

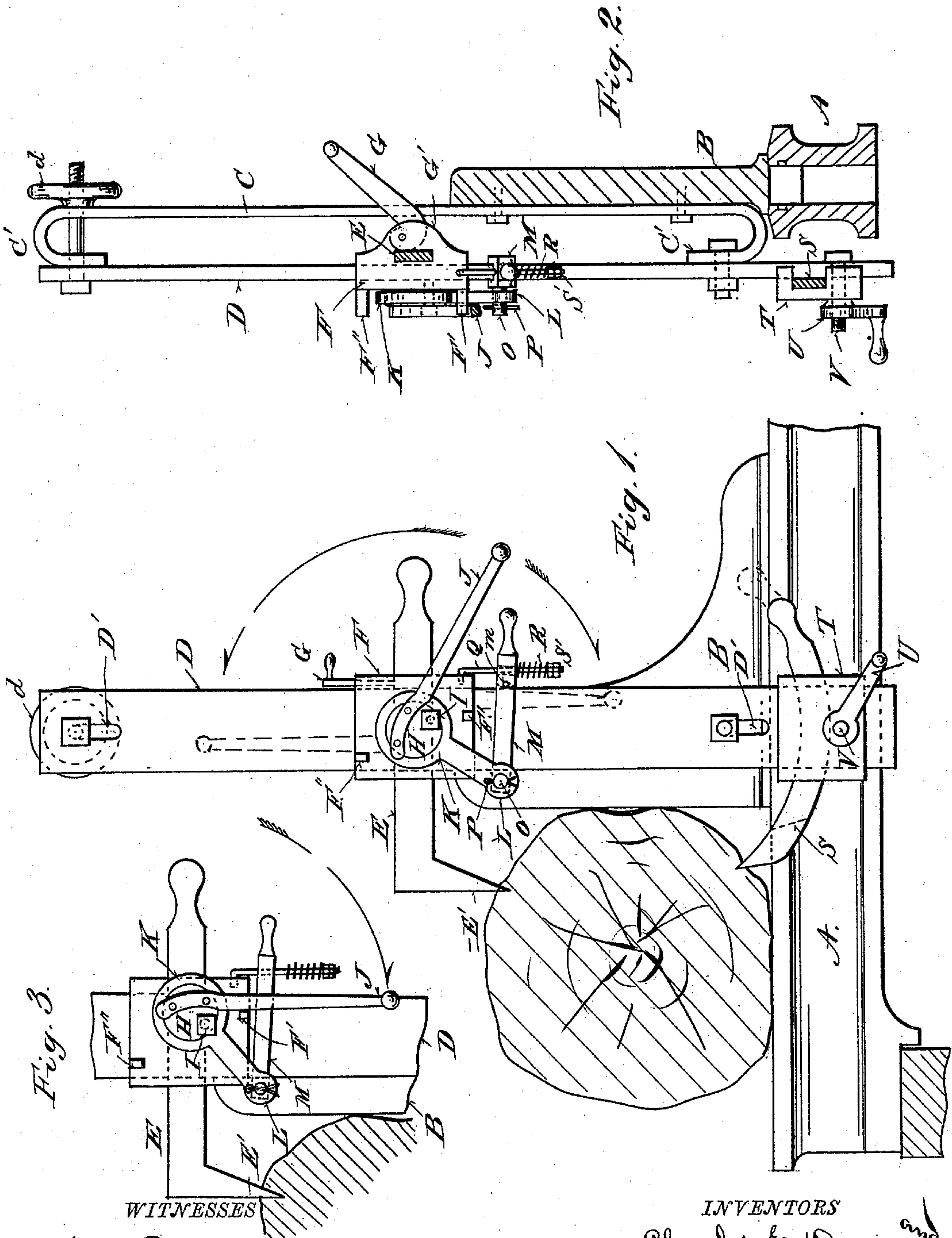
(No Model.)

2 Sheets—Sheet 1.

C. E. DENISON & J. C. PARNELL.
SAW MILL DOG.

No. 441,944.

Patented Dec. 2, 1890.



