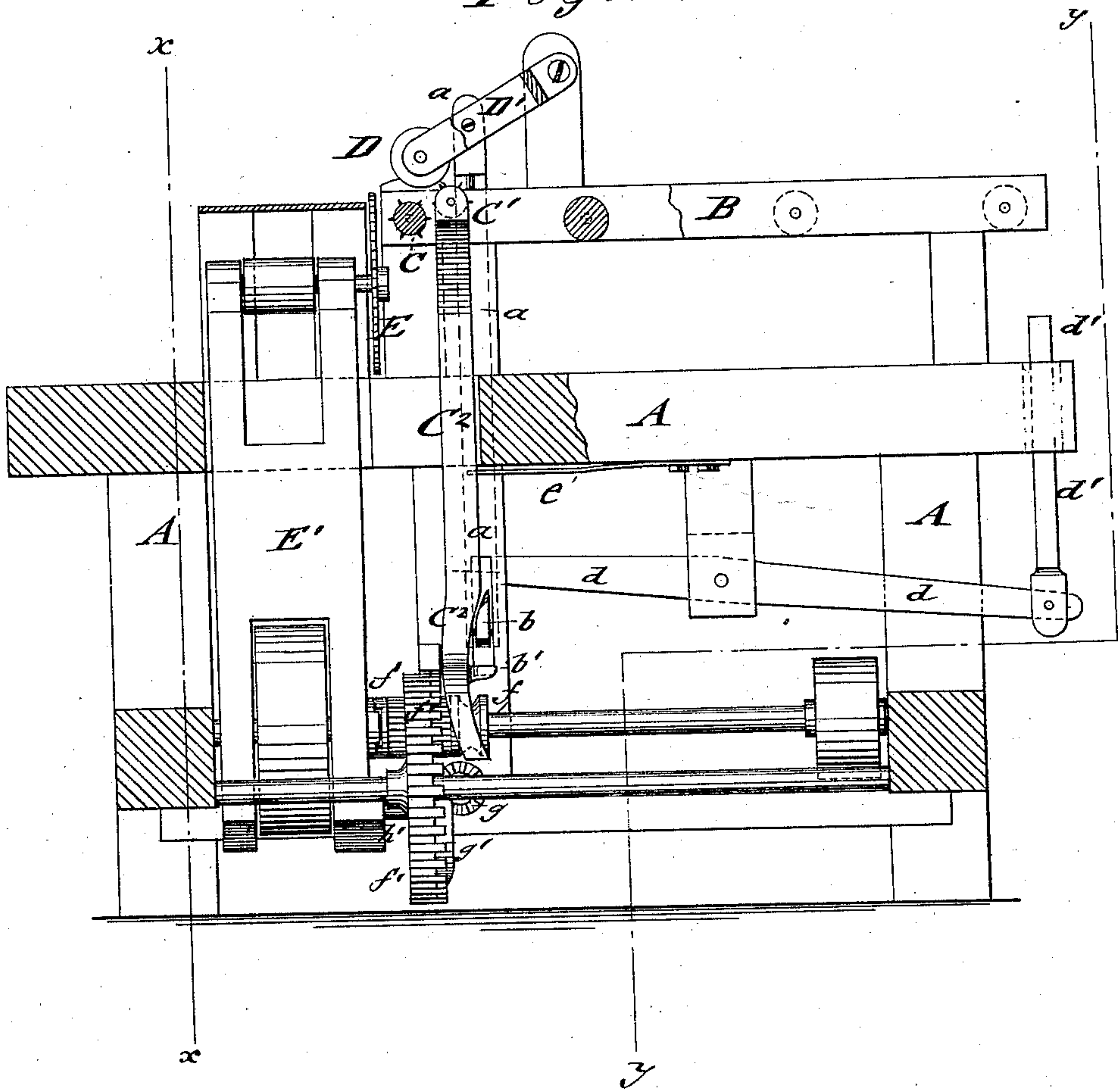


G. J. KAUTZ.
Circular Sawing-Machine.

No. 198,025.

Patented Dec. 11, 1877

Fig. 1.



