

(No Model.)

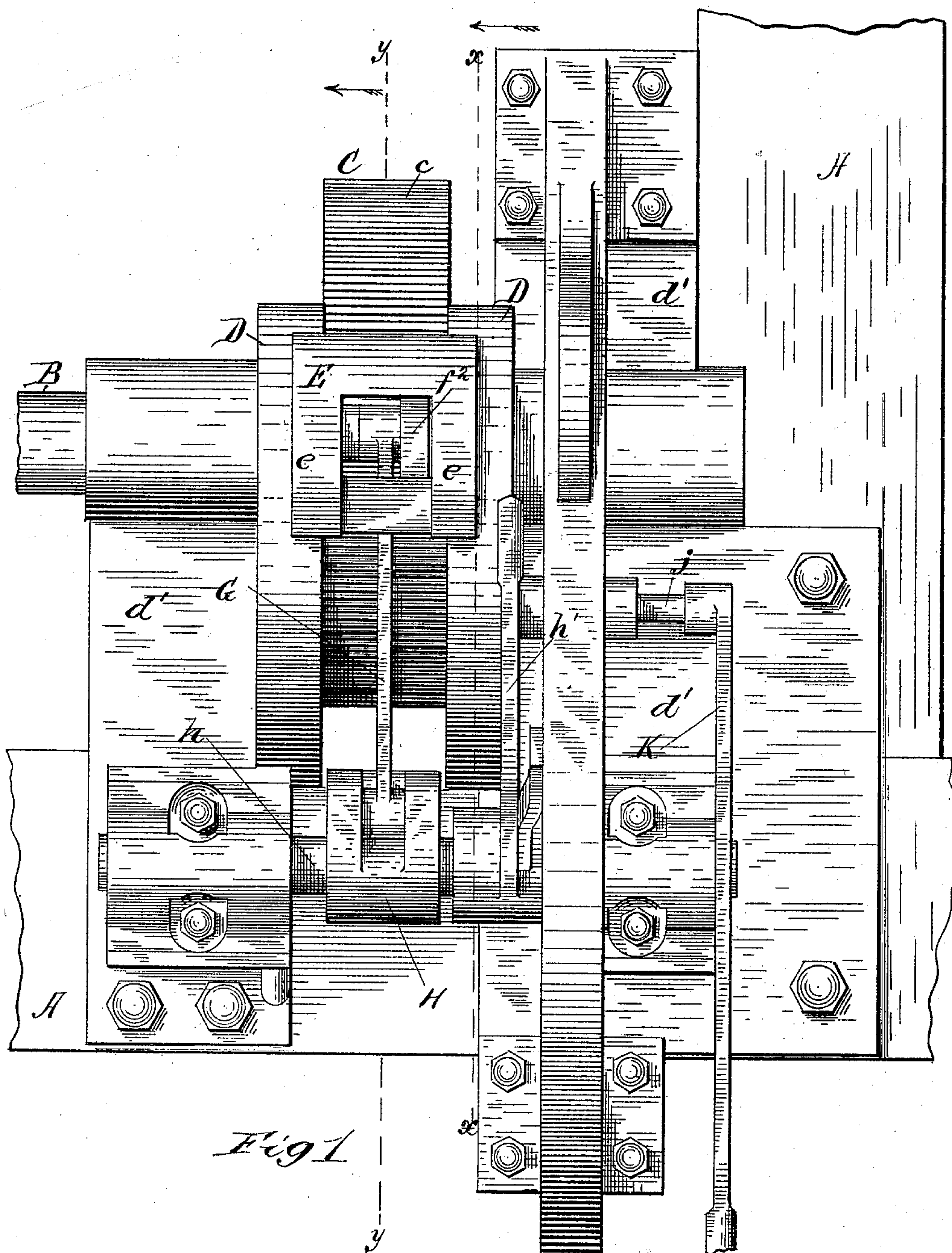
4 Sheets—Sheet 1.

DE WITT C. PRESCOTT.


SAW MILL SET WORKS.

No. 368,730.

