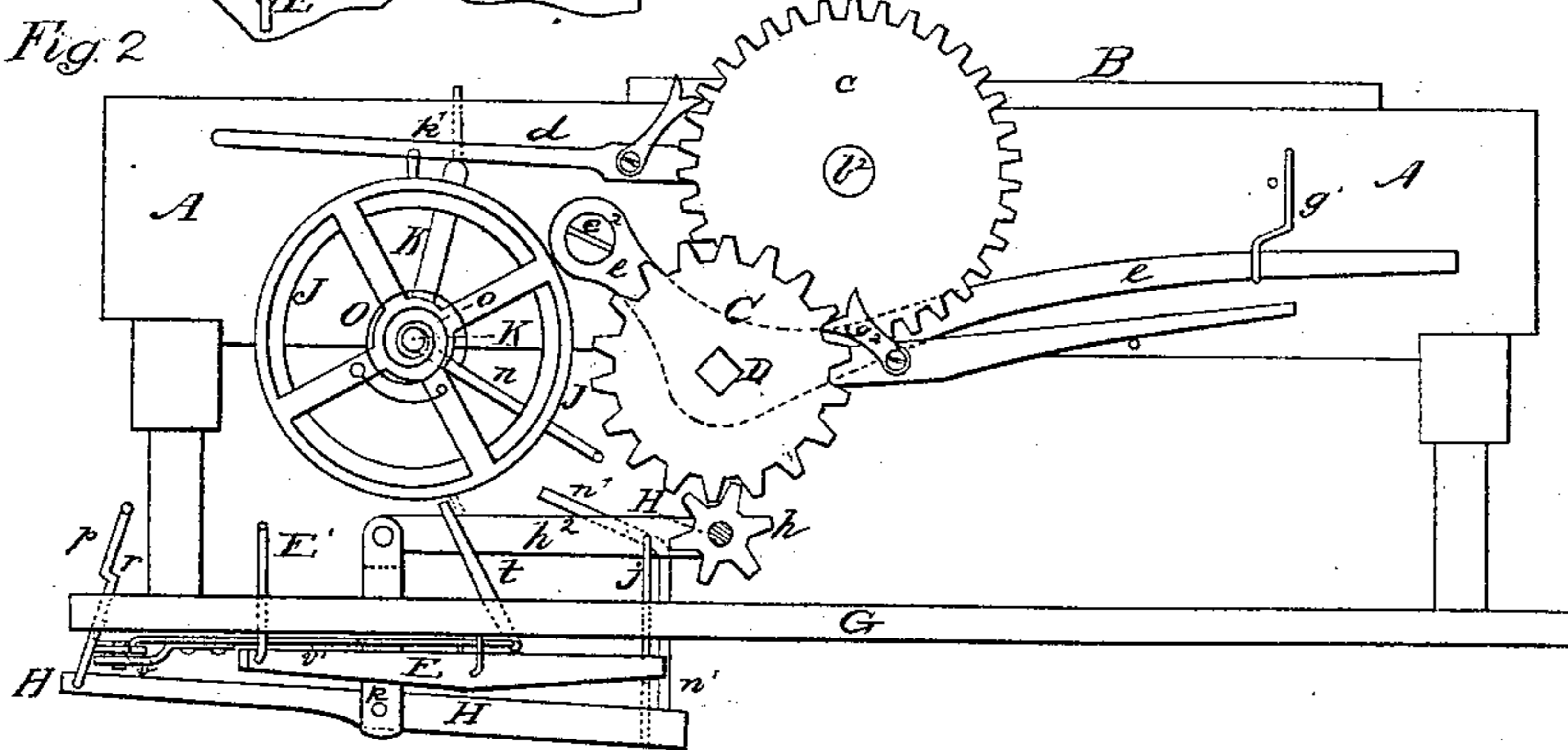
