

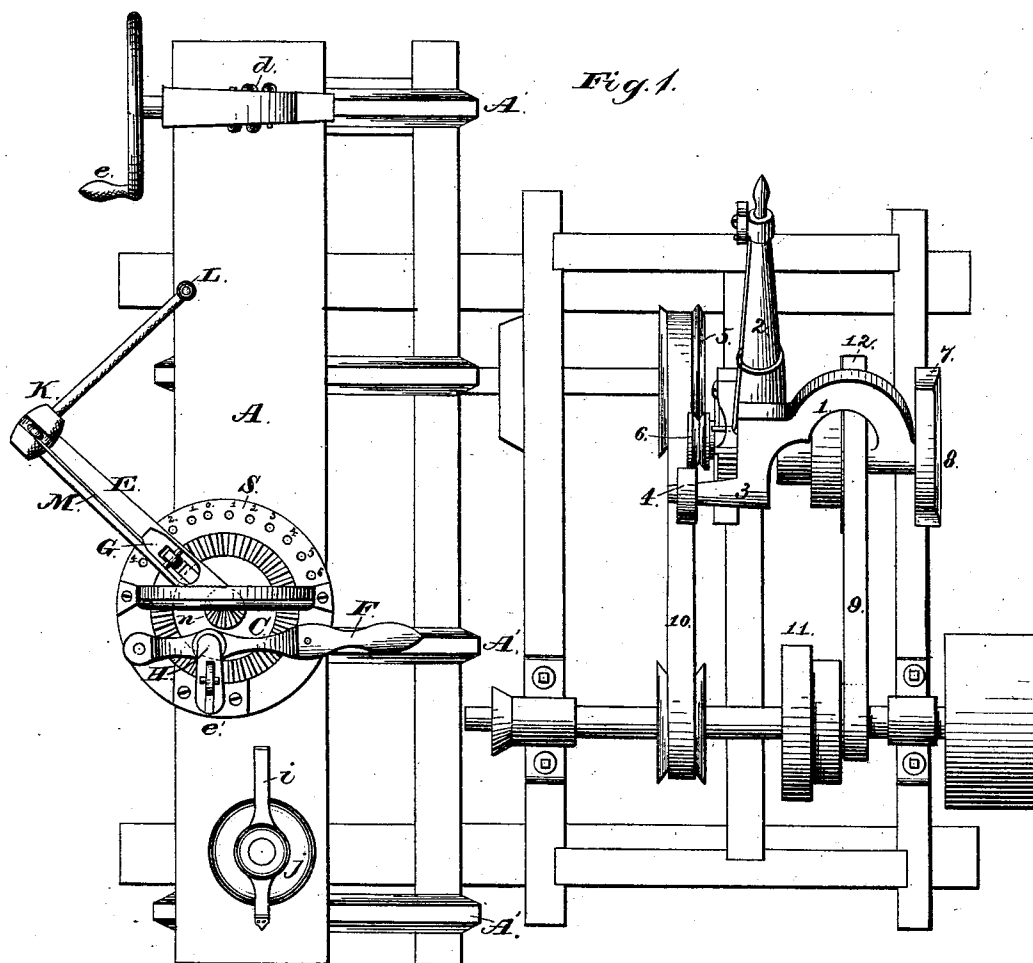
(No Model.)

3 Sheets—Sheet 1.

C. A. HEGE.
Saw Mill.

No. 243,556.

Patented June 28, 1881.



Witnesses:

Jas. E. Hutchinson.
J. A. Rutherford

Inventor:

Constantine A. Hege,
By James L. Norris.
Atty.

