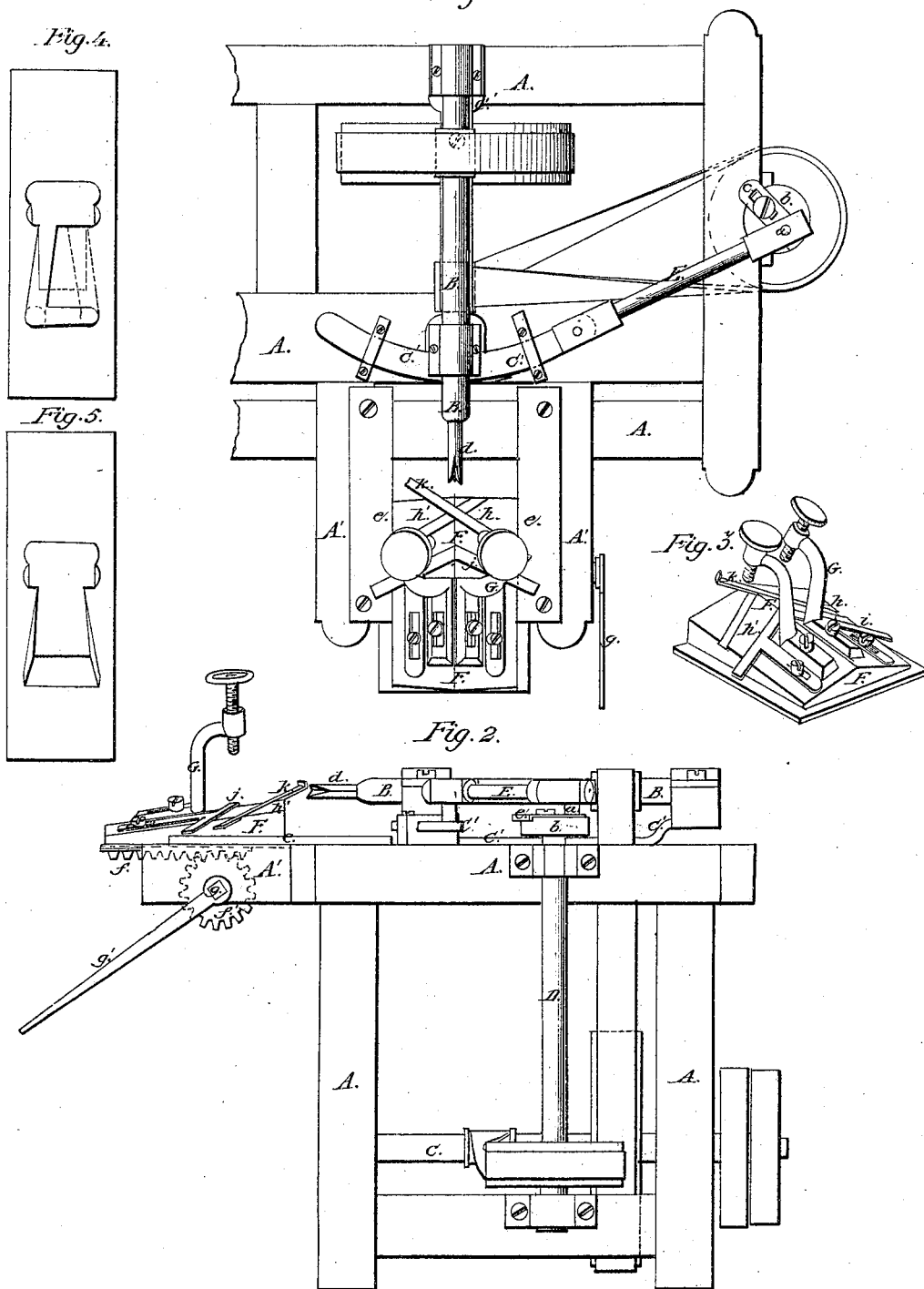


Patented Feb. 14. 1865.

Fig. 1.



Witnesses:
R. T. Campbell.
E. Schafer.

Inventor:
John Richards
by his Atty
Mason Jewett & Lawrence.

UNITED STATES PATENT OFFICE.

JOHN RICHARDS, OF COLUMBUS, OHIO.

IMPROVEMENT IN MACHINES FOR MORTISING PLANE-STOCKS.

