

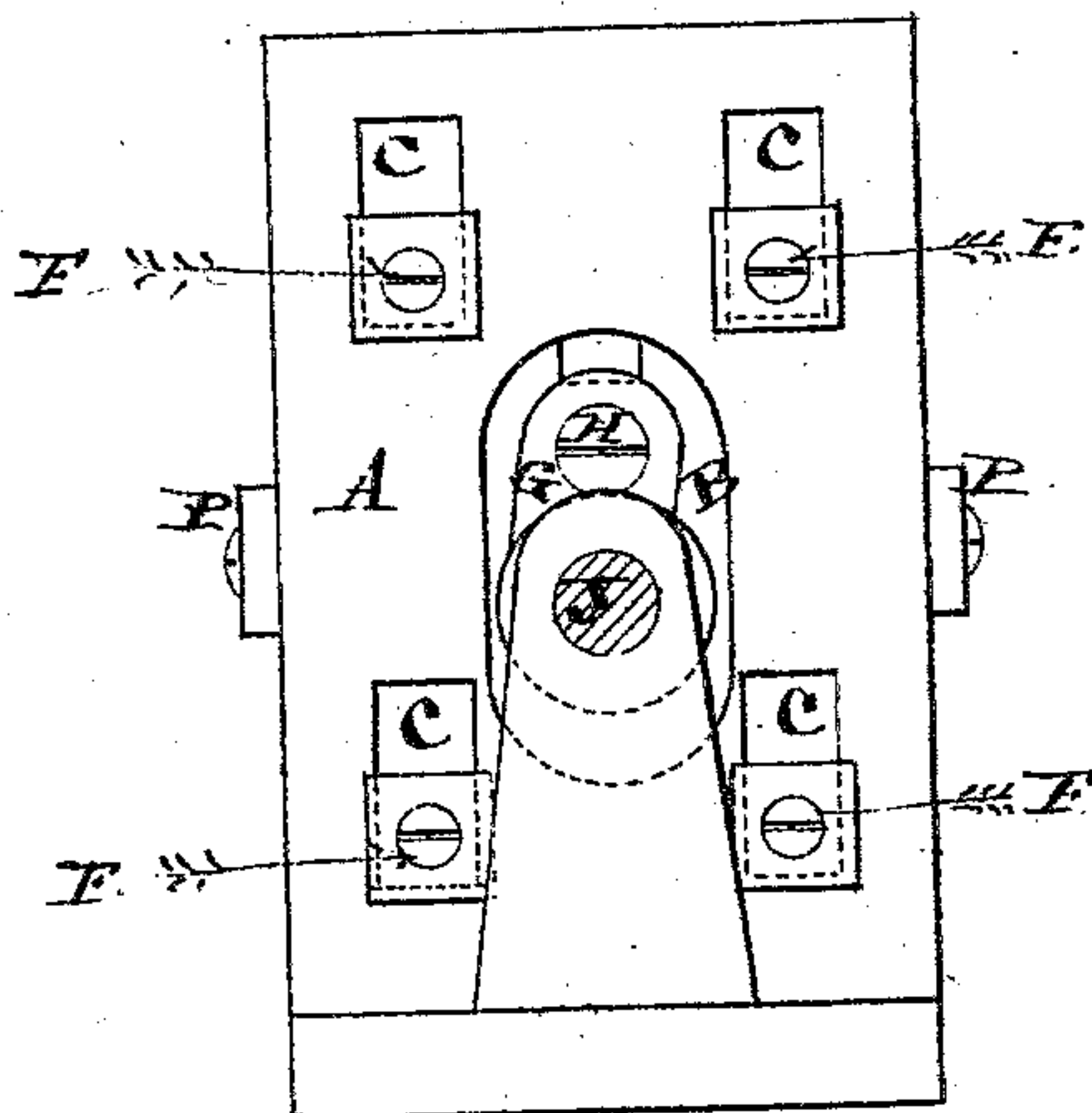
CHARLES H. HELMS.

