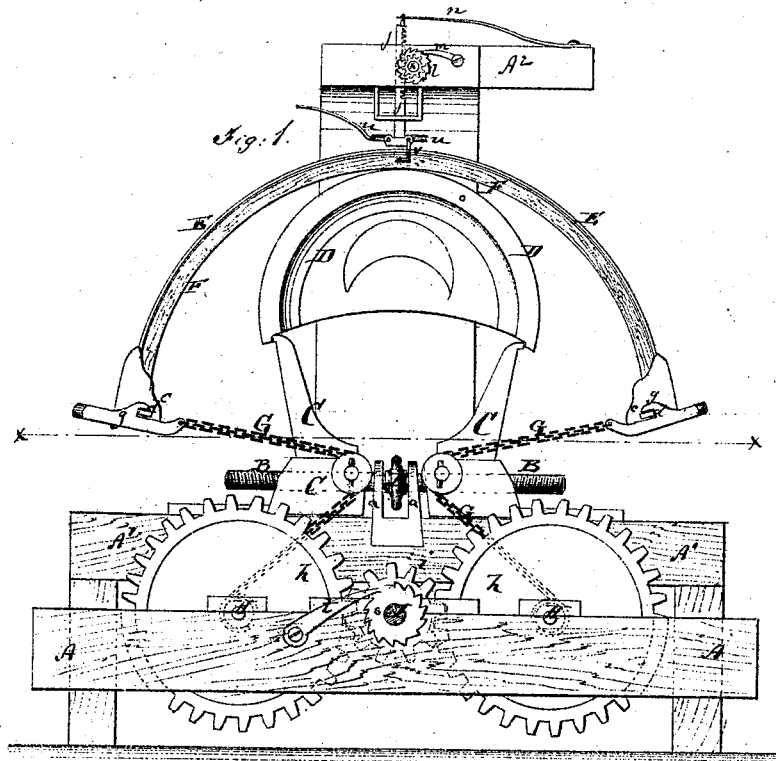


J. K. B. Solomon,

Bending Wood.

No. 106,880.

Patented Aug. 30. 1876.



