T. G. Stagg,

Tenoning and Wiring Blind Slats.

No. 10,710. Patented Mar. 28, 1854.

Fig: 1.

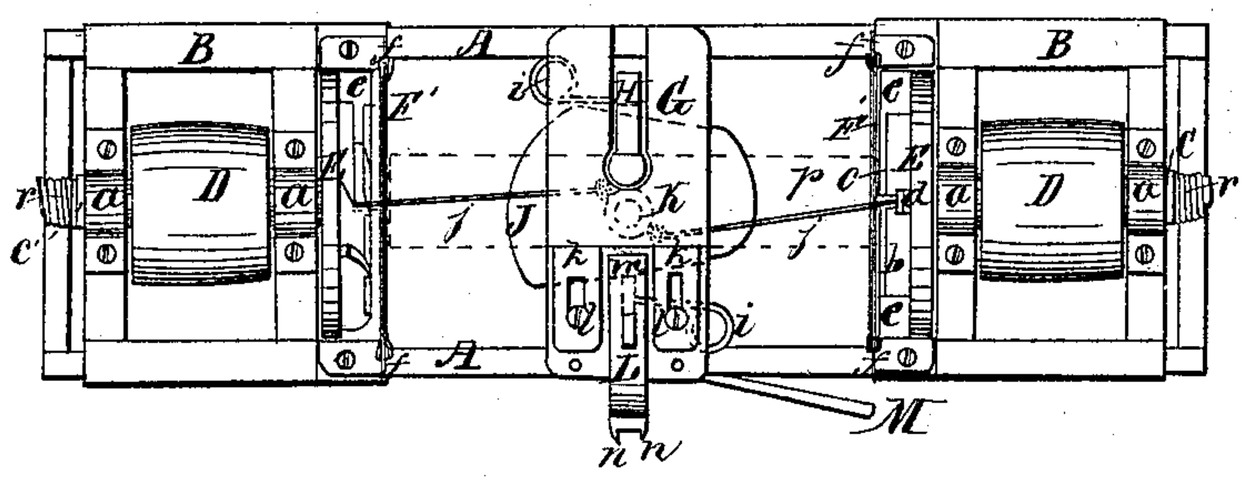


Fig: 2.

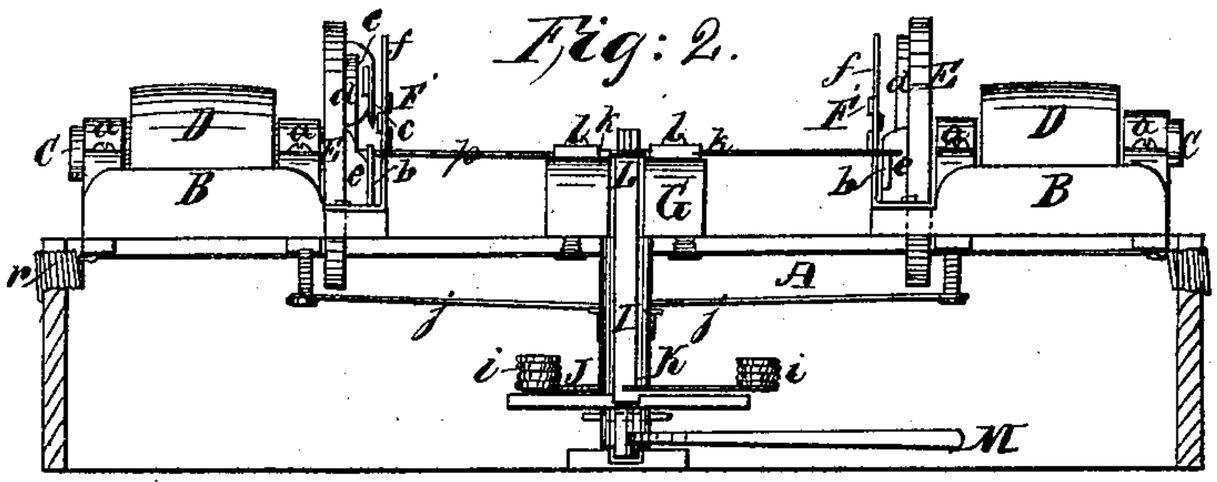


Fig: 3.

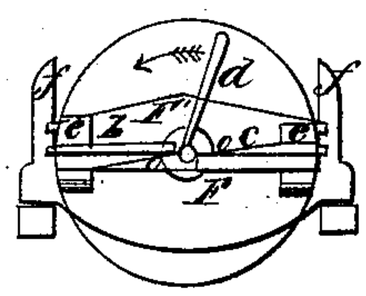


Fig: 4.

