(No Model.)

4 Sheets—Sheet 1.

J. CASEY.

WOOD WORKING MACHINE.

No. 353,539. Patented Nov. 30, 1886.

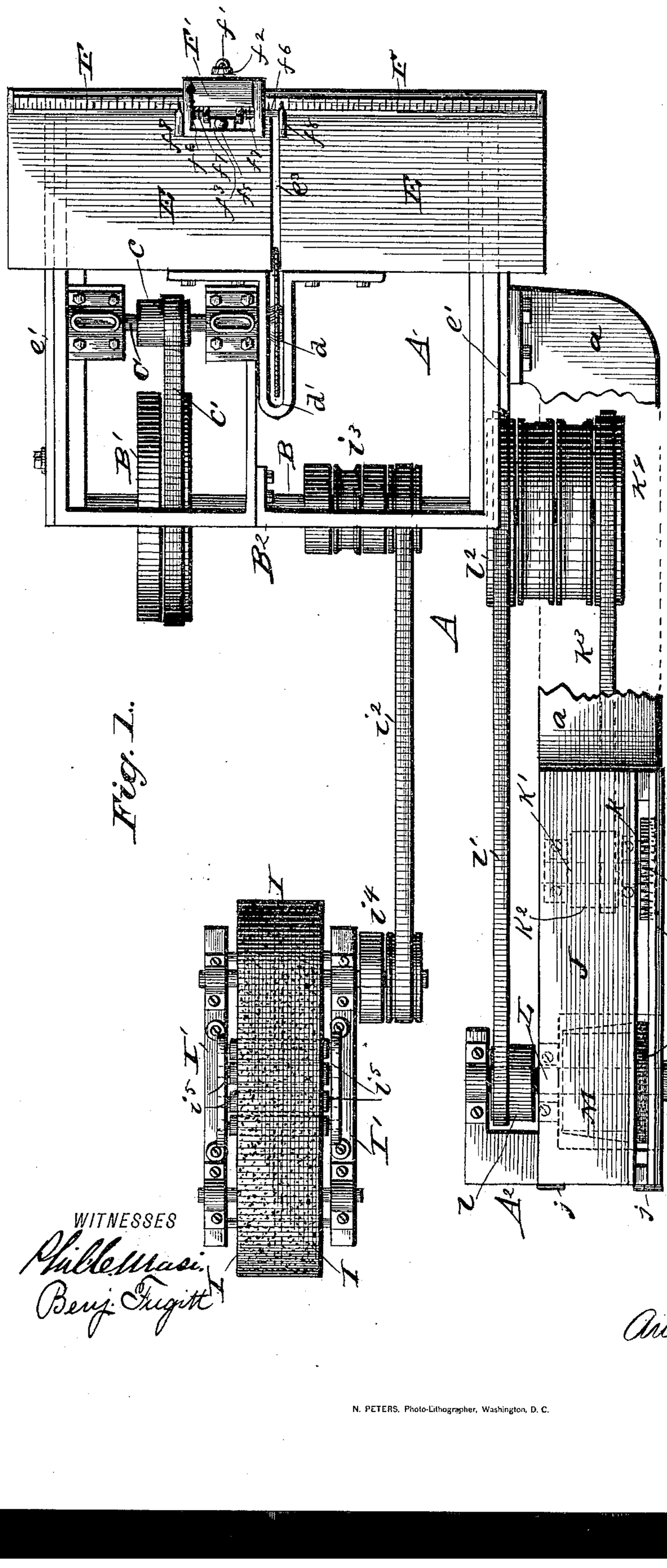

Fig. 7.

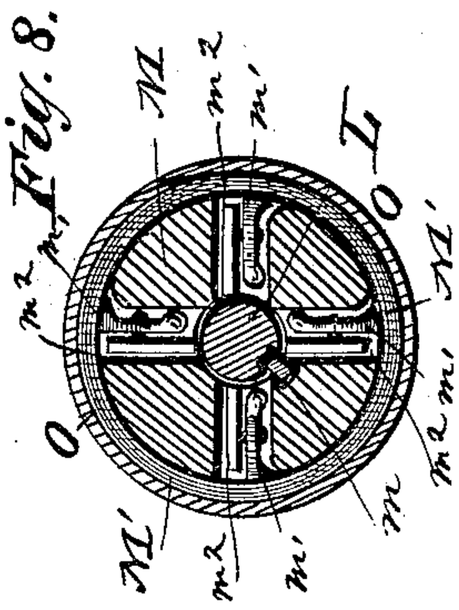

Fig. 8.