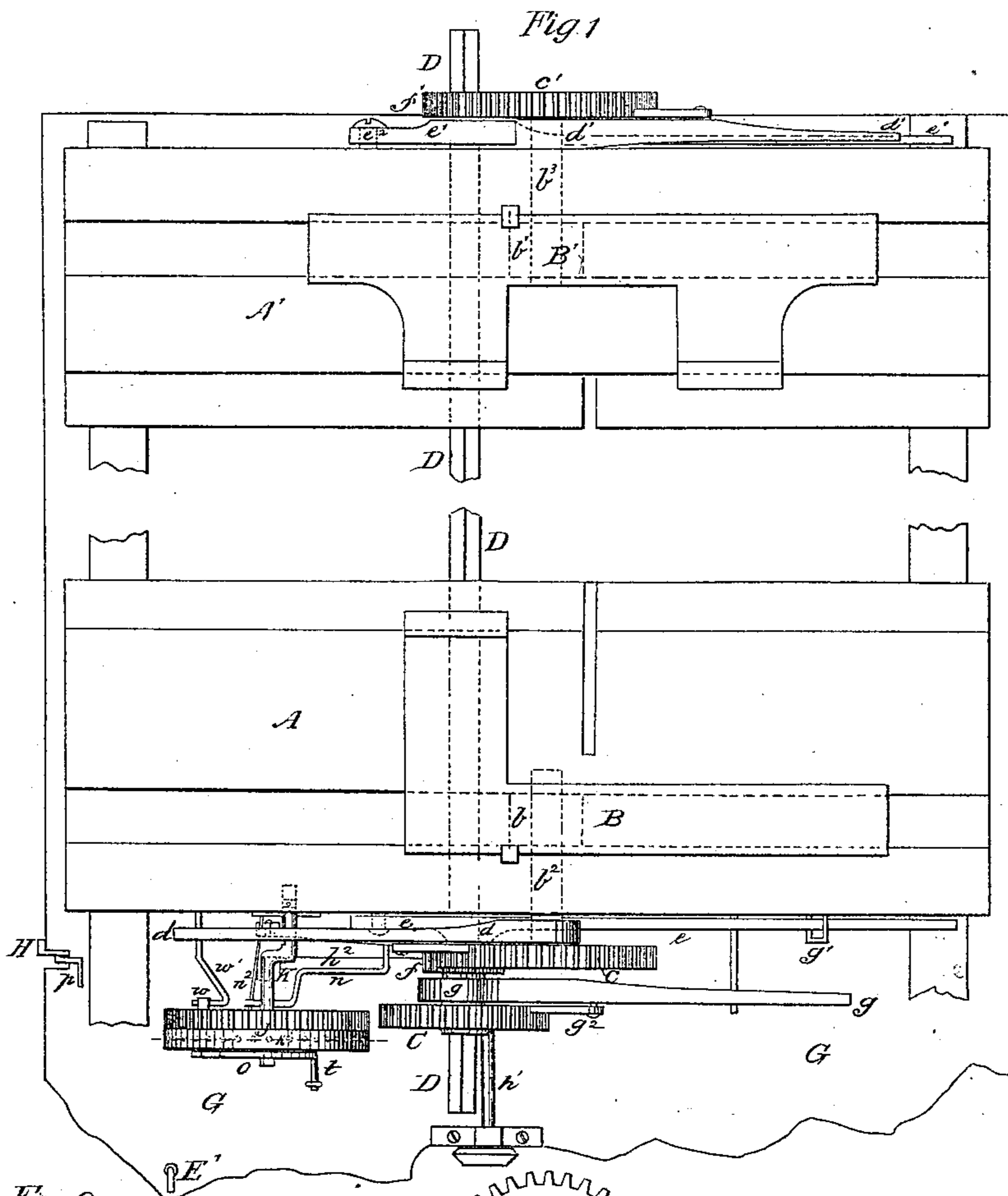


