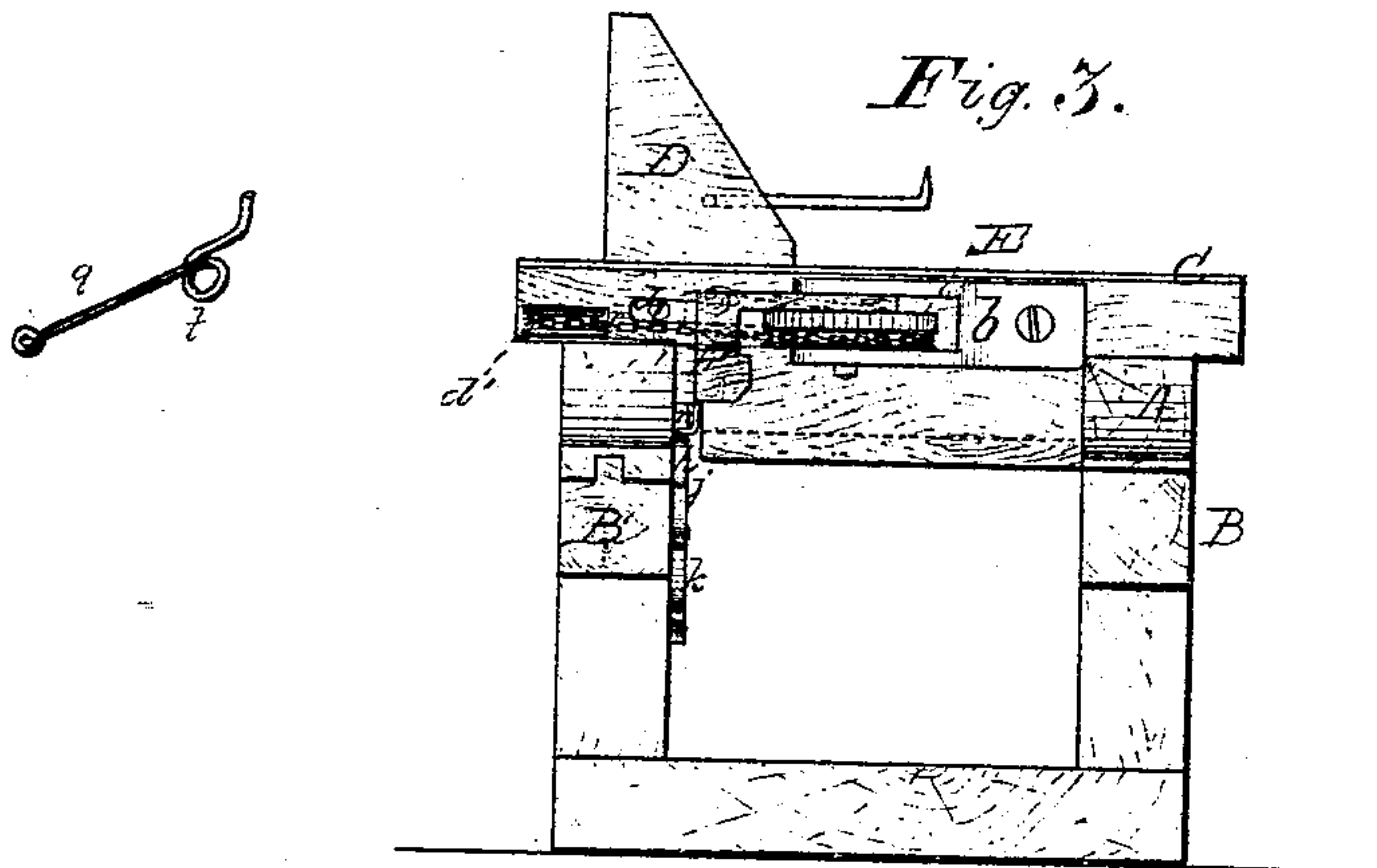
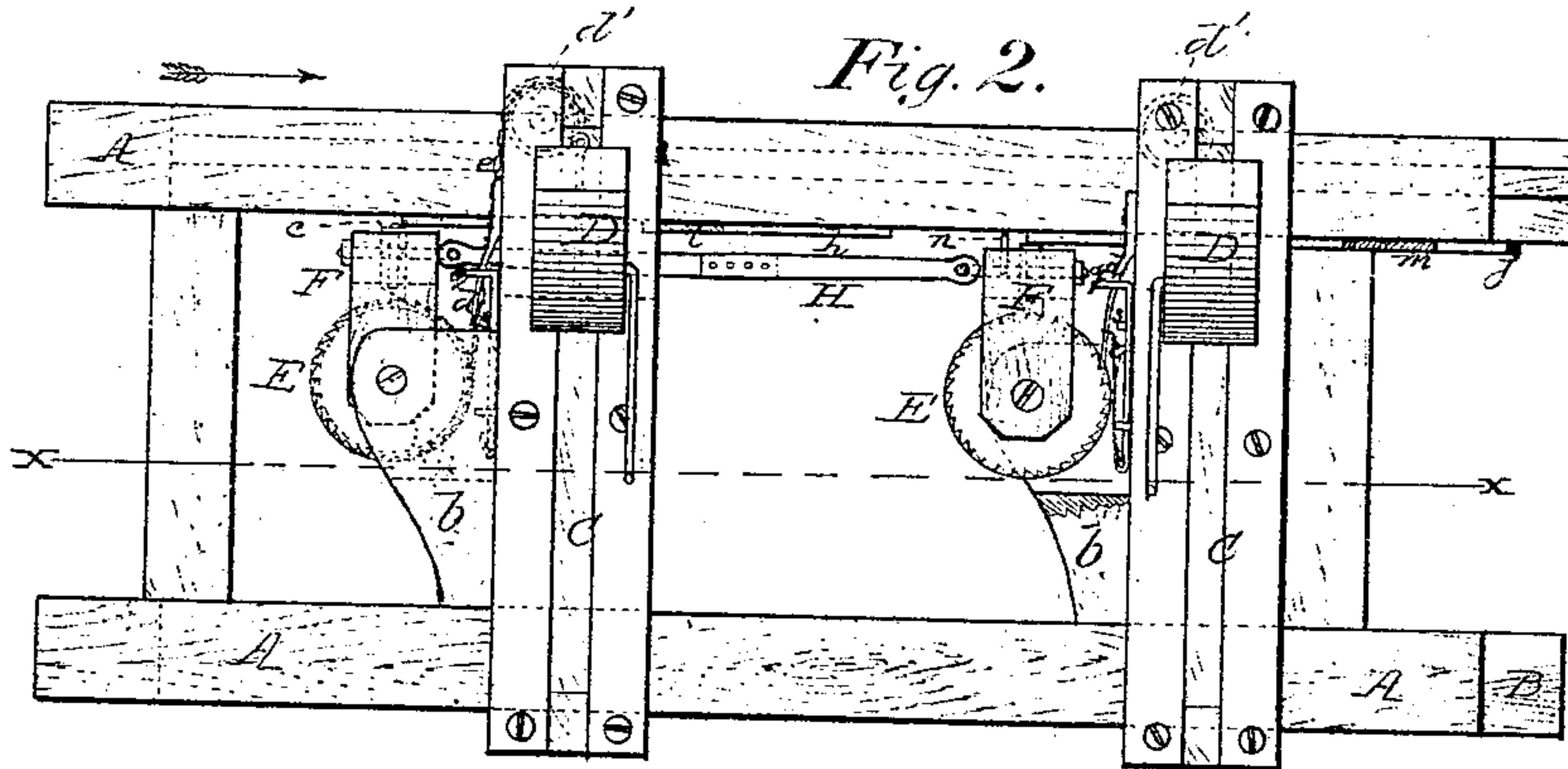
