

(No Model.)

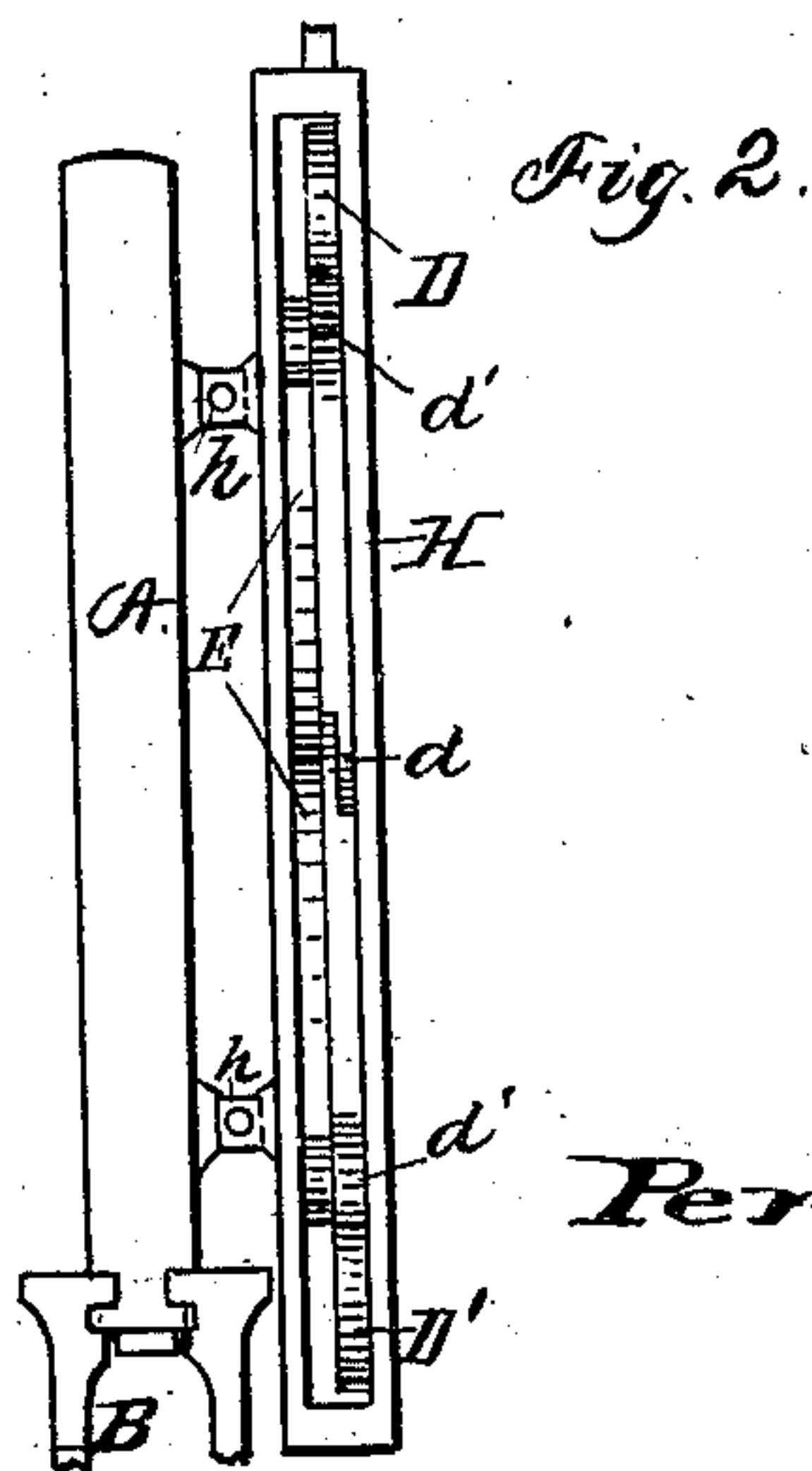