Improvement in Mechanisms for Polishing the Heels of Boots and Shoes.

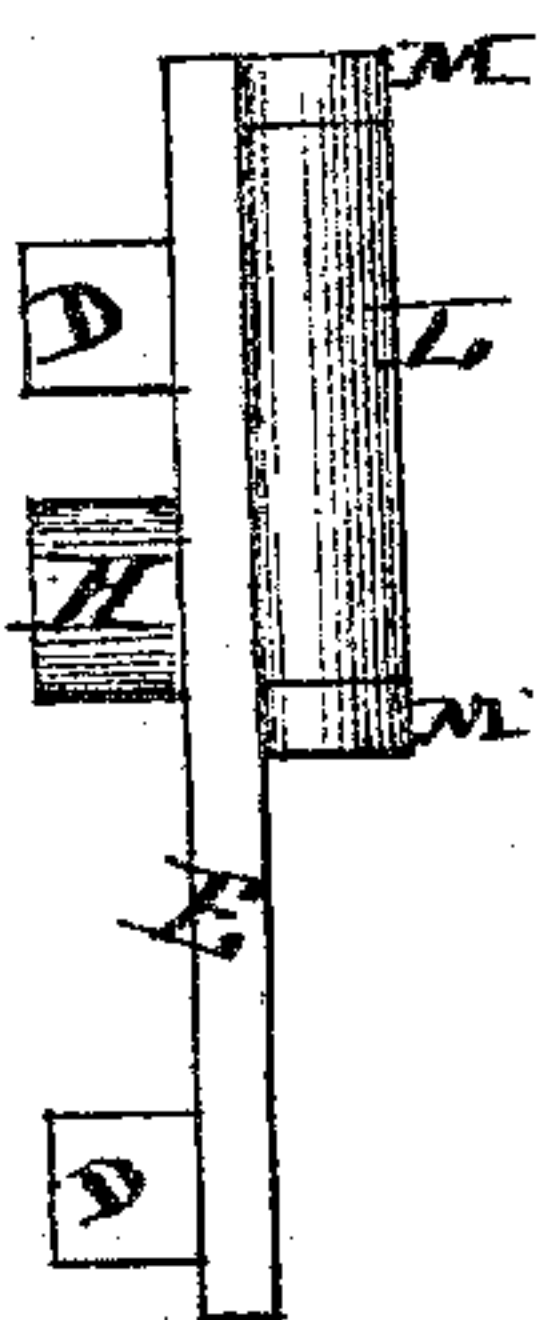
No. 115,853.

Patented June 13, 1871.

