

H. A. BACHELDER.  
Sand-Papering Polishing Machine.

No. 210,287.

Patented Nov. 26, 1878.

Fig. 1.

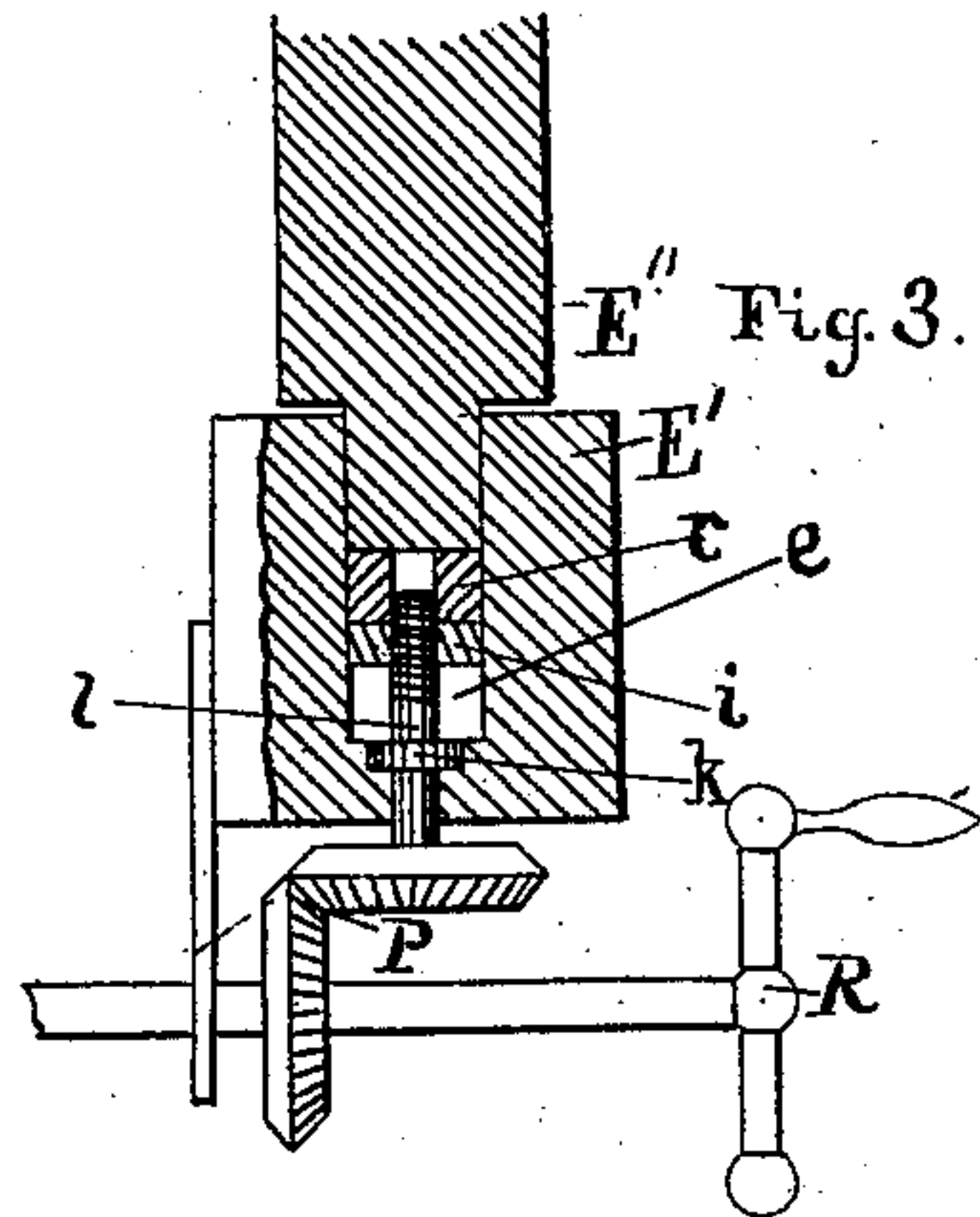
