

(No Model.)

F. A. J. SMART.  
SAWMILL DOG.

No. 575,432.

Patented Jan. 19, 1897.

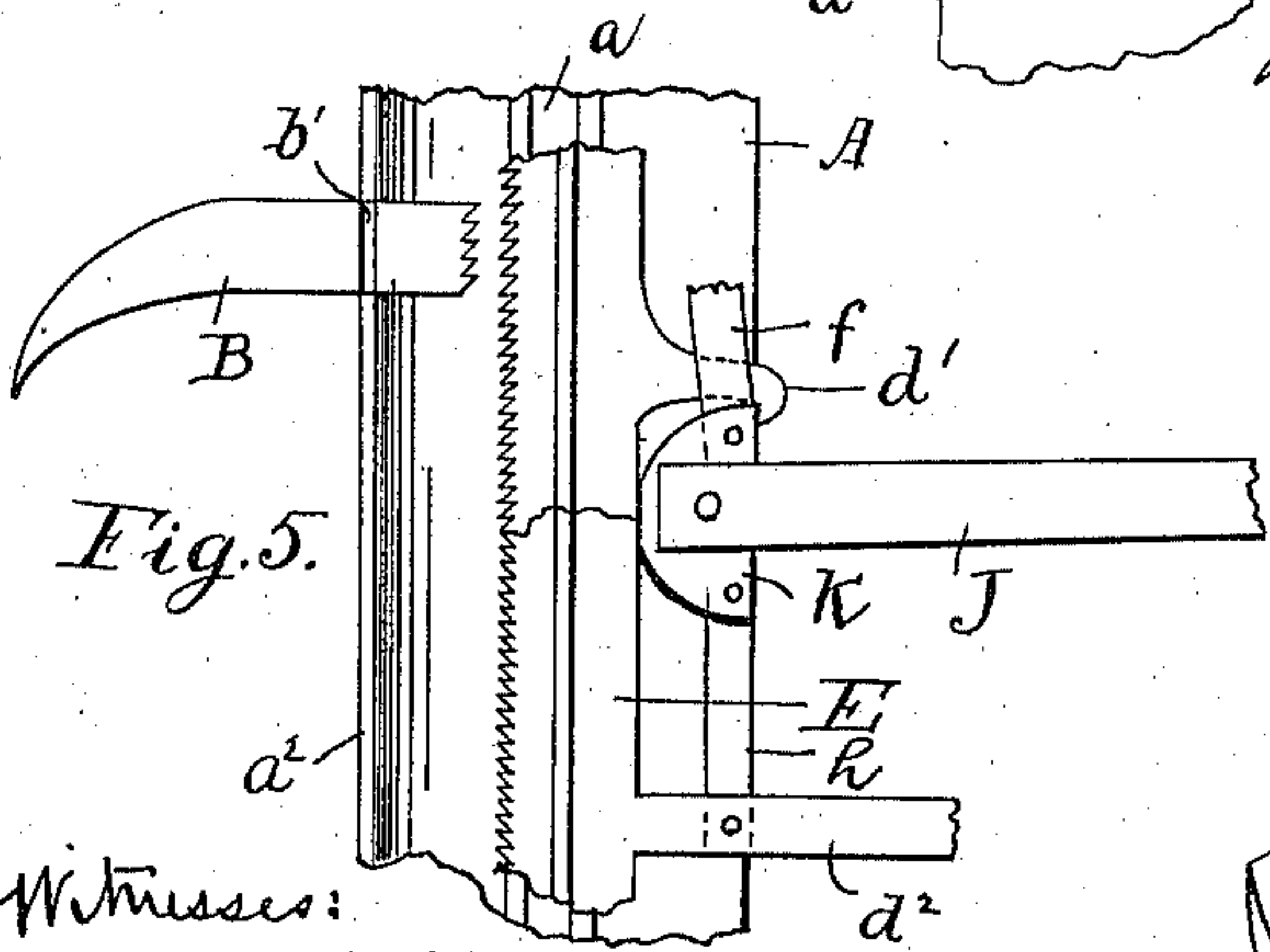
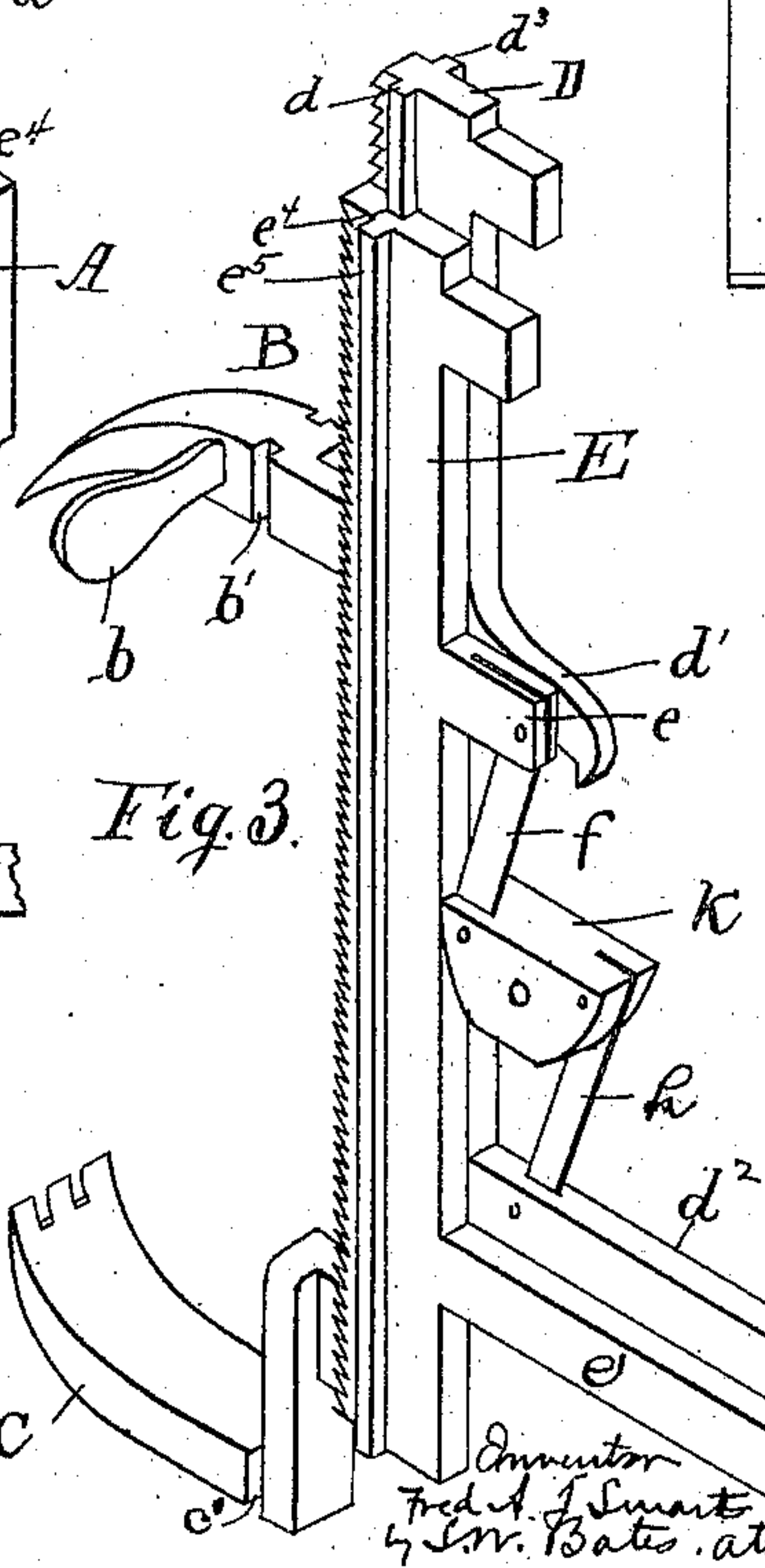
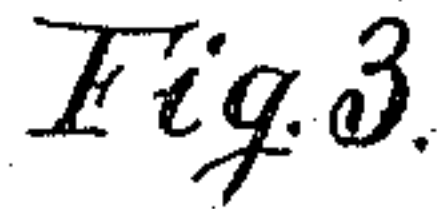