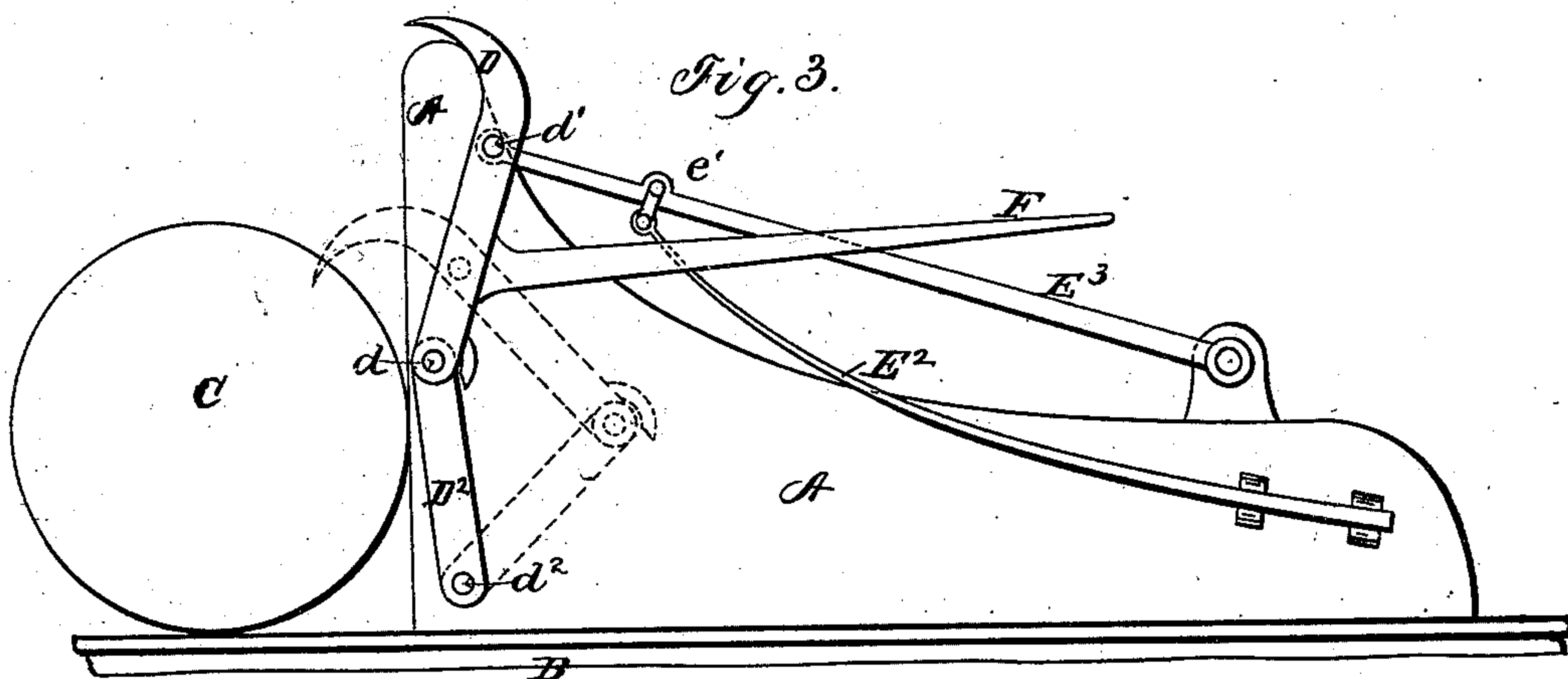
