2 Sheets—Sheet 1.

C. O. HALL.

CIRCULAR WOOD-SPLITTING MACHINE.

No. 182,188. Patented Sept. 12, 1876.

Fig 1

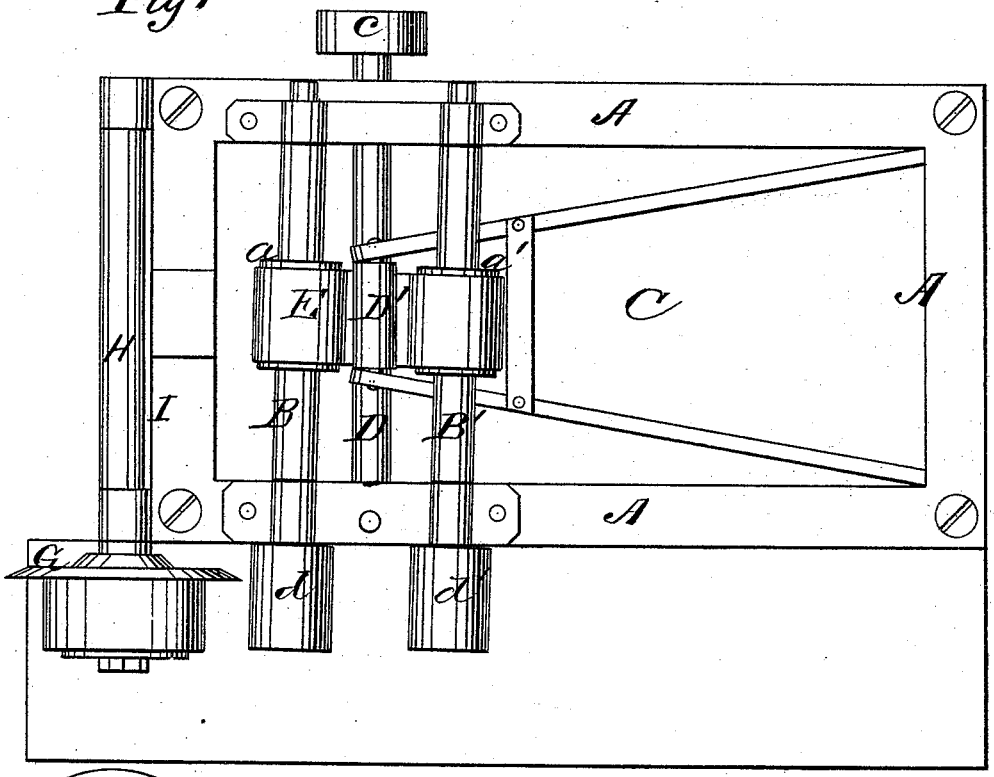
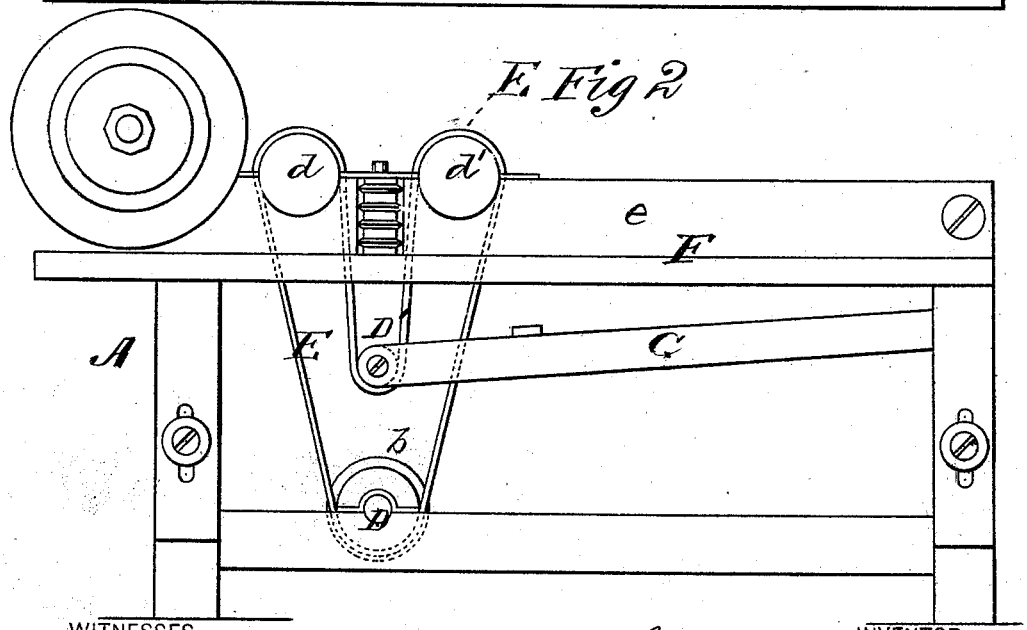


Fig 2



WITNESSES

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2 Sheets—Sheet 2.

