

V. H. Buschmann,

Re-sawing Lumber,

No 40,816,

Patented Dec. 8, 1863.

Fig. 1.

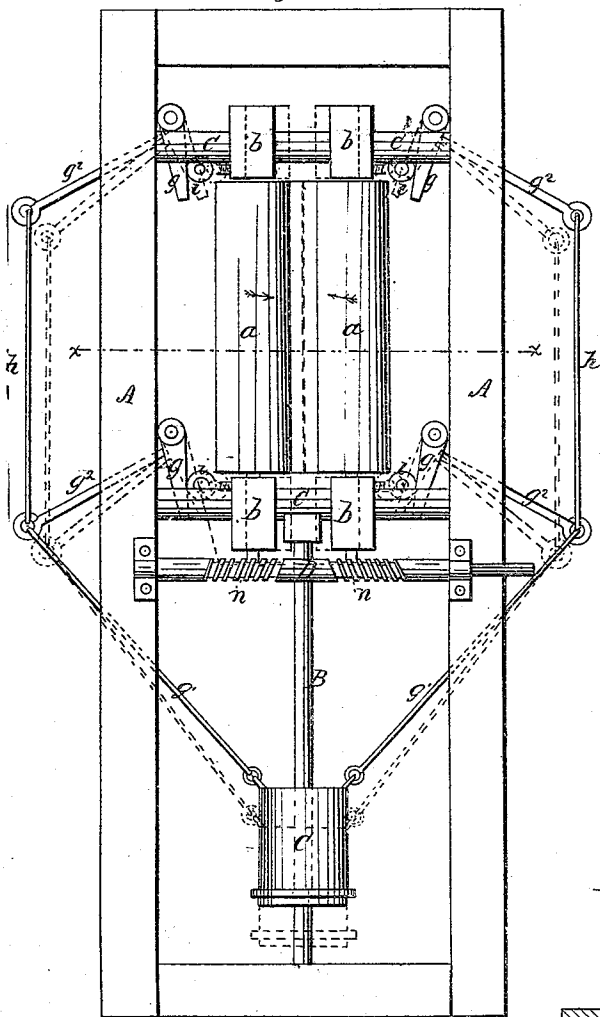


Fig. 2.

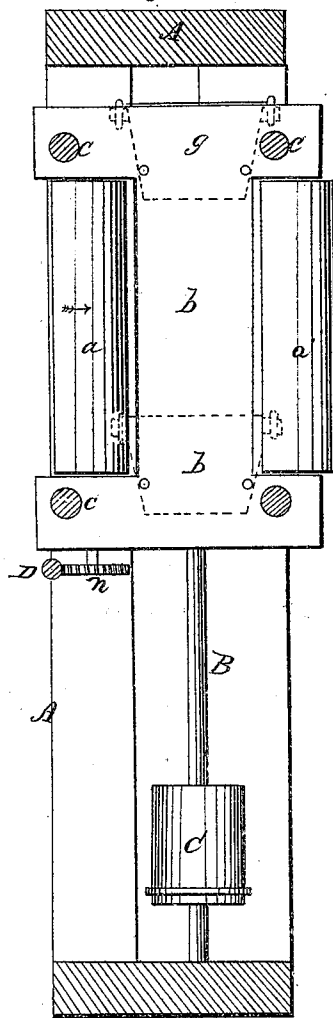
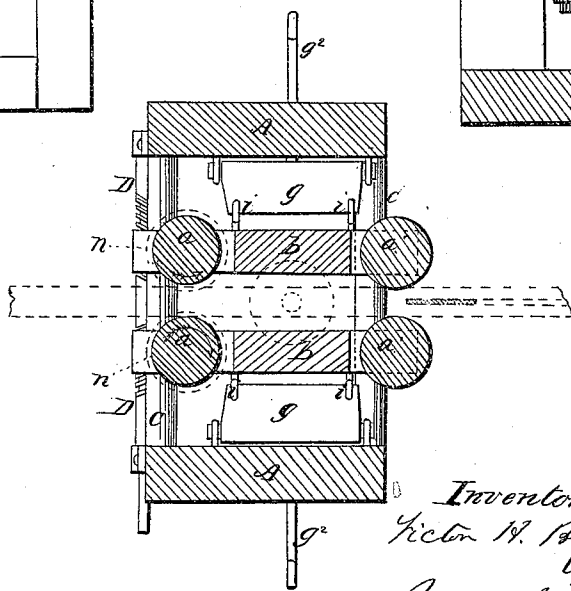


Fig. 3.



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VICTOR H. BUSCHMANN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN FEEDING DEVICE FOR SAW-MILLS.

Specification forming part of Letters Patent No. 40,816, dated December 8, 1893.

To all whom it may concern:

Be it known that I, VICTOR H. BUSCHMANN, of the city and county of Baltimore, State of Maryland, have invented a new and useful Automatic Feeding Device for Saw-Mills and other Purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front elevation of the improved feeding device, representing the parts in two positions. Fig. 2 is a vertical transverse section through Fig. 1. Fig. 3 is a horizontal section taken at the point indicated by red line *x x*, Fig. 1.

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

This invention relates to an improvement in hanging and adjusting the feed-rollers which are used for feeding the stuff to the saw in machines for resawing boards for clap-boards, box-stuff, &c.

