

No. 609,114.

Patented Aug. 16, 1898.

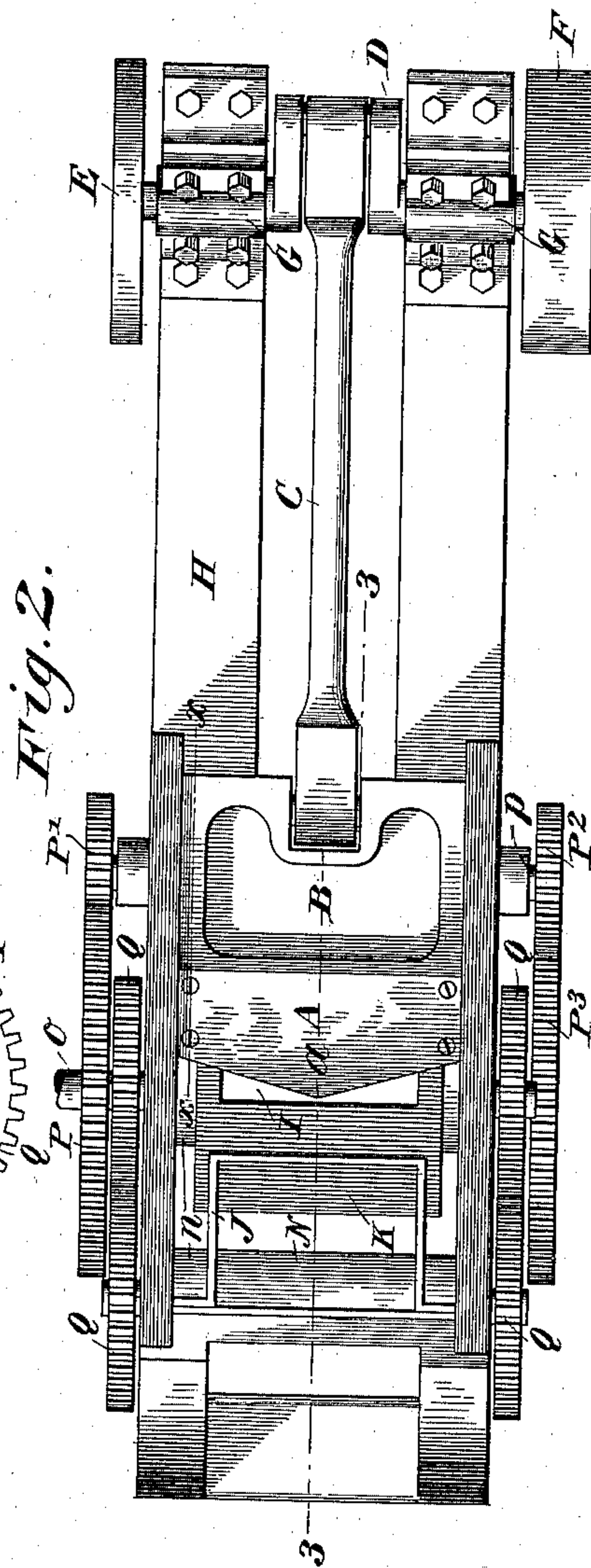
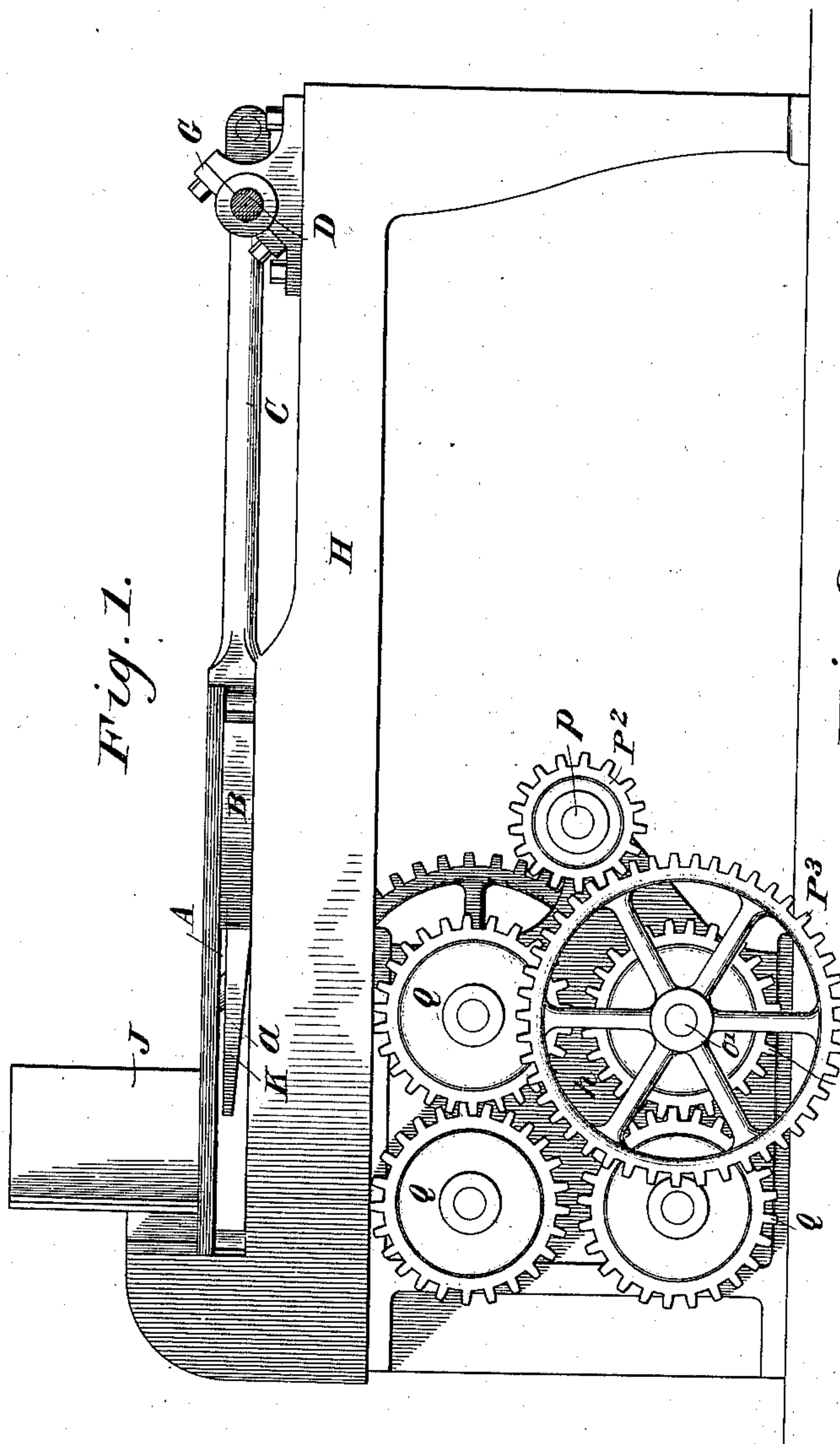
W. S. MUNDAY.

