H. M. Popple,
Head Block for Saw Mills.

115237

PATENTED MAY 23 1871

Fig 1.

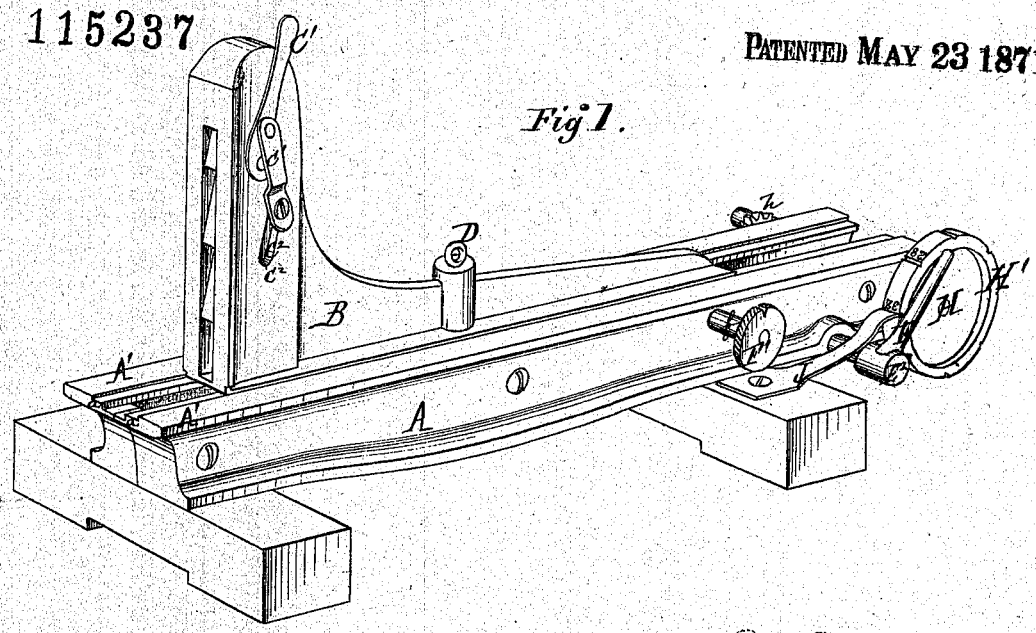


Fig. 2.

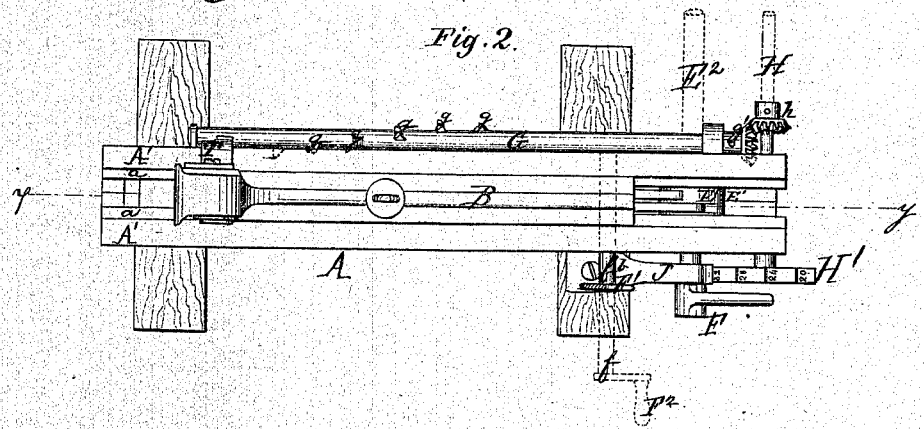
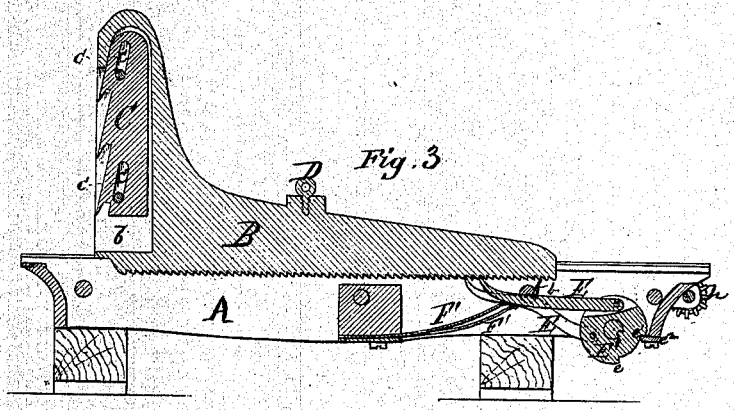


