

(No Model.)

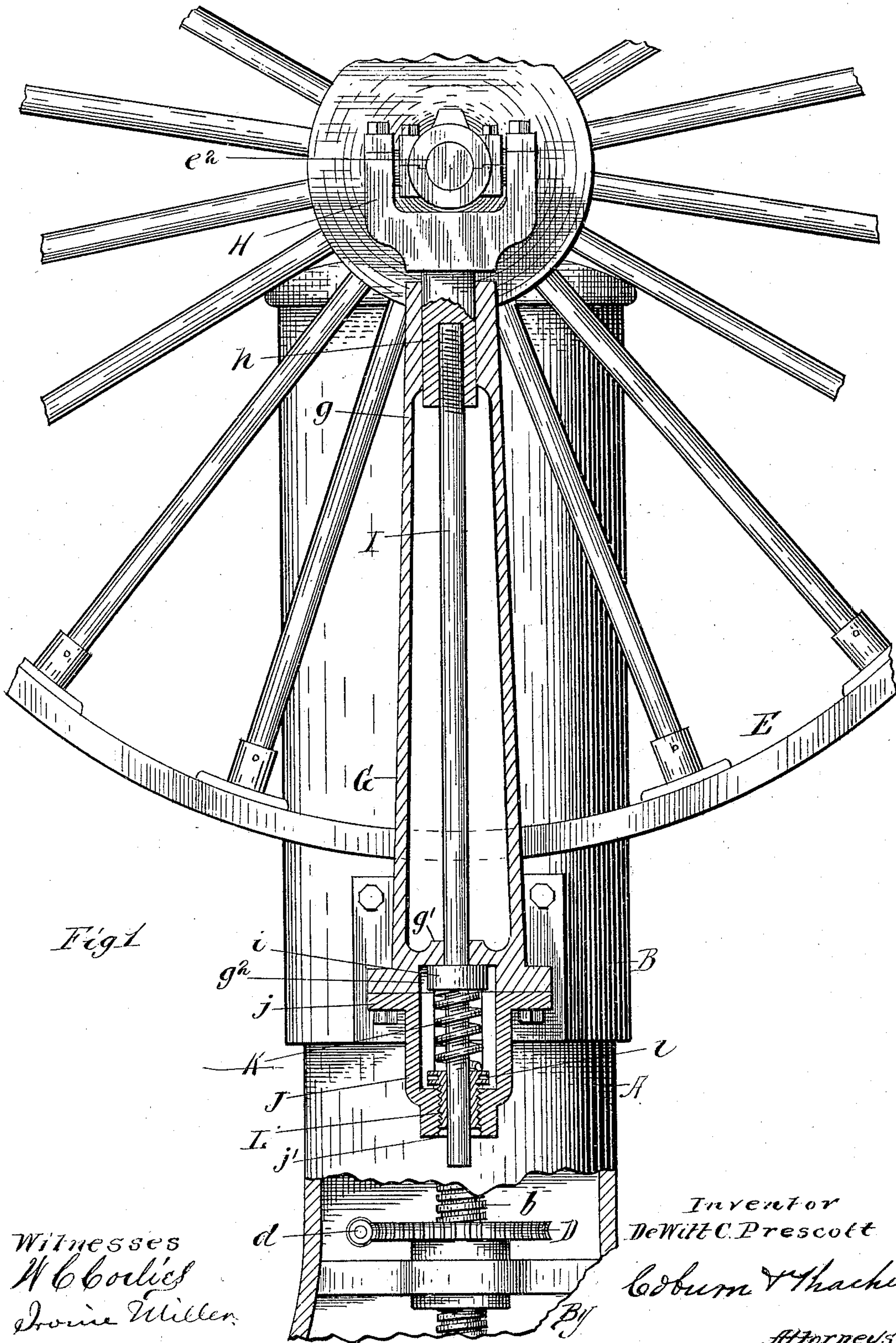
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BAND SAW MILL.

No. 368,731.

Patented Aug. 23, 1887.



