

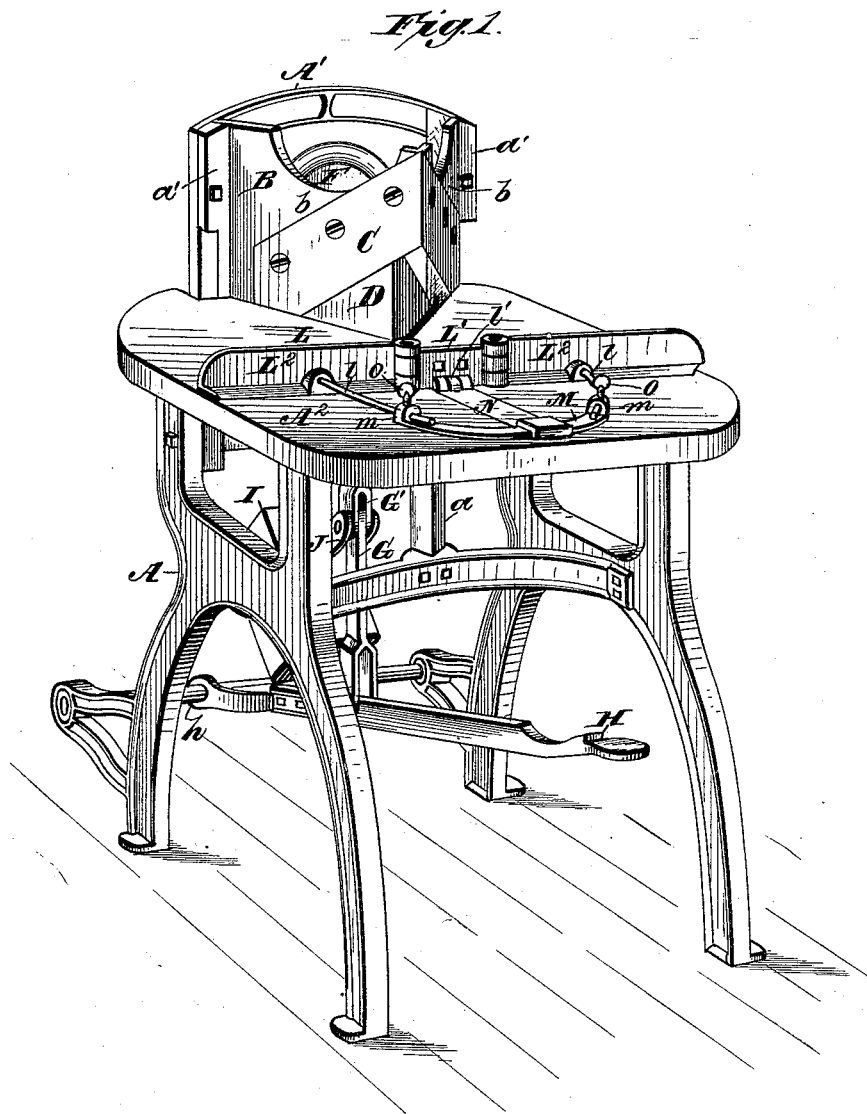
(No Model.)

2 Sheets—Sheet 1.

W. MURPHY.
MITERING MACHINE.

No. 422,608.

Patented Mar. 4, 1890.



Witnesses:
 Rbt Court.
 William H. Muzzey

Inventor:
William Murphy
By Wm H Babcock

Atty,

(No Model.)

