

(Model.)

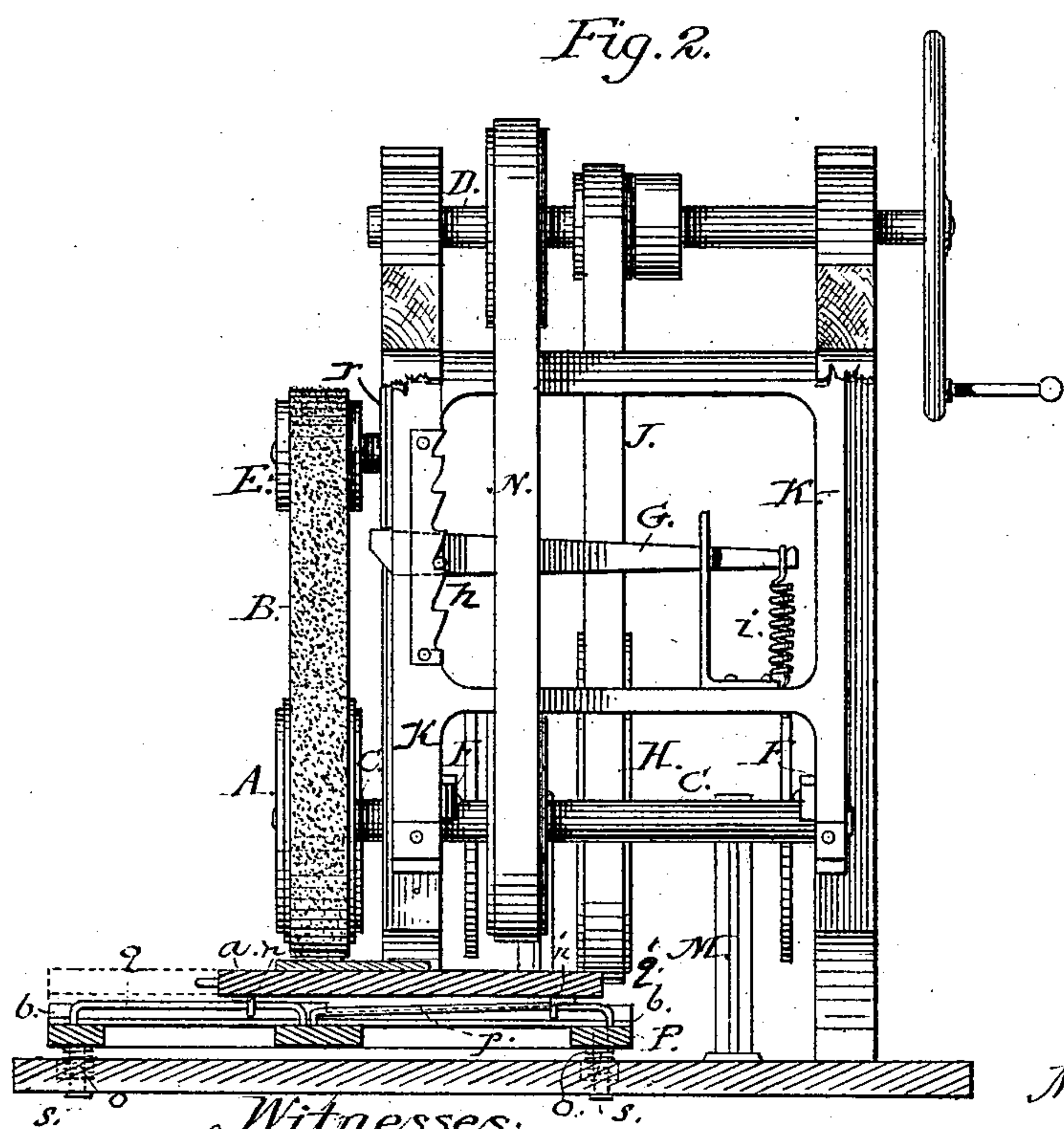
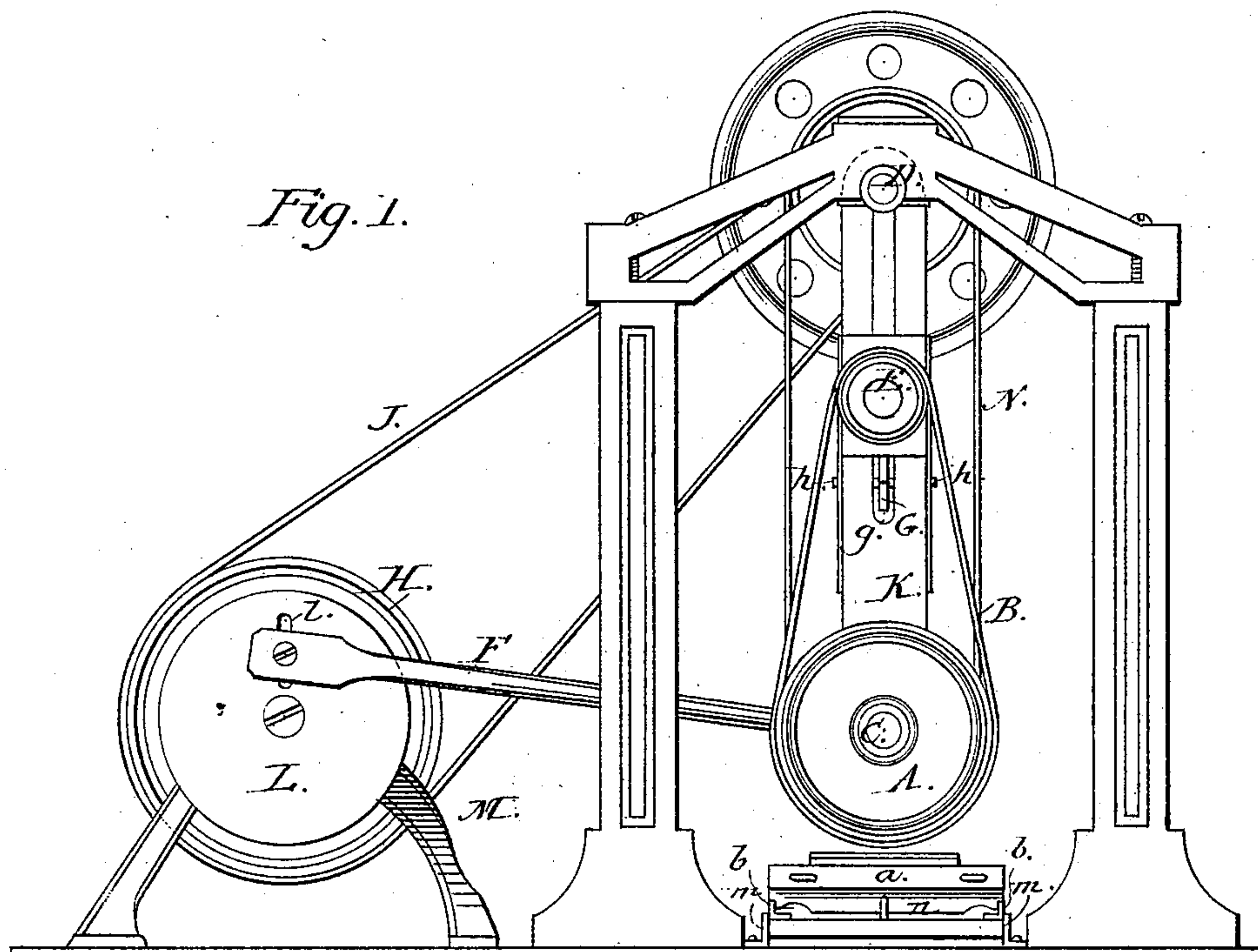
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M. V. B. HOWE.

