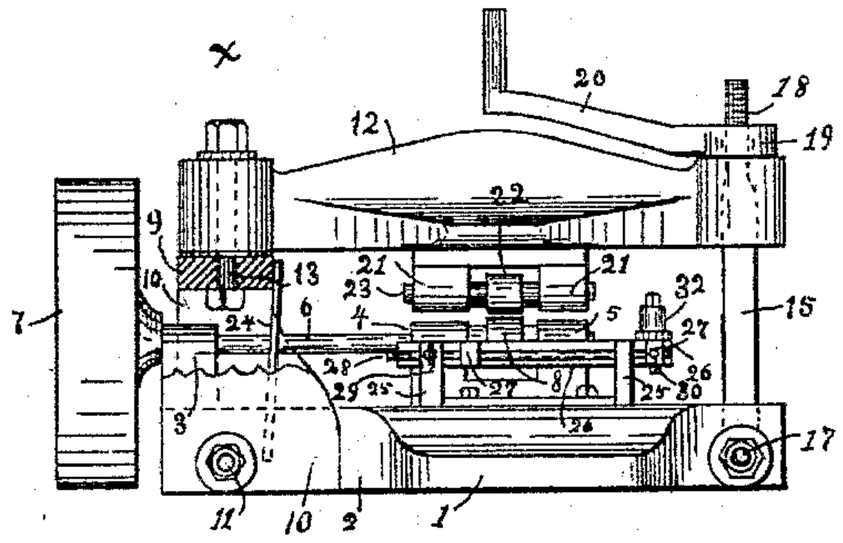
(No Model.)

A. CARRIER.

SAW STRETCHING MACHINE.

No. 589,814. Patented Sept. 14, 1897.

Fig. 1.



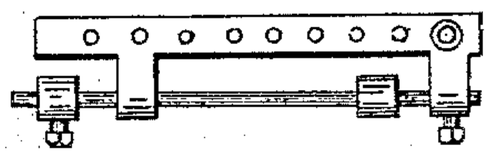


Fig. 4.

Fig. 2.

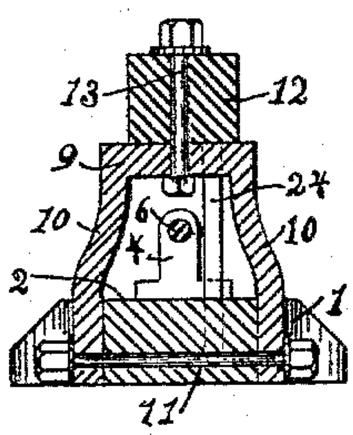


Fig. 3.

Attest:
C. J. Fenton
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UNITED STATES PATENT OFFICE.

ARTHUR CARRIER, OF BAY CITY, MICHIGAN.

SAW-STRETCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 589,814, dated September 14, 1897.

Application filed January 23, 1897. Serial No. 620,423. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR CARRIER, a citizen of Canada, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Saw-Stretching Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in saw-stretching machines; and the invention consists more particularly in the construction and arrangement of the parts and contrivances composing the machine and in the combination of the same, as will be fully explained in the following specification and specifically pointed out in the claims.

The principal object to be obtained by my invention is to so construct and arrange a machine for stretching saw-blades that the saw can be easily placed in position for the operation or removed from the machine, and at the same time provide a machine that can be cheaply and easily constructed and also be sufficiently strong and durable to obtain the proper results in the work and be easily manipulated and operated. I attain these objects by means of the devices and contrivances shown in the accompanying drawings, in which the same figures of reference will be found indicating the same parts throughout the several views.

Figure 1 in the drawings represents a view in elevation and partly sectional of the front or working side of my improved saw-stretching machine with the parts in position for stretching the saw. Fig. 2 is a plan view of the same with the parts arranged for placing the saw in position. Fig. 3 is a transverse vertical section of Fig. 1 taken at X X. Fig. 4 is a plan view of the improved gage attachment detached and enlarged.

1 represents the base-plate provided on its rear end with a portion 2, extending rearwardly and carrying a box 3, while 4 and 5 are boxes secured upon the central portion of the bed-plate, and 6 is a shaft mounted in these boxes and, extending beyond the end of the bed-plate, is provided with a pulley 7 for imparting revolution to the shaft, and upon the shaft between the boxes 4 and 5 is mounted a roll 8 for operating upon the saw.

9 is a chair which is provided with the portions 10, extending downwardly on each side of the rear end portion 2, to which they are pivotally secured by a bolt 11, which passes horizontally through the several parts and provides for a slight oscillation of the chair, and 24 is a spring solidly secured to the portion 2 of the bed-plate and, extending upwardly, its upper end is in contact with the inner portion of the chair, so that the spring operates to move the upper portion of the chair backwardly or to the rear.

12 is a beam arranged over and at a proper distance from the bed-plate and with its rear end resting upon the upper side of the chair, to which it is pivotally secured by a vertical bolt 13, passed through the end of the beam and the chair, and the opposite or front end of the beam is provided with a slot 14, into which is passed the bar 15, which has its lower end passed into a slot 16 in the front end of the bed-plate and is secured in position by a bolt 17, passed transversely through the bed-plate and bar, so as to allow the upper end of the bar to swing outwardly.

The portion 18 of the bar which extends above the beam is provided with a screw-thread, and 19 is a nut upon the threaded end of the bar, and this nut is provided with a suitable handle or crank-lever 20, with which to turn the nut for adjusting the same upon the threaded end.

Upon the under side of the beam is secured suitable boxes 21, between which is a roll 22, mounted upon a shaft 23, carried by the boxes, and this roll is so located upon the beam as to oppose the roll 8.