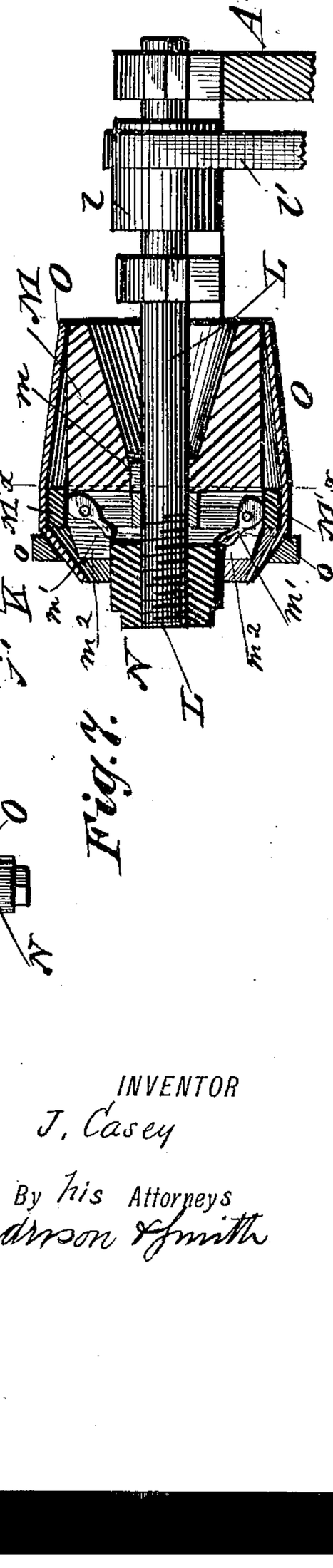

Fig. 9.

WITNESSES

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(No Model.) 4 Sheets—Sheet 2.

J. CASEY.

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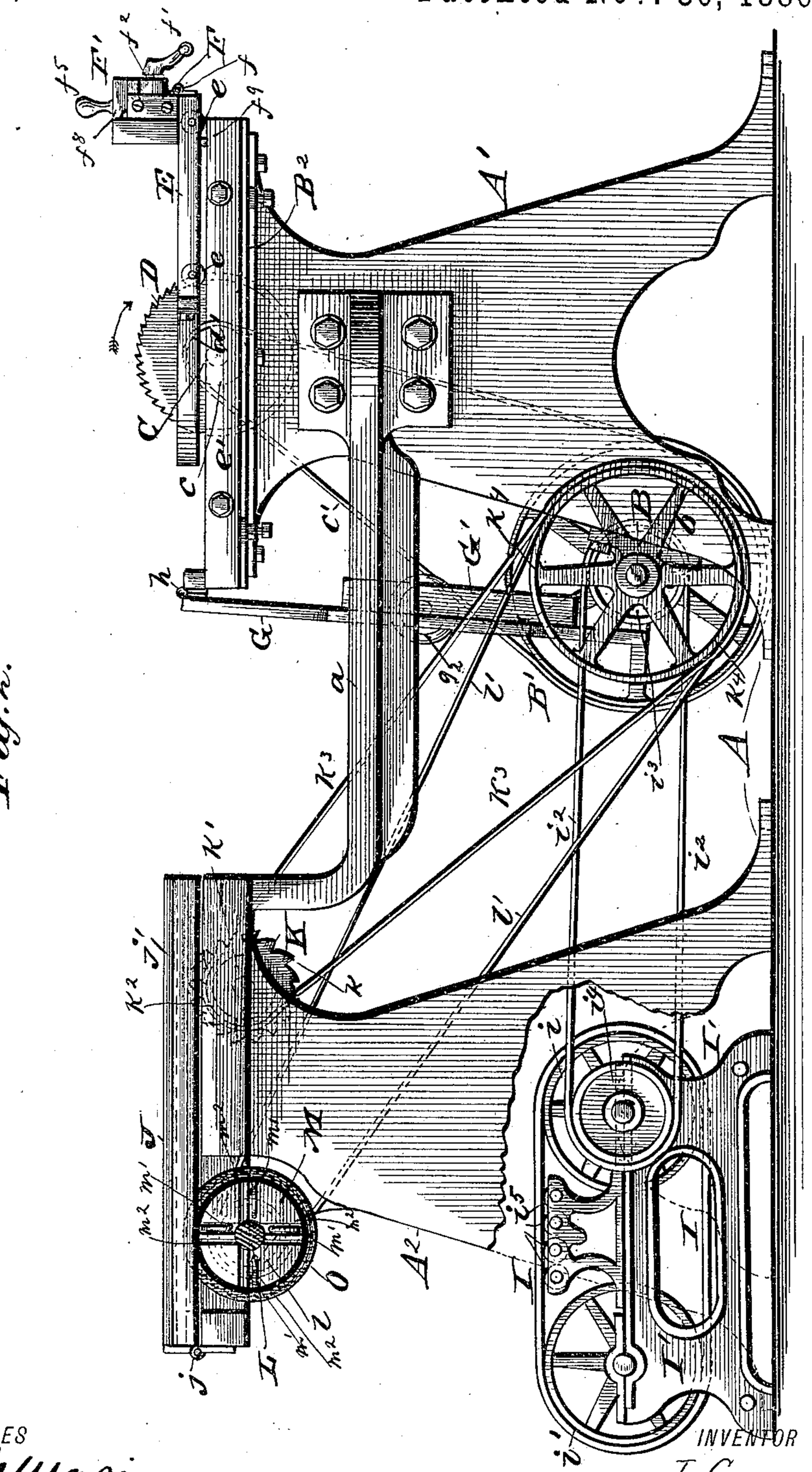

Fig. 2.