MACHINE FOR PREPARING WOOD FOR FUEL.

(Application filed Aug. 13, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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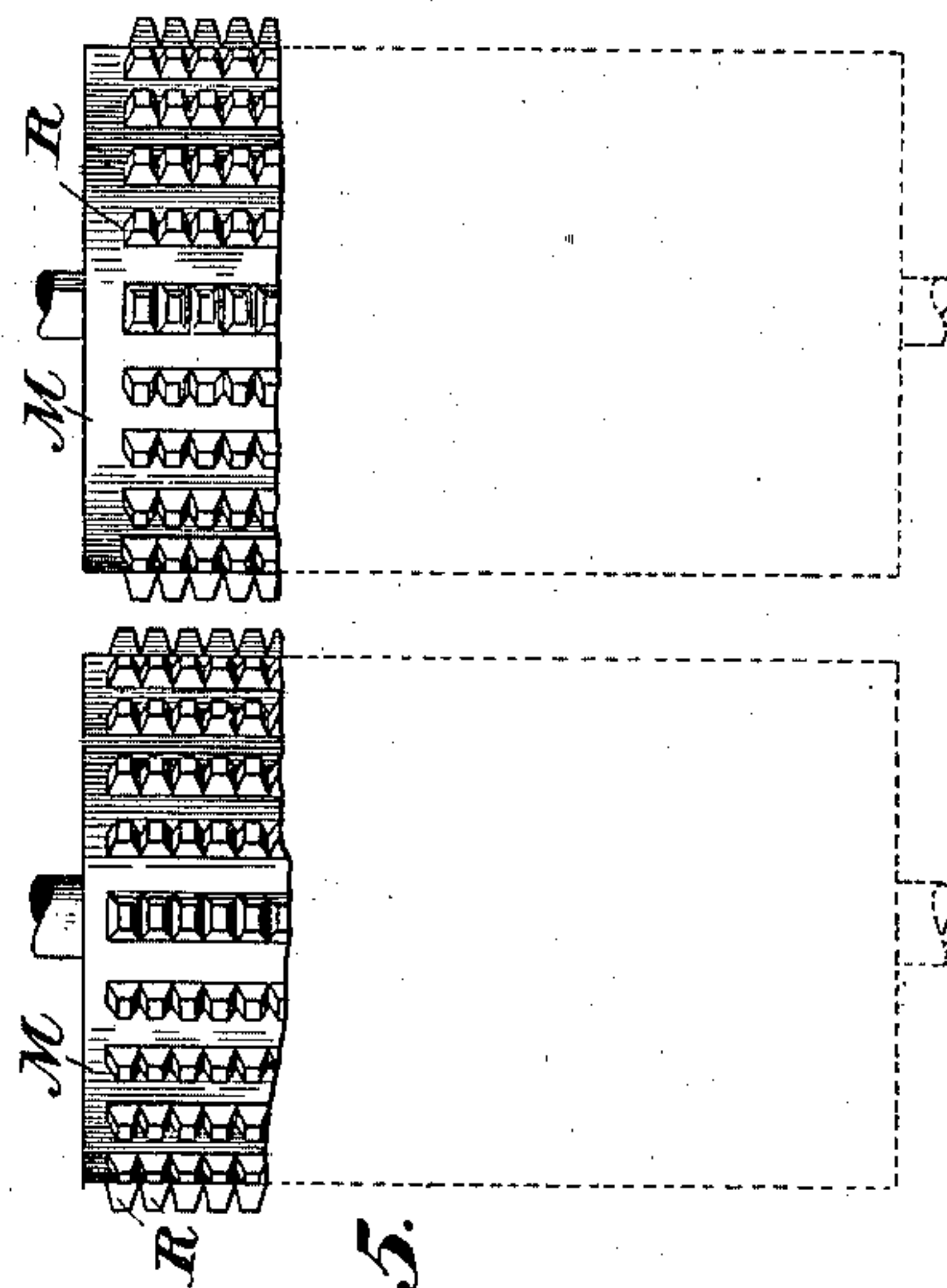
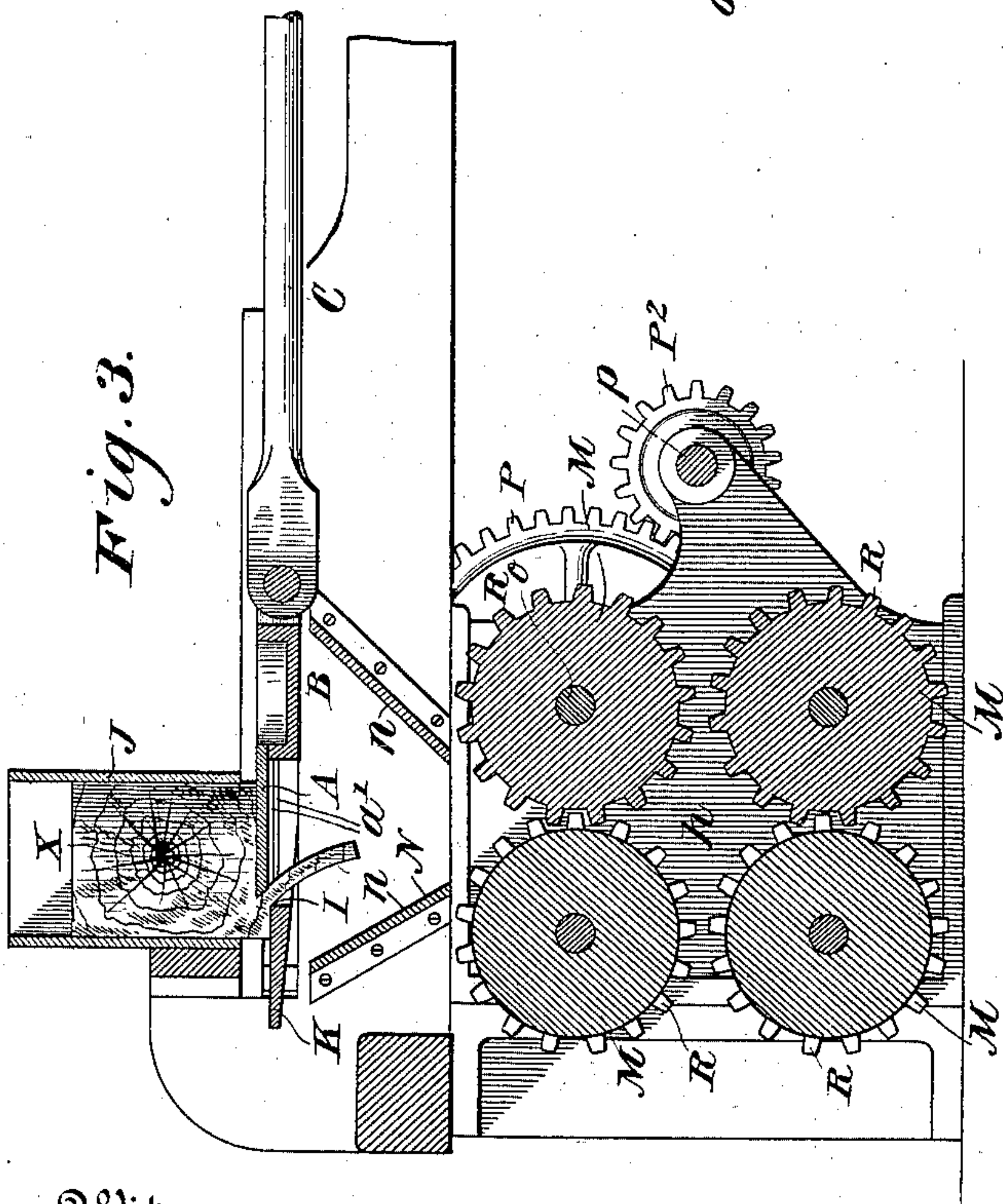
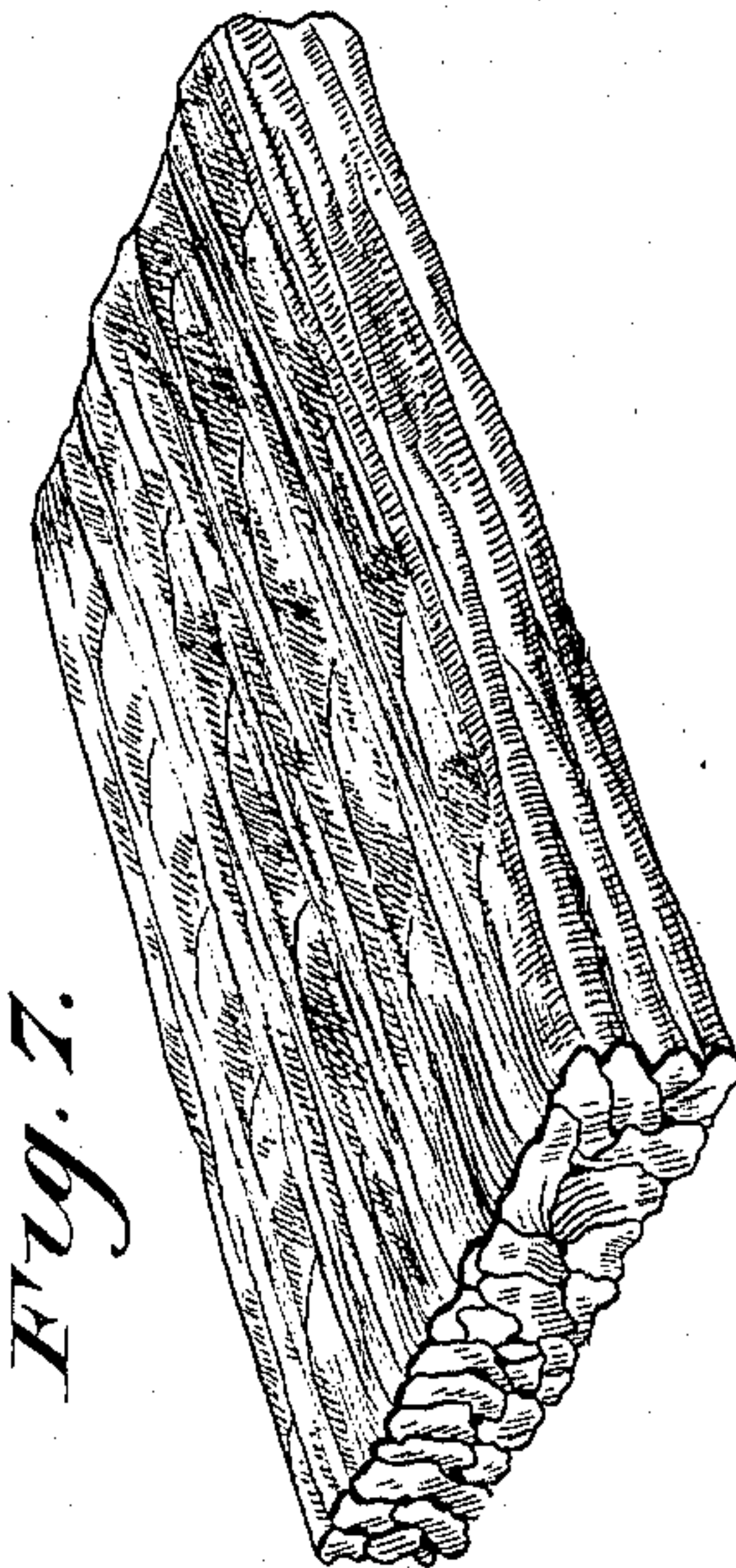
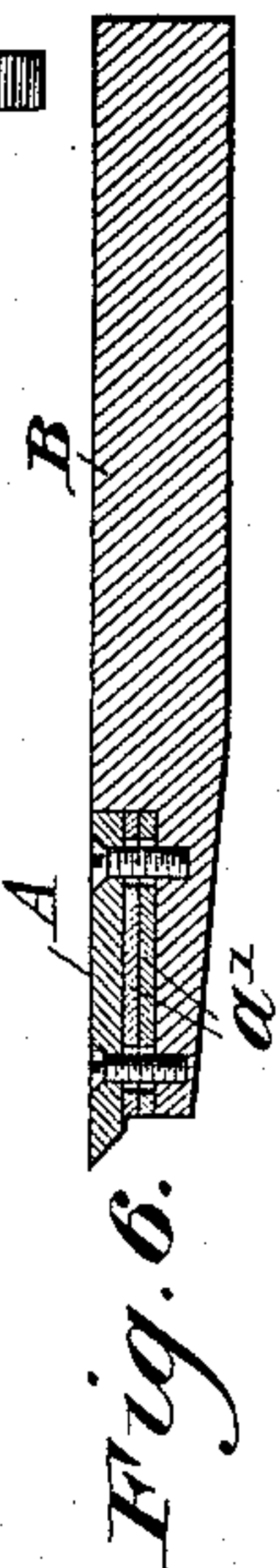
