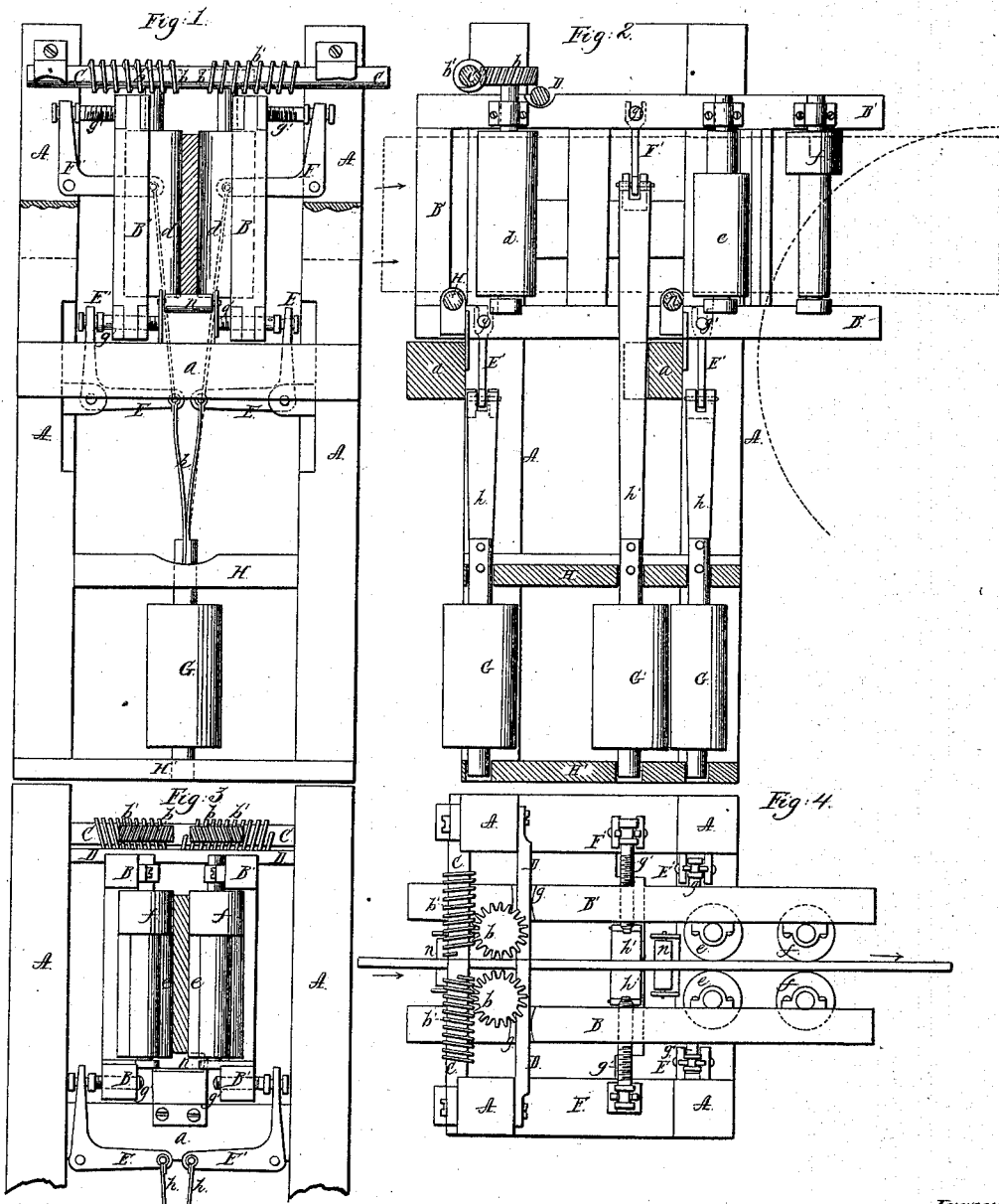


V. H. Buschmann,
Resawing Machine.

N^o 47,279.

Patented Apr. 18, 1865.



Witnesses:
R. T. H. H. H.
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UNITED STATES PATENT OFFICE.

VICTOR H. BUSCHMANN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. **47,279**, dated April 11, 1865; antedated April 7, 1865.

To all whom it may concern:

Be it known that I, VICTOR H. BUSCHMANN, of Baltimore, county of Baltimore, State of Maryland, have invented a new and useful Feeding Device for Saw-Mills; 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 my feeding device. Fig. 2 is a vertical longitudinal section taken centrally through the feeding device. Fig. 3 is a rear end view of the upper part of the same. Fig. 4 is a top view.

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

The object of this invention is to arrange and support feed-roller-carrying frames—between which boards to be resawed are fed up to the saw—in such manner that the rollers of said frames shall yield and accommodate themselves to boards of different thickness, or to boards which may be of unequal thickness—i. e., thicker at one edge than at the other—at the same time preserving the required feed and pressure on the sides of such boards to properly guide and direct them to the saw, as will be hereinafter described.

Another object of my invention is to maintain a firm lateral hold on the end of each board until it is completely sawed, where a circular saw is employed, as will be hereinafter described.

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

In the accompanying drawings, A represents the main supporting-frame, which consists of four upright posts, secured in their proper position by horizontal braces.