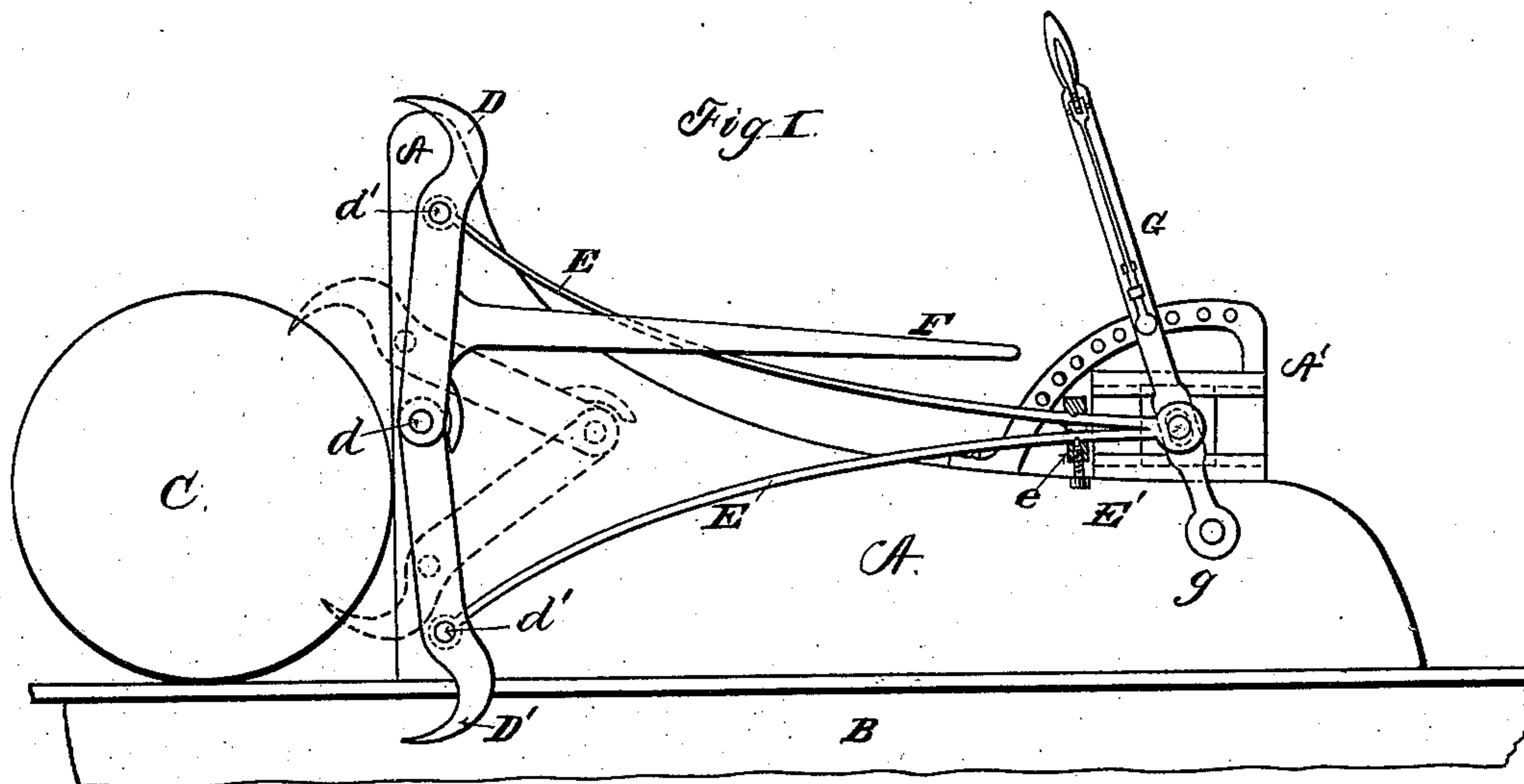
2 Sheets—Sheet 1.