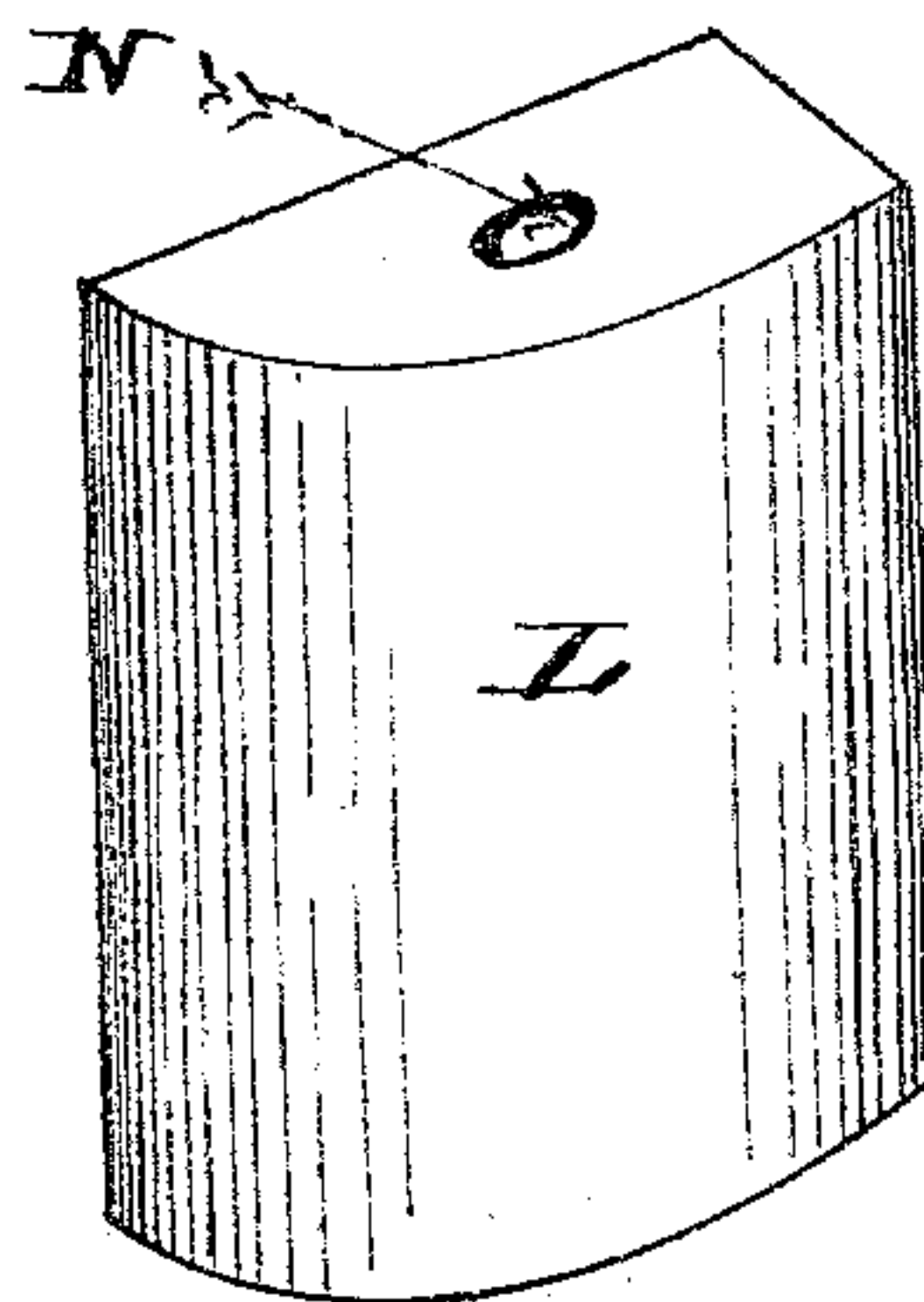
*Fig: 4.*



*Fig: 5.*



*Fig: 6.*



Witnesses.

*Charles L. Parritt*  
*Franklin Parritt*

Inventor.

