83-751. OR X 9,581 SR

NO PRINTED SPECIFICATION AVAILABLE

14358

D. Gerrish,

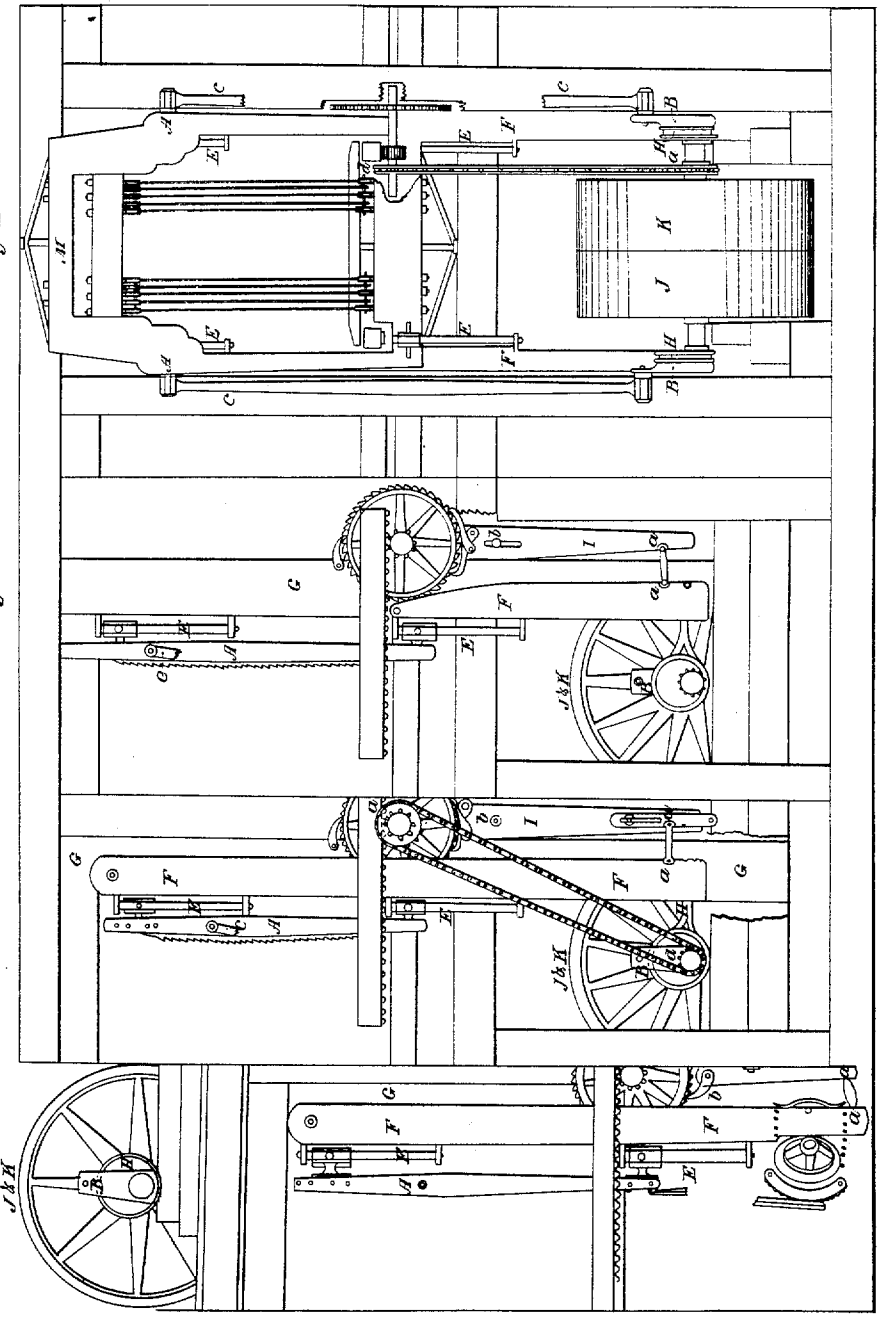
Reciprocating Saw Mill.

Patented Apr. 11, 1836.

9581 X.

Fig 2

Fig 1



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

9581 X 4-11-1836 1.

Daniel Cerrish.
Letters Patent. Patented April 11th 1836.

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Daniel Cerrish himself of his improvement in the Saw-Mill.