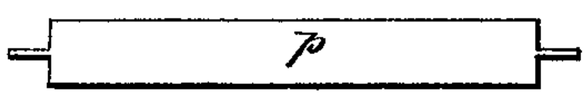
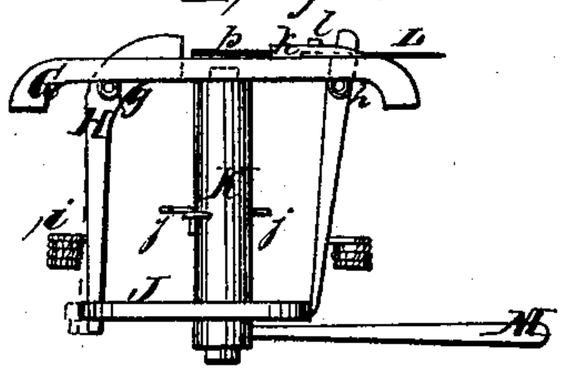


Fig: 5.



UNITED STATES PATENT OFFICE.

THOMAS G. STAGG, OF JERSEY CITY, NEW JERSEY.

MACHINE FOR TENONING, &c., BLIND-SLATS.

Specification of Letters Patent No. 10,710, dated March 28, 1854.

To all whom it may concern:

Be it known that I, THOMAS G. STAGG, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Machines for Tenoning and Wiring or Pricking Blind-Slats; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a plan or top view of my improved machine. Fig. 2, is a side elevation of ditto, the side of the frame or bed nearest the eye being removed. Fig. 3, is a face view of one of the cutter disks and the stationary knives; the stationary knives are shown in red. Fig. 4, is a detached view of a blind slat. Fig. 5, is a detached view of the clamp lever, staple or pricking lever, and cam, by which the two levers abovementioned are operated.

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

This invention relates to certain new, useful improvements in machines for tenoning and wiring, or pricking blind slats.

The nature of the invention consists, 1st, in the employment or use of stationary knives, and a series of cutters placed upon a rotating disk, the disk and stationary knives being placed upon a vibrating head. Two vibrating heads with their knives and cutters attached are employed upon one machine; and by their operation, as will be presently shown, the tenons are perfectly cut—one at each end of the slat, at the same time, and of an equal length.

This invention consists, 2d, in the employment or use of a clamp lever, and a staple or pricking lever, arranged and operating as will be hereafter shown, whereby, in case of the slats varying in width, an equal distance is always obtained between the tenons and the edge of the slat in which the staples are driven. This will be hereafter fully explained.

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

A, represents a frame or bed, on which two heads, B, B, work or vibrate, a head being on each end of the frame or bed, as shown in Figs. 1 and 2. On each head there is placed on suitable bearings, (*a*), a small shaft, or arbor, C, provided with a pulley, D, and on the inner end of each shaft, or arbor, C, there is secured a circular disk, E. Each disk, E, has three cutters, (*b*), (*c*), (*d*), secured to its face, as shown more particularly in Fig. 3. Two of the cutters, (*b*), (*c*), are secured radially to the disk at opposite points upon it, the cutters being a short distance from the surface of the disk, as shown in Figs. 1 and 2, and secured to the ledges or sockets, (*e*), attached to the disk, at its edge. One of the edges of each of the cutters, (*b*), (*c*), is sharpened or beveled to form a cutting edge, see Fig. 3, in which, (*o*), (*o*), represent the cutting edges of the cutters, the arrow showing the direction in which the disk rotates. The inner ends of the cutters, (*b*), (*c*), do not meet, but a space is left between, which is equal to the diameter of the tenon to be cut, see Fig. 3.

The cutter, (*d*), is secured to the face of the disk, E, its inner end being somewhat rounded, and forming a cutting edge, as shown at (*o'*), Fig. 3. This cutting edge extends across, or to the center of the disk. The cutter, (*d*), may be placed radially upon the face of the disk, or rather obliquely upon it, as shown in Fig. 3.

Each of the two disks and their cutters, (*b*), (*c*), (*d*), are constructed precisely similar to each other.

To each head, B, and directly in front of the disks, E, E, are attached stationary knives, F, F', one pair of stationary knives before each disk. The lower knife, F, is fixed, or is immovable; and its cutting edge is horizontal, and extends across the disk a short distance below its center, as shown in red, Fig. 3. The upper knife, F', slides or works on guides, (*f*), (*f*), directly over the lower knife, F, and is therefore adjustable, and its cutting edge may be brought nearer to, or farther from, the cutting edge of the lower knife, F.

G, Figs. 1, 2, and 5, is a transverse stationary cross piece on the upper part of the frame, or bed, A, and at about its center.

