

WILLIAM H. DOANE & WILLIAM P. McKEE.

Improvement in Band-Saw Machines.

No. 120,949.

Patented Nov. 14, 1871.

Fig. 1.

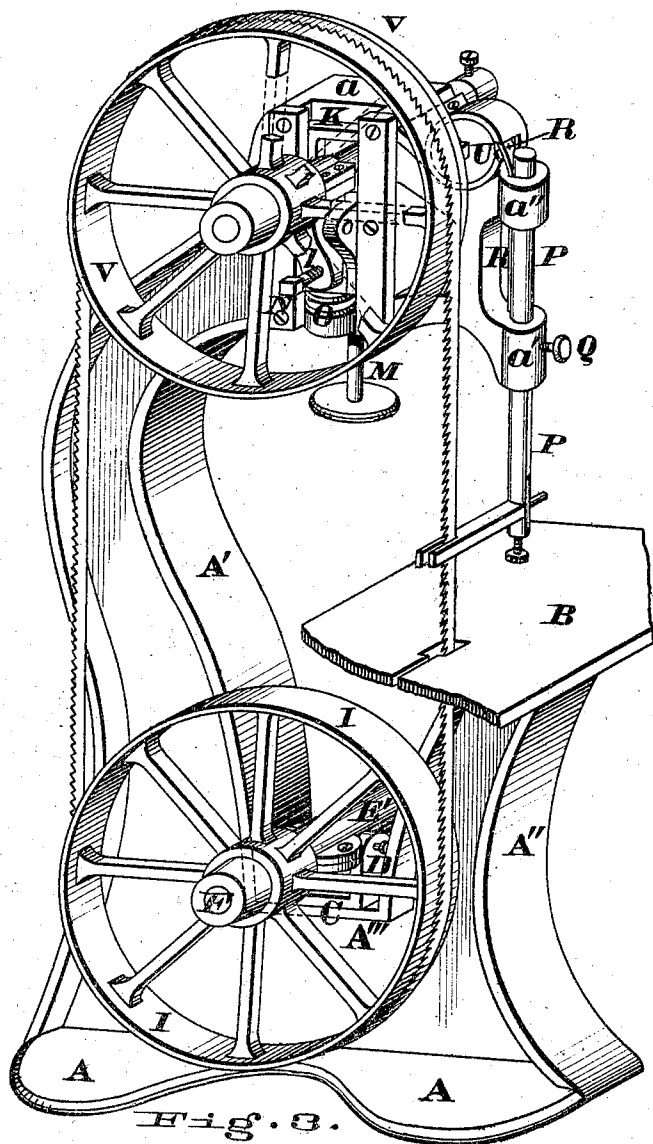


Fig. 2.

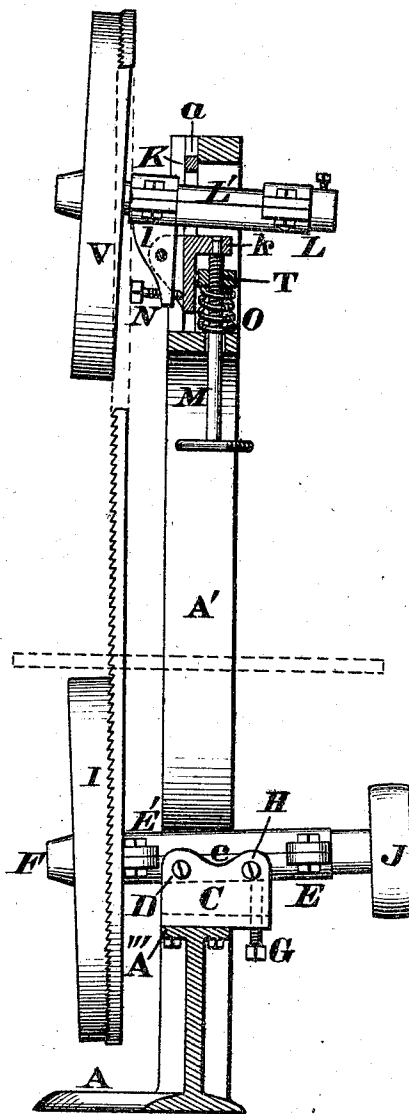


Fig. 3.

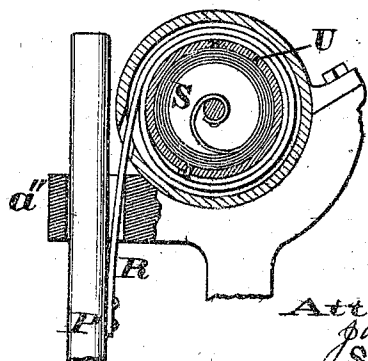


Fig. 4.

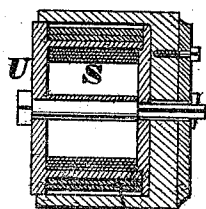
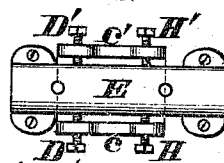


Fig. 5.



W. H. Doane. W. P. McKee
INVENTORS.
By Knight Bros
Attys.

Attest.
Jas. H. Layman,
S. Williamson.

UNITED STATES PATENT OFFICE.

WILLIAM H. DOANE AND WILLIAM P. MCKEE, OF CINCINNATI, OHIO, ASSIGNORS
TO J. A. FAY & CO., OF SAME PLACE.

IMPROVEMENT IN BAND SAWING-MACHINES.

Specification forming part of Letters Patent No. 120,949, dated November 14, 1871.

