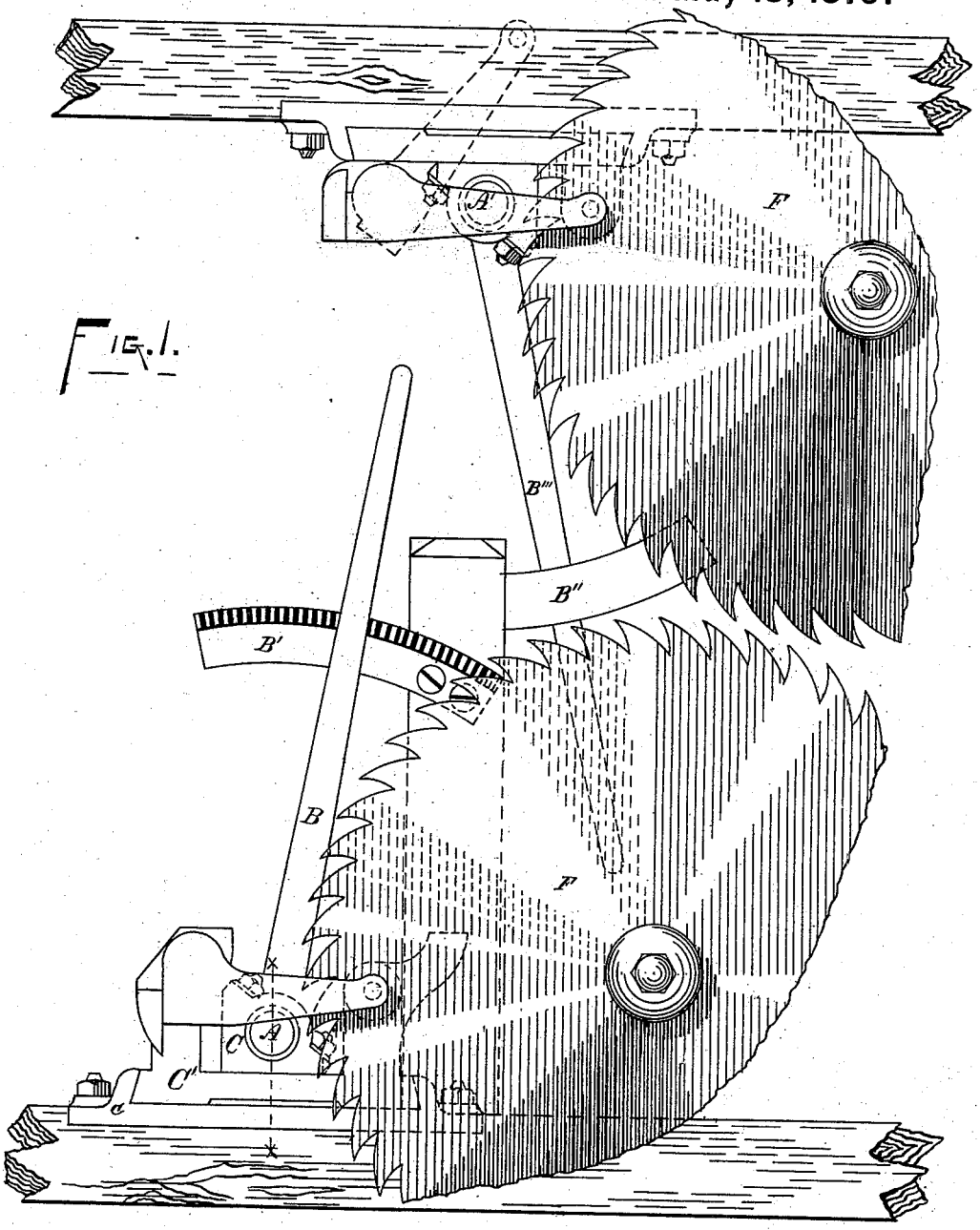
2 Sheets—Sheet 1.

E. H. STEARNS.

Saw-Guide.

No. 215,255. Patented May 13, 1879.

FIG. 1.



Witnesses,

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John J. Love

Inventor,

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Per Jno K Hallock

Atty

2 Sheets—Sheet 2.

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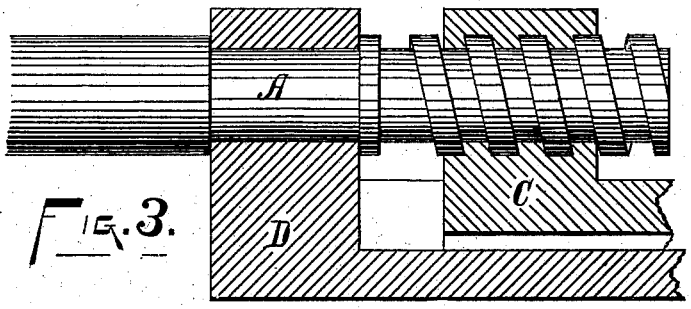

FIG. 3.