WITNESSES
H. M. Plaisted.
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INVENTORS
Charles E. Denison and
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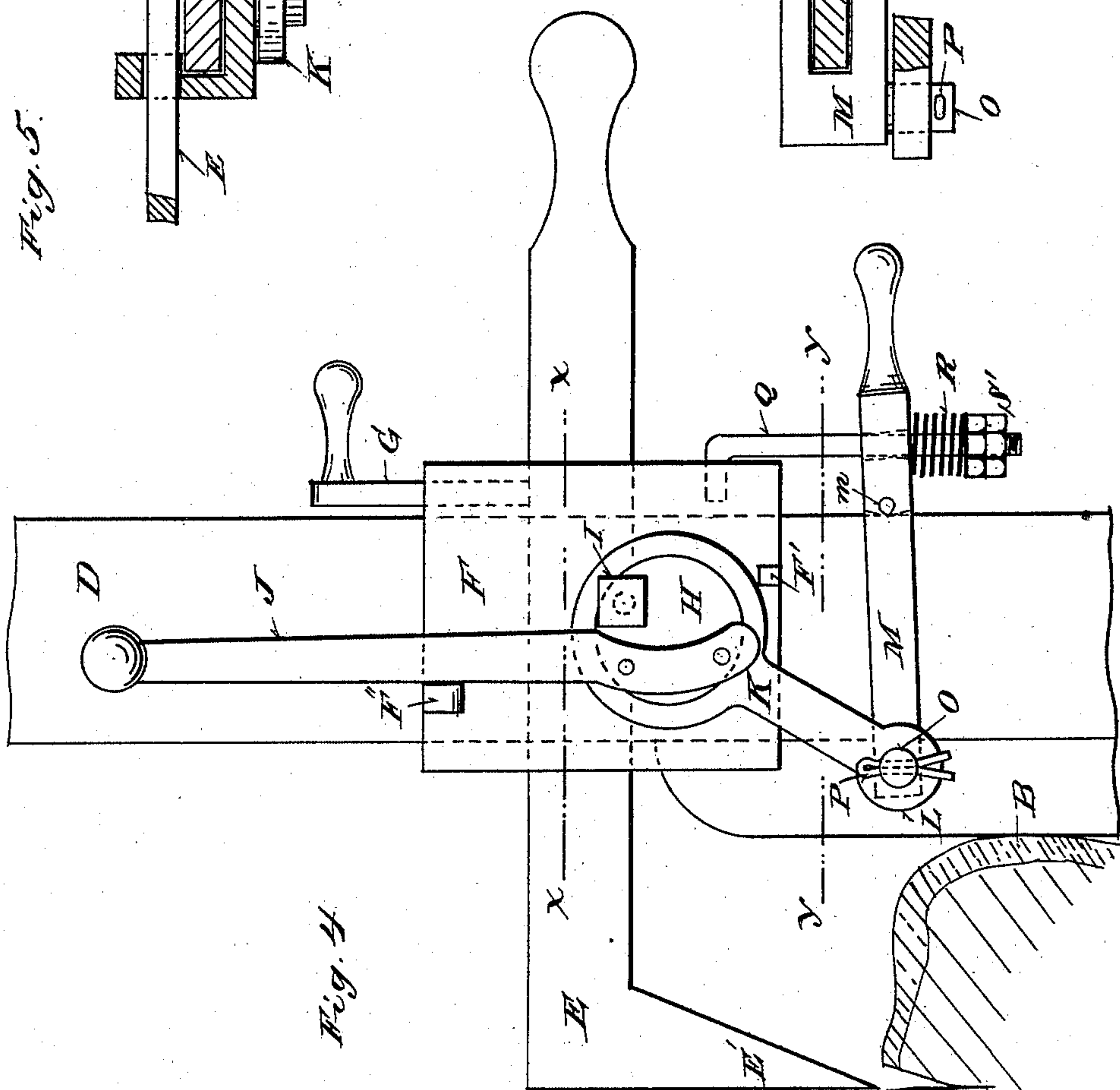
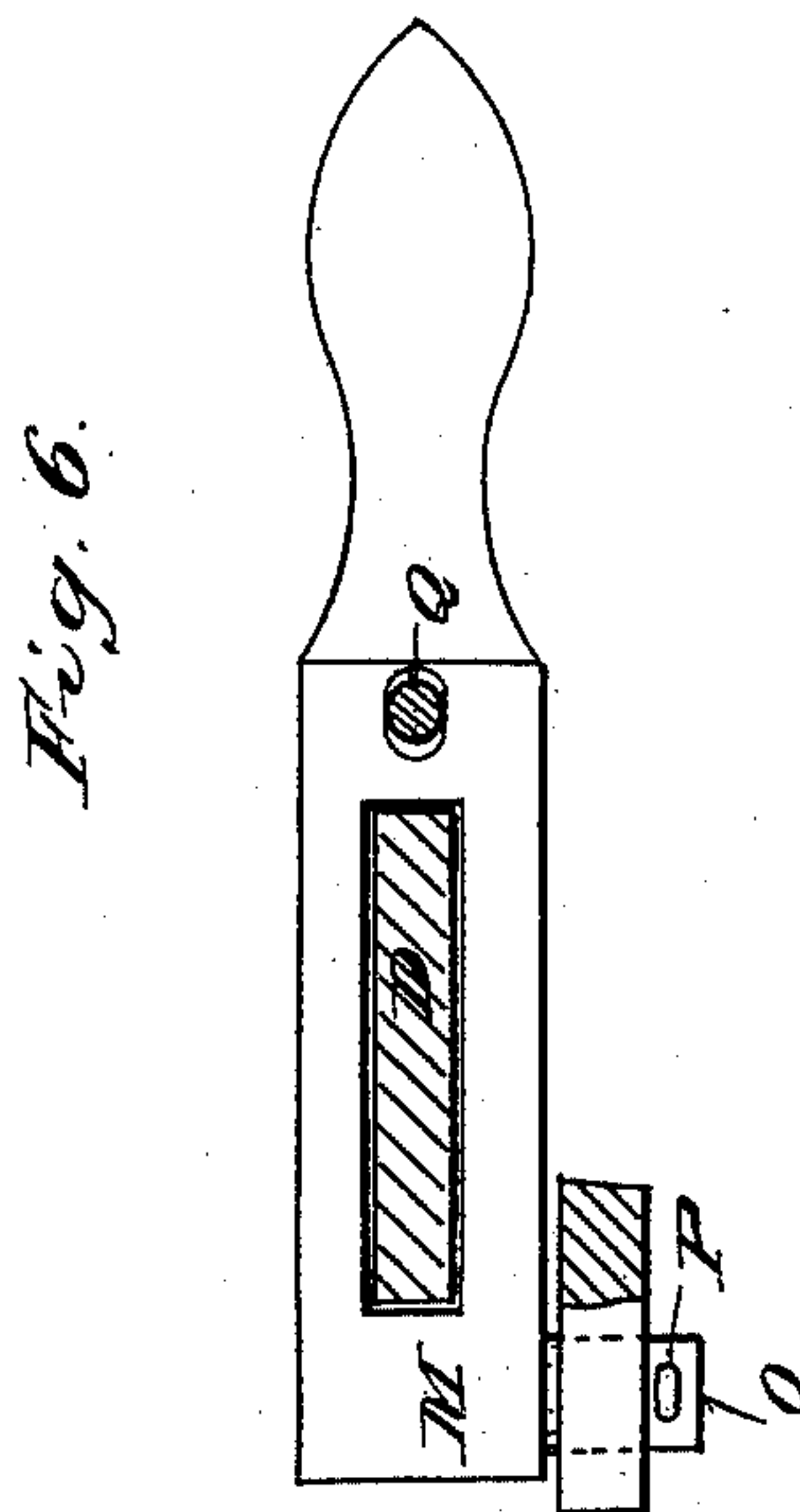
