

(No Model.)

2 Sheets—Sheet 1.

B. E. SERGEANT.
SAW MILL SET WORKS.

No. 283,670.

Patented Aug. 21, 1883.

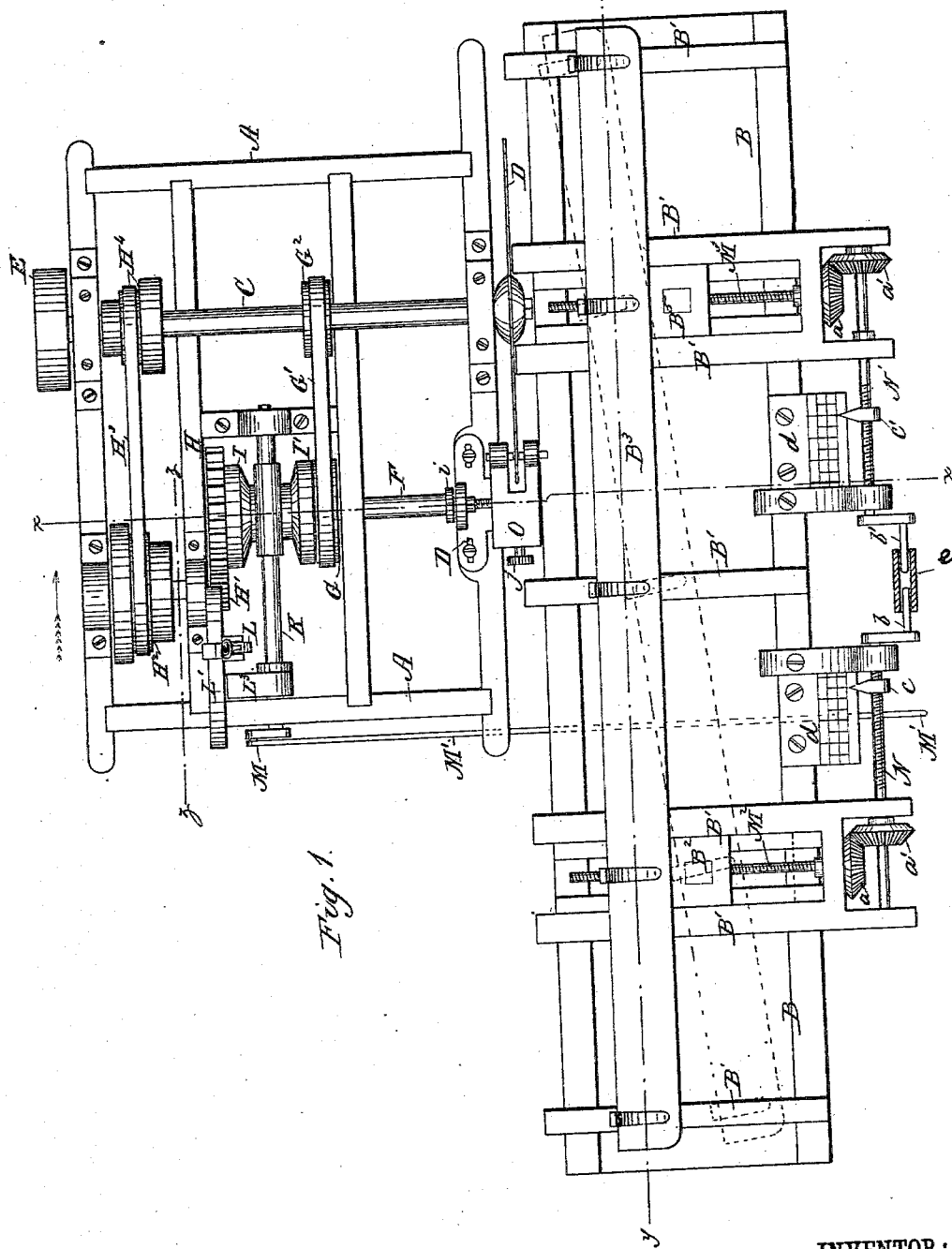


Fig. 1.

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Edw. W. Byrnes

INVENTOR:

Benj. E. Sergeant

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(No Model.)