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4 Sheets—Sheet 3.

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WOOD WORKING MACHINE.

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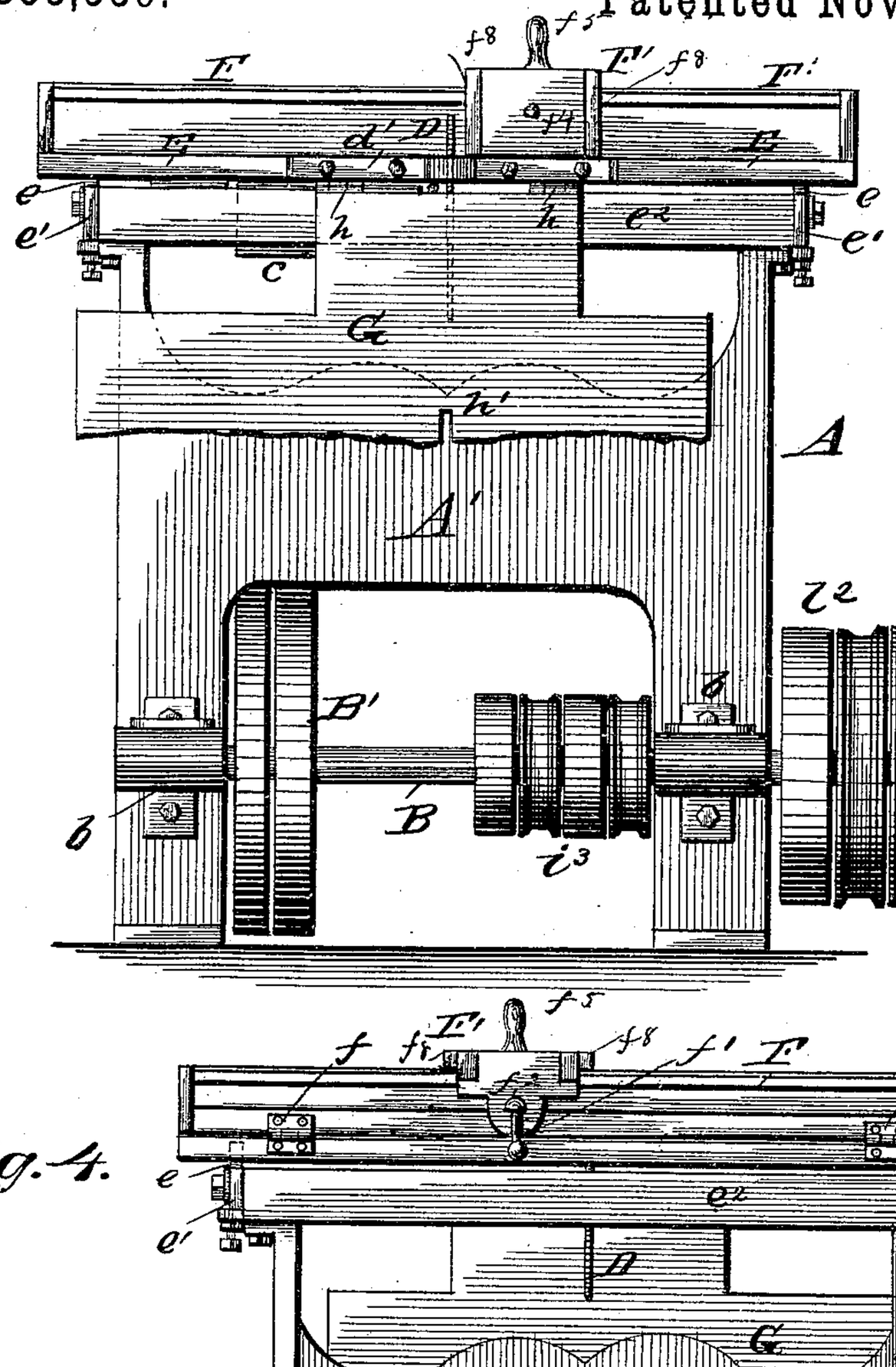

Fig. 3.