Fig. 3



Witnesses.
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HIRAM M. POPPLE, OF WARREN, PENNSYLVANIA.

Letters Patent No. 115,237, dated May 23, 1871.

IMPROVEMENT IN HEAD-BLOCKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HIRAM M. POPPLE, of Warren, county of Warren, State of Pennsylvania, have invented certain new and useful Improvements in Head-Blocks for Saw-Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of my improved head-block;

Figure 2 is a plan or top view of the same; and

Figure 3 is a vertical longitudinal section on line *y y*, fig. 2.

Similar letters of reference denote corresponding parts in all the figures.

The invention relates to that class of head-blocks in which the log-cant or timber is dogged to and fed forward by vertical knees which rest upon ways.

First, in combining with a knee, made hollow for the purpose, a slotted dog, which reciprocates on a right line, is supported against lateral thrust by the walls of the knee independently of the pins on which it slides; is, when withdrawn from the log, protected by the shell of the knee, and is operated by a lever and link in such manner that when it (the dog) is withdrawn it is locked in position by the lever and link referred to.

The second part of the invention consists in combining with the head-block, upon which knees move, a graduated or adjustable stop, or series of stops, for regulating the point to which the knees shall be withdrawn, in order that the knees may be drawn back just a proper distance to receive a log-cant of any given size; and this part of the invention further consists in operating this adjustable stop or gauge by means of an index-wheel, constructed in such manner that the operator can readily determine the distance which the knees can be withdrawn, and consequently the sized log that can be accommodated.

The third part of the invention consists in a novel construction of the double crank-wheel, by which it is made to serve, in combination with a stop, to limit the motion of the pawls which carry the log forward.

In the accompanying drawing—

A A represent the body or bed of the head-block, made preferably in two parts, as indicated in figs. 1 and 2, and bolted or otherwise secured together.

This part of the head-block is made substantially in the usual manner, except that it is provided upon its upper face with a double track, or two independent tracks, the upper one, A' A', being the broadest, and intended to receive and support the log, while the lower one, which is formed in this instance by simply rabbeting the inner edges of tracks A', as is shown plainly at *a*, fig. 1, is intended to support the knee B.

The knee B is made substantially in the form usually adopted in this class of blocks, and is constructed with a groove extending along each side near its lower face, these grooves receiving the ways *a*.

The vertical portion of the knee is recessed or chambered, as at *b*, fig. 3, for the reception of the toothed dog C.

The dog C is provided with slots *c*, fig. 3, which inclose suitable pins projecting from or extending through the chamber *b*.

The slots *c* are not parallel with the outer face of the knee, but are inclined, as shown in the drawing, so that when the dog is thrust downward from the position in which it is shown, it is at the same time brought forward, as will be readily understood without further explanation.

C' is a hand-lever, pivoted to the vertical portion of the head-block, and connected with the dog C by link c^1, the lower end of this link being connected to a spur projecting from the dog through a slot, c^2, this slot being inclined from a vertical line to correspond with the inclination of the slot *c* in the dog.

D is a staple or eye, to which is hinged an ordinary dog or hook used for dogging the log in the usual manner, as the dog C is intended more particularly to be used when sawing the last board, when it is necessary to remove the ordinary dog.

The under side of the knee B is toothed or serrated, and is moved forward by means of pawls E E, which are actuated by the double crank-wheel E^1, which is mounted on shaft E^2, and has an alternate rocking motion imparted to it by means of lever F.

The crank-wheel E^1 has a portion of its periphery cut away from *e* to e^1, leaving two shoulders, which engage with a stop, e^2, and thus limit the throw of crank-wheel E^1.

