A. Shearon.

Head Block.

No. 103,245. Patented May 17, 1870.

Fig: 1.

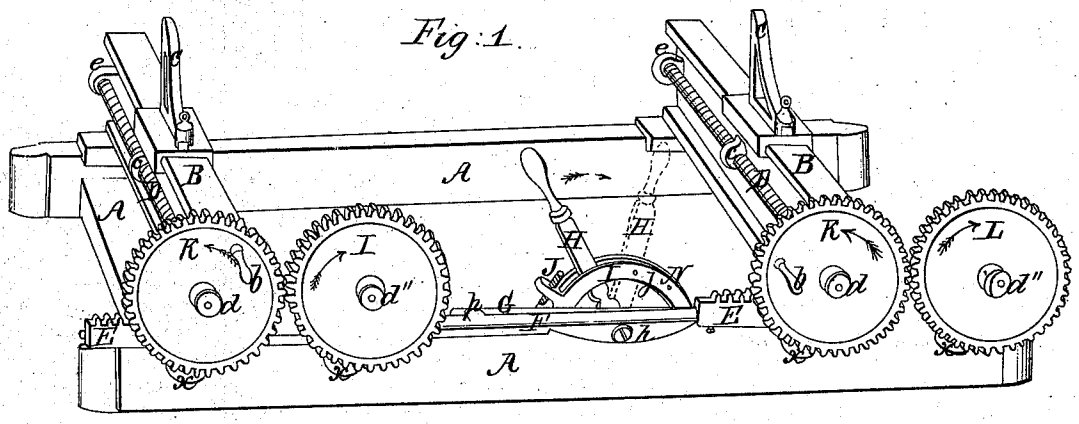


Fig: 2.

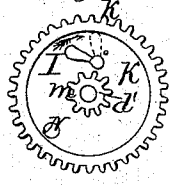


Fig: 3.

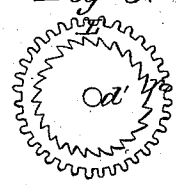
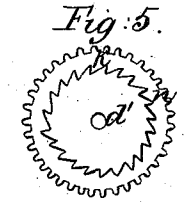
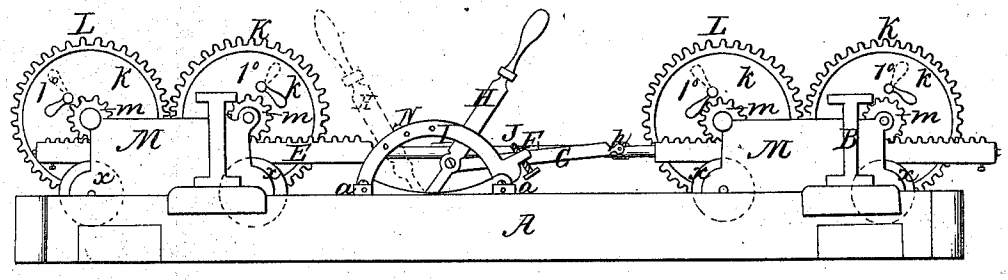


Fig: 4.

Fig: 5.





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W. J. Dennis

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UNITED STATES PATENT OFFICE.

ANDREW SHEARON, OF RICHMOND, INDIANA, ASSIGNOR TO ABRAHAM GAAR, JOHN M. GAAR, JONAS GAAR, AND WILLIAM G. SCOTT.

IMPROVEMENT IN HEAD-BLOCKS FOR SAW-MILLS.

Specification forming part of Letters Patent No. **103,245**, dated May 17, 1870.

To whom it may concern:

Be it known that I, ANDREW SHEARON, of Richmond, Wayne county, Indiana, have invented certain new and useful Improvements in Head-Blocks for Saw-Mills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings which accompany this specification, forming a part of the same, and to the letters of reference marked thereon.

Like letters refer to like parts.

Plate 1: Figure 1 is a perspective view of the head-blocks and carriage. Fig. 2 is an obverse view of one of the compound wheels attached to and propelling the screw. Fig. 3 is an interior view of the same. Fig. 4 is a view of the inner side of the plate forming the inside of the same. Fig. 5 is a view of the interior of the compound wheel, having the circular ratchet reversed from that shown in Fig. 3.

Plate 2: Fig. 1 is an obverse vertical sectional view of the operating parts of the head-block, taken at a point perpendicular to the inside face of front side framing.

The object of my invention consists in providing a direct, positive, and continuous motion to the screw-shaft which carries the knee of the head-block, by the backward and forward throw or vibrations of a hand-lever, placed in a central position between the saddles of the carriage-frame.

It further consists in regulating the length of vibration of the hand-lever by means of an adjustable pin and temper-screw, so as to allow of the most delicate variations of thickness of lumber to be secured with accuracy and precision.