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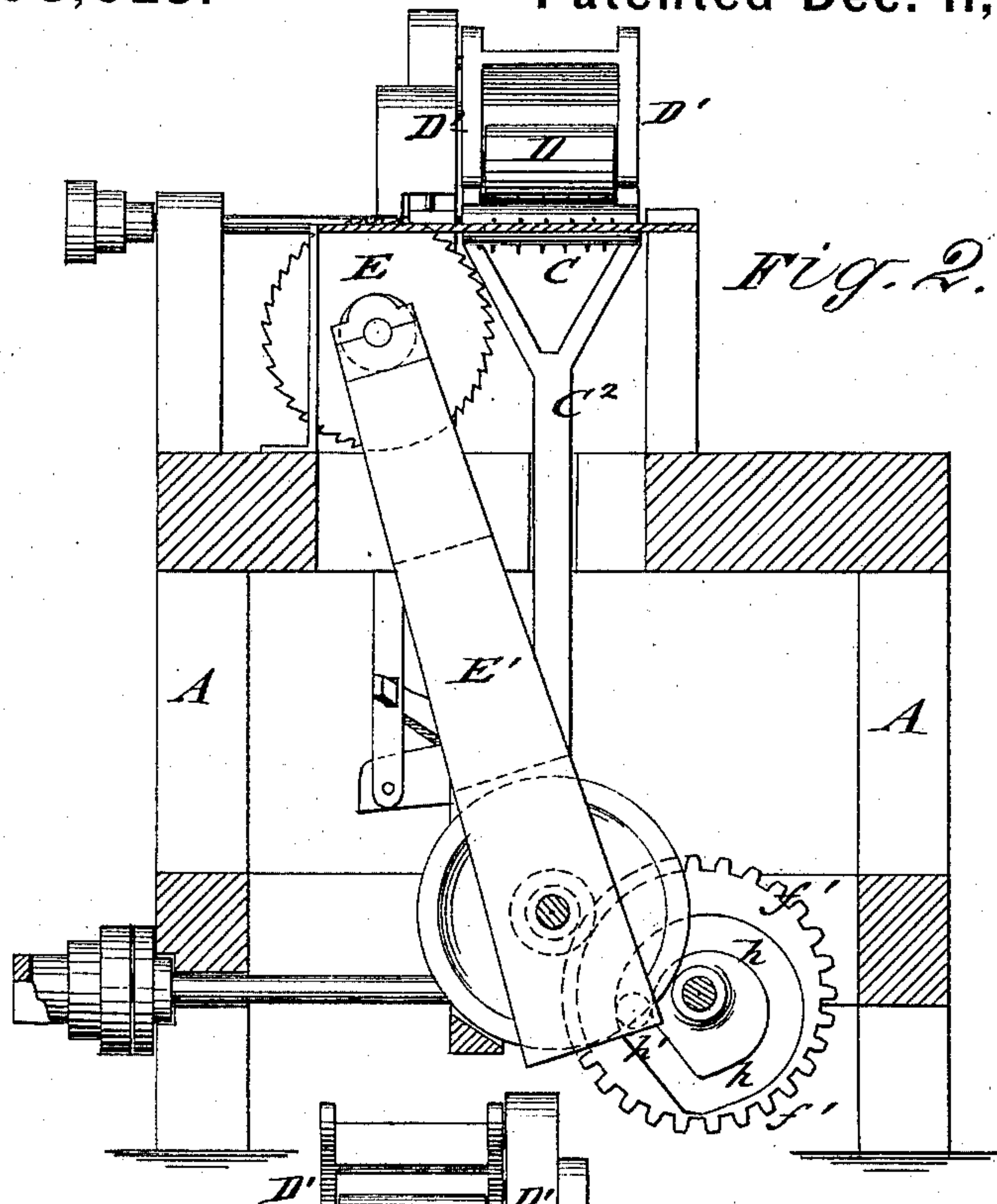


Fig. 2.

