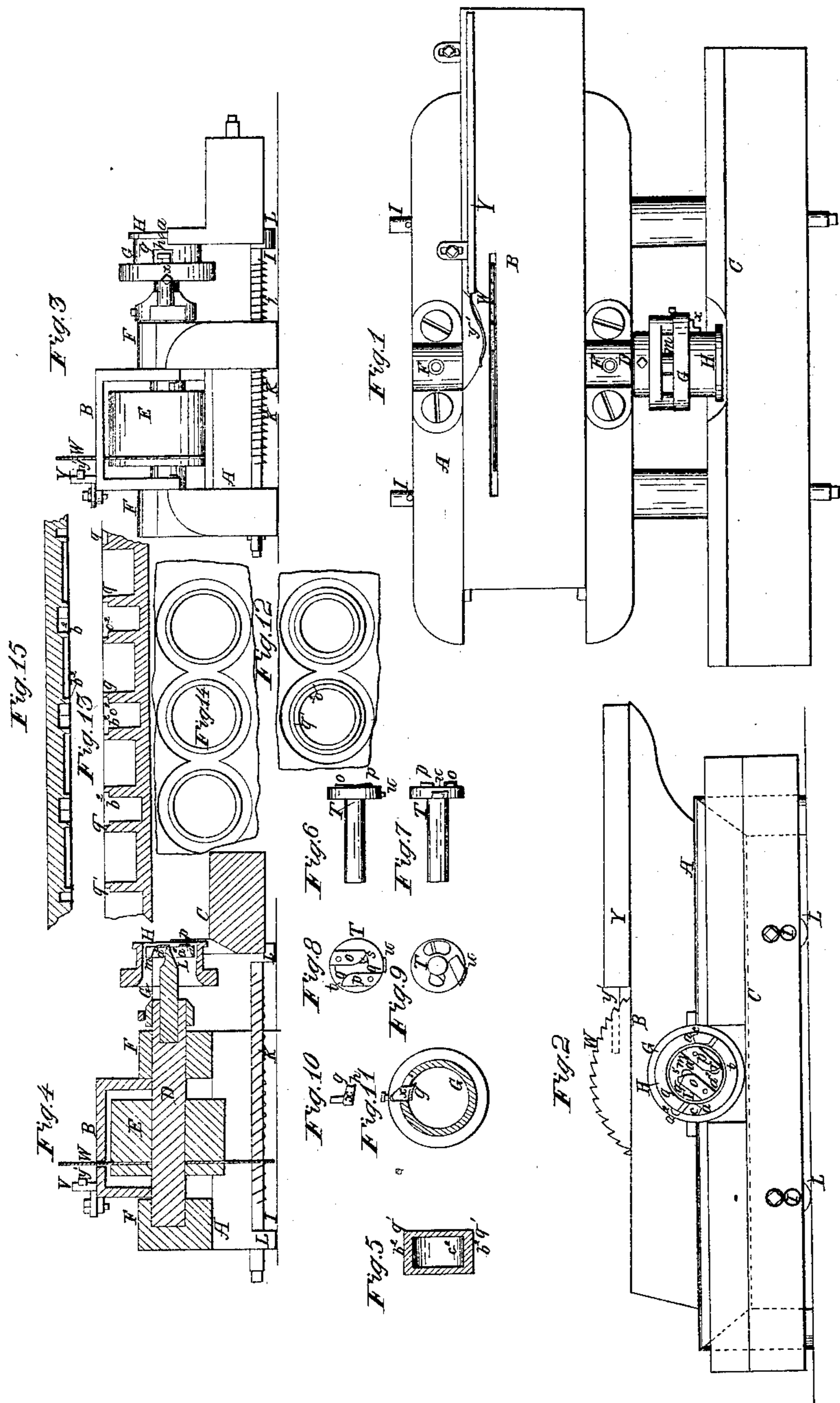


H. Mellish,
Making Wooden Boxes.
No 17,249. *Patented May 5, 1857.*



UNITED STATES PATENT OFFICE.

HENRY MELLISH, OF WALPOLE, NEW HAMPSHIRE, ASSIGNOR TO CHARLES POPE, OF
BROOKLINE, MASSACHUSETTS.

CUTTER FOR TURNING CYLINDRICAL WOODEN BOXES.

Specification of Letters Patent No. 17,249, dated May 5, 1857.

To all whom it may concern:

Be it known that I, HENRY MELLISH, of Walpole, in the county of Cheshire and State of New Hampshire, have invented a
5 new and useful or Improved Machine for Making Wooden Boxes, the following specification and accompanying drawings fully setting forth the nature and operation of said machine.

10 Figure 1, of the drawings, represents a top view; Fig. 2, a front elevation; Fig. 3, an end elevation, and Fig. 4, a vertical cross section of my machine. Fig. 5, denotes a
15 cross section of a box made from my machine. Fig. 6, is a top view, Fig. 7, a side view, Fig. 8, a front view, and Fig. 9, a rear view of the tool that cuts out the box cover. Fig. 10, is a top view of the cutter α ,
20 that cuts out the rim of the box, for the cover to fit upon. Fig. 11, is a cross section of the cylinder having the cutter α , applied to it. Fig. 12, is a view of a box of wood after the cutting tools have operated upon it,
25 and before the boxes have been sawed off. Fig. 13, is a cross section of said piece of wood. Figs. 14 and 15, show similar views of the wood operated upon to produce the covers.