Patented Aug. 23, 1887.



Witnesses  
W. C. Corlies  
Irene Miller.

 *Inventor*  
*DeWitt Clinton Prescott*  
*By Colburn & Thacher*  
*Attorneys*



(No Model.)

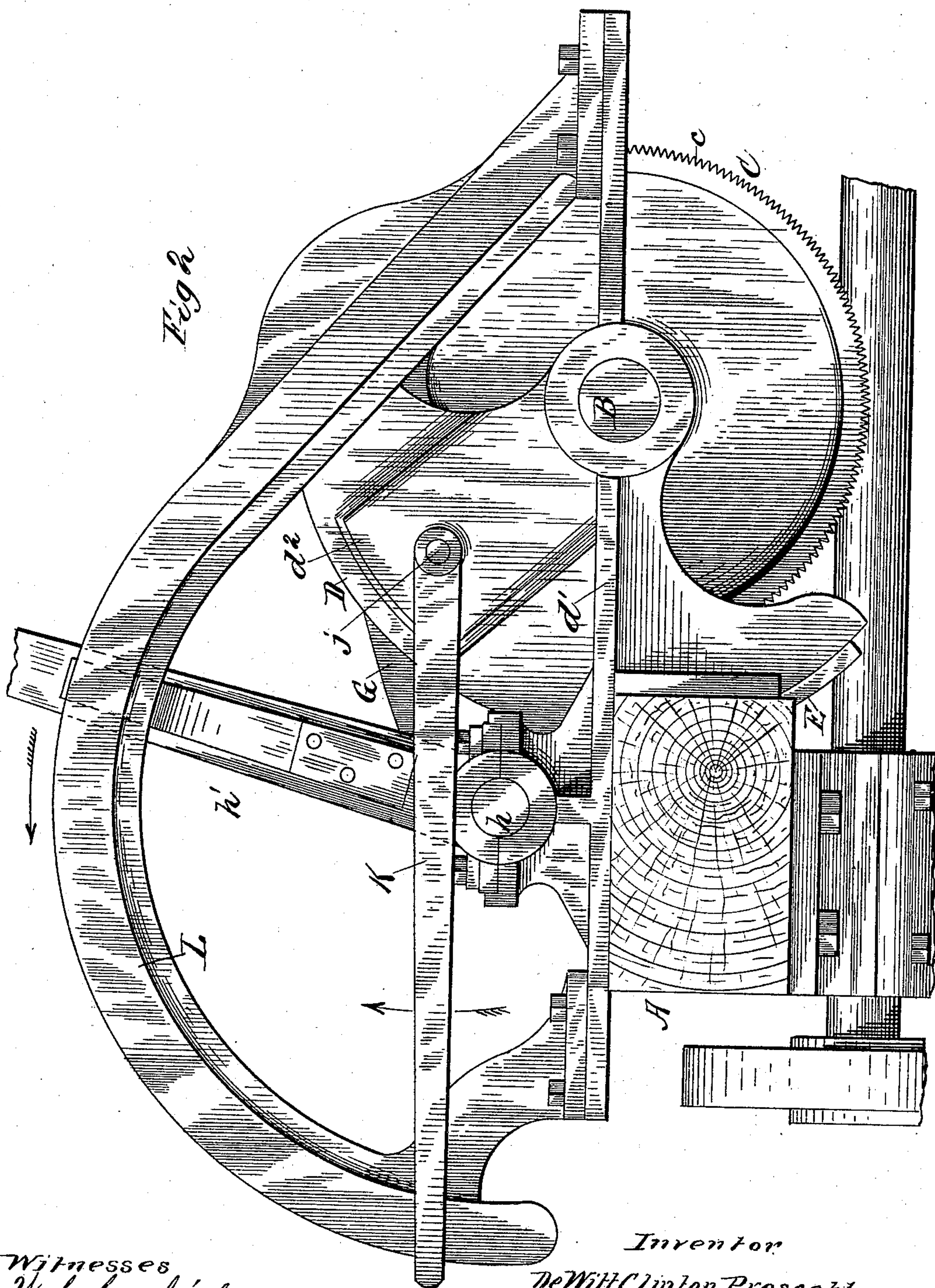
DE WITT C. PRESCOTT.