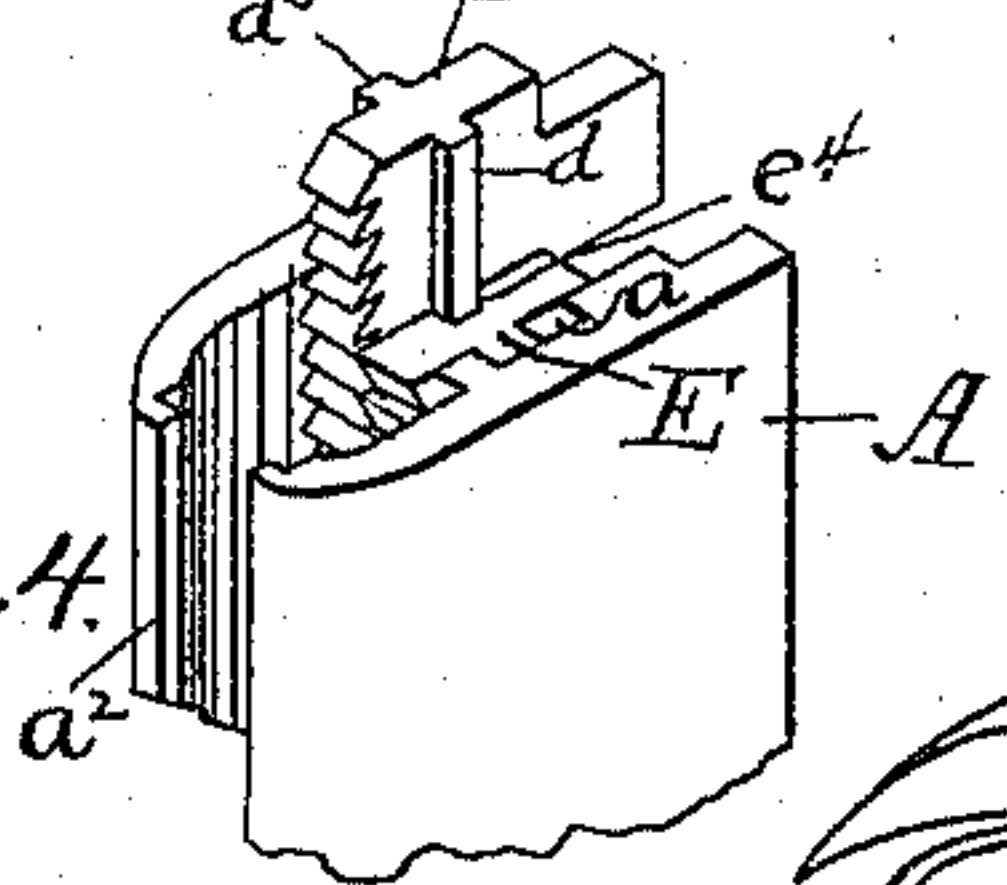
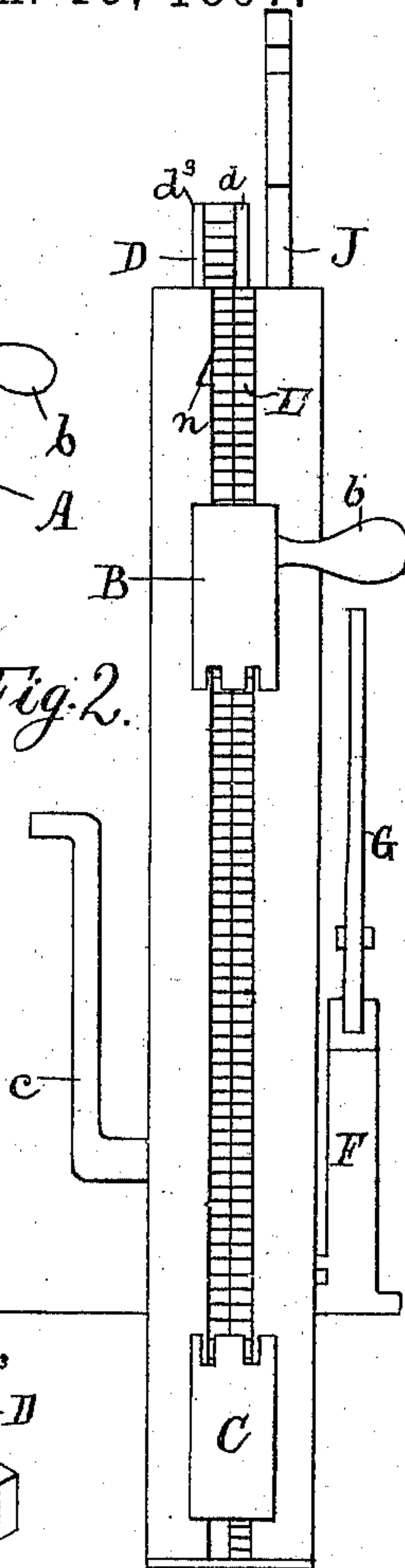
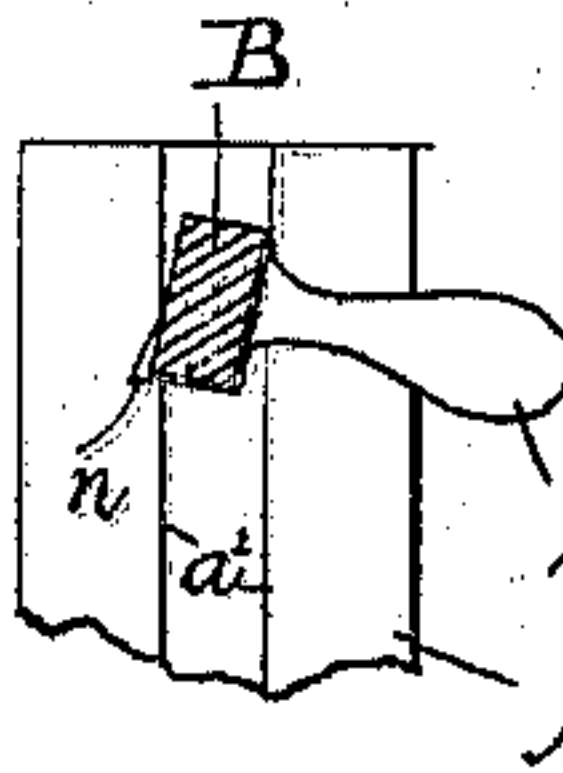