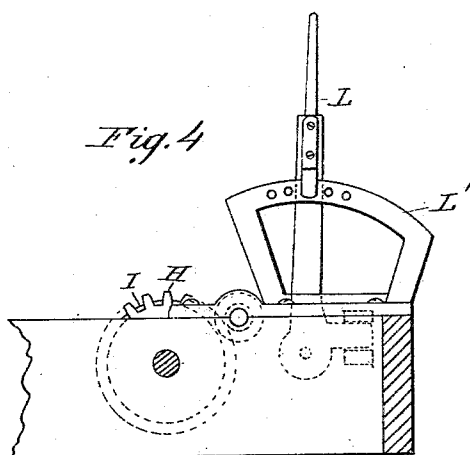
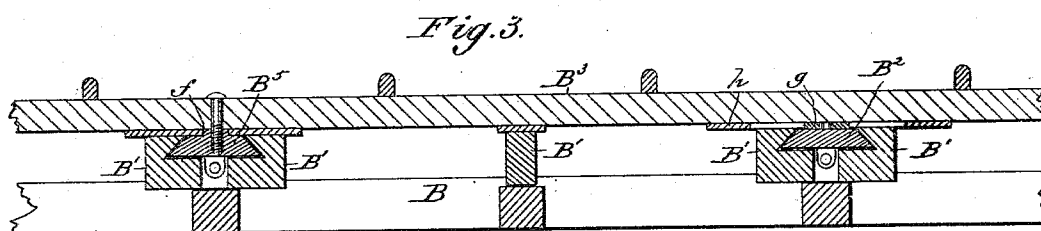
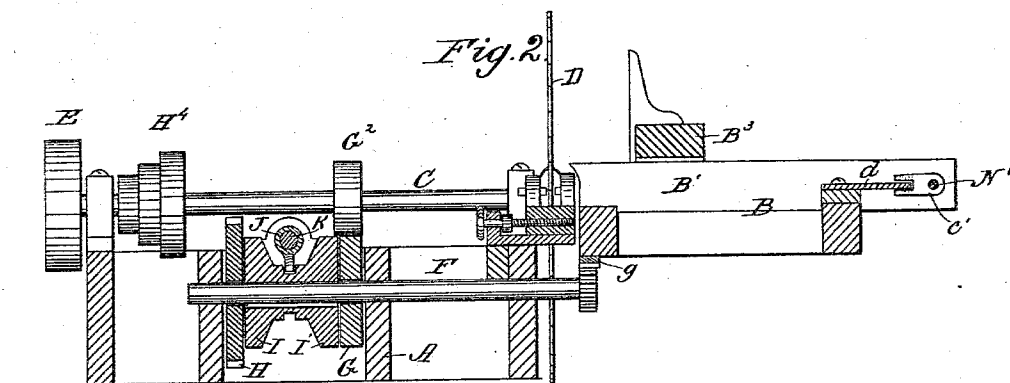
2 Sheets—Sheet 2

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UNITED STATES PATENT OFFICE.

BENJAMIN EVENS SERGEANT, OF GREENSBOROUGH, NORTH CAROLINA.

SAW-MILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 283,670, dated August 21, 1883.

Application filed March 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN EVENS SERGEANT, of Greensborough, in the county of Guilford and State of North Carolina, have invented a new and useful Improvement in 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 accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view. Fig. 2 is a vertical section through the line *xx*, Fig. 1, looking in the direction of the arrow. Fig. 3 is a vertical section through the line *yy*, Fig. 1. Fig. 4 is a vertical section through line *zz*, Fig. 1.

My invention relates to saw-mills; and it consists in improved means for adjusting the log to the saw, as will be more fully described hereafter.

In the drawings, A represents the base or frame timbers of the mill, and B is the traveling carriage, arranged, as usual, upon rollers, and provided on its under side with a rack or straight gear, *g*, Fig. 2, meshing into a pinion

on a reversible shaft. C is the main shaft of the mill, bearing upon one end the circular saw D and upon the other the drive-pulley E, through which motion is imparted to the running parts of the mill.

Parallel with the shaft C is arranged the reversible shaft F, bearing the pinion which meshes with the rack on the under side of the log-carriage, which shaft F receives motion from the shaft C through the following reversing mechanism: On the reversible shaft F is arranged a loose pulley, G, which is connected by a belt, G', to a pulley, G², on the main shaft C. On the reversible shaft F is also arranged a loose wheel, H, having gear-teeth on its periphery which engage with a pinion, H', on the same shaft with a cone-pulley, H², which, by a belt, H³, is connected to a cone-pulley, H⁴, on the main shaft. These cone-pulleys, with belt H³ and the pinion and gear wheel H H', serve to impart motion to the reversible shaft F through a clutch for the purpose of driving the log-carriage forward, and the pulleys and belt G G' G² impart a reverse movement, to the shaft F through a clutch for the purpose of driving the log-carriage in the reverse direction. For regulating these

movements, a double friction-clutch, I I', is arranged on the shaft F, so as to revolve rigidly with it, but be adjustable longitudinally on the same, which is accomplished by means of a feather or spline. The two portions of the clutch are made disk-shaped, and have frictional side faces that are arranged to engage, respectively, with one or the other of the two loose wheels, G and H. The two disks of this clutch are connected together by a collar with a groove around it, and in said groove swivels the forked arm J of a rock-shaft, K, arranged at right angles to shaft F and crossing the same. By rocking this shaft in one direction one face, I, of the clutch is brought into frictional engagement with the loose wheel H, and the log-carriage is driven ahead. By rocking the shaft in the other direction communication is broken with wheel H, and the other side of the clutch is brought into frictional engagement with the loose pulley G, driving the log-carriage back. For rocking said shaft, I may employ a lever, L, which moves over an arc-shaped bar, L', and is held to its adjustment by a locking-bolt, which lever has a toe that operates in a forked arm, L², of the rock-shaft to rock it. Another means for operating this clutch consists of a crank, M, on the end of the rock-shaft, and a long pull-rod, M', whose use will be explained farther along.