4 Sheets—Sheet 2.

SAW MILL SET WORKS.

No. 368,730.

Patented Aug. 23, 1887.



Witnesses  
W. C. Corlies  
Irvine Miller

Inventor  
DeWitt Clinton Prescott  
By Coburn & Thacher  
Attorneys



(No Model.)

4 Sheets—Sheet 3.

DE WITT C. PRESCOTT.

SAW MILL SET WORKS.

No. 368,730.

Patented Aug. 23. 1887.

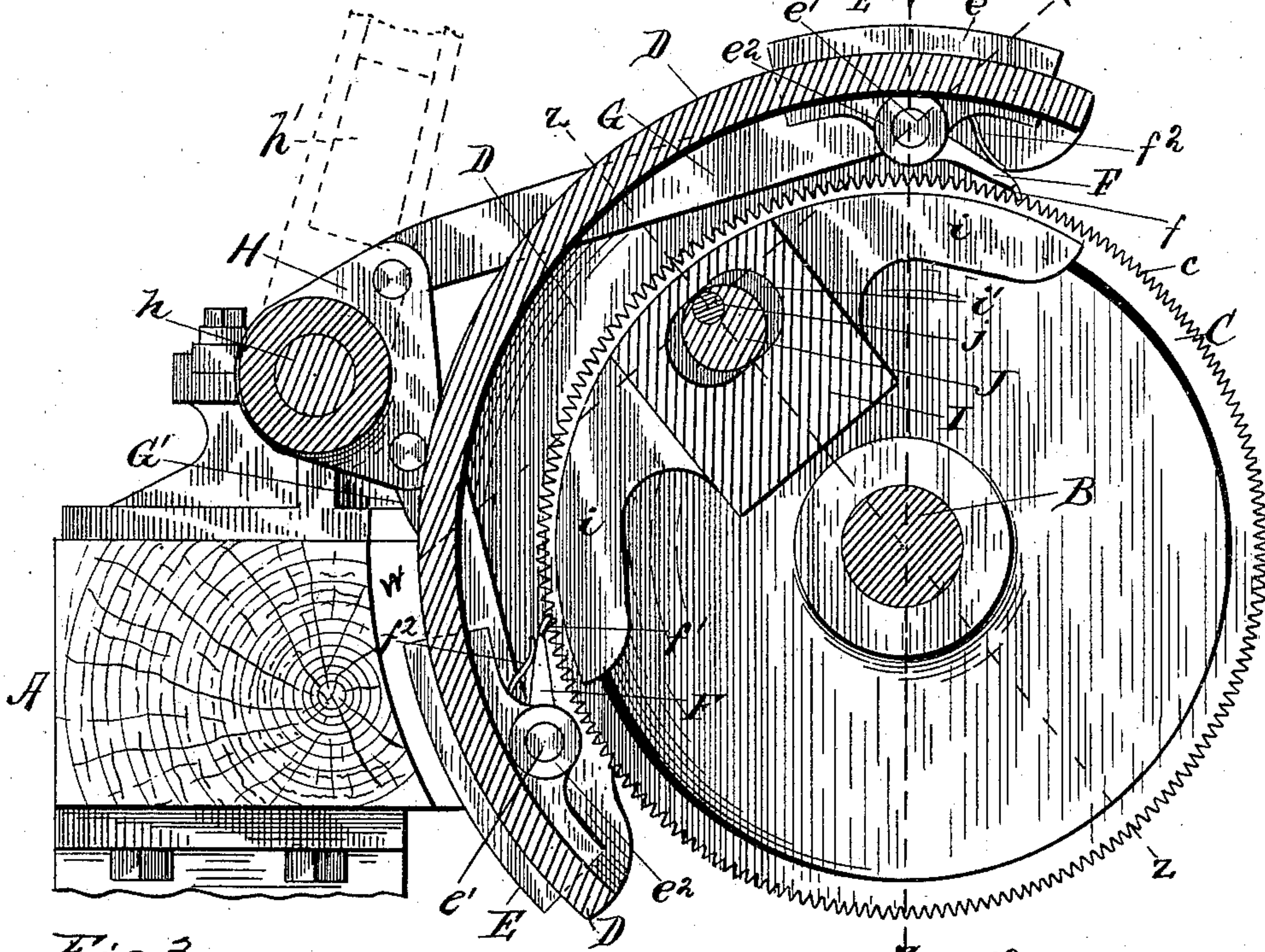


Fig 3

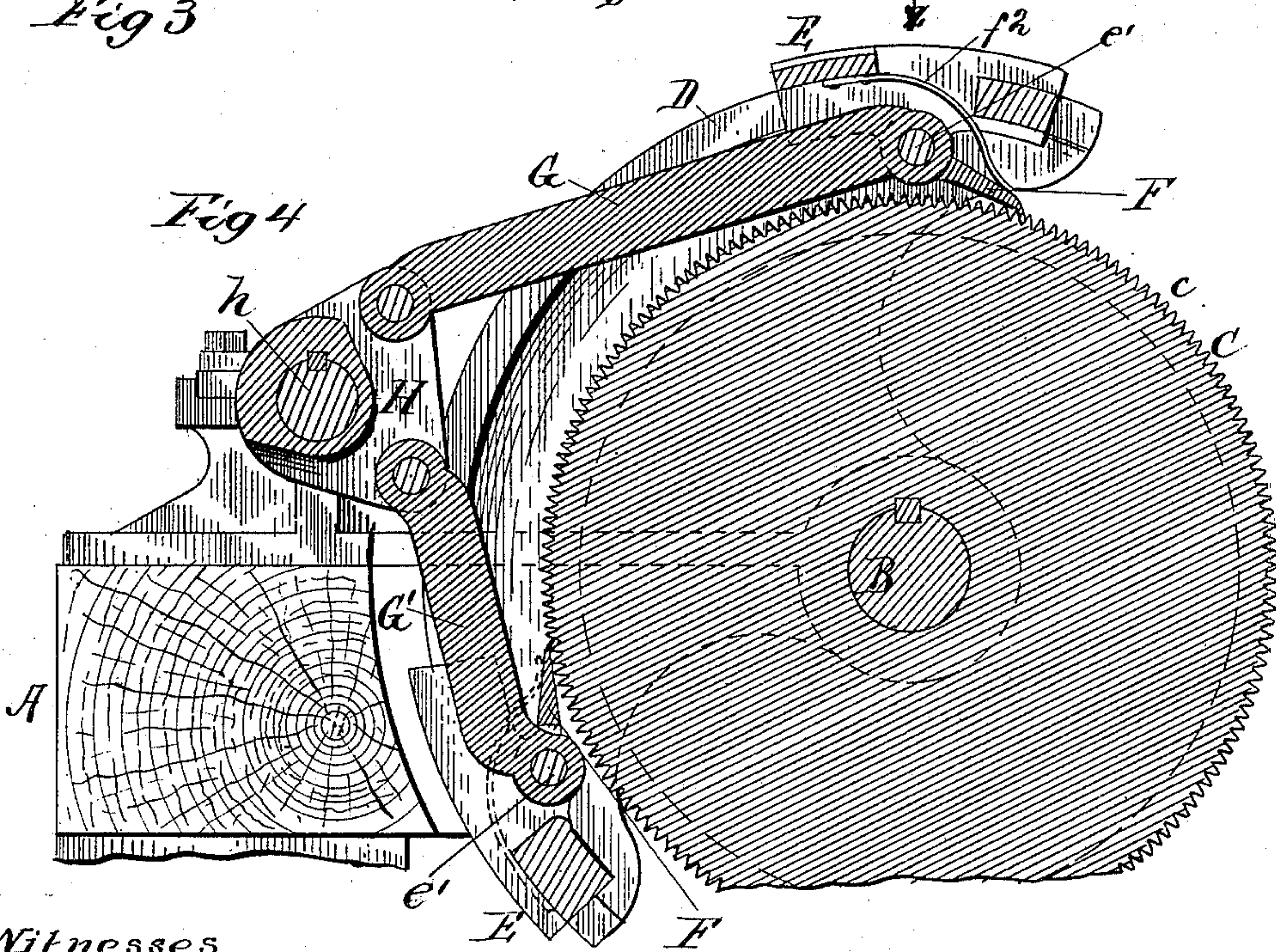


