

ROLLIN M. CLAPP.

Improvement in Machines for Turning and Polishing
Wood.

No. 119,695.

Patented Oct. 10, 1871.

Fig. 1.

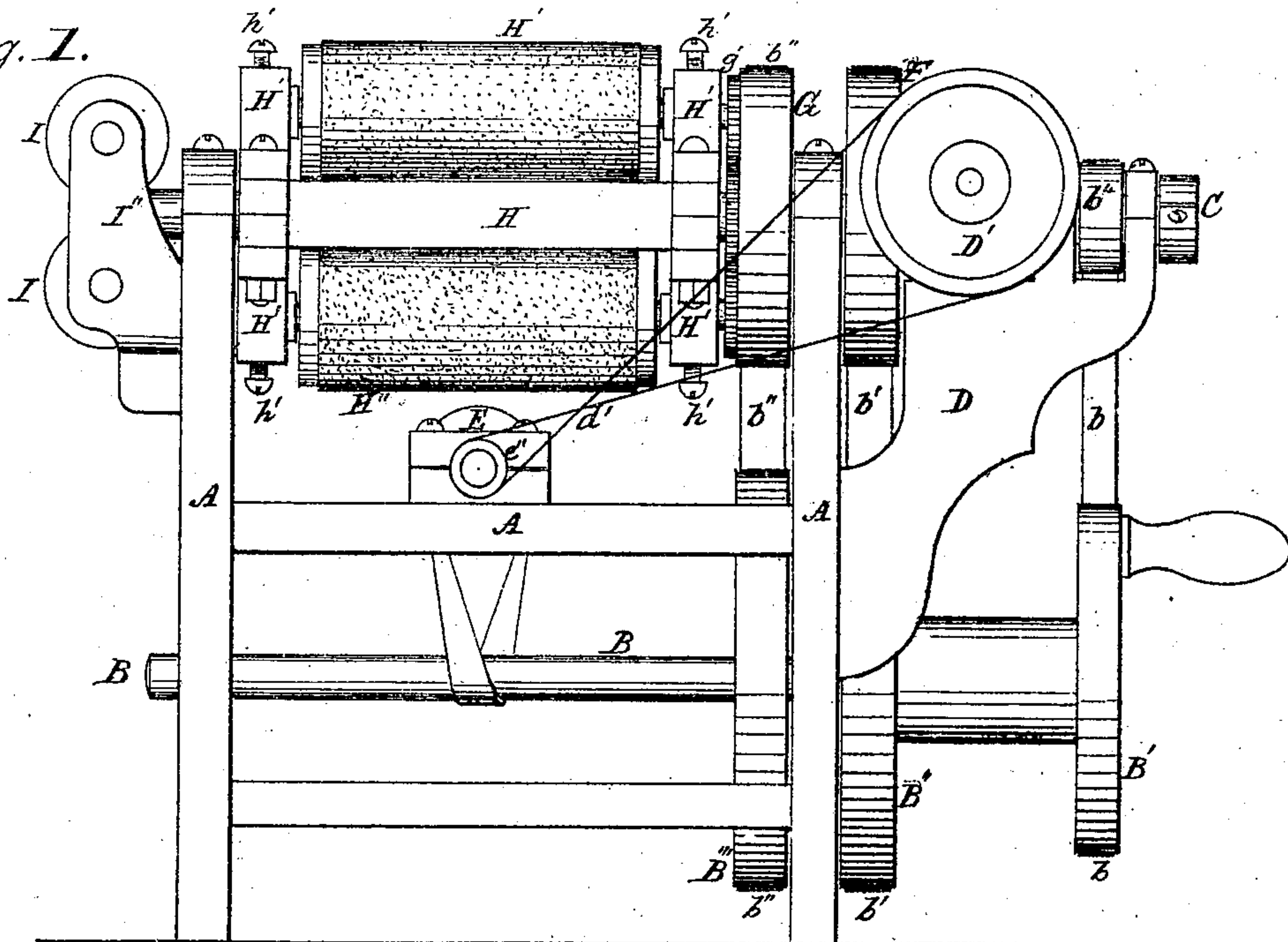
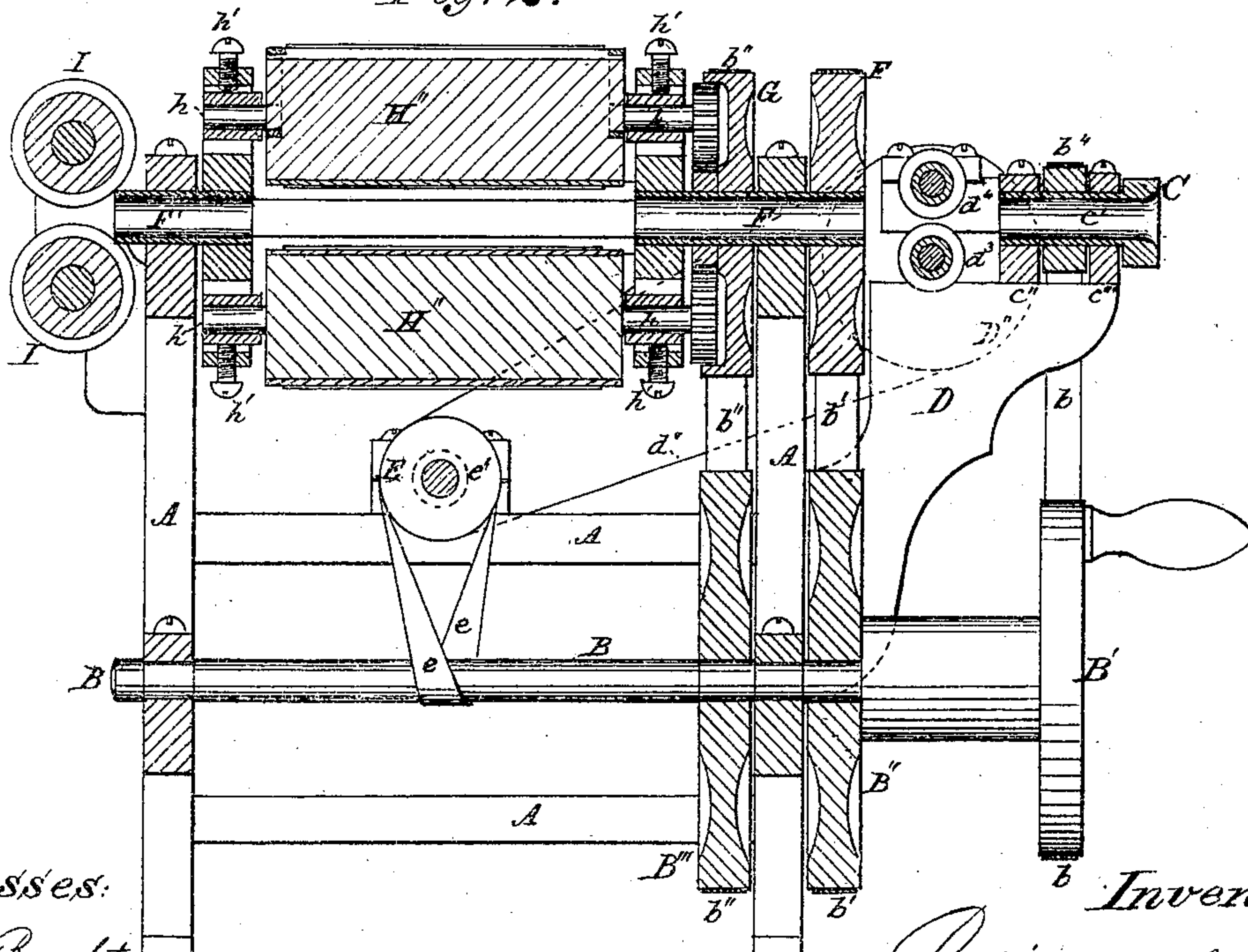