On the log-carriage are arranged the transverse log-rests B', of which there are two near each end, arranged in pairs, and having dovetail sliding blocks B² B³ arranged between them. These sliding blocks are connected to the log-beam B³, and they serve to adjust the log-beam laterally to throw the log more out to the saw as each board is cut off. For adjusting these sliding blocks, screw-threaded rods M² M³ are tapped through said blocks, and are swiveled by means of a collar in cross-pieces connecting the paired log-rests. Each of these screw-threaded rods is provided with a bevel-wheel, *a a'*, which latter are respectively fixed on screw-shafts N N' at right angles to M M'. These screw-shafts N N' terminate in crank-handles *b b'*, which are closely juxtaposed and of the same throw, so that the stem or handle portions of the cranks may be brought into line. The screw-threaded por-

tions of these rods N N' carry nuts *c c'*, which are bifurcated, and the branches of which lap above and below the graduated plates *d d'*, fixed upon the carriage-frame. These nuts act as index-hands or pointers, and as they travel along the graduated plates from the screw-thread they are prevented from turning by lapping both above and below the plates. The adjustment of these pointers on said plates serves to indicate the extent of adjustment of the log laterally to the saw.

It will be seen that the crank-handles of the duplicate setting devices are provided with a common sleeve or handle, *e*. This sleeve not only fulfills the function of a handle when it is on one of the crank-stems, but it is capable of being slipped partly off of one crank-stem and partly on the other, when brought into line, and thus serves as a coupling to connect the two for an exactly equal revolution and equal and simultaneous adjustment of both ends of the log-beam. With the arrangement shown and described the workman is enabled from his position near the setting-cranks to manage all of the adjustments of the saw—*i. e.*, the setting of the ends of the log-beam separately or together, or the reversal of the movement of the log-carriage, the long pull-rod M' being extended to that point for that purpose.

In connecting the log-beams B³ to the sliding blocks B² B³ it is not rigidly attached to the same, but is pivoted to each of said blocks, so that it can be turned into a position oblique to the line of movement of the log-carriage, as shown in dotted lines in Fig. 1. One end of the log-beam is fitted over a boss, *f*, (see Fig. 3,) of the sliding block B², and is held thereto in pivotal relation by a screw-bolt. The other connection to the other sliding block, it is obvious, must have some provision for compensating for the increased length which exists between the two sliding blocks when the beam B³ is arranged diagonally, and for this purpose the sliding block B² is provided with an undercut cleat or plate, *g*, which is loosely pivoted to the said sliding block. Then on the under side of the log-beam is fastened a plate, *h*, having an undercut slot in the same,

with an opening at the end large enough to permit the cleat *g* to pass through and be slipped up into the slot. This form of connection permits this end of the beam to turn and also move endwise to compensate for the diagonal position.

The saw-guide consists of a frame, O, with a forked projection on one side, each of the branches of which carries a bearing-pin for the saw, and which frame sits upon a support, P, fixed to main frame A, and upon which its position is adjusted laterally by set-screw *i* and endwise by set-screw *j*.

Now, in defining more clearly the scope of my invention in regard to some of its features, I would state that I am aware that the log has been adjusted on its carriage by means which permit its ends to be separately advanced or moved together with an equal adjustment. I am also aware that the screw-rods with bevel-gears, pointer, and graduated plate are not broadly new as a means for adjusting the log.

Having thus described my invention, what I claim as new is—

1. The combination, with the sliding blocks of the saw-carriage and the two sets of right-angular screw-rods with bevel-gears, of a pair of cranks of equal throw, arranged on the adjacent ends of the screw-rods, and an adjustable sleeve or coupling adapted, as described, to slide from one crank-stem to the other or couple them both, as shown and described.

2. The combination, with a saw-carriage, of a swiveled or pivoted log-beam arranged to be adjusted at right angles to the line of cut, or obliquely thereto, as described.

3. The combination of the sliding block B², having a boss, *f*, the sliding block B³, having swiveling cleat *g*, the log-beam B³, pivoted to boss *f* by a screw-bolt, and having a slotted and undercut plate, *h*, fitting over cleat *g*, for a longitudinal adjustment, substantially as shown and described.

BENJAMIN EVENS SERGEANT.

Witnesses:

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W. R. ANDREWS.