Fig 4

Witnesses  
W. C. Corlies.  
Irene Miller.

Inventor  
DeWitt Clinton Prescott  
By *Coburn & Thacher*  
Attorneys



(No Model.)

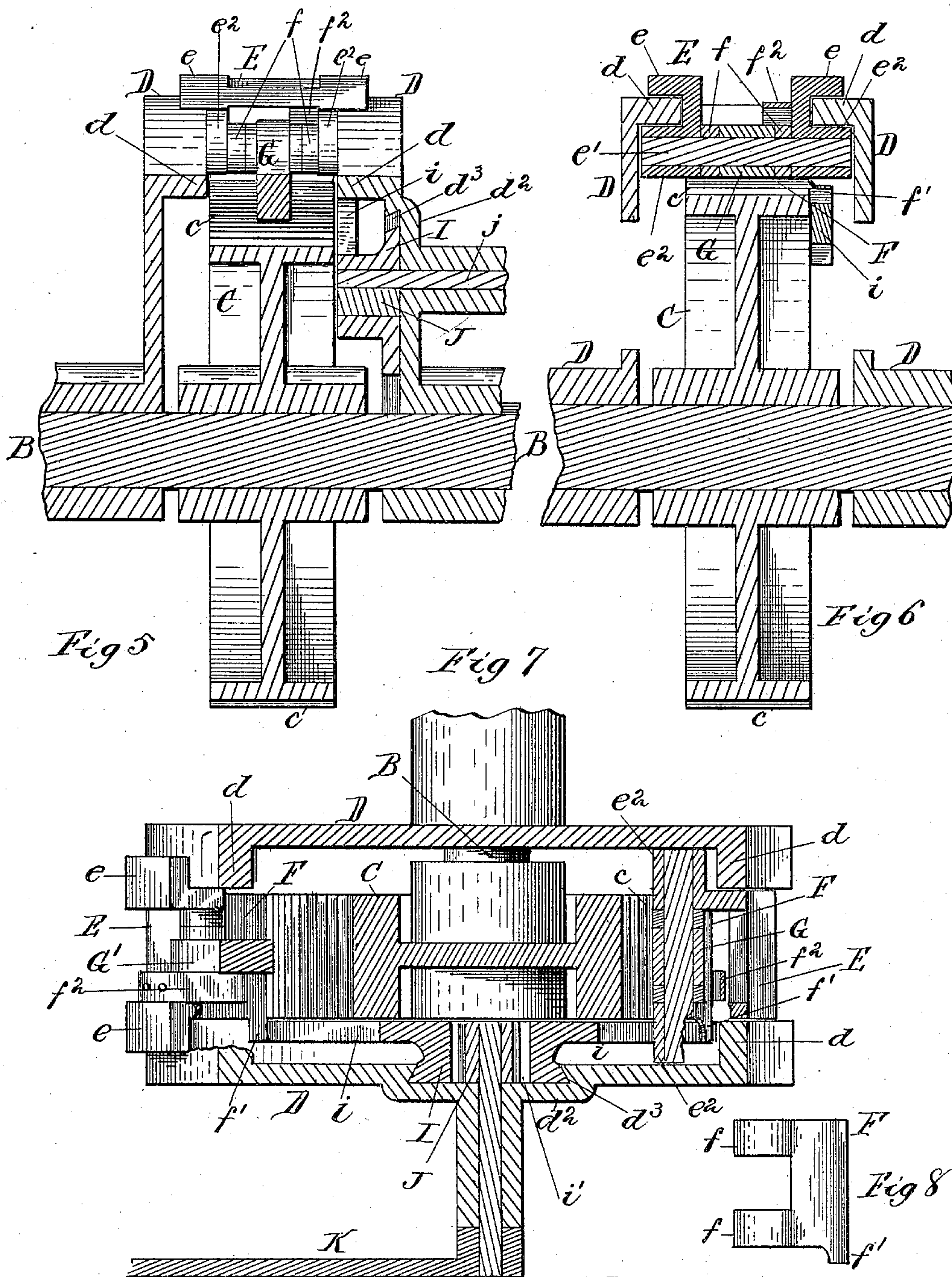
4 Sheets—Sheet 4.

