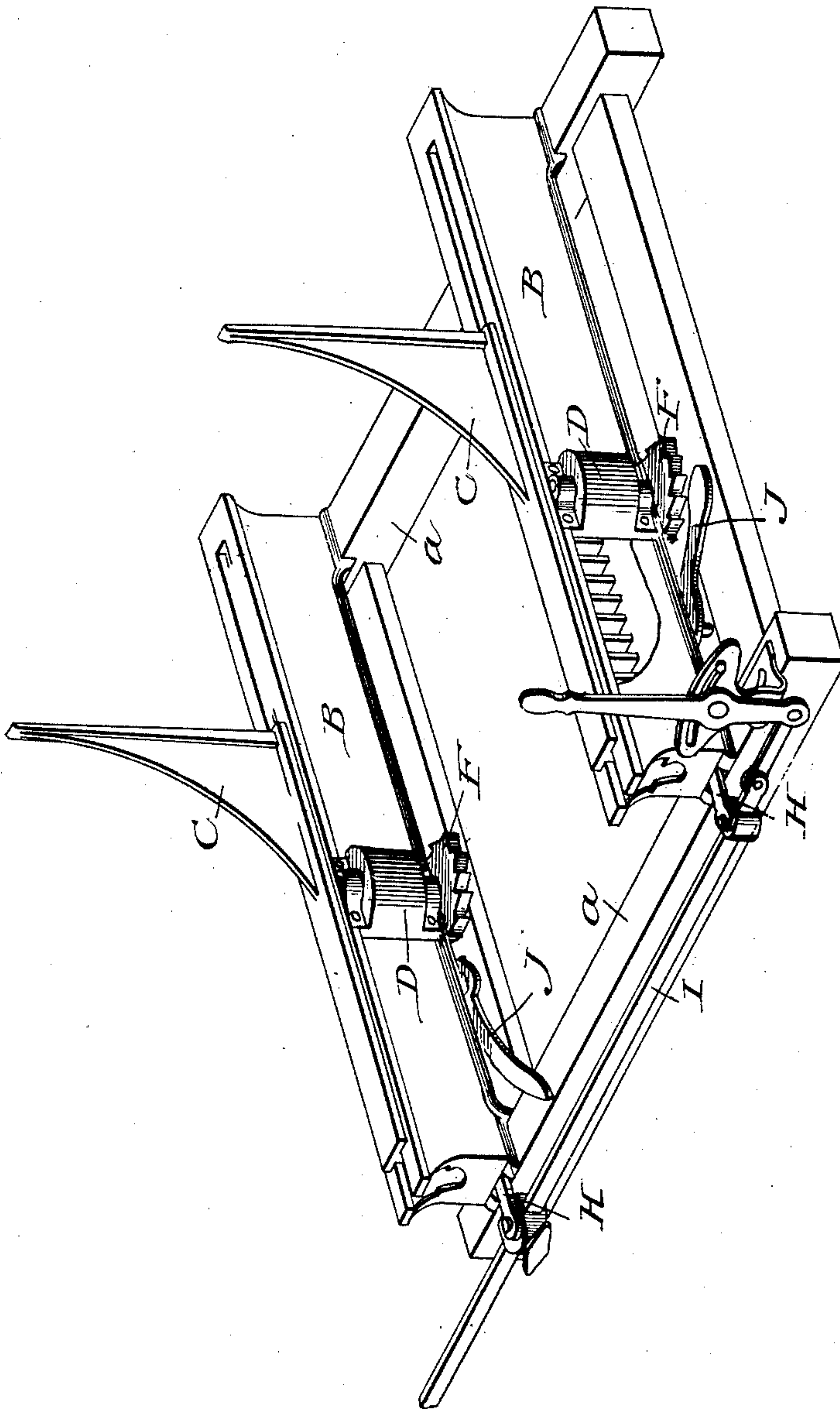


E. G. DYER.  
HEAD BLOCK.

No. 30,623.

Patented Nov. 13, 1860.





# UNITED STATES PATENT OFFICE.

ELBRIDGE G. DYER, OF HAMILTON, OHIO.

## FEED-MOTION FOR HEAD-BLOCKS OF SAWMILLS.

Specification of Letters Patent No. 30,623, dated November 13, 1860.

*To all whom it may concern:*

Be it known that I, ELBRIDGE G. DYER, of Hamilton, in the county of Butler and State of Ohio, have invented a new and useful Improvement in Head-Blocks; 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, and to the letters of reference marked thereon, forming a part of this specification.

Head blocks in saw mills are those parts which rest transversely upon the "carriage" and support the log while it is being sawed.

My invention consists in an improved arrangement of devices for operating the head blocks, by means of which the log is "set" or adjusted for a cut by the saw.

In the annexed drawings Figure 1, is a perspective view of a saw mill carriage with the head blocks resting upon it. Fig. 2, is a sectional plan of one of the head blocks.

In the two drawings the parts to be described are all represented.

A, is the saw mill carriage. It consists of longitudinal timbers *a*, and transverse timber, *b*.

B, B, are the head blocks. They are supported by the carriage, resting transversely thereon and are adjustable to any distance apart, thus accommodating logs of any length within the limits of the carriage.

Resting upon the head blocks are knees C, C, and these have a base which is grooved upon either side to receive the top plate of the head blocks, the plate being constructed to afford a bearing for the knees and to allow them to slide longitudinally upon the head blocks as represented in the drawings. The knees C, have an extension downward into the area within the head blocks, where they have a rack *c*, formed to gear with the horizontal pinion D. D is carried by a vertical shaft E which also carries a ratchet wheel F.

