H. CLEGHORN.

HEAD-BLOCKS FOR SAW-MILLS.

No. 191,931. Patented June 12, 1877.

Fig. 1.

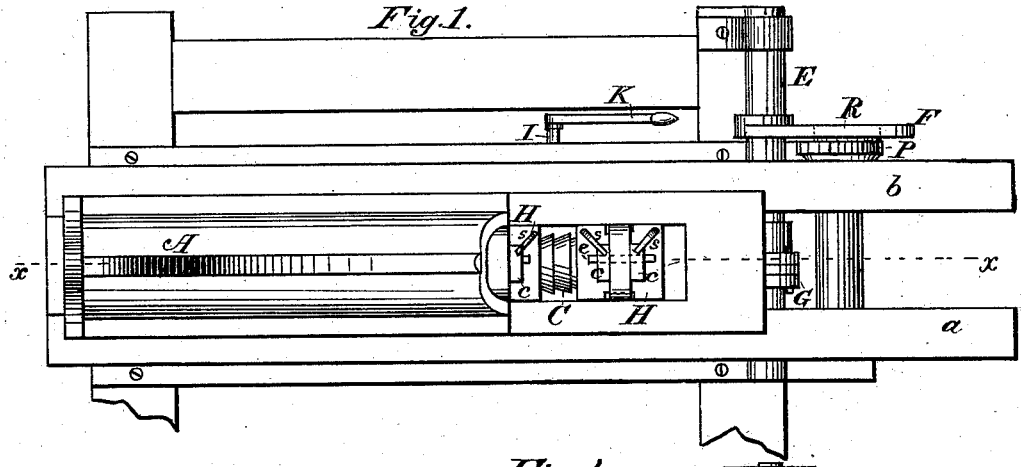


Fig. 4.

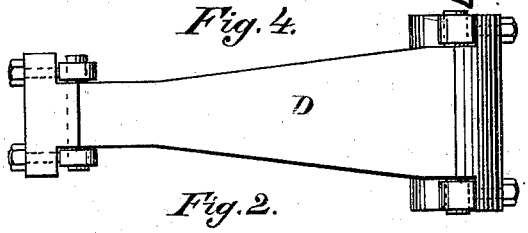


Fig. 2.

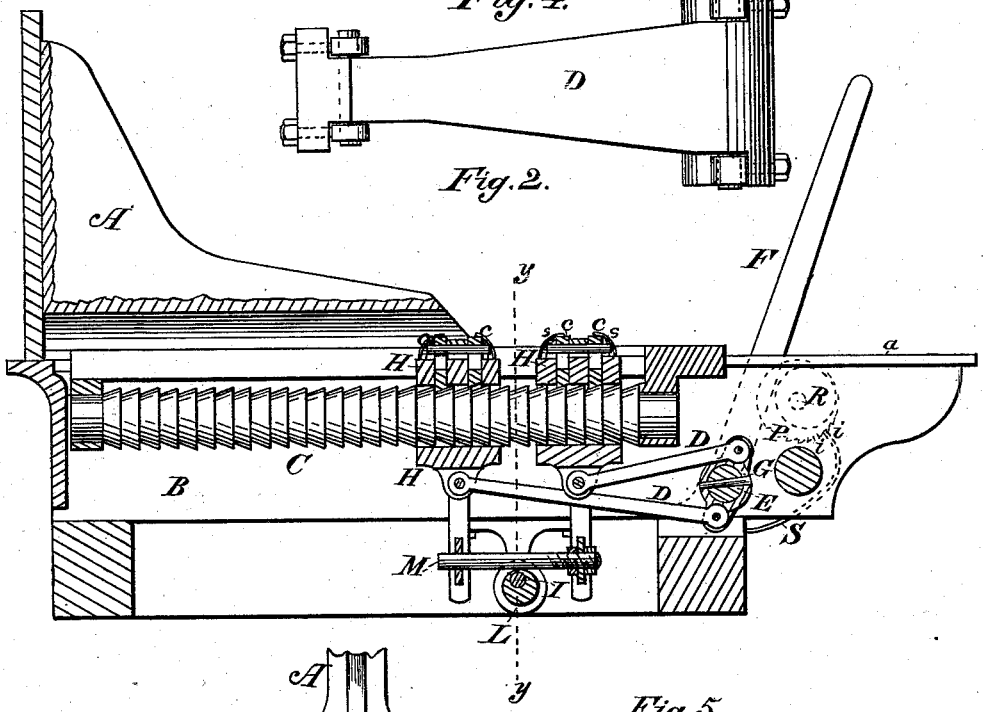


Fig. 3.

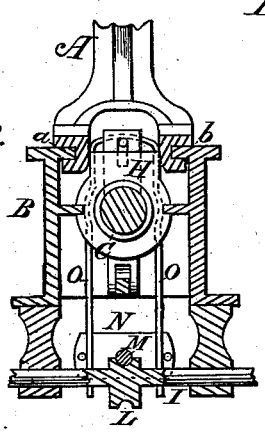
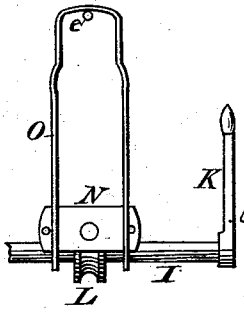


Fig. 5.



Attest:
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Inventor:
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UNITED STATES PATENT OFFICE.

HUGH CLEGHORN, OF MUSKEGON, MICHIGAN.

IMPROVEMENT IN HEAD-BLOCKS FOR SAW-MILLS.