H, is a clamp lever, the fulcrum, (*g*), of which is on the under side of the cross piece, as shown in Fig. 5. The upper part of the clamp lever passes upward through a slot in the cross piece, and extends a short distance above the upper surface of the cross piece. I, is a staple, or pricking lever, also having its fulcrum on the under side of the cross piece, at (*h*). The upper end of the

staple, or pricking lever, extends upward through a slot in the cross piece, as shown in Fig. 5.

J, is a cam placed on the lower part of a vertical shaft, K. The upper end of the shaft, K, fits in the cross piece, G, and the lower parts fit in a step or bearing. The cam, J, and shaft, K, are placed between the levers, H, I, the lower ends of the levers, H, I, by means of springs, (*i*), (*i*), bearing against the periphery of the cam, as shown in Fig. 5.

The two heads, B, B, are connected to the vertical shaft, K, by means of rods, (*j*), (*j*), the rods being connected to the shaft at opposite points upon its periphery, as shown in Fig. 2.

On the upper surface of the cross piece, G, are two ledges or guide stops (*k*), (*k*), as shown in Figs. 1 and 2. The inner ends of these ledges or steps are at such a distance from the line of the centers of the two disks, E, E, as to correspond to the distance desired to be between the tenons of the blind slat and its inner edge. The ledges or stops are secured to the cross piece by set screws, (*l*), (*l*), and therefore may be adjusted as occasion requires.

On the upper part of the staple or pricking lever, there is placed a dog, L, one end of which, (*m*), is square, and the opposite end is provided with two points, (*n*), (*n*).

M, is a lever attached to the lower part of the shaft, K.

Operation: The blind slats are laid upon the cross piece, G, transversely, one at a time, the center of the slat being opposite the clamp lever, H, see Figs. 1 and 2, (*p*), representing the slat. The upper stationary knives, F′, are then adjusted so as to allow the ends of the slat to pass between the knives, F, F′, before each disk, E. The lever, M, is then moved in a direction from left to right, and the cam, J, first acts against the lower end of the clamp lever, H, and the upper part of the clamp bears against the outer edge of the slat, (*p*), and forces it tightly against the ledges, or stops, (*k*), (*k*). The heads B, B, are then drawn inward or toward each other, in consequence of their attachment to the shaft, K, by means of the rods, (*j*), (*j*), and the cam, J, bears against the lower part of the staple, or pricking lever, I; the upper part of said lever, I, moving forward toward the inner edge of the slat, simultaneously with the movement of the heads, B, B. As the heads, B, B, are drawn inward, the cutters, (*b*), (*c*), on the disks, E, E, cut the tenons, the disks being made to rotate by means of belts passing around the pulleys, D, D. The cutters, (*d*), (*d*), cut off the ends of the tenons, so that they are made of an equal length. The stationary knives, F, F′, prevent the shoulders of the slat from being broken by the action of the cutters, (*b*), (*c*). The shoulders, therefore, are made perfectly smooth, as the stationary knives and the cutters operate similar to a pair of shears. When the upper part of the staple, or pricking lever, I, moves forward, the staple is forced into the inner edge of the slat, or the holes for the staple is pricked,—either may be done as desired, if the square end (*m*), is toward the slat, the saple is forced into it, the staple being previously placed before the dog; but if the holes are to be pricked, the opposite ends, (*n*), (*n*) of the dog are placed toward the slat, and the points will enter the slat and form the necesary holes. The dog, L, it will be seen, may be reversed upon the lever, I. When the lever, M, is released from the hand, the heads, B, B, return to their original position, by means of the springs, (*r*), (*r*), see Figs. 1 and 2, and the clamp and staple, or pricking lever, return to their original position, by means of the springs, (*i*), (*i*).

Blind slats are wired in two different ways, viz: by forcing the staples directly into the slats, without holes, and by first making holes, and driving the staples into them.

I am aware that cutters, similar to the ones, (*b*), (*c*), herein described, have been previously used on rotating disks for similar purposes. I, therefore, do not claim the cutters (*b*), (*c*), separately; but

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

1. The employment or use of the stationary knives, F, F′, and the cutters, (*b*), (*c*), (*d*), arranged upon a rotary disk, E, the knives and disk with the cutters attached, being secured to a vibrating head B. Two heads B, B, being employed on one machine, and operating in the manner and for the purpose substantially as herein shown and described.

2. I claim the employment or use of the clamp lever H, and staple or pricking lever, I, arranged and operating as herein shown and described, for the purpose of properly clamping the slat, and pricking the same, or driving the staple therein.

T. G. STAGG.

Witnesses:
A. D. MUNN,
S. H. WALES.