# J. P. Lebzelter,

## Bending Wood,

No. 46,479 Patented Feb. 21, 1865.

Fig: 1.

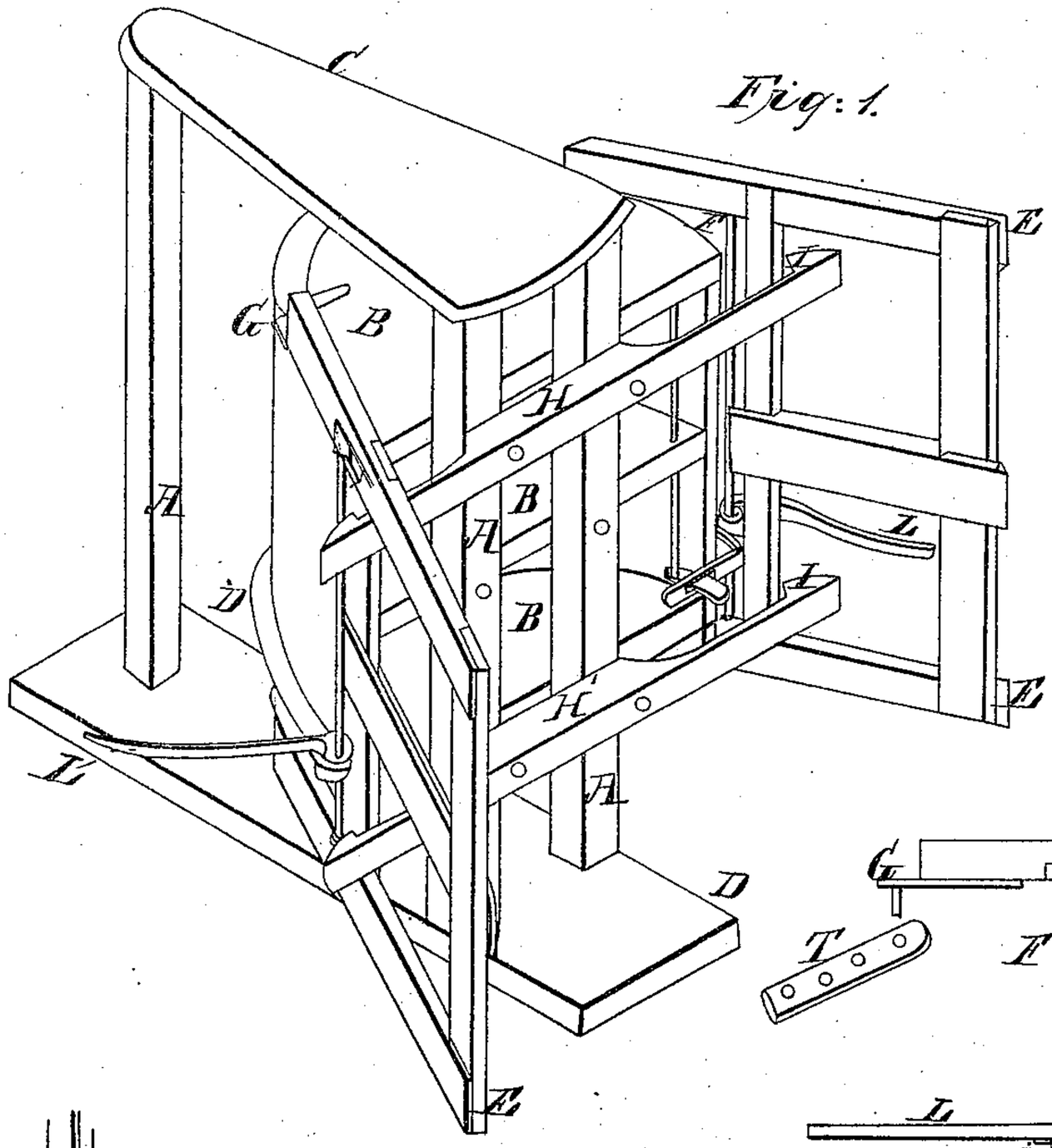



Fig: 2.