# D. C. Baughman, Saw-Mill Head-Block.

N<sup>o</sup> 41,189.

Patented Jan. 12, 1864.



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*D. C. Baughman,  
Saw-Mill Head-Block.*

*N<sup>o</sup> 41, 189.*

*Patented Jan. 12, 1864.*

*Fig. 3*

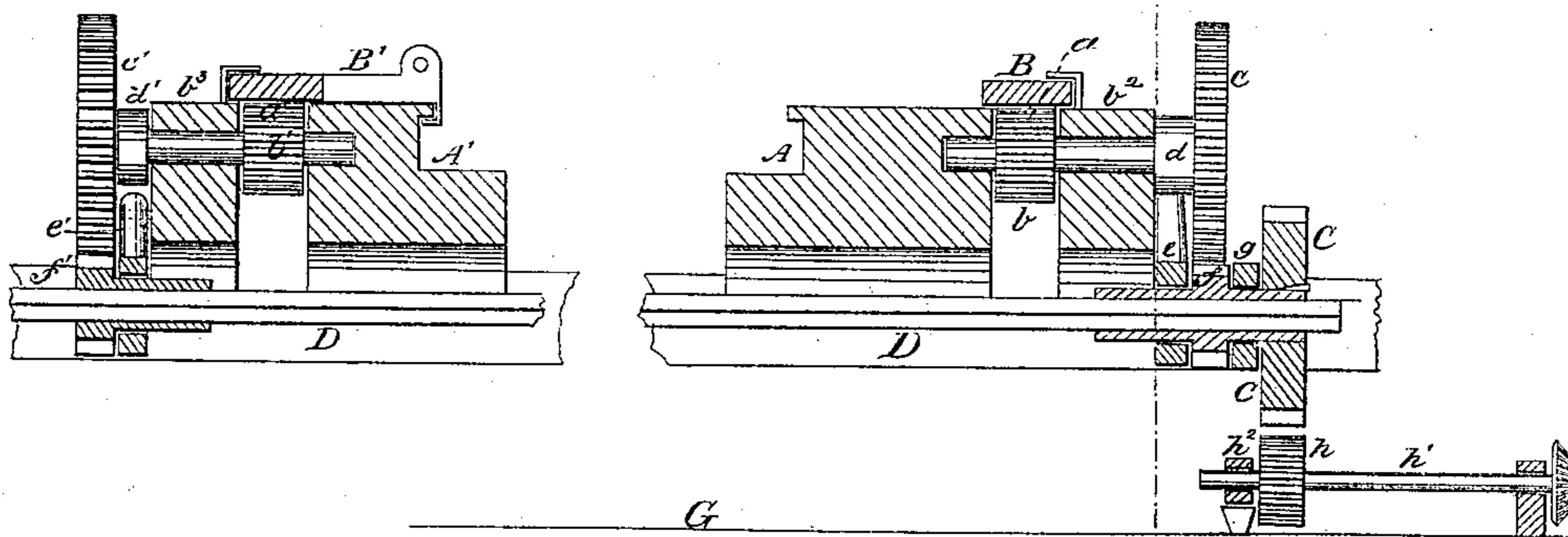
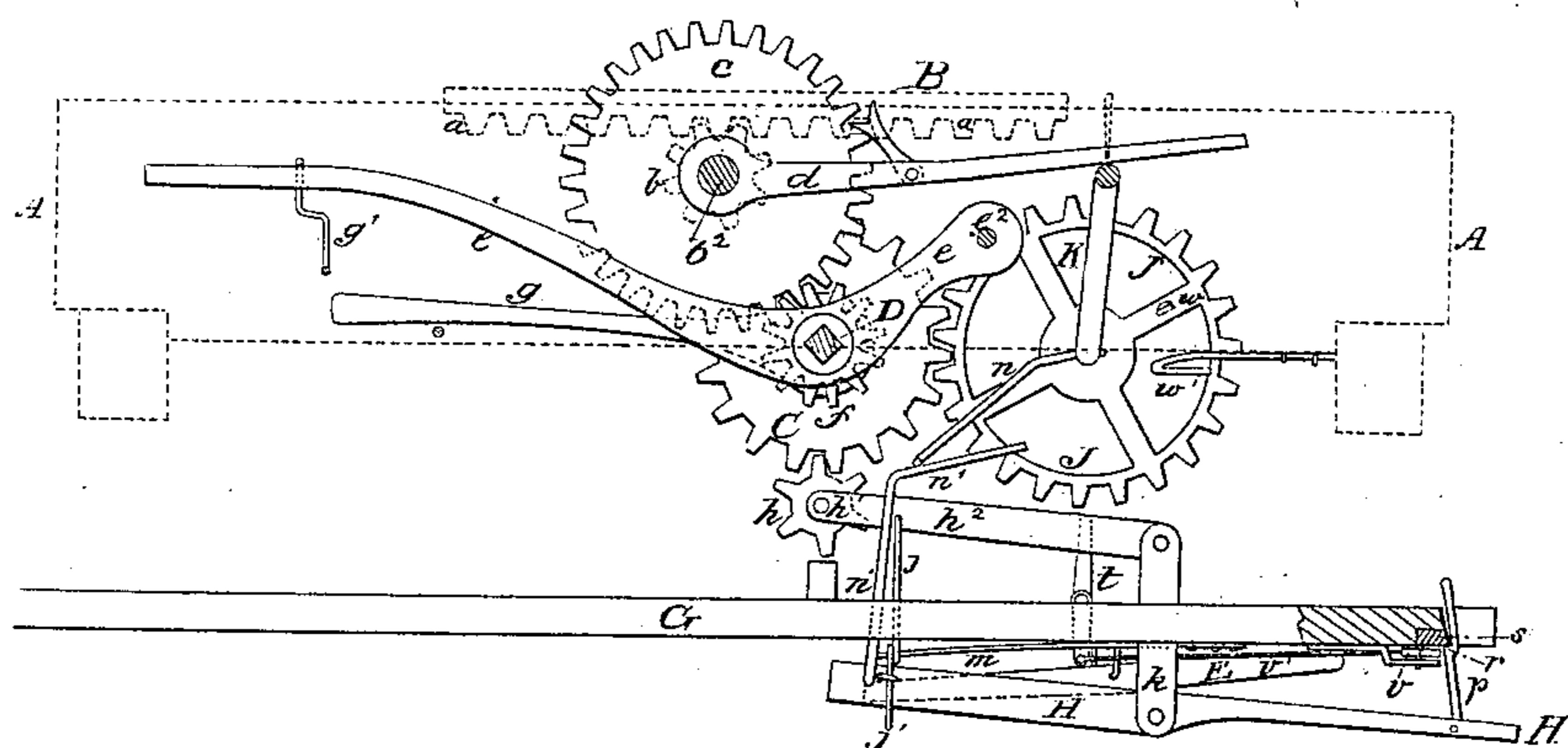
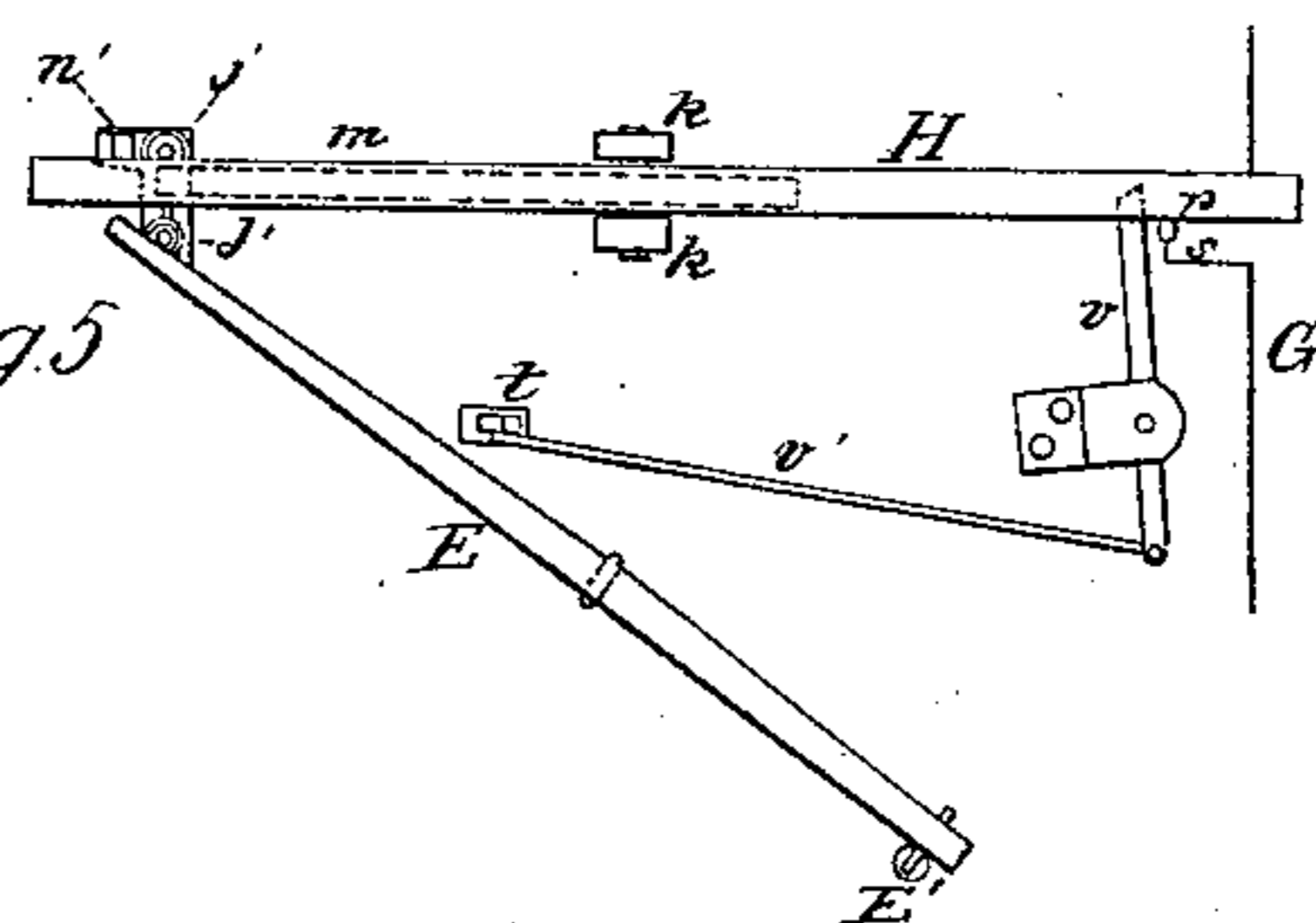


