

H. E. MESSIMER.  
Improvement in Saw Mills.

No. 123,719.

Patented Feb. 13, 1872.

Fig. 1.

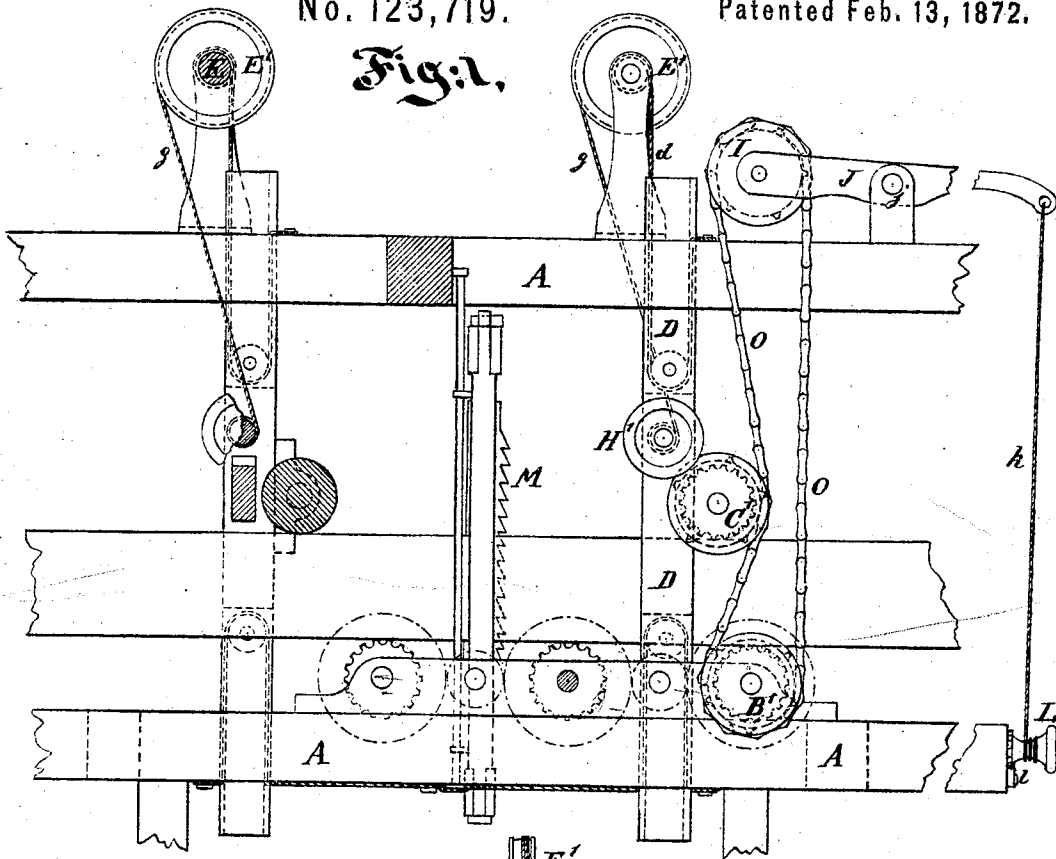
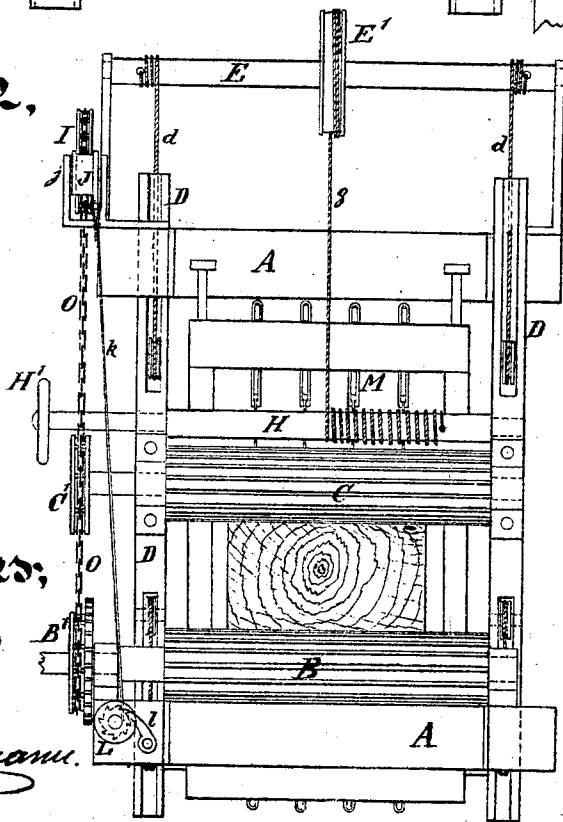


Fig. 2.



Witnesses;

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Inventor;

*H. E. Messimer*

*By his attorney  
J. S. Watson*

# UNITED STATES PATENT OFFICE.

HENRY E. MESSIMER, OF WILLIAMSPORT, PENNSYLVANIA.

## IMPROVEMENT IN SAW-MILLS.

Specification forming part of Letters Patent No. 123,719, dated February 13, 1872.