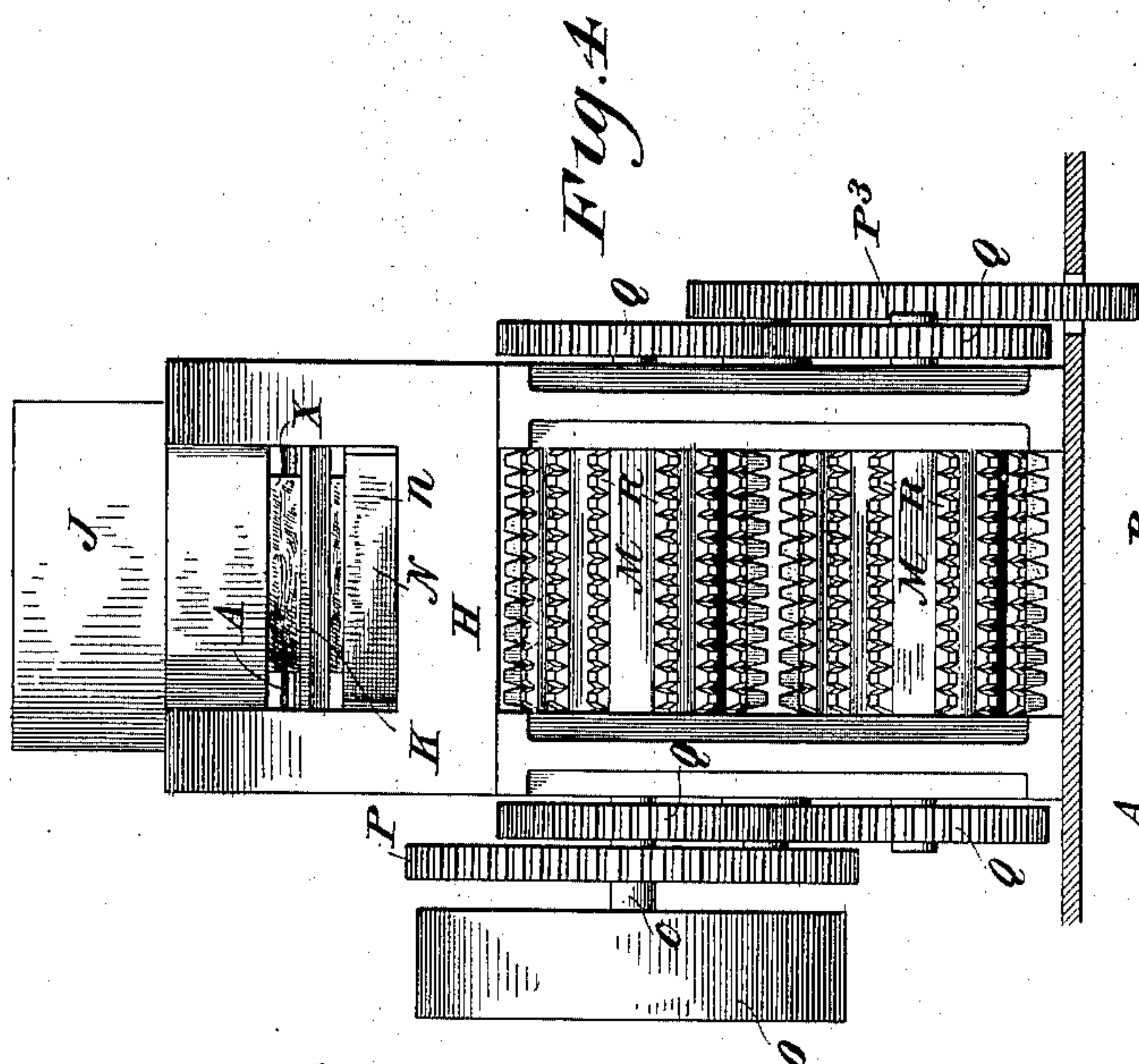
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(Application filed Aug. 13, 1897.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM S. MUNDAY, OF HATTIESBURG, MISSISSIPPI, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO SARAH Z. COHEN, OF NEW ORLEANS, LOUISIANA.