Fig. 4



*Fig.5*



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## IMPROVEMENT IN ADJUSTING LOGS IN SAW-MILLS.

Specification forming part of Letters Patent No. 41,189, dated January 12, 1864.

*To all whom it may concern:*

Be it known that I, D. C. BAUGHMAN, of Adams, Seneca county, State of Ohio, have invented certain new and useful Improvements in Adjusting the Logs in Saw-Mills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of the improved machinery for setting the log. Fig. 2 is a front or end elevation. Fig. 3, Sheet 2, is a longitudinal section taken vertically through Fig. 1. Fig. 4, Sheet 2, is a view of the opposite side of the mechanism shown applied to the head-block in Fig. 2. Fig. 5, Sheet 2, is a bottom view of the arrangement of levers beneath the floor.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements in machinery for adjusting logs to the saw in saw-mills, whereby I am enabled to adjust either one or both ends of a log to the saw, or to move the log from one side to the other of the saw, by the power communicated from an engine or by manual power, and also to effect these results automatically when desired, all as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings the head and tail blocks for supporting the log are represented mounted upon horizontal bars supporting the ends of these blocks, but in practice these blocks will be mounted on a carriage which moves back and forth the distance of the length of the log, and thus feeds the log to the saw, which latter has an established position at a suitable point between the two blocks and in a plane at right angles thereto. One of the blocks (tail-block) is fixed to the carriage, but the other is to be adjustable for different lengths of logs, which will be hereinafter explained.

I have not represented the entire mill, for the reason that my invention relates only to novel means for setting the logs laterally to the saw, and can be applied to saw-mills which are in common use, by such changes as will be hereinafter described.

The head-block A and tail-block A' should

be arranged transversely across a suitable carriage, which is moved by any convenient means in a direction with the length of the log that is confined at its ends to the traveling plates B B'. These plates B B', which are adapted for receiving the ends of the logs, and also for receiving dogs for confining the logs in place, have toothed racks *a a'* on their lower sides, which engage with pinion spur-wheels *b b'*, that are seated into recesses in their respective supporting blocks A A', as shown in Fig. 3. The pinion-spurs *b b'* are keyed to short independent shafts *b<sup>2</sup> b<sup>3</sup>*, which carry on one of their ends the large spur-wheels *c c'*. When these spur wheels *c c'* are rotated in either direction, the log-holding plates are moved in a direction with the length of their blocks.

On both shafts *b<sup>2</sup> b<sup>3</sup>*, I have applied loosely the pawl-levers *d d'*, carrying double pawls or dogs, which will operate upon their respective toothed wheels *c c'*, so that they may be rotated in either direction, and by this means the ends of the log may be adjusted by hand.

