(No Model.) 2 Sheets—Sheet 1.

A. E. ROE & D. L. HARBACK.

SAW MILL SET WORKS.

No. 366,795. Patented July 19, 1887.

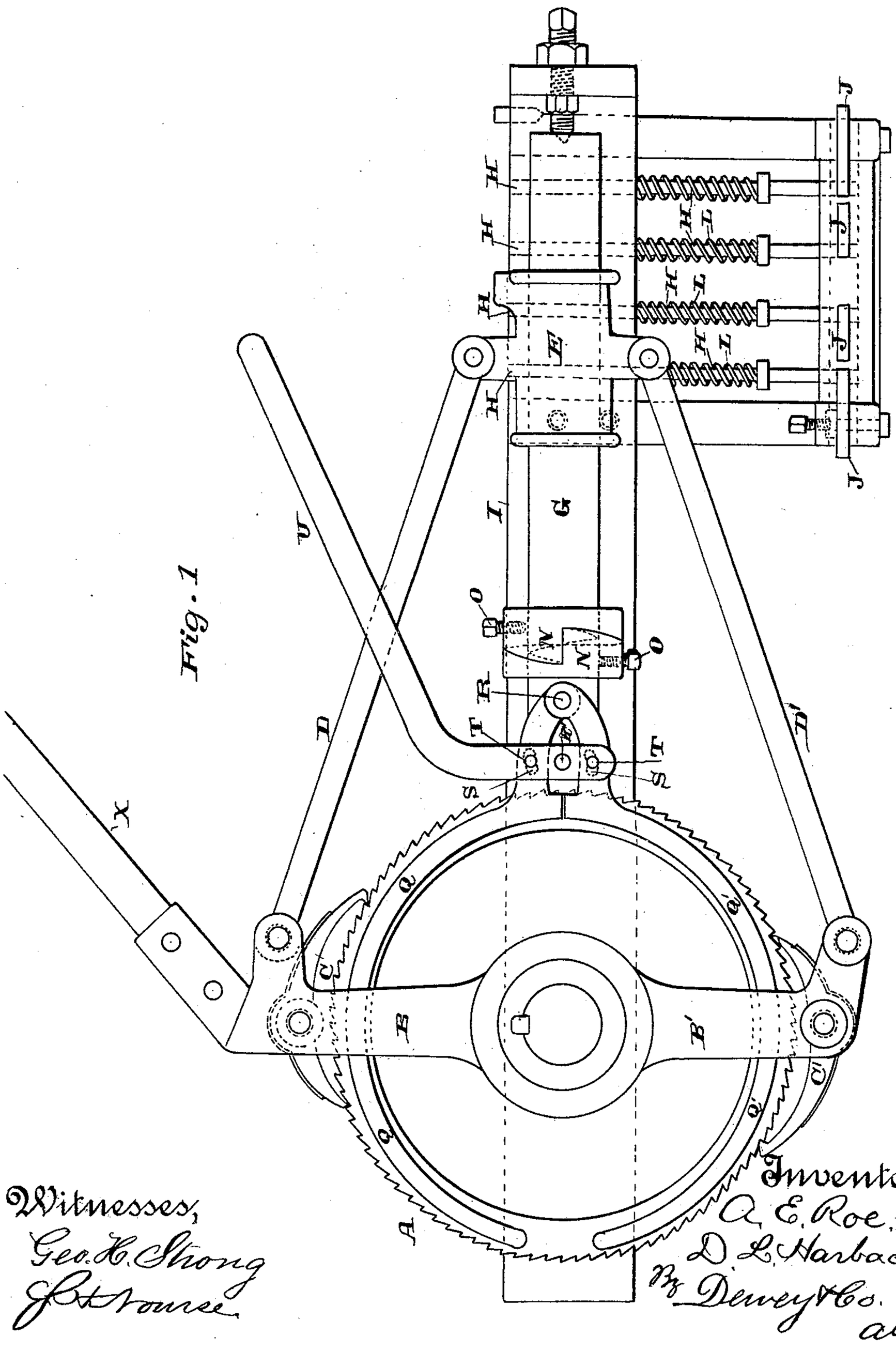

Fig. 1

Witnesses,
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Inventors,
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Attys

(No Model.) 2 Sheets—Sheet 2.

