

G. H. ZSCHECH.

HEAD BLOCK FOR SAW MILLS.

No. 250,034.

Patented Nov. 22, 1881.

Fig. 1.

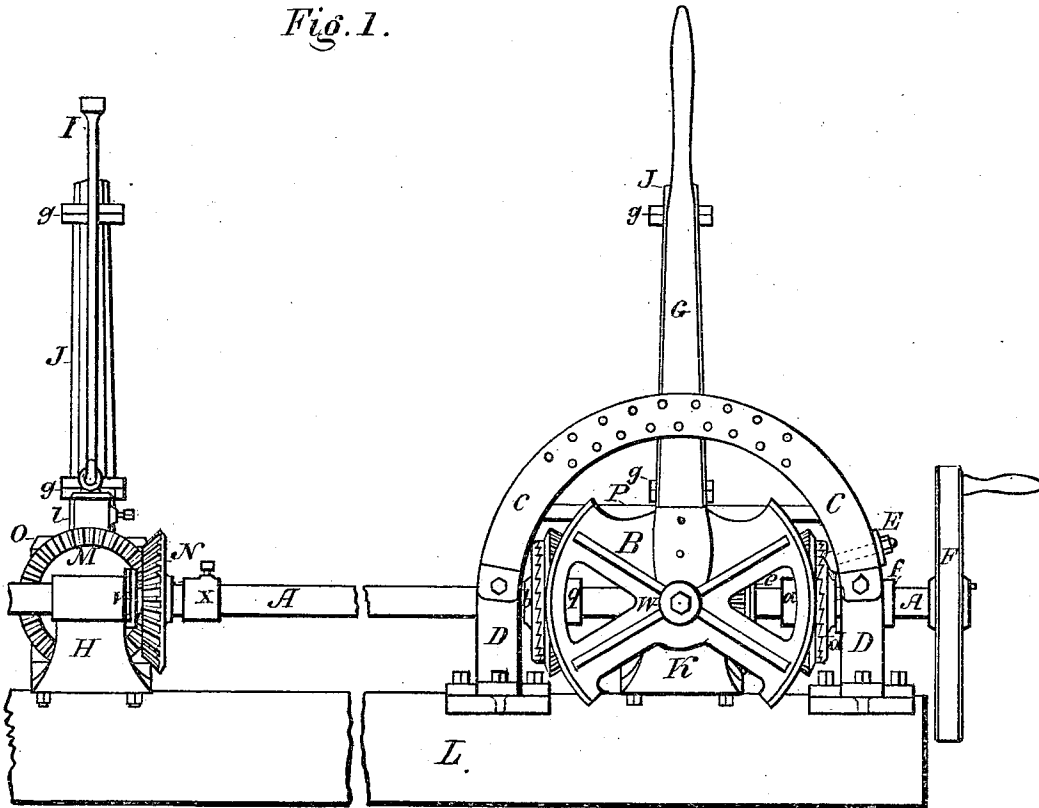
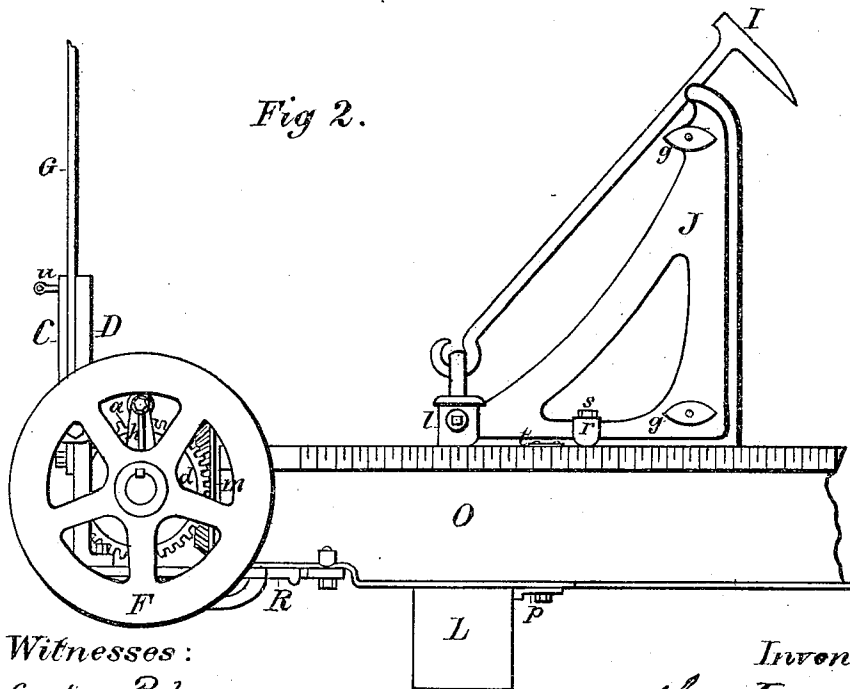