Fig. 2.



Witnesses:

T. C. Brecht.
Charles Chime

Inventor:

Rollin M. Clapp
By N. Crawford
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Fig. III.

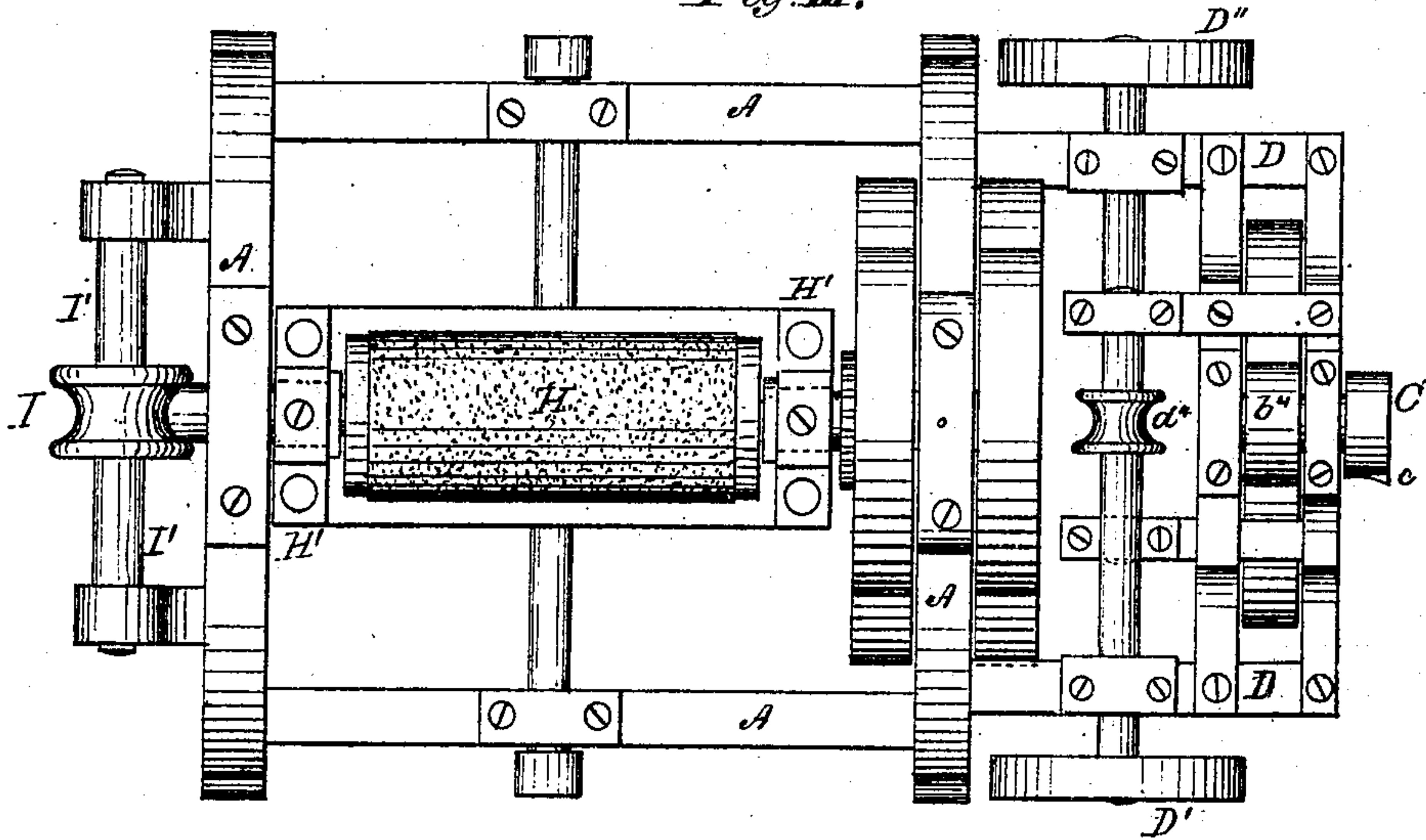


Fig. IV.