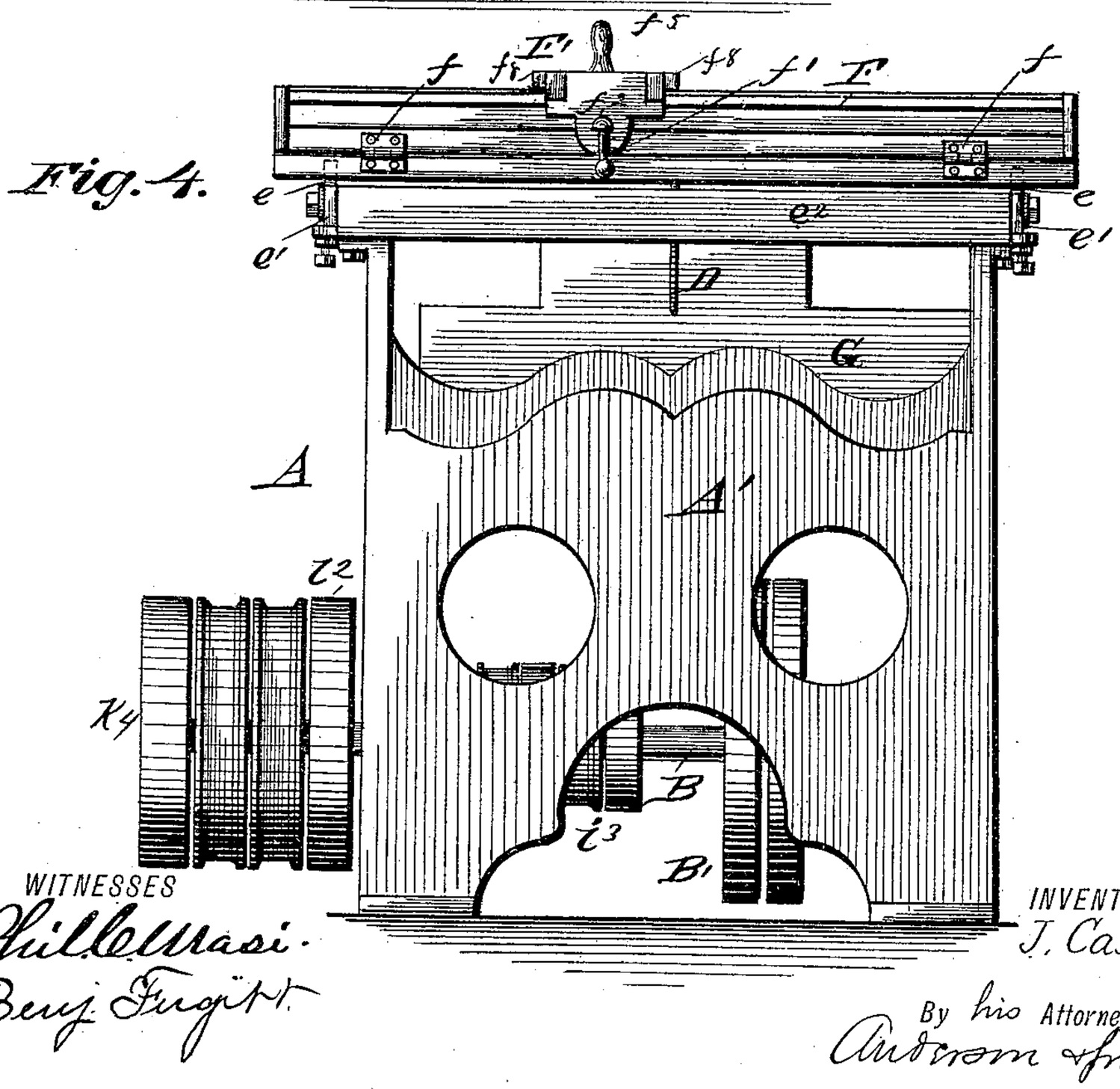

Fig. 4.

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4 Sheets—Sheet 4.

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WOOD WORKING MACHINE.

No. 353,539. Patented Nov. 30, 1886.

Fig. 9.