Specification describing an Improvement in Saw-Mills, invented by H. E. MESSIMER, of Williamsport, Lycoming county, Pennsylvania.

The invention relates to the mechanism for holding and feeding forward the logs to the saw or saws. It is applicable to flat gangs, round gangs, slabbing gangs, pony gangs, and resawing machines.

It is important to keep the space in front of the forward feed-rolls entirely clear, so that all the room will be available for rolling in the logs. It is also important to give a positive feeding motion to the upper as well as to the lower feed-rolls.

My invention accomplishes this and gives certain and positive feeding motion due to the confining of the log between roughened rollers, both of which are moved by the mechanism, while preserving the entire space in front of the feed-rolls clear.

I employ a pitch-chain running over corresponding pulleys, sometimes known as sprocket-wheels, so that the chain, receiving the slow and continuous motion from the power, shall run around and give motion to both feed-rolls, running from a pulley on the shaft of the lower feed-roll around an idle pulley above, and on the route between this lower and driving-pulley and the upper pulley shall act on and give corresponding motion to the upper feed-roll. This arrangement allows the upper feed-roll to rise to accommodate large logs, and to sink to act on small ones.

A train of gearing carried on a movable framing and projecting in front of the feed-rolls has been before tried for this purpose; but the objections due to the various practical difficulties, among which are the friction, and especially the necessity for greater size in the mill, so as to allow the logs to be rolled on at a greater distance from the saw, have prevented the general adoption of such a device.

The following is a description of what I consider the best means of carrying out my invention.

The accompanying drawing forms a part of this specification. Figure 1 is a side elevation, partly in section; and Fig. 2 is a front elevation. The drawing represents the novel parts with so much of the ordinary parts as is necessary to indicate their relations thereto.

Similar letters of reference indicate like parts in all the figures.

A is a fixed frame-work. M represents the saws mounted in a gang, and reciprocated vertically, as usual. B is the lower front feed-roll, and C is the upper front feed-roll. The lower roll B is mounted in fixed bearings. The upper roll C is mounted in bearings which are capable of moving vertically. The bearings of the upper rolls C are fixed on the upright movable bars D D, which are supported in guides in the framing, and are capable of a vertical motion to as great an extent as is ever desired. Cords or chains *d* extend from near the upper ends of these bars D D, and are wound upon a shaft, E, which is supported in fixed bearings above, and is operated by a cord, *g*, which unwinds from a pulley, E', on the shaft E, as it is wound up on the small shaft H below. The shaft H may be operated by hand at will by turning the hand-wheel H', and the upper roll C may be thereby elevated whenever required, and may be lowered again as required. I is a pulley mounted in a movable framing, J, turning on the center *j*. This pulley I is directly over the pulley B' on the end of the lower feed-roll, and the arrangement is such that the pulley C' on the shaft of the upper feed-roll C is nearly in line between them. All three of these pulleys are provided with indentations and projections adapted to match to the links of a stout pitch-chain, O, which runs around in contact with it in the manner represented. The frame J, which carries the upper pulley I, is tilted or changed in position by turning on its shaft *j* according as the opposite end of the frame J is drawn down by the cord or chain *k*, controlled by the hand-wheel L and pawl *l*.

By turning the hand-wheel L the cord or chain *k* is taken up by winding it upon the axis thereof, and the pawl *l*, acting in the ratchet-teeth represented, holds the framing J, and consequently the upper pulley I, at any elevation to which it may be adjusted. The shaft B of the lower feed-roll receives motion from the driving-power by a train of gearing or otherwise, and the rotation of this shaft B acts directly on the lower side of the log to do its portion of the feeding, and by proper geared connections operates the other corresponding lower feed-rolls, as usual. This shaft B also,

by means of its pulley or sprocket-wheel B', imparts a slow and reliable motion to the pitch-chain O. This chain runs in contact with the pulley C' of the upper feed-roll C, and thence runs over the upper pulley I, and thence completes its circuit, as represented. The upper feed-roll C is consequently compelled to turn with a steady motion, corresponding to that of the lower roll B, and contributes its aid to the reliable feeding of the log.

When a large log is introduced it is necessary to raise the feed-roll C, and when a very small one is received it is necessary to lower it; this being effected by the aid of the hand-wheel H' and its connections, as shown. The pitch-chain continues to act as before, except that it is liable to be somewhat slackened or tightened by the operation. This change in the tightness follows naturally from the change of the angles at which the chain is deflected in its course from the pulley B' to the pulley I. These changes of condition, as also any change in the length of the chain due to repairs or other cause, and the gradual increase

in length due to wear, may all be readily compensated for by turning the hand-wheel L and raising and lowering the pulley I.

It will be evident that a corresponding device may be employed to operate a fluted roll in place of the plain press-roll in rear of the saws, and operate it with similar devices, thereby increasing the power of the rolls to pull the log through after the front roll ceases to feed.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

I claim, in combination with the gang-saws M, the feed-rolls B C, sprocket-wheels B' C' I, and pitch-chain O, with means, J k L, for compensating for changes of conditions, substantially as herein specified.

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

HENRY E. MESSIMER.

Witnesses:

PHILIP MILLER,  
D. W. MILLER.