(No Model.) 2 Sheets—Sheet 1.

A. DELANEY & J. M. BOND.

SAW MILL DOG.

No. 344,356. Patented June 29, 1886.

Fig. 2.

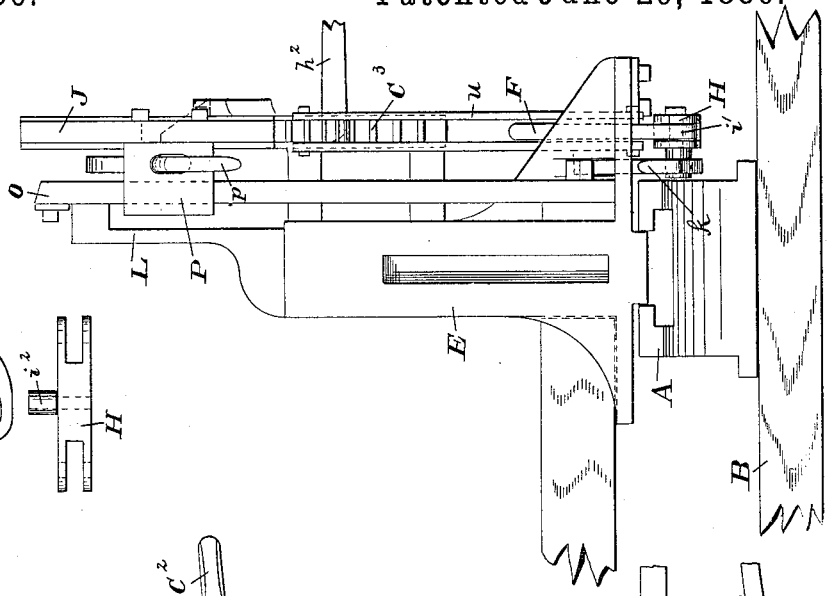


Fig. 4.

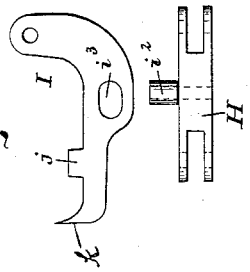


Fig. 5.

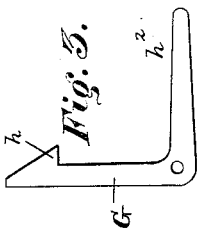
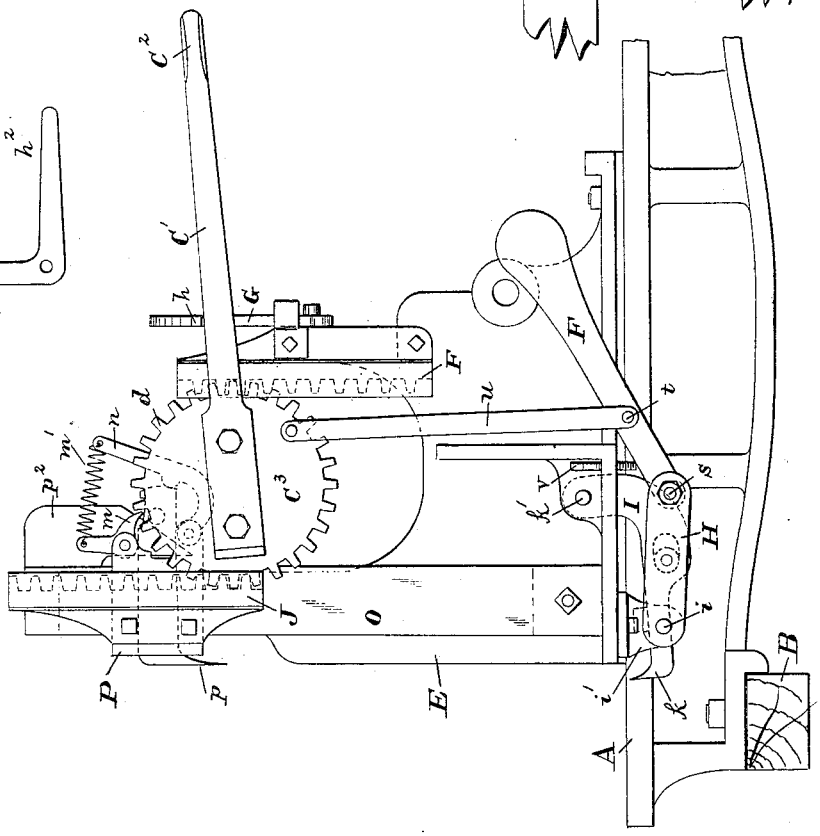


Fig. 1.



Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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SAW MILL DOG.

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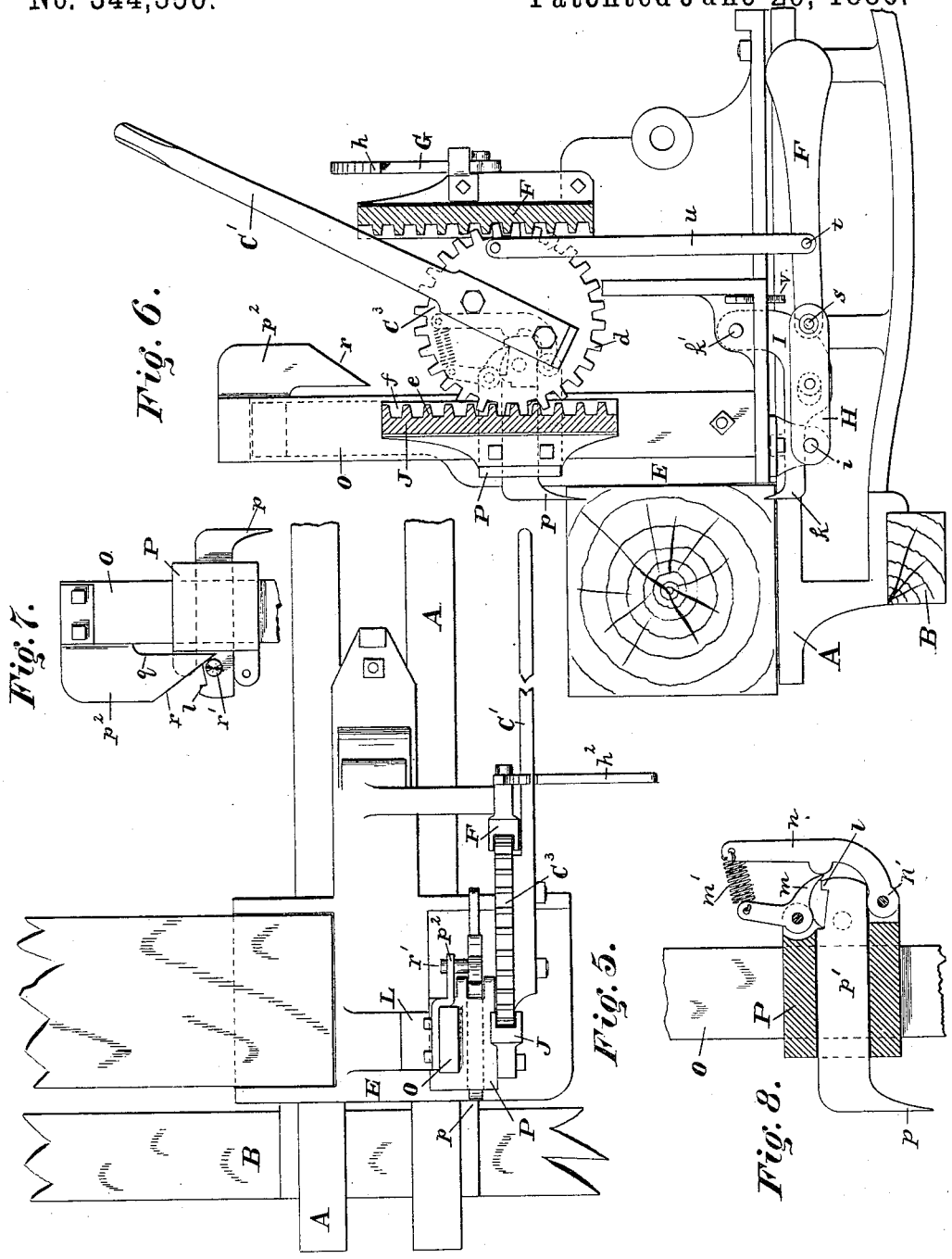

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UNITED STATES PATENT OFFICE.