Upon the bed-plate in front of the rolls are placed the solid supports 25, and a gage-bar 26 is placed parallel with the shaft 6 on the front side of the rolls, and this bar is provided with outwardly-extending hinge portions 27, and through these portions and through the supports 25 is passed the rod 28, while 29 is a set or clamping screw passed through the outer portion of one of the supports 25 and, with its inner end against the rod, serves to retain the rod in position in relation to the supports, while the set-screw 30, passed into one of the hinge portions 27, serves to retain the bar in position and firmly holds the same against turning on the rod.

The bar 26 is provided with a series of openings 31, and 32 is a roller or guide-pin, if preferred, passed into one of the said openings for receiving the back or straight edge of the saw-plate which is to be operated upon by the rolls.

It will be noticed that when the upper portion of the bar 15 is removed from the slot 14 the spring 24 actuates the chair to the rear, and this action operates to lift the front or outer end of the beam, and the beam is then swung to one side on its pivot 13, as shown in Fig. 2, and the saw is then placed in position with its side resting on the lower roll 8 and with its rear or smooth edge against the guide-roller 32, which is previously adjusted to the proper position to bring the roll to impinge upon the desired portion of the saw-plate. The beam is then swung back to the proper position and the outer end thereof is moved downward against the spring until the upper roll bears upon the saw-plate in the side directly opposite the roll 8, and the upper portion of the bar 15 is then passed into the slot 14 and the nut 19 is turned to move the end of the beam downwardly until the upper roll bears heavily upon the saw-plate. Motion is then imparted through the pulley 7 from some convenient source and the shaft and roll 8 carried thereby is revolved, and the rolls, being hard-pressed against the opposite sides of the saw-plate, operate to move the plate along, and by compressing the material thereof between the rolls stretches or elongates that portion of the plate over which the rolls pass to any desired degree.

Of course it is well known to an operator that the strain of the work of a saw obtains more directly upon the edges of a saw than upon the middle portion thereof, and it is therefore necessary to stretch the middle portion of the plate by hammering or otherwise, so as to place an equal tension on all parts of the plate when the saw is strained for cutting the timber, and this by my improved machine is quickly and easily accomplished, as the rolls move rapidly over the saw-plate, and by means of the crank-lever 20 the desired pressure can be placed upon the rolls at any position or point along the plate as may be necessary to produce the proper tension in different portions of the plate.

It will be seen that the swivel action of the beam and the oscillation of the chair provide an easy means of placing the machine in readiness for the quick and easy removal of the saw-plate or for placing the same in position in the machine, as when the beam is swung around, as shown in Fig. 2, all of the parts above the saw are removed and the space is free for placing the saw in position or for removing the same.

While I do not intend to claim, broadly, the pivotal construction and swivel action of the beam, I wish it understood that the peculiar construction of the chair I have devised provides a cheap and effective mode of attaching and supporting the beam and, as will be readily seen, forms a solid and secure means of connecting the parts in position. The chair being pivoted to each side of the base by the lower ends of the supporting-pieces is held solid and true, while the upper portion of the chair being provided with a broad bearing-surface for carrying the end of the beam, which is also provided with a broad bearing-surface for resting thereon, provides a construction which avoids all trembling and vibration of the beam as the saw is moved between the rolls under a heavy pressure and also maintains a rigidity and firmness which produces an even and uniform action on the saw.

As it is the common practice to pass the rolls over the saw-plate several times at intervals, and then pass the rolls over the spaces between the portions formerly rolled until the entire width of the plate has been operated upon by the rolls or such portion thereof as is necessary to true up the plate, the use of the gage-bar renders the operation of regulating the spaces over which to pass the rolls easy and accurate, the gage-bar being provided with a series of openings 31, so that instead of adjusting the common gage for each time the rolls are passed over the plate the guide-roller is moved along and supported by the next hole in the bar, and this is repeated until the rolls have passed over the desired number of times, and the screw 30 is then loosened and the bar is then moved to a position on the rod to bring the openings to such a location that the guide-roller when supported in one of the openings will guide the saw in a position to bring the rolls to operate in the spaces between the spaces formerly rolled, so that the entire middle portion can be uniformly and accurately stretched without time being lost or used by adjusting the gage at each rolling operation.

Having described the construction and operation of my improvements, what I claim as new, and desire to secure by Letters Patent, is—

1. In a saw-stretching machine, the combination of the bed-plate having a shaft journaled thereon and carrying a roll, and provided with a reduced portion extending rearwardly from said bed-plate, a chair provided with supporting portions extending downwardly on each side of and pivotally secured to the said rear reduced portion of the bed-plate, a beam extending over said bed-plate and provided on its rear end with an enlarged bearing-surface resting upon and pivoted to the upper side of said chair, and provided on its under side with a roll for opposing said roll on the bed-plate, and having on its front end a longitudinal slot, a bar having its upper end resting in said slot and with its lower end pivotally secured to the front end of said bed-plate, and provided on its upper end with an adjusting-nut, and a spring secured to

the rear portion of the bed-plate and arranged for actuating said chair rearwardly for lifting the beam, substantially as set forth.

2. In a saw-stretching machine, the combination of the bed-plate and the beam carrying the lower and upper rolls for stretching the saw longitudinally, and means for imparting revolution to said rolls, with a guide-bar in front of and parallel with said rolls and provided with a series of vertical openings for carrying a guide-roller and having hinge portions extending outwardly from the side of said bar, the rigid supports projecting up from said bed-plate, and a rod passed horizontally through said supports and hinge portions, and set-screws passed into said supports and hinge portions for holding the rod adjustably in position, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

ARTHUR CARRIER.

Witnesses:
GEO. P. THOMAS,
JAS. E. THOMAS.