D represents a square shaft, which is supported by means of two levers, *e e'*, which are pivoted at *e<sup>2</sup>* to the sides of their respective blocks A A'. This shaft D is supported beneath the blocks A A', and extends out some distance therefrom, as shown in Figs. 1 and 3, receiving on it the spur-wheels C f f', which have cylindrical collars formed on them. The object of the collars to these wheels C f f' is to prevent these wheels from rotating on their shaft D, and to allow this shaft to slip endwise through the wheels in moving the head block for adjusting the machine for logs of different lengths, and also to receive the two levers *e e'* and the ratchet-lever *g*. One end of each shaft-supporting lever being pivoted to its respective block, the other ends of these levers are supported within and by the lower portions of staples *g'* when the shaft D is not in gear with the spur-wheels *c c'*; but when it is desired to engage the wheels *f f'* of shaft D with the wheels *c c'* on shafts *b<sup>2</sup> b<sup>3</sup>*, the ends of both levers *e e'* are raised and supported upon removable pins, as shown in Fig. 4. When these pins are withdrawn, the ends of the levers fall and disengage the shaft D from the wheels *c c'*. The lever *g*, carrying a double pawl, *g<sup>2</sup>*, is placed loosely on the collar of the wheels C f, and this lever is used,

when both ends of the shaft D are in gear with the wheels  $c c'$ , for adjusting both ends of the log simultaneously. By changing the position of the pawl on the lever  $g$  with respect to the teeth of wheel C this wheel, together with its shaft D, may be rotated either to the right or to the left. Beneath the spur-wheel C is a pinion-spur,  $h$ , which is keyed on the end of a shaft,  $h'$ , that is driven by means of gearing or belts communicating with the engine or any other prime mover. One end of the shaft  $h'$  is supported in a pillow-block, and the other end has its bearings in the end of a vibrating arm,  $h^2$ , which is pivoted at its opposite end between two short standards on the floor G, as shown clearly in Figs. 2 and 4. Near the free end of the arm  $h^2$  are two rods,  $j j'$ , which are pivoted to this arm, and which project down through an opening in the floor G. The rod  $j$  is secured in a suitable manner to one end of a lever, E, beneath the floor, which lever is operated by pressing the foot upon a treadle,  $E'$ , attached to the outer end of the lever and projecting up through a hole in the floor G. By depressing the outer end of lever E it will force the pinion  $h$  upward and engage it with the spur-wheel C, and by releasing the lever E the pinion  $h$  will be instantly disengaged from its wheel C. The rod  $j'$  is also operated to raise the wheel  $h$  and engage it with wheel C, by means of a lever, H, which is located beneath the floor G. This latter lever is pivoted in hanging supports  $k$ , and it carries on its outer end a trip-staff,  $p$ , which has a notch,  $r$ , formed on it, that catches under a plate,  $s$ , secured to the floor G, as shown in Fig. 4. The inner end of lever H acts upon a projection which is formed on the rod  $j$ , and when the trip-staff  $p$  is depressed it raises this rod  $j'$ , together with its arm  $h^2$  and pinion  $h$ , and engages the latter with the spur-wheel C. The notch  $r$ , catching under the plate  $s$ , keeps the parts in their position. It is now desired to trip or release the staff  $p$  automatically, so that when the log has been moved the required distance on the blocks A A', by the power communicated to it from the engine, the pinion-wheel  $h$  will be disengaged from the wheel C, and the further movement of the log stopped. To effect this automatic throwing out of gear of the pinion  $h$ , I apply a tripping spur-wheel, J, to the head-block A' in such manner that when the trip-staff  $p$  is depressed this wheel J, which has teeth on its periphery, will be thrown forward and engaged with the wheel C, and by means of a removable pin,  $k'$ , which is applied at a certain determined point to the periphery of wheel J, the lever  $t$ , which is pivoted to the floor G, will be struck, and this lever being connected to a lever,  $v$ , by a rod,  $v'$ , it will release the trip-staff  $p$  and allow spring  $m$  to throw pinion  $h$  out of gear with wheel C. The wheel J has a number of perforations made in its periphery at certain distances apart to enable the attendant to set the pin  $k'$  at any desired point, according to the distance it is de-

