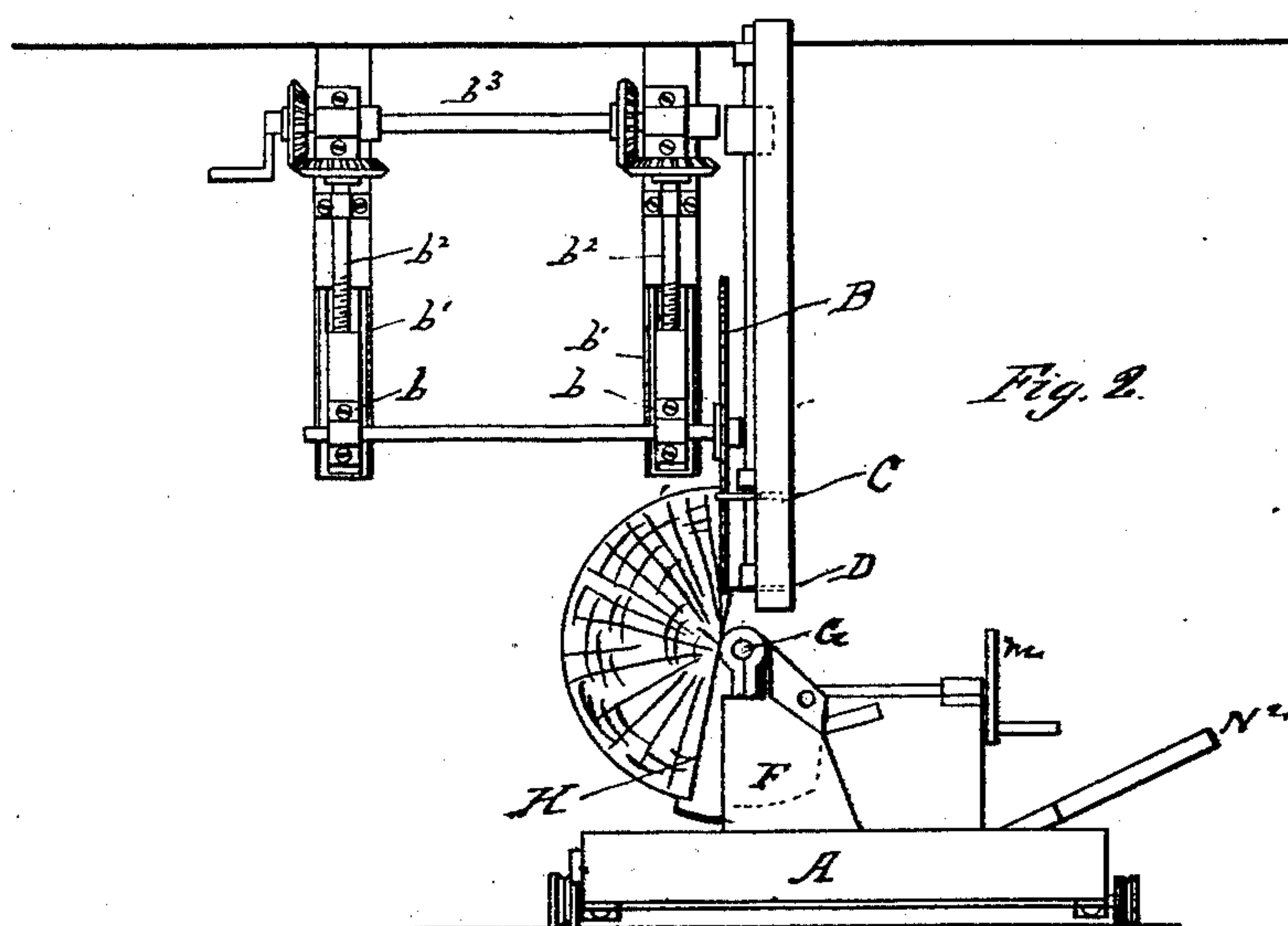
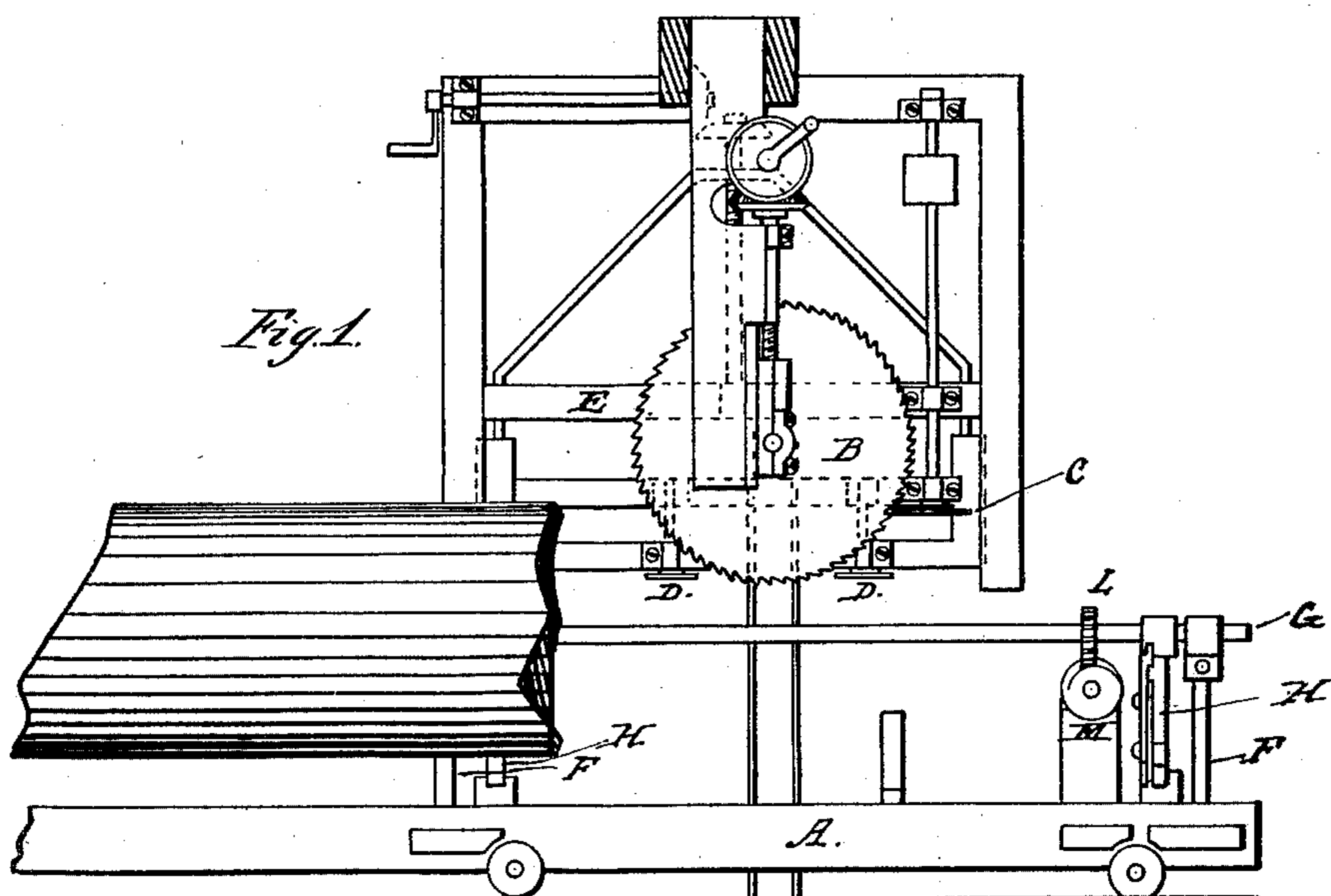


