J. Walker.
Drag Saw.

No. 25,778. Patented Oct. 11, 1859.

Fig. 2

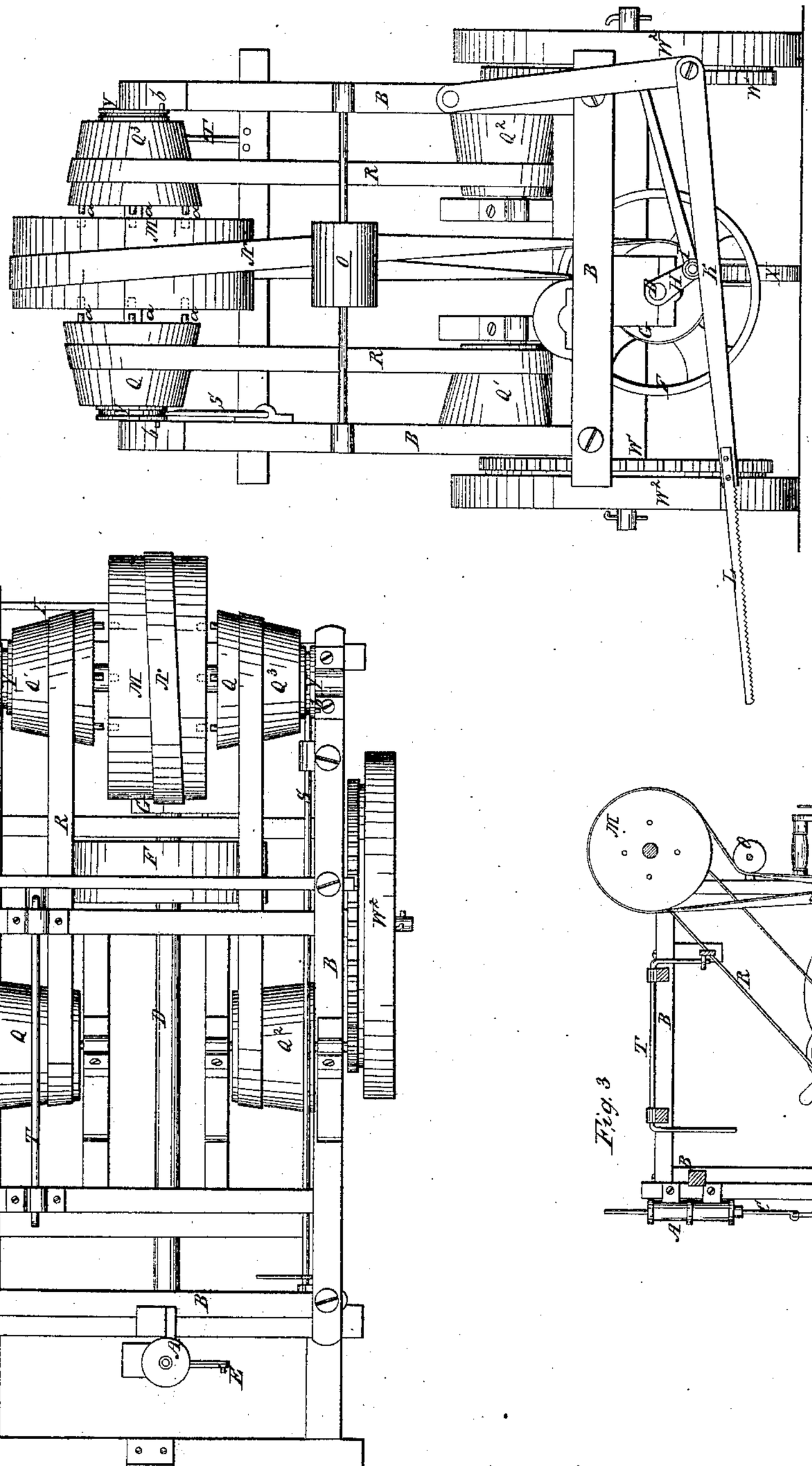

Fig. 1.

