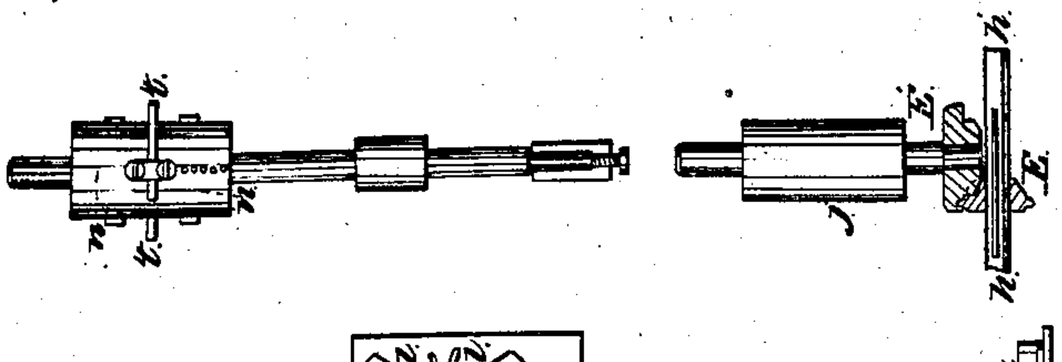
A. A. Milder,

Wood Planing Machine.

No. 64,609. Patented May 7, 1867.



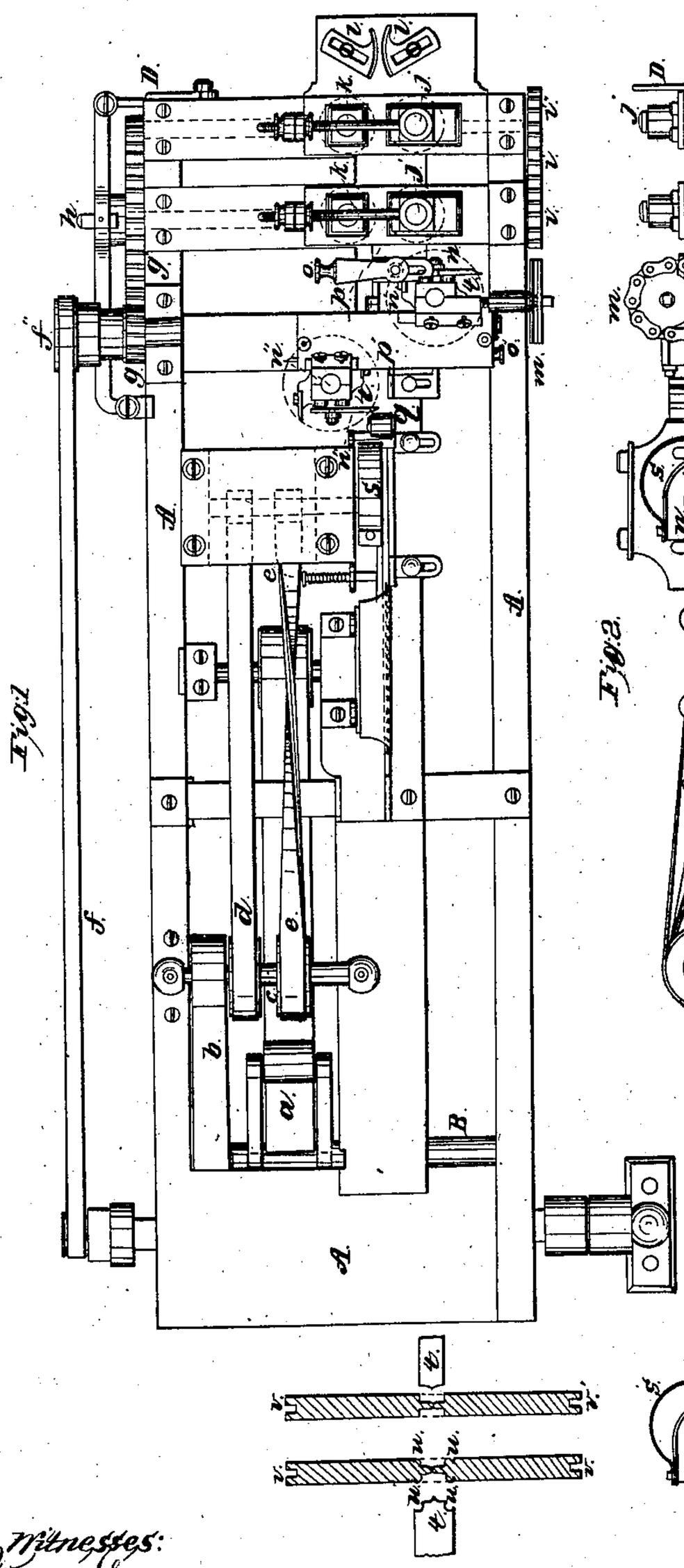


Fig. 1.