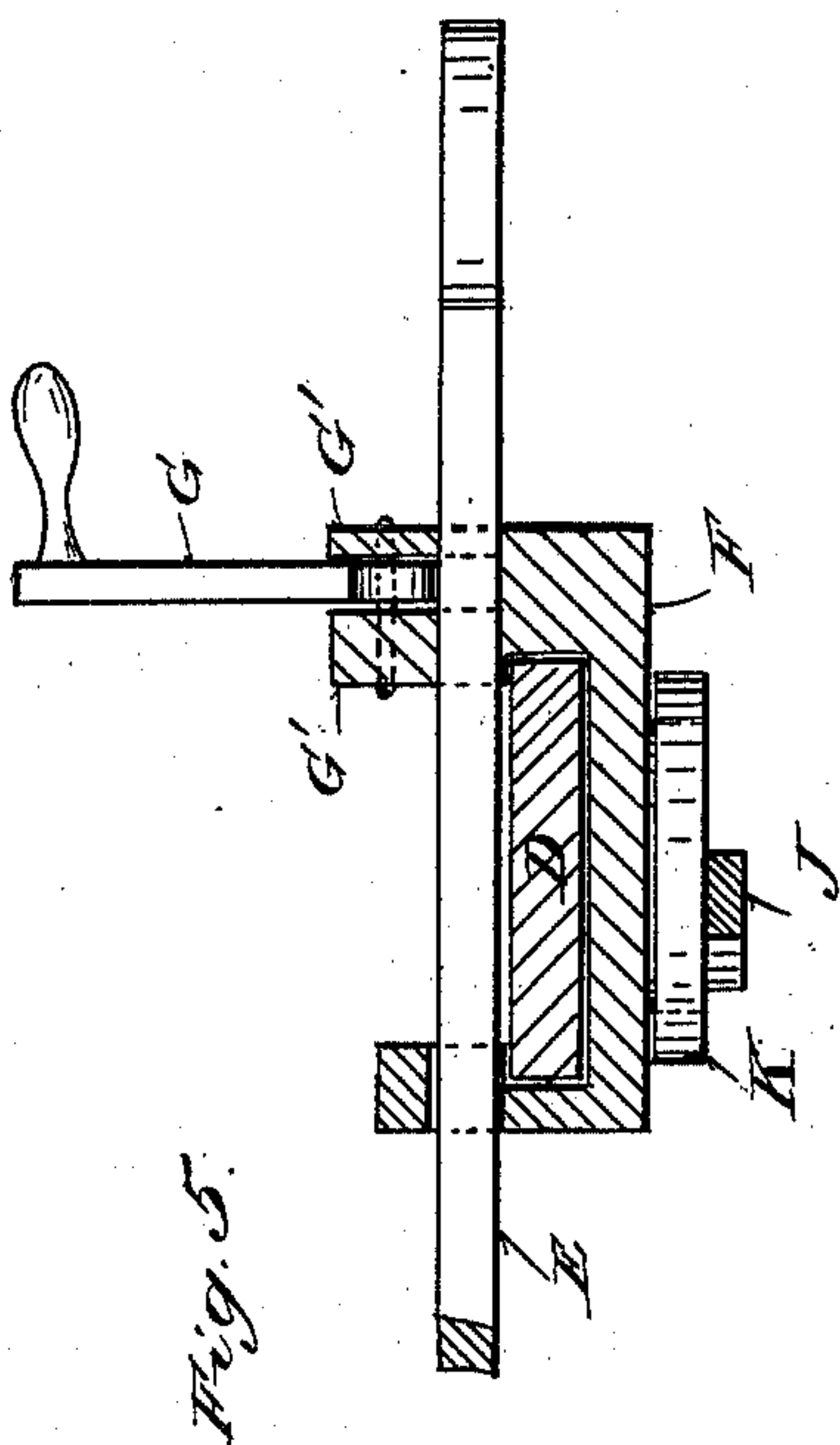
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UNITED STATES PATENT OFFICE.