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SAW MILL DOG.

No. 294,710.

Patented Mar. 4, 1884.



Witnesses.

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Fig. 6.

$a'$

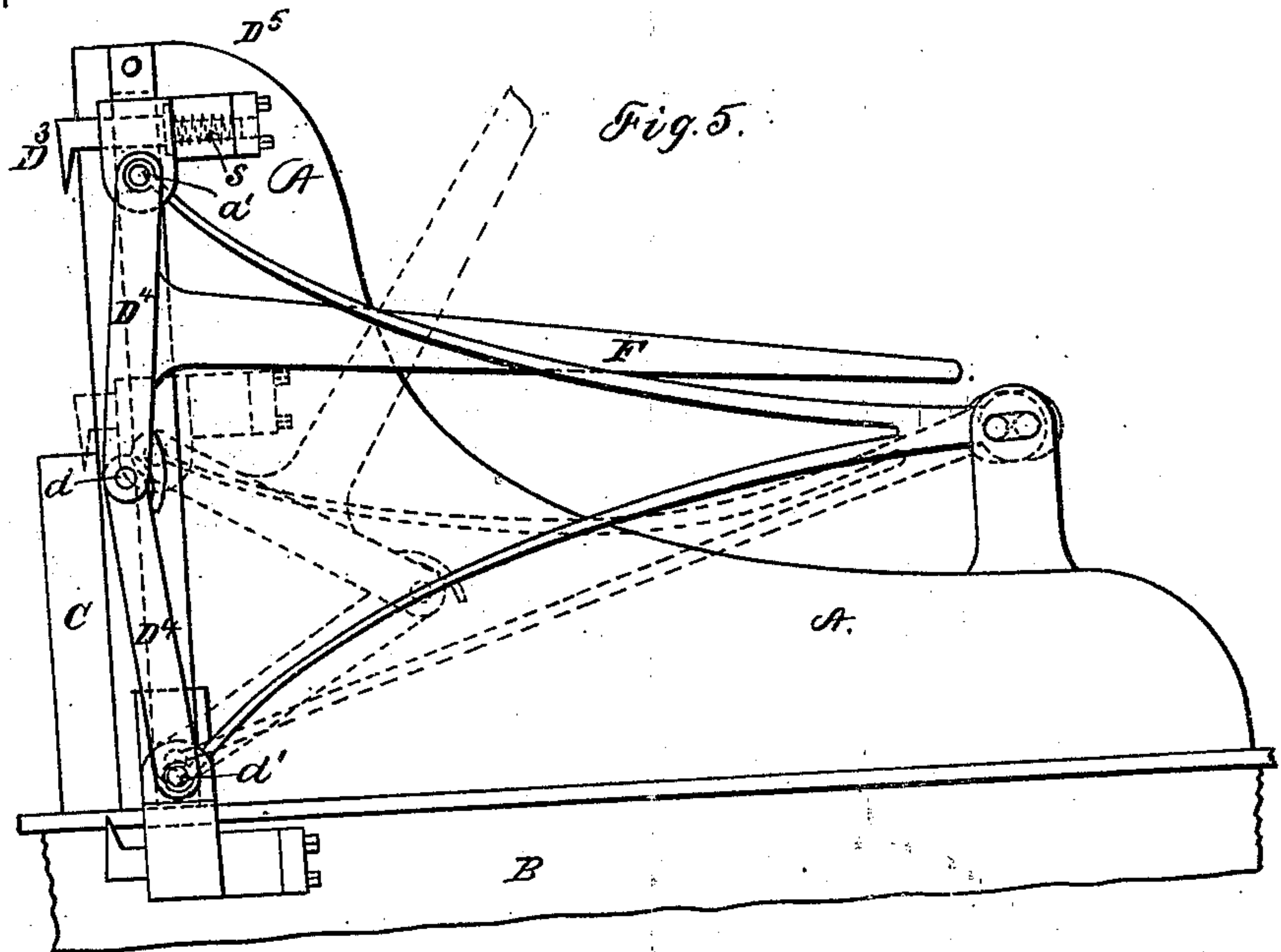


Fig. 5.

Fig. 7.