S. BABCOCK.
Machine for Sawing Clapboards.
No. 232,326. Patented Sept. 21, 1880.



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Fig. 3.

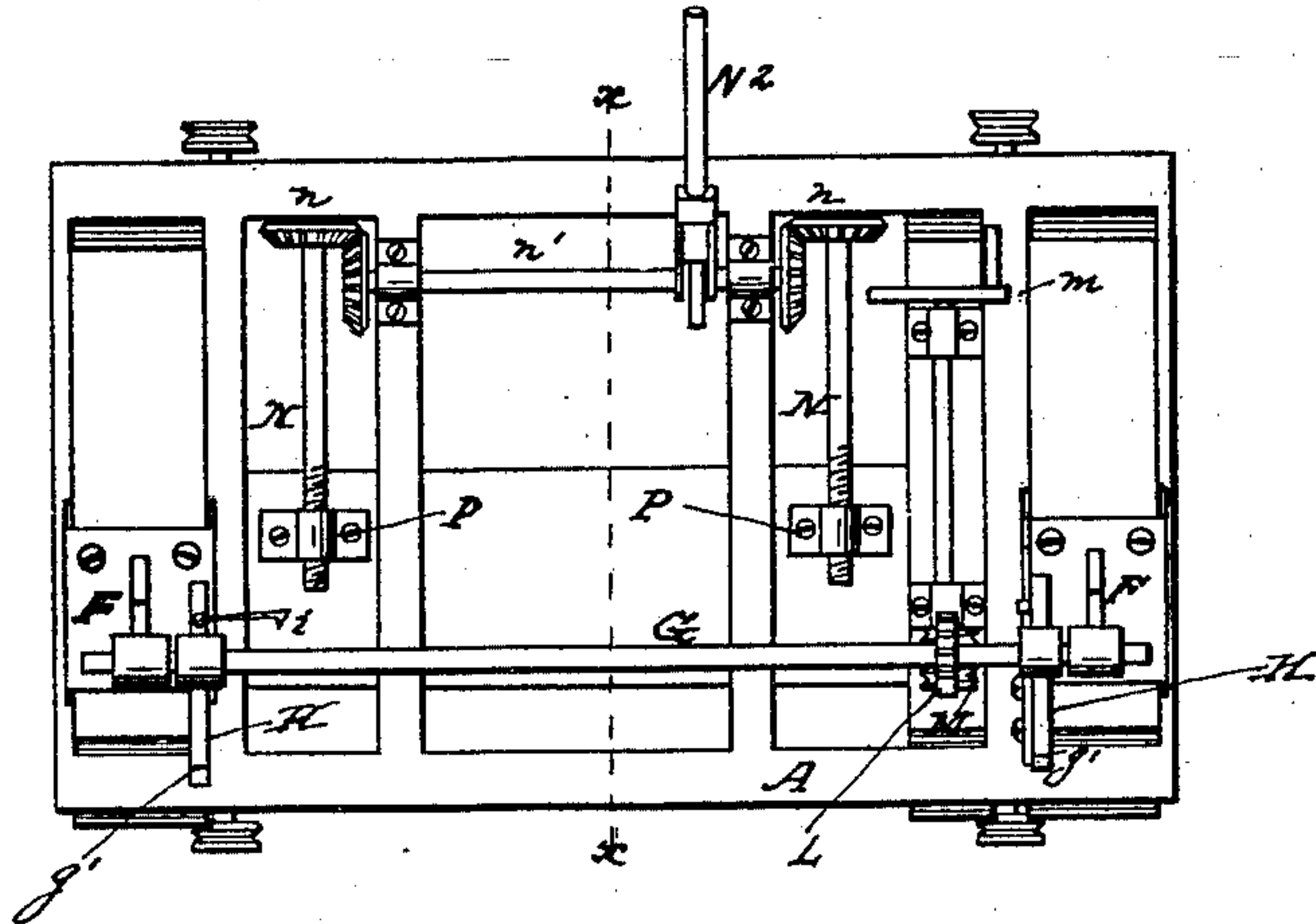


Fig. 4.