*Charles H. Helms*

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Fig: 1

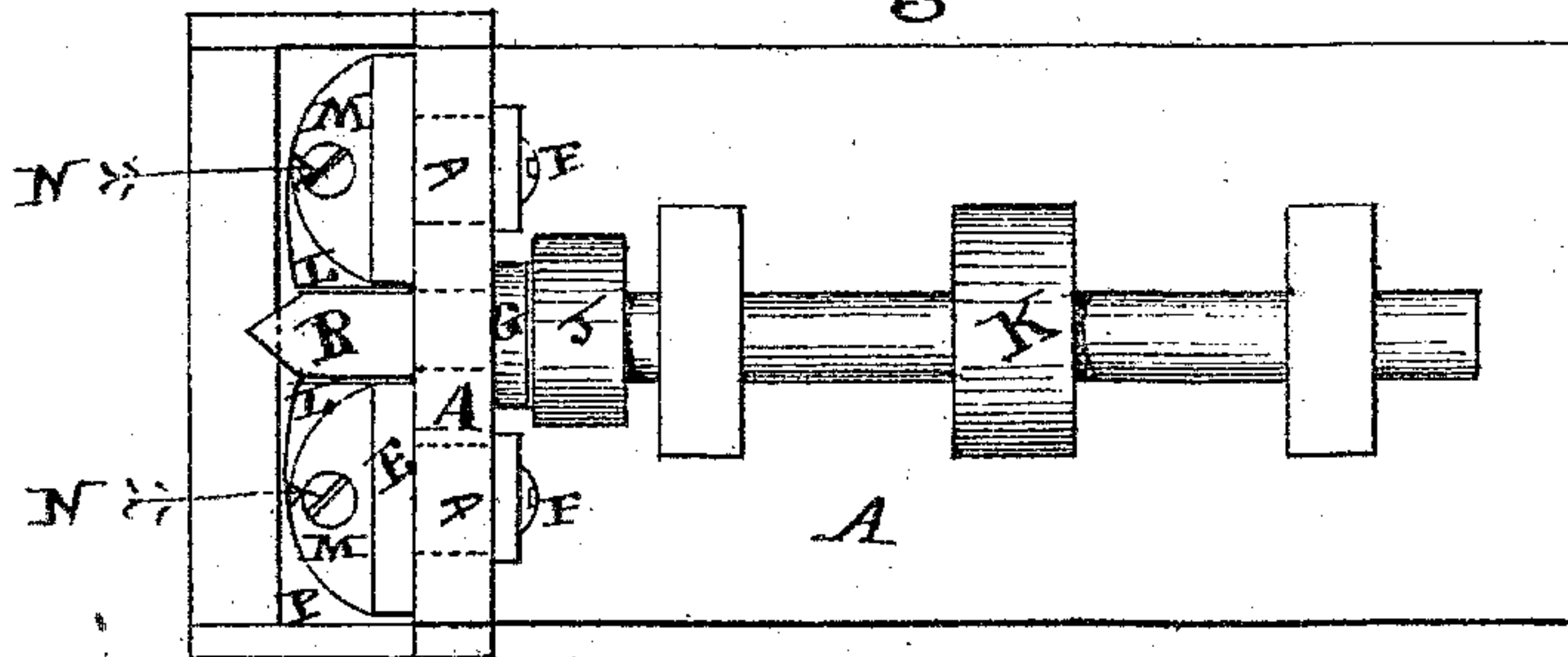