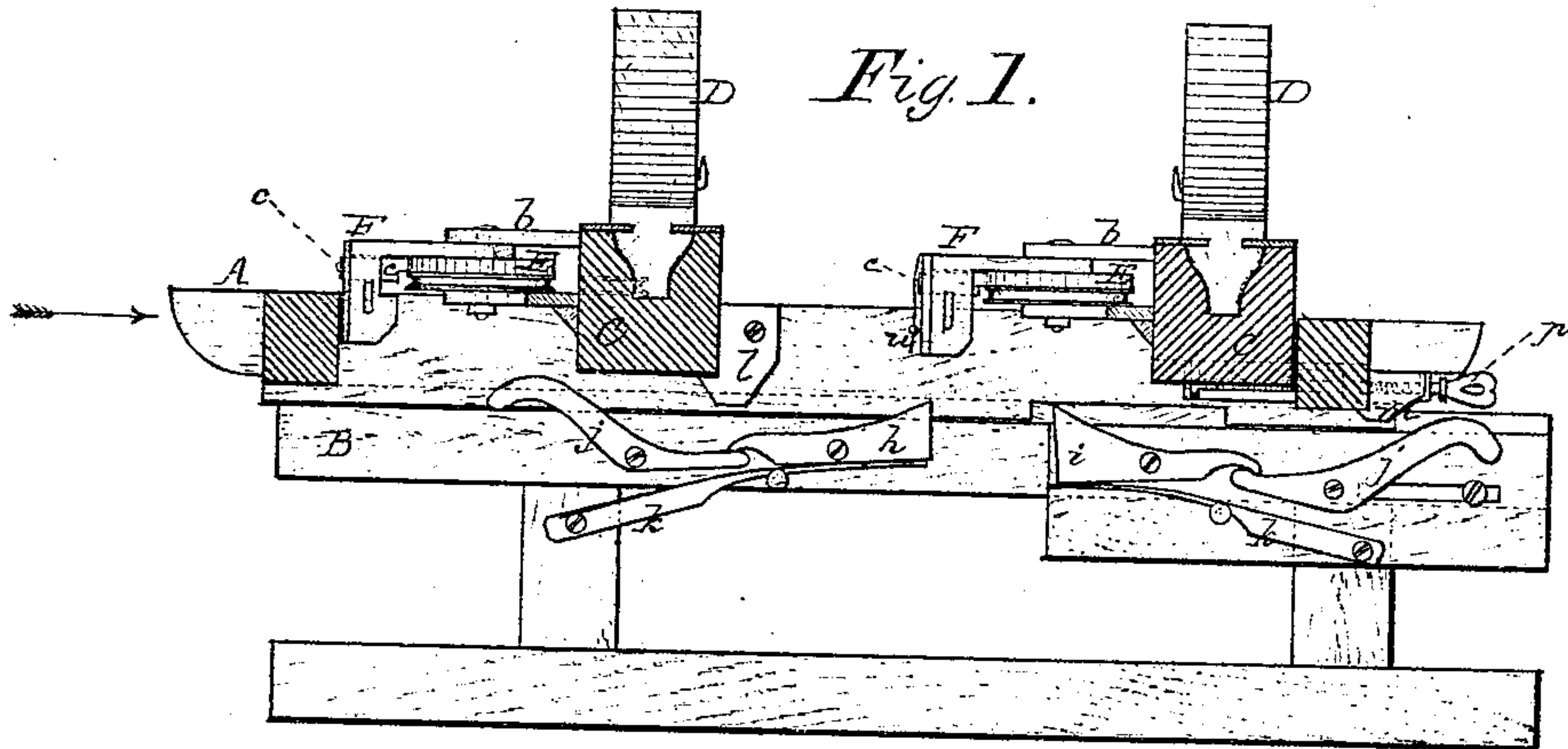


