

Edward Lacey's Imp'd

Wood Bending Machine

3 Sheets--Sheet .1

No. 118,864

Fig. 2



Patented Sep. 12, 1871.

Fig. 1

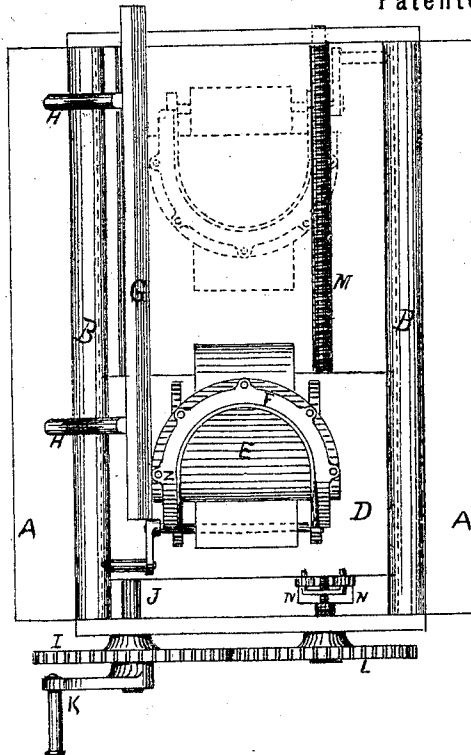


Fig. 4

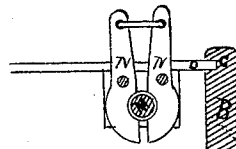
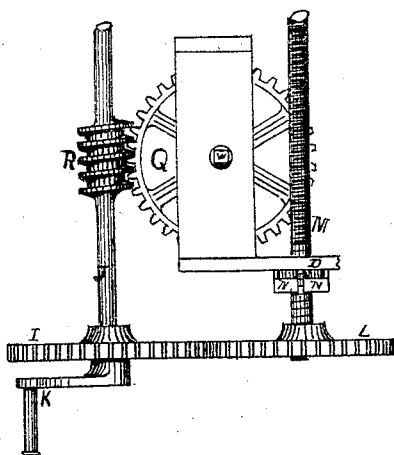


Fig. 3



Witnesses:

Jos. B. Nicholson
 & Harrison Hart.

Inventor:

Edward Lacey.
 Per E. H. Frost & Co.
 Attorneys.

Edward Lacey's Improved Wood Bending Machine

No. 118,864.

Patented Sep. 12, 1871.

Fig. 5

Fig. 6

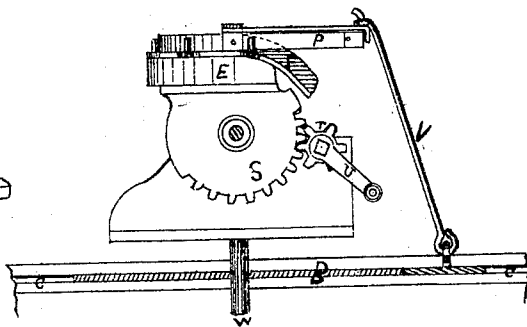
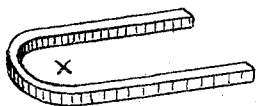


Fig. 8

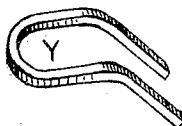
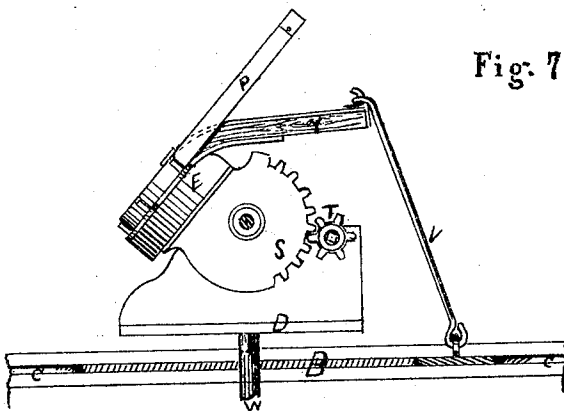


Fig. 7



Witnesses:

Geo. B. Nicholson
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Inventor:

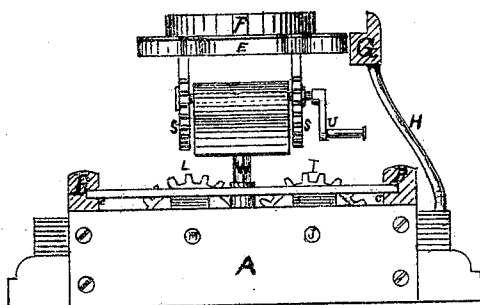
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No. 118,864. Edward Lacey's

Patented Sep. 12, 1871

Wood Bending Machine.

Fig. 9.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD LACEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF, JOHN PHILIPS, AND HENRY LIEBENSTEIN, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR BENDING WOOD.

Specification forming part of Letters Patent No. 118,864, dated September 12, 1871.