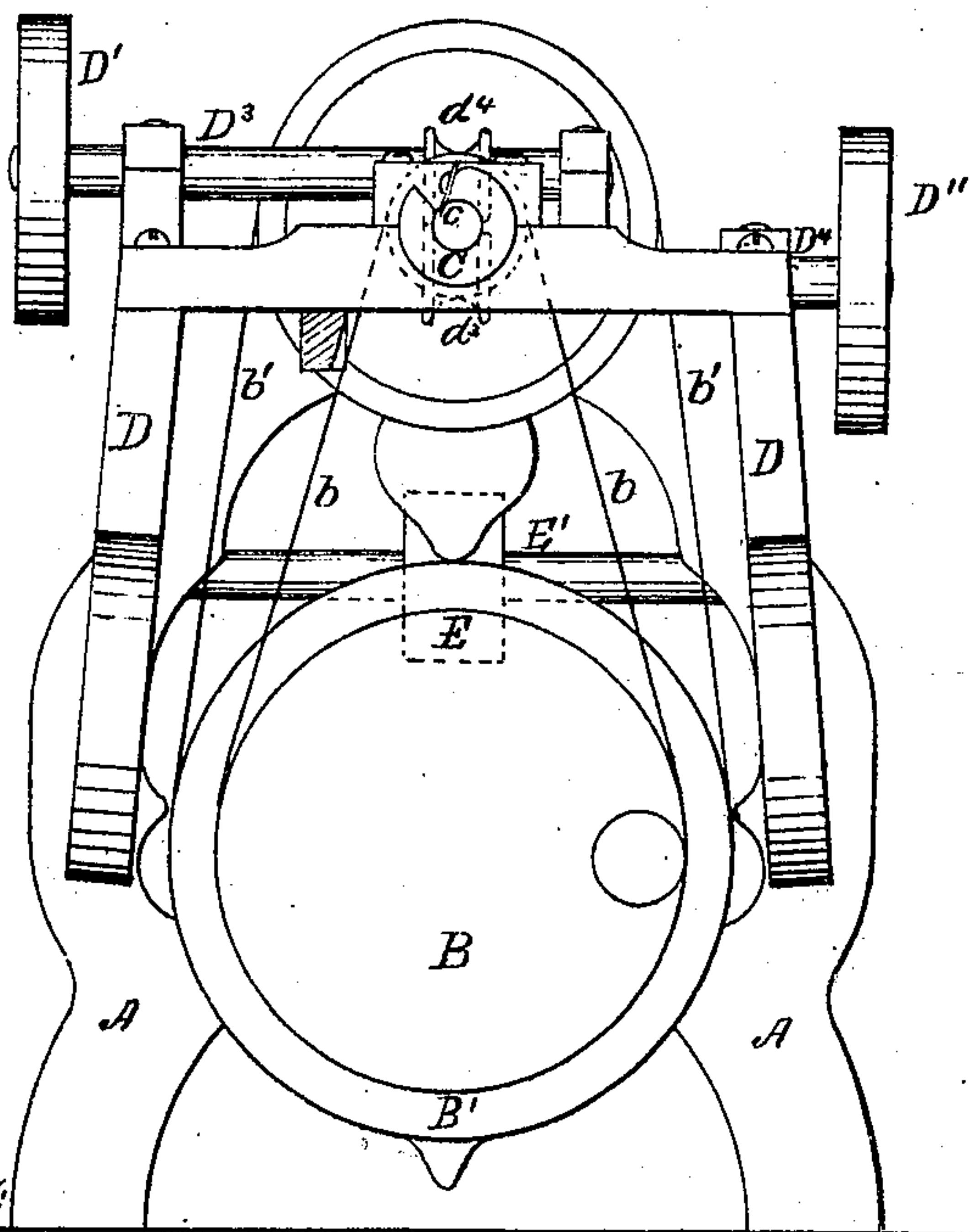
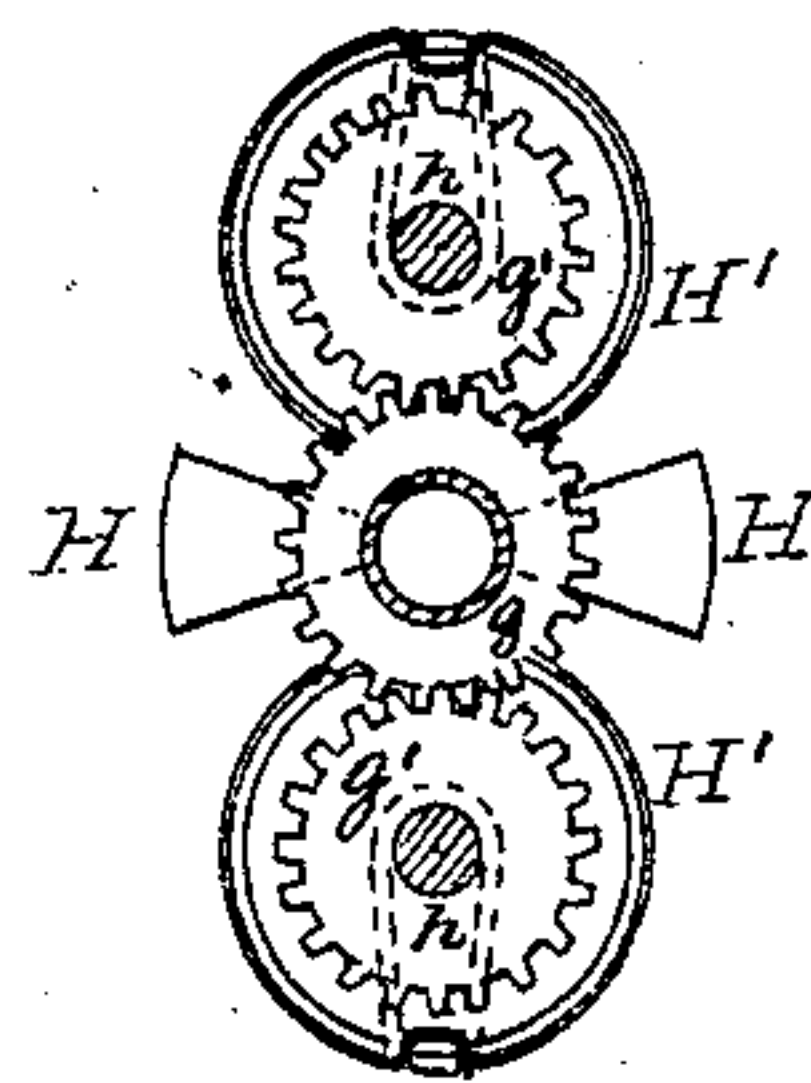


