

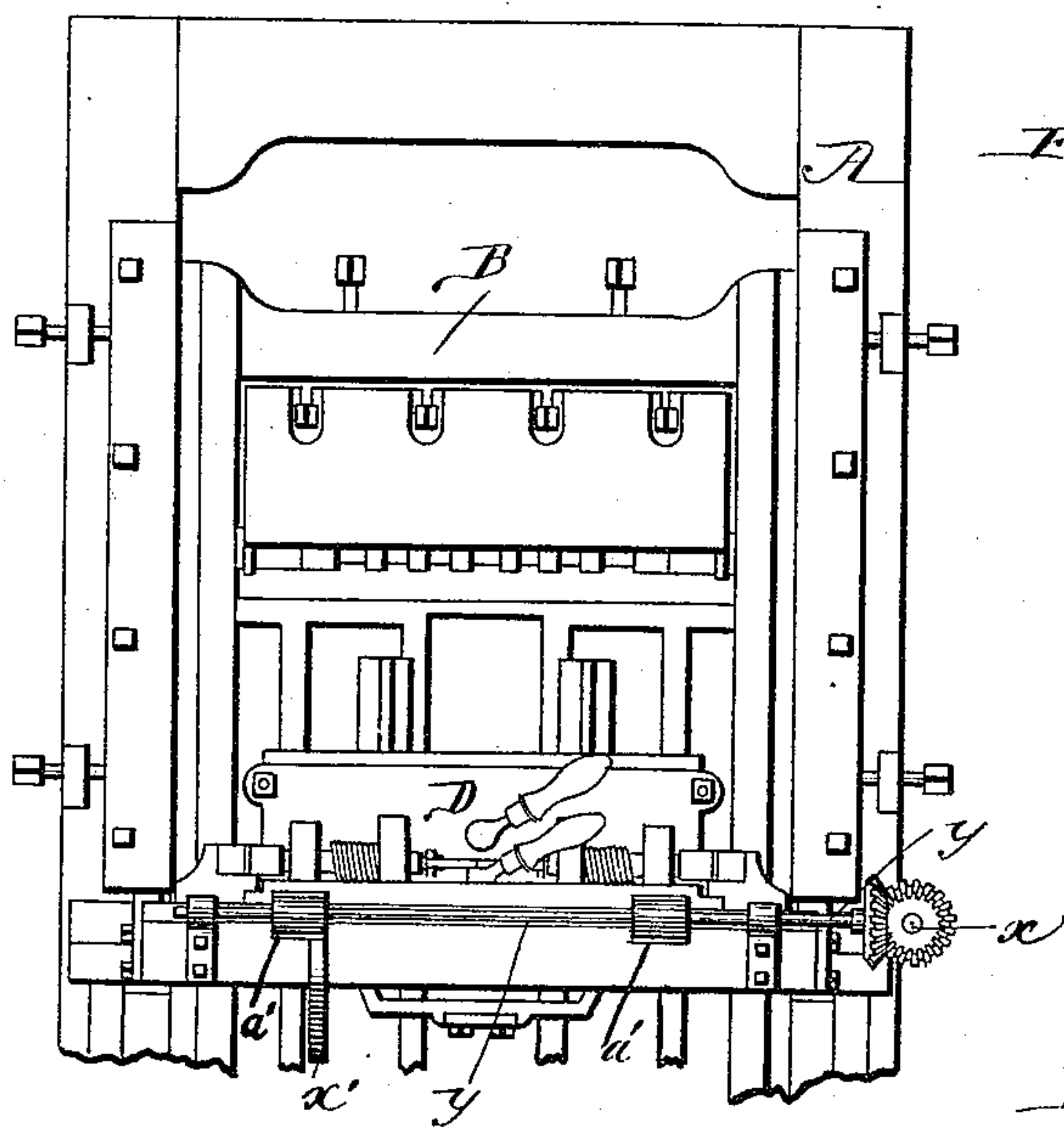