Fig 2.



Witnesses:
Gustav Bohn.
Albert Mowlen.

Inventor:
Gustavus H. Zschech

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Fig. 3.

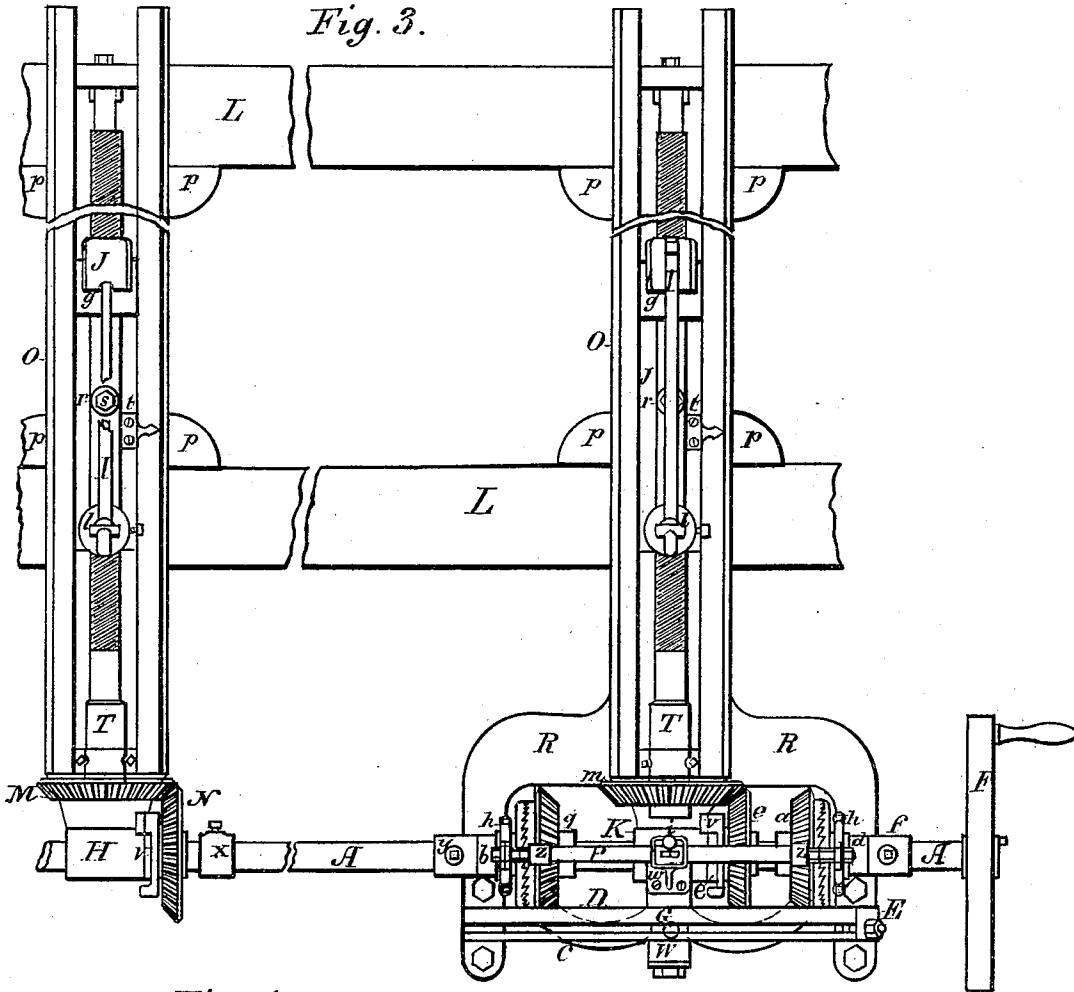
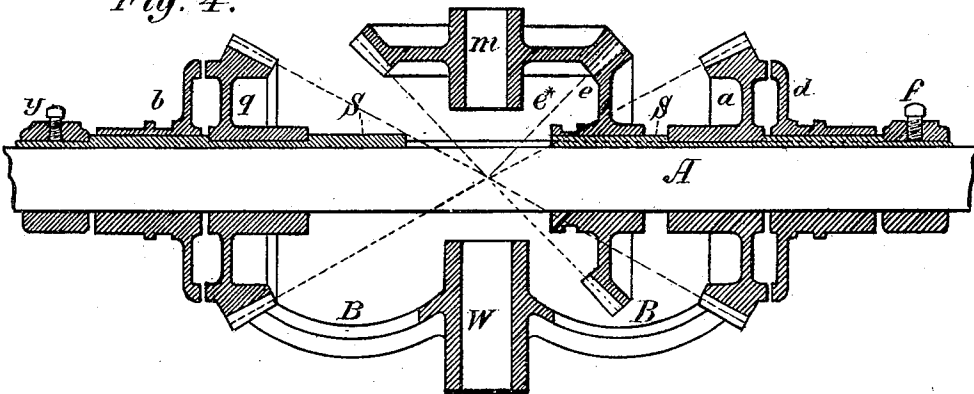