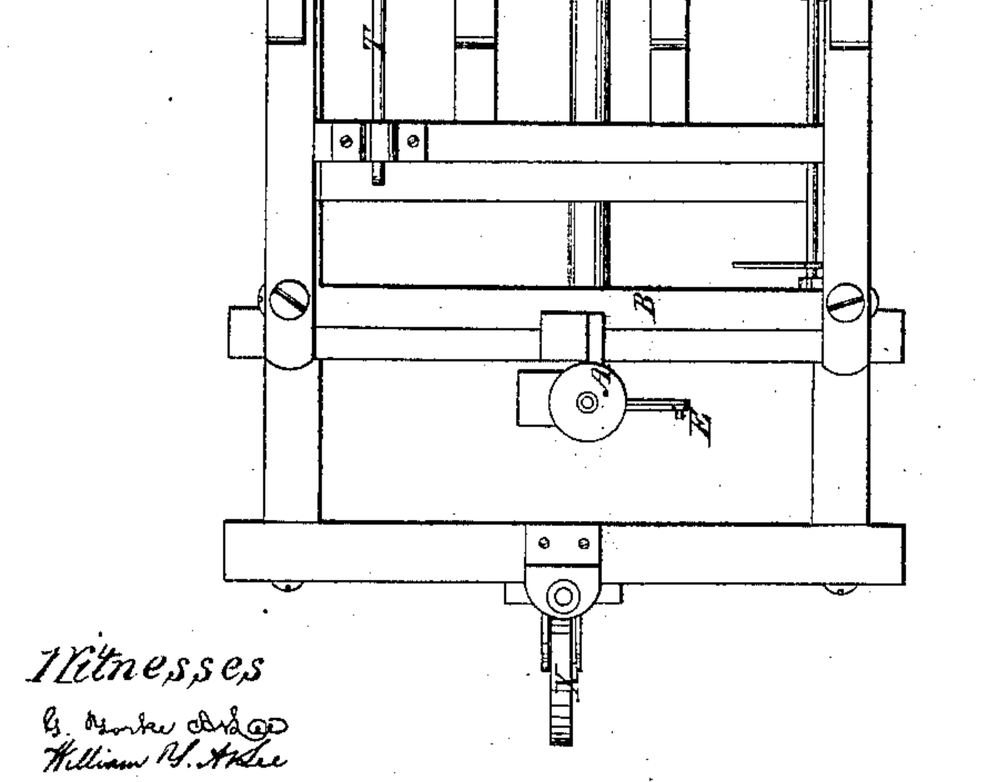

Fig. 3

Witnesses
G. Parker Dyer
William A. Atlee

Inventor.
John Walker

UNITED STATES PATENT OFFICE.

JOHN WALKER, OF SUNBURY, OHIO.

LOCOMOTIVE CROSSCUT-SAWING MACHINE.

Specification of Letters Patent No. 25,778, dated October 11, 1859.

To all whom it may concern:

Be it known that I, JOHN WALKER, of Sunbury, in the county of Delaware and State of Ohio, have invented a new and Improved Locomotive Crosscut-Steam Saw-Mill; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, represents a top or plan view, Fig. 2, a vertical end view, and Fig. 3, a longitudinal side view, on a reduced scale.

Similar letters of reference, in each of the several figures indicate corresponding parts.

The novelty of my invention consists, 1st, in the arrangement of an upright steam engine on a truck frame in combination with a horizontal crank-shaft and a vibrating saw, in the manner hereinafter set forth.

It consists, 2nd, in the employment of conical pulleys so arranged in combination with the other machinery and the engine or motive power of the mill, as to guide the machine when moving from place to place, or to turn it around; said pulleys serving to reduce the speed of one wheel of the carriage and increase the speed of the other and thus facilitate the accomplishment of the results just named, as hereinafter described.

To enable others, skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

The accompanying drawings exhibit the manner of constructing the mill.

A, represents the upright engine or motive power of the mill attached to the truck frame B, at the opposite end from the saw. C, is the jointed piston rod connecting the engine directly with the crank shaft D, by means of the crank E. This crank shaft is placed under the frame and has on it a fly wheel F, and a driving pulley G, by which other portions of the machinery are driven. At the end opposite the engine, this shaft has another crank H, by which the horizontal, oscillating motion is given to the saw L, by means of a pitman I, uniting this crank with a vibrating lever J, attached by its upper end to the frame of the truck. To the bottom of this lever is secured, by a screw pivot, a pitman K; to the outer or free end of which is fastened a saw L. This pitman is of sufficient length to saw logs upon the side of the mill opposite to where it is fastened to the lever. By taking out the screw-bolt and reversing the pitman and saw, logs can be sawed, on the other side of the mill at the distance from the mill of the length of the pitman.

