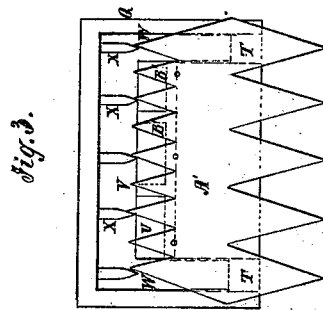
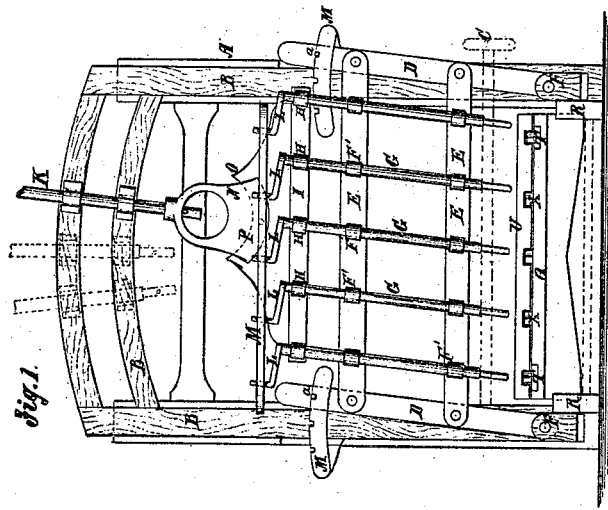
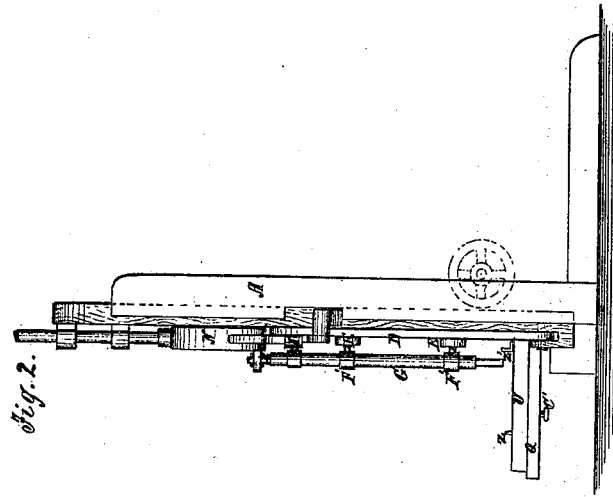


J. B. Schmid,
Twetailing Machine.
No. 10,967/4. Patented Nov. 29, 1870.



Witnesses:
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United States Patent Office.

JOHN B. SCHMID, OF SALEM, VIRGINIA.

Letters Patent No. 109,674, dated November 29, 1870.

IMPROVEMENT IN DOVETAILING-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, JOHN B. SCHMID, of Salem, in the county of Roanoke and State of Virginia, have invented a new and improved Dovetailing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention relates to dovetailing-machines; and

It consists in certain improvements, which will first be described in connection with all that is necessary to a full understanding thereof, and then clearly specified in the claim.

Figure 1 is a front view of my improved machine;

Figure 2 is a side elevation of the same; and

Figure 3 is a plan of the table and the feeding-board, which is used when the notches are being cut.

Similar letters of reference indicate corresponding parts.

A is a vertical frame, which may be arranged and supported in any suitable way; and

B is a frame, arranged on A to have a vertical movement thereon, which may be caused by toothed racks on the vertical bars thereof, and a shaft, C, and pinions on it, or by any other suitable means.

This frame B carries another frame of vertical bars D, and transverse bars E, the former being jointed to the frame B at F, and the latter being jointed at the ends to the bars D, the one near the upper ends and the other near the lower ends of the said bars D.

The bars E carry guides F for the tool-stocks G, the said guides being swiveled to the bars so as to turn thereon, for shifting the line of the stocks.