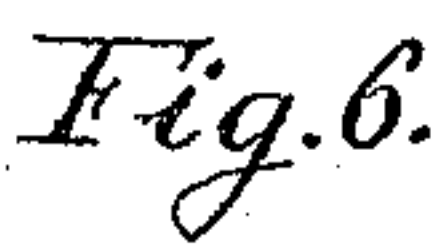
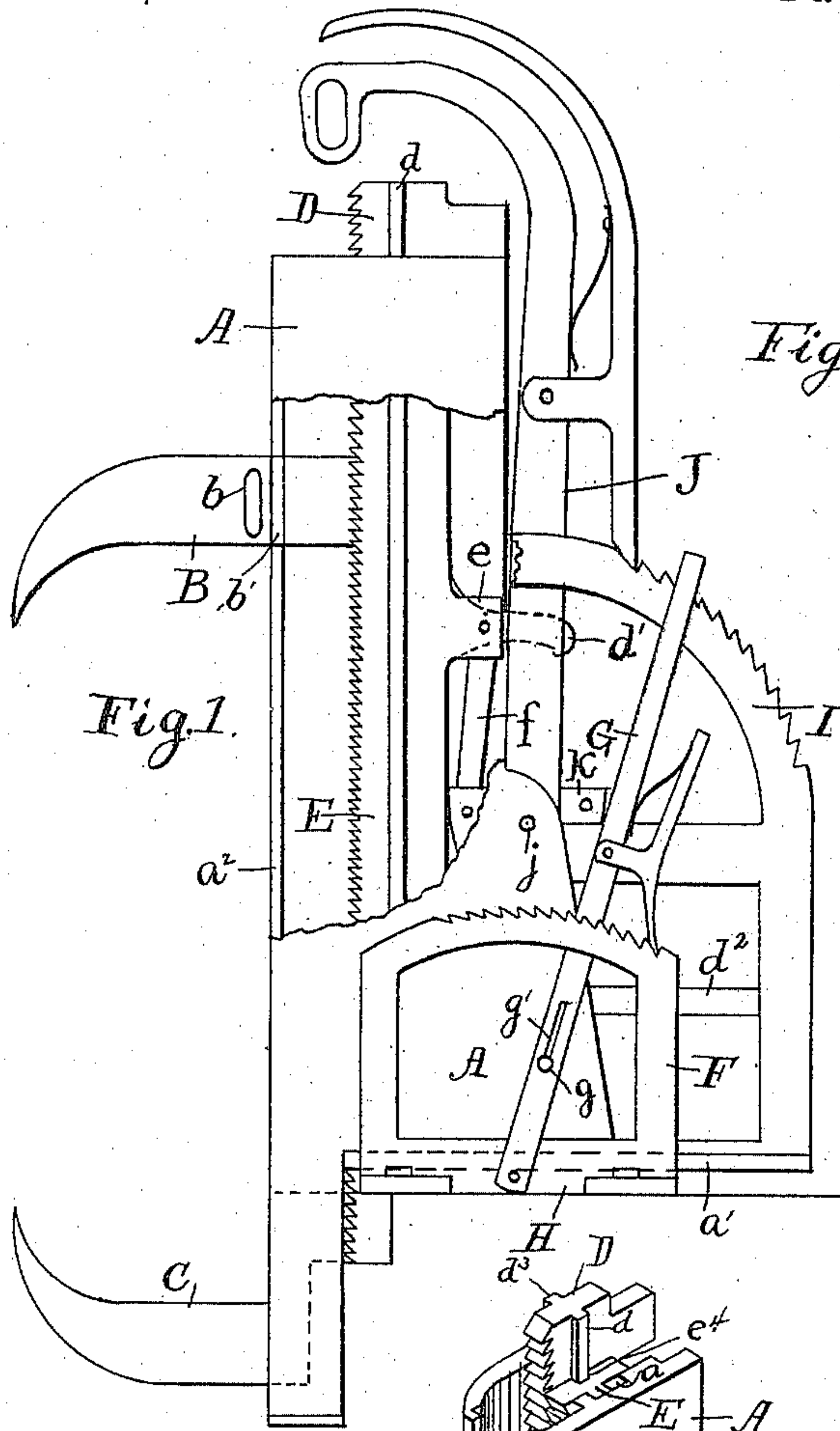


