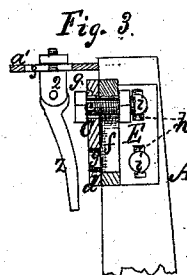
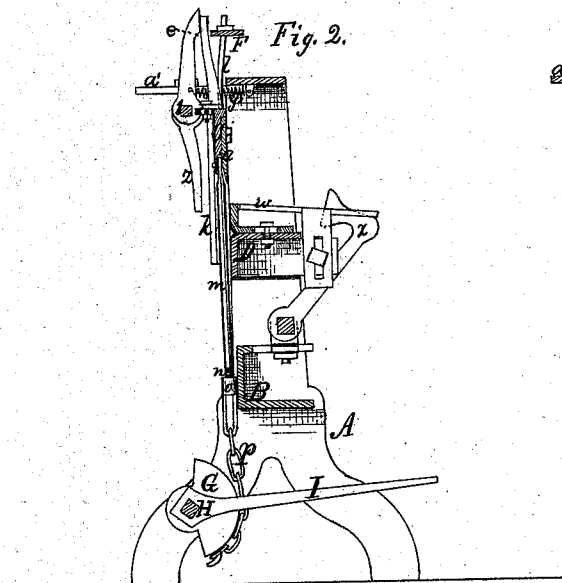
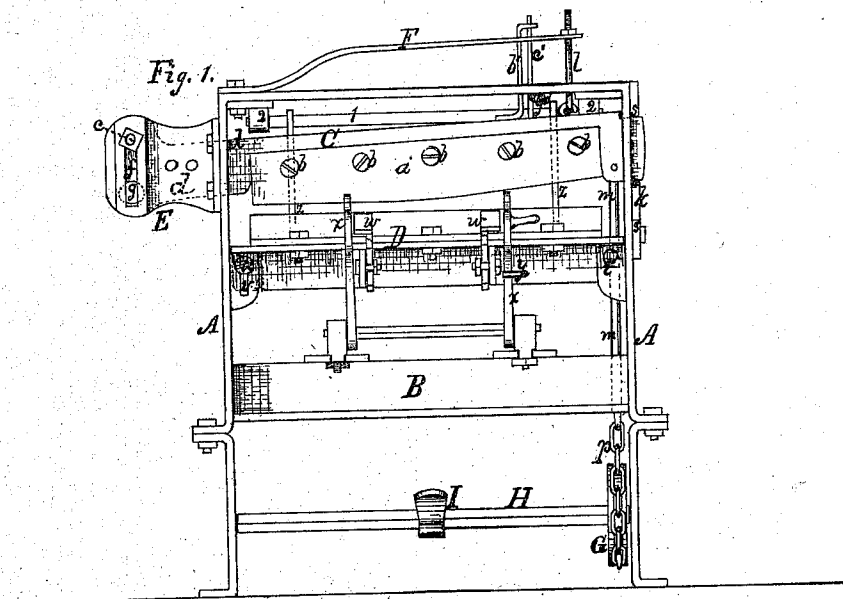


W. Widdowson,
Stave Joiner.
No. 106014. Patented Aug. 2, 1870.



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WILLIAM WIDDOWSON, OF ROCHESTER, NEW YORK.

Letters Patent No. 106,014, dated August 2, 1870.

IMPROVEMENT IN STAVE-JOINTING MACHINE.

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

I, WILLIAM WIDDOWSON, of the city of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Machines for Jointing Staves, &c., of which the following is a specification.

This invention consists in making the bed-piece adjustable at one end, in combination with the cutter-frame below which it is arranged, and in an improved construction and arrangement of the gauge devices, as will be hereinafter fully described.

Figure 1 is a front elevation of my improved machine;

Figure 2, a vertical cross-section; and

Figure 3, an end view of the top of the machine, showing the device for adjusting the knife-frame, in section.

In the drawing—

A A indicate the end upright parts of the main frame;

B, the cross-piece of the frame, connecting the end parts A; and

D, the bed-piece.

The knife or cutter C has the cutter *a* secured to it by means of bolts *b b*, and is made slightly concave, longitudinally, on one side, to give the proper form or bilge to the stave.

The cutter-frame is provided with an extended portion, *d*, at one end, shown in dotted lines, fig. 1, which is hinged by means of a bolt, *e*, to a bearing, E, attached to the side of the frame A.

