

(No Model.)

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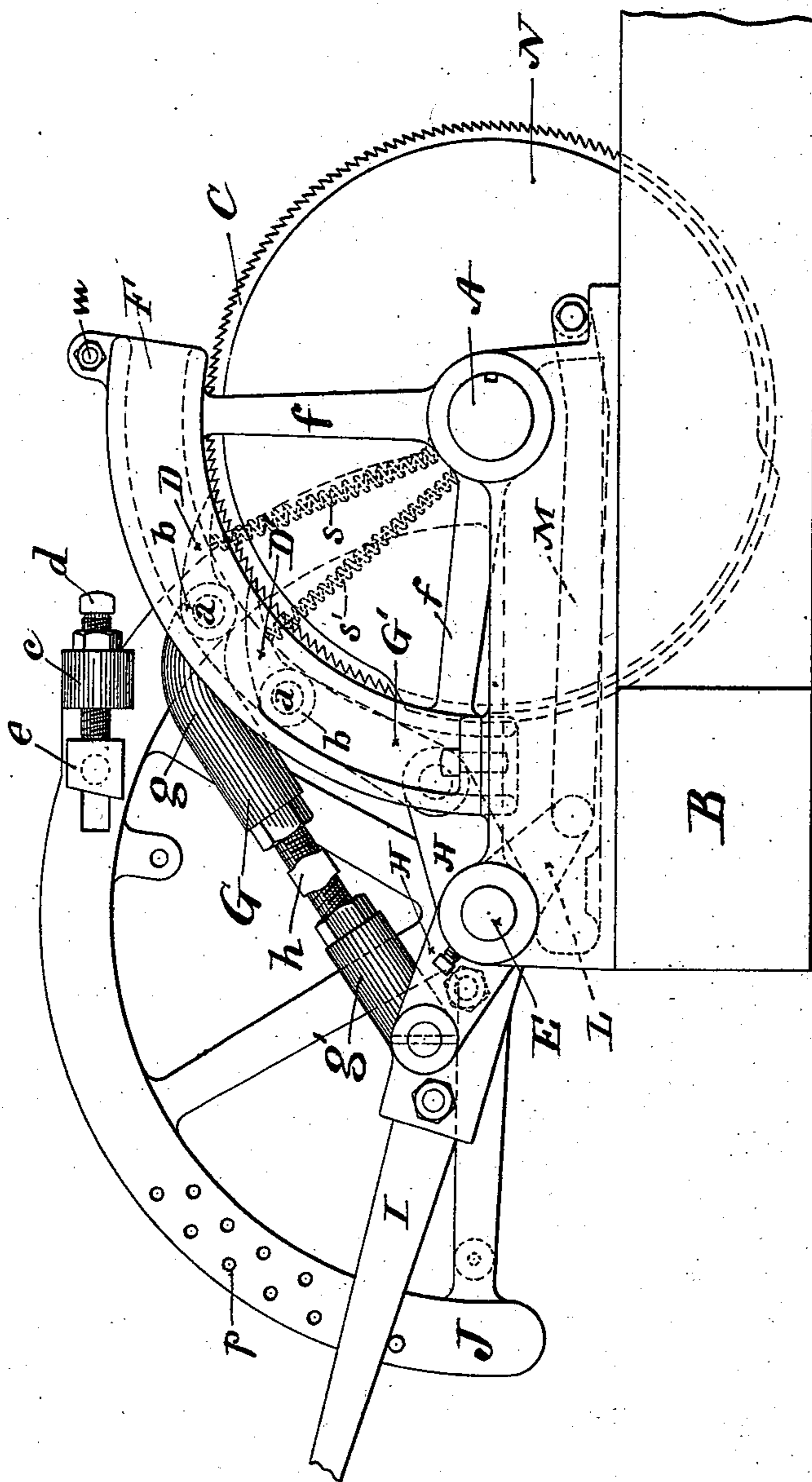
J. B. STANWOOD & P. P. LANE.

SAW MILL SET WORKS.

No. 379,998.

Patented Mar. 27, 1888.

Fig. 1.



