John P. Friends Improved Machine for Finishing Leather.

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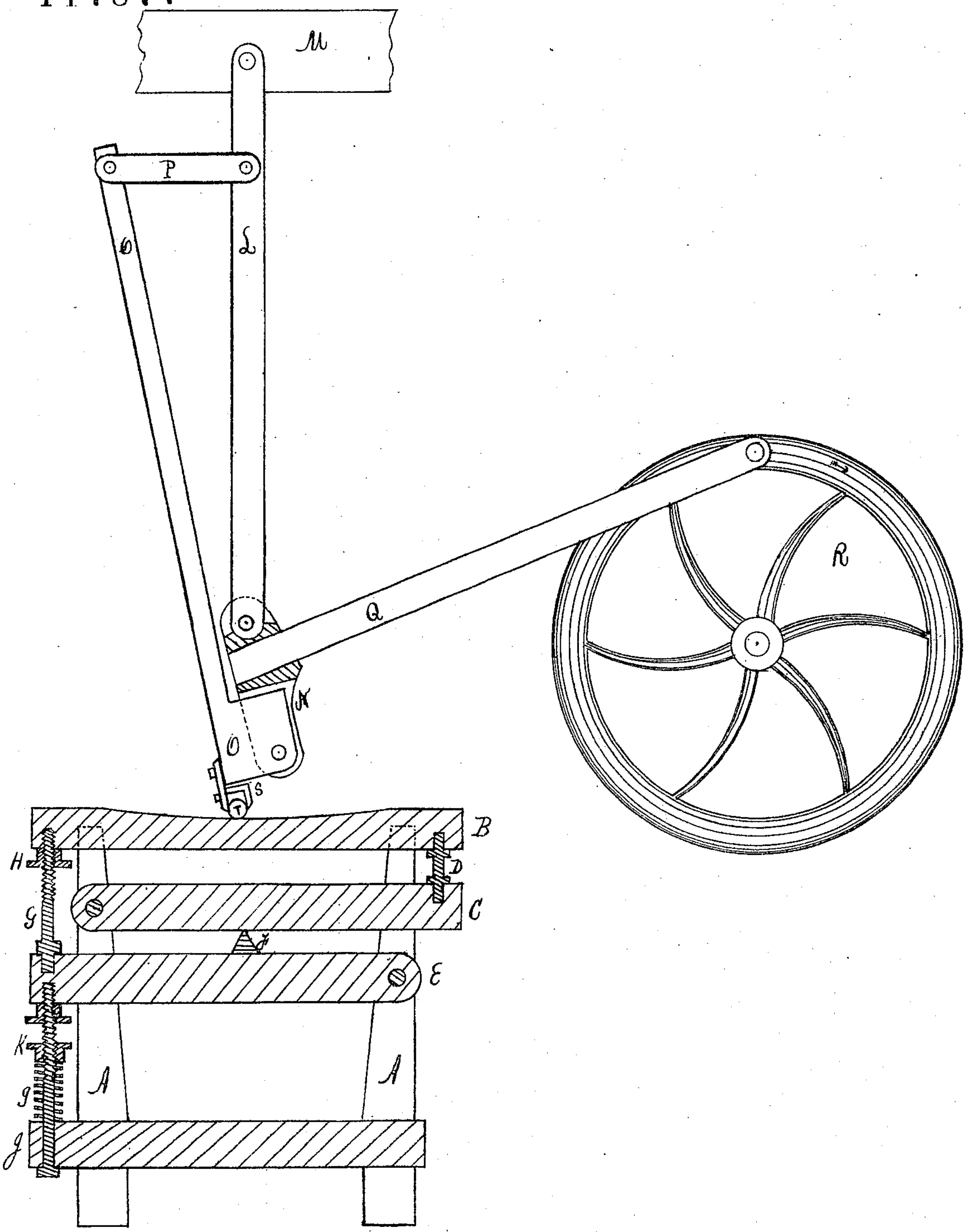

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN P. FRIEND, OF PEABODY, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR FINISHING LEATHER.