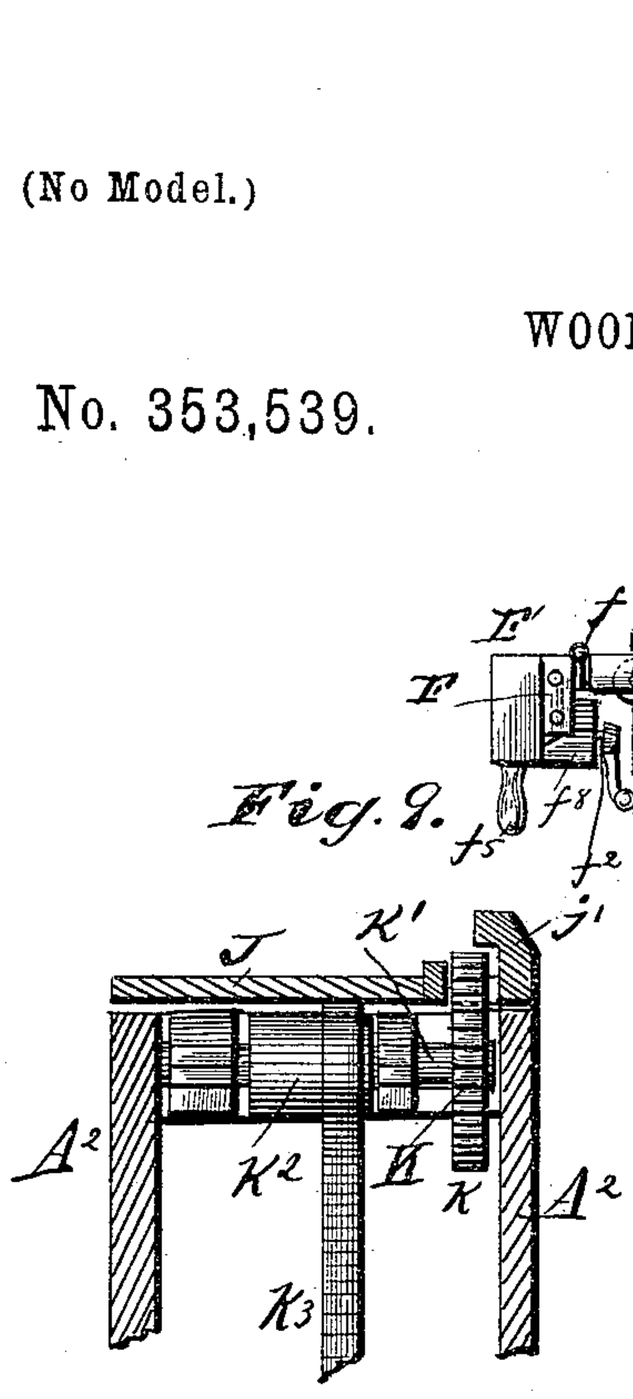


Fig. 10.

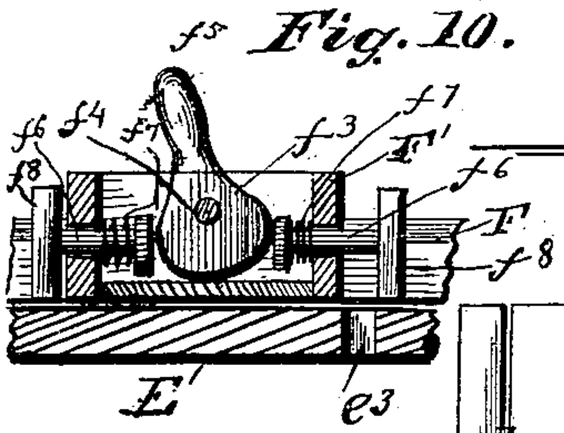


Fig. 5.