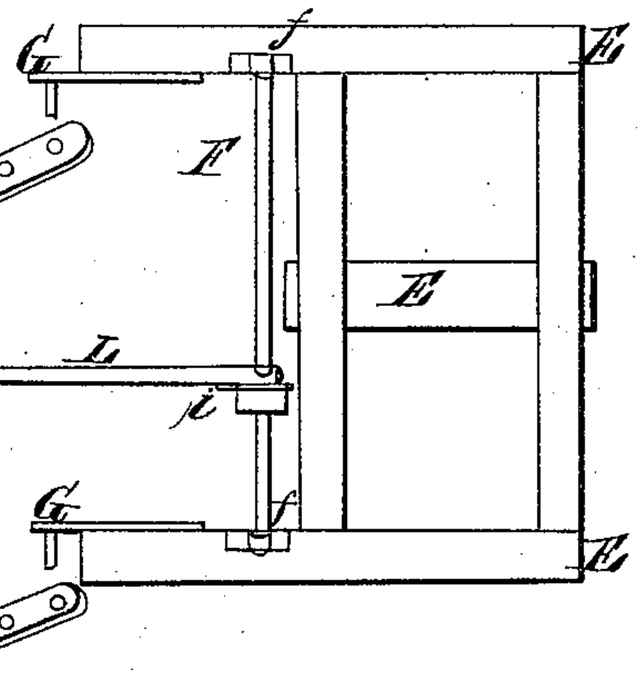



Fig: 4.

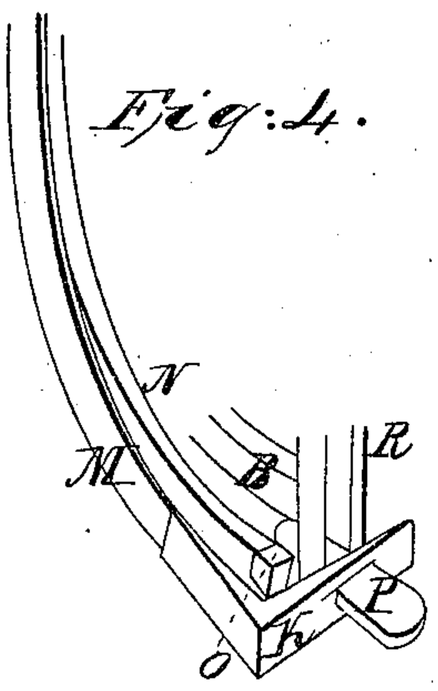
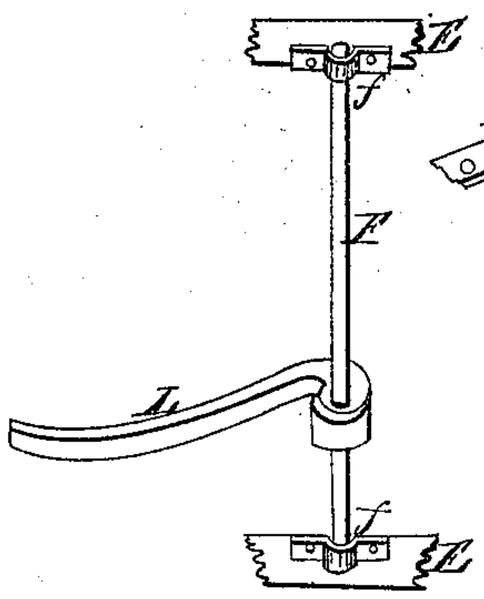



Fig: 3.




Witnesses:
Wm. B. Tiley
Jacob Stauffer

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# UNITED STATES PATENT OFFICE.

JOHN PHILIP LEBZELTER, OF LANCASTER, PENNSYLVANIA.

## IMPROVEMENT IN WOOD-BENDING MACHINES.

Specification forming part of Letters Patent No. **46,479**, dated February 21, 1865.

