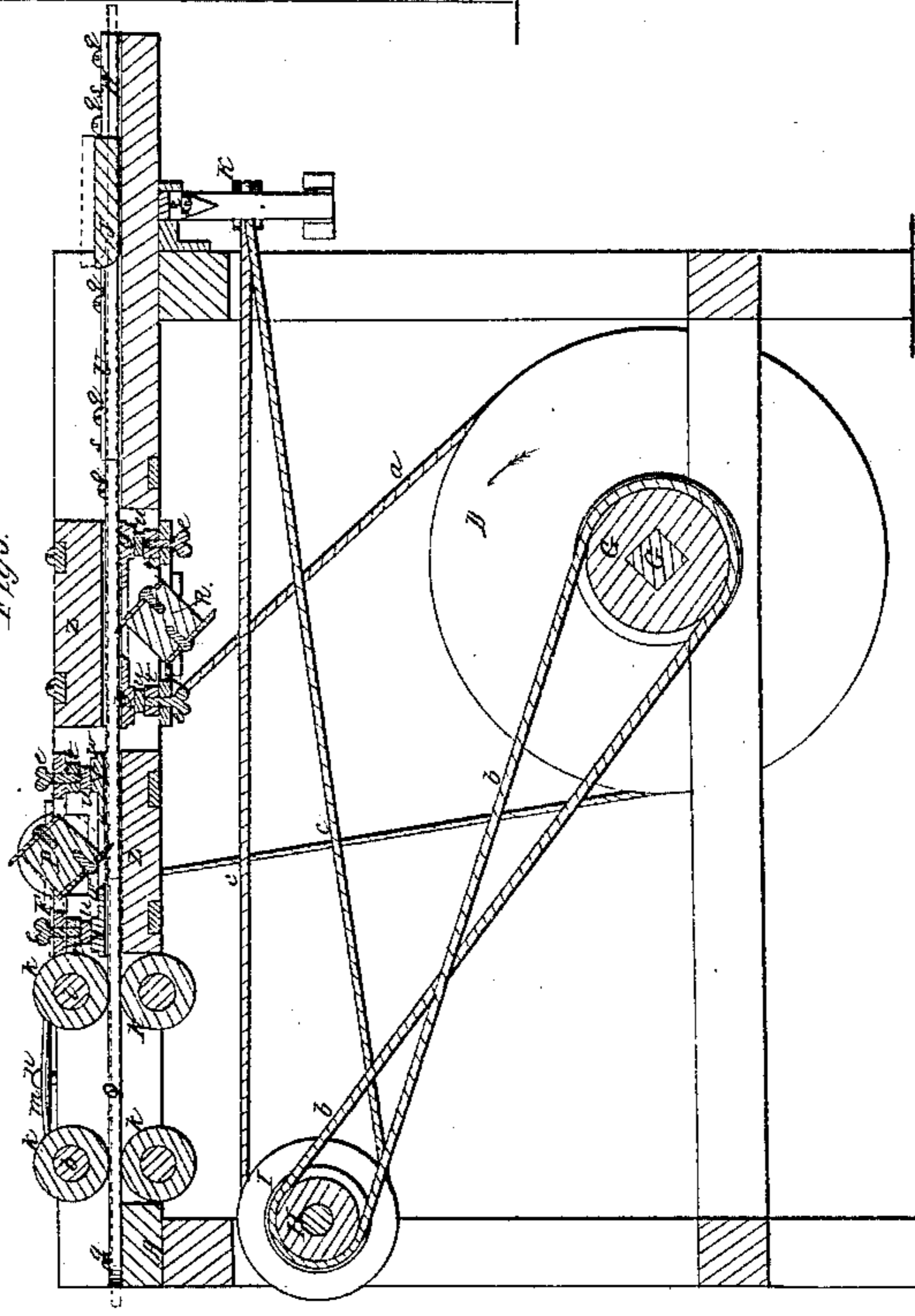


*Patented Apr. 24, 1860.*



Henry W. Sumner.  
By his atty.  
J. S. Brown.