The tool-stocks are connected at the upper ends by swiveled collars H to a bar, I, or cross-head, by which the reciprocating motion is to be imparted to the tools, the said cross-head being connected to the rod K, which is to be worked up and down by suitable machinery.

The upper ends of the tool-stocks are provided with cranks L, connected to a bar, M, by which they are turned from side to side.

The upper ends of the bars D work behind curved plates N, having three notches in the upper edges for the reception of studs a on the bars D, for holding them in the required position for cutting vertical or oblique walls with the chisels. When the studs a of the bars D are in the center notches the chisels will work vertically, and when in notches in either side they will work obliquely.

For shifting from one notch to another, the frame B is raised to raise the slide a out of the notches they occupy and to drop them into the others.

The arms M are attached to the posts of the frame A.

The jointed bars E are designed to be always par-

allel to the bed, and of course the cross-head must be parallel with the bars, to allow all the chisels to work down to the table alike; therefore the cross-head is provided with a socketed block, N, for the attachment of the rod K, arranged to rest in a concave seat, O, in the top of the cross-head, and to oscillate therein to bring the socket for the rod K into line with it.

The said block has flanges fitting down each side of the cross-head, and at the concave seat, and a pin, P, passes through the block and the cross-head to hold them together. A slot is provided in the cross-head for the pin to admit of the oscillation of the block.

By another arrangement the block N may be permanently attached to the cross-head, and have three sockets for the rod K, one socket for each different position for the rod K.

There may be, if preferred, three rods, K, to save the labor of shifting.

Q is a table, for the support of the work. It is arranged in vertical ways R, and may have a shaft, S, with pinions gearing into racks; or other suitable means for raising or lowering it may be required.

This table has two parallel longitudinal grooves T, at the upper side, connecting with a wider transverse groove, u, at the rear end, in which, flush with the top, is an adjustable plate, V W W, carrying on the top of the part V the pointed guides X, over which a sliding table, Y, with straight grooves in the under side, works and carries the work when the tools are working in the oblique position represented in the drawing, or in the other oblique position to cut the tenons.

The work is held on the table by the pins Z, and the latter is moved along by hand until arrested by suitable stops Z' at the rear of the chisels.

When one side of the tenon has been cut in this way, the work is drawn back and the chisels are shifted to the other side, and also turned a half revolution on their axis, and then the work is moved up again.

By shifting the chisel-supporting frame B higher or lower, the tenons may be made wider or narrower, as may be required. The position of the chisels not being dependent on the frame B, but on the cross-head I and connecting-rod K, will be shifted laterally by the movement of the frame B up or down.

For cutting the notches for the tenons, the chisels are adjusted in a vertical position, and the table A' with the triangular points B' is used for feeding the work up to the chisels.

The said points are placed against the points of the ribs X when the work on the table is up to the front line of the chisels; the table being then shoved forward will be caused to move on the oblique line required for one wall of the notches, which corresponds with the oblique wall of the tenon formed by the chisels when working obliquely.

For cutting the other wall of the notches, the points

B' are placed on the other side of the points *x*, and moved forward as before.

The table A' is provided with two sets of points made on different angles for making notches on different angles.

The plate V W is designed to be adjusted back and forth in the fixed bed Q, for adjusting the points X relatively to the chisels when required, and is provided with clamp-screws *c*, passing through the bed Q, for holding it in the required position.

Having thus described my invention,

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

1. The arrangement, in a dovetailing-machine, of the laterally-swinging frames D D E E I, and the

notched curved plates M M, with respect to a vertically-movable frame, B, as and for the purpose specified.

2. The socketed flanged block N, and concave seat O, arranged with respect to rod K and cross-head I, as and for the purpose described.

3. The arrangement, upon a vertically-adjustable table, Q, and a horizontally-sliding table, U, of the equal-angled points *x*, and the table A' having angular points B' thereon, as and for the purpose specified.

JOHN B. SCHMID.

Witnesses:

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