

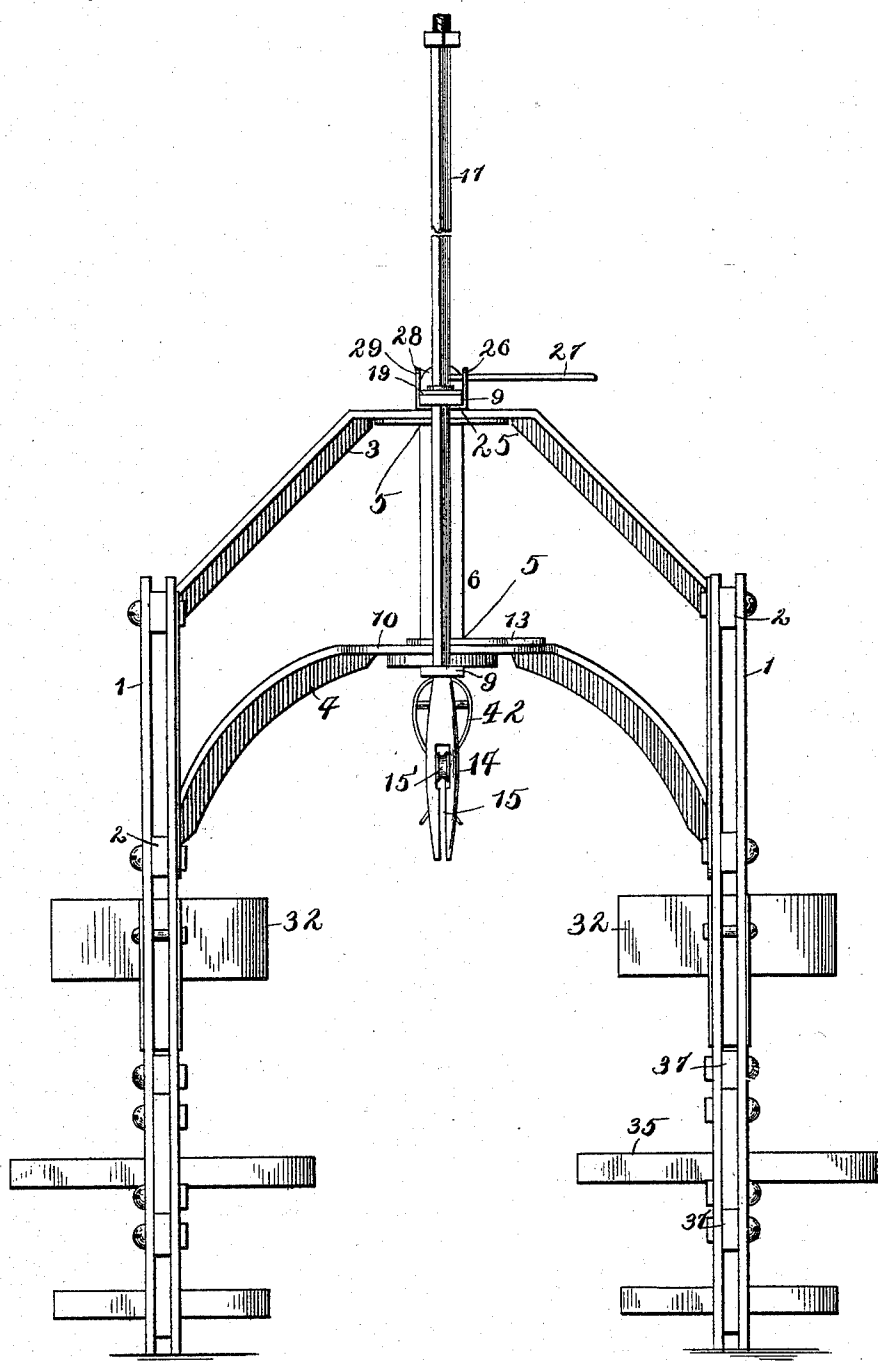
(No Model.)