B B' are two frames, which rest edgewise upon two horizontal beams, *a a*, and which carry the three pairs of rollers *d e f*, between which the boards pass as they are fed to the saw. These rollers have their upper and lower bearings in their respective frames B B', and consequently move with the latter, as will be hereinafter described. The first pair of rollers, *d d'*, are the feed-rollers, and for this purpose the upper ends of their shafts have keyed to them spur-wheels *b b*, the teeth of which engage at all times with the right and left

screw-threads *b' b'* on the horizontal transverse shaft C, as shown in Fig. 4, which give a right and left feeding motion to the rollers *d d'*, and thus move the work up to the saw in the direction indicated by the arrows in Figs. 2 and 4. The other two pairs of rollers are used merely for guiding the stuff, and not as feed-rollers. These rollers are all of an equal diameter where they impinge upon the sides of the boards passed, but the lower portions of the two guide rollers *f f* are very much reduced in diameter for the purpose of allowing the saw to be brought up as closely as possible to the intermediate rollers, *e e*.

The roller-frames B B' are held down by means of a transverse bar, D, which passes through grooves *g g* in the top of each frame. The grooves are of sufficient size and of such a shape as will allow the frames to spread open at their forward or rear ends, or at top or bottom. These two frames are also allowed to separate from each other in parallel planes, according to the thickness of the stuff passed between the feed and guide rollers.

The pressure which is applied to force the roller-frames B B' toward each other is derived from three central weights, which act upon bell-cranks that are pivoted to the frame of the machine. Two bell-cranks, E E, act upon the lower rails of frame B at or near its forward and rear ends, and two cranks, E E', are located directly opposite the cranks E, and press upon the frame B'.

F F' are two bell-cranks, which act upon their respective frames B B' at intermediate points between the cranks E E E' E'. These latter cranks are arranged so that they press upon the upper parts or rails of their respective frames. The upright arms of the bell-cranks are all forked, and embrace slots which are formed around the heads of adjusting-screws *g' g'*, which screw into their respective frames B B', and which are used to set these frames farther apart or nearer together, or, more properly speaking, to so adjust the cranks E' E and F F' that the weights G G' G will act uniformly upon each screw-head. The ends of the horizontal arms of the cranks are connected by means of spring-straps *h h h'*, or other equivalent means, to weights G G' G above mentioned, which weights are guided by having their ends work loosely through

holes which are made through the shelf H and base H'. The weight G' acts upon the cranks F F', which are located at and press upon the upper parts of the frames B B', and the weights G G' act upon the lower cranks and cause them to press the lower parts of these frames together. Each weight acts upon two cranks and the straps connecting each weight with its respective pair of cranks should be of an equal length, so that I can have a single force acting equally upon both sides of both roller-frames.

From this description it will be seen that the roller-frames are allowed to yield outward in planes parallel to each other, and thus accommodate themselves to stuff of different thickness. While this is the case the frames are also allowed to yield and accommodate themselves to beveled stuff, or to stuff which may be thicker at one edge than at another. At the same time the pressure of the rollers on each side of the stuff will be uniform and the weights which give this pressure will always remain in a central position with respect to the space between the pressure-rollers, and rise or fall through a greater or less space, according to the thickness of the board passed between the rollers. The guide-rollers *f f* are intended to serve as guides for the upper portion of each board as its rear end leaves the guide-rollers, and thus support the boards over the saw, as represented by the red lines in Fig. 2.

Where a circular saw is employed, it has been found in practice that it cannot be arranged sufficiently near the full rollers *e e* to saw the boards completely in two parts before they leave these rollers. I therefore employ rollers *f f*, which are sufficiently reduced in diameter below a certain point to admit the saw between their reduced shafts, and thus support the rear end of the board above the saw until the former is divided. The lower edge of each board is supported upon two friction-rollers, *n n*, during its passage between the pressure-rollers.

It will be seen from this description that while I am enabled to maintain a uniform pressure upon each side of a board, the frames in which the pressure-rollers are supported are allowed to yield either at top or bottom or at their forward or rear ends, according to the thickness of the boards passed between

them. Where boards of uniform thickness throughout are passed between the rollers, these rollers, together with their frames, will open and close in planes parallel to each other, as before mentioned. By this arrangement the necessity for adjusting the pressure-roller frames is obviated, and when once set so that the cranks bear uniformly upon each side of said frames there will no further adjustment be necessary for boards of all ordinary thicknesses.

In order to adapt the guide-drums *f f* to boards of different widths, they may be applied to their shafts by means of keys, so that they can be adjusted on their shafts and raised or depressed, according to the width of the boards to be sawed. In this case the drums will always support and guide the ends of the boards up to the work and the saw can be brought up very near to the full rollers.

I have found in practice that for boards of ordinary widths the drums *f f* will not require adjustment, but for very narrow boards it may be necessary.

I will here remark that boards which are very narrow do not require to be held between the drums so long, and that this part of my invention relates more particularly to wide boards, where the greatest difficulty is experienced.

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

1. So arranging and supporting feed and pressure roller-frames B B', which are controlled by a central force, that while they will preserve their parallelism and accommodate themselves to boards of different thicknesses passed between them, they are also allowed to deviate from parallel planes and accommodate themselves to boards of uneven or unequal thickness, substantially as described.

2. The employment of pressure-rollers *f f*, or their equivalents, applied so as to guide and hold the ends of the boards up to the saw after leaving the main pressure-rollers, substantially as described.

Witness my hand in matter of my application for a patent for machine for sawing planks, boards, &c.

VICTOR H. BUSCHMANN.

Witnesses:

R. T. CAMPBELL,
E. SCHAFER.