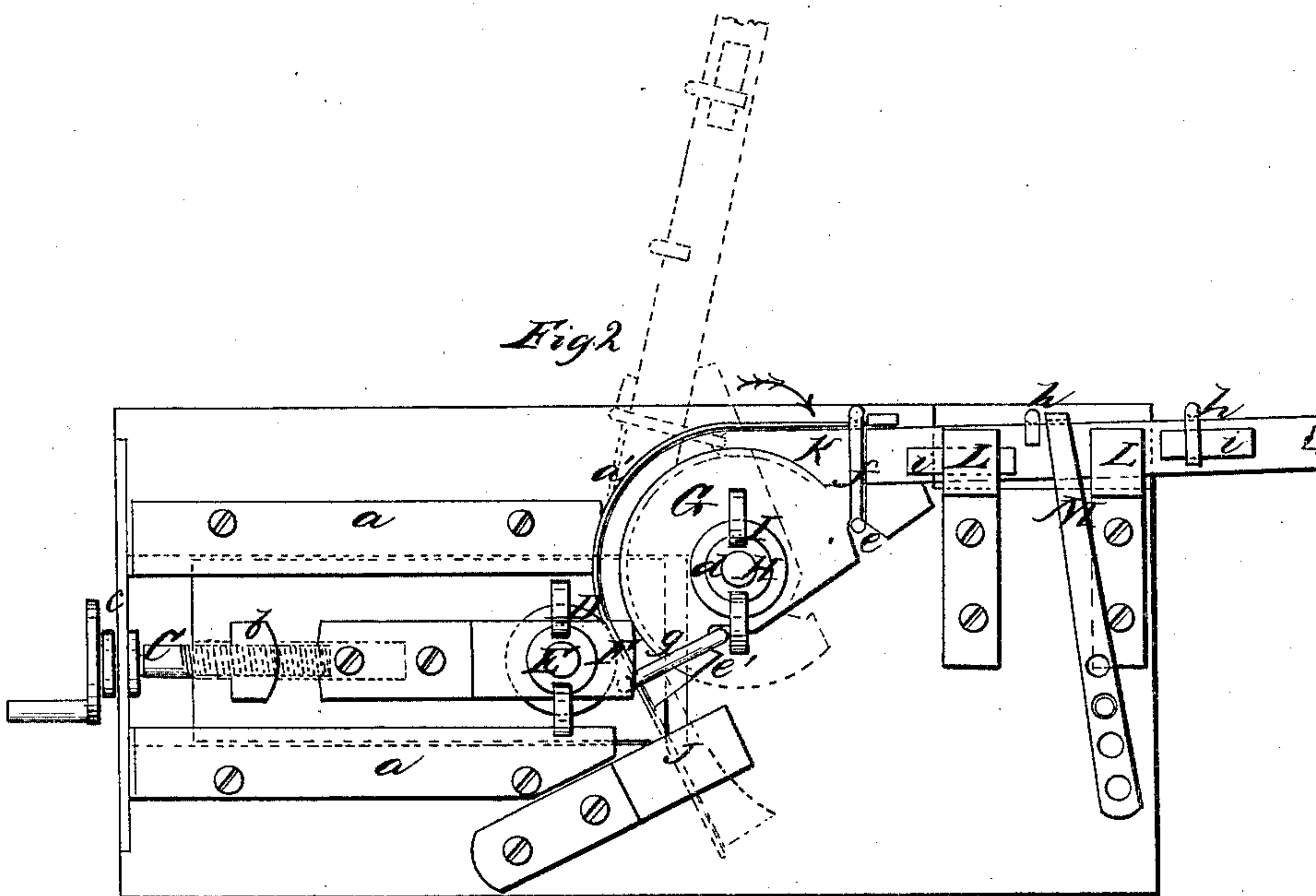
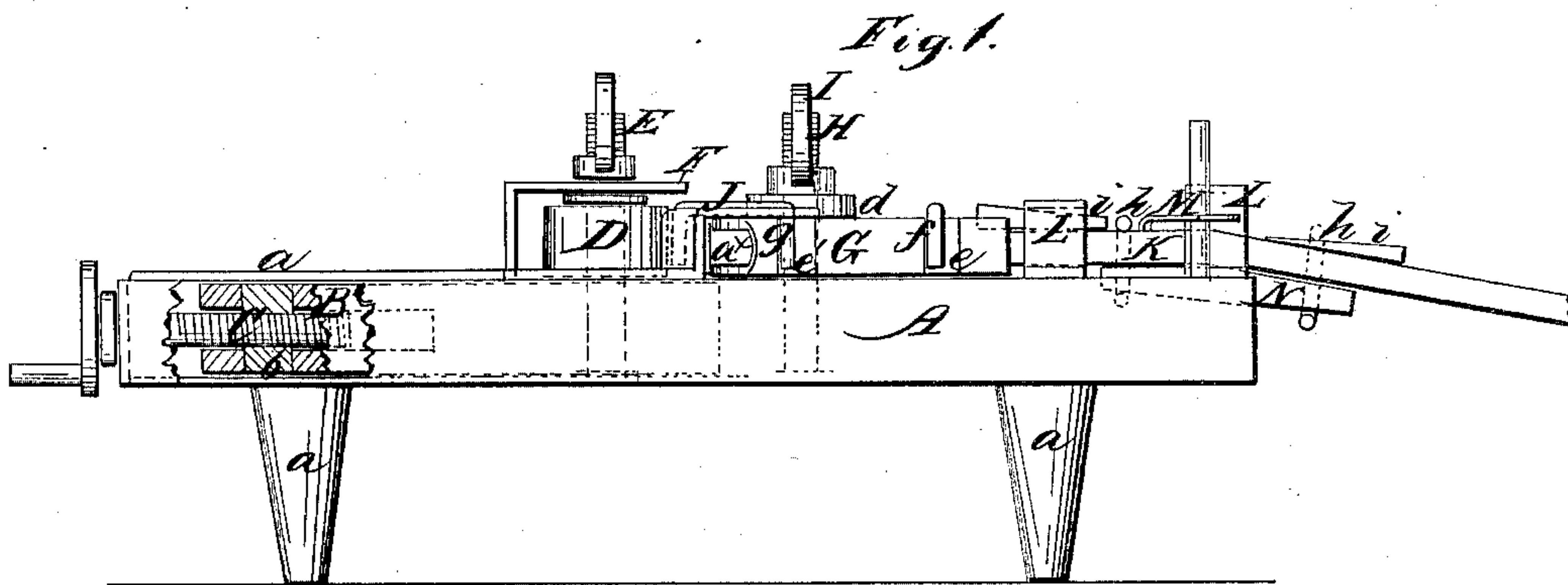


