No. 801,815. PATENTED OCT. 10, 1905.

C. SEYMOUR.

BAND SAW.

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Fig. 1,

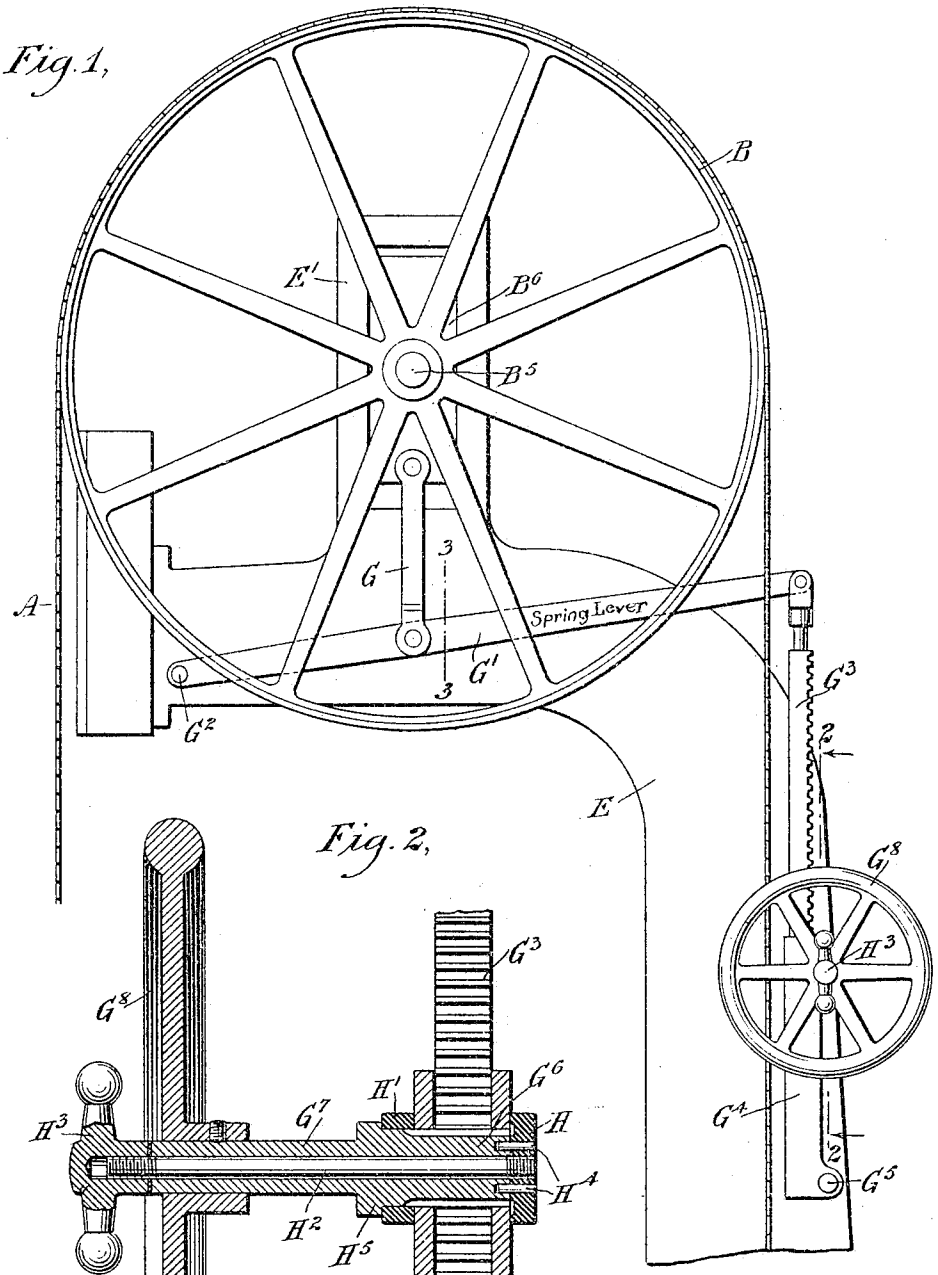


Fig. 3.



Fig. 2,

WITNESSES:

Edw. Thorpe.

Geo. J. Houser

INVENTOR

Charles Seymour

BY

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES SEYMOUR, OF DEFIANCE, OHIO, ASSIGNOR TO THE DEFIANCE MACHINE WORKS, OF DEFIANCE, OHIO.

BAND-SAW.

No. 801,815. Specification of Letters Patent. Patented Oct. 10, 1905.

Original application filed January 30, 1904, Serial No. 191,272. Divided and this application filed April 29, 1904. Serial No. 205,455.

To all whom it may concern:

Be it known that I, CHARLES SEYMOUR, a citizen of the United States, and a resident of Defiance, in the county of Defiance and State of Ohio, have invented new and useful Improvements in Band-Saws, of which the following is a full, clear, and exact description, this being a division of the application for Letters Patent of the United States for a band-saw, Serial No. 191,272, filed by me January 30, 1904.

The object of the invention is to provide certain new and useful improvements in band-saws, whereby any sudden quiver or jar in the saw band or blade incident to the latter's striking a knot or the like is quickly compensated for to prevent injury to or breaking of the saw band or blade and whereby the endless saw-band can be readily removed and replaced and all slack in the saw-band can be taken up at any time and while the band-saw is in use.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement as applied. Fig. 2 is an enlarged transverse section of the same on the line 2 2 of Fig. 1; and Fig. 3 is a cross-section, on the line 3 3 of Fig. 1, of the spring-bar for supporting the band-wheel bearing.