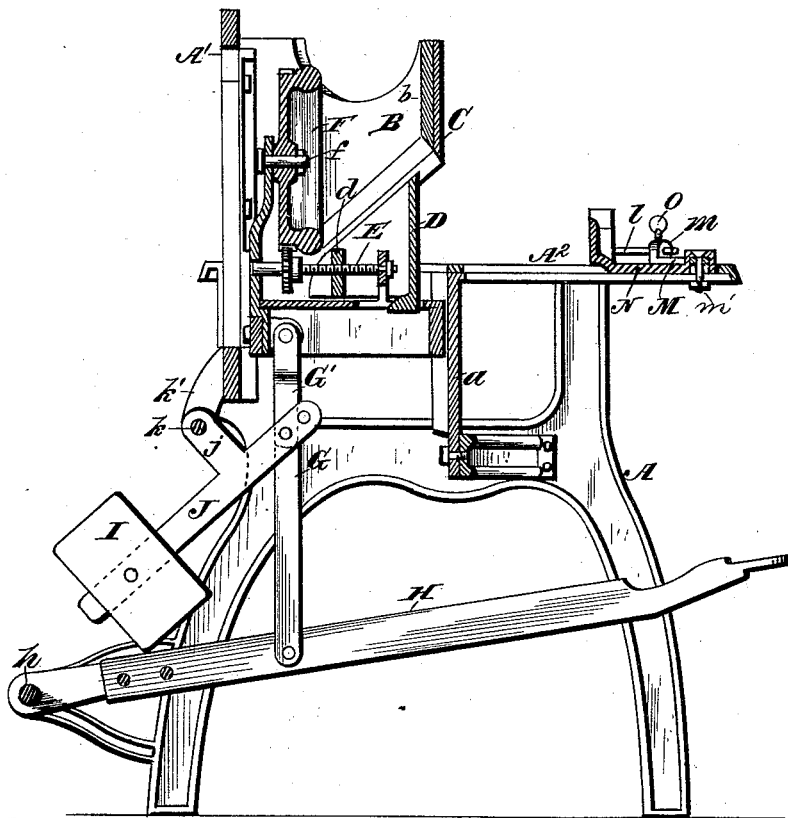
2 Sheets—Sheet 2.

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Fig. 2.



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Robert G. Smith.
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By Wm H Babcock

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UNITED STATES PATENT OFFICE.

WILLIAM MURPHY, OF ST. JOHN, NEW BRUNSWICK, CANADA.

MITERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 422,608, dated March 4, 1890.

Application filed October 23, 1889. Serial No. 327,917. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MURPHY, a citizen of the Dominion of Canada, residing at St. John, in the county of St. John and Province of New Brunswick, Canada, have invented certain new and useful Improvements in Mit-
5 tering-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains
10 to make and use the same.

This invention relates to mitering-machines in which knives or cutters are used; and its
15 chief objects are to adapt the machine to cut several different bevels or miters at the same time and to perform the work of a plane in shearing the mitered face of the wood. These
20 objects are accomplished mainly by combining with the knife and operating mechanism a gage in front of the knife, said gage being in part fixed and in part variable in inclination, and also in combining with said knife a
25 gage of similar shape arranged behind it and adjustable toward and from it.

In the accompanying drawings, Figure 1 represents the machine in perspective, and
30 Fig. 2 in vertical section, from front to rear.

A designates the supporting-frame provided with vertical guideways *a*, in which
35 the carriage B for the knife and the rear gage moves up and down. The general shape of this frame A is like that of a desk or secretary, it having a raised rear wall A' and a feed-table A² in front. The carriage B consists of a horizontal part and a vertical part,
40 the latter sliding up and down in supplemental guides *a'*, formed on or attached to said raised rear wall A'. The vertical part of this carriage is provided with two walls *b*, which
45 converge forwardly so as to be of V shape in cross-section. To these the knife C of similar form is attached, the apex of the V being presented to the front. The lower edge of the knife which does the cutting inclines
50 from the middle downwardly as well as outwardly, so as to give a shearing cut when it descends. Behind and below this knife a gage D, also V-shaped and having sides of outward inclination corresponding to that of the sides
or wings of the knife, is also supported on
said carriage, but movable horizontally toward or from said knife. This gage is ad-

justable in these directions by means of a horizontal screw-threaded shaft E, which
55 passes through and engages with screw-tapped lugs *d* on said gage. This shaft has its rear bearing in the upright part of the carriage, and is provided with a pinion fast upon
60 it, which engages a toothed hand-wheel F, turning on a spindle or stud *f*, also attached to the upright part of the carriage. By means
of this hand-wheel the screw-threaded shaft is turned to effect the adjustment described.
A connecting bar or rod G extends from a bi-
65 furcated link G', depending from said carriage to the treadle H, which is pivoted at its rear end to a transverse rod *h*, rigid with
frame A. When the free forward end of this lever is depressed, the said carriage, hand-
70 wheel, shaft, gage, and knife are drawn down also. They are restored to their former position by the action of a weight I on the rear end of a lever J. The forward end of this
75 lever is attached to the connecting rod or bar G. From a point between the two ends, but nearer to the forward end, a rigid arm *j* extends upwardly and rearwardly, being hung
on a lateral stud *k* of a lug *k'*, attached to frame A.