Fig. V.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROLLIN M. CLAPP, OF VERGENNES, VERMONT.

IMPROVEMENT IN MACHINES FOR TURNING AND POLISHING.

Specification forming part of Letters Patent No. 119,695, dated October 10, 1871.

To all whom it may concern:

Be it known that I, ROLLIN M. CLAPP, of Vergennes, in the county of Addison, in the State of Vermont, have invented certain Improvements in Machines for Turning and Automatically Polishing the thing turned, of which the following is a specification:

The invention consists in the construction and arrangement of the operating parts of the machine in such manner that the sticks will be turned, and when so turned will be automatically passed in contact with polishing-pads that not only revolve on their own axes, but also revolve around the stick being polished, and are then automatically delivered out of the machine.

In the drawing, Figure 1 is a side elevation of the machine. Fig. 2 is a sectional view of the same. Fig. 3 is a top view. Fig. 4 is an end view, and Fig. 5 is a detached view of the mechanism for revolving the polishing-pads on their own axes and for revolving them around the stick to be operated upon.

A A represents the frame or support of the operating parts of the machine; B, the driving-shaft, placed longitudinally with the machine. B', B'', and B''' are pulleys for giving motion to other pulleys, and are all situated on shaft B and are revolved by it. C is a hollow revolving funnel-mouthed cutter-head, having adjustable cutter *c* therein, and firmly attached to hollow shaft *c'*, that has bearings in the supports *c''* and *c'''*, and is revolved by pulley *b'* on shaft *c'* by means of belt *b* passing around pulley B' and *b'*. D D are two brackets, made fast to frame A, to support the hollow cutter-head shaft *c'* and the feed-rollers. D' is a pulley, fast on transverse shaft D³, and D'' is a pulley, fast on transverse shaft D⁴. *d*³ is the lower feed-roller, and is made fast on and revolves with shaft D⁴, getting its revolving motion from shaft B through band *e*, pulley E on transverse shaft E', pulley *e'*, band *d''*, and pulley D'' on shaft D⁴. *d*⁴ is the upper feed-roller, which is made fast on and revolves with shaft D³, getting its revolving motion from shaft B through band *e*, pulley E on transverse shaft E', pulley *e''*, crossed band *d'*, and pulley D' on shaft D³. This arrangement of feed-rollers and the devices that revolve them cause the rollers to revolve in such direction as to force or feed the stick or roll that has been turned along through the machine—as band *d'* is crossed and band *d''* not crossed