The endless saw band or blade A extends over a lower band-wheel and an upper band-wheel B, of which the lower band-wheel (not shown) is the driven band-wheel and is journaled in stationary bearings on the main frame E of the machine, as more fully described in the application for Letters Patent above referred to.

The upper band-wheel B is journaled on a stud B^5, projecting from a bearing B^6, mounted to slide vertically in guideways E', arranged on the main frame E. The bearing B^6 is pivotally connected at its lower end by a link G with a lever G', made of spring metal and preferably of rectangular cross-section, set edgewise, to be sufficiently flexible for the purpose hereinafter more fully described, and the said lever G' is fulcrumed at one end at G^2 on the main frame E, and the free end of the said lever is pivotally connected with the upper end of a rack-bar G^3, mounted to slide in a bearing G^4, fulcrumed at its lower end at G^5 on the main frame E. A pinion G^6 (see Fig. 2) is in mesh with the rack-bar G^3 and is mounted to turn in suitable bearings arranged on the rack-bar bearing G^4, so that when the pinion is turned an up or down sliding motion is given to the rack-bar G^3, so as to swing the lever G', either upward or downward to push the bearing B^6 up or down in its guideway E' by the link G, connecting the lever G' with the said bearing B^6. When the bearing B^6 is pushed upward, and with it the wheel B, then any slack in the saw-band A is taken up, and when it is desired to remove the saw-band from the upper and lower wheels, then the bearing B^6, and with it the wheel B, is lowered to allow convenient removal of the saw-band from the upper and lower wheels.

In order to turn the pinion G^6 in the desired direction, the hub G^7 thereof is provided with a suitable hand-wheel G^8, extending to the front of the machine and under the control of the operator.

In order to securely lock the adjusting device in position after the desired adjustment is made, clamping-plates H and H' are provided, adapted to engage opposite sides of the rack-bar bearing G^4, as plainly indicated in Fig. 2. The clamping-plate H is secured on one end of a screw-rod H^2, extending loosely and centrally through the pinion G^6 and its hub G^7, and on the forward threaded end of the screw-rod H^2 screws a hand-nut H^3 under the control of the operator and abutting against the forward end of the hub G^7. The plate H is provided with pins H^4, slidably engaging the rear end of the pinion G^6 to cause the plate to turn with the pinion. The clamping-plate H' is fitted on the front end of the pinion G^6 and abuts against an annular shoulder H^5, formed integral on the hub of the pinion. When the operator screws up the nut H^3, then the clamping-plates H and H' move in firm contact with opposite sides of the rack-bar bearing G^4, so as to securely hold the pinion G^6 against turning, thereby preventing the accidental up-and-down movement of the rack-bar G^3 after the bearing B^6 is adjusted, as previously explained.

When it is desired to actuate the adjusting

device as described, it is necessary for the operator to first unscrew the nut H^3, so as to release the clamping-plates H and H′ from the rack-bar bearing G^4 to allow turning of the pinion G^6 for the purpose above mentioned.

When the machine is running and the cutting edge of the saw band or blade A strikes a knot or other hard matter in the work and an undue strain is then brought on the active run of the saw-band in a downward direction, then the lever G′, owing to its resiliency, yields sufficiently to relieve the saw-band of the undue strain, thus preventing breaking of the saw-band or injury to connected parts. It is further understood that when the machine is running the lever G′ is held against movement at both ends, and it is evident that the lever by its resiliency yields sufficiently for the purpose described.

In practice the yielding motion of the lever G′ for relieving the saw band or blade A is exceedingly little, the maximum movement being about one-tenth of an inch at the connection of the link G with the said lever G′, and in order to insure a very short and quick spring action of the lever G′ the latter is made rectangular in cross-section and set on edge, as previously explained, and shown in Fig. 3.

From the foregoing it will be seen that the lever or bar G′ acts as a spring for the purpose described, and it also forms part of a manually-controlled adjusting device to permit of taking up any slack in the saw band or blade and to allow of conveniently removing the saw band or blade whenever it is desired to do so.

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

1. A band-saw provided with a band-wheel, a slidable bearing for the said wheel, a spring-lever, a link pivotally connecting the lever with the said slidable bearing, and an adjusting device for the said lever, consisting of a rack-bar pivotally connected with the free end of the lever, a pivoted bearing in which the said rack-bar is fitted to slide and a manually-controlled pinion journaled on the said bearing and in mesh with the said rack-bar.

2. A band-saw provided with a supporting-lever for the bearing of the band-wheel, a rack-bar pivotally connected with the free end of the said lever, a pivoted rack-bar bearing for the rack-bar to slide in, a pinion in mesh with the said rack-bar and journaled in the said rack-bar bearing, and a clamping device for clamping the pinion in position on the said rack-bar bearing.

3. A band-saw provided with a supporting-lever for the bearing of the band-wheel, a rack-bar pivotally connected with the free end of the said lever, a pivoted rack-bar bearing for the rack-bar to slide in, a pinion in mesh with the said rack-bar and journaled in the said rack-bar bearing, and a clamping device for clamping the pinion in position on the said rack-bar bearing, the clamping device consisting of a screw-rod extending loosely and centrally through the hub of the said pinion, a nut screwing on the said screw-rod and abutting against one end of the said pinion-hub, a clamping-plate on the said screw-rod and abutting against one side of the said rack-bar bearing and a clamping-plate on the said pinion, abutting against the opposite side of the said rack-bar bearing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES SEYMOUR.

Witnesses:
GEO. W. DEATRICK,
JOS. BAUER.