*To all whom it may concern:*

Be it known that I, JOHN PHILIP LEBZELTER, of the city of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented new and useful improvements on machines for bending fellies for the semi-diameter of wheels for vehicles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the machine with my improvements in place. Fig. 2 is one of the framed or winged levers, together with the eccentric shifting-lever on its shaft; Fig. 3, the eccentric lever and shaft, shown separate. Fig. 4 shows one end of the felly-covering hoop or band with its terminal right-angled hook, slot, and wedge in relation to the drum and rod or shaft B R, somewhat enlarged from the same, shown in Fig. 1.

There is no special novelty in the drum itself, except that it is stationary, attached by bolts to two upright posts, A A, on the center of its straight side or diameter in front. There is another post, A′, not connected with the drum B, leaving a sufficient space between it and the curved portion of the drum for operating. These three posts are framed into the floor or base piece D and top piece, C, forming the fixed portions of the machine, together with the projecting bottom or ledge of the drum, and central longitudinal partition, B′, vertical sides in front, and shaft or rod, between which shafts and sides the wedges are also retained, hereinafter explained. On the top and the bottom of the drum on each side—say at a point two-thirds of the distance back from the front—there is a projecting plate, T, Fig. 2, bolted to the drum, each projection furnished with a hole for the pivot-plate, G, attached to the framed or winged levers, Fig. 2. They may also be attached by means of hinges when it is not designed to use the same pair of levers on separate drums. By means of the pivot-plates G on the pieces E of the frame they are readily put on or taken off. One of these levers, as already intimated, is on each side of the drum, as shown. There is also a vertical shaft, F, on the arms E of the winged levers. On this shaft there is a lever, L, with its head *l*, having its eye, through which the shaft F passes, removed from the center. There is also a spring, or, as shown, two springs, H, bolted centrally to the uprights A A in front, projecting on each side, with rounded heads I, and holding-notch, tapered out, as shown, for the purpose of holding the winged levers when their office of bending is accomplished.

The operation for bending is performed by two men or boys. The steamed straight wood to form the felly is laid with its center on the rear ledge and center of the drum, the side or winged levers drawn back, the felly N covered with its band or hoop iron M, (provided with the slotted hook K, Fig. 4.) Thus placed and adjusted, the winged levers are operated simultaneously on both sides. They grasp the banded felly, (keeping also the head of the shifting or eccentric lever L with its narrow side against the band,) and bend it around the drum until the levers, Fig. 1, come in contact with the catch in the spring or springs H, where they are securely held. I now avail myself of the eccentric lever L to press the ends still closer by means of the same. When I introduce the wedges P into the slots of the hooks K, this wedge enters and is firmly supported also between the vertical side of the drum B and rods R on each side. Thus secured in less time than it takes to describe it, the winged side levers are released and a second felly laid on and bent in like manner, the eccentric lever slid upward on each successive application of a felly till the drum is covered from bottom to top.

In order to take the strain from the outer surface of the felly in bending, I employ a block or wedge, *o*, of soft wood, between the end of the felly and band on each side, which tend to compress the inner surface of the wood or felly and prevents them from cracking, to which they are very liable by almost every method heretofore employed for bending. Having an extensive factory in which I employed various machines embraced in several patents, necessity has compelled me to lay them aside, and have resource to my own invention. From my experience I am satisfied of the superiority of this machine, both for speed and efficiency.

I am aware that drums are employed in various ways, revolving and affording leverage, as well as in combination with chains,

screws, &c., in the process of bending; also hooks, in combination with the bands, but I am not aware that slotted hooks and wedges were ever employed for the purpose and in the manner specified, nor winged or eccentric levers.

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

1. The winged-levers E E, held by pivots or hinges on the drum, in combination with the spring or springs H, or their equivalent, for retaining them.

2. The eccentric lever L on its vertical shaft F, for shifting it up and down, in combination with the slotted hook K, wedge P, and rod or shaft R, arranged and operating substantially in the manner and for the purpose specified.

JOHN PHILIP LEBZELTER.

Witnesses:
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