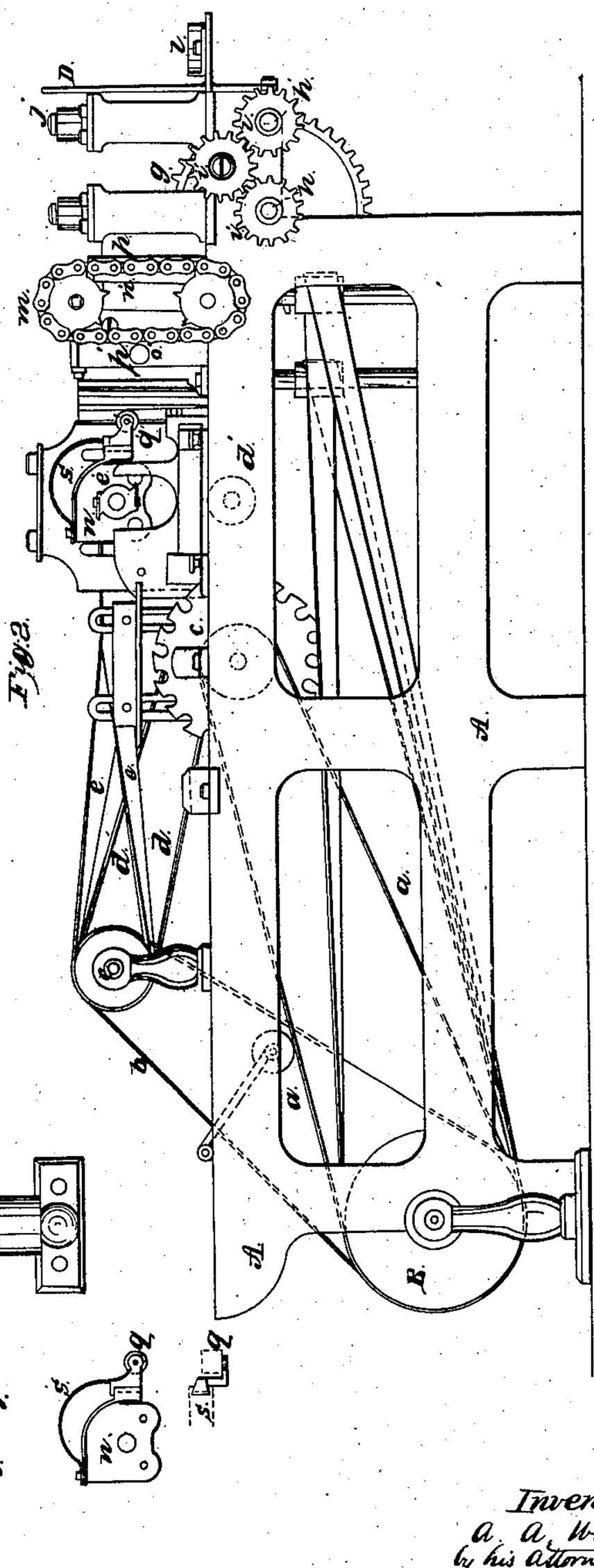


Fig. 2.

Witnesses:
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by his attorney
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United States Patent Office

A. A. WILDER, OF DETROIT, MICHIGAN

Letters Patent No. 64,609, *dated May* 7, 1867; *antedated March* 5, 1867.

IMPROVEMENT IN PLANING MACHINES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. A. WILDER, of the city of Detroit, in the county of Wayne, and State of Michigan, have invented a new and improved Machine for Planing and Otherwise Preparing Lumber; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, and in which like parts are indicated by like letters in the several figures.

The nature of my invention consists in so constructing a planing machine, that at the same time it will tongue and groove, bead, rebate, and split lumber at one and the same operation, making two pieces of dressed and finished flooring or ceiling out of one piece of lumber without the use of a saw.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation. In the drawings—

Figure 1 is a plan view of my machine.

Figure 2, an elevation of the same.

Other parts represented will be mentioned hereafter.