On the feed-table A², in front of the knife, 80
is a gage L, consisting of a fixed middle part L', parallel to the front of the said table, and two wings L², which are hinged to the sides
of said fixed part L' and movable to vary
85 their inclination. They are provided with curved rearwardly-extending arms *l*, which
slide through perforated raised lugs *m* of a curved plate M, which is bolted to the feed-
table A². A plate or bar N connects the middle part of this curved plate to the middle
90 part L' of gage L, being hinged to the latter at *l'* for vertical folding. Set-screws O pass down through screw-tapped openings in lugs *m* to
hold the arms *l* and wings L² in any required
95 position to which they may be adjusted about the hinges of said wings. The said parts L', L², M, N, and O are adjustable together toward and from the cutter or knife C.

The operation is as follows: When a molding-strip is to be mitered, the gage L is moved
100 up close to the knife and the V-shaped rear gage D is drawn back out of the way by the adjusting devices already described, and the treadle is operated so as to draw down the

knife on the molding-strip and cut the latter in two parts, each ending with an inclined or mitered face, a V-shaped piece having been cut from between them. In many instances it is desirable to plane or shear off the faces thus produced, or to improve an imperfectly-mitered surface produced in any other way. To permit this I adjust the gage D toward the knife just far enough for the depth of cut desired, the gages D and L confining between them the molding-strip or other wood that is to be mitered, and the face of the latter being presented to one of the inclined wings of the knife. Two pieces may thus be simultaneously planed or mitered.

By the hinged wings L^2 of gage L, I am enabled to provide for cutting various beveled faces, as well as the true miter, which will be cut when the fixed part L' of the gage is used. By adjusting either of these wings pivotally more or less the position of the wood in contact therewith will be varied correspondingly and the cut will be made at a varying angle. By this machine four different inclined faces may be produced in the wood at once—two on a central piece of wood held between the point of gage D and the fixed part L' of gage L, and two more on pieces between the wings L^2 and the said gage D. The first two faces will be cut by that part of the knife which is at and near the convergence of the two blades or wings. Their angle will always be the same. The inclination of the two other faces will vary according to their adjustment. Of course the machine may be used for planing off the square ends of boards or pieces of wood without giving them any miter or bevel. In such use the wood is simply held against one side of gage D and at right angles thereto. Any other suitable material may be cut by this machine in any of the ways before mentioned—for example, leather, paper, or sheets of molded wood pulp. The gage L and attached parts are held in backward or forward adjustment by a bolt m' , bearing against the under side of the feed-table. The bar N is movable backward and forward in a guideway of said table.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a V-shaped knife and mechanism for reciprocating it, a gage of similar shape arranged behind it, and adjusting devices for setting such gage toward or from said knife to regulate the depth of cut, substantially as set forth.

2. In combination with a vertically-reciprocating V-shaped knife, a gage for regulating the depth of cut, a hand-wheel and screw-threaded shaft for adjusting said gage toward or from said knife at will, a carriage supporting said knife-gage and adjusting devices, and a treadle and connections for reciprocating said carriage and the parts supported thereon, substantially as set forth.

3. In combination with a knife and gage and devices for reciprocating them, a hand-wheel and shaft for adjusting said gage, a feed-table, and an additional gage on said table, which is fixed relatively to the motion of said knife, substantially as set forth.

4. In combination with a V-shaped reciprocating knife and a V-shaped gage adjustable toward or from it at right angles to its line of travel, an additional gage consisting of a fixed middle part and two wings hinged thereto, and adjusting devices for holding said wings inclined more or less, substantially as set forth.

5. In combination with a reciprocating V-shaped knife, a gage L, consisting of a fixed middle part L' , and two hinged wings L^2 , provided with rearwardly-extending curved rods, fixed perforated lugs through which the said rods pass, and screws binding said rods independently, whereby either wing may be adjusted to any angle without adjusting the other, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM MURPHY.

Witnesses:

WM. J. MAHONEY,
FRANK J. SWEENEY.