(No Model.)

W. A. DURRIN.

SAW MILL DOG.

No. 315,133. Patented Apr. 7, 1885.

Fig. 1

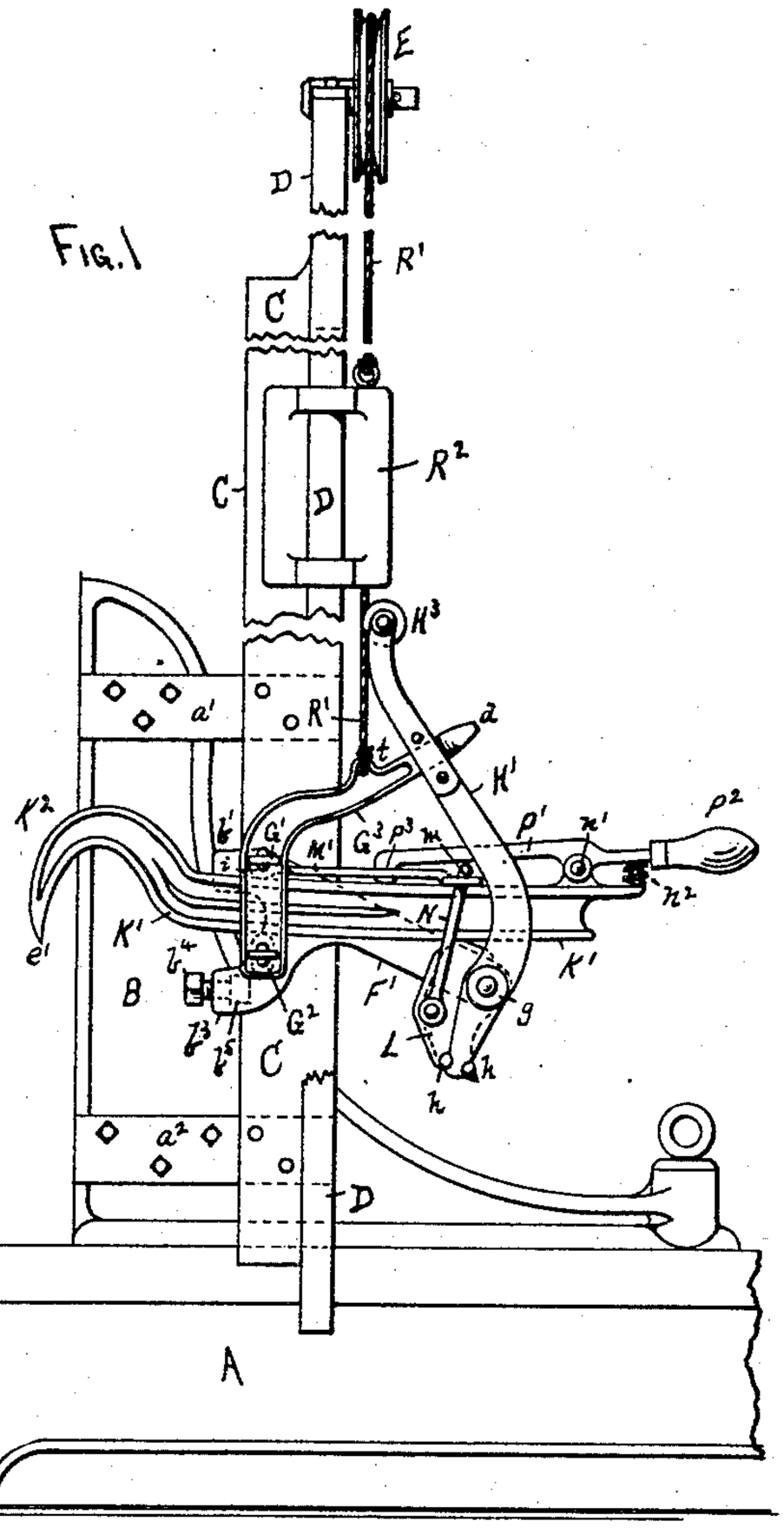


Fig. 2

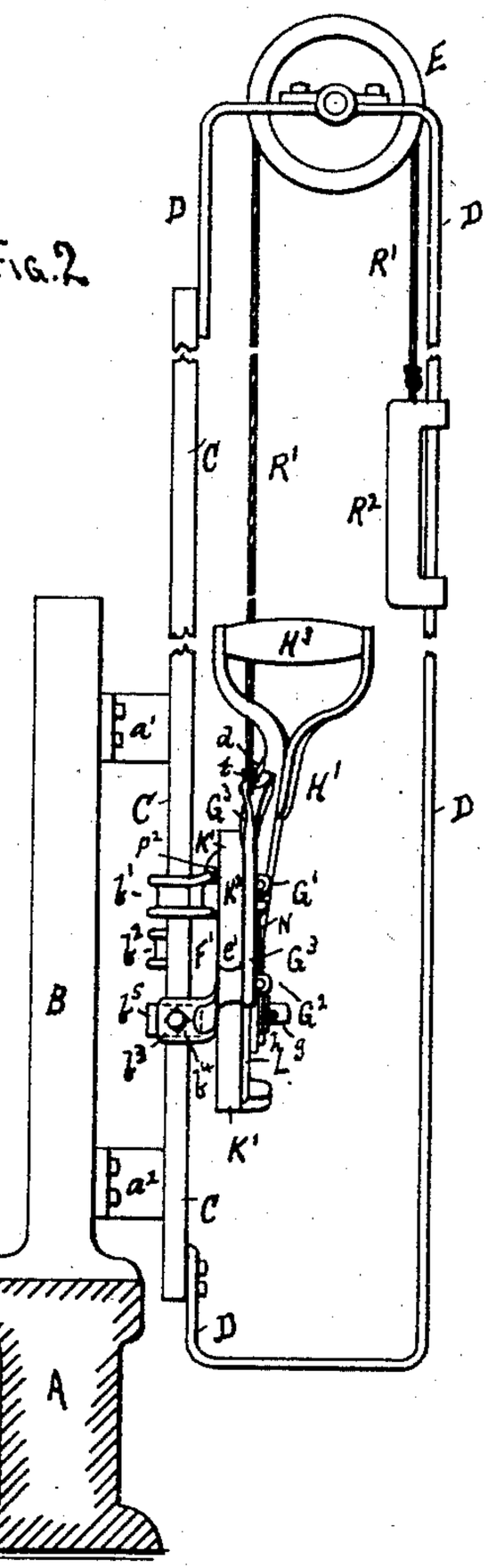
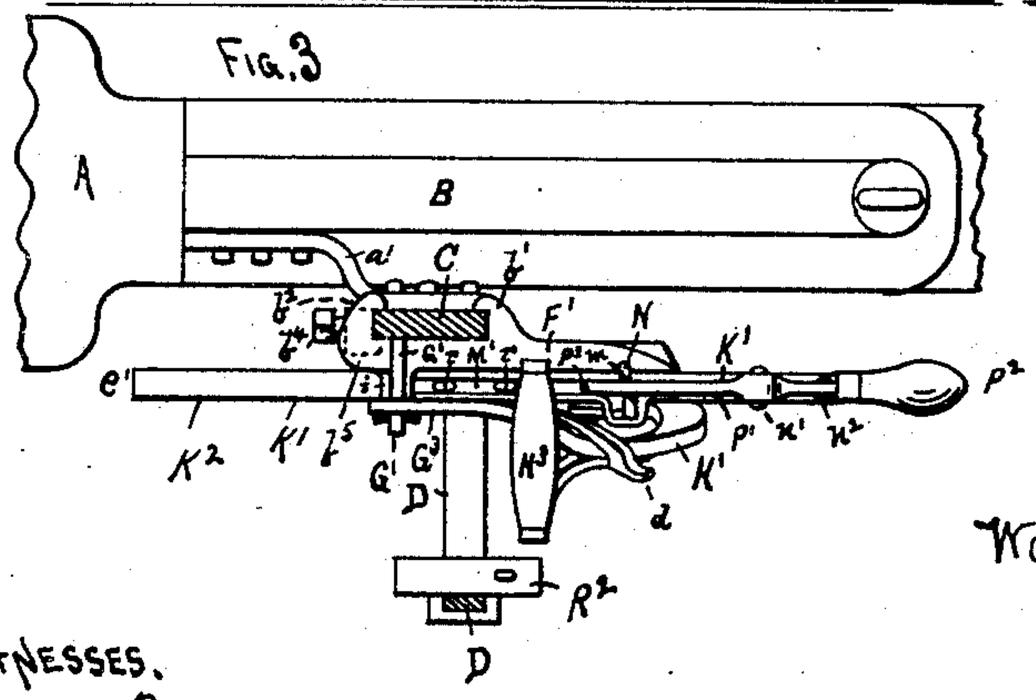


Fig. 3



Witnesses.
Louis Fraser Jr.
H. S. Webster.

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Inventor. By
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UNITED STATES PATENT OFFICE.

WARREN ALONZO DURRIN, OF HERSEY, WISCONSIN.

SAW-MILL DOG.

SPECIFICATION forming part of Letters Patent No. 315,133, dated April 7, 1885.

