H. QUIN.

Reciprocating Saw Mill.

No. 4,091.

Patented June 25, 1845.

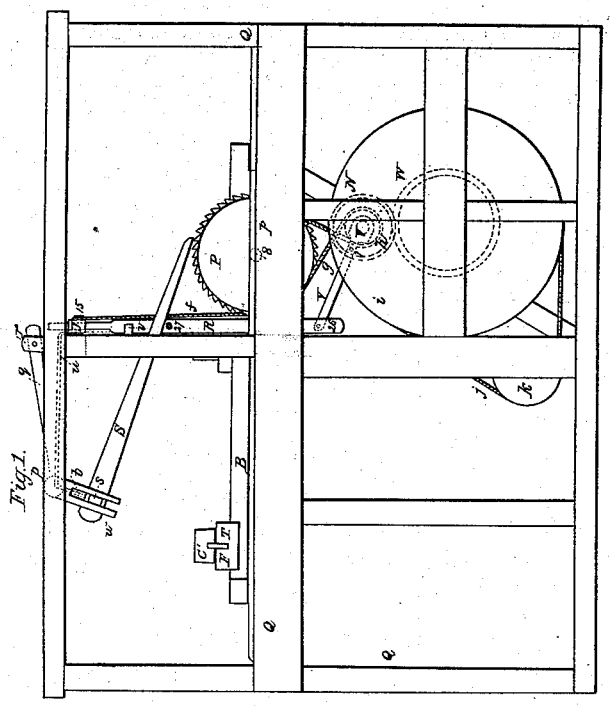

Fig. 1.

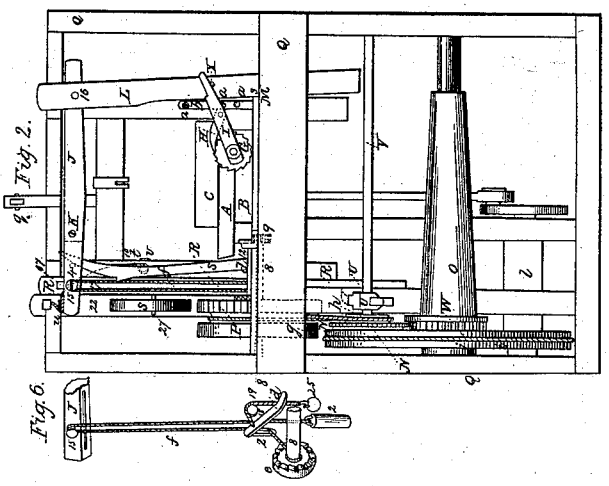

Fig. 2.

Fig. 6.

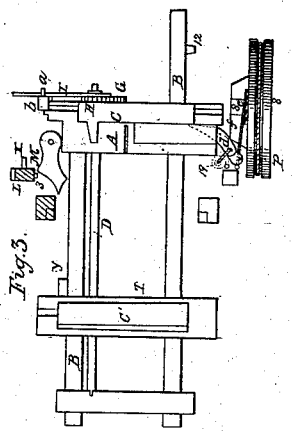

Fig. 3.

Fig. 7.

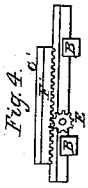

Fig. 4.

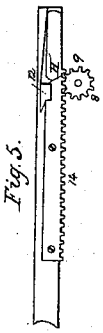

Fig. 5.

UNITED STATES PATENT OFFICE.

HENRY QUIN, OF NEW ALEXANDRIA, NEW JERSEY.

SELF-SETTING SAWMILL.

Specification of Letters Patent No. 4,091, dated June 25, 1845.

To all whom it may concern:

Be it known that I, HENRY QUIN, of New Alexandria, in the county of Hunterdon and State of New Jersey, have invented a new and useful Improvement in Sawmills by which the Said Mills are Rendered Self-Setting; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

Self setting head and tail blocks for saw mills have been long known and in use and several attempts have been made to combine machinery that would reverse the motions of the carriage set the log, &c., by self acting apparatus, but from complexity or other causes their success has been very limited.

My improvements are simple in their construction and are so arranged as to act with certainty without endangering any of the operative parts of the mill so that when a log is placed upon the carriage and dogged on it will need no further attention till it is sawed up.

Figure 1 of the drawings is a side elevation of the mill showing a portion of the apparatus. The mill frame is designated by Q.

B is the carriage, C, the head block.