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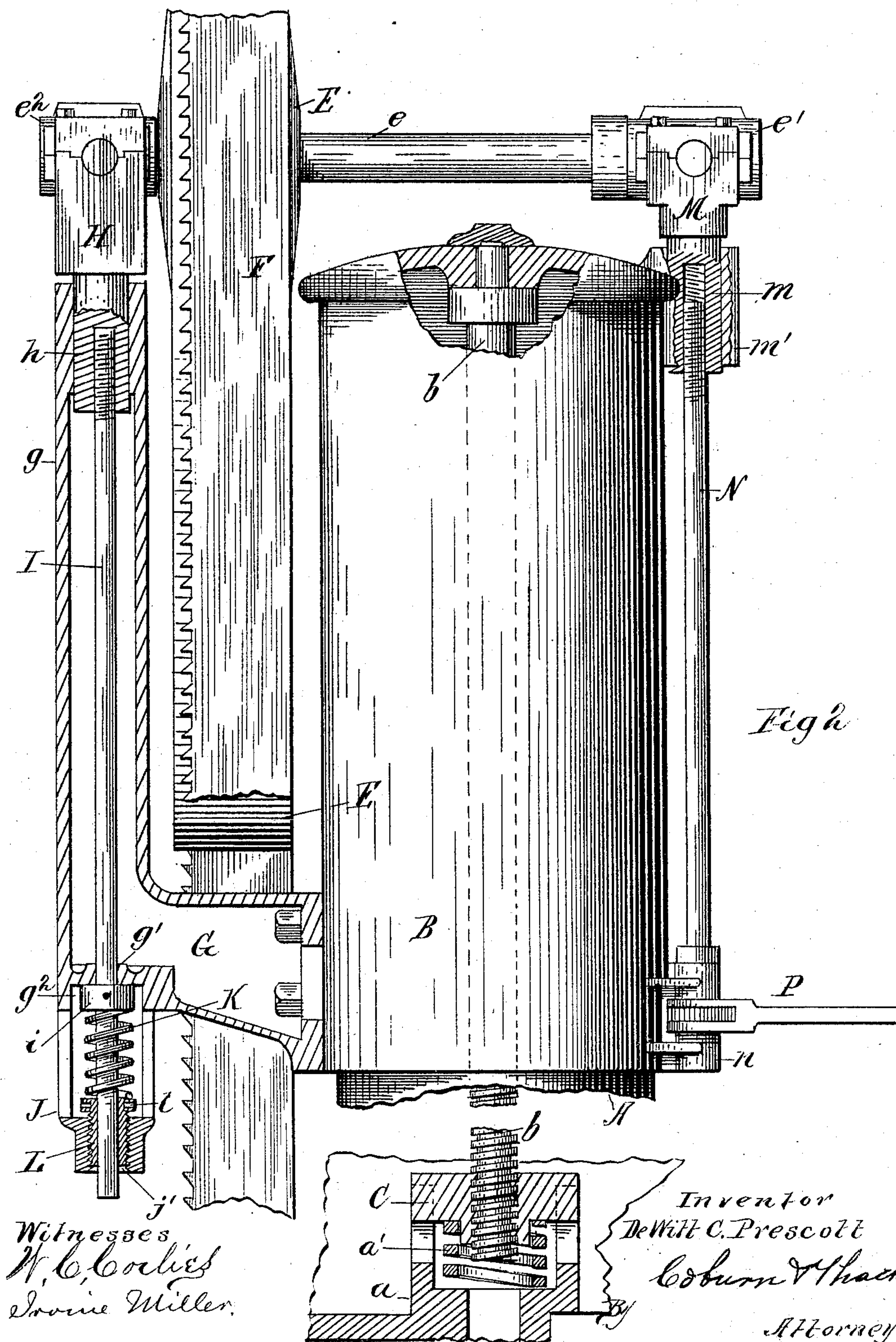
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UNITED STATES PATENT OFFICE.

DE WITT CLINTON PRESCOTT, OF MARINETTE, WISCONSIN.

BAND-SAW MILL.

SPECIFICATION forming part of Letters Patent No. 368,731, dated August 23, 1887.

Application filed January 29, 1887. Serial No. 225,921. (No model.)

To all whom it may concern:

Be it known that I, DE WITT CLINTON PRESCOTT, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented certain new and useful Improvements in Band-Saw Mills, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a front elevation, partly in section, of the upright frame or column and the band-wheel and supports thereof mounted on said column, and Fig. 2 a side elevation of the same, also partly in section.

15 My invention relates to that class of saw-mills known as "band-mills," and is an improvement upon the mill shown and described in my prior application, Serial No. 207,142, filed July 3, 1886.

20 The object of the present invention is to provide a more sensitive device for adjusting the upper band-wheel, whereby any slight slack in the saw is quickly taken up, so that the latter will be kept taut constantly.

25 I will proceed to describe one way in which I have carried out my invention in practical form, and will then point out definitely in claims the special improvements which I believe to be new and wish to protect by Letters Patent.

30 I shall not here describe the entire structure of the mill, in view of the fact that the same is fully described in my prior application mentioned above; and for the same reason I have shown in the drawings only so much of the mill as is necessary to an understanding of my present improvement.