Specification forming part of Letters Patent No. **191,931**, dated June 12, 1877; application filed December 27, 1876.

To all whom it may concern:

Be it known that I, HUGH CLEGHORN, of the city of Muskegon and State of Michigan, have invented an Improvement in Head-Blocks for Saw-Mills; and I do further declare that the following is such a full, clear, and exact description thereof as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon, similar letters indicating corresponding parts in the different figures.

The object of this invention is to produce a setting mechanism which shall be positive in its action, moving the log a certain specified distance at each reciprocation of the setting-lever, thus causing the lumber to be of uniform thickness, whether the log from which it is sawed be light or heavy, thus removing an objection to the ratchet-setting mechanism in ordinary use; and the invention consists in the construction, arrangement, and combination of the different parts, as will be hereinafter fully described, and then specifically pointed out in the claims.

Figure 1 is a plan of the head-block, the setting-jack being moved forward to its full extent, so as to give a top view of the pawls and their operating mechanism. Fig. 2 shows a vertical longitudinal section upon the line *x x* of Fig. 1. Fig. 3 is a transverse section upon the line *y y* of Fig. 2. Figs. 4 and 5 present detail views of the connections between the rock-shaft and pawl-sleeves and devices used for raising the pawls from the rack when the setting-jacks are to be moved backward.

The parts A and B are of the ordinary construction, being formed of cast-iron, the part B planed smoothly on its upper surface, and provided with tongues *a*, which enter corresponding grooves *b* in the setting-jacks or part A, thus allowing the setting-jack to slide freely upon the bed B. Within a concavity of the setting-jack is placed the cylindrical rack C, formed of wrought-iron or steel, and having a series of encircling notches cut in its surface, thus causing it to form a rack of a very durable nature, as it may be turned around when it becomes worn in one place, so as to present a fresh series of notches to the action of the pawls. Encircling these racks, and reciprocating upon them, are the sleeves H, which carry the pawls *c*. These pawls have a vertical movement in mortises formed in the sleeves, so that, when not forcibly held up, their lower ends, which are curved and beveled to fit the grooves or serrations in the racks, will remain in contact with them, and therefore give a forward motion to the same when the sleeves are reciprocated, the bevel of the lower ends of the pawls allowing them to slip over the serrations of the rack when moved in one direction, but to catch and carry the rack with them when moving in the opposite direction.

Springs S may be placed over the pawls, if desired, in order to make sure of their catching in the notches of the rack.

Motion is imparted to the sleeves through the connections D from an oscillating shaft, E, carried in suitable bearings in the head-blocks and put in motion by the setting-lever F. It is thus apparent that when an oscillating motion is imparted to the shaft the sleeve G, secured thereon, will impart a reciprocating movement to the connections D and, through them, to the pawl-sleeves H, and consequently give a forward motion to the setting-jacks, and, as the pawl-sleeves are connected to the sleeve G upon opposite sides of its center of motion or fulcrum, it is evident their movements will alternate, thus giving nearly a steady forward movement to the setting-jacks during the oscillatory movements of the setting-lever.

When it is desired to move the setting-jacks backward to put on another log, or for other purposes, it becomes necessary to raise the pawls *c* out of the serrations of the racks. This is accomplished by means of the hand-lever K attached to the shaft I. This shaft is placed lengthwise of the carriage beneath the head-blocks, and is provided with eccentrics L, one beneath each head-block. These eccentrics act upon bars M secured in the keys N, connecting the lower ends of the stirrups O, which pass through the head-blocks and straddle the sleeves H. At the highest point of each stirrup is secured the lifting-bars *e*, the ends of which pass through verti-

cal slots in the pawls *c*. It thus becomes apparent that, when the shaft I is turned so that the eccentrics upon it raise the bars M, they, in turn, lift the stirrups, which, through the agency of the lifting-bars *e*, raise the pawls clear of the serrations in the racks, allowing the latter, with the setting-jacks, to which they are attached, to be moved backward or forward, as may be desired.

In order to regulate the movement of the setting-lever F, a disk, P, having a series of notches, *i*, around its periphery, is placed upon a stud projecting from the side of the head-block. Attached to this disk is an eccentric, R, against which the setting-lever strikes in its backward movement. A spring-pawl, S, secured to the head-block, serves to hold the disk and eccentric in any desired position. It will be seen that as the eccentric is turned toward or from the setting-lever the length of stroke of said lever will be increased or diminished, as its forward movement is limited by the coming together of the pawl-carrying sleeves, and is, therefore, always a certain quantity, thus rendering it an easy matter to vary the forward movement of the setting-jacks to exactly suit the thickness of the lumber to be cut by simply changing the position with relation to the setting-lever of the eccentric.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States the following:

1. In head-blocks for saw-mills, the round rack C, constructed substantially as and for the purpose shown and described.

2. The combination of the rack C, pawl-sleeves H, with their vertically-moving pawls *c*, connections D, and rock-shaft E, substantially as and for the purpose set forth.

3. The reciprocating pawl-sleeves H and pawls *c*, in combination with their lifting devices, consisting of the stirrups O, bar M, eccentric L, and shaft I, as and for the purpose specified.

4. The variable stop devices, consisting of the notched disk P, eccentric R, and spring-pawl S, in combination with the setting-lever F and devices for moving forward the setting-jacks, as set forth.

In testimony whereof I have hereunto affixed my signature this 17th day of November, 1876.

HUGH CLEGHORN.

Witnesses:
ALEX. RODGERS,
E. S. LATIMER.