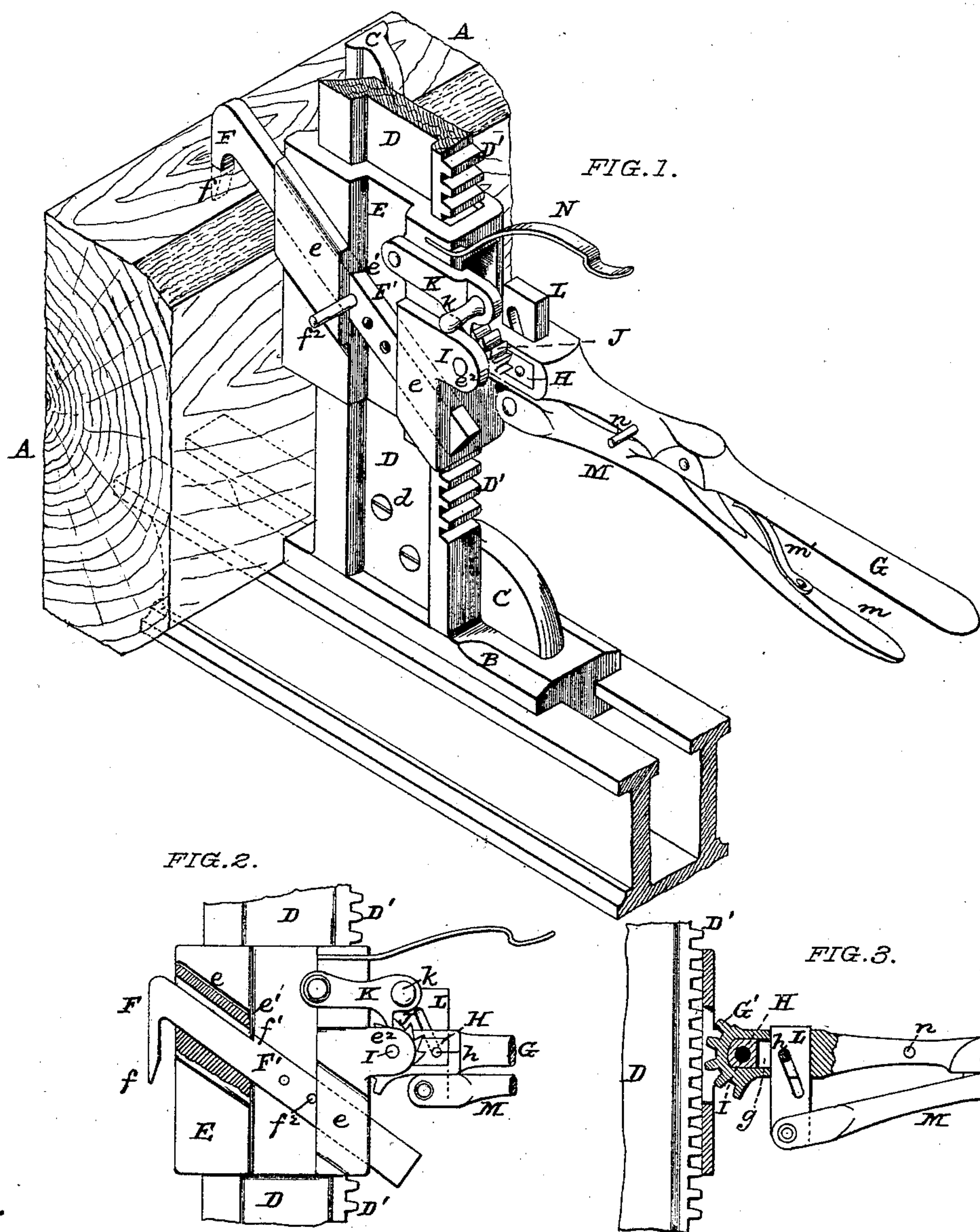


J. P. BARNARD.  
Dog for Saw-Mill Head-Block.

No. 223,094.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN DOGS FOR SAW-MILL HEAD-BLOCKS.

Specification forming part of Letters Patent No. 223,094, dated December 30, 1879; application filed July 19, 1877.

*To all whom it may concern:*

Be it known that I, JOSEPH P. BARNARD, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Dogs for Saw-Mill Head-Blocks, of which the following is a specification.

My improvement consists in the described means of raising and lowering the slider in which the dog is supported, said device having a hand-lever carrying a cog-rack engaging the cogs at the side of the standard on which the slider works. The fulcrum-block of the hand-lever fits in a recess of the lever, so as to allow of the lever being drawn away from the standard to disengage the cogs. The lever is drawn backward for this purpose by a lever attached to a block sliding transversely through the lever and fulcrum-block, and having an inclined slot working on a pin passing through the fulcrum-block.

My improvement also consists in a dog attached to an inclined bar so arranged that it will slide back on being disengaged from the log, so as to be out of the course of the saw without any special attention.

Figure 1 is a perspective view of my invention. Fig. 2 is a detail side view, part in section. Fig. 3 is a section through the fulcrum-block and that part of the lever.

