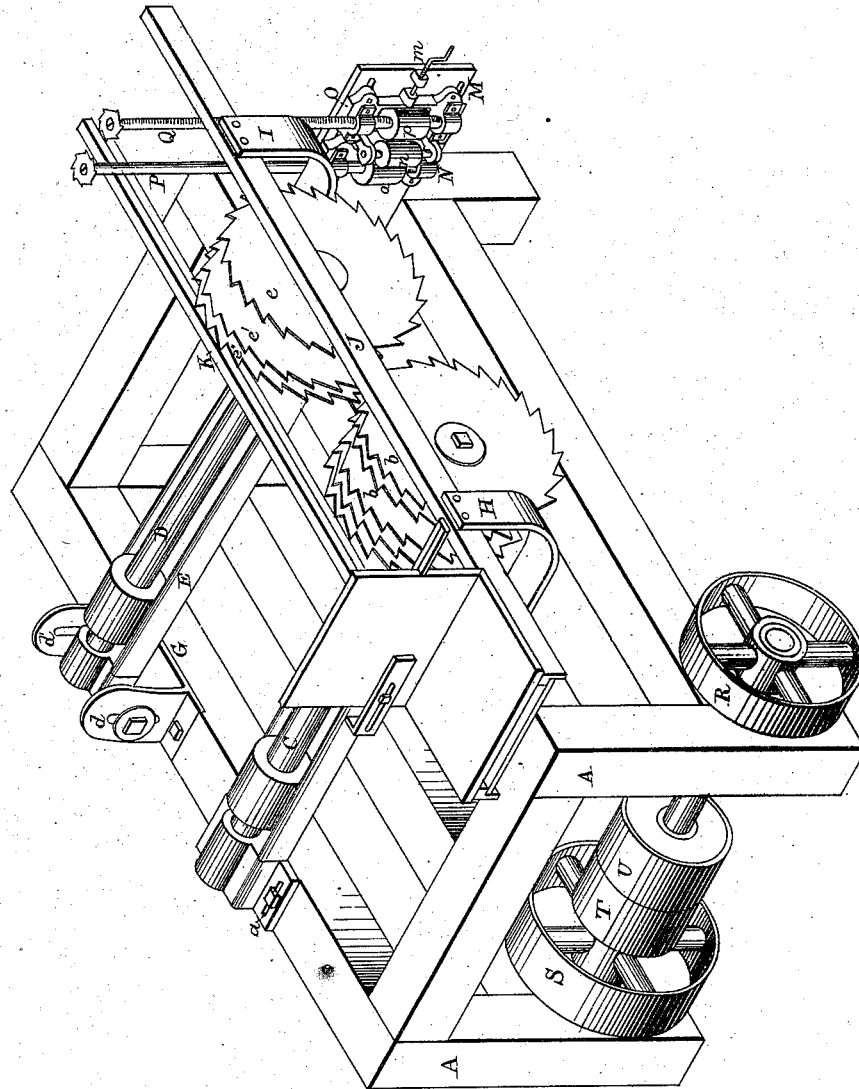


E. A. ROWLEY.
Machine for Relishing Tenons.

No. 160,957.

Patented March 16, 1875.

Fig. 1.



Witnesses:
F. H. Schott,
A. C. Parker

Inventor:
Edwin A. Rowley
per John P. Town. Att

E. A. ROWLEY.

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Fig. 2.

