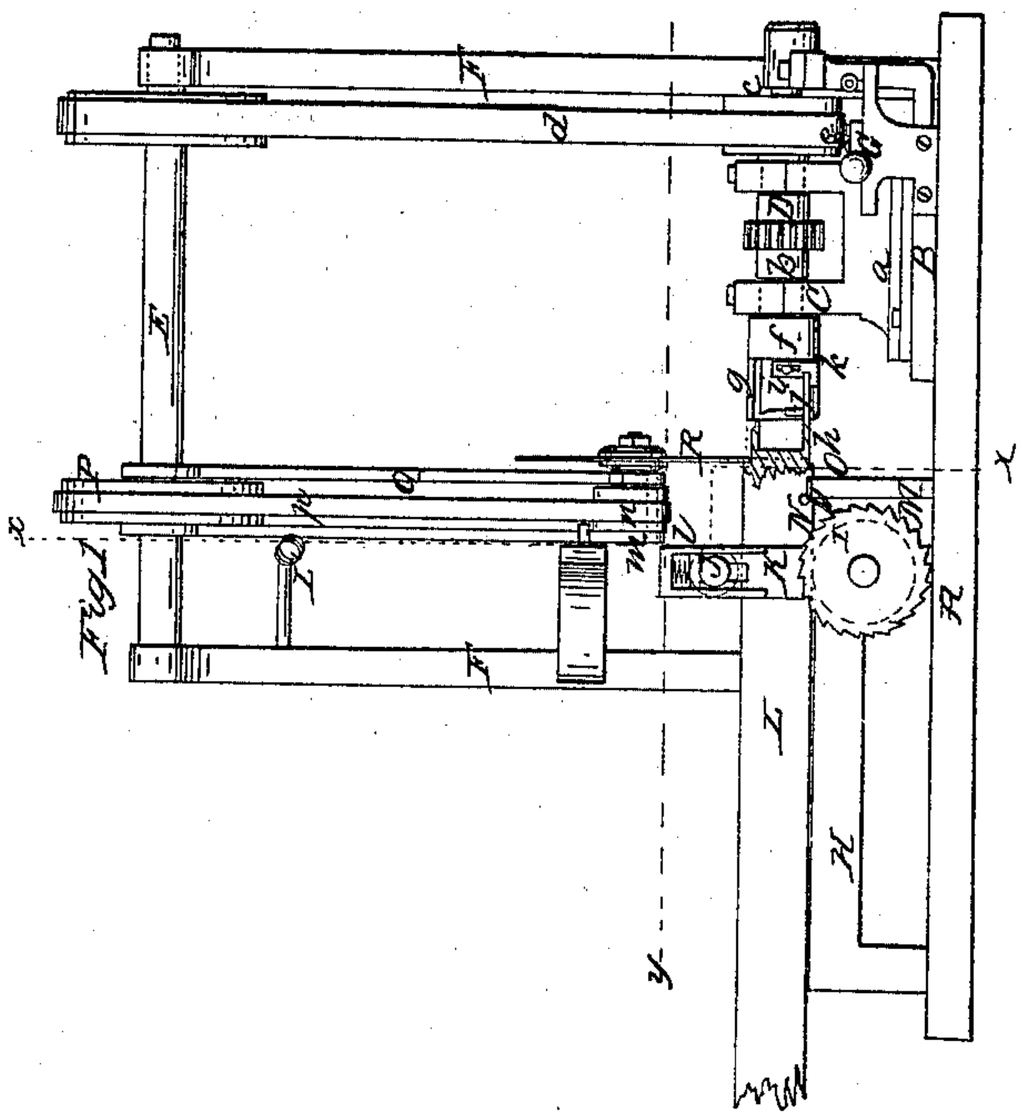
Smith, Hanson & Richardson

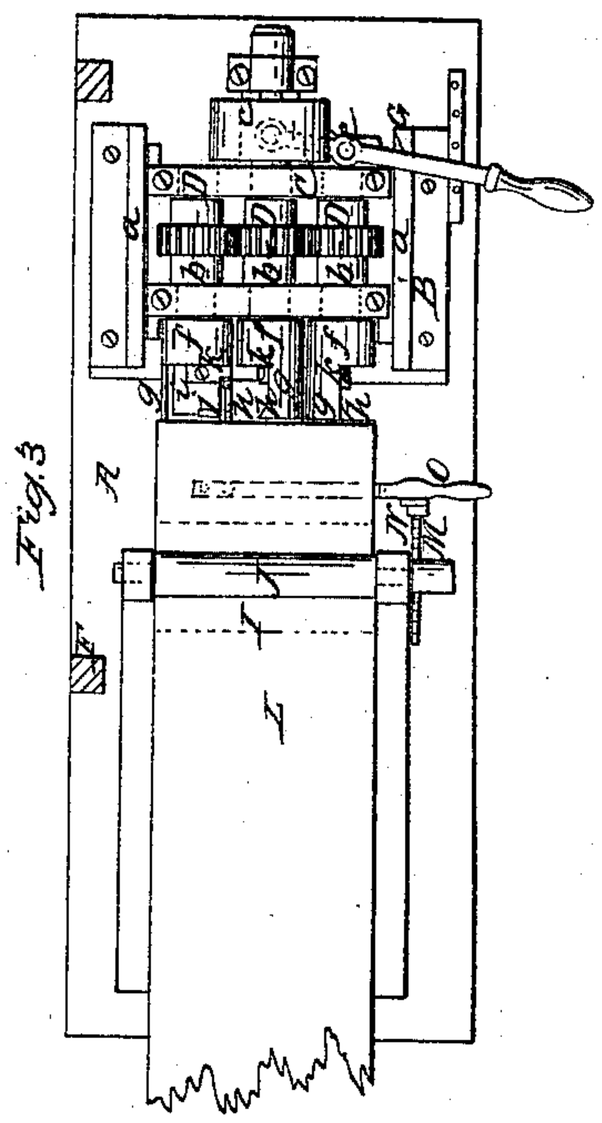
Making Wooden Boxes,

No. 17,001. Patented Apr. 7, 1857.









UNITED STATES PATENT OFFICE.

HORACE S. SMITH, ELIJAH HANSON, AND M. S. RICHARDSON, OF RUTLAND, VERMONT.

MACHINE FOR MANUFACTURING CYLINDRICAL BOXES.

Specification of Letters Patent No. 17,001, dated April 7, 1857.

To all whom it may concern:

Be it known that we, HORACE S. SMITH, ELIJAH HANSON, and M. S. RICHARDSON, of Rutland, in the county of Rutland and State of Vermont, have invented a new and Improved Machine for Making Cylindrical Wooden Boxes; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side view of our improvement. Fig. 2 is a transverse section of ditto; (*x*) (*x*) Fig. 1, showing the plane of section. Fig. 3 is a horizontal section of ditto; (*y*) (*y*) Fig. 1, showing the plane of section. Fig. 4 is a detached perspective view of the cutters. Fig. 5, is a detached longitudinal section of a box.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists in the employment or use of cutters and a circular saw, arranged as will be hereinafter shown and described, whereby the boxes are cut direct from the bolt or plank, and sawed off from the bolt or plank when finished, thereby facilitating, to a great degree, the construction of cylindrical wooden boxes.

To enable those skilled in the art to fully understand and construct our invention we will proceed to describe it.

A represents a horizontal bed, on one end of which a metal plate B is secured, said plate having a guide (*a*) at each side between which a head C is fitted and works. In the head C, three spindles D, D, D, are placed, side by side and in the same plane. The spindles are connected by toothed wheels (*b*), the center spindle having a pulley (*c*) on its outer end, around which pulley a bolt (*d*) from a driving shaft E passes, the driving shaft being fitted in bearings at the upper ends of uprights F, F, which are attached to the bed A. To the outer part of the head C, a lever G is attached, this lever works on a fulcrum pin (*e*) and is used for moving the head C toward, and from, the bolt or plank.