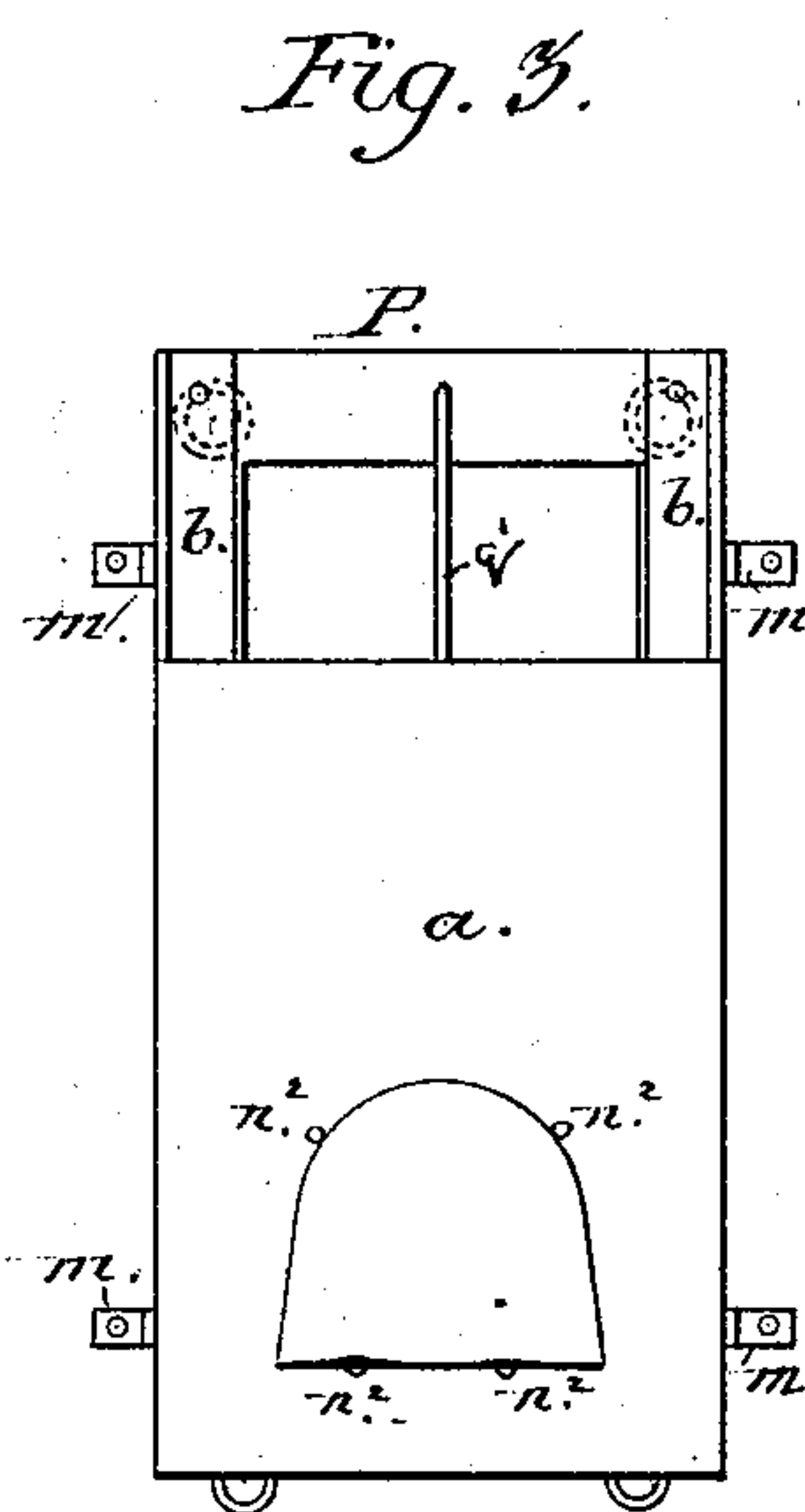
MACHINE FOR SANDPAPERING CHAIR SEATS.