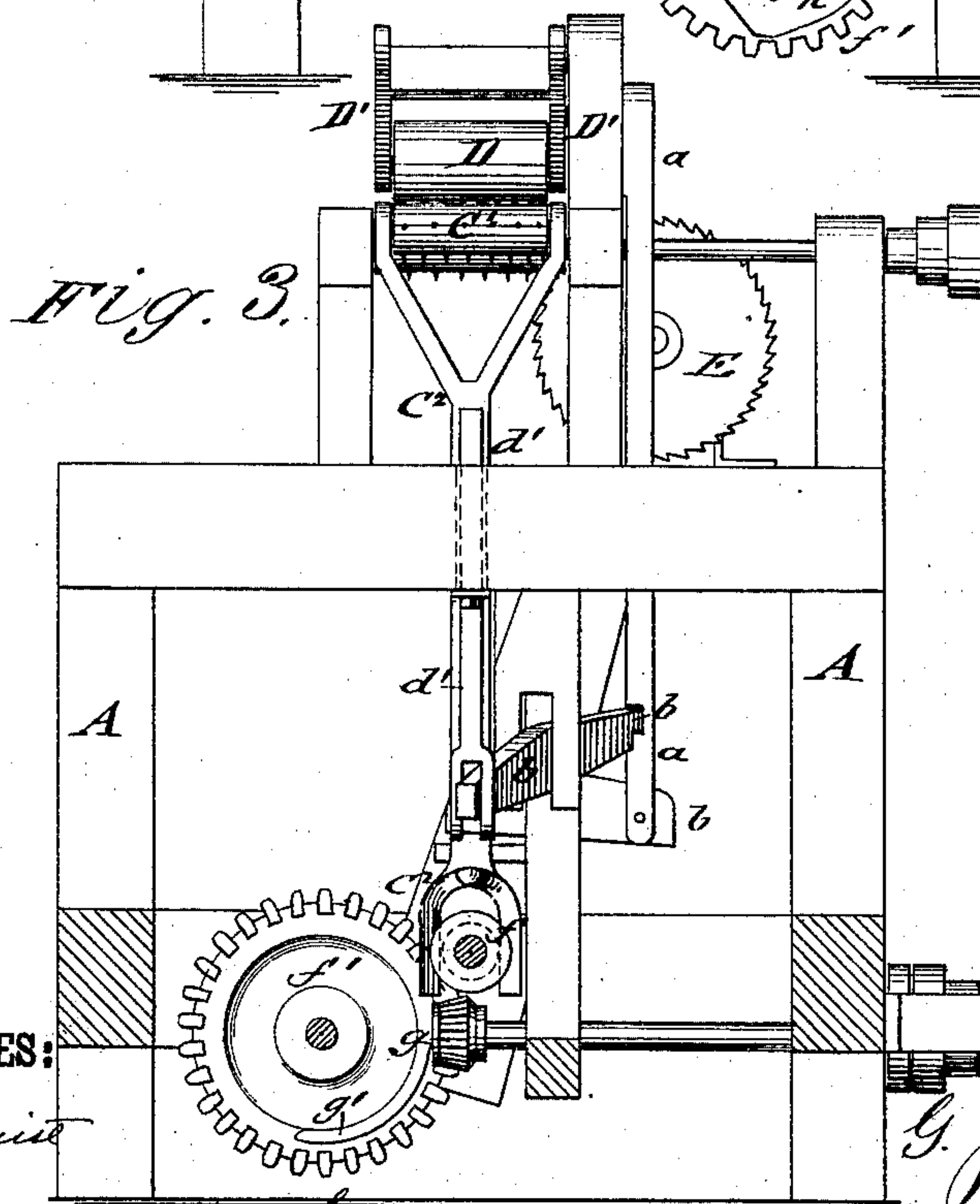


Fig. 3.

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UNITED STATES PATENT OFFICE.

GEORGE J. KAUTZ, OF EMPORIUM, PENNSYLVANIA.

IMPROVEMENT IN CIRCULAR SAWING MACHINES.

Specification forming part of Letters Patent No. **198,025**, dated December 11, 1877; application filed September 14, 1877.

To all whom it may concern:

Be it known that I, GEORGE J. KAUTZ, of Emporium, county of Cameron, and State of Pennsylvania, have invented a new and Improved Circular Sawing Machine, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a sectional side elevation of my improved machine; and Figs. 2 and 3 are vertical transverse sections of the same, respectively on lines *x x* and *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to an improved sawing-machine for cutting lumber to any required length in quick and regular manner, and is an improvement upon Letters Patent No. 189,628, granted to me April 17, 1877; and the invention consists of a feed mechanism for the lumber, constructed of a weighted top roller and lower spiked roller, in connection with an intermittently-revolving spiked feed-roller, and of a revolving circular saw, turning in an intermittently-swinging frame. A lever arrangement throws the feed mechanism and saw in or out of gear by a suitable clutch device with the driving-shaft, and regulates the cutting off of the lumber.