The object of this invention is to obtain a self-adjusting centering feeding device which when once set will require no further adjustment for boards of different thicknesses, and which will guide and feed warped as well as straight stuff to straight or circular saws in a more positive and certain manner than devices hitherto used for this purpose.

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

In the accompanying drawings, *a a' a'* represent four upright feed-rollers of unequal diameter, which have their end bearings in two laterally-sliding plates, *b b*, that are in the same plane as their respective rollers. These plates or frames *b b* are in planes parallel to each other, and are kept in these positions and supported by means of the four guide-bars *c c c c*, which have their ends secured in the upright sides of the main frame A, as shown in Figs. 1 and 2. The feed-rollers when thus supported are allowed to have a free lateral movement on the bars *c*, and they always preserve their parallelism during this movement, so that a board when passed between them will be kept in a plane with the face of the saw, which latter is supposed to have an established position in a line with the center of the space between the two pairs of rollers and outside of

the plates *b b*, as indicated by red lines, Fig. 3, where I have represented a board in the act of being resawed or split into two boards of an equal thickness.

In the center of the frame A, and below the base of the roller-supporting plates *b b*, is a vertical guide-rod, B, which is secured in a rigid position. This rod B receives loosely on it a sliding weight, C, which is connected to four wide pressure-plates, *g g g g*, by means of jointed connecting-rods *g' g'* and four lever-arms, *g² g²*, which latter are connected together by rods *h h*, and secured to the pressure-plates *g*, as shown in Fig. 1. The pressure-plates *g* are arranged so that they will act upon adjustable bearings *i i*, located at or near the upper and lower ends of the roller-carrying plates *b b*, and press both of these plates toward each other with a force equal to the weight of C, acting upon the lever-arms *g²* of the pressure-plates *g*. In order to obtain the same pressure on both roller-carrying plates, the levers should all be of an equal length and the pressure-plates of an equal width. The roller-plates *b b* can then be adjusted laterally for centering the boards with respect to the saw by means of the adjustable bearings *i i*. The object of these bearings is therefore to adapt the rollers for guiding and feeding thick or thin boards to the saw, so that they will be split into two thin boards of a uniform thickness throughout, and when the rollers are thus set they are adapted for boards of varying thicknesses without any other adjustment, as they will yield outward and still be acted upon by the unvarying pressure of the gravitating load C, acting through the medium of the connecting-rods, lever-arms, and pressure-plates above described. When a thick plank is introduced between the feed-rollers, they will both be forced apart, and the weight C will be elevated in proportion to the thickness of such board; and when a thin board is introduced between these rollers the weight C will descend slightly, but still keep up the same pressure of the rollers on each side of the thin board as upon the thick board.

The two feed-rollers *a a* are rotated by means of twin spur-wheels *n n*, which are keyed to the lower ends of the shafts of these rollers, and beneath the frames *b b*, as shown in Fig. 2, and in Figs. 1 and 3 in red lines. These wheels are acted upon by right and left worm-

screws on a shaft, D. This shaft may receive its motion from the arbor of the saw, if a circular saw be used, and it should be driven at a speed commensurate with the cut of the saw. The screw-shaft D, acting upon the spur-wheels *n n*, move these wheels in the direction indicated by the arrows in Fig. 3, and consequently it tends to force the two rollers together, and thereby increase the rolling-pressure of these rollers upon the stuff which is passed between them; but besides this auxiliary pressure, which I obtain by the arrangement of a right and left screw-shaft in front of the rollers *a a*, I am also enabled by the use of this screw-shaft to allow the roller-frames to reciprocate, and to preserve the contact of the gearing during the movement of the frames.

From the above description it will be seen that my feed and guide rollers have their bearings in plates which reciprocate upon parallel guide-rods that preserve the parallelism of these rollers, and hence prevent one roller from yielding more than the other on the same plate—*i. e.*, the plates will not be moved out of their parallelism in consequence of a board being passed between the rollers which may be more or less warped.

It will also be seen that I obtain an equal pressure upon boards of varying thicknesses by the use of a weight, C, or whatever may be used in its stead, applied in such manner as to act upon both roller-carrying frames; and it will finally be seen that both roller-frames, with their rollers, will move outward equally on each side of a central line, which line should be in the plane of the saw; hence whatever may be the thickness of the stuff fed between the rollers it will be cut into two boards of an equal thickness.

The guide-rod, which passes centrally through the sliding weight C, is for the purpose of causing this weight to act uniformly upon the extremities of the levers *g g g g* on both sides of the roller-plates by keeping the weight at an established central point between said levers.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Applying the required pressure to the feed and guide rollers by means of a single force acting equally upon opposite sides of both roller-carrying frames by mechanism constructed and operating substantially as described.

2. Hanging or supporting the roller-carrying frames, constructed as described, in such manner that while they will always preserve their parallelism to each other they are allowed to yield equally on each side of a central line and accommodate themselves to boards of different thicknesses, substantially as described.

3. The use of adjustable bearings *i i* or their equivalents, in combination with the roller-frames *b b* and pressure-plates *g*, constructed and operating substantially as for the purposes described.

4. A central weight or other similar force, in combination with a guide applied and operating substantially as and for the purposes described.

Witness my hand in the matter of my application for a patent for improvement in automatic feeding device for saw-mills.

VICTOR H. BUSCHMANN.

Witnesses:

R. T. CAMPBELL,
E. SCHAFFER.