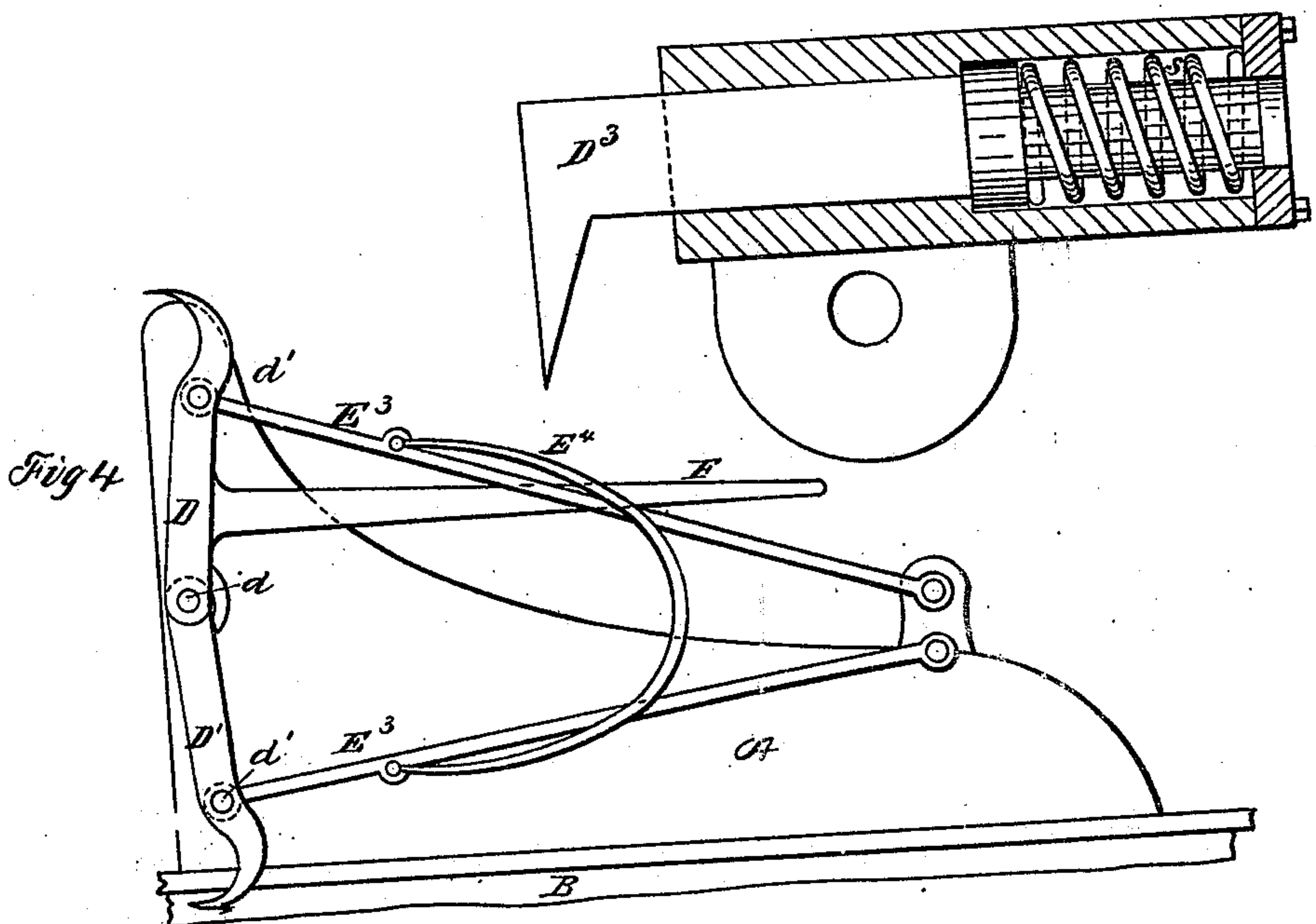


Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## SAW-MILL DOG.

SPECIFICATION forming part of Letters Patent No. 294,710, dated March 4, 1884.

Application filed March 1, 1882. Renewed January 14, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM M. WILKIN, a citizen of the United States, residing at East Saginaw, in the county of Saginaw, in the State of Michigan, have invented new and useful Improvements in Saw-Mill Dogging Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and the letters or figures of reference marked thereon.

In the operation of a saw-mill, the dogging apparatus is employed to firmly hold the log to the jacks or knees, which push it toward the saw, and after the log is squared up into a cant the dogs hold it against the knees until the last cut is made.

The requirements for properly holding a log are entirely different from those for holding a cant or board, and therefore a mill is generally provided with two different apparatuses, one of which is called a "log-dog" and the other a "board-dog."

Various attempts have been made to provide an apparatus which will serve equally well for both purposes, but none that I am aware of have proved entirely successful. To accomplish this end is the primary object of this invention.