CHARLES E. DENISON AND JOHN C. PARNELL, OF JEFFERSONVILLE, OHIO.

SAW-MILL DOG.

SPECIFICATION forming part of Letters Patent No. 441,944, dated December 2, 1890.

Application filed August 9, 1890. Serial No. 361,549. (No model.)

To all whom it may concern:

Be it known that we, CHARLES E. DENISON and JOHN C. PARNELL, citizens of the United States, residing at Jeffersonville, in the county of Fayette and State of Ohio, have invented certain new and useful Improvements in Saw-Mill Dogs, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in saw-mill dogs. These improvements have reference to a clutching-link mounted on a bar and connected to the dog-hook carriage; have reference to an eccentric connection between the said link and carriage; have reference to an elastic hanger for said clutching-link; have reference to a lower dog-hook in connection with the upper one to give a double bite, both being operated by the same eccentric; have reference to a sliding bar to automatically equalize the bite of the upper and lower dog-hooks, and have reference to other matters of detail herein-after set forth.

In the accompanying drawings, forming a part of this specification, and on which like reference-letters indicate corresponding parts, Figure 1 represents a side elevation of our improved mechanism, the handle being in its middle position; Fig. 2, an edge view of the same; Fig. 3, a portion of the same with the handle in its lower position; Fig. 4, an enlarged view, similar to Fig. 3, with the handle in its upper position; Fig. 5, a section on the line *xx* of Fig. 4, and Fig. 6 a section on the line *yy* of Fig. 4.

The letter A designates a portion of the head-block, of the usual or any approved type of saw-mill traveling table and suitably mounted to carry the log supported thereon. A knee B is mounted in ways in said head so as to slide transversely on the same, and has secured to it, by bolts or otherwise, an upright supporting-piece C, preferably having the ends turned over, as shown at C', to which are conveniently secured, by bolts or otherwise, a bar D, preferably having slots D' in the same, through which the said fastening-bolts pass. A dog-hook E, having a turned-down sharpened end E', adapted to bite and hold the log or other timber placed on the said head-block A, is slidingly mounted in a

carriage F and secured in any desired position thereon, preferably by means of the cam-lever G, pivoted to the lugs G', extending from the back, or otherwise, from said carriage. The dog is thus adjusted horizontally to suit the size of log or timber which it is intended to hold. It will be seen in Fig. 5 that the dog-hook E is secured upon the carriage without binding the said bar D, thus allowing the carriage to slide up and down upon the bar, while the dog is fixed in position, as just described. On the front face of said carriage is revolubly mounted an eccentric H by means of a pivot I or otherwise, and preferably having a handle J, by which it is rotated. An eccentric-strap K is mounted on said eccentric and conveniently prevented from slipping off by the projecting ends of said lever, while its lower pitman end L is adapted to engage with a clutching-link M, preferably by means of a gudgeon O, extending through said lower connecting end of the eccentric-strap, which is secured thereon by the split pin P or otherwise. Fig. 6 shows a plan view of this clutching-link, with the bar D located thereon, which is adapted to be gripped by said link, preferably by frictional contact. Any other gripping means may be employed. The opposite end of said link, on which a handle is conveniently formed, has an elastic hanger, preferably consisting of a bolt or rod Q, secured in said carriage at one end and having a spring R below the link and mounted on the rod, and jam-nuts S' on the lower end of said rod. Any other elastic means may be employed in the place of the spring R, and the rod Q may be rigid or otherwise. The object of this hanger will be presently described. The said link M is so mounted on the bar D that a slight inclination will cause it to bite or grip said bar to operate the dog-hook E and its carriage, as will now be described. If desired, a steel bearing-point *m* may be inserted at one or both ends of the said link to grip the bar.

Fig. 1 shows the operating-handle J in its middle position and the link M inclined upward, gripping the bar. A further operation of the handle to a lower position will cause the link to bite still more strongly, while the rotation of the eccentric will bring the carriage and the dog mounted thereon lower