In that part of the machinery by which the mill is moved from one place to another, M, is the driving wheel set in motion by the band N, from the pulley G.

O, O, are loose pulleys by which the band N, is held in a position to act upon the two pulleys G, M, whose axes are at right angles to each other.

Q, Q^1, Q^2, Q^3, are conical pulleys driven by bands R, R. These pulleys are so arranged that the truncated ends of the cones of the pair Q, Q^1, or Q^2, Q^3, are placed in opposite directions, so that when the band is working upon the small end of one cone, it is upon the large end of the other. When the mill is moving in a straight line, the position of the bands is in the middle of each pulley of the pairs Q, Q^1, and Q^2, Q^3. The position of these bands is changed by moving the lever T, to the right or left. The degree or angle, to which the direction is changed from a straight line, to the right or left, depends upon the distance the band is moved by the lever to the right or left. The effect of thus working the band upon the small end of one pulley and upon the large end of the other is to increase, the speed of one truck wheel and lessen the speed of the other, and consequently change the direction of the machine in the same proportion as the speed of one wheel is greater than the other.

S, is one of two clutch levers by which the upper conical pulleys Q and Q^3, are thrown out of gear with the driving wheel M.

Y, Y, are small clutch wheels at the small ends of the pulleys Q, and Q^3, in each of which is a groove for a lever S, to fit in. *a*, *a*, are pins projecting from the large ends of the upper conical pulleys, and when in gear with the driving wheel M, fitting into holes corresponding with them in the sides of the wheel M. Should it be necessary to turn the mill at right angles, throw the upper conical pulley on the side to which it is desired to turn, out of gear with the driving wheel M, by means of the lever S, said lever sliding the pulley away from the wheel far enough to move the pins *a*, *a*, by which it is geared with the driving wheel, out of the holes in the side of said wheel; this being accomplished, the truck wheel on the

side which is thus ungeared will remain stationary and become the axis upon which the mill is turned as the geared wheel performs a movement in the path of a circle. Upon the outer ends of the shafts upon which the lower conical pulleys Q^1, and Q^2, are placed, are two small pinion wheels U, U, the cogs of which mesh into the cogs of larger wheels W^1, W^1, attached to the inner side and near the outer edge or circumference of the truck wheels W^2, W^2, thus communicating motion to the truck wheels upon which the mill is moved.

X is a caster wheel supporting one end of the machine and turning in any required direction. Upon the outside of each of the clutch wheels Y, Y, is a small pin *b*, projecting about an inch. As the upper conical pulleys are thrown out of gear with the wheel M, these pins catch upon the top of the truck frame B, and prevent the possibility of these pulleys being turned while thus out of gear.

The boiler and tank may be placed upon the truck frame, either forward or back of the engine, as may be found most convenient.

From the foregoing description, it will be seen that this machine is very compact and the power applied direct from the engine to the crank shaft that drives, the saw, thus giving the least possible amount of friction; and that the same power that drives the saw is used to move the mill from one place to another, and this power is applied near the circumference of the truck or driving wheels, thus securing the advantage of a long leverage and consequently avoiding the necessity of applying but a small amount of power, When moving from one place to another, the direction can be changed by the simple act of moving the lever I, as herein described; this movement causing the inner wheel to revolve more slowly than the outer one and to act as a rolling or movable axis, and thus allow the mill to be turned with very little resistance on a long or short curve, as may desired. It will be seen also that by ungearing one truck-wheel the mill can be turned at a right angle.

From the manner of applying the power, only a very small engine and boiler will be required and consequently a very effective mill can be built at a very small expense.

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

1. The arrangement of an upright steam engine A, on a truck frame B, with a horizontal crank-shaft D, and a vibrating saw L, substantially as herein set forth.

2. The employment of conical pulleys Q, Q^1, Q^2, Q^3, and shiftable bands R, R, in combination with the other machinery and the engine which operates the saw for the purpose of guiding the machine when moving from place to place, substantially as and for the purposes set forth.

The above specn. of my impd. locomotive cross-cut saw mill, signed by me this 29th. day of August 1859.

JOHN WALKER.

Witnesses:
GOODWIN Y. AT LEE,
ALFRED MARSHE.