To properly grasp and hold a log, the dogs should grasp it well below and well above the central horizontal line, for the reason that during the operation of pushing the log forward, and when the carriage is suddenly stopped or started, the log is apt to turn, and if the dogs only reach a short distance from the face of the knee, although they may enter from above and below the center line, they will not have a hold with sufficient purchase to properly hold the log from turning. It is further essential that the dogs be so arranged and operated that they will grasp logs of various sizes in the manner above described with the same effect. The dogs should also be capable of reaching out and grasping logs or cants which are not snug against the knee, and draw them up snug. When used for holding a cant, the dogs should extend very little beyond the knee-line, so as not to be in the way of the saw when sawing the last cut. Besides the above requirements, the dogs should be capable of instant adjustment from one capacity to another,

and this adjustment should be effected by the movement of not more than two levers; and, further, the dogs should be able to grasp the log or cant with great force, so as to thoroughly embed the bits, and this force should be obtained without undue exertion by the attendant.

To grasp logs with equal effect both above and below the central horizontal line, I provide two dog-bits, one of which works downward and the other upward at the same time and by the same operating mechanism. These two bits have long shanks, and are pivoted together at the ends of the shanks, and are also pivoted near the bits to arms which extend back to the rear of the knee, and are there pivoted together upon a common center. The dogs are not attached to the standard of the knee, and therefore they can move with a great degree of latitude. Their general design is that of a pair of grapples, and as they move from a common center they can grasp logs above and below the central line in nearly the same position on the log, no matter where, by the size of the log, the central line cuts the standard. The point where the arms to which the dogs are attached is pivoted I make movable horizontally, and thereby I am able to extend the dogs far beyond the face of the knee or draw them back, so as to extend a very little beyond the knee-line. To this movable pivot I attach a lever, by which I can move it, and thereby I can send the dogs out and grasp a log or cant and draw it back against the face of the knee. One of the dog-shanks I provide with a lever, by which I move them into and out of the timber. The arms to which the dogs are pivoted I make of springs, or provide them with springs, and thereby I obtain a force outside of the attendant for forcing the dogs into the timber.

I have also devised several modifications of the above construction, some of which show all and some only a part of the above features.

In order to enable others skilled in the art to which this invention relates to construct the same, I will proceed to minutely describe the same, together with the aforesaid modifications.

My device is illustrated in the accompanying drawings as follows:

Figure 1 is a side elevation of a dogging ap-



paratus possessing all the features above described. Fig. 2 is a front elevation of the same. Figs. 3, 4, 5 are modifications, which will be fully pointed out hereinafter. Fig. 6 is a front view of the parts shown in Fig. 5. Fig. 7 is a detail of construction of parts shown in Figs. 5 and 6.

The device shown in Fig. 1 is as follows:  
A is the knee of the head-block.

B is the block.

C is the log.

D D' are the dogs, which are pivoted together at  $d$ , and at  $d'$   $d'$  they are pivoted upon the spring-arms E E.

F is the lever attached to the dog D.

E' is the point at which the arms E E are attached and pivoted. This point is a block with a wrist-pin or pivot, and is mounted in grooves in a standard, A', extending from the knee A.

G is the lever by which this block E' is moved.

On the right of Fig. 2 is shown a yoke or frame, H, which is attached to the side of the knee. This serves as a guide or case to hold the dogs, and yet allow them free action. In place of this case H, the knee may be provided with a central slot or opening to receive the dogs. The two shanks at  $d$  are connected with a joint somewhat like that in a rule. It is so formed that the dogs can only open just far enough to let the pivot  $d$  pass beyond the line of the pivots  $d'$   $d'$ ; hence when the dogs are opened fully they will stay open until the pivot  $d$  is drawn back past the line. When this occurs, the spring-arms E will throw the dogs into the log. This manner of constructing the joint  $d$  saves the necessity of a catch to hold the lever F down, and thus keep the dogs open.  $e$  is a clamp on the springs for regulating their tension.

The operation of this device is as follows: The attendant raises the end of lever F far enough to throw the pivot  $d$  back of the central line between the pivots  $d'$   $d'$ . The springs E E then act upon the dogs simultaneously and throw them into the log. The dog D', when the log is so small that its central line comes below the pivot  $d$ , enters the log first, and the other quickly follows; but to do so the arms have moved slightly on their pivot E'. The log is now thoroughly grasped by the dogs, as seen by dotted lines in Fig. 1. If the log is not snug against the knee, it can be drawn up by the lever G. If it was a cant that was to be grasped in place of a log, the attendant would, before springing the dogs, move the lever G back, so as to draw back the dogs so they would just nip onto the edge of the cant. By the use of the two levers G and F the attendant can adjust and operate the dogs at will.

