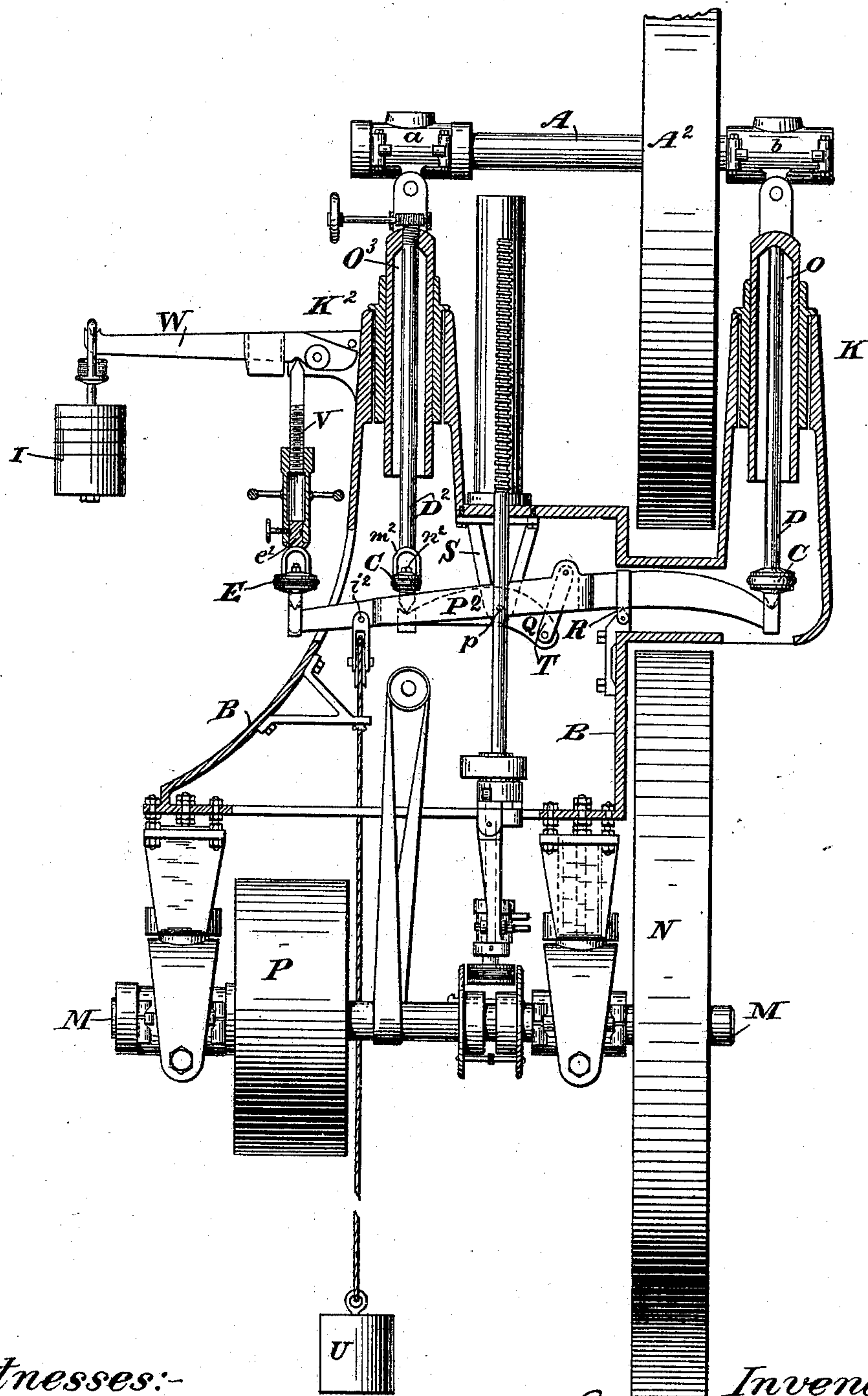


(No Model.)

E. E. THOMAS.
BAND SAW MILL.

No. 544,999.


Patented Aug. 20, 1895.



Witnesses:-

R. H. Maynard
M. E. Weston.

Inventor:-


 To the order of
 C. C. Thomas
 Pay atty
 J. N. M. Cutler

UNITED STATES PATENT OFFICE.

EDWIN E. THOMAS, OF BAY CITY, MICHIGAN, ASSIGNOR TO MICHAEL GARLAND, OF SAME PLACE.

BAND-SAW MILL.

SPECIFICATION forming part of Letters Patent No. 544,999, dated August 20, 1895.

Application filed April 12, 1894. Serial No. 507,233. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. THOMAS, of Bay City, in the county of Bay and State of Michigan, have invented a certain new and useful Improvement in Band-Saw Mills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to band-saw mills, and has for its object to improve this type of machine in the direction of rendering more efficient the mechanism by which the upper wheel and shaft are supported or maintained in the proper position or condition relatively to the lower and fixed band-wheel shaft when the saw is running.

To this end or object my invention consists in the novel combination of devices which will be hereinafter described, and which will be found most particularly pointed out in the claim of this specification.

To enable those skilled in the art to which my invention relates to make and use a saw-straining rig embracing the same I will now proceed to more fully describe my improved mechanism, referring by letters to the accompanying drawing, which forms part of the specification, and in which I have shown my invention carried out in that particular form of saw-straining rig in which I have so far successfully used it.