MACHINE FOR PREPARING WOOD FOR FUEL.

SPECIFICATION forming part of Letters Patent No. 609,114, dated August 16, 1898.

Application filed August 13, 1897. Serial No. 648,142. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. MUNDAY, a citizen of the United States, residing at Hattiesburg, in the county of Perry and State of Mississippi, have invented certain new and useful Improvements in Machines for Preparing Wood for Fuel, of which the following is a specification.

Heretofore wood has been disintegrated by machinery to render it fit for ready ignition to be used principally for kindling fires. Special machinery has been devised for cutting and preparing such wood, and I now seek to improve such machinery as well as the article produced thereby.

According to my present invention I cut successive slices from a block of wood and cause these slices of wood to pass between spiked rollers which crush and disintegrate the fiber, rendering it soft and broken, so as to readily ignite and rapidly burn. The wood employed is usually resinous wood, and unless this be crushed and otherwise disintegrated it will not kindle or burn rapidly. Therefore it is desirable to render this wood as fibrous as possible. Such wood is difficult to slice from a block, owing to its hardness. Therefore my improved machine is equipped with an improved cutter or slicer which slices boards or slabs of suitable size from the block and delivers them immediately to crushing-rolls equipped with spikes which tear the fibers apart, rendering the slabs pliable and readily ignitable without tearing the fibers to such an extent that they separate from each other.

