

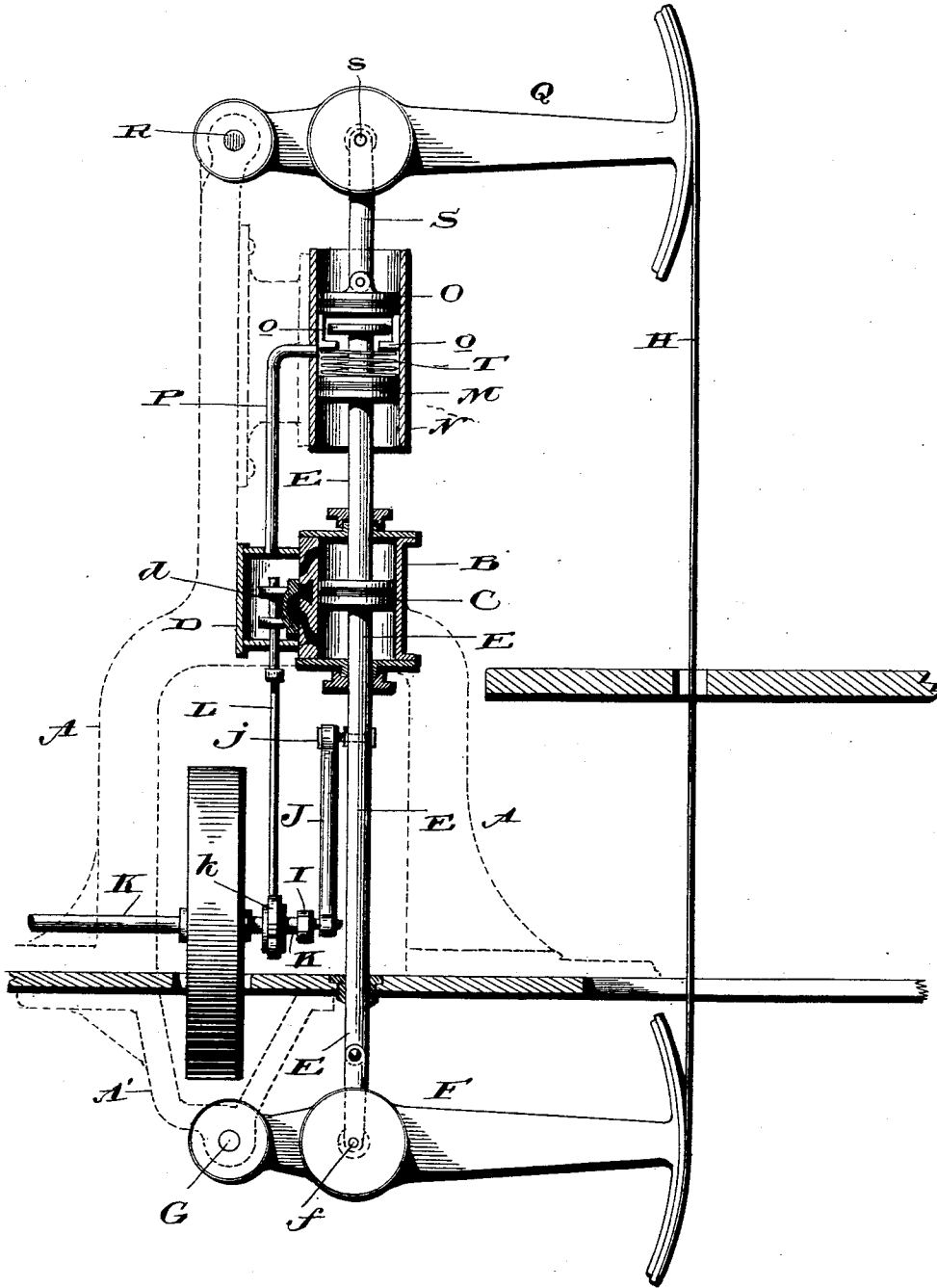
(No Model.)

C. W. GARLAND.

RECIPROCATING SAW MILL.

No. 541,160.

Patented June 18, 1895.



Witnesses:

L. C. Hills.
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Inventor:

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UNITED STATES PATENT OFFICE.

