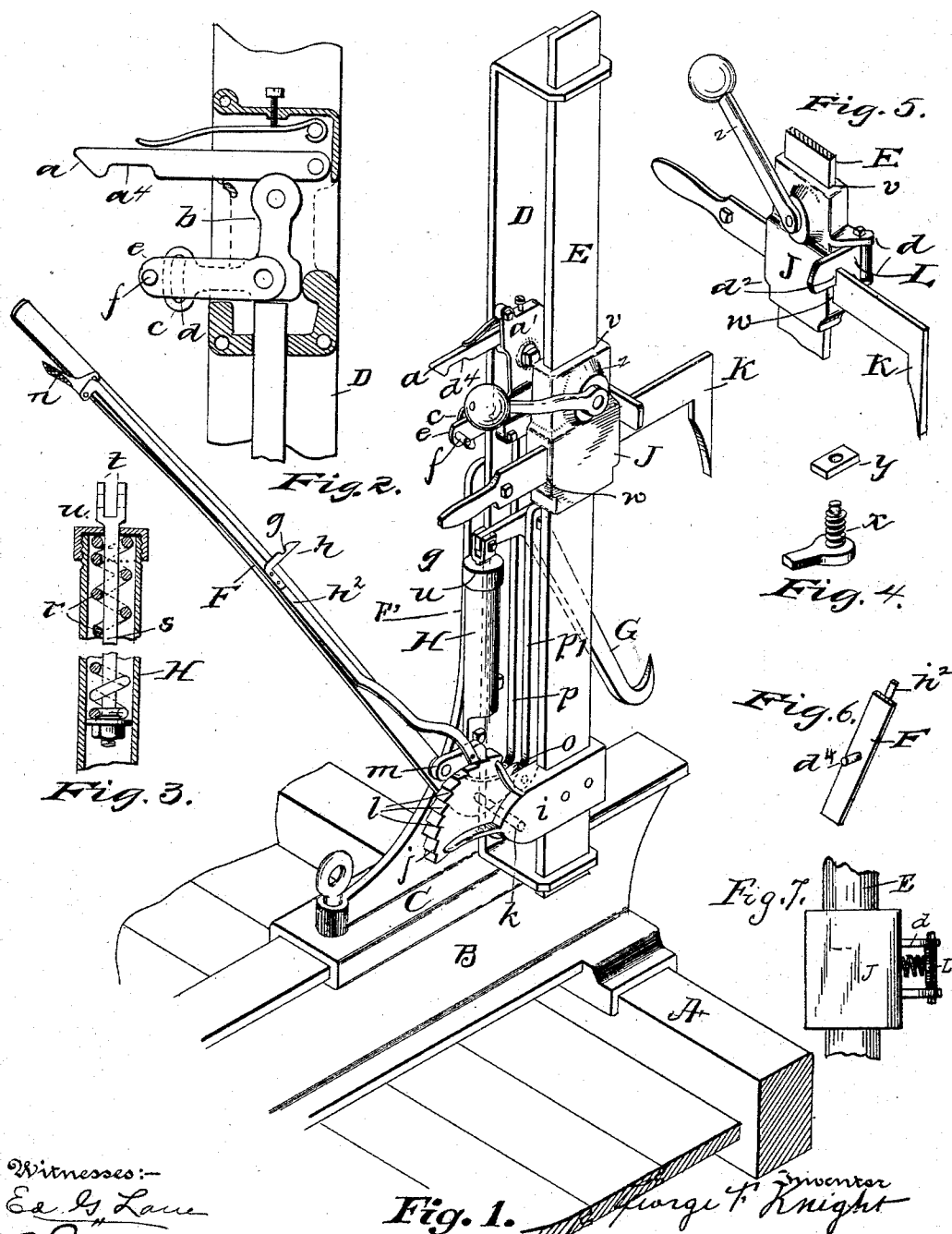


(No Model.)

G. F. KNIGHT.
SAWMILL DOG.

No. 483,223.

Patented Sept. 27, 1892.



Witnesses:-
Es. by Lane
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Fig. 1. *Inventor*
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UNITED STATES PATENT OFFICE.

GEORGE F. KNIGHT, OF CANTON, OHIO.

SAWMILL-DOG.

SPECIFICATION forming part of Letters Patent No. 483,223, dated September 27, 1892.

Application filed August 21, 1891. Serial No. 403,287. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. KNIGHT, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have
5 invented a new and useful Improvement in Sawmill-Dogs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

10 My invention relates to improvements in sawmill-dogs; and it consists of certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claims.