In the accompanying drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan view, the spiked rolls being omitted. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is a rear elevation. Fig. 5 is a plan view of the crushing-rolls, the dotted lines showing the relative sizes of the rolls, which are separated for clearness. Only a part of the rolls is shown equipped with the spikes. Fig. 6 shows a vertical section of the knife on the line $x x$ of Fig. 2. Fig. 7 is a perspective view of the crushed slab or board produced by the machine.

The knife A is secured to the end of a frame B, connected by a pitman C with a crank-shaft D, having a balance-wheel E and a driving-pulley F, which may be operated in any suitable way. The crank-shaft is mounted in bearings G of suitable construction. The main frame H may be of such size, shape, and construction as to best accommodate the mechanism which it supports.

The knife A is inclined rearward in opposite directions from the point a and is suitably beveled at its edge to most efficiently cut the slabs or boards from the block X. As this block is saturated with resin, it is very hard, and it is desirable to have a knife which will most easily cut it without breaking the slabs. The particular shape of knife employed enables me to make a shear cut, which does the work most efficiently. The blade may be adjusted vertically by means of liners a' , as shown in Fig. 6, to vary the thickness of the slabs cut from the block.

The frame B is extended beyond the edge of the knife. It is slotted at I and is provided with a table or apron K. This table or apron, being a part of the knife-frame, reciprocates back and forth with it beneath the block X, which is contained in the box J, and descends by its own weight. The apron serves to support the block when the knife is withdrawn from under it, as shown in Fig. 2. Fig. 3 also shows how the apron supports the block while the knife is cutting it. Below the box J and the cutting-knife are arranged the crushing-rolls M, and between these rolls and the knife there is a guide-chute N, the opposite sides of which are inclined, as shown in Fig. 3, to cause the slabs cut from the blocks X to pass into the bite of the rolls M.

The rolls M are mounted in a suitably-formed part h of the main frame. They may be geared together in any suitable way. As shown, a belt-pulley O, which may be driven in any suitable way—for instance, from the same shaft that drives the pulley F—is mounted on a shaft o of one of the upper crushing-rolls. The shaft carries a large gear-wheel P, meshing with a smaller wheel P' on a shaft p , carrying a pinion P², which gears with a

large gear-wheel P³ on the opposite side of the machine. This wheel is mounted on a shaft o' of one of the lower crushing-rolls. The lower set of rolls have cog-wheels Q, 5 which mesh with each other, as have also the upper rolls. By this means all of the rolls are driven from the same pulley O, it being observed that the lower rolls do not gear directly with the upper ones.

10 Heretofore fluted rolls have been employed for disintegrating wood for kindling; but such crushing-rolls are not efficient. I have discovered that the best results are attained by employing spiked rolls of the kind illustrated 15 in the drawings. The spikes R should be arranged in rows, as shown, and the rows of spikes on each pair of rolls should break joints, as most clearly indicated in Fig. 5, and should interlock, as shown in Fig. 3. By this means 20 the fibers are disintegrated, softened, and made readily ignitable, as indicated in Fig. 7. It being remembered that the wood is resinous, it will be understood how the spiked crushing-rolls will more thoroughly disintegrate the 25 material than where fluted rolls are employed.

I claim as my invention—

1. The combination substantially as set forth of the block-guiding box, the knife 30 pointed at its front central portion and having backwardly and laterally inclined edges,

the spiked crushing-rolls arranged below the knife, the guide-chute interposed between the crushing-rolls and the knife, the slotted apron or frame arranged in front of the knife and 35 movable simultaneously therewith for supporting the block to be cut when the knife is withdrawn, and means for reciprocating the knife and apron and for actuating the crushing-rolls.

2. The combination, substantially as set 40 forth, of the block-guiding box, the slotted apron arranged beneath the box, a centrally-pointed knife rigidly secured to the apron and having lateral and rearwardly-inclined 45 cutting edges diverging from a cross-piece of the apron which is adapted to sustain the block when the knife is withdrawn, a guide-chute arranged immediately below the knife 50 and apron, the crushing-rolls having rows of spikes breaking joints and interlocking as described, and arranged below the guide-chute, and means for reciprocating the knife and apron for actuating the rolls.

In testimony whereof I have hereunto subscribed my name.

WILLIAM S. MUNDAY.

Witnesses:

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J. D. BENNETT.