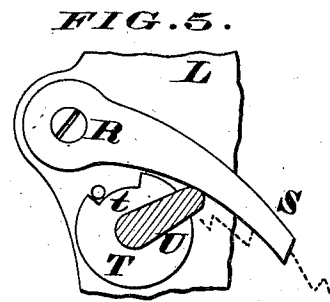
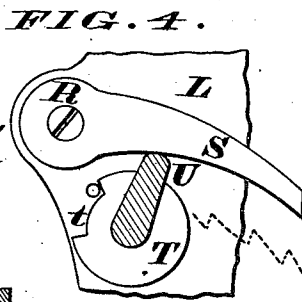
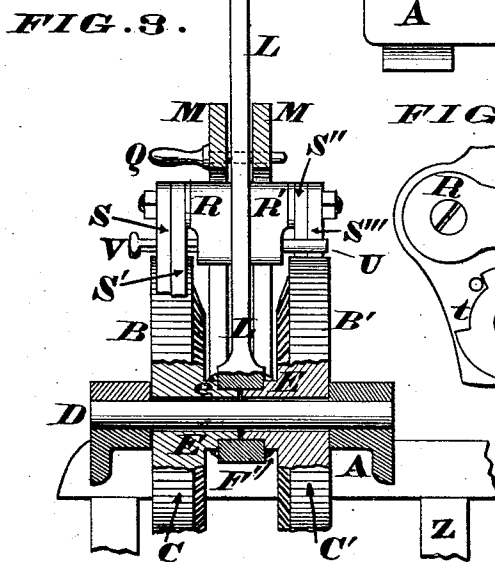
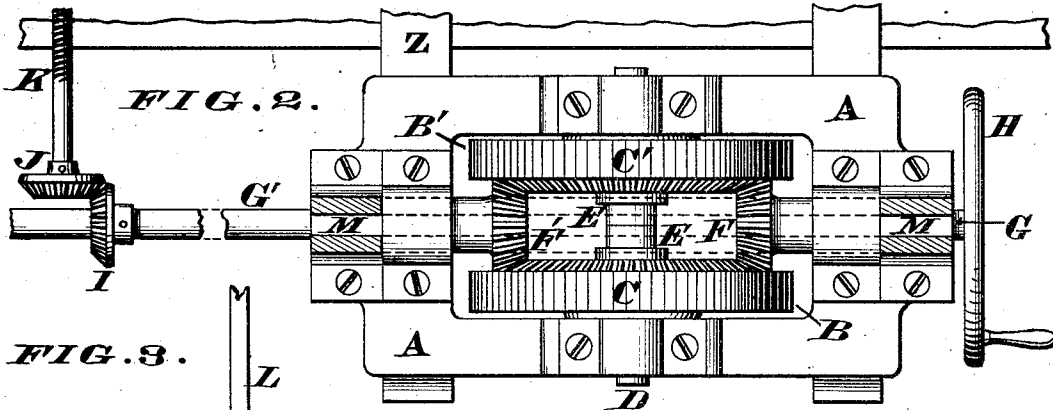
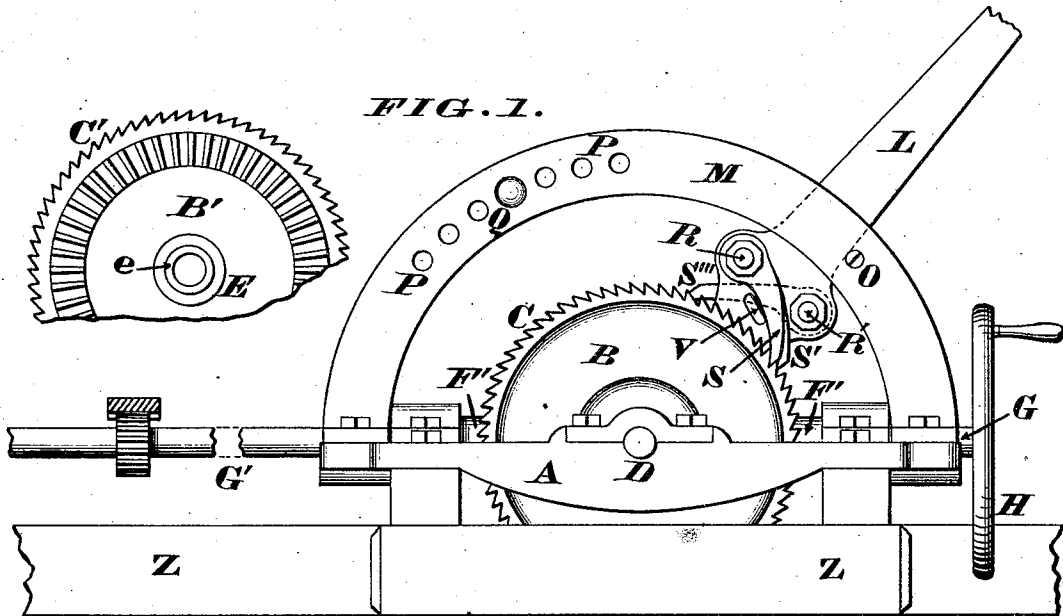


W. BELLIS.
Saw-Mill Head Blocks.

No 157,306.