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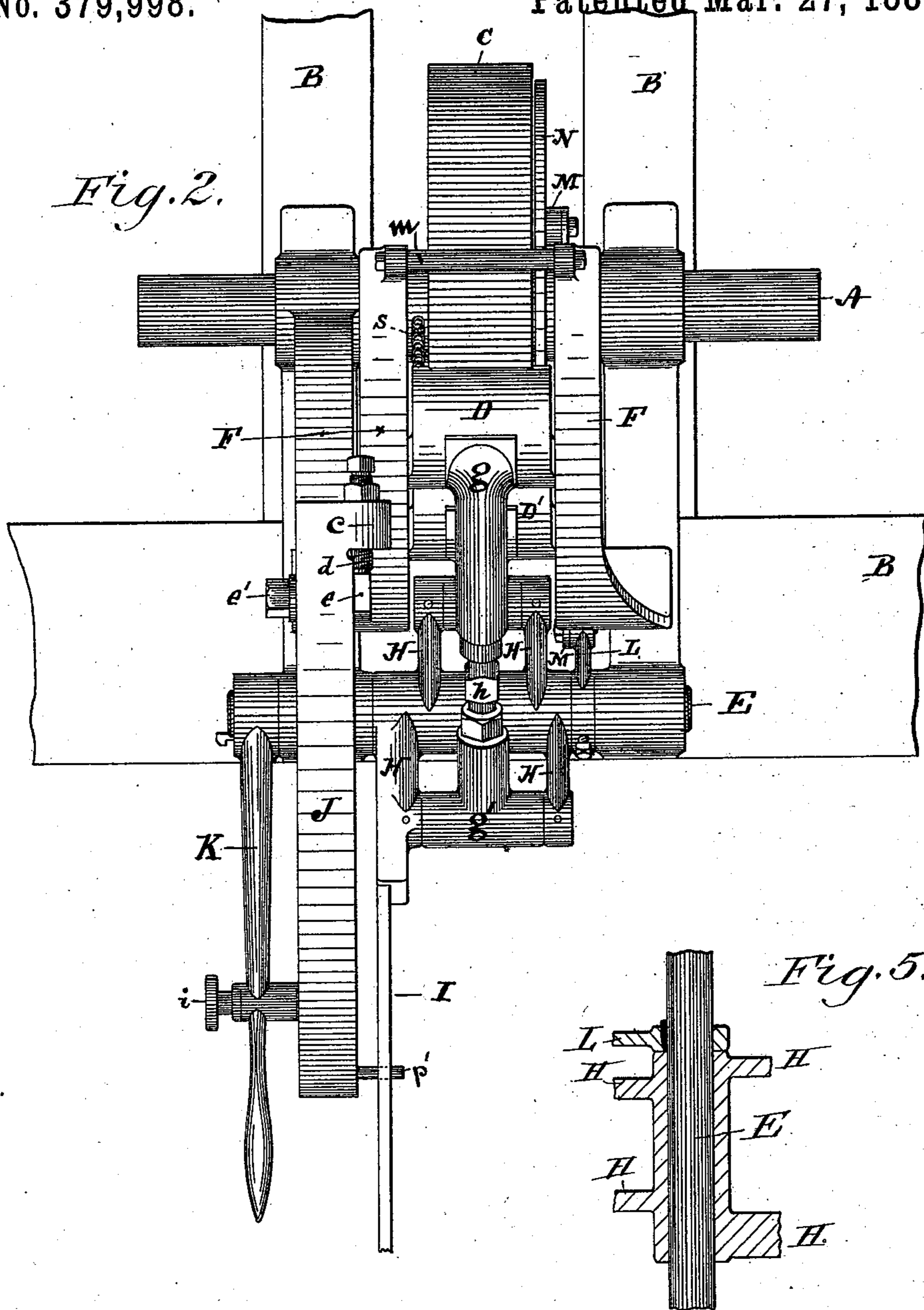
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SAW-MILL SET WORKS.

No. 379,998.

Patented Mar. 27, 1888.



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(No Model.)

3 Sheets—Sheet 3.

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SAW MILL SET WORKS.

No. 379,998.

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Fig. 3.

Fig. 4.