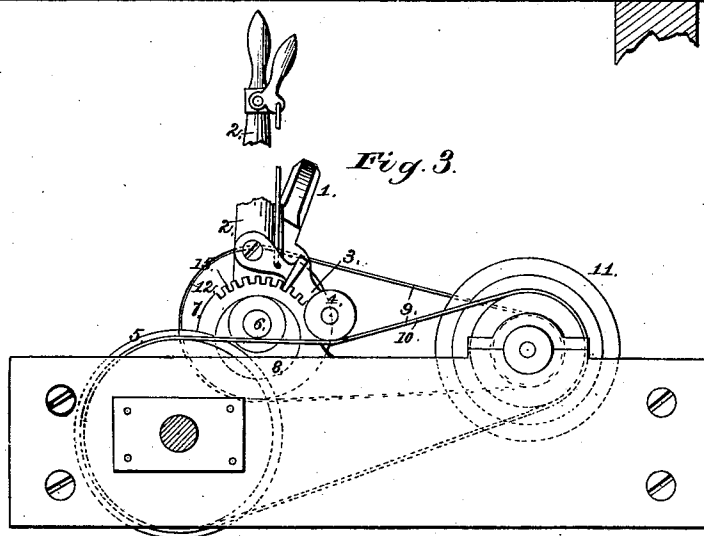
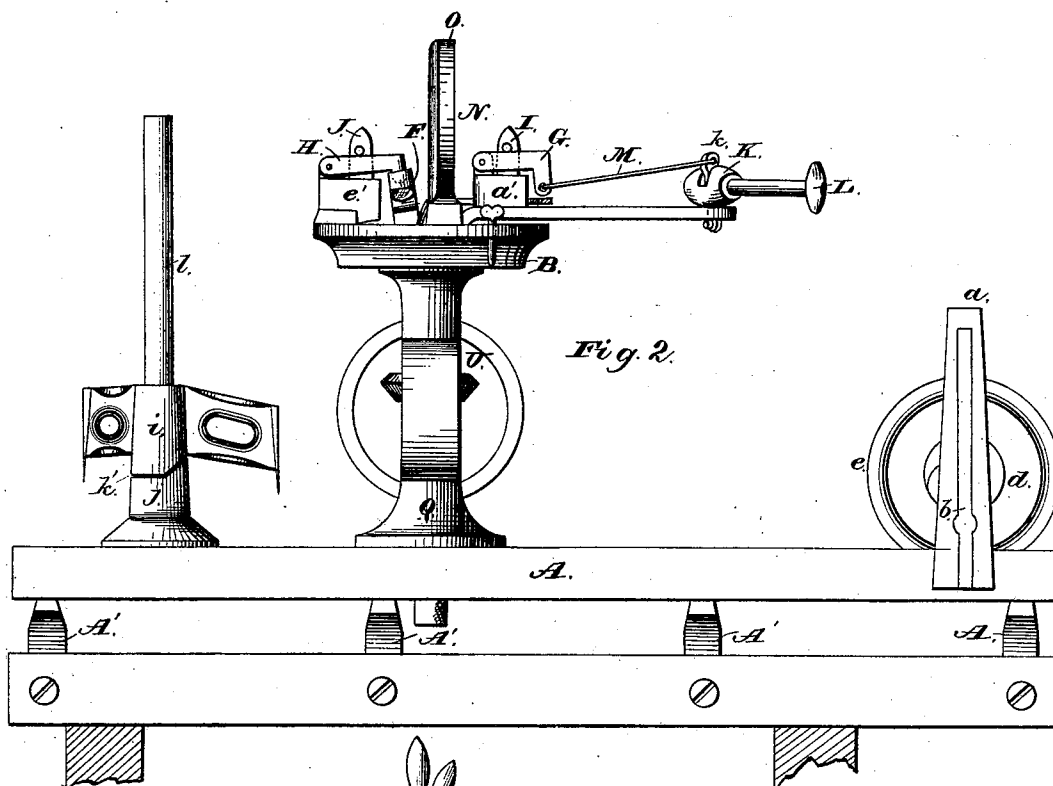
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