Specification forming part of Letters Patent No. **46,392**, dated February 14, 1865.

To all whom it may concern:

Be it known that I, JOHN RICHARDS, of Columbus, Franklin county, State of Ohio, have invented a new and Improved Machine for Cutting Throats in Plane-Stocks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of my improved machine for cutting the cheeks in plane-stocks. Fig. 2 is an end elevation of Fig. 1. Fig. 3 is a perspective view of the holding-guide for the plane-stocks. Fig. 4 is a top view of a plane-stock partially finished. Fig. 5 is a top view of a finished plane-stock.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to form the cheeks on each side of the throat of a plane-stock by means of an auger which receives a rotary, and also a vibratory motion, as will be hereinafter described.

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

This machine is intended for completing the work of cutting the throats of plane-stocks, by forming obliquely-inclined cheeks on each side of the throat, and cutting out the core which is left by the machine which forms the subject of my application for a patent lettered "A."

In the accompanying drawings, A represents the frame for supporting the machinery for cutting the plane-stocks, and for holding and guiding the same during the cutting operation.

B represents the auger-shaft which receives a rapid rotary motion from a driving-shaft, C, arranged near the base of the machine.

C' is a frame in which the auger-shaft B has its bearings, and which receives from an eccentric pin, *a*, projecting from the disk *b* of driving-shaft D, a vibrating motion. The pitman E is used as a means for transmitting motion from disk *b* to the frame C'. The wrist-pin *a* is secured to an adjustable slide, *c*, which can be set so as to give greater or less throw to the forward end of the auger-frame. The auger *d*, which is suitably secured in the forward end of the auger-shaft B has cutting-edges formed on its sides and end, so that it

will make a clean cut as it penetrates the wood.

I do not confine myself to any particular form of auger-bit, as a variety of forms may be used.

A' A' are two arms projecting from the front rail of the frame A, and constituting a part of this frame. These arms are arranged at equal distances from a vertical line dropped from the axis of the auger, when the latter is in the position indicated in Fig. 1, and they are intended for sustaining the stock-bed F, which is so applied as to slide back and forward, toward and from the auger, between guide-jaws *e e*. The bed F is moved by means of a rack, *f*, which latter is keyed to a rock shaft, *g*, carrying on one end a hand-lever, *g'*, as shown in Fig. 2. The stock-bed F has two inclined surfaces, *h h'*, which also incline from that end nearest the auger backward, as represented in Fig. 3.

On each one of the inclined surfaces *h h'* of the bed F I have applied an oblique gage, *j*, which is allowed a longitudinal adjustment toward and from the auger. This gage determines the obliquity of the cheeks of the throat. Another gage, *k*, is used for determining the point desired to commence the cheeks. This gage *k* is let into an oblique slot cut into the inclined surface *h* of the bed F, and it can be adjusted in a direction with its length for plane-stocks having throats of different lengths.

G represents an adjustable bracket, which has a clamping-screw tapped through its overhanging end, the object of which is to confine the plane-stock down in place upon the surface *h* of the bed F, during the operation of the auger. By means of the inclined bed with the contrivances which are applied to it for gaging the stock and confining it in place, and also the horizontal vibrating auger, an oblique flaring cheek is formed on one side of the throat of the plane-stock. To produce a cheek of a corresponding shape on the opposite side of the throat, as indicated in dotted lines, Fig. 4, the stock is applied to and secured upon the inclined surface *h'* of the bed F, which surface has applied to it gages and clamp constructed as described for the inclined plane *h*.

After the operation of forming each cheek of a stock is completed by my machine, the work of dressing and finishing the throat can be performed by means of common chisel with

great facility, as it is only necessary to square the corners left by the auger and dress the edges of the throat.

What I claim as new, and desire to secure by Letters Patent, is—

1. Producing the cheeks on each side of the throat of a plane-stock by means of a rotary vibrating auger, operating in conjunction with a double-inclined bed, F, which is adapted for holding the stocks in a proper position to receive the auger, substantially as described.

2. The stock-holding bed F, constructed

with double-inclined surfaces *h h'*, and provided with gages and clamps for holding the work in place during the operation of forming the cheeks, substantially as described.

Witness my hand in the matter of my application for a patent for improvements in machinery for cutting throats in plane-stocks.

JOHN RICHARDS.

Witnesses:

R. T. CAMPBELL,
E. SCHAFER.