Fig. 5.

Witnesses:

E. Under Freeman

John T. Curtis

Inventor  
Fred A. J. Smart  
by L. W. Bates, atty.



# UNITED STATES PATENT OFFICE.

FRED A. J. SMART, OF PORTLAND, MAINE, ASSIGNOR OF ONE-FOURTH TO  
WALTER FICKETT AND EDWARD L. MILLIKEN, OF STROUDWATER,  
MAINE.

## SAWMILL-DOG.

SPECIFICATION forming part of Letters Patent No. 575,432, dated January 19, 1897.

Application filed October 5, 1896. Serial No. 607,954. (No model.)

*To all whom it may concern:*

Be it known that I, FRED A. J. SMART, a citizen of the United States, and a resident of Portland, in the county of Cumberland and State of Maine, have invented a certain new and useful Improvement in Sawmill-Dogs; and I hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which the invention belongs to make and use the same.

My invention relates to sawmill-dogs of that class used for securing logs on the carriage in board, circular, and other similar sawing-machines.

The principal object of the invention is to construct a dog which will clamp the log above and below by a single movement of the operating-lever, completely releasing the dogs, so that they can be moved independently up and down when the lever is thrown back.

According to my invention I make use of a pair of dogs or jaws mounted in a suitable carriage so that they each have an independent movement in a vertical direction when not in operation.

The movement by which they are pressed into the log to dog it is secured by two racks having teeth which are adapted to engage teeth on the rear portion of each dog. Means are provided for separating the racks and jaws when the latter are to be adjusted to clamp the log and to bring them together and into engagement when the pressure is to be applied for forcing them into the log. The racks are given a movement vertically in opposite directions to set the dogs, and these various movements are, in the form of apparatus herein shown, made by the movement of a single lever.

I have illustrated my invention in the accompanying drawings, wherein I have shown the device in the form in which I prefer to make it, although it is understood that it may be constructed in other forms while keeping within the spirit of my invention.

In the drawings, Figure 1 is a side view with a portion cut away, showing the mechanism in the interior. Fig. 2 is a front view. Fig. 3

is a perspective view of the working parts,

showing their relative positions. Fig. 4 is a perspective view of the upper end of the carriage. Fig. 5 is a detail showing the operation of the cam, and Fig. 6 is a detail showing the manner of holding up the upper dog.

A represents a suitable carriage mounted, as here shown, on a base-plate H, so as to have a horizontal movement. This is secured by a tongue  $a'$  on the lower end of the carriage, which fits in a corresponding groove in the base-plate. A lever G, pivoted to the base-plate and to the lower portion of the carriage at  $g$ , is provided for moving the carriage out and in. A groove  $g'$  is formed in the lever G to allow of the necessary motion of the pivoting-pin  $g$ , and a segment F is provided for holding the lever in position.

The dogging of the log is effected by means of two dogs or jaws B and C, mounted one above the other in vertical guides  $a^2$  in the face of the carriage A. The lower jaw C is provided with a handle  $c$ , and the upper jaw is provided with a handle  $b$ , by which they may be raised and lowered.

The jaw B has grooves  $b'$ , and the jaw C has grooves  $c'$ , which fit the guides  $a^2$ .