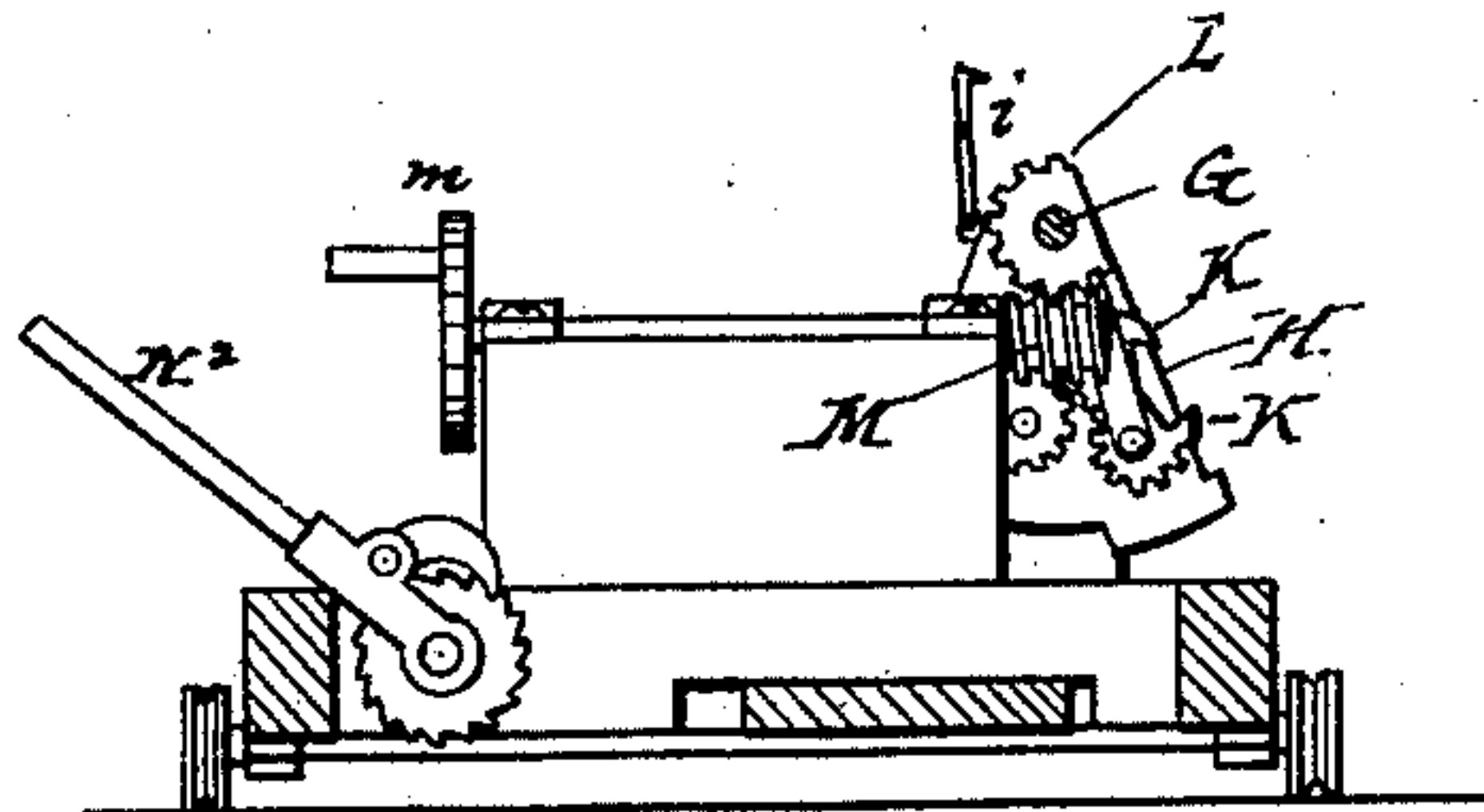
