(No Model.)

F. W. CHAPMAN.

CIRCULAR SAWING MACHINE.

No. 301,959. Patented July 15, 1884.

Fig. 1.

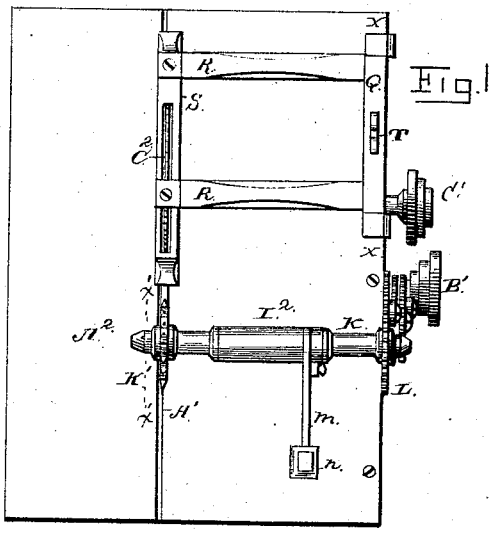


Fig. 4.

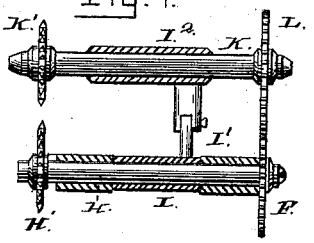


Fig. 3.

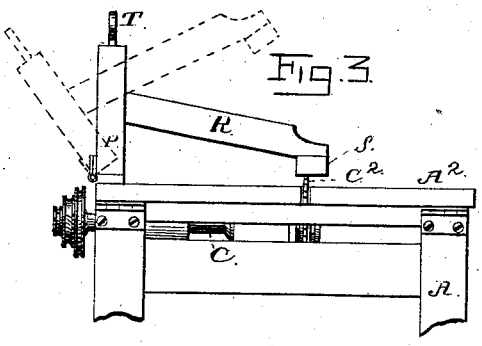


Fig. 2.

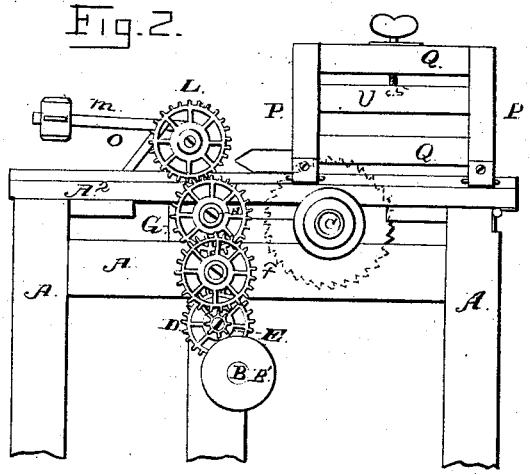


Fig. 5.

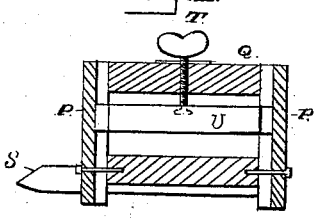
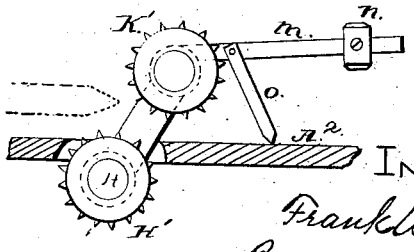


Fig. 6.



WITNESSES
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His attorney.

UNITED STATES PATENT OFFICE.

FRANK W. CHAPMAN, OF CORNING, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES C. B. WALKER, OF SAME PLACE.

CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 301,959, dated July 15, 1884.

Application filed May 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. CHAPMAN, residing at Corning, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Circular-Saw Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to circular sawing machines; and it consists in certain improvements in the mechanism by which the lumber is fed to the saw; also in improvements in the saw-guard, as hereinafter pointed out and claimed.

In the drawings, Figure 1 is a plan of a circular-saw machine provided with my feed and guard mechanism. Fig. 2 is a rear elevation of the same. Fig. 3 is an end view of the saw-guard. Fig. 4 is a detail showing the relation of the feed-rolls to each other. Fig. 5 is a partial section on line *x x*, Fig. 1. Fig. 6 is a section on line *x' x'*, Fig. 1.