To all whom it may concern:

Be it known that I, EDWARD LACEY, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Wood-Bending Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1, Plate 1, is a top or plan view of my invention, showing the several parts in position ready for use. Fig. 2, Plate 1, is a detached view of the wood to be bent and of the metallic strap used in connection therewith. Fig. 3, Plate 1, is a detached view of the devices employed to give a rotary movement to the bending parts. Fig. 4, Plate 1, is a detached view of the clutches used, in connection with an endless screw-shaft, to give a forward or backward movement to the bending parts. Fig. 5, Plate 1, is a side elevation of the mold or pattern, in connection with the devices used in producing the downward or right-angled bend required in the rims of office-chairs, and showing their position at the commencement of the downward bend. Fig. 6, Plate 2, is a detached view of a piece of bent wood, showing its shape at the completion of the first stage of the bending, represented by dotted lines, Fig. 1, Plate 1. Fig. 7, Plate 2, is a side elevation of the devices shown in Fig. 5, giving their position at the completion of the downward or right-angled bend. Fig. 8, Plate 2, is a detached view of the wood after the process of bending has been completed. Fig. 9, Plate 3, is an end elevation of my invention, showing the relation of the posts and plate to the form and pattern.

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

My invention has for its object to provide a machine for bending wood from end to end, in contradistinction to bending from the ends toward the center or from the center toward the ends, and by the use of which one man can bend timber of any desired size or shape with ease; and to that end it consists in a tramway composed of two metallic rails secured horizontally upon a suitable bed or platform, having grooves or channels running through their entire length, in which the platform supporting the bending devices is propelled forward or backward. It also

consists in a form mounted upon a vertical shaft extending through the platform, upon which the pattern is placed. It further consists in an endless screw mounted upon a horizontal shaft, which, operated in connection with a pinion secured upon the lower end of the vertical shaft beneath the platform, gives a rotary movement to the bending parts. It also consists in a screw-shaft, operated in connection with clutches secured to the platform, to produce a forward or backward movement of the bending parts. It further consists in a stationary plate running horizontally along the side of the machine, and upon which the wood to be bent is laid. It also consists in the devices employed in producing a downward or right-angled bend, to be hereinafter more fully described.

In the accompanying drawing, A represents the bed of the machine, upon which rails B are secured. Said rails have grooves or channels C running through their entire length, in which rest the ends of platform D, and also the ends of the plate, to which hooks V are secured. E is the form upon which pattern F is placed, and G the plate upon which the wood to be bent is laid. Said plate is secured upon the upper ends of posts H, the lower ends of which are inserted into slots formed in the outer edge of the bed, so that the plate can be removed when desired. I is a gear-wheel mounted upon shaft J and operated by crank K. L is a gear-wheel mounted upon screw-shaft M and operated by gear-wheel I. N N are clutches secured to the movable platform and encircling shaft M. O is the piece of wood to be bent, and P the metallic strap used in connection therewith. Q is a gear-wheel upon the lower end of the vertical shaft, and R an endless screw upon shaft J, which, being used in connection, impart a rotary motion to the bending parts. S represents gear-wheels, upon which form E is secured, which are operated by pinions T and crank U to throw the pattern over upon its back, producing a downward or right-angled bend. V represents hooks secured to a plate working in the grooves in the rails, which are fastened to the ends of the wood to hold it in position while making the downward bend. W is the vertical shaft upon which form E and pinion Q are mounted. X represents the wood at the completion of the first stage of the bending process, and Y represents the same at the second and final stage.

The operation of my invention is as follows:

The wood to be bent, having been properly prepared, is secured to metallic strap P and laid upon plate G, with the end secured to the pattern by a pin at Z, and crank K revolved, which causes gear-wheel I to be revolved with endless screw R, causing the pattern to rotate around with the wood. Gear-wheel L being revolved by gear-wheel I causes the form to move forward by means of shaft M, working in clutches N N, until the pattern has revolved around to the position shown by dotted lines, Fig. 1, the wood being secured to the pattern by means of metallic pins inserted in the outer edge of the pattern outside of the wood. The first stage of the bending having now been completed, plate G is removed, hooks V brought into position and fastened to the ends of the wood, as shown in Fig. 5, and the pattern thrown over upon its back, as represented in Fig. 6. The pattern, with the wood, is then removed, a new pattern substituted, and the operation repeated.

The form upon which the pattern is used being slotted upon the vertical shaft, can be removed, if desired, and the ordinary pattern placed right upon the shaft, and the bending accomplished

by that means, the operation of the several parts, with the exception of those for producing the right angled bend, being substantially the same.

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

1. Pattern F, in combination with form E and movable platform D, constructed and arranged substantially in the manner and for the purposes herein set forth.

2. Pattern F, in combination with form E, gear-wheels S T, and hooks V, for the purposes herein set forth and described.

3. Bed A, in combination with rails B, grooves or channels C, platform D, form E, pattern F, plate G, posts H, gear-wheels I, L, S, Q, and T, shafts J and M, cranks K U, clutches N N, metallic strap P, endless screw R, hooks V, and upright shaft W, when constructed and operated substantially in the manner and for the purposes herein specified.

EDWARD LACEY.

Witnesses:

G. H. FROST,
W. E. TURNER.