2 Sheets—Sheet 1.

J. LOCKE.
MITERING MACHINE.

No. 527,434.

Patented Oct. 16, 1894.



Witnesses.

C. S. Frye
J. S. Myers

J. Locke

James Locke
Inventor

By Napkin & Atkins

Attorneys.

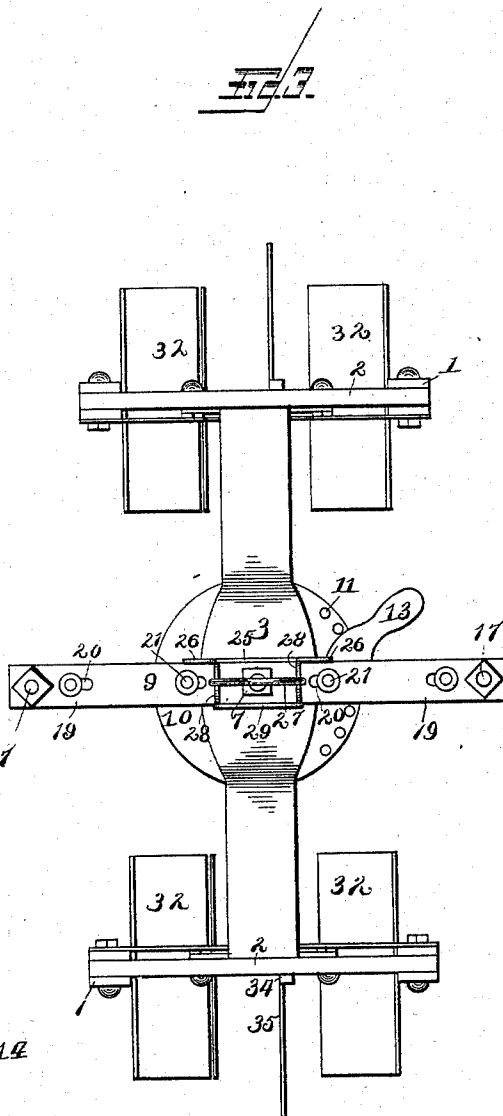
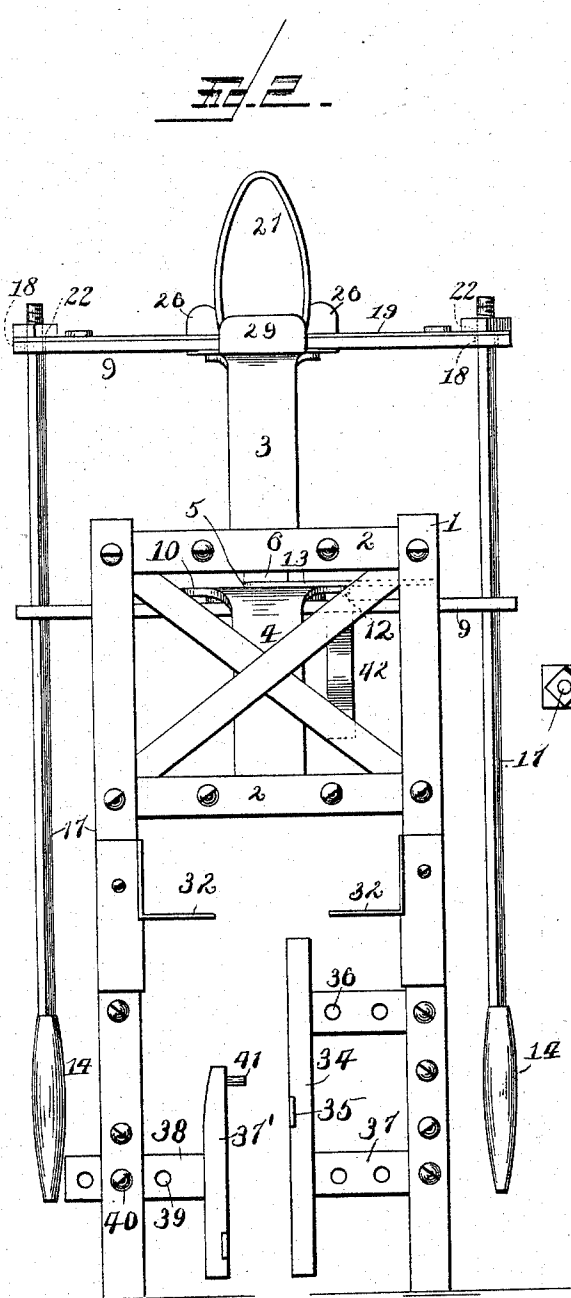
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES LOCKE, OF MIDDLETOWN, OHIO.

MITERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 527,434, dated October 16, 1894.

Application filed July 6, 1892. Serial No. 439,155. (No model.)

To all whom it may concern:

Be it known that I, JAMES LOCKE, of Middletown, county of Butler, and State of Ohio, have invented certain new and useful Improvements in Mitering-Machines, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce an improved machine for cutting miter joints, preferably by the use of a saw; and whose construction is such that limitations as to the height, breadth, or thickness of material to be cut are avoided.

In the accompanying drawings, Figure 1 is a side elevation of my device, showing the guides in the elevated position. Fig. 2 is an end view of the same, showing the guides in their lowest position. Fig. 3 is a top plan view.

Referring to the figures on the drawings, 1 indicates the frame posts of my machine, which are preferably made of metal in any suitable manner, and are provided with cross stays 2 uniting them in pairs.

3 indicates an upper arch or connecting piece firmly secured at opposite ends by bolts, for example, to the opposite upper cross stays.

4 indicates a lower arch or connecting piece united in like manner to the next lower pair of cross stays. The frame posts and connecting pieces united compose the frame of my machine.

5 indicates bearings or apertures in the middle part of the upper and lower arches, which rotatably carry a vertical swivel post 6, to which above and below the arches, respectively, are rigidly secured by nuts 7, for example, miter cross pieces 9.

10 indicates a table, preferably made integrally with the lower arch, and provided on one side with perforations 11 that are adapted to receive and hold a pin 12 carried on the under side of a spring latch 13 that is vertically united to the lower end of the swivel post above the table. The perforations are set suitable distances apart to a scale, so that the miter cross pieces fastened to the ends of the swivel may be fixed in any desired angle to the arches. Numbers indicating the angle are in practice preferably set opposite the perforations for guidance in adjusting miter cross pieces.

While I have illustrated a particular form

of catch, and have indicated perforations as means of holding it in place, I do not desire to limit myself to the specified construction in this particular, because any suitable means of adjusting the relative positions of the swivel posts and cross pieces may be employed.

14 indicates cutter guides, preferably slotted, as indicated at 15, for the free passage of a cutter, as for example a saw, and provided with anti-friction rollers 16, against which the back of the saw may reciprocate. These guides are preferably carried on the lower ends of guide-rods 17, preferably squared and vertically movable in suitable apertures 18 in the miter cross pieces, whereby a saw is held rigidly in the guide pieces, and being extended through both of them is held in the position in which the miter cross pieces are fixed by the adjusting mechanism above described.

19 indicates plates provided with longitudinal slots 20, through which pins 21 movably secure them to the upper miter cross piece. They are provided with apertures 22 to correspond with the apertures 18 in the cross piece. When the plates are drawn toward the center of the cross piece, their edges will engage the sides of the rods and hold them fixed in any position in which they are set. For this purpose I prefer to employ the mechanism illustrated, which consists of a compressing piece 25 fastened to one side of the miter cross piece, preferably provided with lugs 26 having beveled edges toward the center of the cross piece.