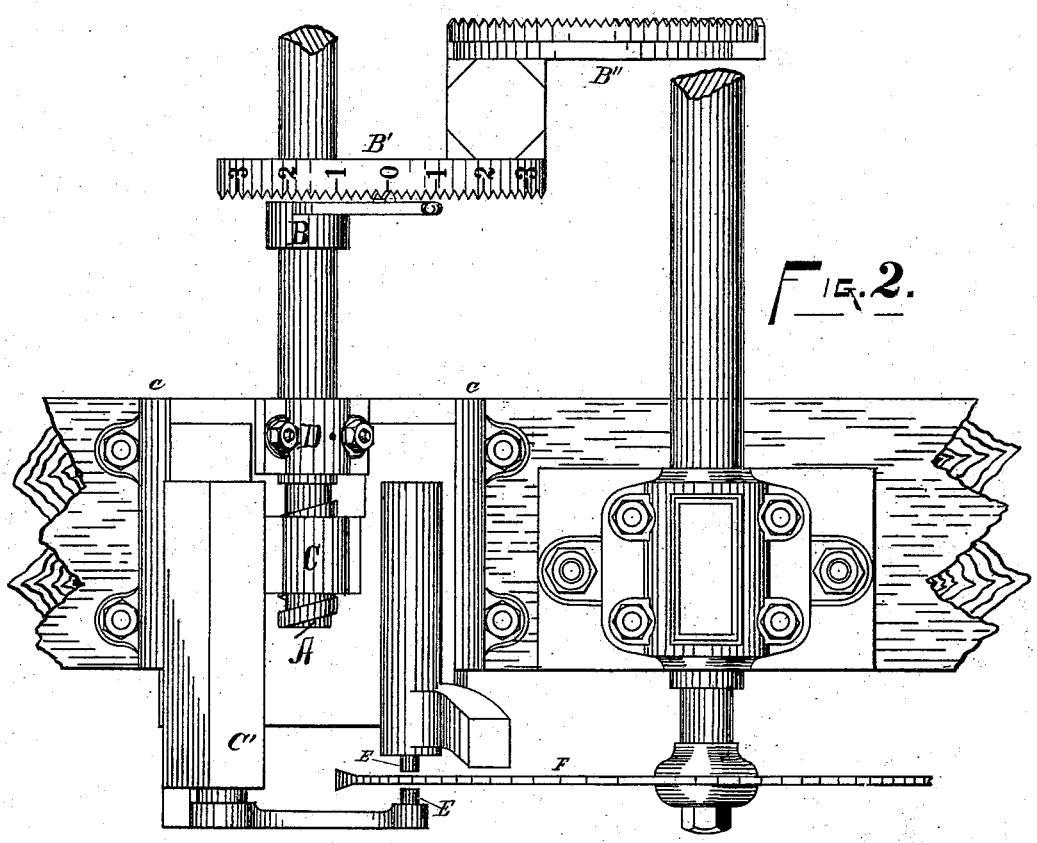

FIG. 2.

Witnesses,

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UNITED STATES PATENT OFFICE.

EDWARD H. STEARNS, OF ERIE, PENNSYLVANIA.

IMPROVEMENT IN SAW-GUIDES.

Specification forming part of Letters Patent No. **215,255**, dated May 13, 1879; application filed January 11, 1879.

To all whom it may concern:

Be it known that I, EDWARD H. STEARNS, of Erie, in the county of Erie and State of Pennsylvania, have invented a new and useful Saw-Guide for Saw-Mills; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the mechanism for operating the saw-guide of a circular-saw mill; and consists in providing devices whereby accurate and expeditious setting of the guide can be accomplished, which devices can be operated by the sawyer while he stands at his post, without stooping and without using any tool or instrument other than said device, and this without stopping the work of sawing.

My invention does not relate to the construction of the guides themselves, but is intended to be used, with proper modifications, with saw-guides of any construction. The guide I show in the drawings is the same as that heretofore patented by me.

Most saw-guides are operated by a set-screw operated by a wrench or hand-wheel. However, some are moved by other appliances. In all cases, I believe, a cessation of the sawing is necessary, as the appliances for operating them are immediately in the way of the falling lumber, an essential feature of my invention being the removal of the appliances for operating the guides far enough therefrom to enable them to be operated at any time, even during the passage of the saw through the log.

