

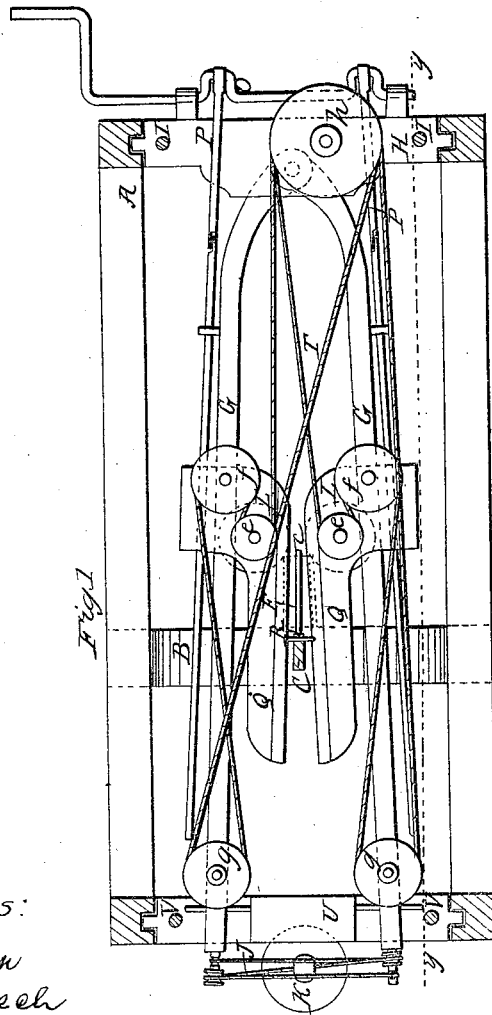
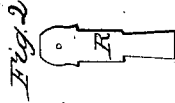
2 Sheets. Sheet 1.

J. Jackson,

Cutting Wooden Gearing.

N<sup>o</sup> 51,458.

Patented Dec. 12, 1865.



Witnesses:

Wm. Freeman  
Thos. Tusch

Inventor:

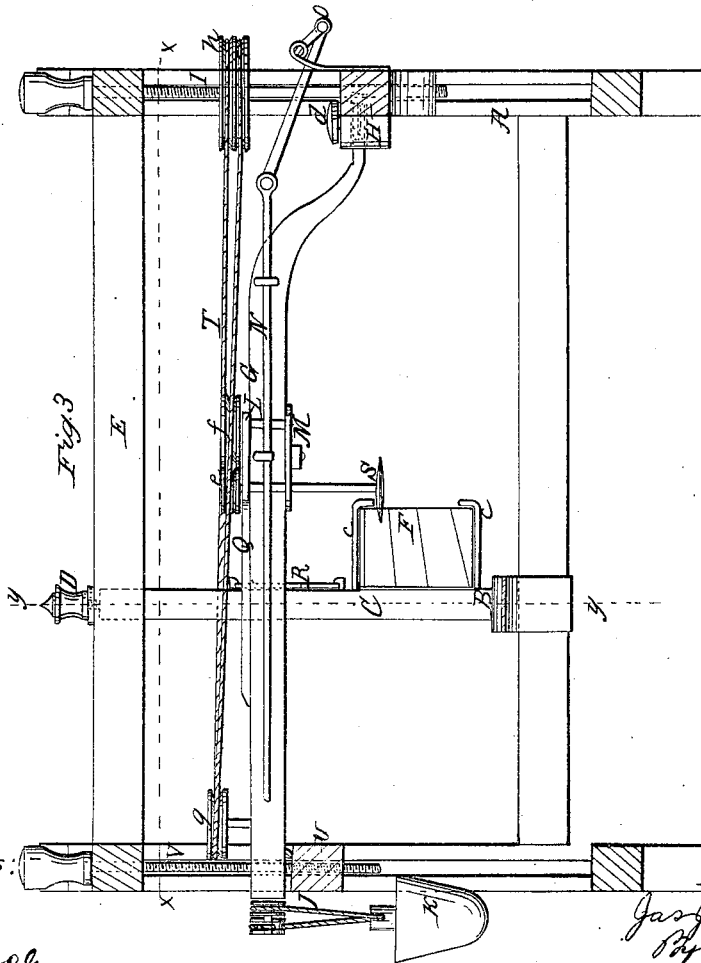
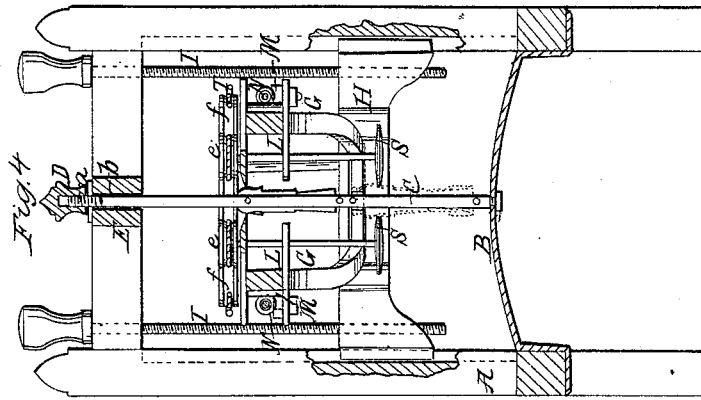
J. Jackson  
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Witnesses:

Wm. Freeman  
Elihu Fusch

Inventor

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*Elihu Fusch*

# UNITED STATES PATENT OFFICE.

JAMES JACKSON, OF WOONSOCKET, RHODE ISLAND.

## IMPROVEMENT IN MACHINES FOR CUTTING WOOD GEARS.

Specification forming part of Letters Patent No. 51,458, dated December 12, 1865.

*To all whom it may concern:*

Be it known that I, JAMES JACKSON, of Woonsocket, in the county of Providence and State of Rhode Island, have invented a new and Improved Machine for Cutting Mortise-Teeth for Bevel-Gears; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet No. 1, is a sectional plan or top view of my invention, taken in the line *x x*, Fig. 3; Fig. 2, a detached view of a pattern pertaining to the same; Fig. 3, Sheet No. 2, a side sectional view of the same, taken in the line *y y*, Fig. 1; Fig. 4, a transverse vertical section of the same, taken in the line *z z*, Fig. 3.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved machine for cutting wooden teeth for bevel-gears, whereby the work may be done in an expeditious and perfect manner, and machine adapted for cutting teeth to suit wheels of different diameters.

A represents a framing constructed of rectangular or other suitable form, and having a sliding cross-bar, B, placed transversely in its lower part, with a vertical bar, C, attached, the upper part of said bar having a screw, *a*, on which a thumb-nut, D, is fitted, the upper part of the bar passing through a slot, *b*, made longitudinally in a bar, E, which is placed longitudinally in the upper part of the framing. This vertical bar C has two arms, *c c*, projecting horizontally from it, between which the blocks F, from which the teeth are cut, are clamped one at a time.

G & G represent two arms, which are connected at one end by a pivot, *d*, in a horizontal bar, H, in one end of the framing A, said bar being allowed to slide freely up and down in the framing, and adjusted higher or lower by means of screw-rods I I. The opposite or free or disengaged ends of the arms G & G are connected by a cord, J, having a weight, K, attached and applied in such a manner that the weight will have a tendency to draw the arms toward each other. The arms G & G have

each a slide, L, fitted on them, and these slides are connected by clamps M to reciprocating rods N, which are operated by a crank-shaft, O, and pitman P at one end of the framing, the arms G serving as guides for the slides. The slides L have each a plate, Q, attached, and these plates are made to bear, by means of the weight K, against the sides of a pattern, R, fitted vertically to the bar C. This pattern is shown clearly in Fig. 2, and it corresponds to the form of the teeth to be cut. The slides L have each a vertical shaft fitted in them, with a circular cutter, S, on their lower ends, and on the upper ends of these shafts there are pulleys *e*, around which and pulleys *f* on the slides, pulleys *g* on the arms, and a pulley, *h*, on the framing a belt, T, passes. (See Fig. 1.) By this arrangement of the pulleys and belt a rotary motion is communicated to the cutters S, while they are allowed to work with a reciprocating motion.

The free or disengaged ends of the arms G & G rest on a horizontal bar, U, in the framing, which may be adjusted higher or lower by means of screw-rods V V.

From the above description it will be seen that the tooth will be cut from the block F of a form corresponding to the pattern R.

By adjusting the bar H higher or lower and the vertical bar C nearer to or farther from the bar H, the device may be adapted for cutting teeth for different-sized wheels.

The whole arrangement is extremely simple and efficient. The cutters are fed to their work from the top of the tooth downward by any suitable mechanism applied to the screw-rods V V.

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

1. The combination of the pivoted arms G & G, reciprocating slides L, rotary cutters S, and belt T, arranged and operating substantially as and for the purposes specified.

2. The combination of the adjustable bars H U and screw-rods I V with the pivoted arms G & G, as and for the purposes set forth.

JAMES JACKSON.

Witnesses:

CHARLES NOURSE,  
ANGELO HOWLAND.