Application filed August 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, WARREN ALONZO DURRIN, a citizen of the United States, residing at Hersey, in the county of St. Croix and State of Wisconsin, have invented certain new and useful Improvements in Saw-Mill Dogs, of which the following specification is a full, clear, and exact description, reference being also had to the accompanying drawings, in which—

Figure 1 is a side elevation, Fig. 2 is a front elevation, and Fig. 3 is a plan view, partially in section, of the "dog" complete, Figs. 1 and 2 being foreshortened to enable the scale of the drawings to be enlarged.

A represents a portion of one of the carriages, and B one of the "head-blocks," of any desired or well-known form.

C is an upright standard secured to the side of the head-block by brackets a' a^2, and having a strap, D, connected to it at top and bottom, as shown, leaving an open space between them. Upon the upper part of this strap D a grooved pulley, E, is mounted, as shown.

F′ is a flat bed-plate having two lugs or clasps, b' b^2, fitting around the opposite edges of the standard C, the lug b' being at a higher point than the lug b^2, while a third lug, b^3, is formed upon the bed-plate F′ on the same side as the lug b', but at a lower point than either of the lugs b' or b^2, as shown. This third lug b^3 does not inclasp the standard C, but is provided with a set-screw, b^4, which is adapted to hold a small metal piece, b^5, up against the standard, this piece b^5 being provided with lips which inclasp the sides of the standard. By this means the bed-plate F′ may be adjusted to regulate its position with relation to the standard C. Projecting from the face of this bed-plate F′, opposite the point where it crosses the standard C, are two arms, G′ G^2, having secured across their outer ends a plate, G^3, the latter curving backward and upward, and provided on its outer end with a spring-catch, d, to hold the operating-lever H′, the arrangement and operation of the latter to be hereinafter described.

Between the arms G′ G^2, and behind the plate G^3, a curved pointed lever-dog, K′, is adapted to be moved back and forth, the arms G′ G^2 forming guides to the dog.

The lever-dog consists of a long curved body portion, K′, and a pointed hooked end, K^2, the lower point, e', of the latter being at a point below the line of the upper arm, G′, which forms the fulcrum of the lever-dog, as hereinafter explained.

L is a cam-plate pivoted at g to the lower end of the bed-plate F′, and adapted, when turned upon its pivot, to raise and lower the rear end of the lever-dog K′, and thus force the point e' into or withdraw it from the log or timber upon the carriage. The operating-lever H′ is also pivoted upon the bed-plate F′ by the pivot g, while its lower end is secured to the cam-plate L by small lugs or studs h, which are riveted or closed into notches in the lever. By this construction the moving of the lever H′ up or down will revolve the cam-plate L up or down and elevate or depress the lever-dog K′ K^2. The working-surface of the cam L is formed of flat sections, so that the cam will remain stationary and hold the lever-dog fixed at as many different points of elevation as there are flat surfaces on the cam, each flat surface thus forming a separate cam of itself.

M′ is a flat plate or bar having a curved end at i, the upper side fitting up beneath the lower edge of the fulcrum-arm G′, and with the lower side of this curved end rounded and resting in contact with the upper surface of the lever-dog K′, thus forming a rounded point on which the lever-dog will oscillate. The rear end of this bar M′ rests upon the lever-dog K′, above the cam L, and is connected thereto by a loosely pivoted and jointed rod, N. The upper end of this rod N is turned over at right angles at m, so that while the rod will run upward freely through the bar M′ when the cam L is raised, the turned-over end m will cause it to stop when said end strikes the bar M′, and thus draw the lever-dog down upon the cam L, and raise the point e' out of the log or timber being sawed.

P′ is a lever pivoted at n' to the rear end of the lever-dog K′, and provided with a spring, n^2, and with a handle, P^2, on one end and a hook or stop, P^3, on the other end, the latter fitting into one of a series of holes, r, in the bar M′, as shown.

By pressing down upon the handle P^2 and

raising the end P^3 free from the hole *r*, the lever-dog K′ may be drawn backward or pushed outward to regulate the distance which the point *e′* shall be from the head-block B. Thus by setting the end P^3 into the holes *r* the point *e′* will be adjusted proportionately farther away from or nearer to the head-block to adapt the dog to different-sized timbers or logs. A cord, R′, is attached by one end at *t* to the arm G^3, and runs up over the pulley E and down to a counter-weight, R^2, adapted to slide up and down upon the strap D. When the cam-operating lever H′ is thrown upward and caught by the spring-catch *d*, the handle H^3 of the lever comes in a line close to the standard C, so that by pulling upward with said handle the whole dog mechanism can be easily run up and down the standard to adapt the height of the point *e′* to the size of the log or timber being sawed, the counter-weight R^2 rendering this action very easy of accomplishment. The standard C and strap D may be of any suitable height, but I have shown them foreshortened for convenience in drawing.