A, in the drawings, denotes the frame of
30 the machine. B, the saw bench, and C, the feeding table. Across the frame A, a shaft D, (having a driving pulley E,) extends, said shaft rotating in suitable bearings F, F,
35 and carrying the tools which operate to cut out from pieces of wood, the boxes and their covers. To one end of this shaft, a tubular cylinder G, is attached, said cylinder extending out to the feeding bench, and bearing a
40 cutter ring H, on opposite sides of which are two or any other suitable number of plane cutters, a, a . The front or cutting edges of these cutters are adjusted to the front surface of the ring, so as to meet the surface
45 of the wood when it is placed upon the feeding table B, and pressed up against the ring. These two cutter planes are for the purpose of cutting away the wood next adjacent to the circumference of the box cylinder, and thereby form the outer cylindrical surface
50 of said box, and while their front edges cut away the ring of wood, a cutting edge, c , at right angles thereto, planes over and smooths the circumference of the box. This cutting tool H, forms the outside of the

cover, as well as that of the box; they being
55 of the same diameter, and the wood in both cases is "fed" up to the ring the proper distance, by pressing the feeding table (with the wood upon it,) up to the action of the
60 cutters, the table for this purpose being placed on horizontal shafts, I, I, running through bearings L, L, and having suitable springs, K, K, for keeping it away from the cutters when at rest.

To make the ledge or rim q' on the top of
65 the box, (for the cover to fit and rest upon,) the cutting edges of a plane knife α , extend through the side of the tubular cylinder G, and so as to project down into the horizontal
70 path of the cylinder of wood, a sufficient distance, said knife having a vertical cutting edge, h , to cut away the wood to the proper depth, and a horizontal cutting edge
75 g , to follow, and plane or smooth the rim.

To reduce the wood, to form the interior
75 surface of the box, I employ a cutting tool m , fastened to the end of the main shaft D. This cutting tool is formed of two cutters, or knives, o, p , the knife o , cutting away the wood to form the central part of the
80 interior of the box, and the knife p , that portion to form the adjacent outer portion of the same. They are screwed or fastened to a frame z , having discharge throats, a^2, a^2 ,
85 for discharging the chips, said chips passing through and dropping out at the rear of the tubular cylinder. The knives are placed in rear of the front surface of the ring, enough to leave a portion of the wood
90 to form the bottom of the box, as will be readily understood. The front cutting edges
95 q, r , of the knives, cut into and parallel with the grain of the wood, two other cutting edges, s, t , at right angles thereto, cutting across the grain, and the edge, t , planing or smoothing the interior, cylindrical
100 surface of the box.

The cutting tool T, shown in Figs. 7, 8, 9,
6, is for the purpose of cutting the wood to
105 form the interior of the box cover, and is similar to the tool m , having similar knives, o, p , with cutting edges q, r , and s, t , &c. It is however made of a diameter enough larger than that of the tool m , to correspond to the
110 difference between the diameters of the interior of the cover, and box, and it has a knife or cutting edge u , projecting from its circumference, to plane over, and gage the

front edge b^2 , of the box cover so as to make it perfectly smooth and fitted to the seat c^2 of the box.

I would remark that any suitable number of shafts and cutting tools may be arranged along upon the frame A, (made of corresponding length) so as to form in a piece of wood, a number of boxes at one operation, I generally using a set of about six in number.

After the wood has been operated upon to form in it the boxes or covers as described the piece of wood with the unsevered boxes or covers attached, as seen in Figs. 13, 14, 15, 12, is placed upon the saw bench B, with the front of the covers or boxes against an adjustable guide bar Y, and fed to the action of a circular saw W. To keep each box up against the saw, until it is entirely severed from the bar of wood, and so as to prevent its splitting or breaking off with portions of wood attached, a spring Y', extends out from the guide bar, and keeps each box, up close against the saw, until entirely severed, when it drops down from the machine.

The teeth of the saw I construct or file so as to cut a smooth or finished surface on the box, so that as each box drops from the action of the saw, it is finished throughout and ready for use.

I would remark that in machines as here-

tofore constructed for making boxes, the boxes have been cut out crosswise of the grain, but my machine cuts the box, with, or nearly parallel to, the grain, thereby making a smooth finished box; whereas the boxes cut crosswise of the grain are always rough, and unfinished, and they cannot be cut from the wood to so much advantage, either as regards cost, saving of material, or rapidity of production.

By reference to the drawings, it will be seen that I construct the cutters above described with their edges, at an angle with the plane of their movement, or so that each cutter cuts with a drawing or knife stroke, they thereby working much easier with the grain of the wood, than if they cut perpendicularly with it, or in a plane parallel to the plane of movement of the cutting edge.

I claim—

The cutting tools H, x , m , t , made with cutters or cutting edges, to operate substantially as above specified, to cut and plane the box or box cover.

In testimony whereof I have hereto set my signature this eighteenth day of February, A. D. 1857.

HENRY MELLISH.

Witnesses:

LOUISA M. MEAD,
WALTON MEAD.