ALEXANDER DELANEY AND JOHN M. BOND, OF RICHMOND, VIRGINIA.

SAW-MILL DOG.

SPECIFICATION forming part of Letters Patent No. 344,356, dated June 29, 1886.

Application filed January 8, 1886. Serial No. 187,960. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER DELANEY and JOHN M. BOND, citizens of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Board-Dogs for Saw-Mills, of which the following is a specification.

Our invention relates to an improved adjustable board-dog for saw-mills.

The invention consists in certain novel parts, combinations of parts, and features of construction, which are herein first described, and then designated in the claims.

In the accompanying drawings, which illustrate the invention, Figure 1 is a side elevation of the head-block, knee, and dogs, showing the position of the latter when not in use. Fig. 2 is a front or face view of the parts shown in Fig. 1. Fig. 3 is a view of the latch, as seen from a transverse direction to that shown in Fig. 1. Fig. 4 is a side view of the lower dog-carrier and a top view of the lever H. Fig. 5 is a plan view of the parts shown in Fig. 1. Fig. 6 is a side elevation of the head-block, knee, and dogs, showing the latter holding a piece of timber ready for sawing a board. Fig. 7 is a reverse side view of the top part of the slide, upper dog, and the retractor. Fig. 8 is a view in detail of the upper dog, its carrier, and projector.

The letter A designates the head-block; B, a timber of the saw-mill carriage, and E the knee, which slides on the head-block toward or away from the saw. The board-dogs and the mechanism which operate them are attached at one side of the knee, and a log-dog (not shown) may be attached to the other side. A standard, L, is fixed on top of the knee, and a fixed upright slide-bar, O, is secured at one side of the knee to the latter and to the standard L, so as to leave a space between it (the slide-bar) and the knee. The upper dog-carrier, P, is fitted on the slide-bar loosely to move up and down. It has a horizontal slot occupied by the shank p' of the dog p, which has endwise movement therein. This upper dog-carrier has attached to it a vertical rack, J, the teeth e of which are in a groove formed by a guide, f, on each side. Another vertical rack, F, constructed in the same manner, is stationary, being rigidly attached to and at one side of the knee, or to any suitable permanent support.

The dog-driver C^3 consists of a circular head having its rim provided with gear-teeth, d, like a cog-wheel. This dog-driver has position between the two racks J and F, and gears with both of them.

Rigidly attached to the dog-driver head C^3 is an arm, C', having a handle, C^2, which serves as a lever. It will be seen by reference to Fig. 1 and 6 that when this lever is drawn back and down the dog-driver head C^3 will partly turn and traverse up the stationary rack F, and its action on the other rack, J, will be such as to lift it and the upper dog-carrier, P, to which it is attached.

A latch, G, is a bar bent at an angle, and has at one end a hook, h, which engages with the lever handle or arm C' and holds it down, thereby keeping the upper dog in an elevated position, as in Fig. 1. This latch swings on a pivot, while the end h^2 opposite the hook end serves as a weight to cause the hook to press in the right direction, and also as a handle whereby to release the hook.

The shank of the upper dog, p, (see Fig. 8,) has at its rear end a shoulder, l, and the carrier P has at its top or above the dog a pawl, m, which normally bears on the top edge of the upper dog, and stops against the said shoulder l. The carrier P has a lever, n, whose lower end is pivoted at n' below the dog and curves upward and across the rear end of the dog, and its upper end is connected with the pawl m by a spiral spring, m'. The effect of this construction is a double result: First, when the pawl m has its normal position on top of the dog-shank p', as indicated by broken lines in Fig. 6, the projecting forward of the dog-bit beyond the knee is limited by the stop-shoulder l. This projection is sufficient for sawing inch-thick boards. The dog, however, can be retracted from the face of the knee by the spring m' yielding and the lever n swinging back. The second effect this construction provides for is, that when it is desired to have the dog project forward further than the stop-shoulder l and pawl m will allow, it is only necessary to raise the pawl above the shoulder, as in Fig. 8.