down and nearer to the link M, which remains stationary. The rod Q slides through the handle end of the link as the carriage goes down, and the position of the parts when the handle is in its lowest position is shown in Fig. 3. A stop F' opposes the handle in this position, and it will be seen from Fig. 3 that the greater part of the eccentric is opposite its pivotal point I and the link M. The spring R under the handle end of the link descends with its supporting-rod and leaves a space between the said link and the said spring. When the handle J is raised from a lower position, the first effect will be to break the grip of the link M on its bar, causing it to drop down and again rest on the spring R. The parts will then again be in the position shown in Fig. 1, but slightly farther down, and when the handle is lowered a second time the link will grip on a new place and force the dog yet farther into the log as the handle is carried to its lower position once more. This action may be repeated until a firm hold is had on the log. It will be seen that the spring R may be replaced by any suitable support for the link, since it is not compressed in this downward movement of the dog. Its function will appear when the dog is raised by the operation now to be described. In fact the support of the link is not necessary to the downward movement of the dog and might be entirely dispensed with were it not for the upward movement of the same. This upward movement is caused by the same mechanism. The handle being raised beyond the middle position will throw the link downward till it grips in the opposite direction on the bar, the handle end being meanwhile supported by the hanger. A farther elevation of the handle, thus revolving the eccentric, will raise the carriage and dog till the handle is in its highest position and rests against the stop F'', as indicated in Fig. 4. Since the link was stationary when the handle was elevated, the spring R will be compressed, as shown in Fig. 4. If we now lower the handle, the first effect will be to break the grip of the link, when the spring R will extend and raise its end of the link to a higher position on the bar. A second raising of the handle will cause the link to take a fresh bite and raise the carriage and dog another step higher. This operation may be repeated until the dog-hook is free from the log, when the carriage may be freely raised and the handle thrown into the upper position, thus throwing down the link and locking it in any desired position on the bar. It will be seen that if the link were not connected by an elastic hanger with the carriage it would not allow the latter to rise when the handle was elevated, as just described. It is preferred to have the link rise automatically; but, if desired, it may be raised by hand instead of by the spring. It will be observed that one handle and one eccentric, together with the clutching-link, will operate the dog-hook E up or down, accord-

ing as the handle is actuated at the upper part of its travel or at the lower part of its travel.

It may be desired to hold a log from above and below at the same time, and in quarter-sawing, where the timber is reduced to boards by vertical cuts, it is specially desirable. This can be done by our device, and a duplex arrangement formed in which an upper and a lower dog are both operated by the same eccentric, as has just been described. The bar D, having the slots D' therein, was previously clamped rigidly to the supporting-bar C. We now slack off the bolts slightly, so as to allow the said bar D to be actuated up and down. On the lower extended end of the bar D is mounted a lower dog-hook S, preferably of a curved shape, as shown in Fig. 1, and passing through a clamping-block or carriage T, having a slot therein of somewhat less depth than the thickness of the said dog-hook S, whereby the said dog-hook S may be firmly clamped against the said bar D in any desired extended position by manipulating the crank-nut U, mounted on the threaded bolt V, passing through the bar D and said clamping-block T. The operation is as follows: The lower dog-hook S is moved forward till it is in contact with the lower side of the log or timber. The handle J is then thrown over from its upper position, thus breaking the contact of the link on the bar and allowing the carriage and dog-hook E to fall and engage the upper side of the log, as shown in Fig. 1. The handle is then carried farther down to its lower position, thus gripping the bar by the link M and raising it in the slots D' and bringing the dogs nearer together, and thus forcing them with an equal pressure into their respective sides of the log. The handle is then raised to the middle position and again fed downward, causing both dogs to enter yet farther into the log, the friction of the supporting-bolts upon the sliding bar D being sufficient to hold the bar from slipping back when the handle is raised from its lower to its middle position, in order to allow the link M to descend and take a new bite.

In order to change from a duplex to a single arrangement, it is only necessary to push the dog-hook S backward out of the way of the log and then clamp the bar D so that the bolts are in the lower ends of their respective slots. A convenient means of securing the bar D is by the hand-wheel d, mounted upon the upper screw-threaded supporting-bolt, as shown in Fig. 2.

If desired, the piece C may be dispensed with and the bar D mounted directly on said head-block or other suitable support.

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

1. In a saw-mill dog, the combination, with a head-block, a bar thereon, a carriage on said bar, and a dog-hook therein, of a gripping device slidably mounted on said bar, and inter-

mediate mechanism operating said carriage and gripping device, whereby said dog is moved while the said device is temporarily stationary.

5 2. In a saw-mill dog, the combination, with a head-block, an upright bar carried thereby, a carriage adapted to slide on said bar, and a dog-hook adjustably mounted on said carriage, of a gripping-link adapted to grip said
10 bar, and connecting mechanism between said carriage and link whereby the dog-hook is actuated.