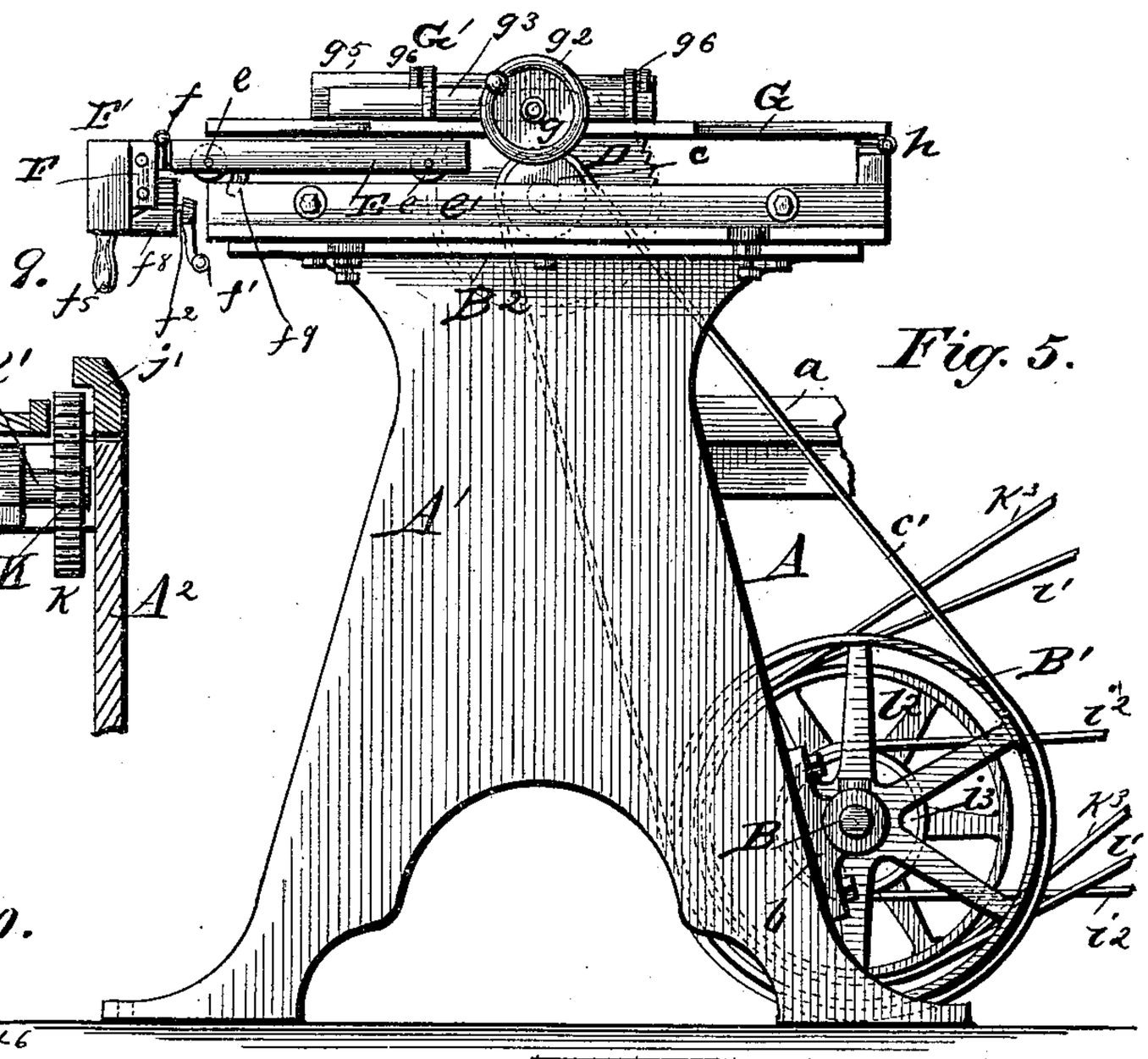
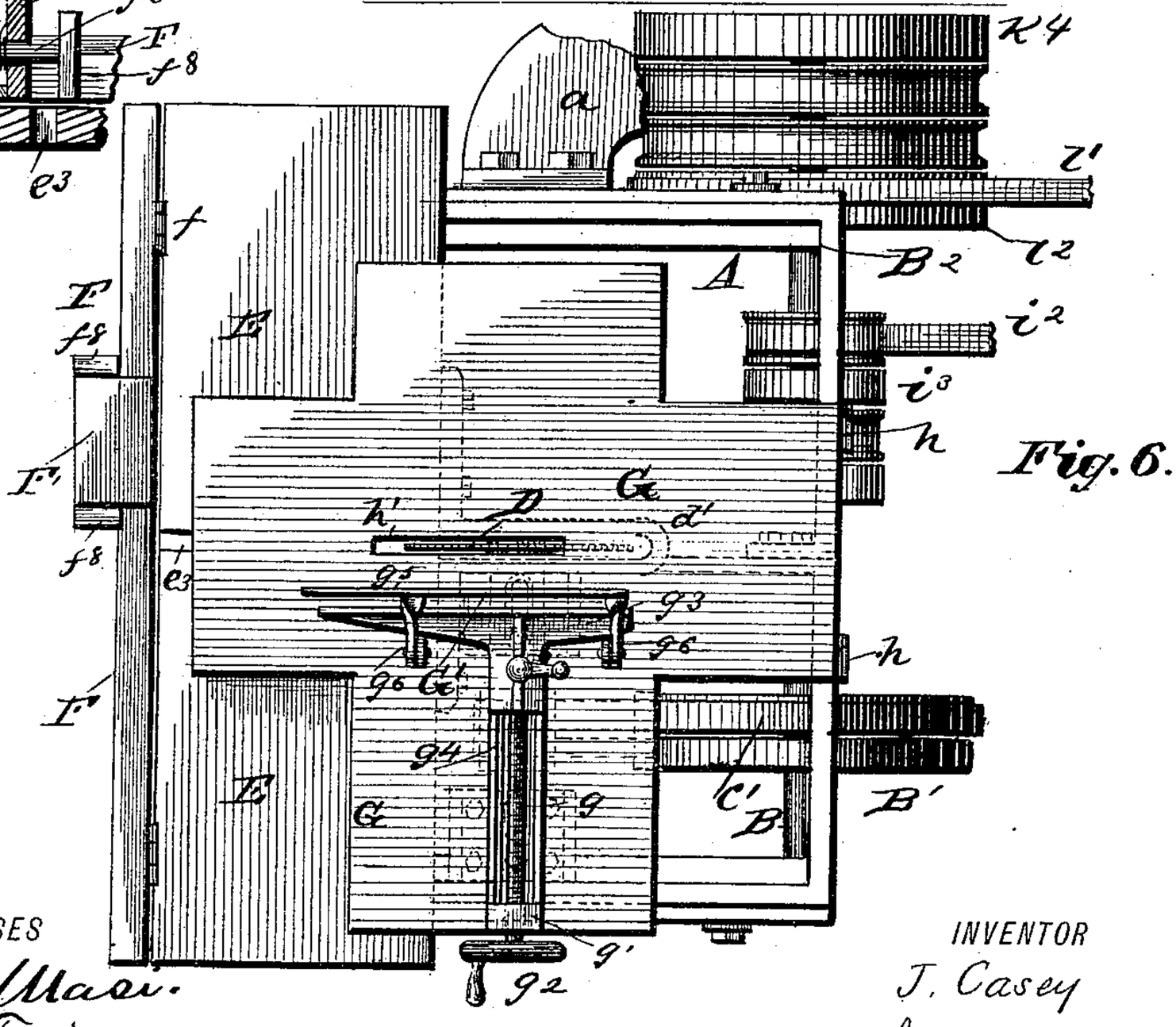


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

JEREMIAH CASEY, OF NEW YORK, N. Y.

WOOD-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 353,539, dated November 30, 1886.

Application filed March 29, 1886. Serial No. 196,982. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH CASEY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Wood-Working Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a top view of my improved wood-working machine. Fig. 2 is a side elevation of the same. Fig. 3 is an end view of one of the standard-frames. Fig. 4 is also an end view of one of the standard-frames. Fig. 5 is a side view of one of the standard-frames. Fig. 6 is a top view of one of the standard-frames. Figs. 7, 8, 9, and 10 are detail views.