15 Figure 1 is a perspective of a sawmill-dog, illustrating my invention from the right rear; Fig. 2, an elevation of a fragment of the supporting-bar, showing detail; Fig. 3, a vertical sectional view of cant-hook spring; Fig. 4, a
20 perspective of tightening-screw and block; Fig. 5, a similar view of a front portion, showing the dog-lock; Fig. 6, a fragment of actuating-lever. Fig. 7 is a detail view of the sliding head, sliding bar, and latch herein-
25 after described.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

30 A represents the log-carriage, B the head-block, and C a knee-portion adjustable transverse the carriage A, to which the dog-supporting bar D is secured, said bar having its end portions turned at right angles with the body, as shown in Fig. 1. In said end portions, at a distance from the body of the bar,
35 are provided elongated apertures, in which is placed a vertical sliding bar E.

On the face of the stationary bar D are pivotally secured a spring-latch *a* and a locking-
40 pawl *b* in the position substantially shown in Figs. 1 and 2, the lower face of the latch having a circular depression conformed to the circular end portion of the pawl, which, with the downwardly-exerted energy of the latch-
45 spring, serves as a friction-grip to hold the pawl in operative position.

At the lower end of the pawl *b* is provided an outwardly-projected arm *c*, having at its outer end portion an elongated aperture *d*,
50 as shown. A gravity-latch *e*, lapping over said arm, is pivotally secured to the lower end portion of the pawl, said latch having at its

free end portion a pin (not shown) to slide in the aperture *d* the length of the aperture to determine the throw of the latch, and at the
55 end of the latch is provided a pin *f* to engage a notch *g* in a finger *h*, projected from the rod *h*², by which the pawl *m* is vibrated, as will be explained farther on. *a'* is a cap or cover inclosing the inner ends of the latch
60 and pawl *b*.

At the lower end portion of the sliding bar E is secured a bracket *i*, supporting a segmental rack *j*, to which the actuating-lever F is pivotally secured by the pin *k*, as indicated
65 by the dotted line. A pawl *m* is pivotally secured to the lever F, the free end to engage the notches *l* on the segment *j*, which is raised out of engagement by the rod *h*² and the hand-lever *n*. At the inner or short end *o* of
70 the lever F are pivotally secured vertically-projected bars *p p'*, the former extending upwardly and into a groove provided on the under side of the cap *a'*. To the lower end of the
75 pawl *b*, between the bars *p p'*, at the upper end of the bar *p'*, is pivotally secured a dog G, said dog having a short tail or lever portion *g*, which is secured to a fixed portion of the structure by a yielding connection F';
80 and for the purpose of this application I have provided for such yielding connection an inclosing case or cylinder H, the lower end of which is secured to the knee C or bar D. In
85 said cylinder is placed a coiled spring *r*, as shown in Fig. 3, through which is passed a bolt or rod *s*, having at its lower end a washer and nut to engage the lower end of the spring, the upper end having prongs *t*, by which the
90 rod is connected to the lever end or tail of the dog G, the upper end of the spring resting against the cylinder-cap *u*.

A sliding head J, having a vertical aperture *v* and a horizontal offset aperture *w*, the former to embrace and slide upon the bar E
95 and the latter to receive the dog K, is provided, and to secure the head J in vertical adjustment a screw *x* is turned into a threaded aperture in the head J. On the inner end of
100 said screw is placed a block *y*, that rests in a recess in the head, the face of the block against the bar E. The head may be raised or lowered by taking hold of the handle *z* and when adjusted secured against vertical movement by turning the handle in the direction

to cause the screw to press the block against the sliding bar.

At the front side of the head J is provided lugs *d*, to which is pivotally secured a dog-locking latch L, said latch having a notch *d*², adapted to receive and engage the sides of the dog K and to bite and hold said dog against outward longitudinal movement in the aperture *w* in the head J. To move the dog through the head, the bite of the latch is released by pressing it toward the head. Between the latch and the head is placed a short stiff coiled spring, (not shown in the drawings,) the energy of which is exerted against the latch to hold the diagonally-opposite edges of notch *d*² in engagement with the sides of the dog.

The object sought by the hereinbefore-described structure is to provide a dog that may be operated singly—that is, by the use of the lever F—to draw down the bar E to drive the dog K into the log alone, or to be operated double—that is, by the same lever—to draw down the dog K, as before stated, and throw out and up the dog G, the spring or yielding connection H of the lever or tail end of the dog to hold that end of the dog stationary or thereabout until the dog has come in contact with the log, whether it be large or small, when the dog will move up bodily, the point penetrating the log, thus providing a lower hook or dog that will move out or up to any size or form of log, at which instant both the upper dog K and the lower dog G will be simultaneously driven into the log; and to further provide for an unequal movement of the dogs K and G, in case the down movement of the former should be arrested before the latter has penetrated the log, the continued movement of the lever F (the descent of the bar E having been arrested) will move the bars *p* and *p'* up to carry the point of the dog up and into the log. When the dog stands in normal position, the hook G rests between the bars D E. The lever F is held in vertical position by a pin *d*⁴, projected from the side of the lever, engaging the notch *a*⁴ on the under side of the latch. The pawl *b* passes over the bar *p* to lock it down.

