

October 24, 1913.

DRAWING

3,092

A careful search has been made this day for the original drawing or a photolithographic copy of the same, for the purpose of reproducing the said drawing to form a part of this book, but at this time nothing can be found from which a reproduction can be made.

Finis D. Morris,

Chief of Division E.

AWK



# UNITED STATES PATENT OFFICE.

ISAAC D. RUSSELL, OF NEW YORK, N. Y., AND STEPHEN WATERMAN, OF GREENWICH, CONNECTICUT.

## MACHINE FOR SAWING OFF LOGS.

Specification of Letters Patent No. 3,092, dated May 19, 1843.

*To all whom it may concern:*

Be it known that we, ISAAC D. RUSSELL, of the city, county, and State of New York, and STEPHEN WATERMAN, of Greenwich, Fairfield county, Connecticut, have invented a new and useful Machine for Sawing; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an isometrical view; Fig. 2, sections detached.

The nature of our invention consists in constructing an apparatus for holding a piece of timber up to a saw so as to saw it off any number of times revolving the stick while sawing and only centering it once for the whole operation.

The frame consists of one sill piece (*a*) supported on two sleepers (*b*) near the center of which two uprights (*c*) are erected and properly braced standing a little distance apart. At one end of the sill there is a short upright post, from which a horizontal beam (*a'*) extends connecting it with the upright (*c*); this beam serves to attach the upper bearing of an upright shaft to a circular saw (*d*), the lower bearing of which is affixed to the sill below.

From a projecting piece (*e*) on one of the uprights near the lower end, a shaft of iron (*f*) rises up to the top where it is supported by a staple; near the upper end of this shaft it is surrounded by a collar with a set screw in it; from this collar an arm (*g*) extends out horizontally for a purpose hereafter described; below this is a frame (*h*) consisting of two horizontal and two upright pieces, the former of which extend out beyond the frame; and on one side, form collars which surround the shaft; on the other they form bearings for the journals of an upright shaft (*i*) on the upper end of which there is a collar to sustain it; on the lower end of the above named shaft four arms (*i'*) extend out horizontally the ends of which are bent down at right angles; in the ends of these arms are horizontal set screws all pointing toward the center; on the same shaft there is a pulley (*i<sup>2</sup>*) from which a belt runs to a pulley on the main shaft which runs loosely upon it; this last named pulley has another connected with it which receives its motion from a belt (*i<sup>3</sup>*) that connects it with a horizontal pul-

ley (*k*) suspended in a frame (*k'*) between the uprights; this frame is kept in place by a crane (*k<sup>2</sup>*) which is connected with shaft (*f*) by collars which surround it.

The frame (*h*) is sustained at any elevation on the shaft (*f*) (carrying the pulleys and crane (*k<sup>2</sup>*) with it) by means of a screw (*l*) that enters a nut near the shoulder of the arm (*g*) at the top of the shaft; this screw is connected with a rod (*l'*) by a pin passing through both which rod extends down through the frame and has a crank on its lower end. The arm (*g*) is made to swivel around in the collar so that the screw can be turned over and its opposite end coupled with the rod (*l'*) thus saving the time in running back the screw when the log is sawed up; the outer end of the arm passes through an eye in the upper end of a vertical rod (*g'*) which rod runs down through holes made in the horizontal pieces of the frame (*h*) to receive it, to a short distance below the level of the saw. The shaft (*f*) passes through a lever (*m*) situated near its lower end and sustained on a collar which surrounds the shaft and is fixed to it by a set-screw; the end of the lever which extends backward is straight, and has a weight (*m'*) upon it; the forward end curves down and forward, the extreme end being horizontal and reaching out nearly to the rod (*g'*); about half way between the shaft (*f*) and rod (*g'*) a stud (*m<sup>2</sup>*) is put through the lever, on the upper end of which there is a catch; on the lower end below the lever there is a short arm (*m<sup>3</sup>*) affixed to it by which it is turned as hereafter described. Below the lever joint named, there is another lever (*n*) formed like the forward end of lever (*m*) and extending out horizontally beyond it, to a line with the center of shaft, and below it at which point there is a spur or center pin (*n'*) on it shown by dotted lines in the drawing; the rod (*g'*) passes through this lever, when it is up to its place; and a stud (*n<sup>2</sup>*) projects up between the rod and the end of lever (*m*) on the top of which a trap piece (*n<sup>3</sup>*) is jointed; this piece is brought over the end of the lever (*m*) and caught under the catch on the stud (*m<sup>2</sup>*) which is turned round over it, the arm (*m<sup>3</sup>*) affixed to its lower end being pointed toward the frame.

When a block is put into this machine to be sawed it is centered on the shaft (*i*) and



held in its place by the set screws in the arms ( $z'$ ) the lower lever ( $n$ ) is then brought up to its place and the trap fastened so that the weight on lever ( $m$ ) will hold it while the block is being sawed. The block is slowly revolved by the pulleys and bands above described, the pulley ( $k$  see Fig. 2) is turned by means of a band ( $o'$ ) from a pulley ( $o$ ) situated between the uprights (and which takes its motion from the prime mover) the band ( $o'$ ) passes up from pulley ( $o$ ) over pulley ( $k$ ) thence down around a pulley ( $k^3$ ) in the same frame thence up over an idler ( $o^2$ ) situated near the top of the uprights, (which is counterbalanced by a weight,) from which pulley it descends again to ( $o$ ); by this arrangement the pulleys ( $k, k^3$ ) revolve at any height the frame ( $k$ ) is raised.

20 When the machine is put in motion the block is drawn up to the saw by means of a weight not shown in the drawing from which a cord passes to the rod ( $g'$ ) with which it is connected by a hook ( $w$ ). When the block is nearly sawed off, the arm ( $m^3$ )

on the stud ( $m^2$ ) strikes a projection ( $f$ ) from the upright causing the stud to turn and release the lever ( $n$ ) that falls down just before the piece is entirely freed from the block, thus allowing it to fall, when cut off; the screw ( $l$ ) is then turned till the block is brought low enough for another cut, and the lower lever ( $n$ ) is again replaced as before without again centering the stick; this operation is continued till it is all sawed up. 30 35

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

The apparatus for holding the log to be sawed; that is to say, the combination of the frame ( $h$ ) revolving shaft ( $i$ ) levers ( $m, n$ ), and elevating screw ( $l$ ) constructed and arranged substantially in the manner and for the purpose herein described. 40

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Witnesses:

THOS. J. STUNNERS,  
JAS. P. ROBINSON.