In the drawing, the figure is a vertical central section of a band-saw machine of a well-known type, but in which there are certain novel structural features with reference to the mounting of the upper working parts and the combination of devices for supporting the upper shaft that form the subject-matter of another application filed by me, Serial No. 498,963.

In the drawing, B is the husk or main frame, suitably mounted on a stand-like base, while M is the lower driving-shaft that carries the band-wheel N and the pulley P, over which the driving-belt of the saw is banded.

A is the movable upper shaft, carrying the upper band-saw wheel A², all after a fashion substantially like that seen in analogous machines to mine.

The mechanism by which the upper wheel-

shaft is supported and by which the upper wheel is forced and held up to strain the saw (not shown) when in action is a novel one, which is made the subject of my said other application, and which, in addition to the novel structural features made the subject of said case, embodies, also, the improvement upon which my present application is based. As usual the front and rear journal-boxes b and a of the top shaft A are mounted at the upper ends of vertically-sliding tubular devices O and O³, arranged within the front and back columns K and K², and within the columns descend, respectively, the spindles D and D², that sustain the upper movable parts, and which in the cases shown have their lower ends stepped in bearings of two sustaining-levers P² and Q. The peculiar arrangement of these levers and the combination therewith of the tension-bar e² V, stepped on the rear end of lever P² and acted upon by the weighted lever W, form mainly the subject-matter of my other case, so that I need herein only state that, as shown, the lever P² is pivoted or fulcrumed at R, while the lever Q, which is located in a central eye or yoke of lever P², is hung by the pivot p to a hanger S of the husk B and is coupled to the lever P² by a link-bar T, all as clearly illustrated.

U is a counterbalancing-weight hung by a rope or chain from about the point i² of lever P², all in such manner that the said weight will just about balance the weight of all the parts sustained, both directly and indirectly, by the main lever P².

I is the tension-weight or the main actuating device of the saw-straining mechanism, and said weight through the medium of the lever W and the presser-bar or spindle e² V exerts on the rear end of lever P² the downwardly-exercised force that is necessary to force and hold upwardly the top shaft A, and thus keep the band-saw (that passes around the two wheels A² and N in the usual manner) properly strained or under the requisite degree of tension. The actuating-weight I is composed of separable and measured weights, so that by the removal or addition of parts the operator or manager of the machine can vary the gravity of the device I as the kind of work being done by the saw may require,

and can always know exactly what maximum weight is being utilized as the motive power of the saw-straining rig.

Instead of having the spindles D and D², through which the force of the tension-weight is transmitted from the straining-levers P² Q to the upper shaft-journal, and supporting-boxes b a rigid, as heretofore, I interpose between the extreme lower end of each spindle and its upper main portion a heavy rubber spring C, made in the case shown of disk-like form, or somewhat after the fashion of a rubber compression car-spring.

As a simple and convenient manner of combining the spring C with the spindle, I have made the latter in two parts, as shown, the lower end of the longer or main part being formed or provided with a sort of stirrup m², having at its extremity a disk or face-plate, centrally perforated, while the smaller lower part of the spindle has a similar disk, and a centrally-located screw-threaded stud, long enough to pass upwardly through the rubber spring C, and thence through the face-plate located on top of said spring, so that by means of a nut n² the assembled parts may be securely fastened together, as shown in the drawing.

At E, I have a shown a similar arrangement of spindle and spring-disk between the bearing-point at the rear end of lever P², to which the downward pressure of the tension mechanism is applied, and the power-imparting lever W, that carries the actuating-weight I, and in carrying out my invention in the kind of straining-rig shown I prefer to use all three of the springs shown at C, C, and E, though, of course, only two or one only of the springs or cushion-like devices may be employed with good effects. These elastic pads or springs are of such character that under the compressive action to which they are subjected they will yield to an extent sufficient to take up a material degree of the motive power or gravitating force of the weight I, as exerted through the lever W, or, in other words, during their compression these springs absorb a portion of the standing-weight power of the tension device; and the operation and effect

of this is that, under the fluctuations of the resistance offered to the working and strained-up parts during the running of the mill, the stored-up power, so to speak, in these springs is periodically given out and replaced by the main source of power at I, but always in a yielding or elastic manner, and so that, although the weight I may have to rise and fall as the tension device feels the effects of the fluctuations of the strained-up working or running band-saw and other parts, the overcoming of the inertia of the weight I at each and every initial movement thereof is effected by or taken up in the springs, so that they operate as elastic or yielding compensators between the actuating-weight at one extreme and the strained-up band-saw at the other extreme of the saw-straining rig of the mill. Thus by the combined action of weights and spring I am enabled to produce a mechanism which acts differently from and better than any heretofore devised for the given purpose.

Having now fully described the construction and operation of my improved saw-straining rig, what I claim therein as new, and desire to secure by Letters Patent, is—

In combination with the spindles D; and D², which, at their upper ends, support the upper shaft A; the lever P², fulcrumed on the husk with its shorter arm supporting spindle D, and its longer one the counterbalancing weight U; and the lever Q fulcrumed to the frame, with its shorter arm linked to the longer arm of lever P², and its longer arm supporting the spindle D², the springs, or cushions, C and C, arranged, respectively, intermediately of the spindle D, and its supporting lever P², and intermediately of the spindle D² and its supporting lever Q; the whole constructed to operate in the manner and for the purpose set forth.

In witness whereof I have hereunto set my hand this 6th day of November, 1893.

EDWIN E. THOMAS.

In presence of—

A. B. LENNOX,
R. A. MCKAY.