To operate the upper dog K alone, the head J is dropped down until arrested by the point of the dog striking the log and secured by the screw-lever. The lever F is then drawn back and down to force the dog into the log, the pawl *m* locking the parts in adjustment, a reverse movement releasing the dog.

To operate both the upper and the lower dogs simultaneously, the parts being in normal position, drop the head and upper dog, as before stated, and grasp the lever F and the handle-lever *n* to raise the finger *h* on the pawl-rod *h'*, the notch *g* to engage the pin *f* on the latch *e*. The lever is now drawn outward and down. The engagement of the latch *e* with the finger *h* will draw the pawl *b* out of engagement with the upper end of the bar *p*,

the friction of the latch *a* to hold the pawl out of the way of the upward movement of the bar *p*. As the lever F is moved down the dog G is swung out by the upward movement of the bars *p p'* until the point of the dog-hook comes in contact with the log, at which instant the two dogs will be moved simultaneously into the log. The yielding connection at the rear end of the dog G will serve to hold the dog out and against the log as it is raised and forced into it by the upward movement of the bars *p p'*, the lever F drawing down the bar E and dog K at the same time that it is moving up the dog G. To release the dogs, the lever F is seized, as before stated, and thrown up, the pin *d*⁴ on the lever to raise the latch *a*, releasing the friction engagement with the pawl *b*, at which instant the pawl will fall back into normal position.

To use the lower dog alone, the head J, with the dog K, is secured up out of the way, when the lower dog may be used to cant or turn the log. In this latter case the bracket *i* will rest on the turned-out portion of the bar D. It will be observed that by supporting the lever F on the pin *k*, which is carried by the bracket *i*, there is no loss of power, as over a dead-center, every ounce of power applied on the lever F reaching the dogs through the bars E and *p p'*.

Having thus fully described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a sawmill-dog, of the stationary bar D, a vertically-sliding dog-carrying bar E, located adjacent thereto, an actuating-lever, a finger *h* and pin *d*⁴, carried by said lever, latches *a* and *e*, secured to said bar D, a pawl *b*, against which said latch *a* bears and to which said latch *e* is pivoted, a dog G, bars *p p'*, pivoted to the lever with their lower ends and one engaging the pawl *b* with its upper end and the other pivoted with its upper end to the dog G, and a yielding connection between said dog G and a stationary part.

2. The combination of a supporting frame or stand, a pivoted actuating-lever, a dog G, having a laterally-projecting arm, bar *p'*, pivoted to said lever and to said dog, and a yielding connection between the lateral arm and the supporting-frame.

3. In a sawmill-dog, the combination of the frame, the bar D, a sliding bar E in close proximity thereto, a dog-supporting head J, located on said bar E, means for securing said head to the sliding bar, a dog K, secured to said head, an actuating-lever F, a dog G, a bar *p'*, connecting said actuating-lever with said dog G, and a yielding connection between dog G and a fixed part of the frame.

4. In a sawmill-dog, the combination of a bar D, a pivoted lever F, a dog G, a connection between said lever and dog, a latch *a*, pivoted to said bar, a latch *e*, pivoted beneath said latch *a*, a pawl *b*, having a frictional en-

gagement with the latch *a* and latch-operating finger *h*, and latch-pin *d*⁴, carried by said lever.

5 5. In a sawmill-dog, the combination, with a sliding bar *E*, of a head *J*, adjustably clamped to said bar, a dog *K*, having a sliding engagement in said head, and a latch *L*, pivoted to said head at a slight distance from the edge thereof to swing in a path at right angles to
10 a vertical line drawn through said head, said latch having a notch the walls of which embrace the dog *K*, whereby the outward movement of said dog is prevented and an inward movement allowed.

15 6. In combination, a supporting-frame, a stationary bar *D*, a sliding bar *E* in close proximity thereto, a dog *K*, carried by said bar *E*, a lever *F*, a dog, means for connecting said lever to said dog, and a yielding connection between the bar and supporting-frame,
20 comprising a cylinder *H*, spring *r*, arranged therein, and rod *s*, actuated by said spring and connected to said dog *G*.

7. In a sawmill-dog, the combination, with the sliding bar *E*, of a bracket *i*, secured there- 25 to and provided with a segmental rack, a lever *F*, journaled to said rack and provided with a dog to engage therewith, a dog *G*, having a yielding connection with a stationary part, and a bar *p*¹, connecting the lever *F* 30 with the dog *G*.

8. In a sawmill-dog, the combination, with a dog moving downward in vertical line, of a second dog having an upward and outward swinging movement toward the first-named 35 dog and a yielding connection between the swinging dog and a fixed part, and means for simultaneously moving said dogs at different rates of speed, substantially as set forth.

In testimony whereof I have hereunto set 40 my hand this 11th day of August, A. D. 1891.

GEORGE F. KNIGHT.

Witnesses:

W. K. MILLER,
CHAS. R. MILLER.