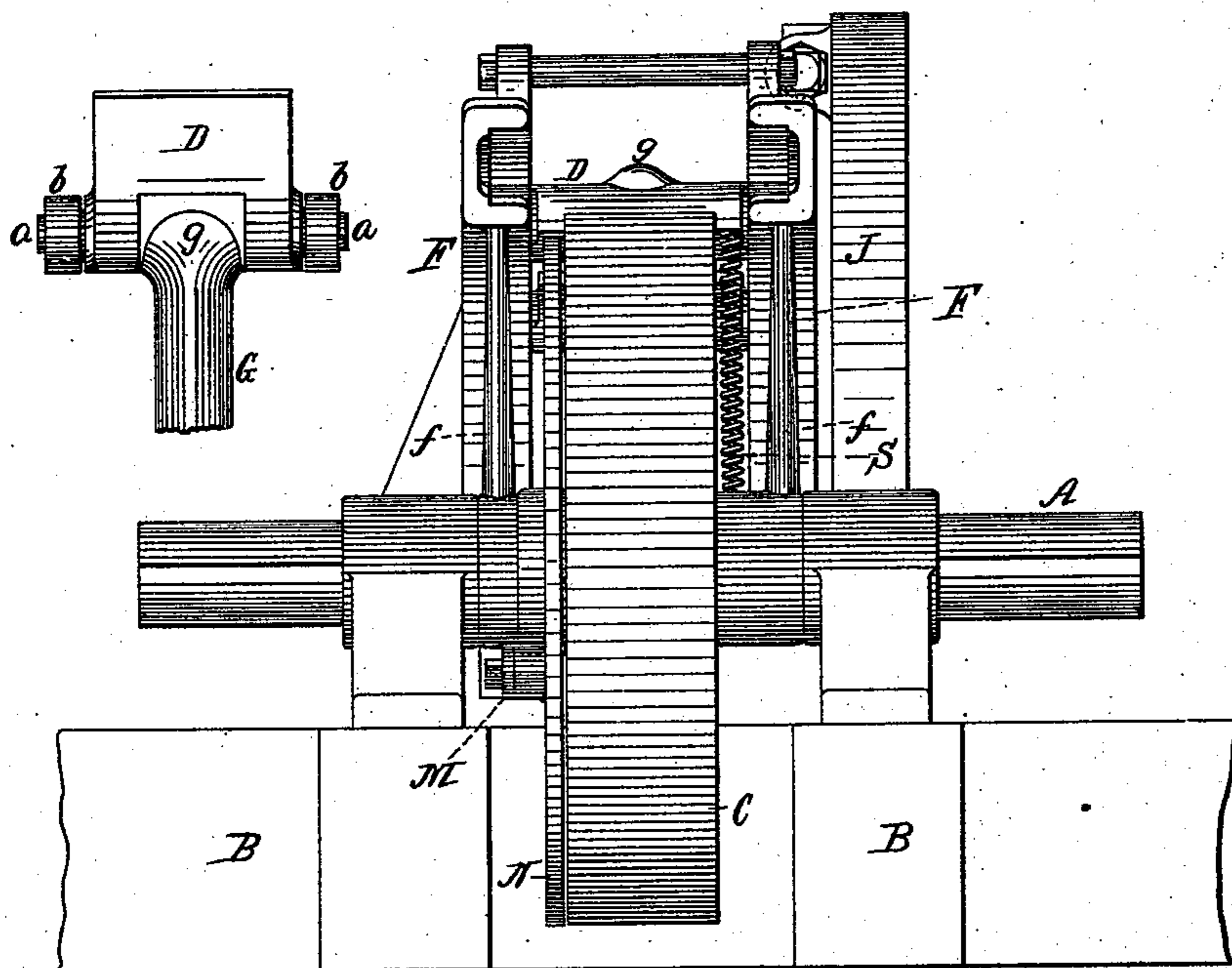
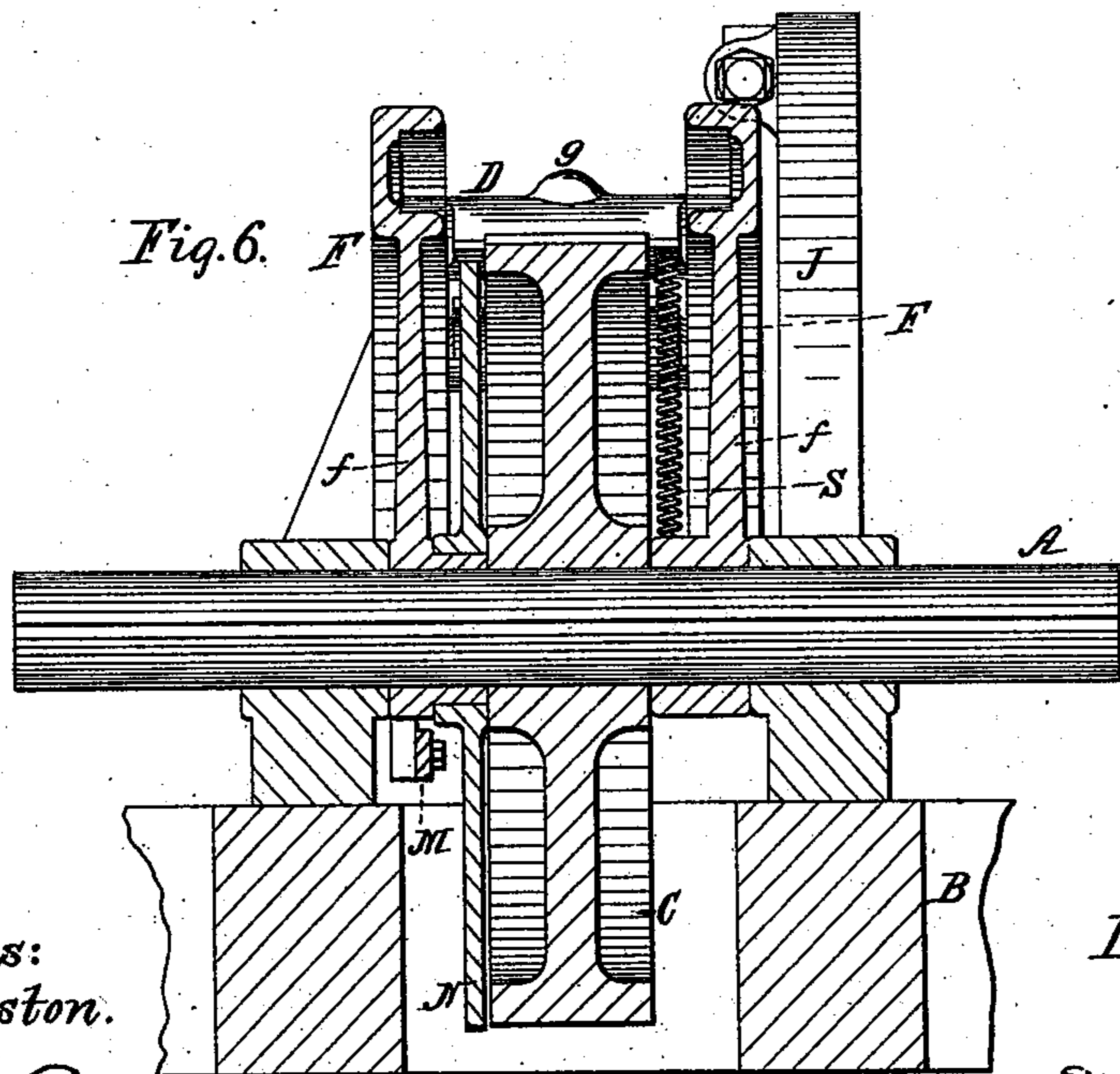