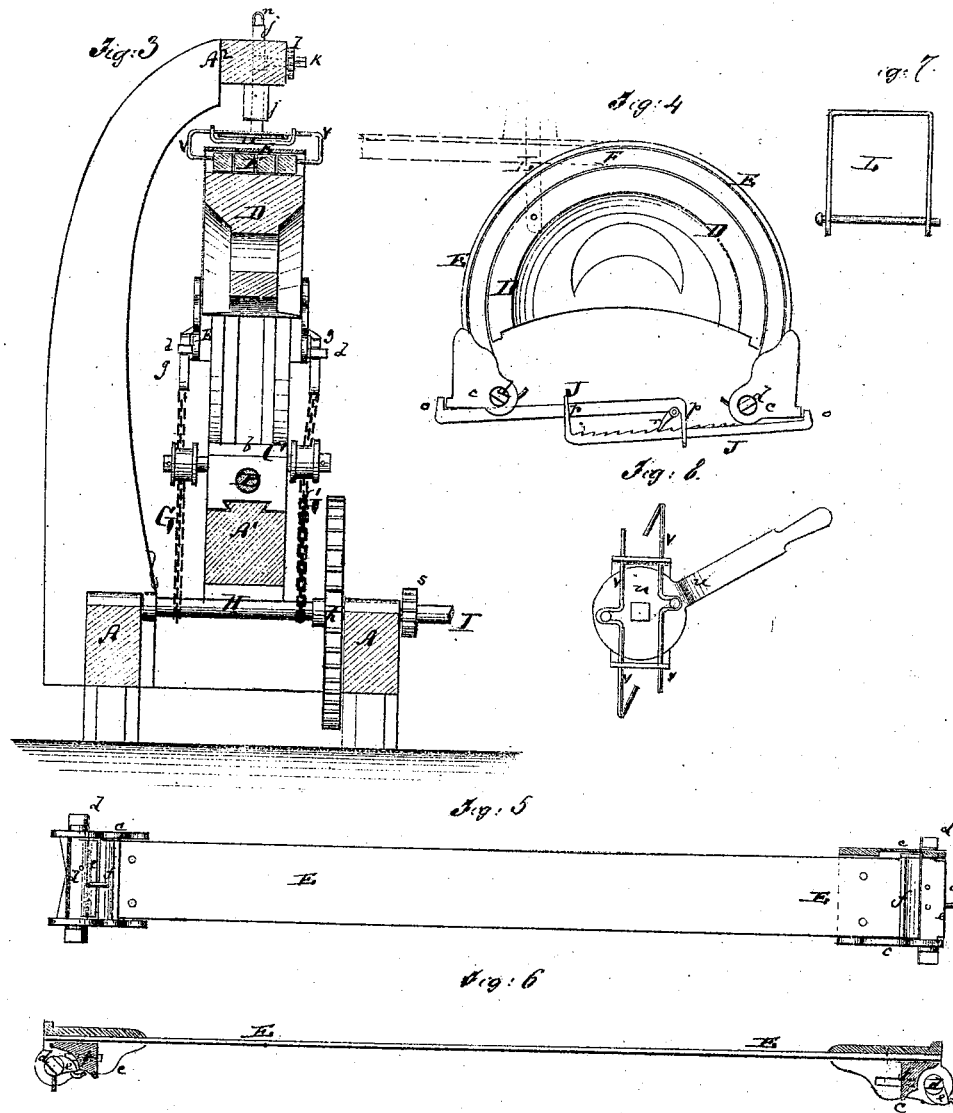
J. K. B. Solomon,

2. Sheets. Sheet 2.

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No. 106,880.

Patented Aug. 30, 1870.



Witnesses:

Chas. Nida.  
E. S. Mabey

Inventor:

J. K. B. Solomon  
per Munn Co  
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# UNITED STATES PATENT OFFICE.

JAMES K. B. SOLOMON, OF RIGGLESVILLE, PENNSYLVANIA.

## IMPROVEMENT IN MACHINE FOR BENDING WOOD.

Specification forming part of Letters Patent No. **106,880**, dated August 30, 1870.

*To all whom it may concern:*

Be it known that I, JAMES K. B. SOLOMON, of Rigglesville, in the county of Bucks and State of Pennsylvania, have invented a new and Improved Wood-Bending Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a front elevation of my improved wood-bending machine. Fig. 2 is a horizontal section of the same, taken on the plane of the line *x x*, Fig. 1. Fig. 3 is a vertical transverse section of the same. Fig. 4 is a face view of the bending-block and band. Fig. 5 is a plan view, partly in section, of the band, showing it extended. Fig. 6 is an edge view, partly in section, of the same. Fig. 7 is a detail side view of a clamp for holding one end of the band straight. Fig. 8 is an inverted plan view of the band or strap holder.

Similar letters of reference indicate corresponding parts.

My invention relates to wood-bending machines; and consists in certain improvements, which will be first described in connection with all that is necessary to a full understanding thereof, and then clearly specified in claims.

A in the drawing represents the bed or frame of my improved bending-machine. It supports, in vertical projecting ears *a a*, a swiveled screw, *B*, with right and left hand threads at the ends. This screw passes, with its threaded ends, through two slides, *C C*, which it serves to adjust any suitable distance apart. The slides rest upon a beam, *A'*, of the bed, and serve to support the bending-block *D*, which is of semicircular or other suitable form. The upper ends of the slides may have pins or ears *b b* projecting into notches of the block *D*. By being adjustable apart the slides are adapted to hold blocks *D* of different forms and sizes.