Specification forming part of Letters Patent No. 117,877, dated August 8, 1871.

To all whom it may concern:

Be it known that I, JOHN P. FRIEND, of Peabody, in the county of Essex and State of Massachusetts, have invented certain Improvements in Machines for Finishing Leather, of which the following is a specification:

My invention relates to that class of machines used for glassing, polishing, and pebbling leather, morocco, and skins, in which a tool fixed at the end of a pendulous arm is made to reciprocate over a spring-bed; and relates to the method of hanging the pendulous arm in combination with links, so that the movement of the tool passing over the bed-plate, when in contact with the leather, shall be as nearly in a straight line as possible, and on the return stroke shall lift the tool clear of the leather, gradually lowering the plane of vibration, so that when the tool commences the return stroke it shall be very near the leather; and it further relates to the method of hanging the bed upon a series of levers, so that the bed in all its parts and throughout the whole of the stroke has the same elasticity, and by which the adjustment of the bed is rendered easier and more certain than in the machines heretofore used.

The drawing represents a vertical section of the machine.

A represents the frame of the machine. B represents the bed-plate, upon which the leather to be finished is laid. The top of the frame A incloses and holds the bed-plate in position. C is the first lever below the bed-plate; it is jointed to it by the stud D. Below the lever C is another lever, E, and the fulcrum F is placed between the levers C and E. The bed-plate B and lever E are connected at the front of the machine by the bolt or connecting-rod G, and the distance between the lever E and bed-plate B is adjusted by the nut and screw H. The front end of the lever E is supported by the spring I, which works on the standard J, and the tension of the spring is controlled by the nut K. It will be seen that, by this arrangement of levers, the adjustment of the bed is had entirely from the front of the machine. In all the machines heretofore used for this purpose it has been the practice to employ one or more springs under each end of the bed, so that the tool, when in the middle of the bed, is resisted by the combined force of the two springs, while, when it is at either end of the stroke, it has the force of only one. This inequality of pressure is avoided by the use of the devices shown, and the pressure is equalized through the whole of the stroke; and the vertical movement ot the bed is parallel, and it does not rock at each reciprocation of the tool, as it does in the use of two or more springs. The pendulum-arm L is hung from a support at M, and is connected, by a pin, with the link N. The foot O is also connected with the link N, and is extended upward at an angle with the pendulum-arm L, and is attached to it near the top by the link P. The connecting-rod Q is attached rigidly to the link N, and at the other end is connected, by a wrist-pin, to the balance crank-wheel R. S is the tool-holder, and T the tool which is used in finishing the leather.

When the wheel R is put in motion in the direction shown by the arrow, reciprocating and other movements are imparted to the tool T. When the stroke is completed the tool is raised clear of the bed, and on the return stroke is gradually lowered, so that when it is ready to commence the backward movement it is near the leather on the front end of the bed. In all the machines which have been used for this purpose the stroke is such that the tool is made to drop suddenly at the commencement of the reciprocation, striking the leather a severe blow at this point, and hardening or otherwise injuring it. By the use of the devices shown and described the stroke is uniform, and this, in connection with the bed, which has a uniform spring pressure at all parts of the stroke and presents a uniform resistance to the tool, renders the machine very desirable for the purpose designed, especially for morocco and other light skins. This arrangement of the pendulum and other operative parts connected with it is such that it is practicable to put the machine into rooms of ordinary height. The objection to the long pendulum commonly used, which requires in most cases to project through into the rooms above, is thus avoided, while at the same time the bed is not rendered any more concave than it is in the common machine, which has a much longer pendulum.

I claim as my invention—

1. A machine for finishing leather, in which the

bed-plate is supported by the levers C E and *g*, in the manner and for the purpose specified and shown.

2. A machine for finishing leather, in which the bed-plate is supported by levers, in combination with the spring *g*, by which the elasticity of the bed is adjusted, substantially as set forth.

3. The device for carrying the tool in a machine for finishing leather, the same consisting of the foot O, which is attached to the pendulum by means of the links N and P, substantially as described and shown.

JOHN P. FRIEND.

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