DE WITT C. PRESCOTT.

SAW MILL SET WORKS.

No. 368,730.

Patented Aug. 23, 1887.



*Witnesses*

Ab. Corlies  
Louise Miller

*Inventor*

J De Witt Clinton Prescottt

By *Coburn & Thacher*  
Attorneys



# UNITED STATES PATENT OFFICE.

DE WITT CLINTON PRESCOTT, OF MARINETTE, WISCONSIN.

## SAW-MILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 368,730, dated August 23, 1887.

Application filed August 2, 1886. Serial No. 209,797. (No model.)

*To all whom it may concern:*

Be it known that I, DE WITT CLINTON PRESCOTT, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented certain new and useful Improvements in Saw-Mill Set-Works, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a portion of a log-carriage provided with set-works embodying my improvements; Fig. 2, an elevation of the same; Fig. 3, a section of the same, taken on the line *xx*, Fig. 1; Fig. 4, a similar section of the same, taken on the line *yy*, Fig. 1; Fig. 5, a section taken on the line *zz*, Fig. 3; Fig. 6, a section taken on the line *vv*, Fig. 3; Fig. 7, a plan section taken on the line *ww*, Fig. 3; and Fig. 8, a plan view of one of the pawls detached.

My invention relates to setting mechanism for saw-mills, by which the knees or standards which hold the log in line with the saw are adjusted laterally after each cut for the purpose of moving the log into proper position for the new cut. In a general way the mechanism is the same as shown in Letters Patent heretofore granted to me, No. 310,848, January 13, 1885, and No. 257,757, May 9, 1882, and the present invention may be regarded as an improvement upon the set-works shown in the said patents.

The object of the present invention is to simplify the construction by using only one ratchet-wheel, and the improvements relate to devices by means of which this plan of mechanism is made available and practical.

I will proceed to describe in detail a setting mechanism in which I have practically embodied my invention in one way, and will then point out definitely in the claims the particular improvements which I believe to be new and wish to protect by Letters Patent.

In the drawings, A represents a portion of the carriage, which is of ordinary construction, and is provided with head-blocks and knees, substantially as shown and described in my prior patent, No. 310,848. The set-shaft B is also arranged substantially as in said patent, and is constructed to operate substantially as therein described. A single ratchet-wheel, C, is fastened to this shaft, being pro-

vided with teeth *c* upon its periphery, whereby it is turned by pawls to rotate the shaft for the purpose of setting up the carriage. On each side of this wheel is a bracket or shell, D, which is of circular form, and extending nearly half-way around the wheel, commencing at a point above the latter and extending down between it and the adjacent side sill of the carriage, as shown in Figs. 2 and 3 of the drawings. These shells are of somewhat greater diameter than the wheels, and are provided at the periphery with a lip or flange, *d*, projecting inward at right angles toward the wheel, as shown in Fig. 6 of the drawings. The shells are attached to or cast in one piece with bracket-supports *d'*, which are fastened at their outer ends to the carriage-sill, and at their inner ends are supported by the set-shaft, which passes loosely through them, they being provided at this point with hubs or bosses, through which the said shaft passes and from which spring the shells above mentioned.