The band or spring *E*, for bending the wood around the edge of the block *D*, is made from a flat sheet, and has clamps at its ends for retaining the wood *F*. Each end of the spring *E* carries projecting ears *c c*, in which a transverse arbor, *d*, has its bearings. This arbor has a cam, *e*, by which a slide, *f*, can be pushed

against the end of the wood to lock the same. The ends of each arbor *d* project beyond the ears *c*, and are squared or flattened to receive the hooks *g*, as shown in Fig. 1. The hooks *g* are secured to chains *G G*, that are respectively secured to drums or shafts *H H*. The two shafts carry gear-wheels *h*, which are connected by a pinion, *i*, on the driving-shaft *I*.

From the ceiling *A<sup>2</sup>* of the room in which the machine is set up, or from a projecting arm of the frame *A*, is suspended the apparatus for holding the band *E* and wood *F* on the highest part of the block *D*. This apparatus consists of a vertically-adjustable rack, *j*, meshing into the teeth of a pinion on an arbor, *k*. The arbor *k* carries a ratchet-wheel, *l*, to be locked by a pawl, *m*.

A pin may be made to project from the band *E* into the flattened end of the rack *j*, or vice versa, for properly centering the band and wood. A spring, *n*, may be employed to elevate the rack after the same is released by the pawl *m*.

The operation of bending the wood is as follows: The wooden bar *F* is placed against the under side of the band *E*, and is secured thereto by forcing the slides *f* against its ends. The wood is then placed upon the block *D* and the rack *j* let down, so as to confine the middle of the wood and band in the proper position. The hooks *g*, which are secured to the ends of the chains *G*, are then fitted over the squared ends of the arbors *d*. Then the shaft *I* is revolved to wind the chains upon the shafts *H*, whereby the ends of the band and wood are gradually drawn down and against the sides of the block *D*. When the wood has been bent so as to be in contact with the block *D* at the ends, as in Fig. 4, the process of bending is completed. The ends of the band are then locked together by an extension-frame, *J*, which consists of two bars, that are provided with hooks *o o* at their outer and eyes *p* at their inner ends, as shown in Fig. 4, each bar passing through the eye *p* of the other. One bar, *J*, has a notched edge to receive a pawl, *r*, from the other bar, as shown.

When the frame *J* is applied to the ends of the band *E* in the manner shown in Fig. 4, so that the hooks *o* fit against said band, the block, with wood and band, can be removed

from the machine and put aside to let the wood dry in the bent form. Another block and band are then applied to the machine to bend another piece of wood. Previous to the removal of the block and its appendages the bar *j* has to be elevated. The shaft *I* carries a ratchet-wheel, *s*, which receives a pawl, *t*, that prevents the chains from unwinding before the frame *J* is applied. After the application of said frame the pawl *t* is thrown off, to allow the unwinding of the chains.

For bending two or more wooden bars, *F*, at once upon the edge of one block, *D*, as in Fig. 3, the same apparatus can be used, provided the band is broad enough. I prefer, however, in that case to apply to the enlarged lower end of the rack *j* a swinging disk, *u*, which works two hook-shaped rods, *v v*, as in Fig. 8. These hooks can be made to fit against the edges of the outer bars, *F*, as in Fig. 3, holding all properly together. If but one end of the wood is to be bent, I prefer to employ a clamp, *L*, (shown in Fig. 7 and by dotted lines in Fig. 4,) for locking the strap and wood to the block *D*, as indicated. Only one chain, *G*, is then used for bending. The slide *f* on the spring-

band will yield, during the operation of bending, to the expanding wood, which gains in length at its outer face. Without this yielding quality of the clamping apparatus the wood would either be crushed or the band snapped during the bending process.

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

1. The screw *B*, combined with the slides *C* to form an adjustable support for the block *D*, substantially as herein shown and described.

2. The arbors *d* on the band *E*, provided with the cams *e* to operate the slides *f*, substantially as herein shown and described.

3. The rack *j*, combined with the ratchet-wheel *l* and pawl *m*, and applied to hold down the strap *E*, substantially as herein shown and described.

4. The arrangement of vertically-adjustable bar *j* with respect to disk *u* and hooks *v*, as and for the purpose specified.

JAMES K. B. SOLOMON.

Witnesses:

JACOB W. GEORGE,  
HENRY B. SEESE.