Fig. 4.



Witnesses:

Gustav Bohm.
Albert Maarten.

Inventor:

Gustav H. Zschech.

(No Model.)

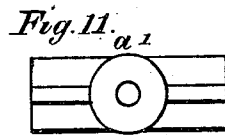
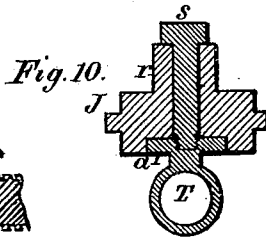
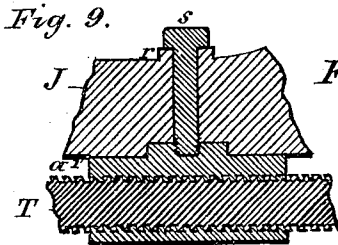
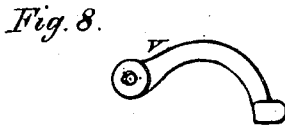
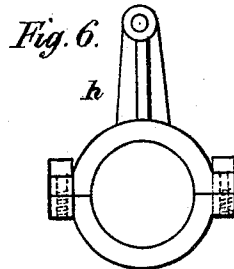
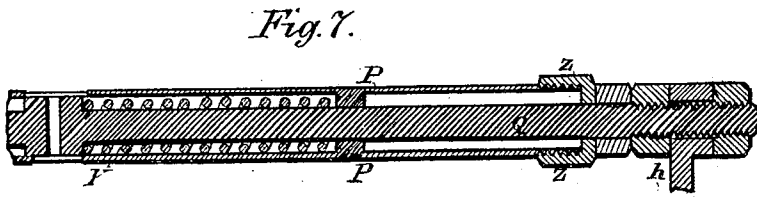
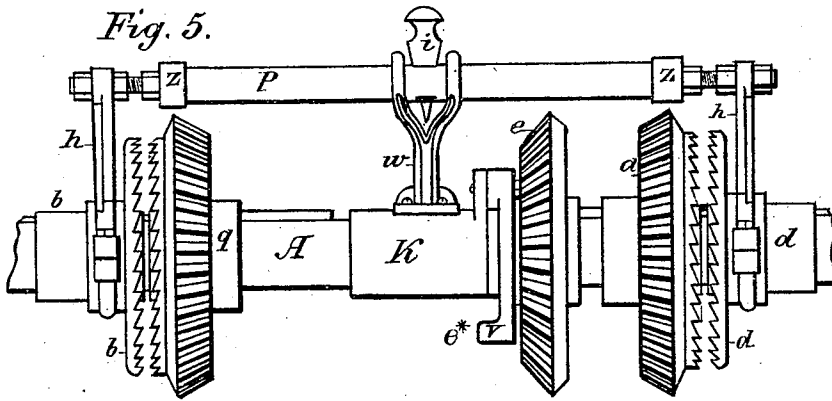
3 Sheets—Sheet 3.