# UNITED STATES PATENT OFFICE.

HENRY W. FARMER, OF POULTNEY, VERMONT.

## INDOOR-BLIND-SLAT MACHINE.

Specification of Letters Patent No. 27,976, dated April 24, 1860.

*To all whom it may concern:*

Be it known that I, HENRY W. FARMER, of Poultney, in the county of Rutland and State of Vermont, have invented certain  
5 new and useful Improvements in Machines for Planing Slats or Shades for Window-Blinds; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accom-  
10 panying drawings, making part of this specification.

Figure 1, is a plan of a machine provided with my improvements; Fig. 2, a side elevation thereof; Fig. 3, a longitudinal, ver-  
15 tical section of the same, in the plane indicated by the line *x x*, Fig. 1.

Like letters designate corresponding parts in all the figures.

The revolving parts of the machine are  
20 two pairs of feed rollers *k, k*, two cutter-heads P, R, for planing the sides of the shades, and two cutter-heads S, S, for planing or forming the rounded or beaded edges thereof. These are mounted in an oblong  
25 frame A, suitably arranged to receive them and the other working parts of the machine.

To communicate the proper motions to these revolving parts, any convenient arrangement of driving gear may be employed. In the drawings, the following arrangement is represented: The power is first applied to the driving pulley B, on the end of the driving shaft C. For driving the  
30 cutter-heads P, R, two large pulleys D, D, are placed on the driving shaft, and bands *a, a*, proceed therefrom to small pulleys E, E, on the respective shafts of the cutter-heads. For driving the cutter-heads S, S, which are on vertical shafts, first, *a* and *b*,  
40 passes from a pulley G, on the driving shaft C, to a transferring pulley H; then from two pulleys I, I, on the shaft of the said pulley H, two bands *c, c*, extend respectively to pulleys K, K, on the shafts of said cutter-heads. For communicating the proper motions  
45 to the four feed rollers *k, k, k, k*, a band *d*, passes from a pulley L, on the driving shaft C, to a transferring pulley M, on the shaft *f*, of which is a pinion N, gearing into a cog-wheel O; and on the shaft *g*, of the latter is a pinion *h*, which gears into one  
50 each of two pairs *i, i, i, i*, of equal-sized pinions on the respective shafts of said feed rollers. I employ these two pairs of feed  
55 rollers, at a short distance apart, and both in front of the cutter-heads, instead of the

usual arrangement of one pair of feed rollers before the cutter-heads, and another pair behind one, or both cutter-heads. The object of this arrangement is to prevent the  
60 scarring or indentation of the shades, after passing the cutter-heads; which result can not be avoided with the old arrangement. At the same time, a single set of feed rollers in front of the cutter-heads, would not be  
65 sufficient to feed along the shades, without such a strong pressure and consequent indentation of the shades as to injure their surfaces, so that they could not be planed to  
70 a smooth and even surface.

The journals of the upper shafts *l, l*, of the feed rollers *k, k*, are held down by spring caps *m, m*, which are adjustable to any desired degree of pressure by screws *n, n*, passing down through them into the sides of the  
75 frame, substantially as shown in the drawings.

In order to feed and guide the shades along through the entire machine, in addition to the double sets of feed rollers, arranged as above described, I employ lateral  
80 guide rods Q, T; U, V; and W, X; the arrangement and objects of which I will specify: The first pair, Q, T, extend from the front end of the machine back beyond the  
85 rear cutter-head R; and have simple, plane inner edges which press against the edges of the shades. The second pair, U, V, extend from the termination of the first pair, back near to the cutter-heads S, S; and have lips  
90 *s, s*, on their upper, inner edges extending over the edges of the shades, so as not only to keep the lateral position of the shades correct, but to hold the shades down in the proper vertical position for making the  
95 beads on their edges by the cutter-heads S, S. Then from just behind the said cutter-heads to the rear end of the machine, the third pair of guide rods W, X, extend. Their construction, arrangement, and action are  
100 similar to those of the second pair of guide rods U, V, just described. The several guide rods T, V, X, on one side, are adjustable laterally in the machine, all in a line, by means of set-screws *r, r, r*, or their equivalents, so as to bring shades of different  
105 widths to a central position in the machine. The other guide rods Q, U, W, on the other side, have a lateral movement, guided by screws and slots *q, q, q*, or their equivalents; and springs *o, o, o*, of india-rubber, or equivalent elastic material, outside, to press the  
110

slats inward in contact with the rods T, V, X, on the other side. The force of the springs *o, o, o*, is varied and adjusted, by means of set-screws *p, p, p*, or their equivalents, pressing against their outer ends, or sides.