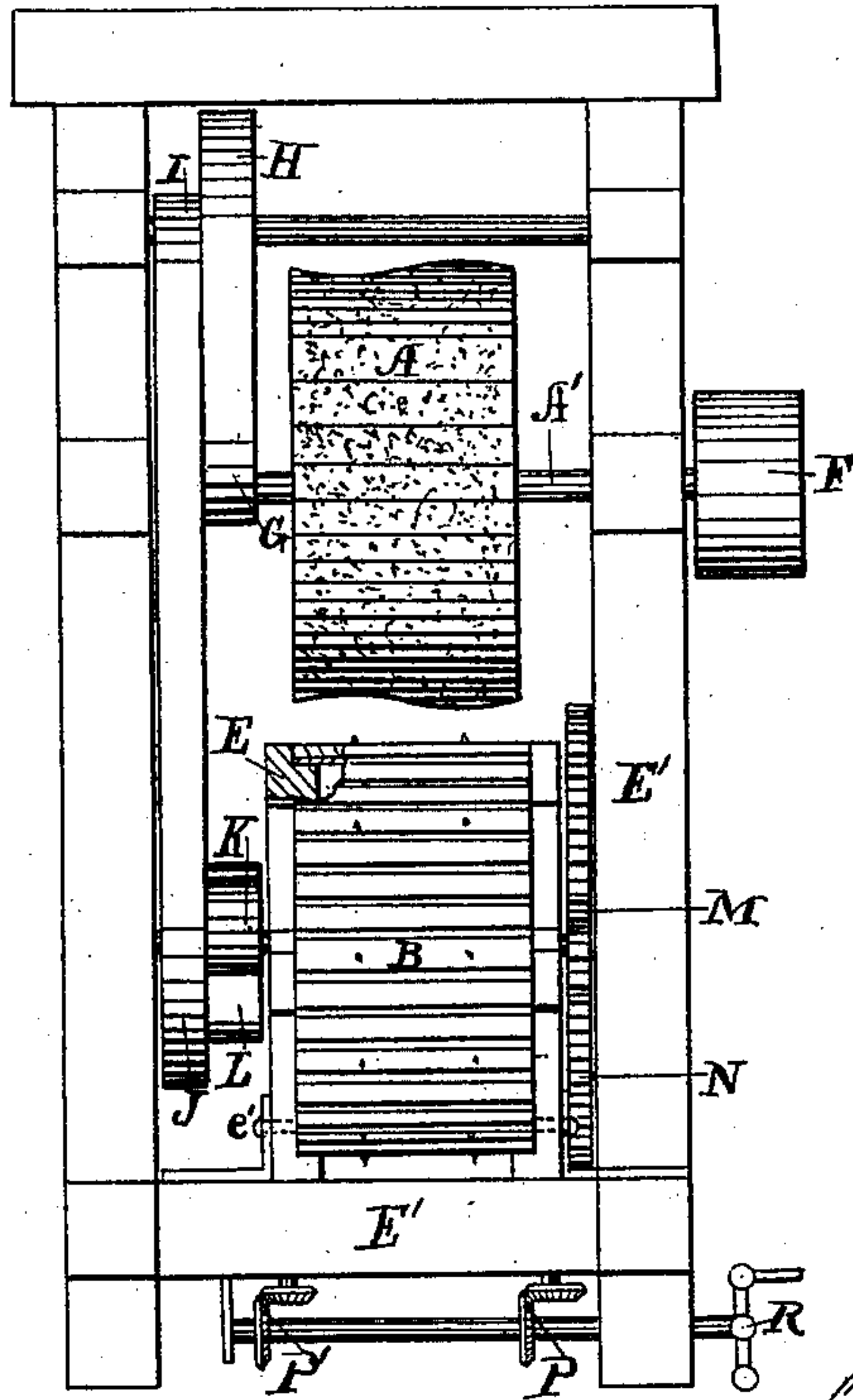
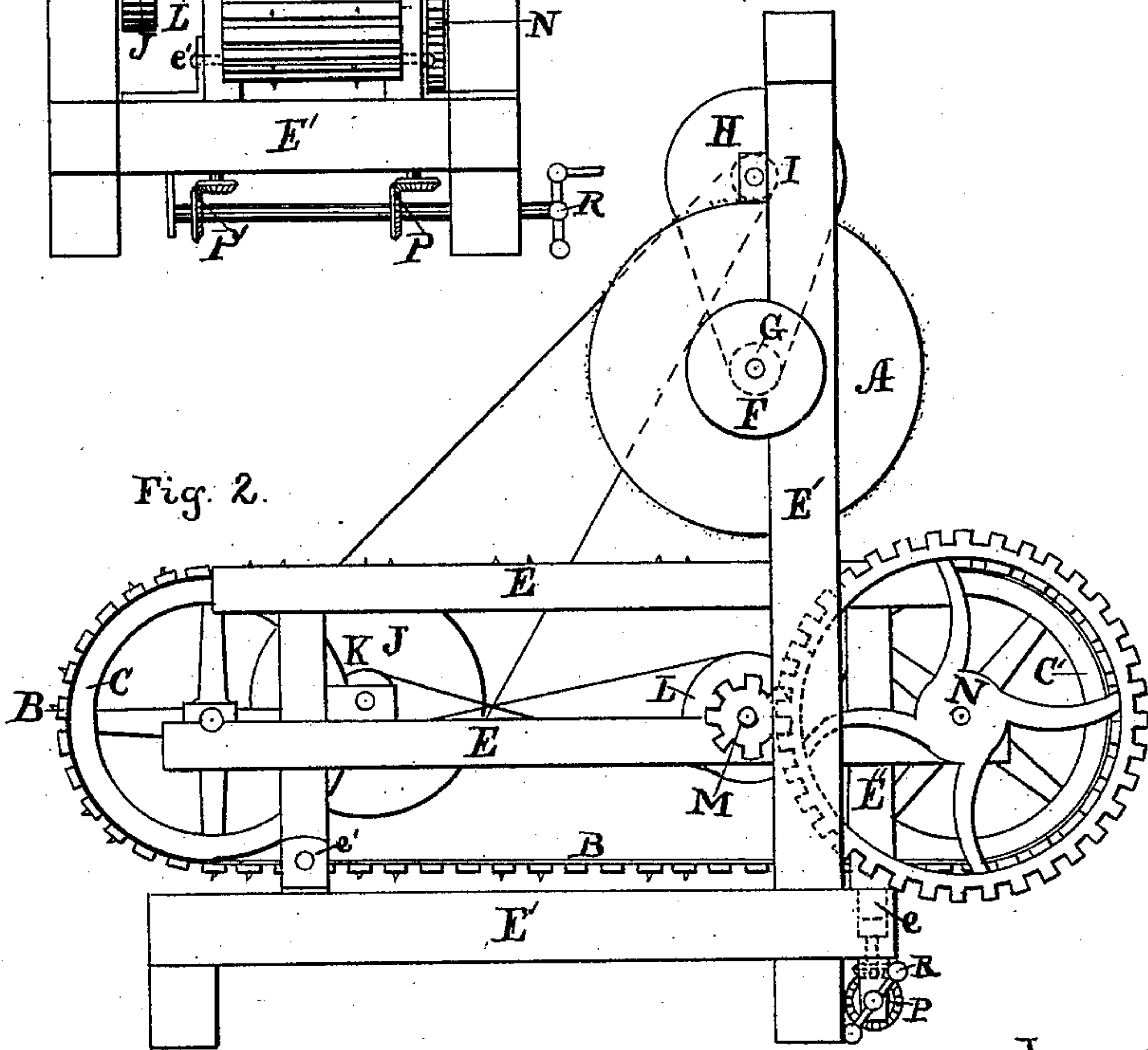


