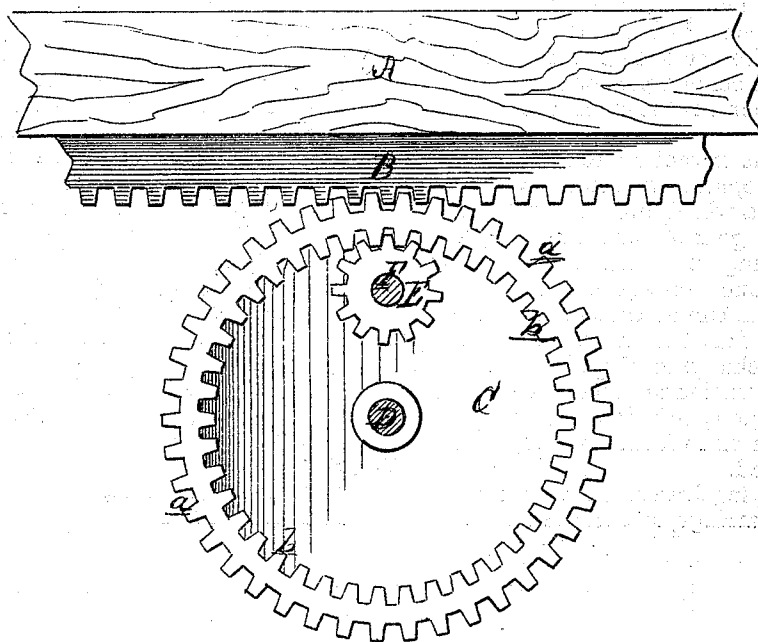


P. ETCHES & J. D. WILSON.

Improvement in Circular Saw Mills.

No. 122,313.

Patented Jan. 2, 1872.



ATTEST:

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UNITED STATES PATENT OFFICE.

PHILIP ETCHES AND JAMES D. WILSON, OF MUSKEGON, MICHIGAN.

IMPROVEMENT IN CIRCULAR-SAW MILLS.

Specification forming part of Letters Patent No. 122,313, dated January 2, 1872.

To whom it may concern:

Be it known that we, PHILIP ETCHES and JAMES D. WILSON, of Muskegon, in the county of Muskegon and State of Michigan, have invented a new and useful Improvement in Circular-Saw Mills; and we do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which our invention is shown in elevation.

The nature of this invention relates to an improved device for operating circular-saw carriages by means of a wheel, provided with internal and external gear or cogs, driven by a small pinion engaging with the internal cogs, while the external ones engage into the cogs upon the rack which moves the carriage, the whole so arranged that the desired result is produced without changing the direction of the motion. The invention consists in the combination of an externally and internally geared wheel with the rack and pinion, as more fully hereinafter described.

In the accompanying drawing, A represents a section of a mill-carriage, to which is secured

the rack B. An externally and internally geared wheel, C, secured to the shaft D, engages with its external cogs *a* with the cogs of the rack. A pinion, E, secured to the shaft F, engages with the internal cogs *b* of said wheel and gives motion thereto, which, in turn, is communicated to the carriage.

In the casting of the wheel C care should be taken that the number, face, and pitch of the internal cogs *b* should be such as not only to conform to the face and pitch of the cogs on the pinion, but also such as to compel the greater number of external cogs *a* to easily engage with the cogs of the rack.

What we claim as our invention, and desire to secure by Letters Patent, is—

In circular-saw carriages, the externally and internally geared wheel C, in connection with the rack B and pinion E, constructed and operating substantially as and for the purposes herein set forth.

PHILIP ETCHES.
JAMES D. WILSON.

Witnesses:

MYRON H. CHURCH,
FRANK DUNLOP.

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