In the drawings, A represents the supporting-frame of my sawing-machine, at the upper part of which a guideway, B, for the lumber, and a table in front of the same is arranged. At the end of the way B is the feed mechanism, which consists of an intermittently-revolving spiked roller, C, that turns in end bearings of way B, and serves to feed the lumber forward in quicker or slower manner, according to the speed of its rotation; next, of a second spiked roller, C¹, that turns in bearings of a forked vertically-sliding standard, C²; and, lastly, of a weighted top roller, D, that turns in a frame, D¹, pivoted to a fixed standard of the way B. The roller-frame D¹ is also fulcrumed to a vertically-sliding lever-rod, *a*, that is pivoted at the lower end to a fulcrumed lever, *b*, which engages by its opposite lug *b'* of the standard C². The lever-rod *a* is further engaged by a fulcrumed lever, *d*, that is operated by a lever-rod, *d'*, extending above the top of frame A, so as to raise, by de-

pressing lever-rod *d*, the top pressure-roller D, and simultaneously lower, by lever *b*, the standard C², so as to allow the lumber to pass level over the spiked rollers.

By releasing the lever-rod *d'*, a strong band-spring, *e*, of the standard C² throws the same upward, and causes the lowering of the pressure-roller D and the firm holding of the lumber between the pressure and spiked rollers. The lower end of the standard C² is also bifurcated and curve-shaped, so as to engage the collar of a clutch device, *f*, of the driving-shaft, and throw the clutch in or out of gear with the same.

Simultaneously with the taking hold of the lumber by the feed mechanism, the clutch is thrown into gear with the driving-shaft, and thereby not only, by belt-and-pulley connection, a circular saw, E, revolved at the upper end of a swinging frame, E', but also a cog-wheel, *f'*, engaged by a pinion of the clutch. The cog-wheel *f'* engages, by side extensions of its teeth, a pinion, *g*, and pushes, by a segmental cam, *g'*, of the cog-wheel, the pinion-shaft forward to clutch a cone-pulley at the other end, which, by a connecting-belt and cone-pulley of the shaft of the spiked front roller C, imparts intermittently-revolving motion to the same, so as to feed the lumber forward for the next cut of the saw.

The spiked roller of the spring-acted standard and the pressure-roller hold the lumber firmly to the cutting action of the saw, while the spiked front roller, in connection with the rollers, moves the lumber at different speed forward, according to the position of the belt on the cone-pulleys and the length of lumber required. The circular saw E swings across the end of the guideway of the lumber, for cutting off the same, the swinging motion being imparted to frame E', that turns on the driving-shaft by a cam-groove, *h*, at the opposite side of the cog-wheel *f*, the cam-groove engaging a pin, *h'*, at the lower part or heel of the swinging frame, and causing the same to move forward at the proper time for cutting off the lumber and passing quickly back before the forward motion of the lumber commences. As soon as the clutch is thrown out of gear, the working of the machine is interrupted and the

lumber-holding rollers raised, so as to discontinue instantly the operation of the machine whenever required.

The forward feeding of the lumber takes quickly place after each cutting action of the saw, and cuts up the lumber into pieces of a certain length in a rapid and effective manner.

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

1. In a sawing-machine, the combination of a lumber holding and feeding mechanism, consisting of an intermittently-revolving spiked front roller, a vertically-movable spiked roller, and a top pressure-roller with a revolving and intermittently-oscillated circular saw, substantially in the manner described, and for the purpose specified.

2. The combination of the lever arrangement with swinging pressure-roller, spiked bottom roller, and vertically and spring acted standards, to release or hold lumber, as required, substantially as described.

3. The combination of the operating-lever

arrangement with the lumber feeding and holding mechanism, and with clutch device of driving-shaft, the latter operating spiked front rollers and circular saw to throw machine in or out of work, substantially as specified.

4. The combination of clutch device of driving-shaft, having intermeshing pinion, and of a cog-wheel having segmental cam at one side and cam-groove at opposite side, with transmitting pinion and gear of spiked front roller, and with swinging frame of circular saw, to secure alternate feeding of lumber and cutting of saw.

5. The combination of the operating-lever arrangement and vertically-sliding, forked, and spring-acted standard C² with clutch device of driving-shaft, swinging saw-frame, top pressure-roller, and spiked intermittently-revolving front roller, substantially as described, and for the purpose specified.

GEORGE J. KAUTZ.

Witnesses:

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