UNITED STATES PATENT OFFICE.

J. H. NELSON, OF OSKALOOSA, IOWA.

MACHINE FOR PLANING IRREGULAR SURFACES.

Specification of Letters Patent No. 21,618, dated September 28, 1858.

To all whom it may concern:

Be it known that I, JAMES H. NELSON, of Oskaloosa, in the county of Mahaska and State of Iowa, have invented a new and Improved Machine for Planing Curved or Irregular-Shaped Stuff; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a vertical section of my improvement taken in the line *x*, *x*, Fig. 3. Fig. 2, is also a vertical section of ditto taken in the line *y*, *y* Fig. 3. Fig. 3, is a plan or top view of ditto.

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

This invention consists in having rotary planers placed within yielding or elastic frames and using in connection therewith feed rollers also placed in a yielding frame, the parts being arranged as hereinafter described, so that the planers and feed rollers may conform to the curvatures of the stuff and perform their respective functions equally as well as if they were stationary and operating on straight stuff or stuff with parallel sides.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a rectangular frame which may be constructed in any proper manner to support the working parts, and B, B, are two frames which are fitted vertically in guides C, C, in the frame, said frame having each an elliptic spring D, bearing against its outer edge, see Fig. 2. The frames B, B, are placed in one and the same plane and their springs D, have a tendency to keep them pressed toward each other, so that their inner ends will be in contact.

In the inner part of each frame B, a vertical arbor E, is placed. Each arbor has a pulley F, on it and a planer G, on its upper end said planers being formed of a head *a*, provided with cutters *b*. The arbors E, extend upward through a slot in a platform H, which is on the top of the frame A, and the planers G, are above the platform as plainly shown in the drawings.

I, is a frame which is fitted vertically in the frame A, and allowed to slide up and down therein. The frame I, has springs I′, bearing against its lower end. The upper end of this frame extends through the platform H, and two parallel shafts J, J, are placed in the upper end of the frame I, above the platform. The planers G, G, are placed between the two shafts J, J, and on each shaft J, opposite the planers a feeding roller K, is placed. These rollers are attached permanently to and consequently rotate with the shafts J. To one end of each shaft J, a pinion L, is attached, and these pinions gear into an intermediate wheel M, into which a wheel N, gears, the latter wheel being at the upper end of a vertical shaft O, which may be driven in any proper manner from a driving or power shaft from which also the arbors E, are rotated.

To the under side of the platform H, a slide P, is placed, said slide being in a line between the two frames B, B. The inner end of this slide is made of wedge shape as shown by the dotted lines in Fig. 3.

The operation is as follows: Motion is given the arbors E, E, and the shaft O, the latter rotating the shafts J, J, and consequently the rollers K, the latter feeding the stuff Q, shown in red, between the planers G, G, which will yield or give to conform to its curvatures in consequence of being fitted in the frames B, acted upon by the springs D, the latter keeping the planers to their work and at the same time yielding to allow the planers to conform to its curvatures. In case the stuff varies in height or depth, or has a curved upper surface the rollers K, K, will also give or yield as the frame I, is movable and governed by the springs I′, which have a tendency to keep the rollers K, pressed down on their work. The slide P, when shoved inward serves to distend the frames B, and consequently the planers G, so as to allow the stuff to enter between the planers. By this machine therefore, it will be seen that curved or crooked pieces of stuff of varying or equal widths may be planed with the greatest facility and equally as well as straight stuff is now planed by the ordinary machines.

I do not claim placing rotary planers within adjustable or yielding frames, for

Nevins & Yates,

Bread Machine,

No. 21,619. Patented Sep. 28, 1858.

Fig. 3.

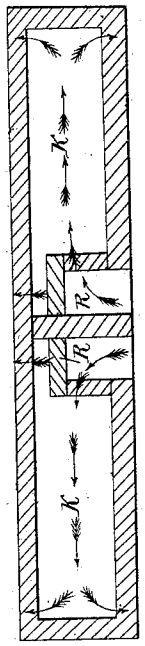

Fig. 4.

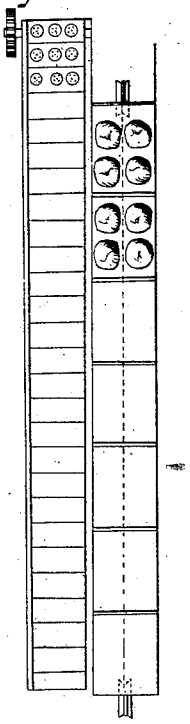

Fig. 2.

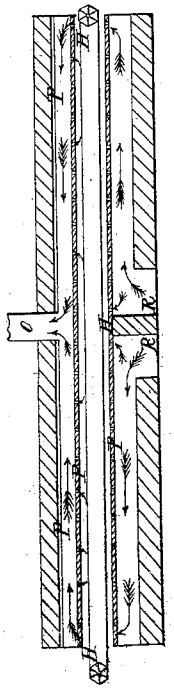

Fig. 1.