Fig: 2

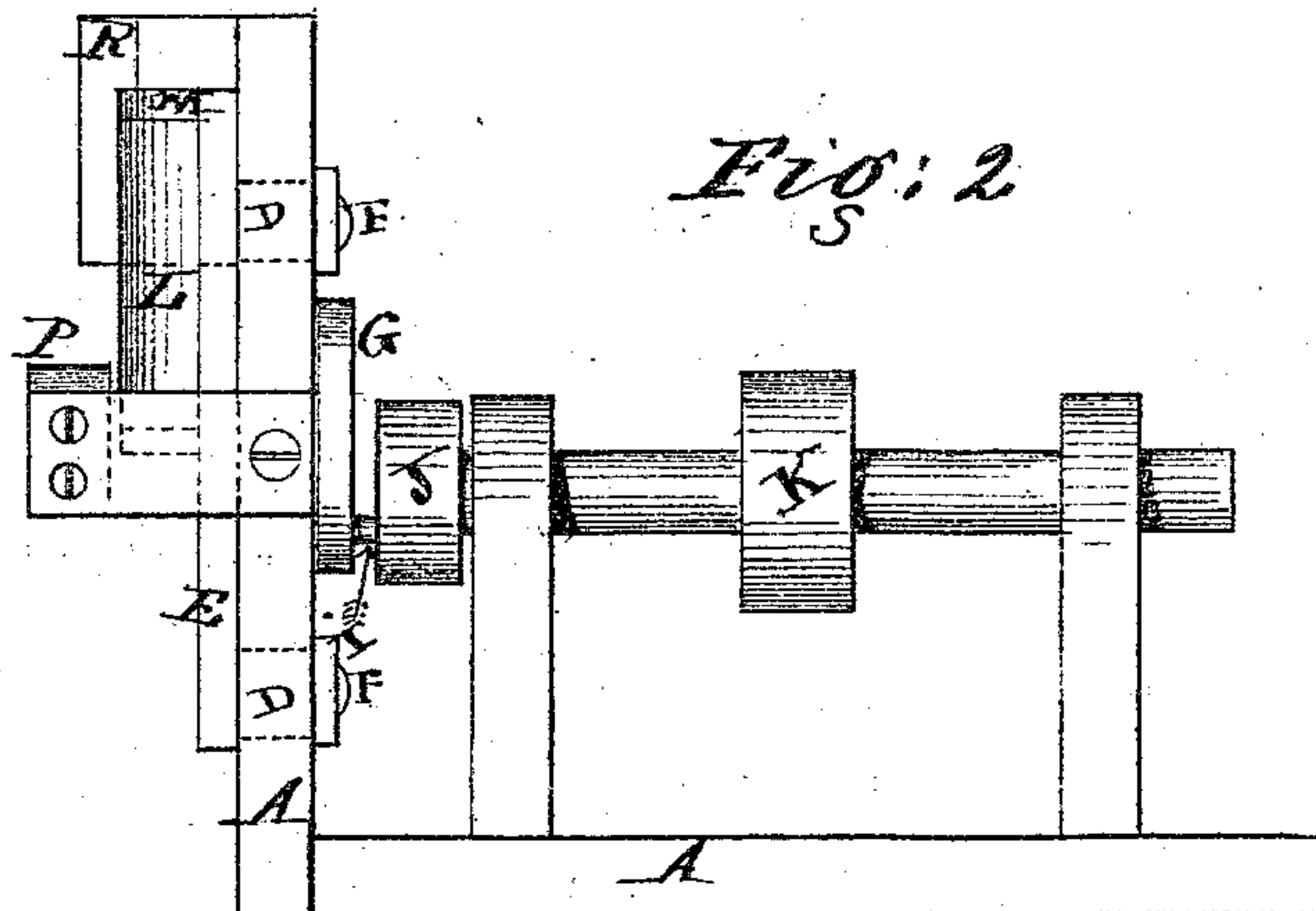
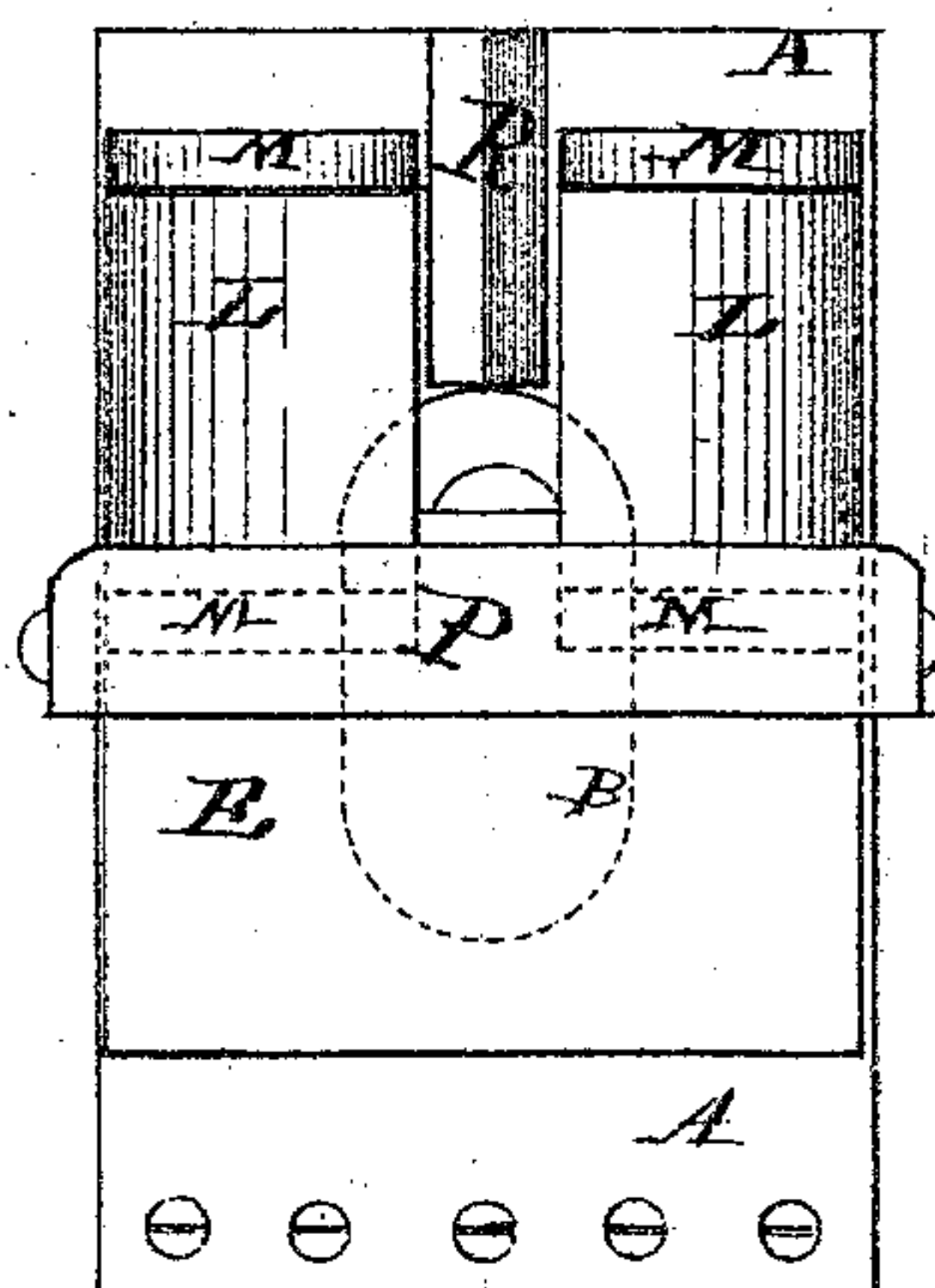