H, is a three armed vibrating piece held by a pin which enters and is fast in the carriage piece *a*. The long arm *d* carries a clamp *e*, which embraces the longitudinal bar I, and it is confined to the bar by the set screws *f*. The shorter arms *g*, *g'*, of the piece H, each carry a pawl *h*, *h'*, which act upon the ratchet wheel F, and they are held in contact therewith by the springs *i*, *i'*. The arrangement of the pawls *h*, *h'*, upon the vibrating arms *g*, *g'*, is such that the pawls act alternately upon the ratchet wheel F, and

both cause it to move in the same direction, for when the piece H, is so vibrated as to cause the pawl *h*, to act upon the ratchet wheel and rotate it forward the pawl *h'*, is withdrawing over the teeth of the ratchet in a contrary direction, and when H is vibrated in a contrary direction the pawl *h'* acts upon the ratchet wheel F, to rotate it forward while at the same time the pawl *h* is withdrawn to a position where it may be again employed to propel the ratchet wheel forward as before.

J is a lever pivoted at *j*, to the underside of the head block.

It is so constructed as that when its longer arm is rotated outwardly from the base of the head block, its shorter end *k* presses against the pawl *h'*, forcing it away from the ratchet wheel F, and causing it also to separate pawl *h*, from contact with the same, thus rendering the pawls for the time inoperative.

The parts which have been described—that is, the three armed piece H, the pawls *h*, *h'*, ratchet and pinion F, E, lever J, and the rack *c*—are all the same in both head blocks.

To one end of the longitudinal bar, I, a link K, is jointed which is also connected with the lower end of the upright hand lever L. This lever is pivoted at *l*, to a support M, extending from carriage timber *a*. The support M, above the pivot *l*, expands into a sectoral plate having a curved slot *m*, near its periphery concentric with the pivot *l*. In this slot are two adjustable stops *n*, which may be set to regulate the arc through which the hand lever L, is allowed to vibrate.

The operation of the device for transferring the log upon the head blocks is as follows:—The log to be sawed is placed with one end resting upon each of head blocks B, and the upright faces of the knees C, are adjusted to press against the periphery of the log so that when the latter are caused to slide toward that end of the head blocks toward which they face. The log is moved laterally in the same direction until a portion thereof is made to project beyond the line of the ends of the head blocks and through the plane in which the mill saw operates, that plane being adjacent to and in a parallel range with the ends of the head blocks. The carriage A, when arranged to operate in connection with the other parts of a saw mill rests upon a carriage way and



is caused to move thereon and thus to feed the log to the saw, that portion of the log which projects beyond the plane of the saw is thus sawed from the other portion. The carriage is then returned or "gigged" back and the log is transferred outwardly upon the head blocks or "set" for a new cut by the saw.

The hand lever L, upon being vibrated in either direction imparts a vibratory motion through the bar I, to each of the vibrating pieces H, causing the pawl,  $h$ , or  $h'$ , to act upon and rotate the ratchets F, as has been explained. The pinions D, upon the same shafts with ratchets F, are thus caused to rotate and being in gear with the racks  $c$ , which are parts respectively of the knees C, the latter are caused to move along on the head blocks and transfer the log against which they are supposed to press a certain distance toward or through the plane of the saw. As the stops  $n$ , in the curved slot  $m$ , may be set to regulate the distance or length of arc through which the hand lever L, is allowed to vibrate, it is apparent that the distance which the knees C, and the log which they act upon are moved with each vibration of the lever L, may be fixed and specifically determined.

Let it be supposed that the stops  $n$  are so set that each vibration of the lever L, slides the knees C, and the log against which they press, one sixteenth of an inch, into the plane of the saw, it is manifest that by vibrating the lever L, successively an appropriate number of times the log will be transferred by successive steps each one sixteenth of an inch until a board or plank of any desired thickness not varying more than one sixteenth of an inch will be presented beyond the plane of the saw to be sawed from the log.

In sawing lumber of considerable thickness it will be convenient to set the stops  $n$  so as to allow each full traverse of the bar L to transfer the log one eighth or a quarter of an inch. The variations in the thickness of the lumber cannot then conveniently be made so minute, but the operation of "set-

ting" the log will be more readily performed.

Lumber is frequently required to be of different thickness at opposite ends. In such cases the log may be set by the operation of the lever as has been explained for a parallel cut of the lesser thickness, when one of the bars J, may be rotated to disengage the pawls, which act upon one of the ratchets F, the hand lever L, may then be vibrated causing the other end of the log to be transferred the required distance to afford the greater required thickness, and thus a tapering piece of lumber will be produced.

When the log has been sawed and another log is to be placed upon the head blocks, the pawls  $h$ ,  $h'$  are to be disengaged from the ratchet wheels F, by the bars J, when the knees C, may be transferred back upon the head blocks by hand affording space in front of their upright faces for another log.

When the head blocks require to be extended farther apart upon the carriage or contracted to suit logs of varying lengths, the set screw in the clamp  $e$ , which embraces the longitudinal bar I, is loosened allowing the head block to be set, when it is again tightened and the parts are rendered operative as before.

Having described my invention what I claim as new and desire to secure by Letters Patent, is as follows:

In combination with the ratchet wheels F, F, by means of which the head blocks B, B are operated, I claim the herein described arrangement of the pawls  $h$ ,  $h'$ , vibrating pieces H, H, connecting rod I, hand lever L, and pivoted bars J, J; whereby the operator is enabled to move the log readily and with precision toward the saw, so as to produce either parallel or tapering cuts of the same, as may be desired, in the manner as and for the purposes specified.

ELBRIDGE G. DYER.

Witnesses:

ISRAEL WILLIAMS,  
LESTER KENNEDY.