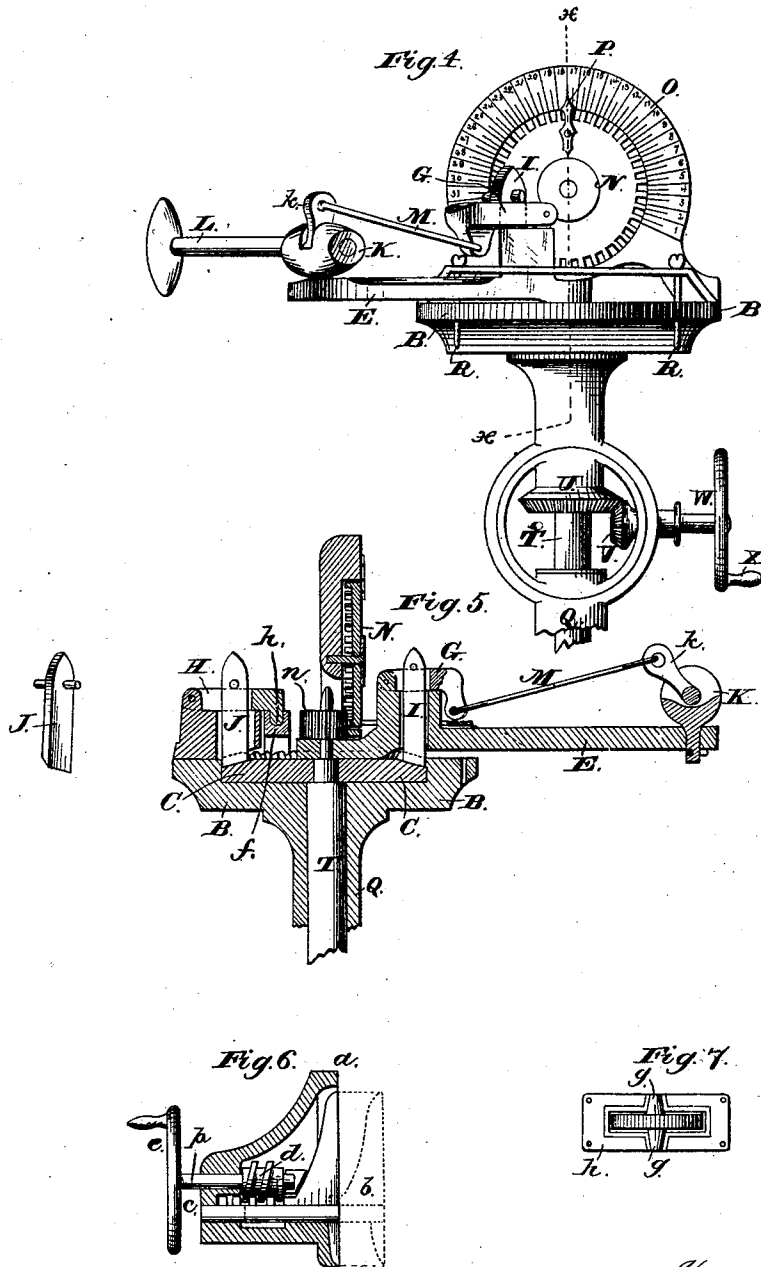
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UNITED STATES PATENT OFFICE.