No. 275,385.

Patented Apr. 10, 1883.



Witnesses:
J. M. Kalb
O. B. Roach



Inventor:
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per Edw. W. Dunn
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(Model.)

2 Sheets—Sheet 2.

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Fig. 3.^a

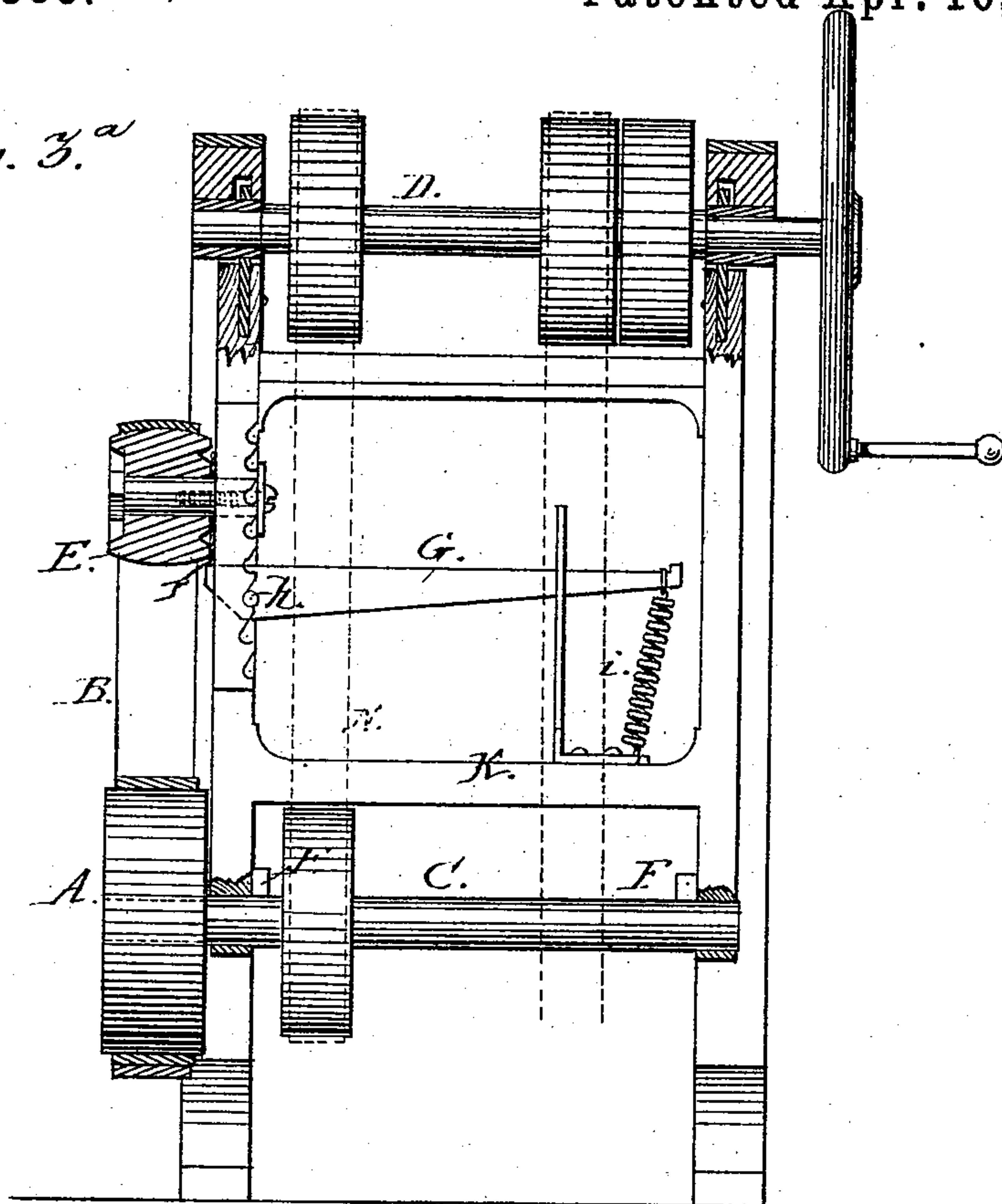
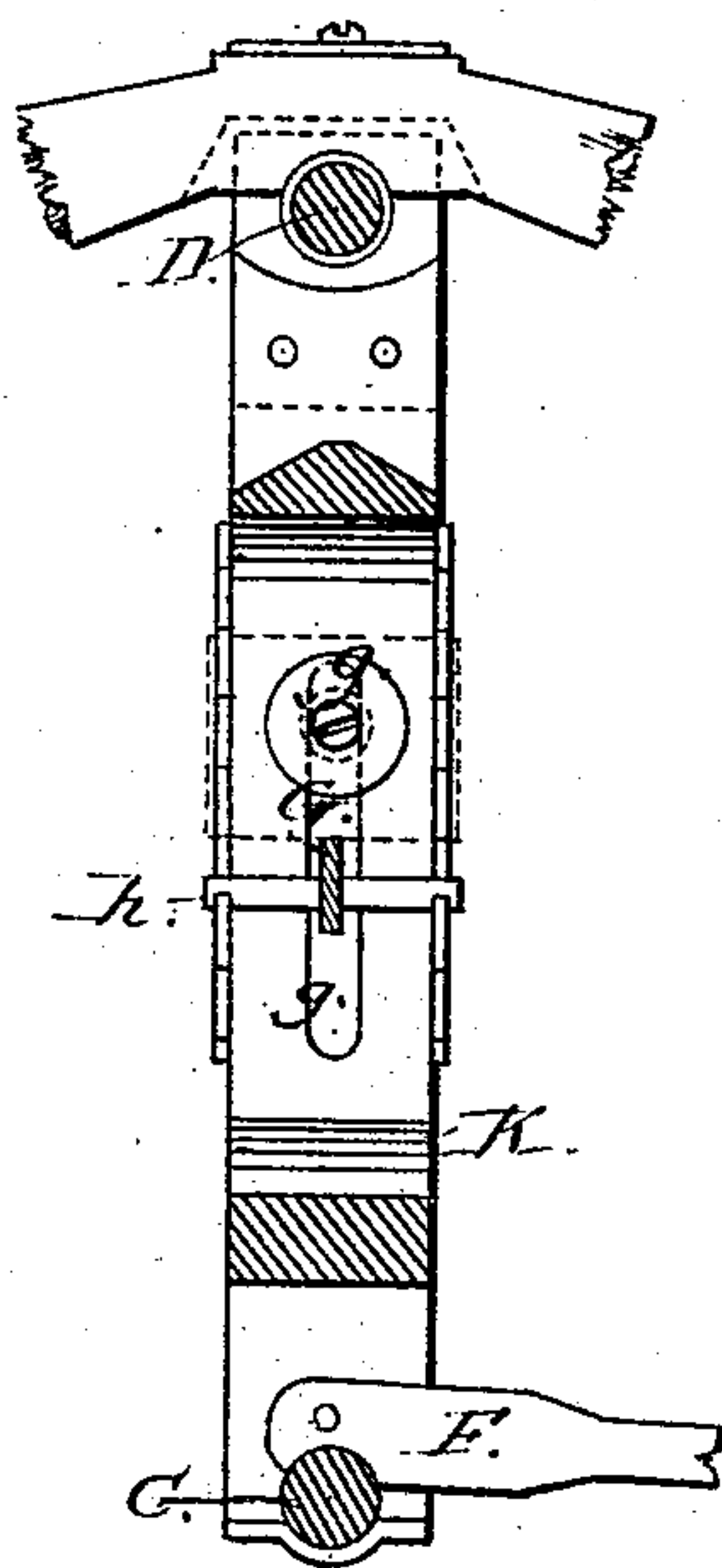


Fig. 4.