The bolt *e* rests through a slot, *f*, in the bearing E, by which means the end of the knife-frame is adjusted up or down to vary its angle, so as to produce a shearing or angular cut of greater or lesser incline, according to the hardness or thickness of the wood or other material to be cut.

I also provide, in the extension *d* of the knife-frame, two or more adjustment holes, *g g*, above and below the line of the angle of the knife-frame, so that, in operation, a slightly drawing as well as shearing cut is produced by the knife.

I prefer to make the bearing-plate E adjustable vertically, by means of slots *h h* and set-screws *i i*, in order to increase the degree of adjustability of the knife-frame.

The opposite or swinging end of the knife-frame C moves in a vertical slot between the end parts A of the frame and the guide or bearing-plate *k*.

Stops *s s* are provided at the upper and lower ends of the said slot, in order to prevent the cutter-frame from rising or lowering too far.

A spring, F, is bolted at one end to the top of the main frame, and at the other end is connected a rod or bar, *l*, which also connects with the swinging end of the knife-frame.

From this end of the knife-frame a rod, *m*, extends downward, with a screw-thread, *n*, on its lower end, which screws into a swivel-nut, *o*, on the end of a chain, *p*.

This chain extends around, and is secured to the lower side of a segment or cam, G, which is mounted on a shaft, H.

A tread-lever, I, secured to the shaft H, extends out in nearly a horizontal direction to the front side of the machine, in a convenient position to be operated by the foot of the operator.

The tread-lever may be gauged higher or lower, to correspond with the distance of stroke required by the knife-frame, by adjusting the swivel-nut *o* to the proper point on the screw *n*.

It will be seen that, by depressing the tread-lever I, the cutter is drawn down so as to shut past the bed-plate, in such manner as to shear off the edge of the stave, and give it the proper form. The cutter-frame is again raised by the tension of the spring F.

By hinging the cutter-frame at one end so as to produce the shearing cut by the knife, as described, much less power is required for operating it than in those machines where the knife strikes squarely upon the stave, and the cutting is effected through the entire length of the stave at the same time.

The knife may also be gauged to any angle to adapt it to cutting wood or other material of different degrees of hardness or thickness, and produce a smooth and uniform cut without liability of abrasion or shattering of the stave.

I prefer to make the bed-piece D adjustable by hinging it at one end by means of a bolt, *t*, with the other end secured by a set-screw, *u*, that rests through a slot, *v*, of the main frame. By this means the bed may be set at any angle to correspond with the angle of the cutter.

The bed D is provided with two parallel bars or rests, *w w*, across which the stave rests, and is slid up under the knife, to be cut, by means of arms or bearings *x x*, that are hinged at their lower ends, and are provided with a stop, *y*, to prevent them from dropping back too far.

In cutting barrel "linings," or other articles in which it is necessary to gauge their breadth, I provide gauge-arms *z z*, which are secured to a rock-shaft, 1, that rests in adjustable bearings 2 2.

The arms *z z* extend downward from the shaft, with the lower ends resting opposite the space between the cutter and the bed-piece, and serve as stops for the material from which the strips are cut as it is passed through under the knife.

The arms are set out from the cutter a distance equal to the breadth of the strip to be cut, and are adjusted out and in to vary the gauge to different

widths by means of the bearings 2 2, that rest in slots 3 3 in the arms $a' a'$.

Extending upward from the rock-shaft 1 is an arm, b' , with its top resting against an arm or bearing, c' , of the cutter-frame C. The arm b' is provided with an offset, e' , and with a spring, g' , which holds it in place against the bearing c' .

The material to be cut is passed through under the knife as far as the arms $z z$, which are set in the position to properly gauge the strip.

When the knife is drawn down in the act of cutting, the bearing c' slides down over the offset or inclination e' in the arm b' , which imparts a tilting or rocking motion to the shaft 1.

By this means the gauge-bearings $z z$ are thrown out from the strip, being cut so as to allow it to drop out of the way when severed by the knife. The knife-

frame rising again, throws the gauge-arms back into position for gauging a new strip.

What I claim as my invention is—

1. The bed-piece D, being adjustable at one end by means of the slot v and set-screw u , in combination with the cutter-frame C, substantially as described.

2. The combination of the gauge-bearings $z z$, arm e , and adjustable rock-shaft 1, with the cutter-frame C, bearing E, and bed D, substantially as herein set forth.

In testimony whereof I hereunto sign my name in the presence of two subscribing witnesses.

WILLIAM WIDDOWSON.

Witnesses:

FREDERIC P. ALLEN,
F. A. DAVIS.