A represents the framework or support of my machine, not differing materially from any other planing machine. B is a drum or pulley, to which motion is communicated in any desirable manner, and around which pass several belts communicating motion to other parts as mere motors. *a* is a belt, driving a saw, C, which can be used in my machine outside of its particular purpose to be hereafter described. At present we will suppose it not to be used. Belt *b* passing over drum B communicates motion to a pulley attached to a shaft, *c*, and on which there are other pulleys, around which other belts pass. These belts are designated by *d* and *e*, and they drive the upper and lower groove-cutters *e'* and *d'*. *f* is a belt, passing over a pulley, *f'*, on the shaft of drum B, which operates certain parts in the front of the machine to be hereafter described, governing the feed-rollers in front, and by means of a lever, D, the feed-rolls or rollers can be operated or not at pleasure. The belt *f* passes over a pulley, *f''*, on axis of which is a cog-wheel, *g*, which gears into a larger one, *g'*, which is on an arbor or shaft, *h*. On the opposite side from *g'*, and on the same shaft, there is a cog-wheel, *i*, which gears into another cog-wheel, *i'*, it gearing into another one, *i''*, which is on a shaft, *h'*. On the shafts *h* and *h'* are bevel-wheels E which gear into horizontal bevel-wheels E' above, operating the fluted feed-rollers *j*. Other bevel-wheels on the same shaft connect with horizontal ones which operate the secondary feed-rollers *k*. These duplicate sets of feed-rollers are made adjustable above in any ordinary manner, as shown, and more especially below through the bevel-wheels E and E'. The former sliding on its shaft *h* or *h'* gives way to the pressure on the fluted rollers *j* through the bevel cog-wheels E' on the lower extremity of their shafts. This adjustable arrangement, which is automatic, I consider of great importance. *l l* are adjustable guides, through which passes the lumber to the feed-rollers *j j* and *k k*. *m* is an endless chain by which to regulate the cutting depth of the planing or rebating and tongueing or beading cutter-head *n*. Between the feed-rollers and the cutter *n* is an adjustable roller, *n'*, made so by a set-screw, *o*, by which to press the boards against the fixed plate *p*, against which it bears when the cutter *n* operates on it. As the board passes along, and before reaching the second tongueing-cutter *n''*, which makes a double tongue on the opposite side like *n* does, it bears against another pressure-plate, *p'*, supporting it in this second operation; this plate *p'* being made adjustable by a set-screw, *o'*. The board now being fed forward during the operation comes under an adjustable friction-roller, *q*, connected with a plate or shield, *r*, through which the arbor of the upper cutter *e'* passes, this plate being attached to box of said arbor. The height of this upper cutter is regulated at pleasure by means of suitable gearing or adjustment unnecessary to detail. These cutters make the grooves *v* and *v'*, and the board emerging falls into two pieces or comes out two finished pieces without any previous sawing. The cutters *n* and *n''* can be so shaped as to not only tongue each upper and lower half of the board fed in, but also bead the adjacent parts as seen at *w*. The pressure-roller *q* has a vertical movement along the front extremity of the plate or shield *r*, and is pressed against the top edge of the board by means of a spring, *s*, secured to the top of said shield *r*. The tongueing-cutters *t*, secured to the cutter-heads *n* and *n''*, are adjustable vertically to suit the necessities of the case. These may be multiplied, and at their extreme outer edges small points round off the tongues and nearly sever them, so that when the board which was fed in at one end comes out at the other

it will fall into two finished pieces of lumber. The bevel gear-wheels E and E′ which give motion to the fluted feed-rollers *j* are self-adjusting, having a novel and useful construction, the outer rim of E taking into a groove on the under side of E′; hence in whatever direction, in or out, the roller *j* moves, and on the axis of which is fastened E′, it carries E with it, which slides on its shaft, yet revolving it by means of a key or "feather."

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

1. The combining and arranging of cutters in a planing machine, in the manner substantially as shown and described, whereby lumber is prepared for flooring or ceiling by tongueing, grooving, and planing the same at one operation, and making two or more finished pieces of lumber out of one without the use of a saw.

2. The self-adjusting feed bevel-wheels E and E′, when constructed and operating in the manner substantially as shown and described and for the purpose set forth.

3. The combination of the shield *r*, spring *s*, and roller *q*, constructed and operated in the manner substantially as shown and described and for the purpose set forth.

A. A. WILDER.

Witnesses:

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THEODORE LANG.