This invention relates to improvements in machines for making wooden boxes, and has especial reference to the manufacture of cigar-boxes or boxes similar in size and shape thereto; and it consists in the construction and novel arrangement of parts, hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings by letter, A designates the main frame of the machine, composed of the two similar standard-frames, A′ and A², connected together by the side bar, *a*, which depends from the rear end of the standard-frame A², near one corner thereof, then bends horizontally, and is bolted at its other end upon the side of the standard-frame A′, as shown.

B is a transverse shaft rotating in bearings *b*, secured to the inward-looking edges of the standard-frame A′, and B′ is a pulley thereon, driven by a belt from any proper source of power.

C is a transverse shaft having bearings on the upper part of the standard-frame A′, and provided with a pulley, *c*, which is driven by a belt, *c′*, from the pulley B′ on the shaft B. The bearings of the shaft C are in the top plate or frame of the standard-frame A′, as shown.

D is a circular saw turning with the shaft C in a slot, *d*, made partly in a horizontal frame, *d′*, standing centrally from the inner edge of a traveling plate, hereinafter described, and partly in said plate.

E is a rectangular bed-plate provided on its sides with the rollers *e e*, which ride on the ways *e′ e′*, made on the top frame, B², of the standard-frame A′. The said plate is kept in position by the rail *e²*, V-shaped in cross-section, which rail forms half of or is made upon the top plate, B², of the standard A′, and fits into a corresponding groove, *e³*, on the plate E.

F is a bar hinged at *f f* upon the outer and upper edge of the plate E, and graduated to inches and parts of an inch, and F′ is a rectangular frame traveling thereon. The frame F′ may be fixed at any desired point upon the graduated bar by the crank-handle *f′*, which actuates the set-screw *f²*, so as to make the latter bind on the graduated bar. The frame F′ has the cam *f³* pivoted within it upon a pin, *f⁴*, and the said cam is provided with the short handle *f⁵*.

f⁶ f⁶ are short shafts running through the ends of the said frame, and provided with heads on their inner ends, and *f⁷ f⁷* are coil-springs surrounding the shafts within the frame F′ and bearing against the heads.

f⁸ f⁸ are holding-bars on the outer ends of the shafts *f⁶*, and moving therewith. When the lever-handle *f⁵* is moved to one side, the cam *f³* moves one of the shafts *f⁶* outward against the action of the coil-spring, so that a piece of wood equal in thickness to two sides of a box being made, and the paper usually pushed thereon may be inserted between the holding-bar and the side of the frame F′.

f⁹ is a curved stop-bar on the outer end of the frame or bed plate E, which bar impinges upon the outer bar of the top of the standard-frame A′ when the plate E is drawn outward, and allows the forward edge of the same to be turned upward, so as to raise the slot *d*, made partly in said frame, above the same, and allow it to clear the same. In crosscut sawing the edge of the board rests against and is directed by the bar F, and the end of the same rests against the frame E.

G is the plate or table on which the board is supported during longitudinal or rip sawing. The said table is hinged to the top B² of

the standard-frame A′ at *h h*, so as to turn on the same inwardly and downwardly when necessary.

h′ is a slot in the table G, through which the saw D passes.

G′ is a guide and gaging device for the board in rip sawing, composed of the transverse set-screw *g*, turning in a bearing, *g′*, on the edge of the table G, and moved by the hand-wheel g^2. The inner end of the screw *g* engages in a threaded opening in the boss of the holding-bar g^3, which travels on ways g^4, made upon the upper surface of the table G.

g^5 is a bar having a face parallel to that of the holding-bar g^3, and provided with the arms g^6 g^6, which are pivoted upon the holding-bar, so that the bar g^5 may be turned to the inner side of the holding-bar when desired. When in this position, its face is as far from the face of the holding-bar as twice the thickness of one side of the box being made. The sides, bottoms, tops, and ends are made separately. The sides and top are cut shorter than the bottom by a distance equal to twice the thickness of the end pieces, with the thickness of the lining-paper usually added. This is effected by letting one of the holding-bars g^3 of the frame F′ out from the same in the manner described, so that the board from which the pieces are cut will rest against the holding-bar, and the piece of board cut off from the side and top will be the requisite distance shorter than if the holding-bar were against the frame F′ in its normal position. The board may be passed over the plate E from either side, as the frame F′ can be secured or set upon the bar F at any point. When the rip sawing is in operation, said bar and frame are turned down on the hinges *f*, so as to be out of the way of the board passing over the table G. The sides are cut narrower than the ends, and this is accomplished by turning the holding-bar g^5 inward in relation to the fixed holding-bar g^3, so that it will be nearer the saw, and the board will be cut narrower. This makes the strip for the sides narrower than those for the ends. Any greater degree of adjustment is regulated by the screw *g*.

When the sides, bottoms, tops, and ends are cut out, as described, a number of each are formed into a bundle and have their edges dressed upon the endless belt I, having a surface of sand or emery paper. This belt runs over the similar pulleys, *i i′*, the shafts of which are journaled in the ends of the frame I. A belt, i^2, upon the pulley i^3 on the main shaft B, drives the pulley i^4 on the same shaft as the pulley *i*, and causes the endless belt to travel.

i^5 i^5 are supporting-rollers for the endless belt I. The said rollers are journaled in arms of the frame I′, as shown. Each box then has its parts nailed or united together so as to be closed. It is then passed over the slotted bed or table J, hinged at *j*, at its outer end upon the top of the standard-frame A^2. The edge of the box lies or is held against a guide-strip, *j′*.