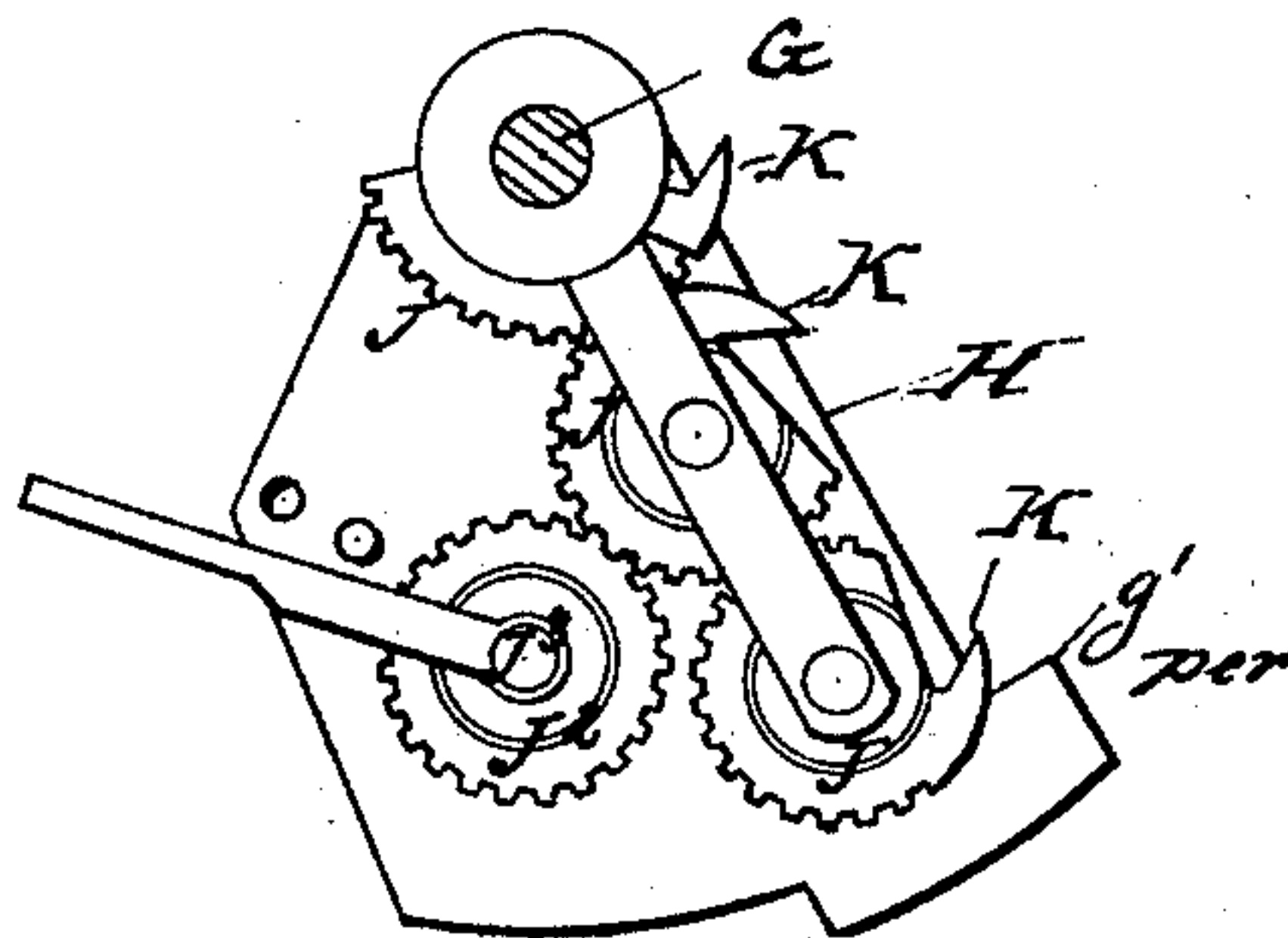