A represents a part of a saw-log on the head-block B, having an ordinary knee, C. D is a rack-bar or upright, which is made to be attached to the side of the knee by screws  $d$ , as shown; or the upright may be otherwise attached or cast in one piece with the knee. E is a slider capable of sliding vertically on the upright D, and affording bearing to the inclined shank  $F'$  of the dog F. The dog slides freely in its bearings  $e$ , so that when its tooth  $f$  is disengaged from the log it will always slide down into the position shown in Fig. 2, so as to be out of the course of the saw. This provision is very important, because if a special operation of the sawyer is required to remove the dog out of the way of the saw, a failure on his part would result in the destruction of the saw and other parts of the machinery.

The outward movement of the dog in its bearings is limited by either the shoulder  $f'$  engaging the corner  $e'$ , or by the pin  $f^2$  coming

in contact with the outer bearing, as shown in Fig. 1. The inward movement of the dog is limited by the pin  $f^2$  coming against the outer side of the inner bearing, as shown in Fig. 2, and it invariably falls back into this position when disengaged from the log by the upward movement of the slider. The slider is moved upward and downward by the hand-lever G, at whose end is a cog-segment,  $G'$ , which engages the cog-rack  $D'$  at the edge of the upright D. The lever G is fulcrumed on a block, H, which occupies a recess,  $g$ , of the lever. The block H turns on a pivot-pin, I, whose ends pass through the lugs  $e^2$  of the slider. Upon the side of the block H is a ratchet-segment, J, and K is a pawl engaging with such ratchet to prevent the lifting of the hand end of the lever G and the upward movement of the slider. This pawl may be raised by a handle,  $k$ , to disengage it from the ratchet.

The lever G is capable of longitudinal movement upon the block H, to disengage its cogs  $G'$  from the rack  $D'$ , so that when the cogs are disengaged the lever may be raised or lowered without moving the slider E. This endwise movement of the lever is accomplished by a sliding block, L, moved by a lever, M.

The block slides transversely through the block H and lever G, and has an oblique slot working on a pin,  $h$ , passing through the block H, so that as the block L is drawn downward it shall travel in the line of the slot, and its side, by its bearing against the outer side of the recess  $g$  of lever G, shall move the lever G outward and disengage the cogs  $G'$  from the rack  $D'$ . To cause this movement of the block L the end  $m$  of the lever M is drawn up to the lever G, compressing the spring  $m'$ , and when the lever M is relieved from the pressure of the hand the spring  $m'$  reacts, and by moving up the block L again engages the cogs  $G' D'$ . N is a catch-spring, which engages the pin  $n$  on lever G when it is raised and holds it up.

The operation is as follows: When the log is put in position upon the head-block the dog is held out by one hand upon pin  $f^2$ , and the block L is drawn down by the lever M, disengaging cogs  $G'$  from rack  $D'$ , as shown in Fig. 3, and the slider descends by gravity un-



til the tooth  $f$  of the dog rests upon the log. The cogs  $G'$  are then allowed to engage rack  $D'$ , and the end of the lever  $G$ , being forced downward, carries down the slider and forces the tooth  $f$  into the log, as shown in Fig. 1. To disengage the dog from the log the end of the lever  $G$  is raised, which lifts the dog and draws its tooth from the log. As the tooth is drawn from the log the dog at once slides back in its inclined bearings out of the course of the saw, when the head-block knee is in its most forward position. (See Fig. 2.) The dog may be used in this position in sawing off the last two or three boards from the log, and then the shoulder  $f'$  engages the corner  $e'$ , to limit the outward movement. The hand and stop pin  $f^2$  is movable, and may be screwed into any one of the holes  $f^3$ , as may be required. In case the lever  $G$  may be in its highest position, and it is desired to raise the slider higher, or in case this lever is in its lowest position and it is desired to move the slider lower, the cogs  $G$  may be disengaged from those  $D'$ , and a fresh movement of the lever be had to accomplish either of these movements of the slider.

I claim as my invention—

1. The saw-mill dog  $F$ , supported by inclined bearings  $e e$ , so as to slide back by its own weight when disengaged from the log, and having the shoulder  $f'$  and pin  $f^2$ , to regulate its movement in said bearings, substantially as set forth.

2. In combination with the slide  $E$ , carrying the mill-dog, the standard  $D$ , with rack  $D'$ , and lever  $G$ , capable of endwise movement to disengage the cogs  $G' D'$ , for the purpose set forth.

3. The combination of lever  $G$  with cog-sector  $G'$ , fulcrum-block  $H$ , cam-block  $L$ , spring-lever  $M$ , and rack-bar or upright  $D$ , substantially as and for the purpose set forth.

4. The combination, with lever  $G$ , fulcrum-block  $H$ , cam-block  $L$ , and rack-bar  $D$ , of the ratchet and pawl  $J K$ , substantially as set forth.

JOSEPH P. BARNARD.

In presence of—

SAML. KNIGHT,  
CHAS. HALL.