CHARLES W. GARLAND, OF DOTSON, WEST VIRGINIA.

RECIPROCATING SAWMILL.

SPECIFICATION forming part of Letters Patent No. 541,160, dated June 18, 1895.

Application filed March 25, 1895. Serial No. 543,146. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. GARLAND, a citizen of the United States, residing at Dotson, in the county of McDowell and State of West Virginia, have invented certain new and useful Improvements in Reciprocating Sawmills; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which forms a part of this specification.

This invention relates to certain new and useful improvements in reciprocating sawmills and the object of the invention is to produce a saw of this class in which the oscillating arms carrying the saw are operated by direct connection with a piston rod which is secured to a piston working in a steam cylinder, the said piston having two piston rods, one passing through the upper end of the cylinder, the other through the opposite end of said cylinder, each pivoted to a reciprocating arm to the ends of which the saw is attached.

A further object of the invention resides in the provision of an additional cylinder for the reception of steam which gives a steam pressure strain to the saw, so as to provide against any possible disaster in case the saw should break.

To these ends and to such others as the invention may pertain, the same consists further in the novel construction, combination and adaptation of the parts as will be hereinafter more fully described and then specifically defined in the appended claims.

I clearly illustrate my invention in the accompanying drawing, which with the letters of reference marked thereon forms a part of this specification, and in which drawing similar letters of reference indicate like parts, in which the figure is a central vertical section of the invention, the supporting-frame being shown in dotted lines.

Reference now being had to the details of the drawing by letter, A designates the standard which carries the mechanism of the saw, and securely fastened to the upright portion of the said standard, is the cylinder B in which the piston C works. The said cylinder has con-

nection with the steam chest D and is provided with the cut off slide valve *d*.

E is a piston rod secured at one end to the under side of the said piston, its other end pivoted to the oscillating arm F at *f*, the said arm being pivoted to an axis G, and its free end carrying one end of the saw H.

J is a pitman secured to the said piston rod E, by means of a wrist pin *j*, its other end journaled to the crank arm I, on the shaft K. On the said shaft K is keyed the eccentric wheel *k* on which the eccentric rod L works which has connection with and reciprocates the slide valve *d* in the steam chest D. Secured to the upper side of the said piston C and working through the upper end of the steam cylinder is the piston M which has connection with an expansion head O in cylinder N, which has open heads. The end of the said piston M has an integral T-shaped end which engages with the extensions *o* of the upper expansion head O, thus locking the said head O to the piston M, and allowing for a slight expansion of the said heads when steam is introduced into the cylinder between the heads through the pipe P, for the purpose of maintaining a strain on the saw which has its other end connected to the end of the oscillating arm Q, pivoted to the axis R, and which has connection with the expansion head O through the medium of the rod S which has its upper end pivoted to the arm Q at *s*. A stiff spring T, holds the upper arm Q from dropping by its own weight, and buckling or bending the saw, when the steam is shut off.

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

1. In a reciprocating sawmill, the combination of the oscillating arms having pivotal connection, one with a piston rod connected to a piston of a steam cylinder, the other by means of a rod connected to an expansion head having connection with a piston which is connected to the upper side of the said piston of the steam cylinder, as and for the purpose set forth.

2. In a reciprocating sawmill, the combination of the steam cylinder, having a piston to the upper and lower ends of which are secured piston rods, the lower piston rod con-

needed to an oscillating saw carrying arm, the upper piston rod carrying near its free end an expansion head within a headless cylinder, and having loose connection with a second expansion head within said cylinder, the latter expansion head having suitable connection with the upper oscillating saw carrying arm, substantially as and for the purpose set forth.

10 3. In combination with a reciprocating saw-mill having the cylinder carrying a piston provided with a double piston rod, the expansion heads M and O carried within a cylinder, the head or piston M carrying a T-
15 shaped end which is adapted to engage with

integral projections of the head O, which is connected to the upper saw carrying arm Q by means of the rod S, and the spring T, and connecting pipe P connected to a steam chest at one end its other end communicating with the cylinder between the expansion heads M and O, all combined substantially as shown and for the purpose specified.

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

CHARLES W. GARLAND.

Witnesses:

G. PETTREY,

S. L. WALDRON.