(No Model.)

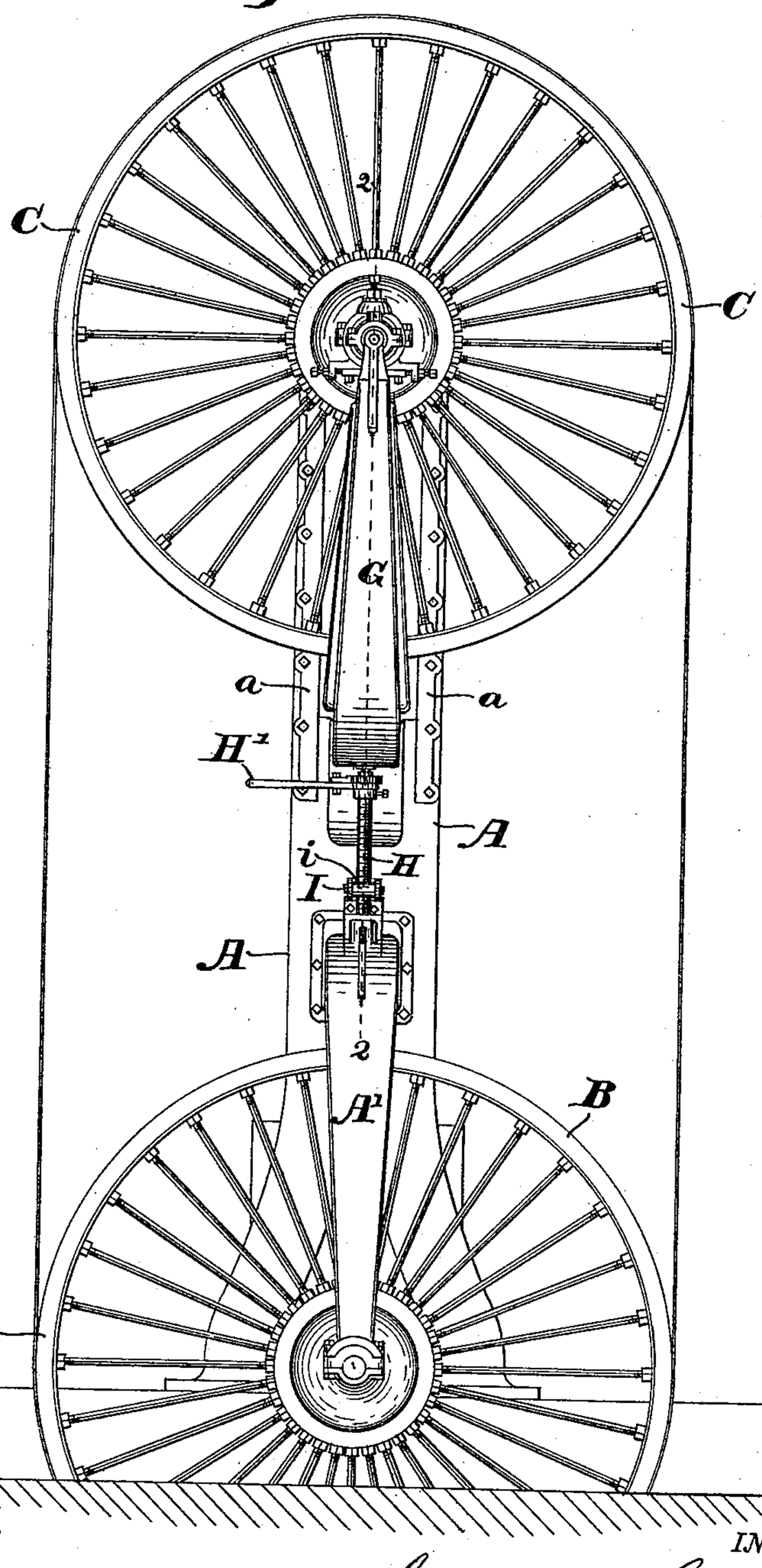
2 Sheets—Sheet 1.

S. STEPHENS.

BAND SAW MILL.

No. 332,365. Patented Dec. 15, 1885.

Fig. 1.



WITNESSES.

Chas. N. Leonard.

E. W. Bradford

INVENTOR.