Fig. 5.



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UNITED STATES PATENT OFFICE.

SIMEON BABCOCK, OF MANISTEE, MICHIGAN.

MACHINE FOR SAWING CLAPBOARDS.

SPECIFICATION forming part of Letters Patent No. 232,326, dated September 21, 1880.

Application filed February 3, 1880.

To all whom it may concern:

Be it known that I, SIMEON BABCOCK, of Manistee, in the county of Manistee and State of Michigan, have invented certain new and useful Improvements in Machines for Sawing Clapboards; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation, and Fig. 2 an end elevation, of the mechanism constituting my invention. Fig. 3 is a plan view of the carriage upon which the material to be sawed is mounted. Fig. 4 is a vertical section on the line *x x* of Fig. 3. Fig. 5 is a view, upon a somewhat larger scale than the other figures, of the dogging mechanism for dogging the logs to the head-block.

Like letters indicate like parts in all the figures.

This invention relates to a machine for sawing clapboards from the log, which is, in the present state of the art, deemed the best method of producing them, as it enables the cuts of the saw which form the two surfaces of the clapboard to be made toward the center of the log, so that every clapboard cut from the log, in so far as the direction of the grain is concerned, is like every other clapboard cut from the same log, and gives to every clapboard the proper direction of grain, so that none are cut bastard.

Heretofore in order to accomplish this object it has been customary either to suspend the log between two points driven into the log as pivots, one at each end, or to place the log or a section thereof in a species of cradle, so that it might be properly revolved to the saw.

By the former of these methods—namely, that of suspending the log by a central pivot at each end—it has been found impracticable to cut greater lengths than six feet or thereabout, because a log longer than that is liable to spring either at the start or after it has been partially cut away, owing to the lack of any central supports.

In the latter of the above-named methods—namely, where the log is laid in a cradle and the log rotates in the cradle—while it is possi-

ble to cut long lengths, another difficulty is met with, owing to the natural taper of the log, which varies in different logs, and which makes it very difficult under all circumstances to cut accurately in radial lines. Moreover, the accuracy of the cut under such circumstances is dependent upon the shape of the log, and other difficulties present themselves, which are well understood by persons skilled in the art.