A indicates the frame of the machine, which is of suitable construction to support the mechanism.

The saw-arbor C serves as the main driving-shaft, on the outer end of which is a pulley or cone, C', which, by means of a connecting-belt, cone-pulley B, and a train of gears, D E F G, drives the lower feed-roll shaft, H. The shaft H is journaled in the frame, and carries the toothed cylinder or roll H', which has teeth extending upward through a slot, A', in the saw-table A. The saw C runs in the same slot or a similar slot in table A. A sleeve, I, on the shaft H may have a slight rocking movement on said shaft. This sleeve has an arm, I', made integral therewith or secured thereto. The arm I', which is in two parts for convenience of disconnection, carries a second sleeve, I^2, which serves as a bearing for the upper feed-shaft, K, which shaft carries the feed roll or shaft K'. A gear, L, on shaft K engages with gear G on shaft H, the gears being of uniform size, so that the two feed-shafts are driven with uniform speed by the train of gears. The sleeve I^2 has a projecting arm or lever, M, which carries a weight, N, made adjustable thereon by a set-screw or in other suitable manner. This weight has a tendency to rock the arm I' and sleeve I on the shaft H, so as to swing the upper feed-roll up or down, as in Fig. 6, and cause it to bear on the stuff which is feeding toward the saw. A standard, O, pivoted to the arm M, has its lower end resting on the table. This will prevent the weight from rocking the sleeve and upper feed-roll too far, and may be moved so as to throw the upper feed-roll entirely out of engagement with stuff of ordinary thickness. The lower feed-roll may then be used alone; or, if both rolls are used, the pressure of the upper roll on the lumber may be graduated very nicely.

The saw-guard consists of upright standards P P, which are joined together by ties Q Q', the lower ends of the standards being hinged to the table, so that the standards may be turned back. The standards are grooved at their inner edges, so that tenons on the ends of bar U may slide in said grooves. Said bar U is raised or lowered in the standards or frame by means of a screw, T, which passes through the tie-bar Q, and has a swiveled connection with the bar U. The bar U has two projecting arms, R R, which support the slitted piece S, which forms the saw-guard proper. This piece S will be raised or lowered with the bar U when screw T is turned, and may be swung up and away from the saw by tipping the standards P P backward on their hinges. The vertical adjustment of the guard is of use in holding the work down, as the guard may rest on top of the work; or, when ready access to the saw is desirable, the guard may be tipped back out of the way. The piece S extends over the saw, and nearly or quite over the lower feed-roll.

The stuff is fed to the saw by the feed-rolls, or by the upper roll alone if the lower be removed, being held down at the front of the machine by the top feed-roll. As the stuff passes forward to the saw, it is held down by the saw-guard, and so prevented from chattering. The top feed-roll and the saw-guard both being vertically self-adjusting within limits, (the former by the rocking of the sleeve on the lower shaft, and the latter by rocking on its hinges,) the two will act jointly to hold material of ordinary thickness to the saw-table.

It will be understood that the top feed-roll may be disengaged or removed, and the saw-

guard extending nearly or quite over the lower roll will hold the stuff down, so that it will be fed along by the lower feed-roll.

I claim—

1. The combination, with a saw-table, of an upper and a lower feed-roll, the lower roll having a sleeve and a projecting arm which supports the upper sleeve, an upper feed-roll journaled in the upper sleeve, and intermeshing gearing on the shafts, by which the two feed-rolls are driven in unison, substantially as described.

2. The combination, with a saw-table, of a lower feed-roll journaled thereon, a sleeve on the arbor of said roll, a projecting arm on said sleeve, an upper sleeve borne by said arm, an upper feed-roll journaled in said upper sleeve, a weighted arm projecting from said upper sleeve, and a standard pivoted to said arm and supported by the table, substantially as described.

3. The combination, with a saw-table, of an upper feed-roll journaled in a sleeve, so as to swing in an arc around a shaft parallel with itself, but below the table, and a saw-guard hinged to the table, so that both the feed-roll and the saw-guard may be self-adjusting to bear upon the work, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK W. CHAPMAN.

Witnesses:

HENRY G. TUTHILL,

G. W. FOSTER.