When the jaws are not set into the log, they are free to be moved up and down by means of their respective handles, so that they can thus be quickly adjusted to logs of different size.

The upper jaw may be temporarily held up by means of a notch  $n$ , formed in the side of the guide  $a^2$ , near the top, in such a position that the jaw will catch in the notch when the handle is released, as is clearly shown in Fig. 6.

To force the jaws into the log after they have been approximately adjusted by hand against the surface of the log, I make use of two racks D and E, mounted in the carriage in vertical guides in rear of the two jaws. Each one of the jaws has teeth on its rear portion adapted to engage the teeth of the rack, and means are provided for separating the racks and the jaws for disengaging them and also for forcing them into engagement and for imparting to the racks an opposite vertical movement, by which the jaws are moved together. In the form here shown I



provide for imparting to the racks a limited horizontal movement to engage and disengage the jaws.

The racks are placed side by side and are dovetailed together by a tongue  $d$  on the rack D, fitting into a groove  $e^4$  in the rack E, so that the two racks are locked together, but are capable of moving vertically by each other. The rack D has a tongue  $d^3$ , and the rack E has a tongue  $e^5$  on the outside, these tongues fitting into a wide groove  $a$ , formed on the inside of the carriage, as seen in Fig. 4. Thus the racks may be moved forward and back horizontally to the width of the groove  $a$ . When in their forward position, they engage the jaws, and when in their rear position they are free from the jaws.

The horizontal movement of the racks is effected by means of a cam K, pivoted in rear of the racks, the cam being operated by a suitable lever J. When the lever J is in its vertical position, the edge of the cam presses the racks forward into engagement with the jaws, and when the lever is thrown back the cam strikes against a hook  $d'$ , which forms a part of the rack D, as herein shown, retracting both racks out of engagement with the jaws. In addition to forcing the racks in and out, the cam by the same movement moves the racks in opposite directions, setting or releasing the jaws. This movement is accomplished, as herein shown, by links  $f$  and  $h$ , pivoted by one end to the cam on each side of the center and by the other end to one of the racks, so that the turning of the cam slides one rack up and the other down.

$j$  represents the journal of the cam. I is the segment for securing the lever at any required point, and  $e$  and  $d^2$  are rearward projections of the two racks to which the links are pivoted.

A rearward projection  $e'$  is formed on the lower end of the rack E for the purpose of steadying the rack.

The operation of my dog is as follows: The log is rolled against the carriage, the upper jaw being held up by the notch  $n$  and the lower jaw being at the lower end of the carriage. The upper jaw is released from the notch by simply lifting the handle and allowing the jaw to fall onto the top of the log. The under jaw is then lifted into contact with the log, and the lever J, which has been thrown back, is brought forward, causing the

cam to force the racks forward into engagement with the jaws and at the same time drawing down one rack, with the upper jaw attached, and lifting the other rack with the under jaw. By this forward movement of the lever both jaws are at once engaged with the racks and both racks are moved vertically in opposite directions to set the jaws, and the operator, by using both hands, can manipulate the jaws and set them in what is practically one motion. In releasing the jaws the lever is thrown back, disconnecting the racks from engagement with the jaws, the lower jaw is allowed to drop, and the upper jaw is lifted by hand until it engages the notch  $n$ .

If a crooked log is to be sawed, or it is desired to saw on a taper, the lever G can be used to move the carriage A in or out into contact with the log.

I claim—

1. The herein-described sawmill-dog consisting of a carriage, a pair of jaws and a pair of racks so locked together as to permit a vertical movement, one on the other, the said jaws and the said racks being mounted in vertical guides in said carriage, the said jaws being provided with teeth for engaging said racks, a cam for pressing said racks forward horizontally into engagement with said jaws, a hook on one of said racks adapted to engage said cam when the latter is turned backward, for retracting said racks, and links connecting said cam with said racks for moving them vertically in opposite directions.

2. The herein-described sawmill-dog consisting of a carriage, a pair of jaws and a pair of racks so locked together as to permit a vertical movement, one on the other, the said jaws and the said racks being mounted in vertical guides in said carriage, the said jaws being provided with teeth for engaging said racks, a cam for pressing said racks forward horizontally into engagement with said jaws, links for connecting said cam with said racks for moving them in opposite directions and means for disengaging said racks from said jaws by a backward movement of said cam.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

FRED A. J. SMART.

Witnesses:

S. W. BATES,  
DAN HOOPER.