Fig. 2.



Witnesses:  
S. W. Bates  
H. W. Stewart.

Inventor:  
Henry A. Bachelder

# UNITED STATES PATENT OFFICE.

HENRY A. BACHELDER, OF WEST WATERVILLE, MAINE.

## IMPROVEMENT IN SANDPAPERING POLISHING-MACHINES.

Specification forming part of Letters Patent No. **210,287**, dated November 26, 1878; application filed October 30, 1878.

*To all whom it may concern:*

Be it known that I, HENRY A. BACHELDER, of West Waterville, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Sandpapering Polishing Machinery; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 of reference marked thereon, which form a part of this specification.

Figure 1 shows an end elevation of my machine, looking from the front, which I will call the "left-hand end," as shown in Fig. 2, a side elevation. Fig. 3 is a detail section, showing the manner of supporting the rear end of the bed of the machine.

My invention relates to improvements in sandpapering-machines, and has for its object the smoothing or sandpapering of certain articles of wood by means of a revolving wheel, the surface of which is cushioned and covered with sand-paper or similar material, and under which is made to pass, with a continuous motion, an endless belt or apron, upon which are placed the articles to be smoothed, their upper surface coming in contact with the sanded wheel above.

In the drawing, A is a sanded wheel or drum, the cross-section of which is made to conform to the article to be smoothed—in this case, a chair-bottom, which I have taken as an illustration. Passing under the wheel A is the endless belt or apron B, stretched upon the two drums C and C', one at each end of the machine. These two drums C and C' are supported by the frame-work or, as I shall call it, the "bed" E.

The bed E is supported at its four corners as follows: The two corners at the front end, *e'*, are supported on trunnions, which allow a hinged motion at that end, while at the other end, *e*, it is supported by a combination of screws and springs, by which that end of the bed is raised and lowered, and which I will now describe by Fig. 3.

E'', in Fig. 3, is one of the back-end posts of the bed E, where it enters the opening *e* in the frame-work of the machine. This post E''

rests upon a rubber-ring, *r*, which is supported by the square nut *i*, kept from turning by the sides of the opening *e*.

The nut *i*, and with it the rubber ring *r* and the post E'', with its end of the bed E, are raised and lowered by means of the screw *l*, which passes through the nut *i*, and is itself held from slipping down by the shoulder *k*.

Operating the screw *l* are the bevel-gears P, moved by the crank R. This arrangement exists under both the rear posts of the bed E, as shown by the position of P and P', in Fig. 1.

F, G, H, I, J, K, and L are pulleys, G and H, I and J, K and L being connected by belts. The belt from K to L is crossed, while the others are straight.

M is a cogged wheel, engaging the larger cogged wheel N, which is attached to the same shaft as the drum C'. A' is the shaft on which wheel A is mounted.

Having explained the parts of my invention, I will now proceed to explain its mode of operation.

The power being applied to the pulley F, the wheel A is revolved rapidly. The motion of the shaft A' is carried through the pulleys G H I J K to L, being reduced at each pulley. The same shaft which carries pulley L carries also the small cogged wheel M. This cogged wheel M engages the cogged wheel N, still further reducing the motion; and from N the motion is applied directly to the drum C', by which the endless belt B and the drum C are moved and the feed produced. The endless belt B runs in two grooves—one in the top rail of each side of the bed E, as shown in Fig. 1. The article to be smoothed is placed on the moving belt B, secured by brads or other suitable means, with the face to be smoothed upward, and passed or fed under the wheel by the uniform motion of the belt B.

It will be seen that the motion of the belt must always be contrary to that of the under side of the wheel A.

Previously to smoothing an article the height of the bed is to be regulated as follows: Turning the crank R one way or the other carries the nut *i* up or down, by means of the screw *l* and the bevel-gears P. The nut *i*, moving upward, carries with it the rubber ring *r*, which raises the post E'', thus raising



the end of the bed E which comes under the wheel. When the nut *i* is lowered, the weight of the bed E carries the rubber ring *r* down with it.

The purpose of the rubber ring *r*, above described, for which may be substituted a suitable spring of other material, is to furnish the necessary elasticity between the wheel A and the bed E, which is indispensable in such an operation as described, owing to the small inequalities in surface of the wood to be smoothed, and also of the wheel itself.

My invention is intended to be applied to the smoothing of chair and settee bottoms, doors, panels, and the like, or of any articles of wood which have flat surfaces or continuous cross-section.

The advantages which my invention possesses over other methods of doing this work are, that while doing the work in a rapid manner, it produces great smoothness and

regularity of surface by means of the uniform feed and the elasticity given by the rubber ring *r*.

I claim as my invention—

1. In a sandpapering-machine, substantially as described, the combination of the frame or bed E with the hinged support at end *e'* and the support *e* at the other end, adjustable by nut *i*, screw *l*, bevel-gear P, and crank R, substantially as and for the purposes set forth.

2. In combination with the frame or bed E, the screw *l*, supporting-nut *i*, rubber ring or spring *r*, bevel-gear P, and crank R, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HENRY A. BACHELDER.

Witnesses:

S. W. BATES,

H. W. STEWART.