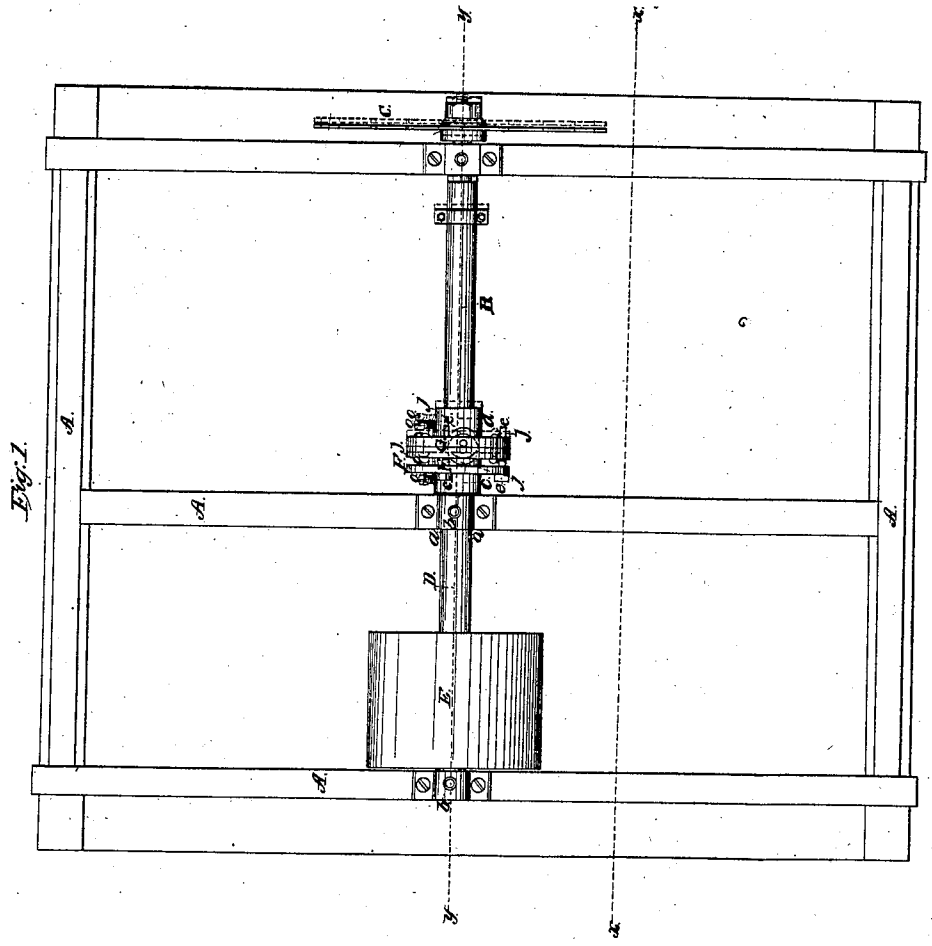
3 Sheets. Sheet 1.

W. S. Reeder,

Circular Saw Mill.

No. 16,655. Patented Feb. 17, 1857.

Fig. 1.



3 Sheets. Sheet 2.

W. S. Reeder,

Circular Saw Mill.

No. 16,655. Patented Feb. 17, 1857.

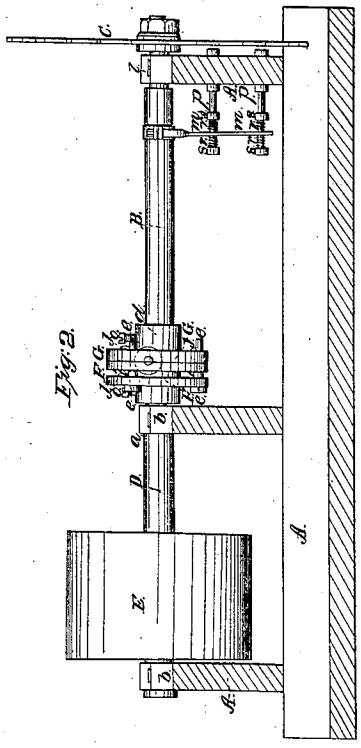


Fig. 2.

Fig. 4.

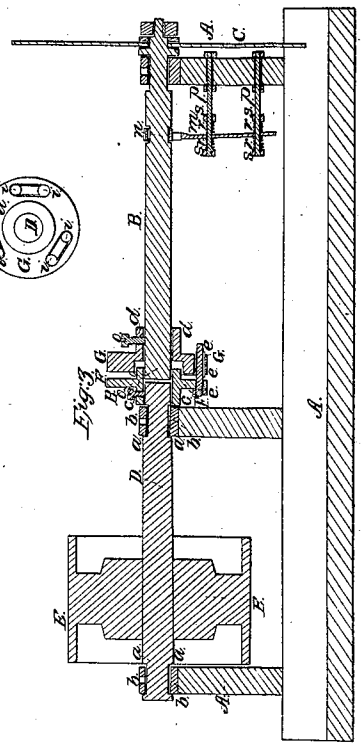


Fig. 3.

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W. S. Reeder,

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Fig. 6.