gives them both the right revolution to carry the stick through the machine. B'' is a pulley on driving-shaft B, and has a band, *b'*, going around it and around pulley F made fast on a longitudinal tubular shaft, F', that is journaled in proper bearings in the ends of frame A. This shaft F' is free to revolve with pulley F, is placed in line with hollow shaft *c'* and so that its axial center will be coincident with that of shaft *c'*, but revolves much slower by reason of the pulley which revolves hollow shaft *c'* being much smaller in diameter than pulley F. Shaft F' is cut away on opposite sides at considerable distance each way from the center of its length. B''' is a band-pulley on driving-shaft B, a little smaller in diameter than pulley B'', and around it and pulley G is band *b''*, and by which pulley G gets its revolving motion. Pulley G is loose on shaft F', freely revolves thereon or independently of the revolution of said hollow shaft F', is smaller in diameter than pulley F, and, consequently, does not make the same number of revolutions in a given space of time as does pulley F. *g* is a small spur-toothed gear-wheel concentrically placed on the inner side of pulley G, and revolves with it and around shaft F'. H is a frame, with heads H' that are made fast to and revolve with shaft F'. H'' H'' are flexible revolving polishing-cylinder pads, covered with emery or other sharp and hard particles for polishing the surfaces of wood, are cylindrical, made to revolve on their own axes *h*, and revolve with the frame H and between heads H' and with the hollow shaft F'. *g'* *g'* are toothed gear-wheels, made fast on journals *h* *h* of polishing-cylinders H'', and cause the polishing-pads H'' to revolve on axes *h*, and are in gear, but on opposite sides, with gear-wheel *g* on band-pulley G. The journals *h* of the gear-wheels *g'* and polishing-pads H'' are regulated by temper-screws *h'*. I I are delivery-rollers that take hold of the stick that has been turned by cutter *c* in the cutter-head C, and has been fed through hollow shaft F' and been polished by the action of the revolving polishing-pads H'', and carries it in line with the axial center of shaft F' until it is clear of said shaft, when it soon falls out of contact with the machine.

The cutting away of the hollow shaft F' on opposite sides, as stated, brings such openings coincident with the peripheries of the polishing-cylinders, and so that the revolving surfaces of

the cylinders will project to the inner diameter of the hollow shaft F' and come in contact with the stick that has been turned and is passing through shaft F' . The stick to be turned is held from turning and forced into the opening of head C , where the revolving cutter c turns it around, and as the stick is forced in the cutter continues to cut until the feed-rollers d^3 and d^4 take hold of it, when it is drawn through the cutter-head and forced forward within the hollow shaft F' in contact with the revolving cylinders H'' , which completes the operation of smoothing them.

By the construction and arrangement of the driving-pulleys, their bands, and the gear-wheels with relation to the hollow shaft F' and the revolving polishing-cylinders, as above described, a revolving motion is given to the polishing-cylinders on their own axes, and, at the same time, they revolve around the hollow shaft F' , which is the center of their revolution, and while so revolving the surface of the polishing-cylinders is against the stick within the hollow shaft, and, as it so revolves in contact with the outer surface of the stick, the surface of the cylinder is also changing so as not to continually keep the same part of the polishing-surface against the stick, as in such case the emery or sand-surface would soon be filled with the powdered wood or be entirely worn out and could not perform a polishing process.

The machine is cheap, durable, and not subject to get out of repair, and requires no more help to

operate it with the polisher attached than when only the turning process is performed, as the entire operation requires but a single attendant to do both the turning and polishing, as the polishing is done automatically and without the immediate action of the attendant.

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

1. The combination of the revolving hollow cutter-head C having cutter c , revolving feed-rollers d^3 and d^4 with the revolving hollow shaft F' and revolving polishing-cylinder H'' , substantially as described.

2. The combination of the band-wheels B'' and B''' , bands b' and b'' , pulleys F and G with the hollow revolving and slotted shaft F' , gear-wheels g g' g'' , frame H , and polishing-cylinders H'' H''' , in the manner and for the purpose substantially as described.

3. The turning and polishing-machine herein described, consisting of the hollow cutter-head C , feed-rollers d^3 and d^4 , hollow revolving and slotted shaft F' , revolving pulleys B' , B'' , B''' , b^4 , F , and G , bands b b' b'' , gear-wheels g g' g'' , and revolving frame H with polishing-cylinder H'' , constructed and arranged to operate in the manner shown and described.

ROLLIN M. CLAPP.

Witnesses:

H. C. HORTON,
D. H. LEWIS.

(125)