To enable those skilled in the art to make and operate my invention, I will now proceed to describe the same.

In Plate 1, Fig. 1, A A A represent a rectilinear framing of wood, constructed in the ordinary manner, having the saddles B B placed across the same, at convenient distances from each other, properly secured. Upon the saddles B B are fitted knees C C, arranged to traverse the same. Each knee is provided with a lug, *c*, which is constructed in a nut, which receives and is operated by the screw-shaft D. The saddles B B are provided, at one end of each, with an eye, *e*, which serves as a journal-box for one end of the screw-shaft D. H is a hand-lever, pivoted to a bar which forms the base of a semicircular frame, which is attached to the side rail of the framing at a point intermediate between the saddles B B. Immediately above the point at which the lever H is pivoted to the frame I it receives a pitman-bar, G, by a jointed connection, the opposite end of which is attached by a pin to a lug, *p*, rigidly attached to a horizontal connecting-rod, F. The hand-lever H works in parallel guides, which form the upper portion of the semicircular frame I, and terminates in a handle. This lever has an upright vibrating or reciprocating motion, the extent of which is regulated and defined by a stop-pin, N, placed in holes *j j*, and the temper-screw J.

At either end of the connecting-rod F are secured horizontal toothed racks E E, and operated by said rod through the functions of the lever H and pitman-bar G, and receiving a reciprocating motion. These toothed racks have their bearings upon grooved friction-rollers *x x x x*, whose journals are secured to the lower outer corners of the angle-plates M M. The toothed racks E E gear into and operate the pinions *m m m m* of the compound wheels K K L L, producing a partial revolution in alternate directions of the pinions and the inner plates, *k*, of the compound wheels, to which they are rigidly attached. The ends of the screw-shafts *d* form a journal for the compound wheels K K, and the journals of the compound wheels L L are secured to the upper outer corners of the angle-plates M M, respectively. The outer or front portion of the compound wheels K K and L L are provided with cogs or spur-gearing on their peripheries, the wheels K and L, which mesh into each other when in motion, being recessed, and provided with right and left handed ratchets upon the shoulders of said recesses upon the inner faces of said compound wheels. The plates *k k* have, on the sides opposite the pinions *m m*, a notched pawl-lever, *t*, actuated by an oval cam, *d'*, which has a handle, *l*, on the opposite side of the plate *k*. The end of this pawl-lever *t*, which is notched, as shown at *n'*, engages the ratchet *n* of the recess of the com-

pound wheel, causing it to revolve as it is operated by means of the pinion *m* and the toothed rack E in one direction only. The spring *s* holds the pawl-lever in its requisite position, allowing it to pass or slip the teeth of the ratchet *n* in its opposite motion. This pawl-lever *t* is thrown in or out of gear by the handle *l*, as shown in the dotted lines in Fig. 2.

A forward motion being communicated to the screw-shaft D by the throw of the hand-lever H, acting on the connecting-rod F, the toothed rack E, the pinion *m*, the plate *k*, and the pawl-lever *t* of the compound wheel K, a reverse throw of the lever H, acting by means of the same devices, operates the compound wheel L in an opposite direction, and, by means of the spur-gearing on the periphery of the wheel L, the wheel K is revolved in its original direction, and a direct positive forward motion of the screw-shaft is thus produced by each forward and backward motion of the connecting-rod.

When the knee C is thus carried by the action of the screw shaft D and the nut *c* the requisite distance on its way across the carriage, the pawl-levers *t t t t* are released by means of the handles *l l l l*, and a reverse motion is given to the screw-shaft D by the operator, by means of the crank-pin *b* bringing the knee to its required position again, when the pawl-levers are replaced and the head-block again ready for use.

The lugs *a a* of the semicircular frame I are slotted at right angles with the plane of the frame, to allow of its lateral adjustment.

The angle-plates M M are firmly attached to the ends of the saddle-trees B B, and act as a frame to sustain and support the operating devices of the machine.

Having thus fully described my said invention, what I desire to secure by Letters Patent is—

1. The hand-lever H, pitman G, connecting-rod F, toothed bars E E, pinions *m m*, plates *k k*, pawls *t t*, springs *s s*, cams *b' b'*, compound wheels K K and L L, and screw-shaft D, all all arranged and operating in the manner and for the purposes set forth.

2. The semicircular frame I, with its holes *j j*, stop-pin N, and temper-screw J, as and for the purposes specified.

3. The arrangement and combination of the devices herein set forth for producing a continuous forward motion of the knees of a saw-mill head-block, substantially in the manner and for the purposes set forth.

ANDREW SHEARON.

Witnesses.

MOSES GROOMS,

W. T. DENNIS.