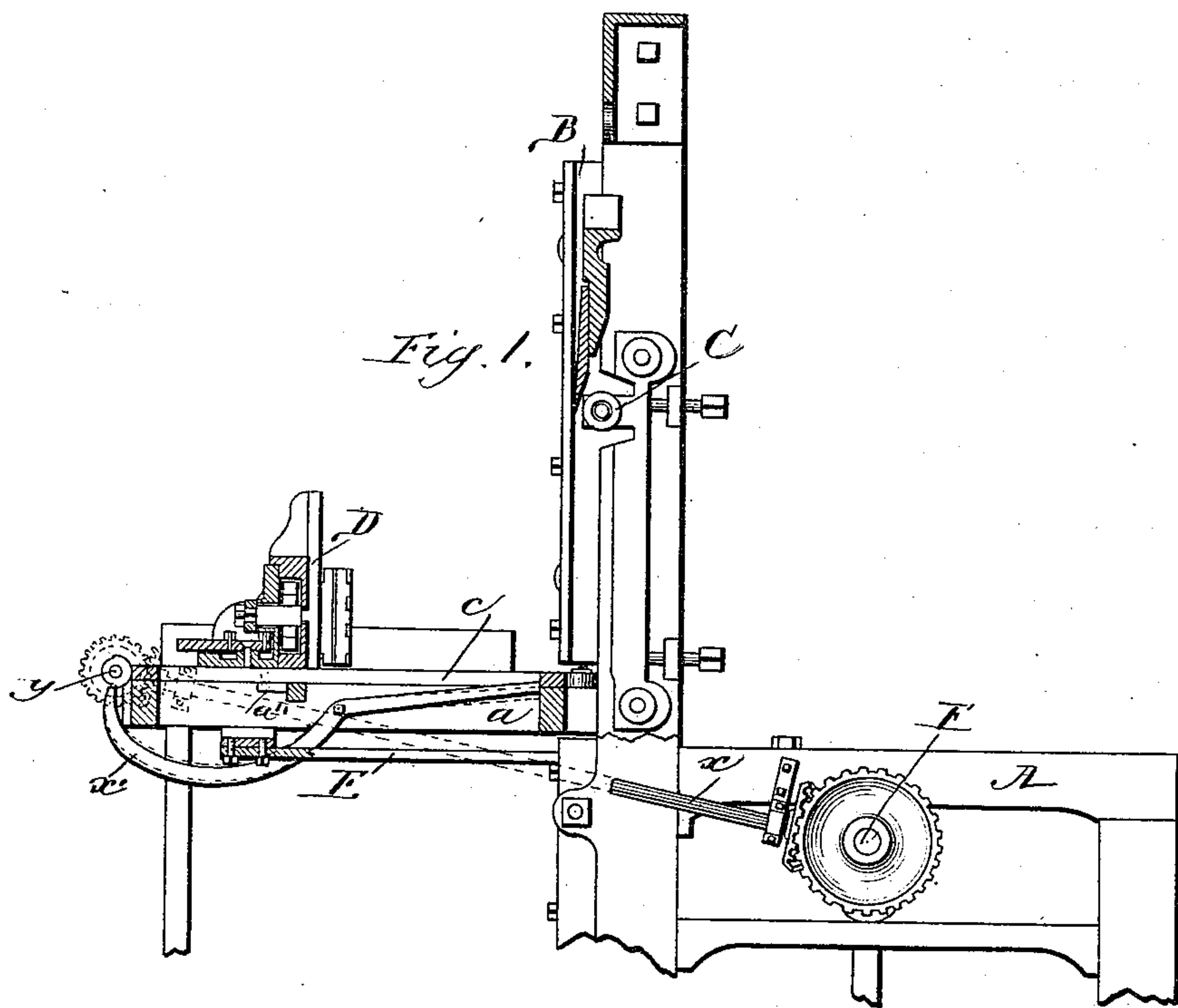
(No Model.)