To All Whom It May Concern: Be it known that I Daniel Cerrish of Corls mouth in the State of New Hampshire have invented certain improvements in the construction of Saw mills and I do hereby declare that the following is a full and exact description thereof, reference being had to the drawings which accompany and make a part of this specification. Fig. 1. in the accompanying drawings is an elevation of the saw gate and its appurtenances as seen sideways of the Mill, portion of the frame work being removed to exhibit the construction of the essential parts in a more distinct manner. Fig. 2. is an elevation of the saw gate and other parts in part the figures when the same parts are shown they are indicated by the same letters A. A is the saw frame which is moved up and down by means of the crank B. B. the [illegible] being as seen in the drawing, a crank on each end of the crank shaft and two pitmans b. b. leading from them, on to each side of the saw frame to which I attach them by a joint pin, at a considerable height, say at, or above the middle of the frame by which means the pitmans may have sufficient length to operate advantageously with a much less elevation of the floor of the mill than is usually required. The saw frame does not slide in fender posts, but is guided in its vibrations by the sockets D. D. which are fitted to, and slide upon the vertical rods E. E. The sockets D. D. are made to vibrate upon gudgeons or joint pins in the manner shown in the drawing, instead of being immovably attached to the saw frame, as this frame besides its vibratory motion up and down, has one also backwards and forwards which is given to it in a way and for the purpose to be now described. The upper and lower guide rods Fig. 1. N°. 1. N°. 2. E. E. E. E. also the inner guide rods F. F. Fig. 1 and 2 instead of being attached to the fender posts or to any part of the frame work of the mill is affixed to the vibrating levers F. F. hung by pins at their upper ends to the posts C. C. as seen in the several figures. The vibrating levers receive their motion from the eccentrics H. H. operating in the cranks

for opening and closing the valves in Steam Engines or may be operated with the application of Cranes Fig. 1. No. 1. II. By these means the backward and forward vibration above spoken of is given to the saw frame, and the saws as they descend are thrown forward against the wood to be cut, whilst in ascending they are made to recede from it so as to give clear of any obstruction and to allow a free passage for the escape of the saw dust. It will be obvious to every machinist that the feed of the saws in this manner may be regulated either by varying the excentric, or the arm of the lever E. E. Instead of the excentric a cam, capable of easy regulation (see Fig. 1. No. 1.) may be employed to produce the vibration, it may also be produced by other means well known to machinist. Behind the levers E. E are two others, one of which is seen at I and these may be denominated the feed levers. They may be regulated by extending the arm of the excentric to them or by a separate connecting joint as at a, which being made moveable will adjust the feed, this may also be done by a moveable fulcrum or joint pin at b. The ratchets which are made known in the under side of the ratchet wheel C as shown in the drawing must be borne up against it by springs or by counter weights as by extending them and by giving them sufficient weight on the opposite side of the fulcrum. The carriage is moved forward in the usual way by a pinion, or lantern on the ratchet wheel shaft, taking into cogs or teeth on its under side J and K on a fixed and loose pulley or drum upon the crank shaft, as I prefer to give motion to the saw by means of a strap for and the carriage back. I employ a chain band C which passes round a swivel d on the crank shaft, which is coupled by means of a clutch to the loose pulley K and thrown in and out of gear by a lever which may be rendered self acting or may be moved by hand; the chain band passes also round a pulley on the shaft of the ratchet wheel and pinion. The feed bands must of course be disengaged from the ratchet wheel when the carriage is run back, it is not necessary however to particularize such things as are well understood by every competent manager of a saw mill. When gangs of saws are used I employ straps to strain them which effect the purpose in a very perfect and rapid manner admitting of a change of the number and arrangement of the saws in a more ready way than by the plans heretofore adopted. The lower ends of the saws are fastened by keys in the usual way but the straps at the upper ends are tightened by means of screws and for the purpose of applying these in the best manner and also to stiffen the saw frame I mortise two

or mortheads or cross timbers as L and M, into its sides or cheeks to which the staples may be alternately attached and upon which they are to be secured by screw pressing the staple cross staples which connect the upper ends of the staple straps I further brace the frame by crowbraces above and below it, extending from the corners of the frame forming an acute angle with its top and bottom and meeting in an obtuse angle in the middle, the timbers which occupy the usual place of the fender posts in ordinary saw mills form parts of a gallows or independent frame to which all the appendages of the movements are attached, they are independent of the framing of the mill house by which means that excessive vibration which is so destructive to saw gudgeons is completely avoided. What I claim as my own invention in the above described mill is first the employment of two cranks and pitmans the latter attached to the saw frame in the way described, by which among other advantages the power of the mill may be placed considerably lower than usual. Secondly the manner in which I arrange and fix the guides of the saw frame in combining the swiveling sockets with the screw guide rods behind the saw frame. Thirdly, The application of the eccentric or of cams or other analogous contrivances upon the cranks shafts for the purpose of vibrating the saw frame backwards and forwards, through the intermediums of levers to which the lower guide rods of the saw frame are attached or between which they are passed by which means I am able to obtain this vibrating motion on a circle much less than that of the sweep of the pitman crank as may be desired. Fourthly The manner of communicating the feed motion as derived from that of the eccentrics and cams and herein fully described. And I do hereby declare that as this invention with all complex machinery may admit of numerous modifications whilst the general principles of its construction and operation remain unchanged. I do intend by the foregoing claims to confine myself to the precise manner of fixing and arranging the individual parts as herein laid down, but to vary the same as I may find convenient whilst the same ends are attained by analogous means.

Witnesses
Wm Mather
James Goodrich

Daniel Jarrish

(Rec'd & Recorded December 14. 1840)

(1408 words)