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES B. STANWOOD AND PHILANDER P. LANE, OF CINCINNATI, OHIO.

SAW-MILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 379,998, dated March 27, 1888.

Application filed December 24, 1886. Serial No. 222,508. (No model.)

To all whom it may concern:

Be it known that we, JAMES B. STANWOOD and PHILANDER P. LANE, citizens of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Saw-Mill Set-Works, of which the following is a specification.

Our invention relates to set-works for saw-mill head-blocks; and it consists in the construction and arrangement of a fixed guide-frame for the pawls concentric with the ratchet-wheel, and of the pawls and their actuating and relieving mechanism in connection therewith, all as more fully hereinafter described.

Mechanism embodying our invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of our improved set-works complete; Fig. 2, a plan view of same; Fig. 3, an end elevation of same; Fig. 4, a detail view of one of the pawls and its immediate connecting parts; Fig. 5, a detail section showing the arrangement of the bell-crank for moving the pawls and the crank for operating the disengaging-cam upon the pivoted shaft, and Fig. 6 a vertical cross-section of the parts in the axial plane of the ratchet-wheel shaft.

Referring now to the drawings, in which the parts herein referred to are designated by letters of reference, A indicates the shaft by whose rotation (and the ordinary rack-and-pinion gear not shown) the saw-mill head blocks or knees are advanced and receded. The shaft A is mounted upon bearings secured upon the framing-timbers B, and is provided with the usual ratchet-pinion, C, by which the shaft is rotated and the knees advanced.

The pawls D D' are operated from a counter-shaft, E, held in bearings parallel with the shaft A by the following mechanism: At the sides of and concentric with the ratchet-wheel C are arranged two arc-shaped guides, F F, secured rigidly upon the framing by a base-flange and radial supports f, centering with the shaft A. The pawls D D' are pivotally hung upon carriers constituting part of the links G G', (presently to be described.) The carriers are laterally-projecting studs a, which, with friction-rolls b thereon, extend into and engage with the guides F at either side, and