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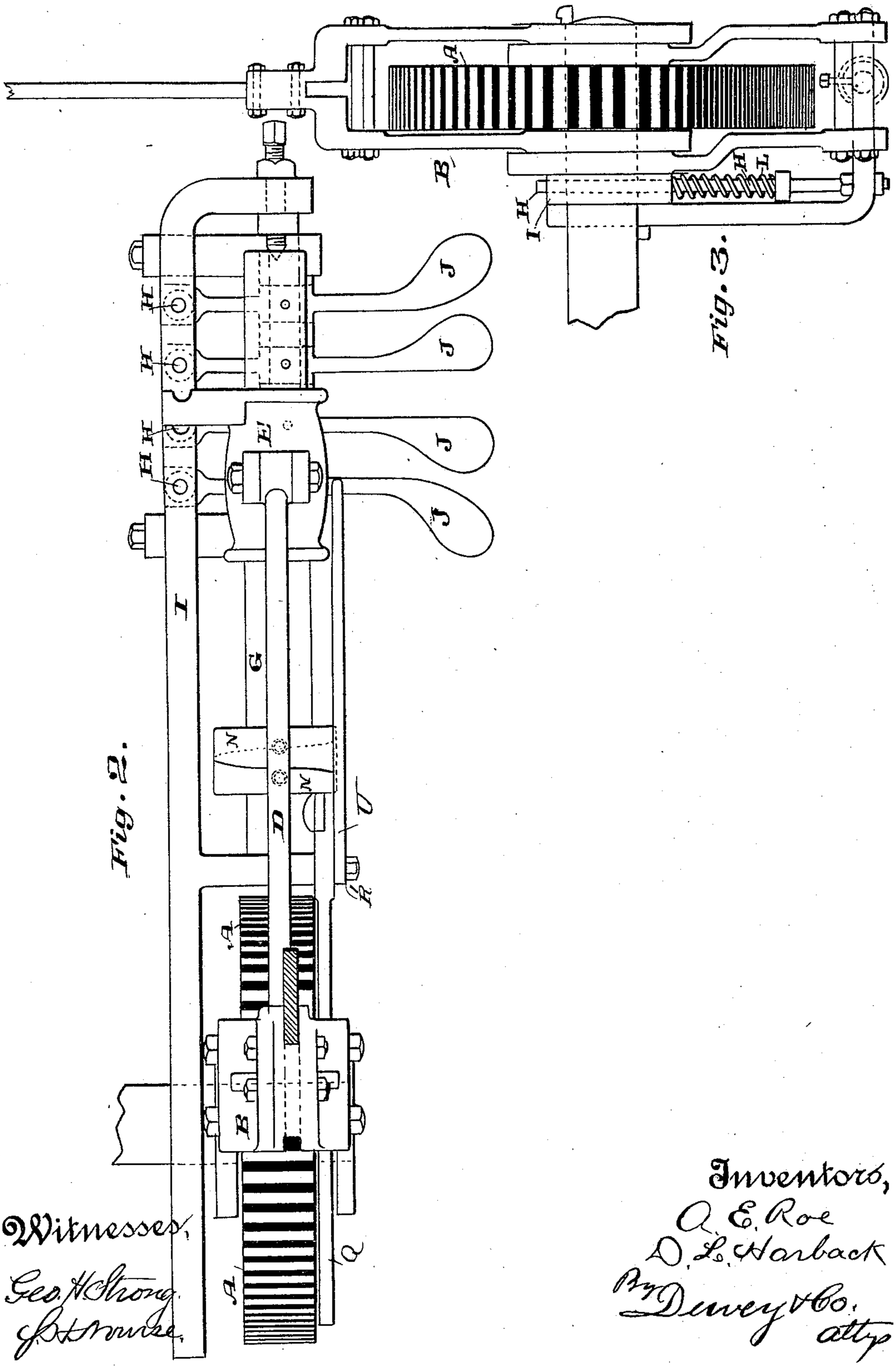

Fig. 2.

Fig. 3.

UNITED STATES PATENT OFFICE.

ALPHEUS E. ROE AND DANIEL L. HARBACK, OF SAN FRANCISCO, CALIFORNIA, ASSIGNORS TO TATUM & BOWEN, OF SAME PLACE.

SAW-MILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 366,795, dated July 19, 1887.

Application filed March 15, 1887. Serial No. 231,031. (No model.)

To all whom it may concern:

Be it known that we, ALPHEUS E. ROE and DANIEL L. HARBACK, of the city and county of San Francisco, State of California, have invented an Improvement in Saw-Mill Set-Works; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to certain improvements in saw-mill set-works, these improvements being especially based upon the patent issued to A. E. Roe, December 7, 1886.

Our present invention consists of an improved arrangement of the mechanism, the means for regulating the amount of cut in inches and fractional parts, and in certain details of construction, all of which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of our device. Fig. 2 is a plan of same, partly in section. Fig. 3 is an end view.

In the former application referred to a device was represented as standing in a vertical position. In our present invention it is placed in a horizontal position, which is more convenient and effective.

A is the ratchet-wheel keyed to the end of the head-block screw, or to an extension thereof.

B B′ are the pawl carriers or arms, upon which the pawls C C′ are fulcrumed. These pawls act alternately upon the ratchet-wheels when said arms are moved backward and forward, and the pawl-carriers have their bearings upon the screw-shank, so as to turn about it as a fulcrum.