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UNITED STATES PATENT OFFICE.

MARTIN V. B. HOWE, OF ERVING, MASSACHUSETTS.

MACHINE FOR SANDPAPERING CHAIR-SEATS.

SPECIFICATION forming part of Letters Patent No. 275,385, dated April 10, 1883.

Application filed December 15, 1882. (Model.)

To all whom it may concern:

Be it known that I, MARTIN V. B. HOWE, a citizen of the United States, residing at Erving, in the county of Franklin and Commonwealth of Massachusetts, have invented a new and useful Machine for Sandpapering Chair-Seats, of which the following is a true and full specification.

In the manufacture of chairs with wooden seats, after the seats have been shaped by various machinery and tools, which leave them somewhat rough and the upper side hollowed out, they must be sandpapered, which is the only economical process to make them smooth enough to be finished. The original way of doing this by hand is quite too slow and expensive, and various devices have been invented to do the work effectually and economically; but they have generally proved imperfect in their execution, or expensive in the wasteful use of sand-paper, or vexatious in causing delays in making repairs. My invention is intended to accomplish this work more expeditiously, cheaply, and perfectly than any machine now in use.

The accompanying drawings illustrate the various devices of my invention, and form a part of this specification, in which—

Figure 1 represents a front view of the machine; Fig. 2, a side view of the machine, or end view; Fig. 3, the sliding platform and ways supporting the seat to be sandpapered. Fig. 3^a is an elevation of the swinging frame, broken away in parts to show construction. Fig. 4 is a transverse vertical section cut close to one of the uprights of the swinging frame.

It has been common to put the sand-paper on a soft or elastic pulley, and while it is swiftly revolving to hold the seat against it. I use a similar yielding pulley, A, with a belt, B, commonly made of stout cotton cloth, like ordinary ticking, sanded on the outside in the usual way, running around on the under side of the soft pulley and over a smaller pulley, E, hanging at a suitable distance above it, which is so arranged as to act as a belt-tightener. This soft pulley is fast on an arbor, C, which runs through to the other side of the machine, and on which is a pulley driving the soft pulley A and the sanded belt by a band running up to the driving-shaft D above,

which also serves as a bearing for the oscillating frame K, which holds the arbor C, with the device for raising and lowering the tightening-pulley E, the tightening-pulley, and the ends of the arms F, which give a reciprocating movement to the frame. The small pulley E is on an adjustable bearing plate or block moving up and down by a slot, g, in the front of the frame. This is controlled by a lever, G, having an adjustable fulcrum, h, nearly under the bearing, while the pressure is applied by a spring, i, holding down the long arm of the lever in the opposite side of the frame. By this arrangement the small pulley or belt-tightener E is not only always kept at the point necessary to make the proper tension of the belt, but also, when necessary to remove the belt for renewal or any other purpose, the pulley can be at once lowered and the belt slipped off and a fresh one put on with but a few moments' delay.

To properly do the work of sandpapering a chair-seat, any person would see that the wheel running the sanded belt must be so arranged as to be moved over the whole breadth of the seat while in revolution, and that it must also be so arranged as to follow the hollowed or concave form of the seat. This is accomplished by two devices, one of which is the frame K, holding the soft pulley and belt, swinging from the driving-shaft D above it, and consequently describing the arc of a circle, of course bringing the bottom of the belt, as it touches the wood at the lowest perpendicular point, under the center, and running out each side as it is swung back and forth. This reciprocating motion is given by a belt, J, passing over the driving-shaft D, and thence back to a large band-wheel, H. At each end of the shaft on which this band-wheel is fastened is a disk, L, nearly as large as the wheel, in one side of which is a radial slot, l, in which one end of the arms F is loosely connected, so as to play in and allow to said arms an eccentric motion as the band-wheel revolves, and these arms being at the other end secured to the frame K, holding the pulleys, a regular vibratory motion is given to the frame at each revolution of the wheel. The sanded belt is thus brought in contact with every portion of the seat to be finished, following perfectly the con-