Samuel Stephens,

PER

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ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

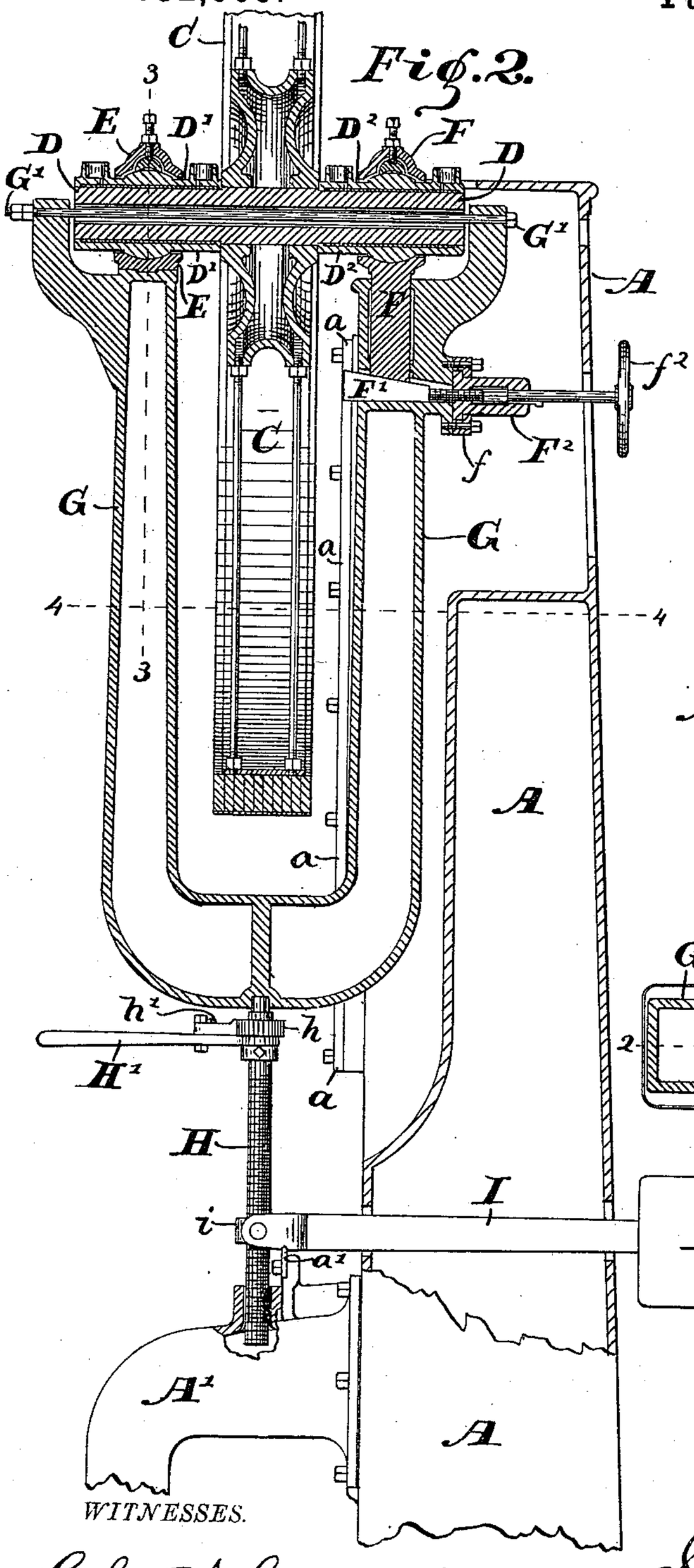


Fig. 3.