X is the lever by which the pawls are moved, and D D′ are the links or arms which connect the arms B B′ with the yoke or slide E, which travels upon a guide, G. The operation of this portion of the apparatus does not differ materially from that described in the former patent; but in order to limit the movement of the slide E in one direction, we have shown a series of pins, H, which extend upward through the guide I, so that when either of these pins is raised to a certain point it will stand in the path of the slide E, and will stop it and prevent its moving farther in that direction. Each of these pins is connected with a foot-lever, J, by which it may be raised. Thus one of the pins may represent one-quarter, the next one-half, the next three-quarter inch, and so on, and when either of these pins is raised so as to stop the movement of the slide the rotation of the ratchet-wheel will advance the screw a corresponding amount at each movement of the lever X, thus moving the log or piece to be cut forward an equal amount.

Each of the pins has a spring, L, or is sufficiently weighted, which immediately forces it back as soon as the pressure on the foot-lever is relieved, so as to leave the space clear and allow the slide to move to a greater distance, when desired. At the opposite end of the stroke the slide is stopped by means of a double cam-ring, N, which is fixed upon the guide G, and is formed in two parts, as shown. The inner faces of these two parts, which come in contact with each other, are each made inclined or cam-shaped, so that when turned around upon the guide in one direction the inclines moving over each other will allow the parts to approach nearer together, and when moved in the opposite direction they will separate the parts.

Each portion has a set-screw, O, by which it may be locked upon the guide, and by moving the cam-ring N the distance which the slide is allowed to move in that direction will be limited, and consequently the motion of the ratchet-wheel and the feed-screw will be regulated thereby. This is a supplemental or auxiliary compensating device, which enables us to adjust the set mechanism for varying thicknesses of saws which may be used at different times, and also for smaller variations in the dimensions than the stop-pins will adjust for.

Q Q′ are two curved arms which follow the curve of the ratchet-wheel, their outer peripheries being just beneath the points of the pawls, so that when these arms are spread they will lift the pawls from the ratchet-teeth, thus allowing the head-block to be run back by hand. In order to operate these curved arms, they are formed with parallel extensions, which are fulcrumed at R, and each of the extensions is slotted, as shown at S, so that the pins T of the lever U will enter these slots, this lever

being fulcrumed to a projection or bearing centrally between the two parts of the arms, as shown at R′ in Figs. 1 and 2. When this lever is moved in one direction, it operates to separate the curved arms, and thus raise the pawls from the ratchet-teeth. When turned in the opposite direction, it draws the two arms toward the center, so that they are just within the line of the ratchet-teeth, and will not interfere with the operation of the pawls. By this construction the movements of the arms are made positive, and they cannot drop by gravitation, but remain where the lever holds them. By these improvements we are enabled to operate the apparatus more readily and to a better advantage.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The saw-mill set-works having the ratchet-wheel secured to the head-block screw or its extension, a slide, the pawls connected by rods with said slide, and a guide-bar, in combination with the pins having the foot-levers, by which they may be moved up into the path of the slide so as to stop it, substantially as herein described.

2. The saw-mill set-works having the ratchet-wheel secured to the head-block screw or its extension, a slide, the pawls connected by rods with said slide, and a guide-bar, in combination with the pins having the foot-levers, by which they may be moved up into the path of the slide, so as to stop it, and the return-springs, by which the bolts are retracted, substantially as herein described.

3. The ratchet-wheel fixed to the head-block screw, the pawl carrying arms fulcrumed so as to turn about the screw-shank, the slide connected therewith, and the two pawl-carriers, in combination with the curved lifters having the slotted extensions, and a lever fulcrumed between these extensions and having pins projecting into slots made in the extensions, so that the arms may be opened or closed by the movements of the lever, substantially as herein described.

4. The variable stop for saw-mill set-works, comprising a ring consisting of ring-sections, one being rotatable, and both sliding and provided with opposing inclined or cam-shaped faces, and a set or holding screw for each ring, substantially as herein described.

5. The ratchet-wheel upon the head-block screw, the arms projecting radially from the screw-shank and turning about said shank as a fulcrum, the alternately-operated pawls pivoted to the arms, and the connecting-rods extending from the arms, a guide, and a slide moving upon said guide, so that the pawls will act alternately upon the ratchet-wheel when the arms are moved backward and forward, in combination with the adjusting-stop composed of the double adjustable cams fixed upon the guide-bar, and having the locking-screws, substantially as herein described.

In witness whereof we have hereunto set our hands.

ALPHEUS E. ROE.
DANIEL L. HARBACK.

Witnesses:
LINCOLN SONNTAG,
ALPHEUS BULL, Jr.