J. A. Clark,

Head Block.

No. 102091.

Patented Apr. 19. 1870.



Witnesses:
Phil. T. Dodge
Samuel G. Cabell

Inventor
J. A. Clark.
by Dodge & Munn
Attys

United States Patent Office.

JAMES A. CLARK, OF LEAVENWORTH, INDIANA.

Letters Patent No. 102,091, dated April 19, 1870.

IMPROVEMENT IN HEAD-BLOCKS OF SAW-MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JAMES A. CLARK, of Leavenworth, in the county of Crawford and State of Indiana, have invented certain Improvements in Saw-Mill Carriages, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an automatic setting device for saw-carriages; and

It consists in a novel arrangement of mechanism whereby the return or backward movement of the carriage serves to move the log over the required distance, preparatory to the next cut of the saw, and in making the mechanism adjustable, so as to move the log more or less each time, according to the thickness of lumber required.

Figure 1 is a longitudinal vertical section of my carriage, on the line X X of fig. 2;

Figure 2 is a top plan view of the carriage; and

Figure 3, an end view of the same.

A is the saw-carriage, and B the ways upon which the carriage runs, both constructed in the ordinary manner.

Upon the carriage A I mount the head-blocks C, having longitudinal grooves in their upper faces, and upon the head-blocks I mount the knees D with tongues on their under sides, which fit into the grooves in the blocks, as shown in fig. 1.

To the side of each of the head-blocks I secure a block, *b*, slotted at its front end, and in each of these blocks I mount a grooved pulley, E, having ratchet-teeth formed around one edge of its periphery; and I also mount on the same axis with the pulley an arm, F, with a depending portion at its end, which extends down past the face of the pulley, as shown in figs. 1 and 3.

In the end of each arm F, I mount a sliding catch or pawl, *c*, held by a suitable spring against the teeth of the wheel, so that, as the arm is turned, the pulley is moved with it; and, to prevent the pulley from turning backward with the arm, I secure to the side of the head-block a spring pawl, *d*, which engages with the pulley, as shown clearly in fig. 2.