sired to move the log on the blocks A A'; and this wheel J is applied loosely to a bent shaft, K, which is attached to the block A in such manner that it (shaft K) is allowed to swing laterally. This shaft K has an arm,  $n$ , projecting from it, which is acted upon by the inclined portion of rod  $n'$ , that projects up from the inner end of lever H, and when this lever is raised the inclined portion  $n'$  forces the wheel J into gear with wheel C, the spring  $n^2$  returning this wheel J to its original position when the trip-staff is released, as above described. The wheel J is attached to its shaft K by means of a volute spring,  $o$ , (shown in Fig. 2,) which is wound up when this wheel is in gear with the wheel C; but immediately the pin  $k'$  strikes the lever  $t$  and releases the pinion  $h$ , and is released in turn, the spring  $o$  turns this wheel J back to its former position, ready for another adjustment of the log. The stop  $w$ , on the inside of the wheel J (shown in Figs. 1, 4) is caught by the fixed projection  $w'$ , and keeps this wheel in its proper position after it is released from the wheel C.

When it is desired to move each end of the log separately—as, for example, in sawing tapering fence-posts—the two levers  $d d'$  are used, their pawls engaging with their respective spur-wheels  $c c'$ . By changing the position of the pawls on these levers the log may be moved from right to left, and vice versa, for sawing alternately on both sides of the log. In this adjustment the shaft D should not be in gear with the wheels  $c c'$ .

When it is desired to move both ends of the log together by manual power, the two shaft-supporting levers  $e e'$  are raised so as to engage the pinions  $f f'$  with their respective wheels  $c c'$ , and the pawl-lever  $g$  is used, its pawl engaging with the teeth of the wheel C. During this adjustment the driving-pinion  $h$  is not in gear with the wheel C.

To operate with the driving-power of the pinion  $h$ , the levers remain in the same position as above described, (shown in Fig. 4,) and this pinion is thrown into gear with the wheel C by the attendant pressing upon the treadle  $E'$ . By releasing this treadle  $E'$  the pinion  $h$  instantly drops out of gear, and the log ceases to move. Finally, when it is desired to move the log by the engine-power, and to control its movement automatically, the attendant, knowing the thickness of the slabs he desires to saw from the log, adjusts the pin  $k'$  on the wheel J accordingly. This pin will now strike the lever  $t$  and release the wheel  $h$  and wheel J when the log has been moved the required distance. All that is required of the attendant after this adjustment is to depress the trip-staff previously to each forward stroke of the carriage.

The perforations in the periphery of the gage-wheel J may be marked in inches and half-inches, so that the point to set the pin  $k'$  can be read off on this wheel. This will prevent any mistake in adjusting the pin for different thicknesses of planks.

The wheel C, which is applied to the main

shaft D, serves as a means for communicating motion to the wheels *c c'* from the driving-pulley *h*, and also of transmitting motion to the gage-wheel J. This wheel can also be used for setting logs obliquely to the plane of the saw by depressing one of the levers *e*, and thus throwing the wheel *f* out of gear with wheel *c*, and then using the two levers *g d*, as above described.

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

1. The shaft D, supported beneath the head and tail blocks A A' upon levers *e e'*, and operating substantially as described.

2. The combination of pinions *f f'*, shaft D, spur-wheels *c c'*, and shaft-supporting levers *e e'*, all operating substantially as described.

3. The spur-wheel C, in combination with the shaft D and driving-pinion *h*, operating substantially as described.

4. The combination of the two pawl-levers *g* and *d*, applied and operating substantially

as described, for adjusting both ends of the log at one end of the machine obliquely to the plane of the saw.

5. The vibrating driving-pinion shaft *h'*, and pinion *h*, in combination with the lever E and spur-wheel C, for operating the traveling plates B B', substantially as described.

6. The pivoted arm *h<sup>2</sup>*, in combination with the rods *j j'* and levers E H, substantially as and for the purposes described.

7. The combination of the trip-staff *p*, catch *s*, and levers *t* and *v*, operating substantially as and for the purposes described.

8. Applying a gage-wheel, J, or its equivalent, to operate in conjunction with a shifting-pinion, *h*, and such mechanism as will throw this wheel J out of action automatically when the log has been moved up to the saw the required distance, substantially as described.

D. C. BAUGHMAN.

Witnesses:

HORACE HALL;

HORACE EMERY.