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Witnesses:
Gustav John.
Albert Hamlen.

Inventor:
Gustavus H. Zschech

UNITED STATES PATENT OFFICE.

GUSTAVUS H. ZSCHECH, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO HIMSELF AND LINDLEY VINTON, OF SAME PLACE.

HEAD-BLOCK FOR SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 250,034, dated November 22, 1881.

Application filed April 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS H. ZSCHECH, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements relating to Head-Blocks of Saw-Mills, of which the following is a specification.

The mechanism is of the general character set forth in the patent to me dated December 13, 1873, No. 145,712. I have made important improvements.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a side elevation of a portion of the carriage with the head-blocks and the connected mechanism. It is an end view of the two head-blocks. Fig. 2 is a side view of the main portion of one of the head-blocks and its attachments. Fig. 3 is a plan view, showing both head-blocks and the adjusting mechanism. Fig. 4 is a horizontal section through certain portions of the mechanism on a larger scale. Fig. 5 is an elevation of the same. The succeeding figures represent details detached. Fig. 6 is one of the yokes by which the ratchet-wheels are controlled in their position endwise upon the shaft. Fig. 7 represents one of the tubes and connected parts by which the yokes are controlled. Fig. 8 shows one of the gravity-levers, of which there are two, each employed to lock and unlock the gearing to the respective head-blocks. Figs. 9, 10, and 11 show one of the nuts and its associated parts which engage the knee J with the screw T. Fig. 9 is a vertical longitudinal section. Fig. 10 is a vertical cross-section. Fig. 11 is a plan view of the nut alone.

Similar letters of reference indicate like parts in all the figures.

L is the carriage, caused to traverse by ordinary mechanism (not shown) to carry the log (not represented) slowly past the saw. (Not represented.)

O O are the head-blocks, sometimes termed the "head-block" and "tail-block," set at adjustable distances apart on the carriage L, according to the length of the log.

J J are knees, and I dogs which engage with the log resting on the head-blocks, as will be understood.

T T are quick-threaded screws, supported in fixed bearings in the head-blocks and turned by gear-wheels set on the ends of the respective screws.

The gear-wheel in the head-block proper is marked *m*; that in the other or tail-block is marked M.

Heretofore supports for the adjusting mechanism have been made by extending a transverse arm out on either side of the adjusting mechanism, and also with small curved arms; but in my mechanism the head-block proper is forked, as indicated by R R, and thus adapted to support the adjusting mechanism or set-rig, allowing this head-block as well as the other to be shifted in position on the carriage whenever required, the adjusting mechanism being moved with it.

A is a shaft extending longitudinally of the carriage L, and supported in bearings in the extended ends H K of the respective head-blocks. Two beveled-gear wheels, N and *e*, are feathered on the shaft A, so that they are compelled to turn therewith, but may be moved endwise thereon. Each has a groove in its hub, which can receive a gravity drop-lever, V, pivoted to the extended end of the respective head-blocks. When these levers V are engaged in the grooves of their respective hubs the gear-wheels N and *e* are engaged with the gear-wheels M *m* on the respective screws T T, and a turning of the shaft A will operate both knees alike. The shaft A may be turned rapidly by the crank-wheel F in drawing the knee back to take on a fresh log. The smaller movements required for moving the knees and consequently the log a little to give the proper width of board or plank between the several cuts are accomplished by vibrating the hand-lever G. The gearing is so proportioned that each vibration of the ratchet-wheel gives a thirty-second ($\frac{1}{32}$) of an inch movement to the log.