The pawl-carriers E are wide pieces of metal and of curved form, adapted to fit between the shells just within the flanges of the latter. These flanges on the two shells are embraced by suitable right-angled lips or flanges, *e*, rising from the surface of the pawl-carriers, so that the latter will be held upon and guided by the flanges of the shells, on which they are free to be moved back and forth. The pawls F are of suitable form to engage with the teeth of the ratchet-wheel, and are nearly or quite as wide as the ratchet-wheel. The back of each pawl is forked or cut out centrally, so as to present lugs or projections *f* on each side, as shown in Fig. 8 of the drawings. The pawls are pivoted to the carriers by means of these lugs, through which a pivot-pin, *e'*, passes, which is inserted through ears *e''* at the under side of the pawl-carriers, about midway of the latter, and the carriers are cut away centrally to accommodate the attachment of the pawls and other parts, as shown in Fig. 1 of the drawings. The pawls are also provided with a projection, *f'*, extending out laterally from one side thereof, as shown in Fig. 8 of the drawings. There are two pawl-carriers—one at the upper and the other at the lower end of the shells, as shown in Figs. 3 and 4 of the drawings—and each has a single pawl hinged



thereto, which is arranged to extend forward from its respective carrier, as seen in the same figures, so as to be operative in the same direction. A bent spring,  $f^2$ , is fastened at one end to the rear cross-beam of each pawl-carrier and its other end is depressed, so as to rest upon the pawl, thereby holding it in engagement with the ratchet-wheel.

Pitmen G and G' are pivoted, respectively, to the pawl-carriers, being arranged on the pivot-pins  $e'$  between the forks of the pawls. The other ends of these pitmen are pivoted to a vibrating plate, H. This plate is of triangular shape, and is arranged in a vertical plane, being fastened to a rock-shaft,  $h$ , mounted in bearings on the sill of the carriage in front of the ratchet-wheel. The plate is arranged with one of its nearly-straight edges toward the wheel, and the pitmen are pivoted to the respective corners, the upper one, G, being connected to the upper corner, and the lower one, G', to the lower corner, as seen in Figs. 3 and 4 of the drawings.

A hand-lever,  $h'$ , is also fastened to the rock-shaft  $h$ , by means of which the latter is oscillated to vibrate the plate. The arrangement of the pitman-plate with reference to the ratchet-wheel is such that the upper pitman extends out in a nearly horizontal direction therefrom, working over the top of the wheel, while the lower pitman depends from the plate in a direction nearly at right angles to the upper one, and works up and down in front of the wheel.

Now, it is evident from the construction and arrangement of these devices, just described above and shown in Figs. 3 and 4 of the drawings, that when the rock-shaft is oscillated forward it will throw the upper pitman forward, thereby turning the wheel by the action of the upper pawl; but this movement of the plate will thrust the lower pitman downward, thereby moving the lower pawl back over the ratchet-wheel. The backward or reverse vibration of the plate will of course reverse the movement of the respective pitmen, the lower pawl now becoming operative to turn the ratchet-wheel, while the upper one is pulled backward over the teeth. It will be seen, then, that the oscillation of the rock-shaft by the hand-lever will always turn the ratchet-wheel forward, first one pawl, then the other, acting upon this single wheel.

The device by means of which the pitmen are connected to the rock-shaft need not be a plate necessarily. Arms arranged at the proper angle to each other, or any other suitable device whereby the pitmen may be connected to the rock-shaft in proper relation to produce the movements required and described above, will serve the purpose equally as well. One of the shells D is also provided with a boss,  $d^2$ , projecting out at one side, substantially rectangular in shape and arranged radially to the set-shaft. On the inside of this boss are dovetailed ways  $d^3$ , within which is seated a plate, I, the edges of which are beveled to correspond to