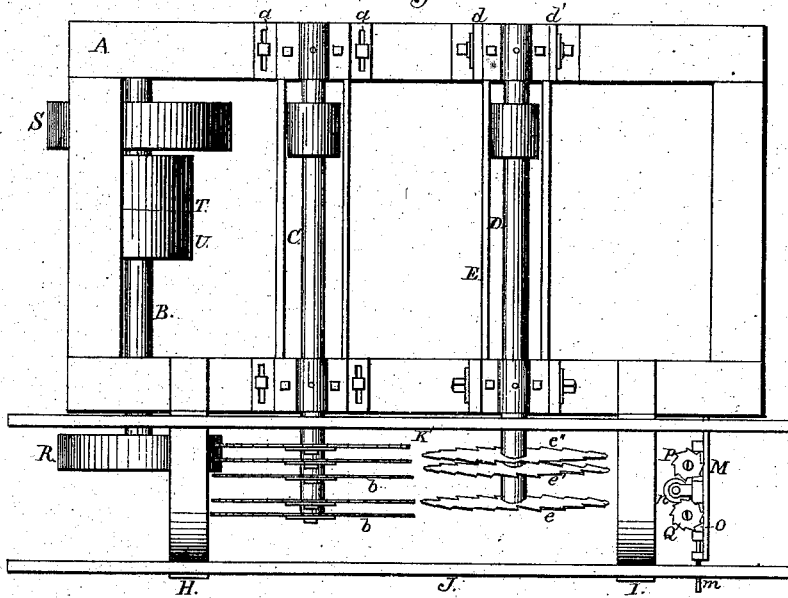


Fig. 3.

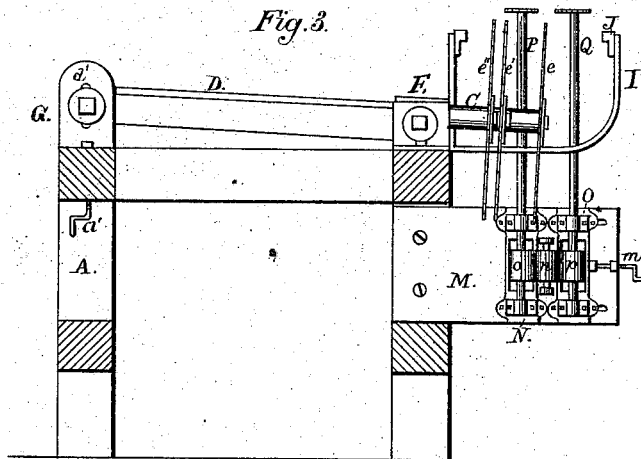


Fig. 6.

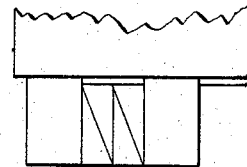


Fig. 4.

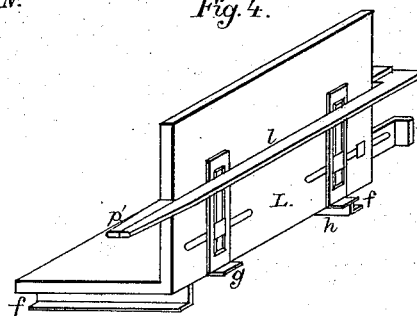
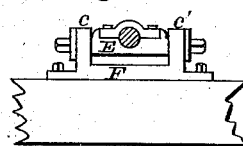


Fig. 5.



Witnesses:
H. B. Schott.
A. C. Parker

Inventor:
Edwin A. Rowley
per John P. Town
Att

UNITED STATES PATENT OFFICE

EDWIN A. ROWLEY, OF WILLIAMSPORT, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR RELISHING TENONS.

Specification forming part of Letters Patent No. 160,957, dated March 16, 1875; application filed January 16, 1875.

To all whom it may concern:

Be it known that I, EDWIN A. ROWLEY, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Relishing Tenons; 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 which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of machines used for relishing tenons in the manufacture of doors, blinds, and similar articles, the object being to produce a machine which shall form the wedges used in putting the doors or other articles together from that part of the tenon cut away in the process of relishing; also to so arrange the parts as to expedite the work to a great extent, enabling the operator to produce a greater amount of finished work in a specified time than can be performed upon the machines generally in use for this purpose; and a further object is to so arrange the parts of the machine as to place the saws within the framing, thus securing safety to the operator by rendering it impossible for him to come in contact with them while handling the material, or otherwise employed about the machine; and the invention consists in the combination and arrangement of the different parts of the machine, as will be hereinafter fully described, and then pointed out in the claims.

Figure 1 is a perspective view of the machine complete. Fig. 2 is a plan view, showing the general arrangement of the parts. Fig. 3 is a section of Fig. 2, showing the manner of adjusting the inclined saws and arrangement of the relishing-saws. Fig. 4 is an enlarged perspective view of the table. Fig. 5 represents the oscillating journal-box, which carries one end of the adjustable saws. Fig. 6 represents a tenon, and shows the manner of cutting the wedges and relish.