To the inner ends of the spindles D, D, D, hubs or bosses (*f*) are attached, one to each spindle, and to the outer end of each hub, a semicylindrical projection (*g*) is formed, the projections (*g*) being shells and having a cutting edge (*h*) at one end. These cutting edges are more particularly shown in Fig. 3. Within the semi-cylindrical projections (*g*) there are placed solid semi-cylindrical projections (*i*). A space is allowed between the shell projections (*g*) and the solid projections (*i*), and the projections (*i*) have each a cutter (*j*) attached to their ends at one side of their centers said cutters being adjustable. To the inner parts of the solid semi-cylindrical projections (*i*) adjustable cutters (*k*) are attached, the use of which will be presently shown. All of the cutters are plainly shown in Fig. 4.

H represents a frame which is placed on the bed A, and I is a roller which is fitted transversely in the inner end of said frame.

J is a roller, the bearings of which are fitted in slotted uprights K at the inner end of the frame.

L is the bolt or plank from which the boxes are cut. This bolt or plank is placed between the rollers I, J. The upper roller J being pressed down upon the bolt or plank by springs (*l*) which are placed in the slotted uprights above the bearings of the roller J. To one end of the shaft of the lower roller I, a ratchet wheel M is attached, and a pawl N works into said ratchet, the pawl being attached to a treadle O, on the bed A. On the driving shaft E a pulley P is placed, and a pendent or swinging bar Q is placed on said shaft, the pulley P being between the ends of the side pieces or plates through which the shaft passes. To the lower end of the bar Q a circular saw R is secured on a shaft (*m*) which is fitted in the lower end of the bar Q. The shaft (*m*) has a pulley (*n*) on it around which, and the pulley P on the shaft E, a belt (*p*) passes.

The operation is as follows. The bolt or plank L is placed between the rollers I, J, and its inner end placed against the cutters (*h*) (*j*), the head C having been previously moved back to its farthest point. Motion is then given the driving shaft E in any proper manner and as the spindles D rotate, the head C is pressed toward the bolt or plank L. The cutters (*h*) on the semi-cylindrical shells (*g*) cut the outer sides or exterior surfaces of the boxes, and the cutters (*j*) on the solid inner semi-cylindrical projections cut out the interior of the boxes, and the cutters (*k*) form the rim at the end of the box to receive the covers. These rims being formed by so setting the cutters (*k*) that they will reduce the diameter of

the cases at their outer ends, see Fig. 5, in which (1) represents the body of the box and (2) the ledge to receive the cover.

When the ends of the bosses (*f*) come in contact with the end of the bolt or plank, the boxes are finished, and the head C is moved out from the bolt or plank, and the bar Q is drawn by hand toward the attendant, the path of the saw being across the end of the bolt or plank on which the boxes are cut. The boxes being consequently sawed off from the bolt or plank. The bolt or plank is again fed up to the cutters by operating the treadle O, and the operation repeated.

The above machine has been practically tested and operates well, and boxes may be cut from waste stuff which does not require to be especially prepared for it. Rough boards or blocks may be used. Any proper number of spindles D, may be used so that three or more boxes may be cut at the same time.

We would remark that the bar Q is kept back from the bolt L by a spring L′ attached to the bar Q and one of the uprights F.

We are aware that boxes have been formed by cutters arranged in previous ways, but we are not aware that cutters have been so arranged as to cut the external and internal surfaces of boxes and also the rim to receive the cover, at the same time.

We therefore do not claim the employment or use of rotating cutters for cutting boxes, irrespective of the arrangement herein shown, but

What we do claim as new, and desire to secure by Letters-Patent, is:

1. The cutters (*h*), attached to or formed on the semi-cylindrical shell (*g*); the cutters (*j*) attached to the ends of the solid semi-cylindrical projection (*i*); and the cutter (*k*) attached to the inner end of the semi-cylindrical projection (*i*); the whole being arranged as herein described for the purpose set forth.

2. We further claim, in combination with the cutters (*h*) (*i*) (*k*) arranged as shown, the saw R attached to the swinging bar Q, as described.

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ELIJAH HANSON.
M. S. RICHARDSON.

Witnesses:
CHAS. SENSLEY,
CHAS. B. MANN.