35 In the drawings, A represents the lower or stationary portion of the column which constitutes the upright part of the main frame, and B the upper section thereof, which is in the form of a cap fitting over the top of the lower portion in telescopic fashion and movable up and down thereon. Both sections are hollow, and the cap is supported by a post, b, 40 which passes down through the column, and is supported by a nut, C, at its lower end, which is mounted in a socket, a, at the bottom or base portion of the main frame, resting upon a suitable spring, a', within the socket, the latter being slotted to permit vertical play of the nut, as shown in the drawings. This construc-

tion is the same as shown and more minutely described in my prior application mentioned above. I have also shown in the drawings the 55 same device as before for rotating the threaded post, which consists of a worm-wheel, D, mounted and secured to a suitable support on the frame and connected to the post by a spline attachment, so as to permit movement of the 60 post through the wheel while turning with it. This worm-wheel is rotated by means of a worm, d, which may be provided with a hand-wheel or any other suitable device. The upper band-wheel, E, is secured to its shaft e, 65 which is mounted in boxes supported on the movable portion of the column, mainly as shown and described in the prior application referred to, and the band-saw F runs over this wheel in the usual way. This mechanism, 70 whereby an elastic support is provided for the upper band-wheel, is satisfactory in operation for general purposes. It will be seen, however, that the whole weight of the upper or cap section of the column, and all the parts 75 attached thereto, rests upon the supporting-spring at the bottom of the post. The action of the device is consequently a little slow for all occasions, and is not quite sensitive enough to take up the lesser variations in the saw, so 80 as to keep it perfectly taut under all conditions in operation. I have therefore devised means for an additional and more sensitive adjustment, which will take up all the lesser variations in the saw and so completely supplement 85 the action of the main devices heretofore described.

The rear journal-box, e', of the band-wheel shaft is mounted as shown and described in my 90 said prior application, and is provided with the same device for adjustment. The front journal-box, e², is, however, very differently mounted, by means of devices which I will now describe.

An angular bracket, G, is attached to the 95 movable cap B, being substantially like the similar device in my said prior construction. This bracket is hollow, as before, but its upper end is left open instead of being closed. The front journal-box, e², is mounted upon a 100 block, H, the other end of which is cut down to cylindrical form, thereby making a stem, h, which is adapted to fit into the open upper end of the upright portion g of this bracket

G, and is left free to move up and down therein. A strong supporting post or rod, I, is attached to the stem *h* of the bearing-block and extends down thence through the upright arm of the bracket, passing through the wall of the latter at its lower end, which is here enlarged and thickened to form a kind of boss, *g'*, which affords a bearing for the supporting-rod I. On the under side of this boss, at the lower end of the bracket, a recess, *g''*, is cut, which is adapted to receive a collar, *i*, fastened to the rod I on the end projecting out below the bracket. A socket-piece, J, is fastened to the under side of the bracket G by bolts passing through suitable ears, *j*, being arranged directly underneath the boss at the lower end of the bracket. The lower end of this socket-piece is perforated, so as to provide an opening, *j'*, through which the lower end of the rod I passes and in which it is free to move vertically. Obviously the vertical movement of this rod will raise and lower the front bearing of the shaft *e*, which is immediately adjacent to the upper band-wheel, and so will adjust the latter and regulate the strain upon the saw. To effect this adjustment automatically, a spring, K, is coiled around the lower end of the rod I, within the socket-piece, being arranged between the lower portion of the latter and the collar on the rod, so that the downward movement of the latter will depress or contract the spring, which in its recoil acts upon the collar constantly to lift the rod upward. It is desirable to provide means for adjusting the tension of this lifting-spring, and so I set a threaded nut or button, L, in the bottom of the socket-piece and pass the end of the supporting-rod through this nut for a loose bearing. The lower end of the spring rests upon the head of this nut or button, and obviously by turning the latter it will be raised and lowered, thereby increasing or diminishing the tension of the spring. Holes *l* are made in the head of the nut for the reception of a pin, by which it may be turned, and the socket-piece is slotted or open at the sides to admit the use of this pin.

The rear journal-box, *e'*, is mounted on a bearing-block, M, which is similar to the front block, H, and is provided with a similar stem, *m*. This stem fits into a suitable socket, *m'*, on the cap portion of the column, and is threaded internally to receive the upper end of a supporting rod or post, N, which is also threaded to correspond. The lower end of this post is seated in a socket, *n*, at the lower end of the cap B, and is provided with a ratchet mechanism, P, or some other device, by means of which it is rotated by hand to raise and lower the rear bearing-block for permanent adjustment. Both journal-boxes are pivoted in their respective blocks, so that they may turn to accommodate the different adjustments of the parts.