P is the rag or carriage wheel; S, the hand that works it which is moved by the gate in the usual way, the rag wheel is connected by a band *g* with a pulley *h* shown in Fig. 1 in dotted lines; on the same shaft as pulley *h* there is a friction or cog wheel N that is acted on by another wheel W when they are brought in contact by the common lever U which is connected with the apparatus hereafter described; the last named wheel is also connected with the driving power and its shaft is made to drive the saw gate by means of a band *j* that passes from a band wheel *i* to a small pulley *k* on the crank shaft, the head and tail blocks are lettered C and are moved by a shaft D, see Fig. 3, that reaches lengthwise of the carriage and connects the two pinions gearing into racks which are affixed to them one of said racks and pinions being more clearly shown in Fig. 4, all the above enumerated parts are of the usual construction and arrangement and the parts being pointed out they do not need a particular description.

My improvements in the self setting apparatus attached to the mill as above named are as follows: The line shaft D Fig. 3 has on its end outside the head block C, a ratchet wheel and also a lever I to which a pawl H is affixed so that when the end of the lever I is raised the shaft is turned (this lever, &c., is better represented in Fig. 2) it plays up and down beside a post 6 and the distance it is to set is regulated by pins *a* in said post 6, it is raised and the mill started in the following way.

On the side of the cap of the fender posts there is placed a lever J having its fulcrum *k* affixed in said cap; to one end of this lever is suspended a bar L, that hangs down beside the lever I above named when the carriage is run back ready to set the log, a position it is always in when starting; a pin *x* projects from said bar under the lever I and catches it as the bar rises; to the opposite end of said lever J a cord is attached to a pin 15, or as shown in the drawing; a cord *f* is fastened to a weight 2 below the floor which holds that end down and takes up the slack as the cord yields; the cord thence passes up over the pin 15 in said lever, and returns down through the floor to a shaft 8 of the rag or carriage wheel P this is best represented in Fig. 6, the cord before reaching the shaft 8 passes through an eye Z in one end of a short lever which I denominate a shipper, said lever is lettered *d* in the several figures; it is placed horizontally and in a position to be struck by a cog 12 see Fig. 3; when the carriage is run back ready to saw and stops, the shipper is moved and held by the cog 12 so as to throw out the cord *f* toward the wheel P, between which and the cord there is, on the shaft 8, what I denominate a clutch, which is a wheel *e*, having a series of notched teeth on its face at the periphery; on to one of these teeth the cord is caught, and wound around with the shaft 8 which is at that time continuing to move in the direction to run the carriage back but is prevented from doing so in consequence of its pinion coming in contact with a common slip cog H Fig. 5, (the pinion 9 in said figure being on shaft 8 is the one that moves the carriage) it will readily be seen that as the cord is wound around the clutch it draws down the end of the lever to which it is attached and raises the other, and with it bar L and the end of lever I which sets the log; when the bar L is elevated to a proper height it is caught by a

small catch 3 in its side, on the floor through which its end passes and is held in that position; this movement stops the backing gear, and throws the hand S on to the rag wheel P as about to be described, and the mill commences to advance the carriage and saw through the log.

The apparatus for stopping the backing gear and starting forward the carriage is as follows: To the end of lever J with which the cord is connected is suspended another bar R smaller than the one L before named, this bar extends down below the floor to the lever U (the fulcrum of which is at 7) that the backing gear is ordinarily thrown in and out by and is jointed to it (see Fig. 1); a pin 27 also stands out from the side of the bar R under the hand S, which, when the carriage is run back, holds said hand off from the rag wheel P, as represented in Fig. 7, and until the bar L is properly raised to effect this, the bar R has a long mortise 17 in its upper end through which the pin passes that connects it with the lever J said bar being put into a mortise in the end of the lever, as seen in the detached Fig. 7. When the bar L is down the bar R is raised to the position above described lifting the hand S, and putting the backing gear into action and is held there by the catch 5 until the carriage is run back and the bar L drawn up as before described; just as the bar L reaches the highest point (and immediately after the log has been set) it pushes back the catch 5 by striking it with a pin 4 on its upper end, releases the bar R, which falls and throws out the backing gear, and brings down the hand onto the rag-wheel. When the saw has cut the length of the log a cog Y, Fig. 3, strikes a trigger M, lying between it and lever L knocks off the catch 3 and the lever descends, and elevating the bar R, throws the backing gear into action, and thus reverses the motion of the carriage as before explained.

Having thus fully described my improvements, in saw mills, I wish it to be understood that I do not claim a self setting saw mill irrespective of the means used in effecting it as that has before been essayed: but

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

The apparatus herein described for self setting the log and self operating carriage motion; that is to say, the combination of the lever J, bars L, and R cord *f* and shipper with the sawmill constructed and arranged in the manner and for the purpose herein described.

HENRY QUIN.

Witnesses:

J. J. GREENOUGH,

LAFAYETTE CALDWELL.