2 Sheets—Sheet 1.

J. L. GAGE.
WOOD CUTTING MACHINE.

No. 428,475.

Patented May 20, 1890.



Witnesses

H. Foxworth

Ralph Hunt

Inventor

James L. Gage

By

Att.

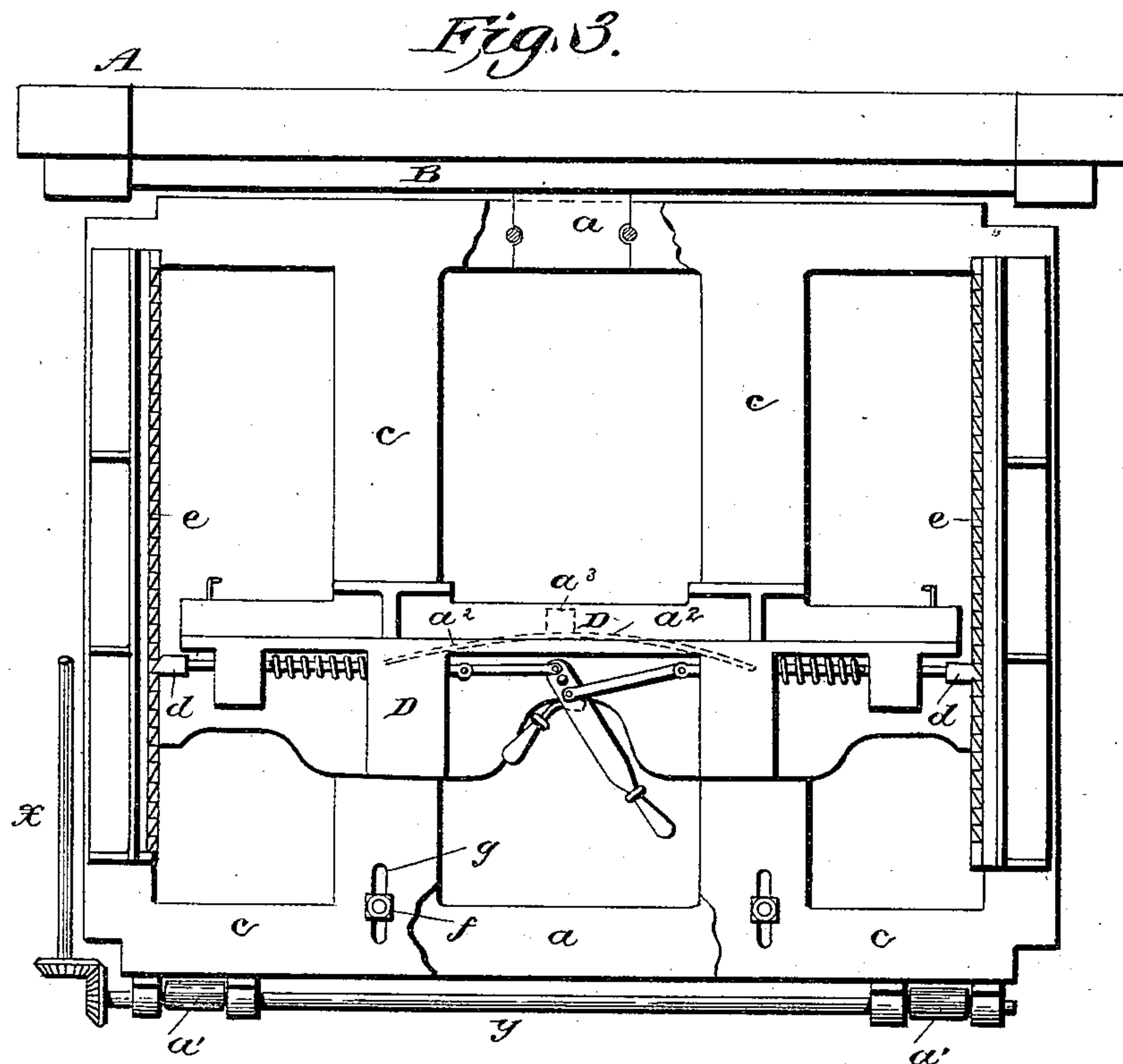
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2 Sheets—Sheet 2.

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Witnesses:
L. C. Hills.
Ewelladik

Inventor:
James L. Gage
by Marshall Bailer
Attorney.

UNITED STATES PATENT OFFICE.

JAMES LORENZO GAGE, OF CHICAGO, ILLINOIS.

WOOD-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 428,475, dated May 20, 1890.

Application filed September 4, 1889. Serial No. 322,957. (No model.)

To all whom it may concern:

Be it known that I, JAMES LORENZO GAGE, of Chicago, in the State of Illinois, have invented a new and useful Improvement in Wood-Cutting Machines of the kind invented and patented by one Goldie, dated March 11, 1879, and reissued June 15, 1880, No. 9,257, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a longitudinal vertical section, partly in elevation, of the machine embodying my invention. Fig. 2 is a front elevation of so much of the same as is needed for the purpose of explanation. Fig. 3 is a plan view on an enlarged scale of the table and carriage, with part of the upper movable table broken away.