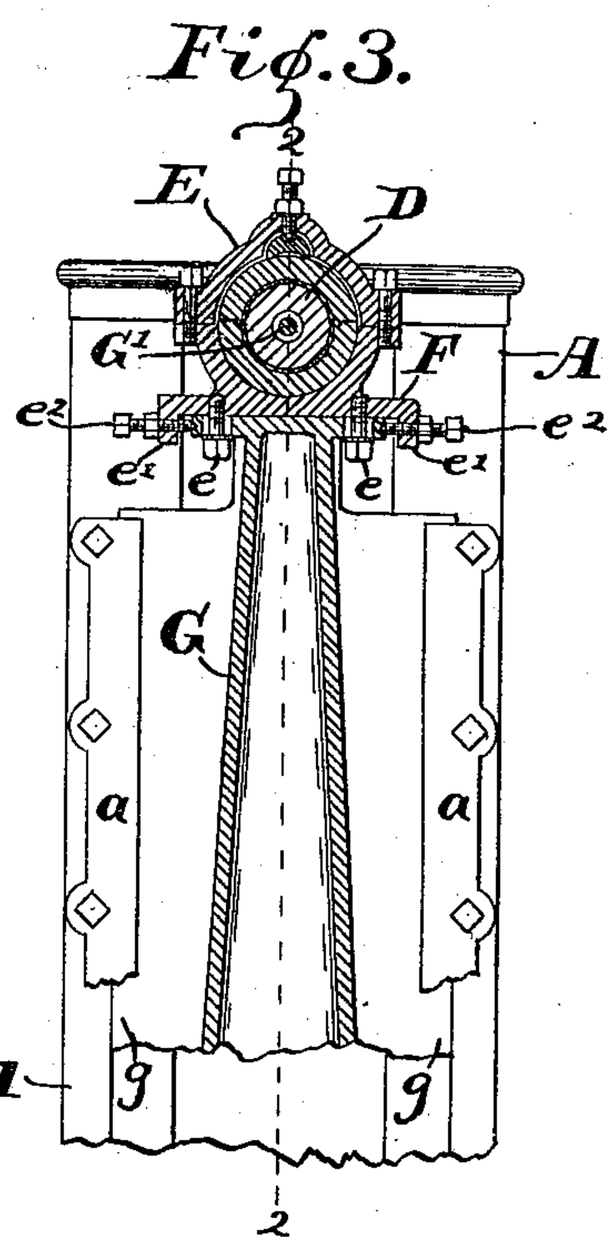
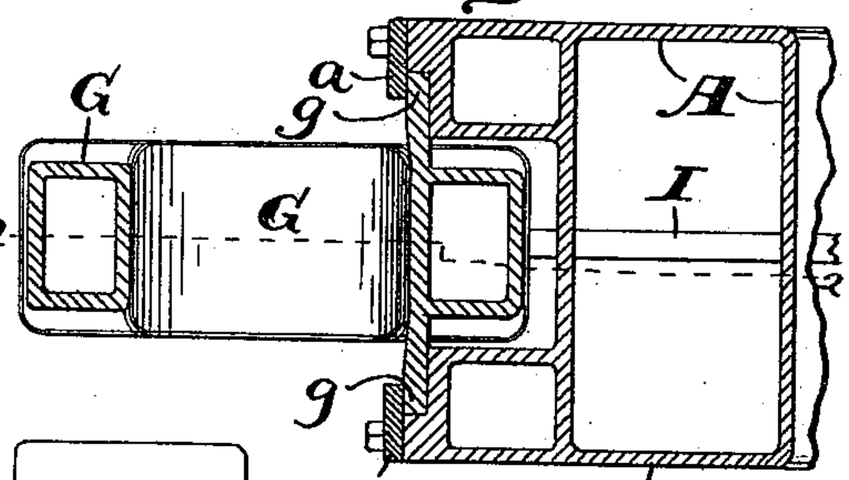


Fig. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL STEPHENS, OF INDIANAPOLIS, INDIANA.

BAND-SAW MILL.

SPECIFICATION forming part of Letters Patent No. 332,365, dated December 15, 1885.

Application filed September 3, 1885. Serial No. 176,055. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL STEPHENS, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Band-Saw Mills, of which the following is a specification.

My said invention relates to that class of machines known as "band-saw mills;" and it consists in an improved means for steadying and adjusting the yoke (which carries the upper band-saw wheel) in various directions, as required in putting the mill in readiness for work, as will be hereinafter more particularly described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a front elevation of a band-saw mill embodying my said invention; Fig. 2, a vertical sectional view, on an enlarged scale, on the dotted line 2 2; Fig. 3, a vertical sectional view on the dotted line 3 3 in Fig. 2, and Fig. 4 a horizontal sectional view looking downwardly from the dotted line 4 4 in Fig. 2.

In said drawings the portions marked A represent the main part or standard of the mill; B, the lower band-saw wheel; C, the upper band-saw wheel; D, the shaft of said upper band-saw wheel; E and F, the supports for the boxes of said shaft; G, the yoke carrying said box-supports; H, a screw-shaft for adjusting said yoke vertically, and I a weighted lever carrying the nut for said screw-shaft. The post A carries a bracket, A′, which forms a housing for the lower band-wheel on its lower portion, and the face of its upper portion is constructed to form, in connection with the plates *a*, slides for the yoke G.