cave form of the seat. The pulley on which the sanded belt runs must necessarily be soft or elastic to yield slightly to the pressure on the work. The other device for accomplishing this work is the sliding table *a*, on which the seat is placed, secured simply by laying it on between pins *n*², which prevent any motion horizontally. This table slides on a platform, *P*, having on each side ways *b*, extending its entire length, and at a point about mid-way they are cut down about the thickness of a chair-seat in front, but with an incline, *p*, running back to the top of the ways *b*, said incline being about the length of a chair-seat.

The table *a* is provided with metal supports *n n'*, resting on these ways *b*. When the table *a* is drawn forward, the support *n'* is intended to be down in the lowest point of the cut in the ways, and the seat being properly secured, the table is pushed back and rises on said inclined ways about the time that the seat comes under the sanded belt *B*, and reaches the highest point as the middle of the seat comes under the said belt at its lowest point while swinging, the belt thus being made to touch, if properly adjusted, every point of the hollow or concave of the seat during the movement of the table *a* and the swinging of the frame *K*.

The table *a* is secured loosely to the platform *P* by rods *q q'*. These rods are secured to said platform, and the latter one has an inclination corresponding with the incline planes of the ways *b b*, so that the downward motion of the table *a* may be unimpeded by its holding-rods. While the incline ways *b* raise and lower the table and the seat fixed thereon, the whole work is kept up to a proper bearing by a set of springs, *o*, which are located under the four corners of the platform *P*. Screws *s*, which pass freely through the base or table of the machine and into the said platform *P*, serve to regulate the tension of said springs and limit the upward play of the table which holds the chair-seat.

On either side of the platform *P* are angle-pieces *m*, secured to the base of the machine, which serve to hold said platform from lateral

movement, while the screws *s'* prevent a longitudinal movement of the same.

What I claim, and desire to secure by Letters Patent, is—

1. In a sandpapering-machine, the sliding table *a*, provided on its under side with transverse supports or bearings *n n'*, in combination with platform *P*, having longitudinal ways *b*, provided with incline portions *p* and guide-rods *q q'*, as and for the purpose specified.

2. The combination, with the platform *P*, constructed as described, of the adjustable bearing-springs *o* and screws *s*, as and for the purpose set forth.

3. The combination, with the swinging frame *K*, provided with fixed pulley *A* and vertically-adjustable pulley *E*, of the sanded belt *B*, all arranged substantially as set forth.

4. The combination, in a sandpapering-machine, with the swinging frame *K*, carrying the sandpapering device, of the adjustable pulley *E*, journaled in an adjustable block, *r*, adjustable lever *G*, and spring *i*, as and for the purpose set forth.

5. In a sandpapering-machine, the swinging frame *K*, carrying the sandpapering device, and having its center of movement in a driving-shaft supported in a fixed frame, which swinging frame is reciprocated from said driving-shaft by means of a suitable belt connected to a pulley, *H*, arranged in connection with crank-disks *L* and pitman-arms *F*, the latter of which connect said crank-disks with the bottom of said swinging frame, as and for the purpose set forth.

6. The combination, with table *a* and platform *P*, of the rotary sand-paper belt *B*, holding pulleys *A E*, and swinging frame *K*, all arranged substantially as described, whereby a body to be smoothed may be moved to and fro and elevated and depressed automatically and simultaneously with a rotary and reciprocating motion of said sand-paper belt, as and for the purpose set forth.

MARTIN V. B. HOWE.

Witnesses :

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JAMES S. GRINNELL.