K is a circular saw the teeth *k* of which are chisel-shaped, as shown, and the shaft *k′* of which has bearings near the top of the said standard. The shaft *k′* receives motion by means of the attached pulley k^2, the belt k^3, and the pulley k^4 on the main shaft B. As the box passes over the table the teeth *k* cut all projecting nails or other parts not flush with the surfaces of the box.

L is a transverse shaft having bearings in the standard-frame A^2, near its top. The shaft L is rotated by means of the attached pulley *l*, the belt *l′*, and the pulley l^2 on the main shaft B. The belts *l′* and k^3 are run onto loose pulleys on the main shaft when it is not desired to rotate the shafts L and *k′*.

M is a drum connected by a spline, *m*, to the shaft L, and having the inner part of its bore cone-shaped, as shown.

M′ is a ring of rubber or equivalent elastic material surrounding the drum, and *m′ m′* are levers pivoted within the equidistant radial channels or recesses m^2, made in the drum M, and running inward from its outer end.

N is a sleeve or ring upon the shaft L, and moved inward or outward thereon, the shaft and bore of the sleeve being correspondingly threaded. The inner face of the sleeve rests against the inner arms of the levers *m′*, so that by moving the sleeve inward the outer arms of said levers are extended and expand the rubber ring M′, with which they are in contact. Any other suitable construction for moving the sleeve N inward may be used in place of the above.

O is a sleeve of sand or emery paper, surrounding the drum and the ring M′, and *o* is an elastic ring, which retains the outer end of the same in place by binding it on the beveled outer end of the drum. When the boxes have passed over the circular saw K, they travel farther on and pass over the sleeve O, on the rotating drum, and are dressed thereby. Only that portion of the sand-paper above the ring M′ comes in contact with the boxes, and when the same is worn the ring M′ may be loosened by means of the levers *m′* and controlling-sleeve, and the sand-paper sleeve drawn outward to give a new operating-surface, and again tightened on the drum. This arrangement economizes both in sand-paper and in time occupied in adjusting the same.

The mode of operation for each part given in connection with the description of the same, the operation of the machine as a whole is evident, being only the different described steps, following each other consecutively.

The frame of the polisher may be a part of the frame of the trimmer, and be on the side of the same.

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

1. The combination of the slotted frame or bed for crosscut sawing, moving on ways on the main frame of the machine, the graduated bar hinged thereto, and the gage-frame F′, traveling on said bar, and provided with the

set-screw f^2, actuated by the crank-handle f', coil-springs f, the pivoted cam f^3, the shafts f^6, coil-spring f^7, surrounding said shafts, and holding-bars f^8, attached to the outer ends of the shafts, substantially as specified.

2. The combination of the slotted bed or frame for crosscut sawing, traveling on ways on the main frame, the guide and gage bar hinged thereto, and the gage-frame F', traveling on the said bar, with the circular saw having its shaft journaled in the main frame below the said bed, the slotted table for rip-sawing, hinged to the top of the main frame and arranged to overlie the bed for crosscut sawing in such manner that the circular saw will pass through the slots of both the gaging device G', secured to said table, and the gage and guide bar g^5, connected to said device, substantially as specified.

3. The combination, with the machine for crosscut and rip sawing, constructed substantially as described, of the frame I', the pulleys $i\ i'$, having their shafts journaled in said frame and driven from the main shaft of said machine by the pulleys $i^3\ i^4$ and belt i^2, and the belt I, traveling over the pulleys $i\ i'$, having an outer sand-paper surface and supported by the rollers i^5, substantially as specified.

4. The combination, with the machine for crosscut and rip sawing, constructed substantially as described, of the circular saw K, having its shaft k' driven from the main shaft of the said machine by means of the belt k^3 and pulleys k^1 and k^2, and the hinged bed or table J, provided with a slot for the passage of the saw and proper guide-strips to direct the boxes properly over the same, substantially as specified.

5. The combination, with a machine for crosscut and rip sawing, substantially as described, of the circular edge-dressing saw, driven from the main shaft of said machine, the hinged table J, and the drum having its shaft driven by means of pulleys and a belt from said main shaft, and provided with a surrounding sleeve of sand-paper to smooth the boxes after they have been riven by the saw, substantially as specified.

6. The combination, with a machine for crosscut and rip sawing, substantially as described, of the slotted hinged bed J, provided with guide-strips j', the shaft L, driven from the main shaft B by the pulleys $l\ l^2$ and belt l', the drum M, splined on the shaft L and provided with the pivoted levers m', the sleeve N, actuating said levers, the elastic ring M', surrounding the drum, and the sleeve O, of sand-paper, surrounding the drum and ring M', substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JEREMIAH CASEY.

Witnesses:
PHIL. C. MASI,
THEODORE S. WEST.