The lever G is bolted firmly to a segment-wheel, B, turning on a fixed central bolt or pivot, *w*. The segments B engage constantly with beveled wheels *a* and *q*, which are fitted

on the shaft A with freedom to be turned, but not to be moved endwise thereon. The back of each of these wheels *a* and *q* are ratcheted and adapted to be engaged by ratchet-wheels *b d*, which are fitted on the same shaft with freedom to move endwise, but not to turn thereon. Either of these ratchet-wheels is able to turn the shaft A as it receives motion by the engagement of its ratchet with the respective wheel *a* or *q*. The ratchets are held engaged by a sufficient spring force, with provision for holding them out of engagement when desired. The hubs of the wheels *b* and *d* are grooved and receive yokes *h*, which are adjusted firmly on rods Q, each inclosed in a tube, P, and subject to the action of a coiled spring, Y, which is housed between the rod Q and the tube P and protected from injury, dust, &c. The force of the spring Y tends to draw the yokes *h h* together, and thus to hold the ratchet-wheels engaged, but with freedom to move apart as the respective wheels *a q* turn idly in one direction. The stand *w* supports the tube P in the proper position, and provision is made for inserting a tapered wedge or key, *i*, through the tube, so as to force the rods Q Q apart and hold both ratchets out of engagement when the knees are to be retracted to receive a fresh log.

C D are curved or arched guides fixed on the ends of the fork, and allow the lever G to be vibrated between them.

The beveled gears *a q* and the ratchet-wheels *b d* are connected to the shaft A with their respective measures of freedom, as above indicated, through the employment of peculiarly-formed feathers S, let into a longitudinal groove in the shaft A, and firmly held in the required positions by means of set-screws *y f*, inserted through stout collars provided for the purpose. Each feather S projects about half its thickness outside of the shaft A. Where the beveled-gear wheels *a* and *q* are seated each feather is turned down flush with the surface of the shaft A. Where the ratchet-wheels *b d* are seated the feather projects and is indicated in a corresponding groove in the ratchet-wheel.

I form the nuts *a'* on the knees J, which engage with the screws T by a casting of brass around the respective screws T, the latter being thinly coated with a clay wash, or smoked

or otherwise prepared, to allow a close fit without sticking. The iron or steel of the screw T being accurately finished and thus prepared, the nut fits with more than usual closeness, and its mode of manufacture secures great hardness on the inner and wearing surfaces. The upper edge of each nut *a'* is locked in its respective knee J by a projection of considerable area, as indicated in Figs. 9, 10, and 11. The bolt *s* in those figures aids to hold it firmly. To facilitate the adjustment of the logs the upper edge of the side of each head-block is graduated and each knee carries an index-finger, *v'*.

The gravity-levers V can be thrown upward and backward and caused to assume a position where they will be held out of use by their gravity. When it is desired to put them again in use they can be moved forward and downward, and they can be engaged and remain engaged by gravity. In the latter case they can be engaged either side of the collar *e**, and thus hold the wheels in gear or out of gear, as may be desired. The capacity for holding themselves out of use is a marked advantage over the corresponding parts in my patent of 1873, above referred to.

I claim as my invention--

1. The forked arms R R, attached to the end of the head-block O, in combination with the guides C D, hand-lever G, and connected set-rig mechanism, so that the whole may be adjusted together on the carriage L and shaft A, as herein specified.

2. The gravity-levers V, arranged to engage either side of the collar *e**, or to be held automatically out of use, as desired, in combination with the longitudinal shaft A and the gear-wheels N e M m, as herein specified.

3. In saw-mill mechanism, the tube P, springs Y, rods Q, and yokes *h*, in combination with each other, and with the ratchet-wheels *b d*, engaging pinions, and operating means, arranged to serve as herein specified.

In testimony whereof I have hereunto set my hand, at Indianapolis, Marion county, Indiana, this 21st day of April, 1881, in the presence of two subscribing witnesses.

GUSTAVUS H. ZSCHECH.

Witnesses:

EDWIN M. BYRKIT,
LORENZ SCHMIDT.