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Fig 3

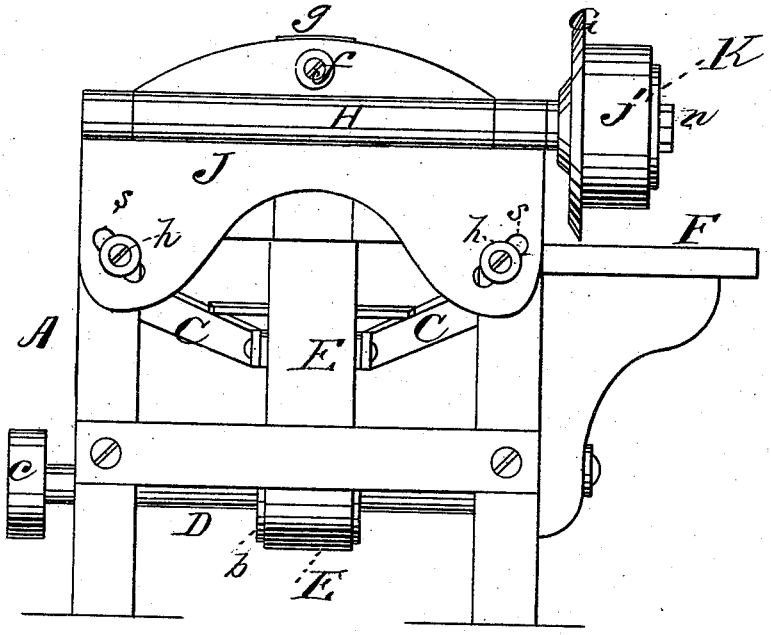
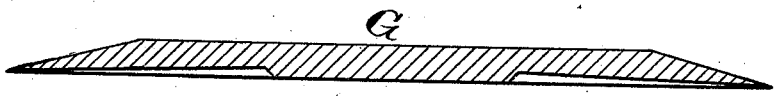


Fig 4



WITNESSES

Mary F. Utley.
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UNITED STATES PATENT OFFICE.

CHRISTIAN O. HALL, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO ARCHIBALD RIDELL, OF SAME PLACE.

IMPROVEMENT IN CIRCULAR WOOD-SPLITTING MACHINES.

Specification forming part of Letters Patent No. **182,188**, dated September 12, 1876; application filed January 8, 1876.

To all whom it may concern:

Be it known that I, CHRISTIAN O. HALL, of Chicago, in the county of Cook and State of Illinois, have invented a new and valuable Improvement in Circular Wood-Splitting Machines; 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 annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of my machine for splitting wood, and Fig. 2 is a side view of the same. Fig. 3 is an end view of the machine, and Fig. 4 a central sectional view of the cutting-knife.

This invention relates to machines for splitting wood to form hoops, veneers, &c.; and the invention consists in the arrangement and novel construction in connection with feeding-rollers of a circular splitting-knife, and an elastic roller on the arbor of the said knife, as hereinafter more fully set forth.

In the annexed drawings, the letter A represents a preferably rectangular frame in connection with which I propose to illustrate my invention. This frame affords bearings upon its upper rails for spaced shafts B B′, having pulley-wheels *a a′*. It also affords bearings for a vertically-vibrating frame, C, in the outer end of which is mounted a tension-roller, D′. Immediately below shafts B B′, and intermediately thereto, is mounted a shaft, D, having a central pulley, *b*, in the same vertical plane with pulleys *a a′*, and upon one end an actuating-pulley, *c*, by means of which motion is communicated to the said shaft D.

As shown in Fig. 1, shafts B B′ are each provided upon their contiguous ends with feed-rollers *d d′*, and their position is slightly oblique to the length of the frame, the object of which will hereinafter appear. E represents an endless belt, which passes around pulleys *a a′* on shafts B B′, and pulley *b* on shaft D. This belt is sufficiently loose to allow a degree of slack, which will be taken up by tension-roller D′, so that when motion is communicated to shaft D, the said belt will cause motion to be given to the feed-roller bearing-shafts B B′, and the timber placed upon a vertically-adjustable table, F, will be fed to a splitting or cutting wheel, G, the construction of which will be hereinafter explained.

Shafts B B′ being at an angle to the frame the action of feed-rollers *d d* will be to saw the stuff to be cut into lengths against the top rail *e* of the frame, the effect of which will be to prevent the timber from being forced outward therefrom, and will cause the timber operated upon by the circular cutting-knife, to be cut into lengths of equal thickness.

The table being vertically adjustable, stuff of any thickness may be split up into lengths. The circular cutting-knife G, before alluded to, is keyed or otherwise suitably secured upon a shaft, H, having its bearings in a strong metallic plate, J, which is pivoted at *f* to an upright, *g*, of the frame, so that the shaft H is allowed to have a degree of vertical vibration which is regulated by means of bolts *h*, which pass through curved slots *s* in the said plate, and clamp it immovably against the end of the frame, when the desired adjustment has been obtained, and the said clamp-bolts are set up. By this means, the cutting-knife being set at an angle to the horizontal plane, will cut one edge of the strip beveled, but when the shaft is arranged horizontally the edge cut will be straight. The circular cutting-knife G, as shown in Fig. 3, is beveled outwardly, and a rubber pressure-wheel, J′, is jammed against its outer surface by means of a clamp-plate, K, actuated by a nut, *n*, applied upon the screw-threaded end of the said shaft, as shown in Fig. 3. Pressure-wheel J′, during the passage of the knife through the wood, will bear down upon the wood being cut, and will hold it in position, and the said knife being adjustable in the usual manner to or from rail *e*, strips of various thicknesses may be obtained from a single machine.

In case I so elect, I may use a chain instead of a belt for driving the feed-rolls, or I may employ gears for the same purpose.

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

1. In a machine for splitting wood, the com-

bination of the circular knife G, and the elastic pressure-roller J′ on the same shaft, substantially as specified.

2. The shaft H, provided with the circular knife G, and elastic pressure-roller J′, attached to the pivoted plate J, in combination with the feed-rollers *d d′*, operated by suitable mechanism, as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHRISTIAN O. HALL.

Witnesses:
A. T. HEMINGWAY,
D. G. DUELL.