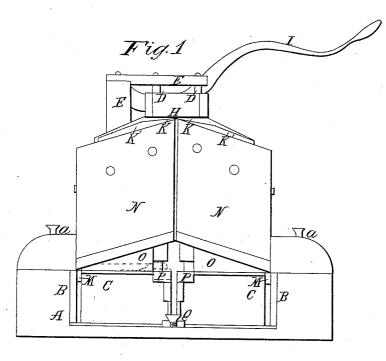
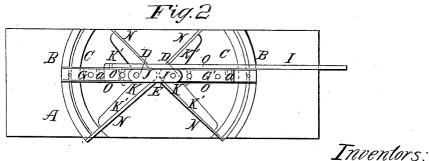
## Tompkins & Williams, Miter Box, Nº83,891, Patented Nov. 10, 1868.





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## ROBERT F. TOMPKINS AND HUGH T. WILLIAMS, OF NEW YORK, N. Y.

Letters Patent No. 83,891, dated November 10, 1868.

## IMPROVEMENT IN MITRING-MACHINES.

The Schedule referred to in these Letters Fatent and making part of the same.

To all whom it may concern:

Be it known that we, ROBERT F. TOMPKINS, of the city, county, and State of New York, and HUGH T. WILLIAMS, of same place, have invented a new and useful Improvement in Wood-Mitring Machines; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein we have set forth the nature and principles of our said improvement, by which our invention may be distinguished from all others of a similar class, together with such parts as we claim, and desire to have secured to us by Letters Patent.

This invention relates to a new and useful improvement on a machine for cutting mitres, for which Letters Patent were granted to ROBERT F. TOMPKINS, one of the parties to the present invention, the Let-

ters Patent bearing date October 1, 1867.

The within-described invention consists in certain improvements, as hereinafter fully shown and described, whereby the value of the original machine is greatly augmented as regards facility of adjustment and general operation throughout.

In the accompanying sheet of drawings-Figure 1 is a side view of our invention. Figure 2, a plan and top view of the same.

Similar letters of reference indicate corresponding

parts in the several drawings.

A represents what may be termed the bed of the machine, which is cut out at its upper surface in such a manner as to leave two sector-shaped concaves, B B, in which two similar-shaped blocks, CC, work. These blocks C C are fitted and work freely upon two upright shafts, D D, which are placed at the centres of circles,

of which the concaves B B form a part.

The upper ends of the shafts D D have their bearings in a horizontal bar, E, which projects from an upright, F, attached to the bed A, said upright having a base-block, G, underneath which one of the blocks C is allowed to work or turn freely. A similar baseblock, G', is attached to the bed A, and projects over the other block G, one of the shafts D passing through it. The shafts D D are both stationary, and there is fitted upon them a yoke, H, which is allowed to slide freely up and down, and is operated by a lever, I. On each shaft, D, within the yoke H, there is fitted a collar, J. These collars are allowed to turn freely on the shafts, and also to rise and fall freely thereon. Each collar, J, has a flange, K, projecting horizontally from it, the two flanges of each collar being at right angles with each other. Each flange has a bar or arm, K', extending horizontally from it, and these bars or arms have each a pendant-bar or guide, M, attached, which bars or guides are also attached to the knives, and extend downward, and are dovetailed into and bear against the faces or outer surfaces of the blocks C, near the ends of the same.

N represents the knives or cutters, which are attached to the flanges and bars, K K', of the collars J,

and consequently are at right angles with each other, and the two knives of each shaft, D. The lower edges of the knives or cutters N are inclined, so as to obtain a drawing-cut, as will be fully understood by referring to fig. 1.

O represents guide-strips or fences, which are placed, one at each side of the base-blocks G G', and may be adjusted further forward or backward by set-screws a.

The blocks C C may be secured in any desired position by set-screws b, which pass through the baseblocks G G'.

The bevel of the knives or cutter N is at their outer sides, and the stuff to be cut or mitred is placed on a block, C, against a fence, O, the angle of the mitre to be given the stuff being determined by adjusting the block C.

The mitre is cut by pressing down the cutter through the medium of the lever I, and it will be seen that if the blocks C be adjusted so that one knife or cutter, N, of a shaft will form an angle of forty-five degrees with the fence O, opposite to or directly behind it, the other knife or cutter, N, of the same shaft will form the same angle with the fence O which is opposite to or directly behind it, and in case one cutter, N, forms an angle greater than forty-five degrees with its fence, the other or fellow-cutter will form an angle with its fence proportionably less. For instance, say one cutter forms an angle of sixty degrees with its fence, the other or fellow-cutter will form an angle of thirty degrees with its fence. Hence mitres may be cut of different angles, at opposite ends of the same stick, or at the ends of different sticks, to form or suit frames or other articles having mitres varying from an angle of forty-five degrees, and this is accomplished by only one adjustment of the block C.

In the original machine only two knives or cutters were employed, one with each block, C, and mitres of different angles could only be cut by a separate adjustment of a block, C, for each angle required.

This is a great disadvantage, for, in mitring mouldings on articles, for instance, the angles in many cases vary materially from forty-five degrees, and much time is consumed in adjusting the blocks C of the old machine.

The placing of the collars J, to which the knives or cutters are attached, on fixed upright shafts, D, as shown and described, admits of the knives being readily turned or adjusted, and also raised and lowered, without any trouble or difficulty whatever, while the pendant-bars M serve as guides for the knives or cutters, rising and falling with them, and preventing them being deflected toward and their cutting-edges brought in contact with the upper face-edges of the blocks.

At the inner end of each block C there is fitted a bearing-block, P These blocks are allowed to rise and fall freely, and their lower ends rest upon a set-screw, By adjusting this set-screw higher or lower, the blocks P may be placed at a greater or less degree of elevation, as may be required.

The object of these bearing-blocks is to support

shoulders or projections at the ends of mouldings which would be liable to be split off under the downward motion of the knife, if a firm support or bearing were not provided for it.

It will be seen from the above description that one or two pairs of knives or cutters may be used, but, whether one or two pairs are used, each pair must have a block, C, and the knives or cutters of each pair fitted to one and the same shaft D.

Having thus described our invention,

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

1. The knives or cutters N, arranged in pairs, each pair fitted on a vertical shaft, D, in such manner that they may turn, rise, and fall thereon, as described, and for the purposes herein set forth.

2. The guides M, attached to the arm K and knives

N, so as to move, in connection with the knives, as described, and for the purpose desired.

ROB'T F. TOMPKINS.

HUGH T. WILLIAMS.

Witnesses:

H. L. WATTENBERG. A. R. HAIGHT.