*E. P. Haskell,*  
*Bending Wood.*  
*No 37,096.      Patented Dec. 9, 1862.*



*Witnesses*  
*J. W. Coombs*  
*G. W. Rude*

*Inventor*  
*E. P. Haskell*  
*per Munn & Co*  
*attys*

# UNITED STATES PATENT OFFICE.

E. P. HASKELL, OF HARLAN, INDIANA.

## IMPROVED MACHINE FOR BENDING WOOD.

Specification forming part of Letters Patent No. 37,096, dated December 9, 1862.

### *To all whom it may concern:*

Be it known that I, E. P. HASKELL, of Harlan, in the county of Allen and State of Indiana, have invented a new and improved machine for bending plow-handles, hames, carriage-thills, and other articles of wood; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention, a portion being in section; Fig. 2, a plan or top view of the same.

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

This invention consists in the employment or use of an adjustable pressure-roller in connection with a pivoted pattern of semicircular form, and guides and clamps, all arranged in such a manner as to admit of the desired work being performed very expeditiously and with but little labor.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a horizontal bed, which may be supported at a suitable height by legs *a* or any proper framing; and B is a slide which is fitted longitudinally in the bed A between suitable guides, *a a*, and adjusted or moved by means of a screw, C, which passes through a nut, *b*, in the slide, and has its outer bearing in a metal bar, *c*, secured to one end of the bed. On the slide B, near its inner end, there is placed a roller, D. This roller is fitted loosely on a vertical shaft, E, the lower end of which is permanently secured in the slide, the upper end having its bearing in a plate, F, which is attached to the slide and projects some distance beyond the edge or periphery of the roller, as shown in both figures.

G is a pattern which is of semicircular form, and is secured on the bed A by a vertical rod, H, which serves as a center for the pattern to turn on or around, the pattern being held down in proper position on the bed by a thumb-nut, I, and washer *d*. The pattern G has its rod H placed somewhat out of line with the shaft E of the roller D, as shown in Fig. 2, and the pattern has two notches, *e e'*, made in it at its

straight or plane side, which are also shown in Fig. 2.

J is a bearing or guide secured to the upper surface of the bed A. This bearing is formed of a bent metal plate, and it projects forward in front of the roller D at one side of it, its front end being in line with the rod H of the pattern.

The bending operation is as follows: The stuff, K, to be bent, which in this case is represented as a plow-handle, is gotten out in proper form, and is secured to the outer part of the pattern by a clamp, *f*, which is simply a rod bent in staple form, with one end fitted in the notch *e* and the other end fitted over the stuff. The roller D is then, by turning the screw C, adjusted in contact with the stuff, and the pattern G is turned in the direction indicated by the arrow, the roller causing the stuff to conform to the semicircular side of the pattern and fit snugly to it. The position of the pattern at the commencement of the operation is shown in red outline in Fig. 2. The plate F and guide J both serve to keep the stuff down upon the bed, preventing it from rising during the turning of the pattern, and when the stuff is bent to the pattern a clamp, *g*, like *f*, is fitted to the pattern and stuff, one end of the clamp being fitted in the notch *e'*. (See Fig. 2.) The straight part of the stuff serves as a handle by which the pattern is turned, and when the bending operation around the pattern is performed the outer end of the stuff is adjusted underneath two plates, L L', and retained under them by a hook, M, as shown in Fig. 2. The outer end of the stuff is then bent obliquely to form a bevel to suit the part of the plan to which it is to be attached. This is effected by means of a key or wedge, N, upon which the stuff is bent and retained in close contact by clamps *h h* and keys *i'*. This bevel may be given to either side of the stuff by adjusting the key or wedge N to either its upper or lower surface.

It has been stated that the outer end of the stuff K serves as a handle to turn the pattern. This is so when articles like plow-handles are to be bent; but in case of short articles being bent—like hames for horse-collars, for instance—a special handle must be attached to the pattern G. The adjustment of the roller



D, it will be seen, admits of stuff of different thicknesses being bent with one and the same machine.

The whole device is exceedingly simple and efficient.

I would remark that in case the article to be bent is rounded at its concaveside, which is in contact with the pattern, the edge of the latter may be grooved to correspond with the article. This is the case with plow-handles, the concaveside being rounded, so as to form nearly a semicircle in its transverse section, and the periphery of the pattern G grooved to receive the rounded surface.

I would remark that in some cases a metal

plate,  $a^x$ , may be interposed between the roller D and the stuff.

I do not claim, separately, any of the parts herein shown and described; but

I do claim as new and desire to secure by Letters Patent—

The combination of the sliding pressure-roller D, slide B, screw C, plate F, and guide J with the rotary pattern G, in the manner herein shown and described.

E. P. HASKELL.

Witnesses:

WM. B. DANIELS,  
SAMUEL BRUNCKHART.