The devices for supporting and adjusting the rear journal, just described above, are the same as in my said prior application, and

these devices, together with all others herein shown, which are also found in the said prior application, constitute no part by themselves of my present improvement. These devices must be constructed and adjusted relatively when set up in working position, so that when the movable section of the column is raised to strain the saw until it is perfectly taut the collar *i* will rest against its seat, or nearly so, and an open space will be left between the upper end of the bracket-arm *g* and the bearing-block H, as shown in the drawings, and the spring K must be sufficiently strong to hold the parts up in this position under the ordinary action of the saw. Now, if any unusual strain is brought suddenly upon the saw, this spring will yield sufficiently thereunder to permit the bearing-block to drop slightly and relieve the strain, so as to obviate the danger of breakage; but as soon as released from this extra force the reaction or recoil of the compressed spring will lift the bearing-block instantly, and so keep the saw taut. This action is instantaneous, or practically so, for the reason that there is little weight for the spring to lift. Only the front journal of the wheel is raised together with the wheel, wholly or partially, and the additional weight of the bearing-block and its supporting-rod is of no practical consequence. This adjusting device is therefore very sensitive, and serves to adjust the saw quickly to sudden changes in strain, while the main adjusting devices do the heavier work of this nature.

There may be variations in the mechanical devices which are described and shown herein without material change in the mode of operation; hence I do not wish to be understood as limiting myself in all respects to the special devices or construction and arrangement of the same, which are shown in the drawings and have been described above.

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

1. In a band-saw mill, the upper band-wheel, in combination with separate bearings for the respective ends of the band-wheel shaft, each of which is mounted on pivots and is vertically movable independently of the other, and an automatic adjusting mechanism applied to one of said bearings, whereby the said bearing and one end of the shaft are adjusted in a vertical direction automatically and independently of the bearing at the other end of the shaft, substantially as and for the purposes specified.

2. In a band-saw mill, the upper band-wheel, in combination with the vertically-movable support on which said wheel is wholly mounted, and an automatic adjusting mechanism whereby said support is adjusted vertically and automatically, separate bearings for the respective ends of the band-wheel shaft mounted on pivots on said movable support and each vertically adjustable independently of the other, and an automatic adjusting mechanism applied to

one of said bearings, whereby the band-wheel shaft may be vertically adjusted bodily and one end thereof automatically and independently of the other end, substantially as and for the purposes specified.

3. In a band-saw mill, the upper band-wheel, in combination with independent and vertically-movable boxes in which the shaft of said wheel is mounted, a yielding automatic adjusting mechanism for automatically and independently adjusting one of said bearings, and a hand mechanism for independently adjusting the other of said bearings, substantially as and for the purposes specified.

4. In a band-saw mill, the upper band-wheel, in combination with a vertically-movable main support on which said wheel and its bearings are mounted, a yielding automatic device for adjusting said main support vertically, separate bearings for the respective ends of said band-wheel shaft, vertically and independently movable, a yielding automatic device for adjusting one of said bearings independently, and a hand device for the independent adjustment of the other bearing, substantially as and for the purposes specified.

5. In a band-saw mill, the upper band-wheel, E, in combination with the independent vertically-movable block H, in which the front journal-box, e^2 , is separately mounted, the supporting-rod I, attached to said block and having a limited vertical movement, the spring K, arranged to act upon said rod upwardly, and the independent journal-box e' , mounted on pivots at the rear end of the shaft, substantially as and for the purposes specified.

6. In a band-saw mill, the upper band-wheel shaft, e , in combination with the vertically-movable front bearing-block, H, the hollow

bracket G, the supporting-rod I, provided with the collar i , the socket-piece J, and the adjusting-spring K, substantially as and for the purposes specified.

7. In a band-saw mill, the adjustable bearing-block H for the upper band-wheel shaft, in combination with the hollow bracket G, the supporting-rod I, provided with the collar i , the socket-piece J, the lifting-spring K, and the spring-adjusting nut or button L, substantially as and for the purposes specified.

8. In a band-saw mill, an upright supporting-column in combination with the telescopic cap B, vertically movable on said column, the post b , which supports said cap, the supporting-nut C and supporting-spring a' for said post, the upper band-wheel shaft, e , mounted on and supported by said cap, the vertically-movable front bearing-block, H, the supporting-rod I, and lifting-spring K, substantially as and for the purposes specified.

9. In a band-saw mill, an upright supporting-column in combination with the telescopic cap B, vertically movable on said column, the post b , which supports said cap, the supporting-nut C and supporting-spring a' for said post, the upper band-wheel shaft, e , mounted on and supported by said cap, the vertically-movable front bearing-block, H, the supporting-rod I, the lifting-spring K, the rear vertically-movable bearing-block, M, the threaded supporting-rod N, and a hand device for turning said rod, substantially as and for the purposes specified.

DE WITT CLINTON PRESCOTT.

Witnesses:

W. P. MARS,

JOHN J. ANDREW.