The construction and operation of these parts are fully shown in fig. 3.

F^1 F^1 are two tongue-springs, attached to any convenient part of the head-block in such position that their free ends engage with the lower sides of pawls E for the purpose of holding said pawls in contact with the ratcheted face of the knee B.

For the purpose of throwing the pawls out of action and allowing the knee to be drawn back; I employ a tripping cam-shaft, *f*, or a shaft with a projecting lip, and operate this shaft by a wheel, F^1, or a crank, F^2, fig. 2.

G, fig. 2, is a shaft mounted in suitable bearings at the side of the bed A A, and rotated by the bevel-gears *g h*, gear *h* being mounted upon shaft H, which

is arranged transversely of the head-block, and operated by hand-wheel H'. This hand-wheel has a series of numbers stamped upon its periphery, as shown in fig. 2, the object of which will be fully explained hereafter.

g g are short studs attached to or formed upon shaft G. They are placed spirally on the shaft, and extend from its front end such distance toward the other end as may be found desirable.

I is an arm or plate attached to the lower side of knee B, near or at the vertical part, and extending across the face of way or track A', and is bent down at about a right angle, so that its end will engage with the stops or studs *g* on shaft G, thus limiting the backward movement of the knee.

J is a spring pawl, which takes into notches or grooves cut in the peripheral face of wheel H'.

These notches are cut at such intervals that when the wheel is moved from one notch to another the shaft G will be turned far enough to turn the next stud to the upper side of the shaft, so that the arm I may pass by the stud which has just been turned to one side, and strike against the one which I have just described as having been turned up.

In operating my head-block I first set the shaft G at such point as will allow the knee to be withdrawn far enough to admit the log, this point being indicated by the figures on the rim of hand-wheel H', they being so arranged, relative to studs or stops *g*, that they will designate which stop is turned up, and consequently how far back the knee can be moved.

The log is now placed on the carriage and secured by the dogs, as is customary in this class of head-blocks, and fed forward by means of the pawls E in a manner which is well understood and need not be particularly described, except in reference to the operation of the stop e^3, which engages with the shoulders e e^1 on crank-wheel E^1, and thus limits the forward movement of the knee B, and it is apparent that by using a stop which shall fill up a greater portion of the space between these shoulders, the throw of the lever at each reciprocation, and the consequent advance of the log toward the saw, can be regulated at the will of the operator.

Of course, in feeding the log forward, the position of the tripping-shaft e^3 should be that shown in the drawing; and when it is desired to move the knee backward, the pawl will be thrown out by rotating said shaft; and it will be further understood that in practice it is usually found desirable to extend shaft E^2, H, and e^3 from one head-block to the other, so that both knees may be actuated simultaneously.

When the last board or two is to be cut, the cant is held in place by the use of the dog C only, as it is necessary to remove the other ones, and this construction will be found very effective for that purpose, as the direct motion on a right line is better adapted to give the jaws of the dog a firm hold than is the movement in an arc of a circle which others have; and then again, under my arrangement of parts, the weight of the lever and link tends to hold the dog in place, instead of to draw it out.

I do not claim, broadly, the slotted dog C, as that is admitted to be old; but I believe that my combination and arrangement of parts are new.

I am aware that head-blocks have been constructed with a double crank-wheel by means of which the pawls were actuated, and that in this construction there was a collet on the crank-wheel shaft, said collet engaging with stops to limit the throw of the pawls; therefore I do not claim, broadly, the use of the double crank-wheel, nor of stops to limit its throw, but only claim mine as an improvement upon the construction referred to.

Having now described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the hollow knee B, the slotted dog C, arranged within the walls of the knee, and operated by the lever C' and link c^1, as described.

2. The shaft G, provided with the spiral row of studs *g*, in combination with the knee B, as set forth.

3. The combination of shafts G H, gears *g h*, and hand-wheel H', substantially as described.

4. The crank-wheel E^1, provided with shoulders e e^1, in combination with pawls E, shaft E^2, and stop e^3, when these parts are constructed and arranged for joint operation, as described.

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Witnesses:

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