the general motion of the pawls is thereby made concentric with the ratchet-wheel C. The alternate action of the pawls D D' is given by connecting the links G G' with the terminal wrists of a bell-crank lever, H H, centered and carried as a sleeve loosely upon the shaft E, as indicated in Fig. 5, and actuated by a hand-lever, I, in the usual manner. The hand-lever I moves against or in proximity to a rack-bar, J, secured upon the framing concentrically with the shaft E and provided with perforations p, wherein pins p' are placed, as required, to form back-stops for the lever-movement. At the side of the rack-bar J a lug, c, is formed, in which a suitably-threaded set-screw, d, is adjustably held, carrying a block, e, constituting the forward stop for the lever-movement. The object of this adjustability will be more apparent in connection with the constructive features of the link G. This link is made in two parts, g (constituting one of the pawl-carriers) and g', the latter forming the pivotal connection with the bell-crank H H. The two parts g g' are threaded in the same axial line upon an interposed right-and-left screw, h, by the rotation of which the length of the link G may be changed at pleasure. The stop e is provided with a lateral extension carried through a slot in the rack-bar and threaded for retaining a set-nut, e', for secure holding. The corresponding link, G', moving the second pawl, D', is constructed as a single piece with lateral stud projections constituting its pawl-carrier, but without the described features of adjustment; and in order to secure a perfect interaction of the parts where, in case of wear or lost motion, the lengthening of the link G is necessary, the stop e is to be receded, if required, far enough to allow the pawl D' to be carried to the proper point to drop behind its rack-tooth upon the ratchet-wheel C. This adjustment is far more convenient of reach and manipulation than would be an independent lengthening adjustment of the link G', owing to the necessary position of the latter behind the link G and between the guides. In practice we provide the pawls D D' with retractile springs s s', to insure their proper seating; but these are not absolutely essential.

The pawl-releasing mechanism is as follows:

The shaft E is extended beyond its bearing at one side and carries fixedly at its end a hand-lever, K, moving against the outside of the rack-bar J and provided with a latch of any convenient construction—such, for example, as the stud *i*, held by a spring surrounding it within its holding-aperture in the lever. Near the other end of the shaft E, inside of its bearing, is rigidly fixed a short crank, L, operating by means of a pivoted link, M, a cam-disk, N, loosely pivoted upon the shaft A alongside of the ratchet-wheel C. The pawls D D', being somewhat wider than the face of the ratchet-wheel C, project over into the plane of the cam-disk N, and as the latter is rotated by the lever and the crank-connections described, the enlargement or cam-surface of the disk is brought under the pawls, lifting them out of engagement with the ratchet-wheel, for the time being, to allow the knees to be receded.

One of the special advantages of the latter construction is that by giving the shaft E the double function of serving as a pivot for the bell-crank H, and also as the counter-shaft for operating the cam N, the operating-levers of both are brought into juxtaposition for the convenience of the operator, and the machine rendered compact and economical.

The fixed guides F are secured together and further steadied by a connecting-brace, *m*, at their upper and outer terminals, so as to constitute a practically homogeneous and rigid structure.

We claim as our invention, and desire to secure by Letters Patent of the United States—

1. The set-shaft and a single ratchet-wheel secured thereon, in combination with fixed guides arranged on each side of said wheel wholly above the horizontal plane of its axis and concentric therewith, two pawl-carriers moving in said guides above the axial plane of the wheel, with pawls resting by gravity on its toothed periphery, and mechanism, substantially as described, for moving said pawls

simultaneously in opposite directions, said pawls both actuating the ratchet by thrust engagement, substantially as set forth.

2. In saw-mill set-works of the character described, embodying the set-shaft, ratchet-wheel, and pawls carried in independent concentric guides, the guide-frame constructed with parallel grooves facing each other and constituting interior guiding-surfaces, in combination with pawl-moving links provided with lateral studs projecting into said guide-grooves and constituting the carriers, and pawls pivotally engaged upon said studs, substantially as set forth.

3. In saw-mill set-works, the combination, with the ratchet-wheel, its pawls, and their operating-lever and cranks, of the integral link G', extensible link G, and the adjustable stop *e*, substantially as set forth.

4. The combination and arrangement of the ratchet-wheel C, pawl-guides F, pawls D D', and links G G', the double crank H, loosely centered upon the shaft E, and the cam-disk N, its connecting-rod M, and its crank L, fixed upon the shaft E adjacent to the double crank H, substantially as set forth.

5. In saw-mill set-works of the character described, the combination, with the ratchet-wheel, of the concentric guide-frame having interior opposite guiding-grooves, the pawl-links having studs projecting laterally into said grooves, pawls hung upon said studs as pivots, and friction-rollers carried upon the studs and operating in the grooves, substantially as set forth.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JAMES B. STANWOOD.
PHILANDER P. LANE.

Witnesses:

L. M. HOSEA,
C. D. KERR.