Fig: 3.



Witnesses  
Charles L. Parritt  
Franklin Parritt.

Inventor  
Charles H. Helms



# UNITED STATES PATENT OFFICE.

CHARLES H. HELMS, OF POUGHKEEPSIE, NEW YORK.

## IMPROVEMENT IN MECHANISMS FOR POLISHING THE HEELS OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. 115,853, dated June 13, 1871; antedated June 2, 1871.

*To all whom it may concern:*

Be it known that I, CHARLES H. HELMS, of Poughkeepsie, Dutchess county, New York, have invented certain new and useful Improvements in Mechanism for Polishing the Heels of Boots and Shoes; and I do hereby declare that the following is a full description of the same.

The nature of my invention consists in combining, with any suitable frame and crank-shaft, a set of vertically-adjusted vibratory or reciprocating polishers, composed of soap-stone, or metal, or other suitable material, whereby the heel of the boot or shoe may be readily polished on subjecting it to the action of the same. Also, in combining, with a set of polishers, an adjustable rest-board and heel-guide, for the purpose of supporting the boot or shoe firmly and steadily in contact with the face of the polishers while being subjected to the polishing operation.

But to describe my invention more particularly I will refer to the accompanying drawing forming a part of this specification, the same letters of reference wherever they occur referring to like parts.

Figure 1, Sheet 1, is a plan view of the machine. Fig. 2, Sheet 1, is a side view of the same. Fig. 3, Sheet 1, is a front view of the same. Fig. 4, Sheet 2, is a back view of the machine. Fig. 5, Sheet 2, is a detached view of the polisher-holder. Fig. 6, Sheet 2, is a detached view of the polishers.