A retractor is provided for the upper dog, whereby when it is raised it will also be drawn back, so as not project from the face of the knee. This retractor consists of a stationary pointed bar, p^2, having a straight-edge, q, and an inclined edge, r, and these two edges converge and meet and form a downward point. (See Figs. 6 and 7.) A laterally-projecting pin, r', is on one side of the upper dog, p, (see Figs. 5 and 7,) and when the dog is raised this pin will come in contact with the inclined edge r of the bar p^2, and upon the dog being further raised the pin will slide up said inclined edge, and thereby the dog will be retracted.

The lever H has one end pivoted at i to a bracket, i', attached to a flange of the knee E. This lever has on one side a lateral stud or roller, i^2. The lower dog, k, is fixed to a carrier, I, which is pivoted at k' on the side of the knee. This carrier has a slot, i^3, which is occupied by the said stud or roller i^2 on the lever H, and has on top a stud or lug, j, which acts as a stop.

A weighted lever, F, has one end jointed at s to the lever H, and is pivoted and suspended at t from a movable hanger, u. The upper end of this hanger is attached to the driver C^3 of the upper dog.

A fulcrum-stop, v, consists of a set-screw in the base-flange of the knee. When the hanger u lowers, the lever is thereby dropped from contact with the fulcrum-stop v, and thereupon its heavy end bears down, which throws up the jointed end s of the lever H, and the stud i^2 thereon then acts on the dog-carrier I, and lifts the lower dog into the timber, as seen in Fig. 6. On the other hand, when the hanger u is raised, the weighted lever F is thereby brought in contact with the fulcrum-stop v, and this causes the jointed ends of the lever H to be depressed, thereby lowering the dog k, as seen in Fig. 1.

The driver C^3 of the upper dog and that F of the lower dog are connected by the hanger u. This connection insures the timely coaction of the two dogs.

The hanger u may be two rods, as shown, or a chain.

The head C^3 is a metal casting, and has in its composition sufficient metal to give it the requisite weight to impart driving force to the upper dog. It may be made weighty to any desired extent by casting a bulk of metal at one side.

Having described our invention, we claim and desire to secure by Letters Patent of the United States—

1. A saw-mill-dog mechanism having in combination an upright slide-bar, a dog-carrier fitted to move up and down on the bar, and having attached to it a rack, another rack immovably secured to a stationary support, and a circular head provided on its rim with gear-teeth, and having position between the said two racks, as set forth.

2. The combination of a dog-carrier having a horizontal slot, a dog whose shank occupies the slot and is movable endwise therein, and has at its rear end a shoulder, l, a pawl, m, on top of the dog-carrier, a lever, n, having its lower end pivoted to the dog-carrier below the dog, and extending up across the dog, and a spring, m', connecting the pawl and lever, as set forth.

3. A saw-mill-dog mechanism having in combination an upright slide-bar, a dog-carrier fitted to move up and down on the bar, and having a horizontal slot, a dog whose shank occupies the slot and is movable endwise therein, a spring to normally project the dog, and a stationary retractor having an inclined edge, r, which, upon the dog being raised, will serve to retract it, as set forth.

4. A saw-mill-dog mechanism having in combination a pivoted lower dog-carrier, I, a weighted lever, F, pivoted, and a lever, H, having one end pivoted and the other end jointed to the said weighted lever, and provided with a lateral stud, i^2, which acts on the dog-carrier, as set forth.

5. A saw-mill-dog mechanism having in combination an upright slide-bar, an upper dog-carrier fitted to move up and down on the slide-bar, a movable circular head, C^3, which moves the upper dog-carrier, a pivoted lower dog-carrier, I, a weighted lever, F, for operating the lower dog-carrier, and a hanger, u, connecting the said circular head with the weighted lever, as set forth.

6. A saw-mill-dog mechanism having in combination an upright slide-bar, an upper dog-carrier fitted to move up and down on the slide-bar, a movable circular head, C^3, which moves the upper dog-carrier, a pivoted lower dog-carrier, I, a weighted lever, F, for operating the lower dog-carrier, a fulcrum-stop, v, against which the weighted lever bears when it is raised, and a hanger, u, connecting the said circular head with the weighted lever, as set forth.

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

ALEXANDER DELANEY.
JOHN M. BOND.

Witnesses:
C. A. PEPLE,
I. S. TOWER.