Where the adjustment is done by a set-screw operated by a wrench or hand-wheel, or by any similar method of setting, the work is inaccurate, as it is done by guess and without any gage to guide the work.

In my device I use an oscillating lever, which is so applied as to do the work required by moving through a short arc, not to exceed one-eighth of a circle, usually.

In the mechanism shown in the drawings, the oscillating lever connects with a rock-shaft, which, by means of a steep screw, moves the guides; but a cam movement may be substituted for the screw, and other mechanical movements may be substituted, as will readily appear to a skilled mechanic.

The rock-shaft is sufficiently long to bring the lever at a sufficient distance from the saw to be free from the falling lumber, and the lever is long enough to come within easy reach of the sawyer without stooping.

In connection with the oscillating lever I apply a graduated gage provided with notches, in which the lever can be set, and which retain it in position. By this the sawyer can gage his work of setting, and can tell at a glance where the guide is and where to move the lever to produce any desired effect. The position of the lever will indicate this quite perfectly without the gage.

In the accompanying drawings, Figure 1 is an elevation view of a saw-mill having two saws and a guide for each. Fig. 2 is a plan view of the guide and the adjusting device. Fig. 3 is a vertical longitudinal view on the line *x x*, Fig. 1.

F is the saw. E E′ are the guide-points. C′ is the guide-block, which slides in a chair-block, *c*. C is a nut on the guide-block; and A is the rock-shaft, and B is the oscillating lever. The rock-shaft is provided with a steep screw, which works in the nut C. This screw is so steep that an oscillation of the lever B through a very short arc will sufficiently traverse the guide-block.

In the present instance the screw is four inches to the revolution, and as the block C′ does not have to traverse in all more than one-half inch, it is obvious that the lever which operates the same will not have to move in all through an arc of more than one-eighth, and this with a lever no more than breast-high to a man is a very convenient arc to work through, and it enables me to notch the gage with notches which will be convenient for quick work, and which will represent a very minute space in the traverse of the guide.

In the present instance the notches represent the one-hundredth of an inch in the traverse of the guides, and a movement of the lever one notch moves the guide the one-hundredth of an inch. The quadrant is graduated and numbered from 0 in the middle each way. The device is supposed to be so adjusted that with a fresh saw the lever should stand at 0, and a movement of the lever therefrom wil

move the guide to the right or left, as the case may be; but no matter where the lever stands, the sawyer, when he finds the guide needs adjusting, knows which way he must move it, and he moves the lever accordingly. If he moves the lever from one space to another—that is, five notches—he moves the guide one-twentieth of an inch. So it will be seen that the sawyer can work with precision, and not by guess, as heretofore.

The shaft A is made of such a length as to bring the setting device far enough away from the saw to be clear of the falling lumber and allow the lever to come up to convenient position. For the upper saw these parts are duplicated, and placed on the frame-work above in an inverted position, and their lever comes down close by the other lever, and is in equally convenient position for the sawyer. As these levers can be operated at any time, and are entirely out of the way of the falling lumber, no stoppage of the sawing is required to adjust the saw-guide. It can be done as easily when the log is being sawed as at any other time, and that is the most convenient time to do so, usually.

These results are accomplished by the combination, with the guide mechanism, of an oscillating lever or an oscillating shaft, so applied by connecting mechanism that an oscillation thereof will produce lateral vibration of the guide. I do not, therefore, desire to be limited to any precise mechanism for connecting said lever or said shaft to the guide mechanism, for it is simply a question of devices for changing oscillating movement to lateral vibratory movement, and a skilled mechanic can at once devise various ways for doing it.

In place of the screw with steep thread, as shown in the drawings, a cam movement may be used, and the rock-shaft may be substituted by a vibrating bar; or the oscillating lever may operate a toggle-lever; or a segment of gearing on the lever and a rack on a connecting-bar can be used. The rock-shaft can be retained and the oscillating lever dispensed with by the use of a gearing-connection and a stem reaching up to within easy access of the sawyer.

What I claim as my invention is—

1. The combination, with the saw-guide mechanism of a saw-mill, and for the adjustment of the same, of a rock-shaft, an oscillating lever, and a notched or graduated retaining device, all so applied that an oscillation of said lever and shaft shall produce a vibration of the saw-guide, substantially as set forth.

2. In the saw-guide mechanism of a saw-mill which has an oscillating lever so applied as to traverse the said guide, the combination therewith of a graduated gage for indicating the position of the guide, substantially as set forth.

In testimony whereof I, the said EDWARD H. STEARNS, have hereunto set my hand.

EDWARD H. STEARNS.

Witnesses:

JNO. K. HALLOCK,

GEO. P. GRIFFITH.