Letter A represents the frame of the machine, which is made of cast-iron, though it may be made of any other suitable material. In the front or upright part of the frame are cut, at the sides of an oblong central opening, B, four guide-way slots, C. Through the slots C are inserted four studs, D, projecting from the back of the polisher-holder E. The object or use of these studs is to support and hold the polisher-holder in contact with the face of the upright forming the end of the frame, and at the same time, by means of binding-screws F inserted in the ends of the studs and drawing or binding against the back of the upright, so securing it as to permit its having a free-and-easy up-and-down motion to polish the heel of the boot or shoe. To give the polisher-holder this up-and-down motion a crank, G, is secured by a center-pin to the end of a stud,

H, projecting from the middle part of the back of the polisher-holder through the oblong slot or opening B in the upright of the frame. Into the end of the crank G is inserted a crank-pin, I, formed on the end of the main propelling-shaft J, which will be rotated by a pulley, K, and any suitable belt-connections with the prime motive power. The object of making the crank G work on a center-pin inserted in the stud H, and connecting it with a crank-pin on the main driving shaft, is to avoid all tendency of a lateral strain on the crank, as well as the consequent friction if the crank H was dispensed with, and the stud projected out so as to rest upon a cam formed on the end of the propelling-shaft, and the polisher-holder thus elevated up and down. It will be obvious that by such a mode of operating the polishers the stud would have to follow the entire circle of the cam, while by the interposition of the movable or loosely-centered crank H the friction is reduced to the circumference of the crank-pins, and thus the friction greatly lessened in operating the polishers, and at the same time giving a steadier motion to it. Letters L are a set of polishers, made of soap-stone, or metal, or any other suitable material for polishing the heel. The outer edges of these polishers are curved so as to conform to the shape of the heel, or nearly so. Their surfaces may be plain or roughened crosswise, with a great number of convex ribs—that is, what may be called a ribbed surface, somewhat like the surface of a washboard, so as to act more effectually in rubbing down the edges of the heel. To secure these polishers to the holder, ledges M are formed on the face of the holder E, and, by means of pins or screws N, or other suitable means, the polishers are attached securely and firmly in their places. Across the lower end of the polishers is secured, by set-screws into the sides of the upright of the frame, a heel-rest, P, upon which the side of the boot-heel is held and rotated by the operator on the machine to polish its edges. To keep the heel from slipping sideways, a straight-edge or tongue of metal, R, is secured to the front and upper end of the upright of the frame in such a position, and of such a depth and length and obliquity of sides, as to give a steady and firm support for the



bottom of the heel to press against while it is being rotated against the polishers. By the shape of the polishers it will be obvious that each is intended to polish but one-half of the heel. Of course, the entire heel may be polished by either one of the polishers; but to do so would not be so convenient or easily managed as by the transfer to the opposite polisher—that is, by the use of the right-and-left-shaped polishers the pressure against the polishers is outward and downward, while to carry the heel all the way round against one polisher would require, for half the circumference of the heel, a very considerable effort to keep it in contact with the polisher while drawing it upward and toward the operator. The importance of this arrangement of right-and-left-hand polishers, instead of using a single polisher, will be quite obvious.

The operation of the machine is thus: The operator, after applying the power to the machine, takes the leg of the boot in his left hand and the toe of it in his right hand in such a position as to hold it firmly. The back of the heel is then placed on the heel-rest and the bottom of it against the straight-edge between the polishers. In this position it is pressed against the polisher until the upper half of the heel is polished. When this is done,

it is transferred to the right-hand polisher, and the position of the hands on the boot changed, and the same operation gone through to polish the other half of the heel.

Having now described my invention, I will set forth what I claim, and desire to secure by Letters Patent of the United States:

1. The straight-edge R, in combination with either one or both of the right-and-left-hand vertically-reciprocating heel-polishers L, substantially as hereinbefore set forth.

2. The heel-rest P, in combination with one or both of the right-and-left-hand vertically-reciprocating heel-polishers L, substantially as hereinbefore set forth.

3. The combination of the right-and-left-hand polishers L with the vertically-reciprocating polisher-holder E and upright of the frame A, having the slots B and C therein, for the purposes set forth, and substantially as described.

4. The combination of the intermediate crank G with the reciprocating polisher-holder E and crank-pin I on the shaft J, substantially as set forth.

CHARLES H. HELMS.

Witnesses:

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