In the present invention I seek to overcome all these difficulties by mounting the log, which I previously cut into two halves for this purpose, upon pivoted flat-surfaced head-blocks mounted upon a common center, and, in fact, secured to a shaft, so that all may be revolved together. These supporting-surfaces may be of any number along the length of the shaft, so as to support the log at several points through all its length. By this means I am enabled to saw any length of log desired. The flat surface of the half-log is laid upon supports with the center of the log as nearly coincident as possible with the shaft. Of course, owing to the thickness of the shaft and its bearings and the necessary material of the supporting-surfaces, it is impossible to make the center of the log coincide exactly with the center of motion of the shaft upon which it is pivoted. I therefore provide for giving the log a lateral movement across the line of the saw, and set the saw a little to one side of the center of the shaft, so that it shall be in proper position to make the first cut a true radial line toward the center of the log, the error due to eccentricity in the subsequent cuts being corrected by moving the entire apparatus, log, shaft, &c., bodily sidewise a little distance at each cut.

The mechanism and apparatus which I have contrived to carry out my invention will be fully understood from the subjoined description and the drawings accompanying the same.

In said drawings, A represents the carriage, which may be of any ordinary construction, and which I have shown mounted upon wheels, so that it may be moved along to carry the log lengthwise under the saw. Any suitable feeding apparatus may be attached or connected with the carriage to feed it along, as an ordinary saw-mill is fed, and to return it, making,

if desired, a cut in both directions going or coming.

B is the saw, suspended in a suitable frame-work above the carriage and not connected to the carriage in any way. This saw is driven by a belt, (not shown in the drawings,) and its arbor is mounted in bearings *b b*, fixed in slides *b' b'* in such manner that the screws *b² b²* will give to the bearings a regulable vertical adjustable control by the shaft *b³*, motion being imparted from this latter shaft to the screws by miter-gearing, as shown. From this shaft *b³* any suitable band, chain, or other contrivance, such as a third shaft with suitable gear, may be employed to carry the power of control directly to the sawyer's hand, so that he can by the apparatus described raise or lower the saw at will to suit the size of the log.

C is a horizontal small circular saw placed across the path of the saw B for cutting off the sap-wood. In case it is desired to cut both ways with the large saw B, there should be two of these sap-saws, one at each side of the main saw. Below the sap-saws are placed circular revolving cutters D, for severing the thin edge of the clapboard, which they do of their own motion as the log is carried forward against them. The sap-saws are, of course, driven by power by suitable belts and pulleys, one of the belt-pulleys being shown connected to the single sap-saw shown in the drawings, Fig. 1.

Both the sap-saws and the cutters are mounted upon a frame, E, so that they may be adjusted up and down to follow the adjustment of the main saw B. This adjustment may be accomplished in any desired manner. I prefer to do it by screw and beveled-wheel connections, as indicated in dotted lines in Fig. 1.

Returning to the carriage, F F are suitable uprights to furnish bearings for the shaft G. Upon this shaft are rigidly secured head-blocks H H. In the drawings I only show two of these head-blocks. There may, however, be any number desired. I recommend that enough be employed to give a support for the log at intervals of not more than five feet. Each of these head-blocks is furnished with dogs for engaging the flat surface of the half-log, in order to secure the same firmly thereon. The dogs are of two kinds. At each head-block a common dogging-hook, *i*, is provided for hooking into the log above the shaft, while at the same time the dogging device shown in Fig. 5 engages the flat surface of the log below the shaft. This dogging device (shown at Fig. 5) consists of a series of intermeshed cog-wheels, J J J, a portion of each of which is cut away at one side and otherwise constructed to form sharp-pointed teeth or hooks K. Below these hook-carrying gears is a cog-wheel, J², which meshes with one of them, and the rotation of which causes all of them to rotate. All of the heads are provided with these dogging appliances, and the shaft J³ of the cog-wheel J² being extended through all of the heads enables

all of the dogging-teeth of the several heads to be operated at the same time.

Of course it will be understood that when the hook-carrying gears are rotated the hooks which they carry are forced upward into the log or the flat portion thereof which rests upon the surface of the head-block, the hooks being caused to enter the wood in an inclined position and from opposite directions.

I have shown three of these hook-bearing gears, but of course any desired number may be employed, and the gears may be employed upon either one or both sides of the head-block.

By employing a number of teeth entering the wood in an inclined position and from opposite directions, I am enabled, with a small exertion of power, to very securely fasten the log to the blocks with a single motion and to release it with similar ease.

