B.

H. McDONALD.

Improvement in Wood Bending Machines.

No. 120,306. Patented Oct. 24, 1871.

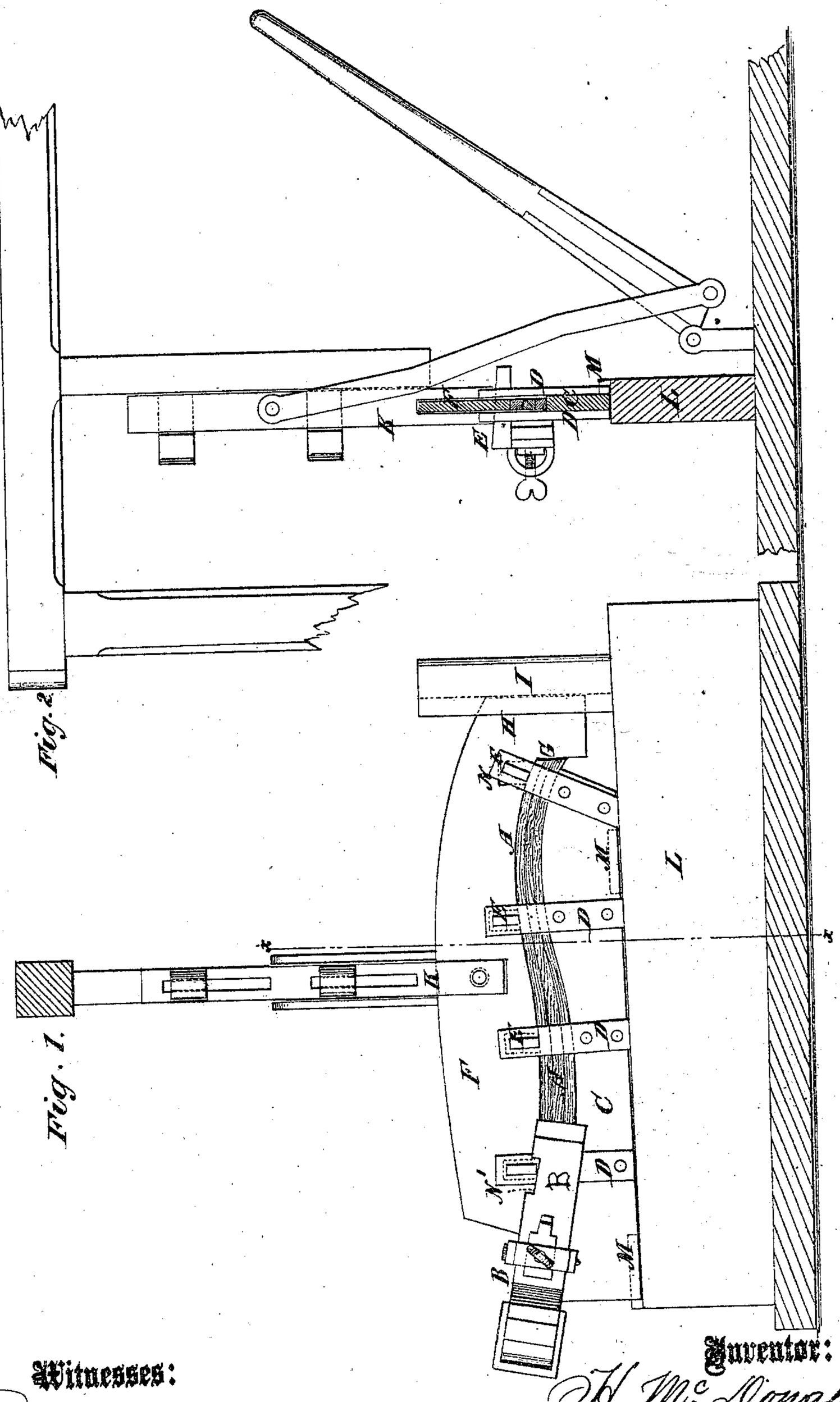

Fig. 2.

Fig. 1.

Witnesses:

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120,306

UNITED STATES PATENT OFFICE.

HIRAM McDONALD, OF SHORTSVILLE, NEW YORK.

IMPROVEMENT IN WOOD-BENDING MACHINES.

Specification forming part of Letters Patent No. 120,306, dated October 24, 1871.

To all whom it may concern:

Be it known that I, HIRAM McDONALD, of Shortsville, in the county of Ontario and State of New York, 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 a part of this specification.

My invention consists in the construction of the molds, dies, or formers, in which horizontal bends are given to thills or shafts of one-horse vehicles, and in the combination of another former therewith, as hereinafter fully described and subsequently pointed out in the claim.

Figure 1 is a front elevation of my improved machine. Fig. 2 is a sectional elevation on the line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents three pieces of wood to be bent, being confined to a former, B, whereon they have been previously bent, in the machine above referred to, to form the vertical curves at the ends. C represents the lower or bed-former or die whereon the final bending is to be effected. It consists in a long thin plate of metal, having the upper edge provided with the configuration necessary for imparting the form to the under side of the thill, and has four (more or less) pairs of bars, D, attached to its sides and extending above the edge considerably higher than the depth of the pieces to be bent. The upper ends are mortised, as shown, for keys E. The pair of bars D, at the end of the die where the curve is greatest, are arranged radially to the axis of the curve for having a better action on the pieces A than they otherwise would. F is the upper former or die, also consisting of a long thin plate about the thickness of the pieces to be bent, and having its lower edge formed on the curved line required for the upper side of the thill; also having a shoulder, G, projecting downward from said line at the point where the front ends of the thills terminate. It also has a prolongation, H, at this end, arranged in the vertical guide I, and is connected at the center of the top to the vertically-reciprocating bar K of a press for forcing it down upon the wood pieces to be bent, the said pieces being placed on the lower die between the bars D, as shown, and the said die being placed on a suitable bed, L, against stops M, which latter serve as guides in adjusting it to the right position to receive the die F between the bars D. The said upper die has a notch, N, shown in dotted lines in Fig. 1, in the lower edge opposite each pair of bars, to admit of driving a key, E, into said bars above the said pieces after they have been bent by said upper die and before it is raised, to key the pieces fast to the lower die, to be held until they become sufficiently set to retain their form when released. The former B is notched at N′ to provide room for the key E above it, and it has a notch in the side opposite to the one shown in the drawing, to receive the bar D between it and the wood pieces A.

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

The construction of dies C F of thin plates with a downward and overlapping projection, G, on the top plate, and a corresponding recess to receive it in the bottom plate, for the purpose of preventing any elongation at the end.

HIRAM McDONALD.

Witnesses:

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(176)