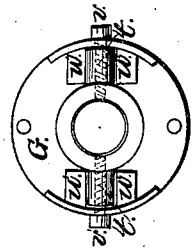


Fig. 5.

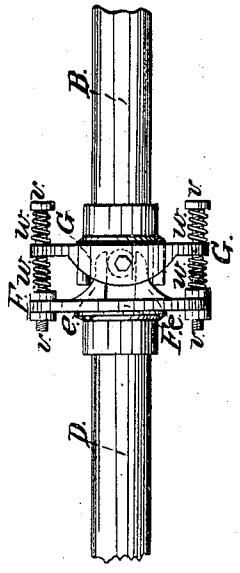
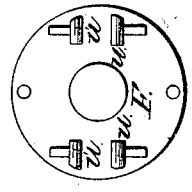


Fig. 7.



UNITED STATES PATENT OFFICE.

WILLIAM S. REEDER, OF ST. LOUIS, MISSOURI.

DEVICE TO ALLOW CIRCULAR SAWS END PLAY INDEPENDENT OF THE DRIVING-SHAFT.

Specification of Letters Patent No. 16,655, dated February 17, 1857.

To all whom it may concern:

Be it known that I, WILLIAM S. REEDER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Driving Circular Saws, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings of the same, in which—

Figure 1 represents a plan of a sawing machine embracing my improvement; Fig. 2, a vertical longitudinal section of the same taken through the line X X of Fig. 1, and Fig. 3, a similar view through the line *y*, *y*. Fig. 4, represents a plan of the saw shaft coupling piece detached; Fig. 5, represents a modification of my improvement, and Figs. 6 and 7, plans of the coupling pieces detached.

My invention relates, and is applicable alone to machinery in which circular saws are used. In the use of circular saws heretofore the saw and pulley from which it is driven have been mounted upon the same shaft, hence any strain of the belt arising from the pulley not being true, or from any other cause is instantly communicated to the saw shaft causing it to spring thus producing a trembling or vibratory motion in the saw, in consequence of which it heats, does bad work, injures the saw, and requires more power to drive it; again, in running the saw if the belt or pulley should happen to be crooked, which they frequently are arising from one side stretching more than the other, a longitudinal reciprocating motion is communicated to the saw shaft from one shoulder, or collar to the other, which not infrequently causes it to enter the log or timber while the collar bears against the journal box next the saw, thereby preventing it from having free end play on that side required by the pressure.

To obviate all of which is the object of the first branch of my invention; and it consists in mounting the pulley and saw, each upon a separate shaft, in such a manner that any vibration communicated to the shaft of the former, shall not be given to that of the latter, thus leaving it at all times free to play back and forth in its bearings, as it accommodates itself to the kerf being cut, independent of the former.

To enable others to make, construct and use my invention I will now proceed to describe its parts in detail reference being had to the accompanying drawings in which A represents a frame supporting in suitable bearings the shaft B that carries the saw (C); and the shaft D, upon which the driving pulley or drum (E) is secured. The shoulders (*a*) of the shaft D, are made to fit closely to its bearings (*b*) although not so much as to bind or produce friction, but yet sufficiently so to prevent end play. Upon the inner end of this shaft is secured by means of a screw (*o*) or in any other suitable manner a collar (*c*) on which is formed a flange (F) to which are secured one or more drivers or coupling pins (*e*), the collar (*c*) also forming the inner bearing of the saw shaft B which like the shaft D carries a collar (*d*) and corresponding flange (G) into which are formed a series of slots (*i*) through which the drivers pass and bear against friction rolls (*j*) arranged there for that purpose. The saw shaft (B) not being closely confined by collars against its bearings has free end play, thus enabling the saw to accommodate itself to the pressure or friction exerted upon it from any side by the timber in sawing.

In order to keep the saw shaft always in such a position as that the saw will have free end play, a lever (*m*) may be arranged so as to clasp around a neck (*n*) formed in the shaft at one end, while the other may be mounted upon a couple of screw bolts (*p*) secured to a standard of the frame of the machine, a couple of spiral springs being coiled around the bolts one on either side of the lever (*m*) having their bearings at one end upon the latter and at the other on nuts (S,) by adjusting which so as to weaken or strengthen the springs the position of the shaft (B) may be regulated at pleasure.

Another and perhaps a better plan of driving the saw and regulating its end play is shown in Figs. 5, 6 and 7 in which but two friction rolls (*t*) and two drivers (*u*) are used; in this example however two bolts (*v*) are screwed fast to the flange (F) of the driving shaft and pass through slots (*n'*) in the other (G) on each of which are arranged two spiral springs (*w*) one on each side of the coupling flange (G) of the saw shaft, one end of each having a bearing against it and the other against nuts by the adjustment of which the end play of the saw

is regulated, and the springs strengthened and weakened at pleasure. The arrangements of the springs (*w*) in this connection have a great advantage over the other as they create no friction in the running of the saw, as they are much more direct in their action and can be made at much less expense.

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

The arrangement and combination of an additional driving shaft (D) with the shaft (B) that carries the saw for the purposes described.

In testimony whereof I hereunto set my hand in presence of two subscribing witnesses.

WM. S. REEDER.

Witnesses:
H. D. CATLIN,
WM. E. SLAWSON.