To all whom it may concern:

Be it known that we, WILLIAM H. DOANE and WILLIAM P. MCKEE, both of Cincinnati, Hamilton county, Ohio, have invented certain Improvements in Band Saw-Machines, of which the following is a specification:

The first part of our invention relates to an improved form of supporting frame and of the upper and lower arbor-bearings, whereby the said bearings, with their inclosed arbors, are made easily accessible and removable for inspection and repair, and relatively adjustable, so as to be brought into exact line, and otherwise so regulated as to insure the perfect operation of the saw, as hereinafter explained. The second part of our invention relates to a new and useful self-retracting adjustable saw-guide.

Figure 1 is a perspective view of a machine embodying our improvements. Fig. 2 is a vertical section of the machine in the plane of its arbors. Fig. 3 is a side elevation, and Fig. 4 is a longitudinal section of the saw-guide's retracting-spring, to a larger scale than the other figures. Fig. 5 is a plan of the lower arbor-bearing.

The frame which supports the operative parts of our machine consists of a single casting of the peculiar form here represented—that is to say, a base, A, from whose rear end there rises the main column or standard A', (supporting the upper arbor-bearing and saw-guide,) and from whose front end there rises a shorter column or pedestal, A, which latter supports and is surmounted by the bench or table B, on which the stuff rests. The depression which intervenes between the columns A' and A leaves exposed a seat, which extends below the center of the lower arbor and is entirely open upward, which seat forms an accessible and convenient place for the attachment, inspection, and regulation, and, when necessary, the ready detachment of the lower arbor-bearing, which bearing is constructed as follows: Bolted or otherwise securely fastened to the top of base A is a pillow-block, C, having vertical flanges c c'. The flanges c c' are traversed near their front end by two co-axial horizontal bolts, D D', which, entering orifices in the box or bearing E E' of the lower pulley-arbor F, constitute a pivoted fastening for the said bearing. A set-screw, G, tapped in the bottom of the pedestal C, and pressing upward against the box E E', enables its

adjustment and retention to horizontality, or such approximation thereto as may be desired. Other set-screws, H H', passing horizontally through the flanges c c' near their rear end, enable the adjustment and retention of said box to a common vertical plane with the upper arbor. The end of the lower arbor most remote from the pulley I carries the driving-pulley J. It will be seen that on the loosening of four screws the entire lower arbor and journal-box may be lifted bodily upward and detached from the machine without detaching the pulley from the arbor. The upper part of the standard A' is curved forward, as represented, and has a slot, a, to hold and guide to a vertical path a step or saddle, K, to which is pivoted a lug, l, that depends rigidly from the upper arbor-bearing L L'. The saddle K has a horizontal extension, k, which bears on the point of a screw, M, occupying a nut, T, that rests on a spring or cushion, O, in the bottom of the slot a. The screw M being turned to the right or left elevates or depresses the upper arbor-bearing, and in so doing causes the proper tension to be imparted to the saw. Another screw, N, that is tapped in the lug l, bears against the face of the saddle K, and enables the regulation or angular adjustment in a vertical plane of the upper arbor-bearing. The above-described capacity for angular adjustment of the band-pulley arbors in their common plane enables the operator to confine the path of the saw nicely to the middle of the pulleys, or to shift it more or less toward the front or back portions of their peripheries, so as to cause all parts to be equally worn. The spring O, while co-acting with the screw M to preserve the proper tension of the saw, also imparts an elastic and yielding quality to the tension. The saw-guide P is adjustable vertically in sockets a' a'' in the frame, and is secured to any specific adjustment by a set-screw, Q. Attached to the rear of the guide-bar P is a strap, R, which is connected to a drum, U, containing a helical retracting-spring, S, of sufficient force to overcome the weight of the said bar and to elevate it to the top of its stroke when left at liberty. Hence all the operator has to do in setting the guide is with one hand to pull it down to the desired level, and with the other to fix it thereto by means of the set-screw Q. This is much easier than it would be to lift the entire weight of the bar and guide—from twenty-five to seventy-five pounds—and is

also better than a weighted counter-balance, because the action is an almost instantaneous one, and altogether a pulling one, and with our spring attachment is not liable to bend or jar or to fatigue the operator. Although preferring for the above purpose a helical spring, substantially such as described, we reserve the right to employ a spiral or other form of spring. While preferring the described relative positions of the pivot-screws D D' and laterally-adjusting screws H H', we do not confine ourselves thereto, as the pivot-screws may be situated near the rear and the adjusting-screws near the front portion of the box.

We claim as new and of our invention—

1. The frame A A' A'', in combination with the lower arbor-bearing, said frame being constructed, as herein described, with a depression, A''', permitting the ready removal of the arbor, as explained.

2. The arrangement of frame A A' A'' A''' and of the horizontally and vertically-adjustable arbor-bearing C D D' E E' G H A.

3. The arrangement of step or saddle K and its contained box or bearing L L'.

4. In combination with the upper arbor L', the lower arbor-bearing E, adjustable both vertically and horizontally, as shown and described, and for the purpose set forth.

5. In combination with the lower arbor, the upper arbor-bearing, adjustable in a vertical plane by means of the screw M, nut T, and spring O, as and for the purpose designated.

6. The combination of the slotted standard A' a, saddle K k, arbor-bearing L, L', l, and T, screws M N, and spring or cushion O, as shown and described, for the purpose set forth.

7. The arrangement of spring S, drum U, strap R, saw-guide P, and set-screw Q, for the purpose set forth.

In testimony of which invention we hereunto set our hands.

WILLIAM H. DOANE.

Witnesses: WILLIAM P. McKEE.

GEO. H. KNIGHT,

JAMES H. LAYMAN.

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