The said Goldie machine comprises, among other things, the combination of a vertically-reciprocating knife and a compression-roller moving with the knife, with a carriage for the block or bolt and mechanism for intermittently feeding the carriage toward the knife. In a machine of this kind the knife on its upward stroke has a tendency to lift the block or bolt, and it is primarily the object of my improvement to obviate this. To this end I impart to the carriage, in addition to its normal intermittent feed movement, a slight movement of reciprocation to and from the knife, these reciprocations being so timed that the carriage will move forward before the knife descends far enough to act on the block or bolt and will recede before the knife begins its upward stroke. In this way, after the knife has done its work and is ready to rise, the block is removed from the knife far enough to allow the latter to rise without in any manner tending to lift the block. For the purpose of imparting these various movements to the carriage, I mount it upon a movable table, which is combined with means for reciprocating it to and from the knife, the carriage itself being movable upon this table and being combined, as usual, with mechanism for imparting to it an intermittent movement of progression toward the knife, which movement is what I have hereinbefore termed the "normal feed movement." I also com-

bine with the table an intermittently-acting brace, by which the movable table is held while the knife is making its cut.

In the drawings, A is the main frame, carrying the several working parts of the Goldie machine and my improvements.

B is the vertically-reciprocating cross-head or gate, which carries the knife and the compression-roller C, said gate being moved up and down by a crank-shaft in the usual manner.

D is the carriage for the block, which, like the carriage in the said Goldie patented machine, is capable of vibrating upon a vertical axis and is so moved by means of a tongue E, to which vibratory movement is imparted from the shaft F through the intermediary of suitable mechanism, such as that represented in the Goldie patent hereinbefore referred to, which, being well known by those acquainted with the art, requires no illustration here.

The carriage is provided with spring-pawls *d*, which during the vibrations or oscillations of the carriage alternately engage the racks *e* of the table on which the carriage is mounted, and thus impart to the carriage an intermittent movement of progression, which is its normal feed movement. Thus far there is nothing new in the machine.

In lieu of mounting the carriage upon a stationary table or frame *a*, as is done in the said Goldie patented machine, I mount it upon a movable table *c*, which has fixed to it the racks *e*, and is supported upon a stationary table or frame *a*, and is adapted to slide thereon toward and away from the path of the vertically-reciprocating knife. For this purpose it can be conveniently connected to the table *a* by means of bolts *f*, which pass through slots *g* in the movable table down into the stationary table *a*, these slots being of such length as to permit the movable table to have the desired range of reciprocatory movement. To impart this reciprocating movement to the movable table, I make use of the cross-shaft *y*, supported in suitable bearings on the frame of the machine and provided with two cams *a'*, that operate against the table and cause it to move toward the knife

at the proper time. When the cams pass out of reach of the table, the latter is moved back from the knife by a spring a^2 , fastened to the movable table and bearing against a suitable projection a^3 on the lower stationary table a . The cross-shaft y is actuated through suitable gearing by the shaft x , which is driven from shaft F, as indicated in Fig. 1.

To the lower stationary table a is attached a pivoted lever x' , which at one end operates against the movable table c and at the other end is in operative connection with the cam a' . When the table has been moved forward by the cams a' , the lever x' will be operated by one of the same cams to move in such direction that its inner end will be raised and brought just behind the front rail of the movable table, so as to lock that table into position, as indicated by full lines in Fig. 1. As soon, however, as the cam passes the outer end of the lever its inner end will drop to the position indicated by dotted lines in the same figure, thus releasing the table and permitting it to move back. The object of this lever is to relieve the pressure which otherwise would come upon the cam-shaft y while the knife is operating on the block.

The operation of the machine is as follows: The carriage D has of course the usual intermittent feed movement imparted to it, as customary. The cam-shaft y is so geared and its cams are so adjusted that they move the table C forward toward the path of the knife just before the knife is at its uppermost point, and they hold the table in that position until the knife descends and the cut is made. By that

time the cams will have passed out of reach of the table, and then by the action of the spring a^2 the table is caused to recede far enough to leave the block free of the knife, which, as hereinbefore stated, is important where a compression-roller is used in conjunction with the knife.

The timing of the movement of the lever x' with reference to the movement of the table has been hereinbefore indicated and need not be repeated.

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

1. The combination, with the reciprocating knife, of the movable carriage-supporting table, the locking-lever or brace for holding the same while the cut is being made, and mechanism for reciprocating said table and operating said lever, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the vertically-reciprocating knife and the compression-roller moving therewith, of the reciprocating table c , provided with racks e , and the independently-movable carriage mounted on said table and provided with spring-pawls to engage said racks, substantially as and for the purposes hereinbefore set forth.

Signed at the city of Chicago this 16th day of July, A. D. 1889.

JAMES LORENZO GAGE.

Witnesses:

RALPH HUNT,
JOHN H. BATTEN, Jr.