CONSTANTINE A. HEGE, OF SALEM, NORTH CAROLINA.

SAW-MILL.

SPECIFICATION forming part of Letters Patent No. 243,556, dated June 28, 1881.

Application filed January 17, 1881. (No model.)

To all whom it may concern :

Be it known that I, CONSTANTINE A. HEGE, a citizen of the United States, residing at Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Saw-Mills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to circular-saw mills; and it consists in a novel construction, combination, and arrangement of parts, which have for their object to improve and facilitate the operation of setting the log upon the carriage of a saw-mill by a single attendant, and the operating by him of the feeding and gidding back of the carriage.

The invention has also for its object the ready adaptation of parts for adjusting the log to saw boards of different thicknesses.

It is also designed to provide one or more slide-rests or bearings on the setting-up bar or log-beam with suitable devices for adjusting the rests out more or less from the log-beam, according as it may be found necessary for the proper adjustment of the log.

I attain these objects by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top view of my invention. Fig. 2 is a side view of a saw-mill carriage with the saw-frame removed, showing a drop-dog, an adjustable rest on the log-beam, and a dial-plate supported on a column with drop-pawls and connections. Fig. 3 is a side view of a saw-frame, taken on the side next the carriage, with the carriage removed, showing one end of the double-eccentric friction-feed with lever, pawl, and connecting-belts. Fig. 4 is a front view of the dial-plate column with circular indicator, stop-pins, and connections for operating the set-works. Fig. 5 is a section of the same on the line *x x*. Fig. 6 is an end view of the adjustable slide-rest on the log-beam, showing the slide-rack, worm-wheel, and crank for operating the same. Fig. 7 shows a top view of my conical-shaped, or tapering-journal, rollers for saw-mills, with tapering boxes for the same.

Similar letters refer to similar parts throughout the several views.

In the drawings, letter A designates the log-beam, which works freely on ways A', and is held in place by suitable guides beneath.

Attached to the log-beam is a column, Q, on which is mounted the dial-plate B, which dial-plate has about one-third of its circumference divided into equal parts, the divisions corresponding with cogs in a ratchet-wheel, C, that is journaled in the center of the dial. A hole is drilled through the dial-plate in each division, also through the semicircular piece *c'*, which is placed above the lever E, and on which are figures corresponding with the number of holes into which the pins R R are placed, as may be desired to graduate the thickness of the plank or lumber to be sawed, and between which pins R R is moved said lever E, carrying a pawl, I, which drops into the cogs of the ratchet-wheel C, thereby imparting motion to the shaft T, on which the ratchet-wheel C is journaled. This shaft passes through the column Q and log-beam A, and carries at its lower end a pinion gearing into racks on the ways A', as shown in the patent granted to me October 30, 1877, No. 196,577, for operating the log-beam, as therein described.

On the top end of the shaft T, above the wheel C, is a small pinion, *n*, which gears into a large wheel, N, on which there is a pointer, P. This wheel N is held in a circular indicator, O, on which are figures and marks corresponding exactly with the set-works. The ratchet-wheel C on the shaft T is revolved by the lever E through the pawl I, at the same time causing the pinion on the top of the shaft T to revolve, thereby revolving the wheel N and moving the pointer P, which indicates precisely the number of inches or fractions thereof that the log-beam has advanced or receded; thus showing exactly the size of the log. This indicator O is placed in such a position that it is at all times facing the sawyer. The ratchet C is moved by the drop-pawl I, which moves vertically in a case, *a'*, which is attached to the lever E, the latter being moved backward and forward by the handle L, which passes through a sleeve, K, that is journaled on the end of the lever E.

On the end of the rod or handle L, in the sleeve K, is attached an elbow, *k*, to the end of which is secured a rod, M, extending to the lifter G, by which means the pawl I is raised and dropped at each stroke of the lever, thereby moving the log-beam either forward or

backward, as the operator may desire, by simply reversing the action of the handle L.

In order to prevent the weight of the log from pushing the log-beam back after it is drawn up toward the saw to the proper distance, and to hold it rigidly there, I have provided another drop-pawl and case on the back side of the dial-plate, similar to the one in front, but operated differently. This pawl is indicated by J, and is held in a rigid case, *e'*, which is bolted on the dial-plate B. The pawl J is beveled on one side of its lower end, so as to slide over the cogs of the wheel C when the log-beam is pulled forward, and is straight on the other side, so as to drop immediately into the cog as it passes and hold it securely when stopped. In order to raise this pawl J to move the log-beam back to the back side of the carriage to receive another log, a lever, F, is provided, which needs only to be moved a little upward and to one side until the stop-pin *h* on the end of the lifter H escapes from the hole *f* in the lever which raises the lifter H, and this, in turn, raises the pawl J clear of the cogs. Then the ratchet-wheel may be revolved freely either backward or forward, as desired, either by means of the handle L or by a crank, X, on the wheel W, acting through the bevel-wheels U and V, as may be desired.