these ways. This plate I is thick enough to extend inward to the face of the ratchet-wheel, alongside of which it is carried out nearly to the periphery. It is provided with wings  $i$ , extending from each side edge thereof, and of circular form on their outer contour, to correspond with the wheel. These wings extend beyond the respective pawls and are arranged at the side of the wheel on which the lips or projections  $f'$  of the pawls are found. These lips project beyond the periphery of the wheel, and obviously the wings of the plate I will come underneath or just within them. Now, as the plate I is reciprocated upon its ways, it is evident that the outward movement will bring the wings into contact with the pawls, and so lift them from engagement with the wheel, while the inward movement will permit them to engage again with the wheel under the influence of their springs. The plate I therefore becomes a pawl-lifter for disengaging the pawls from the ratchet-wheel whenever desired. A circular opening,  $i'$ , is made through the body of the plate I, and is elongated somewhat laterally, as shown in Fig. 3 of the drawings. Within this opening is arranged a cam or eccentric, J, the stem  $j$  of which extends outward through the shell, which is constructed with a hub-bearing for the latter, as shown in Fig. 7 of the drawings. On the outer end of the stem is a lever, K, by means of which the eccentric may be oscillated, thereby reciprocating the pawl-lifter to lift the pawls from the wheel or permit them to engage therewith, as may be desired. A graduated quadrant, L, is mounted on the carriage at one side of the wheel, and so that the actuating-lever of the pawls will move along by it in the usual way and for the usual purpose.

It is obvious that the ratchet-wheel may be set forward with each vibration of the lever, thereby turning the set-shaft so as to set up the carriage in the usual manner, and this movement may be graduated to any required degree of fineness by the scale on the quadrant. This mechanism is much simpler than that described and shown in either of my prior patents mentioned above. There is only one ratchet-wheel and one set of pawls and pawl-carriers, which are connected to a single lever; but at the same time I am enabled, with this simple device, to effect the proper setting of the carriage and with such precision and fineness as are necessary for practical purposes.

I do not wish to be understood as limiting myself in all particulars to the precise details of construction as herein described and shown, for mechanical changes may be made without departing from the main ideas of my invention, and different devices may be substituted for some of those here described. I have shown and described a very satisfactory working device for lifting the pawls from the ratchet-wheel; but some other means may be employed for this purpose without in any way affecting the operation of the other parts. I mention this simply as an illustration of the changes



which may be made in the mechanism without departing from the main features of my improvement.

5 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

10 1. The set-shaft, in combination with a ratchet-wheel secured thereon, the fixed shells arranged on each side of the wheel and forming fixed ways to receive the pawl-carriers, and the reciprocating pawl-carriers mounted on said shells or ways, substantially as and for the purposes specified.

15 2. The set-shaft and a single ratchet-wheel secured thereon, in combination with the fixed shells arranged on each side of the wheel and forming ways to receive the pawl-carriers, the reciprocating pawl-carriers mounted on said shells or ways, pawls attached to the carriers and arranged to engage with the ratchet-wheel in the same direction, and mechanism for reciprocating the pawl-carriers simultaneously in opposite directions, substantially as and for the purposes specified.

20 25 3. The ratchet-wheel C', in combination with the fixed shells D, arranged on each side thereof and provided with inwardly-extending flanges *d*, and the reciprocating pawl-carriers E, arranged within the shells D and provided

with flanges *e*, extending outward over the flanges *d* of the shells, substantially as and for the purposes specified. 30

4. The ratchet-wheel, in combination with the separate fixed shells to receive the pawl-carriers, the pawl-carriers E, cut away centrally, as described, to receive the pawls, and the pawls F, pivoted to the carriers and arranged within the cut-away portion, substantially as and for the purposes specified. 35

5. The set-shaft B, in combination with the single ratchet-wheel C thereon, the fixed shells D, to guide the pawl-carriers, the pawl-carriers E, mounted on said shells, the pawls F, the pitmen G and G', and the rock-shaft *h*, and triangular plate H, substantially as and for the purposes specified. 40 45

6. The ratchet-wheel, in combination with the shell D, provided with ways *d*<sup>3</sup> upon its inside, the plate I, seated in said ways and provided with wings *i*, the eccentric J, mounted in the shell and arranged to work in an opening in the plate I, and the pawls F, provided with lateral projections *f*', substantially as and for the purposes set forth. 50

DE WITT CLINTON PRESCOTT.

Witnesses:

N. P. MARS,

JOHN J. ANDREW.