27 indicates a handle, preferably made of spring steel wire in the shape of a loop. It is preferably fastened at its opposite ends to the sliding plates, preferably by lugs 28, and is adapted, when depressed between the beveled edges of the lugs 26, to draw the plates toward the center and hold the rod in a fixed vertical position. When it is desired to release the rods the handle is raised until the sliding plates release their grip upon the rods. Ordinarily the resiliency of the handle will be sufficient for this purpose; but to avoid such dependence I prefer to use a spreader 29, which preferably consists of a metallic plate having outside beveled edges secured to the side of the miter cross piece opposite to the compressing piece, and adapted, when

the handle is pressed upon it, to spread the sides thereof and positively actuate the sliding plates. By this means it is not necessary to employ a spring handle. A handle of any suitable yielding material may be substituted therefor; but, for reasons above indicated, I prefer to use the spring handle.

From the foregoing description it will appear that a saw of any suitable size is placed in the guides, and the miter cross pieces are set at an angle in which the saw is desired to reciprocate. For flat material I prefer to use tables 32, preferably composed of angular pieces of sheet metal secured to the frame posts by any suitable means about half way, near their middle. For sawing edgewise or crosswise I prefer to use vertical guide frames 34, preferably provided with cross pieces 35, carried upon opposite ends of the machine in the frame posts by any suitable means, preferably bolts inserted through apertures 36 in the arms 37 of the guide pieces. A number of apertures of this kind are provided for adjusting the guide frames to any desired thicknesses of material. From the opposite side I provide a tilting guide frame piece 37, provided with an arm 38 and apertures 39.

40 indicates a bolt which is adapted to be inserted through the frame post and one of the apertures, and to pivot the tilting guide piece in position.

41 indicates a lug with which the tilting guide-piece is preferably provided for engagement with a piece of material to be sawed and hold it in a fixed position.

It will be understood from the description just given I provide in this manner two separate holding devices, one a table for holding flat material; and the other guide pieces for holding material edgewise. Any suitable means, however, for securing the material to be cut in a proper position may be employed, the mechanism illustrated being intended only to show that which I prefer at the present time.

In operation, assuming that the material is put in position, as for example upon the tables, the guide pieces are elevated by means of their rods to a sufficient height and locked in place by means of the handle in the manner above described. Ordinarily the saw is set in place in the guide pieces, and the rods and guide pieces are elevated to the highest position and the saw is set into the clamp 42, which is preferably fastened to the under

side of the lower miter cross piece, and is found convenient for holding the parts in the elevated position while the sliding plates are being adjusted. While in this position the latch is released and the swivel post swung around to the angle desired, and securely latched in place. Then the saw is released from the clamp, the rods released from the sliding plates, when the saw, by its own weight and that of the rods, will be brought into contact with the material to be sawed, when it may be operated in the usual manner. The weight of the guide piece and connected parts will constantly feed the saw against the material so as to cause it to do very smooth even work and prevent the wobbling which is liable to produce an uneven kerf where the usual narrow fixed guides are employed. The operation is precisely similar except as to the securing of the material, where the material is set on edge instead of on its side.

It should be observed that the miter cross pieces and the sliding plates may be provided with different sets of apertures for the reception of the guide-rods, for the accommodation of different lengths of saws.

Although I have indicated in the body of the specification one or two particular instances in which the peculiar mechanism illustrated may be varied, I desire to state generally that I do not wish to be regarded as confining myself to special details of construction, because the same may be in numerous ways varied without departing from the scope of my invention.

What I claim is—

In a miter cutting machine, the combination with a cross piece and vertically adjustable cutter guide rods, of mechanism for retaining the cutter guide rods in position, consisting of sliding plates, adapted to engage with the rods and hold them against the cross piece, a yielding handle connecting the sliding plates and adapted to be expanded by the spreader on one side and compressed by the compressing lugs on the other side of the cross piece, substantially as and for the purpose specified.

In testimony of all which I have hereunto subscribed my name.

JAMES LOCKE.

Witnesses:

L. P. SMITH,
C. C. DONLEY.