The modified constructions shown are as follows:

In Fig. 3 only one dog is used, D, which is pivoted at  $d$  to a link, D', which, in place of carrying a lower dog, is pivoted to the knee

of frame-work at  $d'$ . Only one spring-bar, E', is used, and this is not a spring of itself, as they are in Fig. 1, but is connected with a whip-spring, E'. The bar E' is pivoted to a stationary point at the rear of the knee.

The construction shown in Fig. 4 is very similar to that in Fig. 1. It shows another method of constructing the spring-bars—viz., using bars E', as in Fig. 3, and connecting thereto a spring, E', for operating the dogs. In this construction the bars are not pivoted to a common center. It is not necessary that they be pivoted to a common center. The farther the centers are apart vertically the nearer will the dogs move to the face of the knee as they approach each other.

Figs. 5 and 6 show the spring-bars in use upon common board-dogs which move in a direct vertical line. This construction is as follows: D<sup>3</sup> D<sup>3</sup> are the dogs, which are mounted in clips D<sup>5</sup> D<sup>5</sup>, which slide upon the vertical bar  $a$ . The dogs, or rather the clips, are connected by links D<sup>4</sup> D<sup>4</sup>, which are pivoted together at  $d$ , the same as the shanks of the dog D D' in Fig. 1, and one of them is provided with a lever, F. These links operate the same as the shanks of the toggles in Fig. 1. The spring-bar pivot is in a slot at the point of its connection with the knee, so as to allow the dogs to move in a direct vertical line. This construction is only serviceable as a board-dog.

Fig. 7 shows how the dog D<sup>3</sup> is adjusted in the clip D<sup>5</sup>. It is mounted in a socket, and has a spring, S, to keep it out in place. If a large log is rolled upon the blocks, the dog will be pressed back into the socket, overcoming the spring.

By having the dogging apparatus connected with a sliding pivot or block back of the standard and moved by a lever, which, as shown in Fig. 1, is provided with means for stopping it and holding it at various points, the log can be thrown out from the knee to a desirable distance and held there, thus serving the purpose of an independent knee in holding tapering logs or sawing tapering stuff.

What I claim as new is—

1. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: two dogs adapted to grasp the log or cant from opposite directions, which are independent of the knee, and are pivoted together by their shanks, and are also pivoted near their bits to bars which are pivoted to a support upon the knee back of the standard.

2. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: two dogs adapted to grasp the log or cant in opposite directions, which are pivoted together by their shanks, and are also pivoted near their bits to spring-bars which are pivoted to a support upon the knee back of the standard.

3. The combination, with the knee or jack of a saw-mill head-block, of a dogging appa-



ratus which has its attachment to said jack upon a laterally-movable support back of the standard, and is yoked at its forward end loosely within a frame formed by or upon said standard, and is provided with means, substantially as shown, whereby the attendant can move the same laterally upon the jack and extend the bits of the dogs more or less beyond the face of the standard, for the purposes mentioned.

4. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: two dogs adapted to grasp the log or cant in opposite directions, which are pivoted together at their shanks, and are also pivoted near their bits to bars which are pivoted upon a sliding pivot on the knee back of the standard, which sliding pivot is provided with means whereby the attendant can move the same to and fro at pleasure, whereby the said dogging apparatus can be adjusted by the attendant so as to cause the dogs to act at a greater or less distance from the face of the knee, and also whereby the attendant can grapple a log or cant not snug against the knee and draw it back against the face of the knee.

5. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: a spring-bar pivotally connected with the knee back of the standard, and extending to near the face of the knee, and there connected with a dog which is pivoted thereto near its bit, and is operated upon by a toggle-lever.

6. In a saw-mill dogging apparatus wherein the dog-bits are pivoted on the ends of spring-bars which are pivotally connected with the knee back of the standard, and are moved from contact with the log or cant by a toggle-lever, the combination, with said toggles, of a stop for limiting the movement of the same at the joint toward the face of the head-block standard, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of February, 1882.

WM. M. WILKIN.

Witnesses:

JNO. K. HALLOCK,  
H. R. BARNHURST.