3. In a saw-mill dog, the combination, with a head-block, an upright bar carried thereby,
15 a carriage adapted to slide on said bar, and a dog-hook mounted in said carriage, of a link slidably mounted on said bar and having bearing-pieces therein adapted to bite on said bar by frictional contact when the link is in-
20 clined, and connecting mechanism between said link and carriage to cause said biting action.

4. In a saw-mill dog, the combination, with a head-block, an upright bar carried thereby,
25 a carriage on said bar, and a dog-hook connected thereto, of a gripping-link adapted to grip said bar, and an eccentric-connection between said link and carriage adapted to cause said gripping action.

30 5. In a saw-mill dog, the combination, with a head-block, a bar supported thereby, a carriage adapted to slide on said bar, and a dog-hook mounted in said carriage, of a gripping-link adapted to slide and to grip said bar, an
35 eccentric mounted on said carriage and adapted to be rotated, and an eccentric-strap connecting said link and said eccentric, whereby said dog is fed in one direction by said gripping-link automatically.

40 6. In a saw-mill dog, the combination, with a bar carried by a head-block, a carriage to slide on said bar, and a dog-hook for said carriage, of a clutching device connected to said carriage, adapted to grip said bar and to be
45 adjusted thereon alternately, and mechanism to cause said gripping action and to adjust said link, whereby said dog-hook may be moved in either direction on said bar.

7. In a saw-mill dog, the combination, with
50 a bar carried by a head-block, a carriage to slide on said bar, and a dog-hook for said carriage, of a clutching device connected to said carriage, consisting of a gripping-link adapted to grip said bar and to be adjusted there-
55 on alternately, mechanism to cause said gripping action, and an elastic hanger to effect said adjustment, whereby said dog-hook may be moved in either direction on said bar by successive alternate gripping and adjusting
60 actions of said link.

8. In a saw-mill dog, the combination, with a bar carried by a head-block, a carriage to slide on said bar, and a dog-hook for said carriage, of a gripping-link adapted to grip said
65 bar and to slide thereon alternately, eccentric

mechanism connecting said carriage and link to effect said gripping action, and an elastic hanger for said link, consisting of a spring connected to said carriage, whereby said carriage may move to and from said link in its
70 gripping condition and allow a further adjustment of said link, and thereby feed said dog-hook in either direction on said bar.

9. In a saw-mill dog, the combination, with a dog-hook carriage, a clutching device there-
75 for, and operating means, of an elastic hanger consisting of a spring mounted on a rod and adapted to engage said clutching device to promote its clutching action and to adjust it to a further clutching position. 80

10. In a saw-mill dog, the combination, with a dog-hook carriage adapted to be slidably mounted on a support, of a gripping-link adapted to grip said support, intervening op-
85 erating mechanism for said link, whereby said carriage is moved to and from said link, and an elastic connection between said link and carriage to adjust automatically said link to another gripping position successively.

11. In a saw-mill dog, the combination, with
90 a bar slidably carried by a head-block, of a carriage adapted to slide on said bar, an upper adjustable dog-hook in said carriage, a clamp mounted on the lower end of said bar, a lower dog-hook in said clamp, a clutching
95 device on said bar, and eccentric mechanism connecting said clutching device and upper dog-hook, whereby said dog-hooks are drawn nearer together by successive operations of said eccentric mechanism. 100

12. In a saw-mill dog, the combination, with a bar slidably carried by a head-block, a lower and an upper dog-hook, and a gripping-link, all mounted on said bar, of adjusting
105 means for said link to move it alternately with its gripping action, and eccentric mechanism connecting said link with one of said dog-hooks, whereby they are brought nearer together or farther apart, according to the manipulation of said eccentric mechanism. 110

13. In a saw-mill dog, the combination, with a support, of two dog-hooks and a gripping device, all mounted on said support, an eccentric mechanism connecting said gripping de-
115 vice with the movable one of said dog-hooks, and elastic means to automatically adjust said device to another gripping position on said support, whereby said dog-hooks are caused to approach or recede from each other, according to the action of said movable hook
120 with regard to said gripping device in its temporarily stationary position.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES E. DENISON.
JOHN C. PARNELL.

Witnesses:

JAMES STRALEY,
GEO. CLANSINGS.