Patented Dec. 1, 1874.



William Bellis
by Knight Bros. Att'ys.
Attest.
Jas. H. Gayman,
Henry Farmers.

UNITED STATES PATENT OFFICE.

WILLIAM BELLIS, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO HIMSELF
AND SINKER, DAVIS & CO., OF SAME PLACE.

IMPROVEMENT IN SAW-MILL HEAD-BLOCKS.

Specification forming part of Letters Patent No. **157,306**, dated December 1, 1874; application filed August 19, 1874.

To all whom it may concern:

Be it known that I, WILLIAM BELLIS, of Indianapolis, Marion county, Indiana, have invented a new and useful Improvement in Saw-Mill Head-Blocks, of which the following is a specification:

My invention consists in a new and useful device by which the pawls of the operating-lever are brought into and out of contact with the ratchet-teeth of bevel-wheels for the simultaneous advance or retraction of the knees of the two or more head-blocks of any saw-mill.

In the accompanying drawing, Figure 1 is a side elevation of my improvement, one of the ratchet-wheels being shown detached from the machine. Fig. 2 is a plan thereof, the operating-lever being removed and a portion of the arch or circle plate broken away. Fig. 3 is a vertical section in the plane of the axle, upon which the ratchet-wheels are journaled. Fig. 4 is an elevation, showing one of the pawls elevated, so as to be disengaged from its appropriate ratchet-wheel. Fig. 5 shows the pawl depressed and in gear with said wheel.

Of the above illustrations, Figs. 4 and 5 are drawn on an enlarged scale, and the position of the ratchet-wheel is indicated in both of said views by dotted lines.

The frame A, which supports the principal members of my improvement, may be of cast-iron or other suitable material, and must be firmly fastened, by means of bolts or otherwise, to the carriage Z. B B' are two matched bevel-wheels, armed on their peripheries with reversely-presented ratchet-teeth C C'. The wheels B B' revolve upon an axle, D, which may be made fast in the frame. Each bevel-wheel B B' has a hub, E, projecting from its face, of the proper length, so that when they come together the bevel-gears of said wheels are the proper distance apart to receive bevel-pinions F F', which are respectively keyed fast to shafts G G', of which shaft G is provided with a hand-wheel, H, and shaft G' extends the length of and parallel to the carriage. The shaft G' has keyed

fast to it as many bevel-wheels I as there are head-blocks, and these wheels gear with corresponding pinions J of feed-screws K, which simultaneously advance or retract the head-block knees. The hubs E serve as a bearing for the end of a lever, L, said hubs being turned down smaller, so as to provide collars or shoulders e, which serve to keep the lever in position sidewise. M is a slotted arch or circle bar, through which the lever L passes. It has a stop at or near one extremity to indicate and control the starting-point, and this stop may be either a permanent pin or be a piece, O, bolted to the arch, as in Fig. 1, and may, in this form, be adjustable. The other extremity of the arch may be provided with a number of holes, P, and a movable pin, Q, which, being shifted forward or backward, enables a greater or less sweep of the lever L with a corresponding advance of the knees, so as to produce timber of any required thickness. Projecting from opposite sides of lever L are studs R R', carrying pawls S S' S'' S''' in two pairs, of which one pair engages in each respective ratchet. T is a spindle having a cam, U, and a handle, V, whose partial rotation operates to partially lift the pawls S S' S'' S''', and by so doing to enable the rapid retraction of the knees by means of the hand-wheel H, without disturbing the lever L. The vibration of the spindle T is limited by means of a notched collar, t.

In operating my improvement the pin Q is so adjusted as to secure the proper thickness of lumber, and the log being on the head-blocks the lever L is moved back to stop O, the pawls being in gear with the ratchets, and all in proper order. The operator takes hold of the lever L and moves it forward to the pin Q and backward to the starting-point. The carriage is then put in motion, and the saw cuts off the board. The carriage having been run back the operator repeats the movement of the lever until the log is cut up as he desires. The carriage being now empty the knees are quickly and easily retracted for another log by first lifting the pawls out of

their ratchet by means of the spindle, and then rapidly revolving the hand-wheel in the backward direction.

I claim herein as new and of my invention—

The spindle T, having notched collar *t* and cam U for operating the pawls S S' S'' S''' in the manner set forth, in combination with lever L, having bearings E *e*, slotted arch M,

stops O Q, bevel-wheels B B' C C', shafts G G', and hand-wheel H, substantially as described.

In testimony of which invention I hereunto set my hand.

WILLIAM BELLIS.

Attest:

GEO. H. KNIGHT,
THOMAS DAVIS.