The lower band-wheel, B, and its mountings form no part of the present invention, and therefore need not be further described herein, it being usually rigidly mounted in position, and all the adjustments being effected through the supports of the upper band-wheel, C. The shaft D carries the upper band-wheel, C, and is mounted in boxes D′ and D^2, which are in turn supported by the box-supports E and F. This shaft is of considerable size and hollow, thus permitting a rod or bolt to pass through it longitudinally, as will be presently described. The boxes D′ and D^2 are so formed as to rest in what are known as "ball and-socket" bearings, in order that they may readily adapt themselves to the various adjustments of the machine. The box-support E is mounted upon a horizontal way on the upper end of one arm of the yoke G, to which it is secured by bolts *e*, which pass up through slots in the ends of said horizontal way into the underside of said box-support, as shown most plainly in Fig. 3. This box-support also has downwardly-projecting ends *e′*, through which set-screws e^2 pass and engage with the ends of said horizontal way. By means of these set-screws or adjusting-screws this box-support, and with it the box which it carries and the end of the shaft therein, may be easily and quickly adjusted, and thus the slight lateral adjustment required by this machine is provided for. The box-support F has a downwardly-projecting portion, which rests in a socket in the upper end of the other arm of the yoke G. At the lower end of this socket is formed an inclined way, in which rests a wedge, F′, which is provided with a screw or bolt portion, as shown most plainly in Fig. 2, upon which is a cap or socket nut, F^2, which is secured by a cap-washer, *f*, to the side of the yoke G. A hand-wheel, f^2, or other convenient means is provided by which this cap-nut may be turned, and the wedge F′ thus driven back and forth, by which means the vertical adjustment of the shaft in relation to the yoke is provided for. The yoke G is provided with flanges *g*, which are mounted in the ways on the face of the post A, (see especially Fig. 4,) and carries the box-supports E and F, and through them the boxes, and shaft D the upper band-wheel. One difficulty heretofore experienced with yokes in machines of this character has been their liability to spring apart at the upper end, and thus throw the bearings out of line; and in consequence of this liability such yokes have heretofore been made very heavy and cumbersome. By constructing the shaft D hollow I have been enabled to connect the upper ends of this yoke by means of a rod or bolt, G′, passing through said hollow shaft, and thus tying said ends directly together and entirely precluding any springing apart of said ends.

The adjustment needed in operating this

machine being very slight, by making this shaft of considerable size the hole therein can be made large enough to receive a rod of sufficient size for the purpose and still leave room for all the adjustment necessary without bringing the inner surface of the hollow shaft in contact with the rod. By this construction I not only provide a better and firmer support for the upper band-wheel, but am also able to reduce it materially in weight, thus saving a considerable expense. The shaft H is arranged vertically beneath the yoke G into a socket-nut, which its upper end enters, while its lower end passes down through a guide-socket on top of the arm A′, its end being supported by the lever I, as shown, and as will be presently described. This shaft is provided with a handle, H′, and a pawl, *h*′, which latter engages with a ratchet-wheel, *h*, on the said shaft. By throwing said pawl from one side to the other the shaft can readily be turned in either direction, as will be plainly understood by an inspection of the drawings, particularly Fig. 2. The lever I carries the pivoted nut *i*, through which the shaft H passes, and rests on a fulcrum *a*′. At its outer end it carries a weight, I′, which may be adjusted back and forth as the necessities of the case require. This provides an elastic and yielding support for the upper band-saw wheel, the advantages of which are obvious.

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

1. The combination, in a band-saw mill, of the post A, the lower band-wheel, B, a shaft therefor, the upper band-wheel, C, the hollow shaft D therefor, the yoke G, in which said shaft is mounted, and a rod, G′, which passes through said hollow shaft and secures the upper ends of the yoke together, substantially as and for the purposes set forth.

2. The combination, in a band-saw mill, of a yoke, G, adjustable box-supports mounted thereon, a hollow shaft mounted in boxes, supported thereby, and a rod or bolt passing through said hollow shaft and securing the upper ends of said yoke together.

3. The combination, in a band-saw mill, of a yoke, a shaft mounted in boxes thereon, and a box-support, E, for one end of said shaft, mounted on a horizontal way on the upper end of one arm of said yoke, and provided with lips *e*′ and adjusting-screws *e*², whereby said box-support and the box and shaft end carried thereby may be adjusted laterally.

4. The combination, in a band-saw mill, of the yoke, a shaft mounted in boxes thereon, a box-support, F, for one end of said shaft, mounted in a vertical socket in the upper end of one of the arms of the yoke, a wedge mounted in a way in said yoke and supporting the stem of said box-support, and means for driving said wedge back and forth, whereby said box-support and the box and shaft end carried thereby may be adjusted vertically.

5. The combination, in a band-saw mill, of the yoke G, carrying box-supports upon its two arms, one of which is adjustable laterally and the other of which is adjustable vertically, substantially as described, and for the purposes specified.

6. The combination, in a band-saw mill, of a vertically-adjustable yoke mounted in slides on the frame-work, means of adjusting the same, two box-supports, one mounted upon the upper end of each arm of the yoke, and one of which is adjustable laterally and the other of which is adjustable vertically, and means for effecting said several adjustments.

7. The combination, in a band-saw mill, of the main post or standard, a yoke mounted and adjustable in slides therein, a box-support, E, mounted upon the upper end of one arm of said yoke, means for adjusting the same laterally, a box-support, F, mounted upon the upper end of the other arm of said yoke, means of adjusting the same vertically, boxes mounted in said box-supports by means of a ball-and-socket formation, a hollow shaft mounted in said boxes, and a rod or bolt passing through said hollow shaft and connecting the upper ends of the yoke together.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 26th day of August, A. D. 1885.

SAMUEL STEPHENS. [L. S.]

In presence of—
E. W. BRADFORD,
CHARLES L. THURBER.