In order to prevent the drop-dog *i* from turning round on the post *l*, so as to accidentally strike the saw in gigging back the carriage after the last plank has been sawed, I have sloped the end of the collar *j* and the under side of the dog *i*, as shown at *k'*, so that when the dog *i* is let down on the collar *j* it will not strike the saw. There may be two or more of these dogs used.

In Fig. 6, *a* shows the stationary or rigid support on the log-beam with a movable slide, *b*, which works between the two sides of the support *a*. This slide *b* has a series of cogs on its end extending back between the sides of the frame *a*. A worm, *d*, is secured in such position as to properly gear into the cogs of the rack extending back from the slide *b*. This worm is revolved by a crank, *e*, through the shaft *p*, which causes said slide *b* to advance or recede, as may be desired. The slide is used in adjusting the log properly for sawing. There may be one, two, or more of these slide-rests used, as may be necessary.

In Fig. 7, *g g* are conical or tapering journals for the roller under the carriage, and *h'* is the roller-box, of such shape as to precisely fit the tapering journal-rollers. This tapering of the journals prevents any side play of the rollers as the journals wear, because the journals, being tapering, cause the rollers always to keep in the center of the box. 1 is a yoke, which is attached to the shaft that passes through the cone-pulley 12. On each end of the cone-pulley shaft are disks 8, so placed as to form eccentrics. These disks move freely in circular cases 7 and 7, which are bolted securely to the sides of the frame. The handle 2 is bolted to the yoke 1, and so also is an arm,

3, which carries a pulley, 4. Now, if the handle 2 be raised or pushed forward, it will press the pulley 4 down on the backing-belt 10, and by tightening it will cause the carriage to move backward, while if the lever 2 be pulled back or depressed it will loosen the pressure of the pulley from the belt 10, and through the motion of the eccentrics will press the grooved or V-shaped pulley 6 tightly against the wheel 5, thereby moving the carriage forward. By this double eccentric the cone-pulley shaft is moved back and forth precisely alike at both ends, at the same time tightening the cone-pulley belt slightly when it is to be used for feeding the carriage forward and relieving it of this strain when gigging back the carriage. The arrangement of this lever 2 is such that it is within easy reach of the sawyer, so that he can operate the lever L for setting the log when the carriage is back, and at the same time hold on to the handle 2.

In order to hold the handle 2 in any position, I have provided a semicircular piece, 15, with cogs on its circumference, into which a pawl can engage or be relieved through a rod and lever at any time.

I am aware that a slide-rest in a knee to a head-block has been operated by a rack and pinion, a ratchet-wheel being on the same shaft with the pinion and propelled by a lever and pawl; but this I do not claim.

Having described my invention, what I claim is—

1. The combination, with the log-beam A and standard Q, carrying dial-plate B and indicator O, of the shaft T, having wheel C and pinion *n*, pointer-wheel N, graduated plate S, and suitable connecting levers or rods having pawls for operating the wheel C in setting the log, substantially as shown and described.

2. The combination, with the standard Q and wheel C, of the drop-pawls I J and their lifters G H, arranged on opposite sides of the pointer-wheel N, and operated by levers F E, the latter being provided with a connecting-rod, M, sleeve K, and handle L, for the purpose of operating the log-beam in setting the carriage, substantially as set forth.

3. The combination, with the log-beam F, of the slide-rest standard *a*, having slide *b*, worm *d*, and crank *e*, constructed and arranged as specified.

4. The combination, with the double eccentric 8 and grooved pulley 6 on the shaft of the cone-pulley 12, of the yoke 1, having handle 2, and arm 3, carrying pulley 4, all constructed and arranged for the purpose of controlling the feed of the carriage, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

C. A. HEGE.

Witnesses:

A. G. HOUGH,
R. A. SPAUGH.