In the front end of each head-block I mount a pulley, *d'*, and then provide a chain, *e*, and, securing one end to the pulley E, pass it around the pulley *d'* and through the slot in the block to the knee, to which I secure the remaining end, as shown in fig. 2, so that, as the pulley E is turned by vibrating the arm F, the chain will be wound upon the pulley, and the knee be drawn forward.

The pulleys and their connections I make of the same size in all the head-blocks of the carriage, and I connect the arms F of the whole series by a pitman, H, so that, when one of the arms is moved, it will

communicate motion to all the others on the carriage, and thus insure an equal movement of all the knees, and consequently of both ends of the log.

To the inner side of the ways B, I pivot two dogs *h* and *i*, the adjacent ends of which are held in an elevated position by springs *k*; and behind each of these dogs I pivot a lever, *j*, one end of which rests under the back end of the dog, while the opposite end rises in line with the heads of the dogs, so that, by pressing down the upper end of the lever, the head of its dog will also be depressed.

To the carriage I secure two blocks *l* and *m*, which, when the carriage moves to and fro, strike against and press down the ends of the levers *j*, as and for the purposes hereinafter described; and upon the under side of one of the arms F I locate a pin or stud, *n*, which strikes against the dogs *h* and *i* as the carriage moves back and forth, and thus causes the arms F to vibrate.

When the various parts are thus arranged, and the carriage moved forward in the direction indicated by the arrows, so as to present the log against the saw, the pin *n* will pass over the dog *h*, but will strike against the face of the dog *i*, and thus the arm F be carried backward, until the block *m* strikes the lever *j*, and disengages the dog from the stud *n*.

Upon the return or backward movement of the carriage the arm *n* will pass over the dog *i*, but will strike against the dog *h*, and thus the arms F be carried forward, the wheels E turned, and the knees drawn forward, so as to set the log over for the next cut of the saw. When the arm has moved the proper distance the block *l* will strike the lever *j*, and release the dog *h* from stud *n*.

In this manner it is seen that at each forward movement of the carriage the knees remain stationary upon the head-blocks, and the arms D are turned backward, but that, at each backward movement of the carriage, the arms D will be turned forward, and the knees drawn forward the requisite distance, carrying the log with them.

The pitman or connecting-rod H I make adjustable in length, so that it may be varied as the head-blocks are placed nearer together or further apart upon the carriage.

The block *m* which operates the dog *i* I mount upon a screw-rod, *p*, secured to the carriage, so that, by turning the screw, the block may be adjusted to strike the lever and release the dog *i* at any desired point, and thus the distance to which the arm F is thrown back by the dog be regulated at will; and as, by moving the arms F a large or small distance back, they will have a corresponding distance to move forward again, and consequently give more or less movement to the pulleys E, it will be seen that by adjust-

ing the block *m*, the knees may be caused to move a distance each time corresponding to thickness of the lumber to be produced.

To provide for holding the pawls *c* and *d* away from the wheels *E* when the knees are to be shoved back on the head-blocks after being fed forward, I provide the catches *c* with a hole, and, after drawing them outward, insert a pin, *u*, into this hole, outside of the arm *D*, so as to prevent the catch from sliding back; and to the side of the head-blocks I secure, by eyes, a sliding wire or rod, *q*, having an eye or loop, *t*, near one end, and having connected to the opposite end a cord, passing through an eye on the head-block, and connected to the spring pawl *d*, so that, by pushing backward the rod *q*, the pawl is drawn back from the wheel. The wire may be fastened back so as to hold the pawl up, by hooking its eye upon pins *s* on the head-block provided for that purpose, as shown in fig. 2.

After drawing back the catches *c* and inserting the pins, and pushing in the rods *q* and fastening their

eyes over the pins *s*, the knees may be pushed back to the rear end of the head-blocks, and, after releasing the catches, be again set in operation.

Having thus described my invention,

What I claim, is—

1. The combination of the block *C*, with its sliding knee *D* and pulley *d'*, with the vibrating arm *F*, with the pawls *c* and *d*, and chain *e*, when arranged to operate substantially as described.

2. The dogs *h* and *i*, with their levers *j* and springs *k*, pivoted to the ways *B*, in combination with the projections *l* and *m* on the carriage, and the stud *n* of the vibrating-arm *F*, all constructed and arranged to operate substantially as described.

3. The cam or projection *m*, with the screws *p* for adjusting the same, substantially as set forth.

JAS. A. CLARK.

Witnesses:

SAMUEL I. KELSO,
JOHN R. TUCKER.