By the peculiar arrangement of the lugs b' b^2 b^3 the first two, b' b^2, will "bind" upon the standard C the instant any upward pressure is brought to bear upon the point *e′*, so that no lost motion will result when the point *e′* is forced into the log or timber being sawed.

The operation of the dog is as follows: If a round log is to be sawed, the handle P^2 of the lever P′ is depressed to release the end P^3 and enable the lever-dog K′ to be run out until the point *e′* is over the center of the log. The dog is then lowered down until the point *e′* strikes the log. The lever H′ is then pulled down, which act will cause the cam L to raise the rear end of the lever-dog K′ and depress the point *e′* and force it into the log.

As before stated, the act of pressing upward upon the point *e′* will cause the lugs b' b^2 to instantly bind upon the standard C, and prevent the mechanism from being run upward on the standard, but will hold the dog down firmly in contact with the log.

Under some circumstances it will be necessary to turn the cam L up only until the first flat portion is in contact with the under side of the lever-dog K′; but if that does not hold it sufficiently strong it can be turned up until the next flat portion is reached, and even to the third, if required. The latter will usually only be required, however, when the first cut or two is being made from logs with the bark upon them, as in the latter event it will be necessary to force the point *e′* through the bark into the log. After the log is "squared" and sawed down until only a thin piece is left, the lever-dog will be drawn in until the point *e′* projects only a very short distance beyond the face of the head-block B, the hole *i* in the bar M′ that comes next to the arm G′ being so placed that the point *e′* will project only about one-half an inch beyond the face of the head-block B. The catch *d* will be sufficiently stiff to hold the lever H′ in the position shown in Fig. 1 when the handle H^3 is pulled upright to raise the mechanism upon the standard, but will "give" and release the lever when pulled backward to operate the cam L.

The whole action is very simple, and the device is easily and quickly operated, and holds the log or timber very securely.

When it is desired to release the dog from the log or timber, it is only necessary to raise the handle H^3 up and snap it into the catch *d*, when the rod N will, by its overturned end *m* acting on the bar M′, which rests upon the lever-dog K′, pull the rear end of the latter down and raise the point *e′* out of the log.

As before stated, the point *e′* is on a plane below the line of the fulcrum G′, so that, as will be readily seen, when the point *e′* is forced downward into the log or timber it will also be drawn inward toward the face of the head-block; consequently the same action which forces the point *e′* into the log will also cause that point to draw the log inward toward the face-plate, and thus hold it very firmly against it.

Having described my invention and set forth its merits, what I claim is—

1. A standard, C, mounted on a saw-mill carriage, in combination with the lever-dog supporting-plate F′, vertically adjustable on said standard, said bed-plate being provided on opposite sides with lugs b' b^2 in different vertical planes, which clasp said standard, and being provided with a third lug, b^3, in a vertical plane different from those of the lugs b' b^2, a standard-clasping piece, b^5, and a set-screw, b^4, which is supported and held by the lug b^3, and which secures the clasp b^5 against the standard, substantially as set forth.

2. The combination of standard C, mounted on a saw-mill carriage, bed-plate F′, mounted on said standard, arms G′ G^2, extending out from said bed-plate, bar G^3, secured across said arms G′ G^2, which curves backward and upward, catch *d* on the free end of said bar G^3, lever-dog K′ K^2, fulcrumed between the bed-plate, bar G^3, and arms G′ G^2, cam L, pivoted to the bed-plate and adapted to the lever-dog, and hand-lever H′, adapted to turn said cam, and thus operate the lever-dog, substantially as set forth.

3. In combination with a suitable support, arms G′ G^2, secured thereto, bar G^3, secured across said arms, lever-dog K′ K^2, held between said arms G′ G^2, bar G^3, and the support, graduated bar M′, which takes under the arm G′ and at that point forms the fulcrum for the lever-dog, and adjusting-lever P′, secured to the lever-dog and adapted to the graduated bar M′, substantially as set forth.

4. The combination of the bed-plate F, arms G′ G^2, secured to said bed-plate, bar G^3, secured across said arms, lever-dog K′ K^2, held between said bed-plate, arms G′ G^2, and bar G^3, graduated bar M′, which takes under the arm G′ and forms the fulcrum for the lever-dog,

adjusting-lever P′, secured to the lever-dog and adapted to the graduated bar M′, cam L, pivoted to the bed-plate and adapted, when turned, to depress the point of the lever-dog, and bar N, pivoted to said cam and provided with a projecting end which takes over the top of the lever-dog, whereby when the cam is turned in the opposite direction the point of the lever-dog is raised, as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WARREN ALONZO DURRIN.

Witnesses:
HENRY E. RANDALL,
C. N. WOODWARD.