The means I employ for rotating the shaft G and at the same time fixing it rigidly in any desired position consists of a pinion, L, on the shaft and a worm-wheel, M, on the carriage, the latter being provided with a hand crank or wheel, *m*, the turning of which revolves the shaft G and fixes it in any desired position.

An indicator, dial, or stop may be applied to the wheel *m*, so that the sawyer may be enabled to mark the amount of revolution to be given to the shaft G in order to determine the thickness of each clapboard.

In order to enable the operator to move the log, shaft, and all the appliances bodily sideways across the line of the cut, and to compensate for the eccentricity due to the manner of mounting the log, I make the carriage in two parts, so that one part—that to which the shaft is attached—shall be capable of moving laterally upon the other separate part of the carriage. This is accomplished by suitable frame-work, as will be understood from the drawings; and as a means for producing this movement I attach to the carriage two screw-shafts, N N, which are connected together by bevel-gears *n n* and the gear-shaft *n'*, the latter being furnished with a pawl-and-ratchet lever, N², by working which the screw-shafts may be revolved. These screw-shafts pass through nuts P P, which are secured to the laterally-movable portion of the carriage, so that when the ratchet-lever N² is operated and the screw-shaft revolved the laterally-movable portion of the carriage is brought slowly, at the desired intervals, over toward the saw, thus changing slightly the line of cut at each cut. In order to enable this laterally-movable portion of the carriage to be quickly returned when a new log is to be sawed, I contemplate constructing the nuts P P in such manner that they may be lifted up from the screws. This may be done by making the nuts in two parts, and the one part hinged to the other in the ordinary method.

The operation is as follows: The center of the log is first ascertained, and, measuring from this, a distance is taken equal to the distance

from the center of the shaft G to the square projection or rest g' on the head-block. The log is then slabbed to this depth. The log is next split at right angles to the line of this slab through its center. One half of the log thus prepared is placed upon the head-blocks with its square corner resting at the projection g' . It is then firmly dogged in position, both by the rotating dogs below and by the hooks above the shaft. The center surface should now stand upon a vertical line with the saw. Next, by means of the worm-wheel and pinion, the shaft is rotated so as to tilt the log into the proper position for the first cut, which is made by the saw B, the carriage A being moved forward in the ordinary way to accomplish this purpose. At the same time the sap-saws above and the cutters below sever the two edges of the clapboard from the log, leaving, of course, the heart of the log intact, and casting off as waste the sap-wood. Before entering upon the next cut the ratchet-lever is moved a sufficient distance to carry the log laterally about one-eighth of an inch, to compensate for the eccentricity before mentioned, and at the same time the log is swung over into position for the second cut, and so on in constant repetition until the entire half-log is finished.

I hereby reserve for another application any claims which I may be entitled to upon the peculiar dogging apparatus consisting of the intermeshing hook-carrying cog-wheels mounted upon the head-block.

I claim—

1. In a machine for sawing clapboards, the means of feeding or adjusting the log to the saw, consisting of the revolving bed or supports upon which the log rests and to which it is dogged, said bed or supports being rigidly

secured to a continuous shaft, G, extending the whole length of the log and mounted on a frame adjustable laterally in order to compensate for the fact that the center of the log and the center of the shaft upon which the log-supports rotate are not quite coincident with each other, so that each cut may be made directly toward the center of the log, substantially as described.

2. The combination of the shaft G with two or more head-blocks or supports rigidly secured thereto and upon which the log to be sawed rests, and worm-wheel and pinion for rotating and fixing the same at required distances, substantially as specified.

3. In a machine for sawing clapboards, the circular blade or cutter, mounted on an independent arbor, for severing the thinner edge of the clapboard from the log, in combination with mechanism for feeding the log forward, whereby a rotary motion is imparted to the blade or cutter, substantially as and for the purpose specified.

4. The combination, in a clapboard-machine, of the main saw, sap-saw, circular blade or cutter, with the mechanism for feeding the log forward, substantially as specified.

5. In a clapboard-machine, the revolving head-blocks or supports for the log, provided with a series of dogs for securing the log thereto, the same being adapted to receive and support a half-log of any length, and rotated coincidentally with each other by being secured rigidly to one continuous shaft, so that the half log may be turned or rotated, substantially as and for the purpose specified.

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Witnesses:

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