In the accompanying drawings, A represents the frame of the machine, and B the driving-shaft, provided with suitable pulleys for the reception of the belts which drive the

saws. A saw-arbor, C, mounted in a frame having a lateral adjustment by means of the belts and slots *a*, and an adjusting-screw, *a'*, upon the frame of the machine, is provided with a series of circular saws, *b b*. These saws are retained upon the arbor at the proper distance from each other by collars or sleeves of the same length as the distance between the tenons and width of the tenons themselves, the length of the collars being varied to suit the work in hand. Another saw-arbor, D, is carried by the vertically-adjustable frame E. One end of this frame is pivoted between the two lugs *c c'* upon the support F, which is in turn secured by bolts or otherwise to the main frame A. The other end of the frame E is adjusted vertically upon the support G by means of set-screws passing through the slotted lugs *d d'* and an adjusting-screw, *a'*, thus enabling the frame E, and with it the saw-arbor D, to be adjusted at any desired angle to the arbor C. The saws *e, e', and e''* are secured upon their arbor with collars between them in the same manner as those upon the arbor C, but at only such distance from each other as may be necessary to form the wedges. These saws also vary in size so that when their arbor is inclined, as in use, a line drawn across the upper side of their peripheries shall be parallel with those, and upon the same plane with those upon the arbor C, thus causing them to penetrate the material to an equal distance. Two brackets, H I, carry the rails J K, upon which is placed the carriage L. This carriage is provided with grooves *f*, which hold it firmly to the rails, and at the same time allow of a free longitudinal movement upon them. It is also provided with the stops *g h*, having both a vertical and horizontal movement in order to adjust them to tenons of different widths, the stops being so placed as to receive those portions of the tenon which are to be retained, and allow sufficient space between them for the passage of the relishing-saws. Another stop, *i*, having only a horizontal movement, is secured to one side of the carriage and serves as a gage, against which is placed the finished side of the work. A lug is secured to one or either side of the carriage, and serves to support one end of the lever *l*, which crosses the face of the upright

part of the carriage, and serves to secure the material in position while undergoing the various operations necessary to complete the tenon. Near one end of the main frame A is secured the transverse frame M, which carries the adjustable frames N and O, the latter being moved horizontally by means of the adjusting-screw *m*. These frames carry the relishing-saw arbors P and Q, which are driven by a belt from the pulley R upon the shaft B. An idle-pulley, *n*, being placed between the pulleys *o p* upon the arbors of the relishing-saws, causes the belt to encircle them sufficiently to produce the necessary friction for their efficient working, the arbors C and D being driven by a belt from the pulley S, while power is imparted to the shaft B, for the purpose of driving the whole machine, through the agency of a belt from some suitable motor to the pulleys T U.

The operation of the machine is as follows: The carriage being placed at that end of the machine farthest from the relishing-saws is ready to receive the piece of wood to be operated upon, which, after a proper adjustment of the stops and gages, is placed thereon in a vertical position, the tenon downward and resting upon the stops *g h*, its face or working edge being pressed firmly against the gage *i*. The lever *l* is then swung round upon its pivot and brought into contact with the material, and the whole held firmly in position by the hand of the operator grasping the end of the lever and the handle or projection *p*, or they may be secured together by a clamp or other means, if desired, so as to leave both hands of the operator free. The carriage is then moved automatically forward or by the

hand of the operator, over the series of vertical saws upon the arbor C, which cuts the sides of the tenons and one side of the wedges. It then passes onward over the saws upon the inclined arbor D, which cut the inclined sides of the wedges, and then goes onto the relishing-saws upon the vertical arbors P Q, which form the shoulder and remove the surplus material, leaving the tenon as shown in Fig. 6. It will be evident that the number of saws used upon the arbors C and D must vary to suit the work to be performed.

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

1. The adjustable saw-arbor D, carrying the series of saws *e, e', and e''*, diminishing in size as they recede from the saw *e*, in combination with the frame E, slotted support G, and pivoted support F, substantially as and for the purpose set forth.

2. The arbor C, provided with the saws *b b* and the adjustable arbor D, carrying a diminishing series of saws, as described, in combination with the vertical saw-arbors P and Q, with their adjusting mechanism, as and for the purpose specified.

3. The carriage L, provided with the horizontally and vertically adjustable stops *g h*, adjustable stop or stops *i*, and lever *l*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

EDWIN A. ROWLEY.

Witnesses:

E. C. WEAVER,
E. M. FINCH.