In order further to insure the keeping of the slats or shades down to the bed, while being subjected to the action of the cutter-heads S, S, a pressing block J, is situated between the said cutter-heads, extending between and by the adjacent ends of the two pairs of guide rods U, V, and W, X, substantially as represented in the drawings. This block is pressed down by a spring *j*, of sufficient strength; and its front end is chamfered or rounded, on the lower side, (as shown in Fig. 3,) to cause the shades, to wedge under and lift the block, as they pass backward through the machine.

In feeding the shades successively through the machine, by means of the above arrangement of devices, the feed rollers *k, k, k, k*, force each shade along, and this drives the others preceding it in the machine; and when desired to clear all out, to the last, a single long slat or strip, of the full length of the machine, may finally be run through; and the same one may be used many times over for this purpose.

Opposite to each of the cutter-heads P, R, below the former, and above the latter, is a fixed bed Z, against which the shades are pressed while the planing is going on. The rear bed Z, at least, should properly have the form of the dressed upper surface of the shades. The shades are pressed against the beds Z, Z, close around the cutter-heads, by means of pressing plates, or forms, Y, Y, extending across from side to side of the machine and having apertures through them just large enough to allow the cutter-heads to revolve in them. Upon, or beneath, according to the situation of, the pressure plates, are springs, or elastic pads, *u, u*, (Fig. 3,) and upon, or beneath (as the case may be) these are cross-bars *t, t*, held in place by the frame of the machine. The pressing plates Y, Y, are connected with these cross-bars, by suspending rods *w, w*, (shown by dotted lines in Fig. 3,) which hold the pressing plates up, or away from the path of the shades, and, at the same time, allow all the required movement of the pressing plates, when forced back against the

springs *u, u*. Immediately above, or outside of, the bars *t, t*, are plates or frames F, F, (called "tilting frames," in which are the bearings of the cutter-heads P, R. These tilting frames are adjustable outward, (as indicated by red lines in Fig. 3,) by means of set-screws *v, v*, for the purpose of adjusting the position of the cutters, to vary the thickness of the shades. The force of the springs *u, u*, is adjusted by screws *e, e*, passing through the tilting frames F, F, and bars *t, t*, as represented in the drawings.

The bearings of the cutter-heads, S, S, are adjustable toward or from each other in the frame, by set-screws *z, z*, as shown in Fig. 3, or by equivalent means, for the purpose of varying the width of the shades. The edges of the cutters in the cutter-heads are curved, as seen at *y*, Fig. 2, so as to produce the bead, or rounded form, on the edges of the shades.

I do not claim simply double sets of feed rollers; nor guide ways; nor do I claim the employment of side cutters; but

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

1. The combination of the guide rods Q, T; U, V; W, X, adjustable on one side of the machine, and yielding or elastic on the other, constructed, arranged and operating substantially as described, with the double sets of feed-rollers *k, k, k, k*, all situated in front of the first cutter-head, for the purposes herein specified.

2. I also claim the adjustable cutter-heads S, S, for perfecting the beaded edges of the shades, when arranged, in combination with the guide rods Q, T; U, V; W, X, and pressing-block J, substantially as herein described, so as to receive the shades in proper position, directly from the side-dressing cutter-heads, without intermediate manipulation or machinery, and to finish them, with unerring accuracy, in their continuous and direct course through the machine.

In witness that the above is a true specification of my improved machine for planing window-blind slats, I hereunto set my hand this 6th day of January, 1860.

HENRY W. FARMER.

Witnesses:

M. CLARK,  
J. CLARK.