

(No Model.)

E. A. SEVERANCE.

MACHINE FOR BURNISHING THE HANDLES OF PLATED KNIVES.

No. 327,328.

Patented Sept. 29, 1885.

Fig. 1.

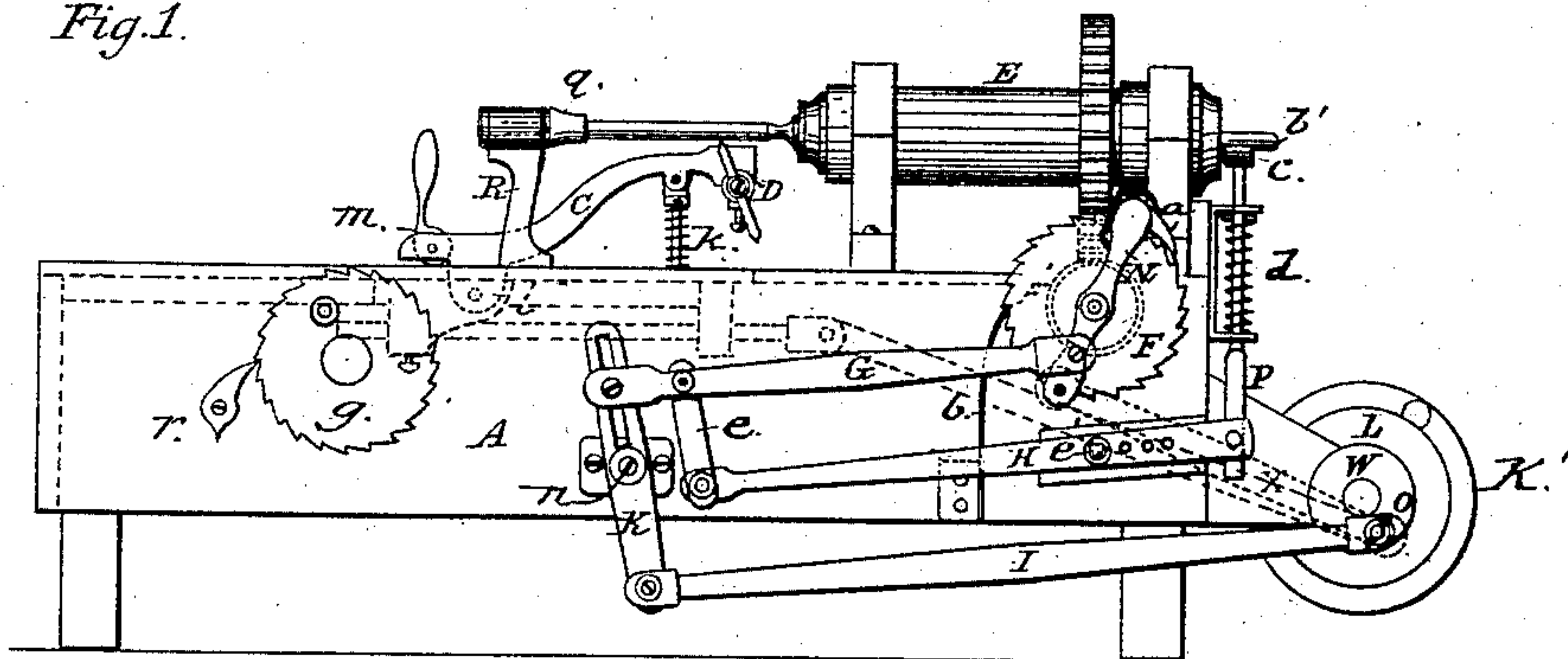
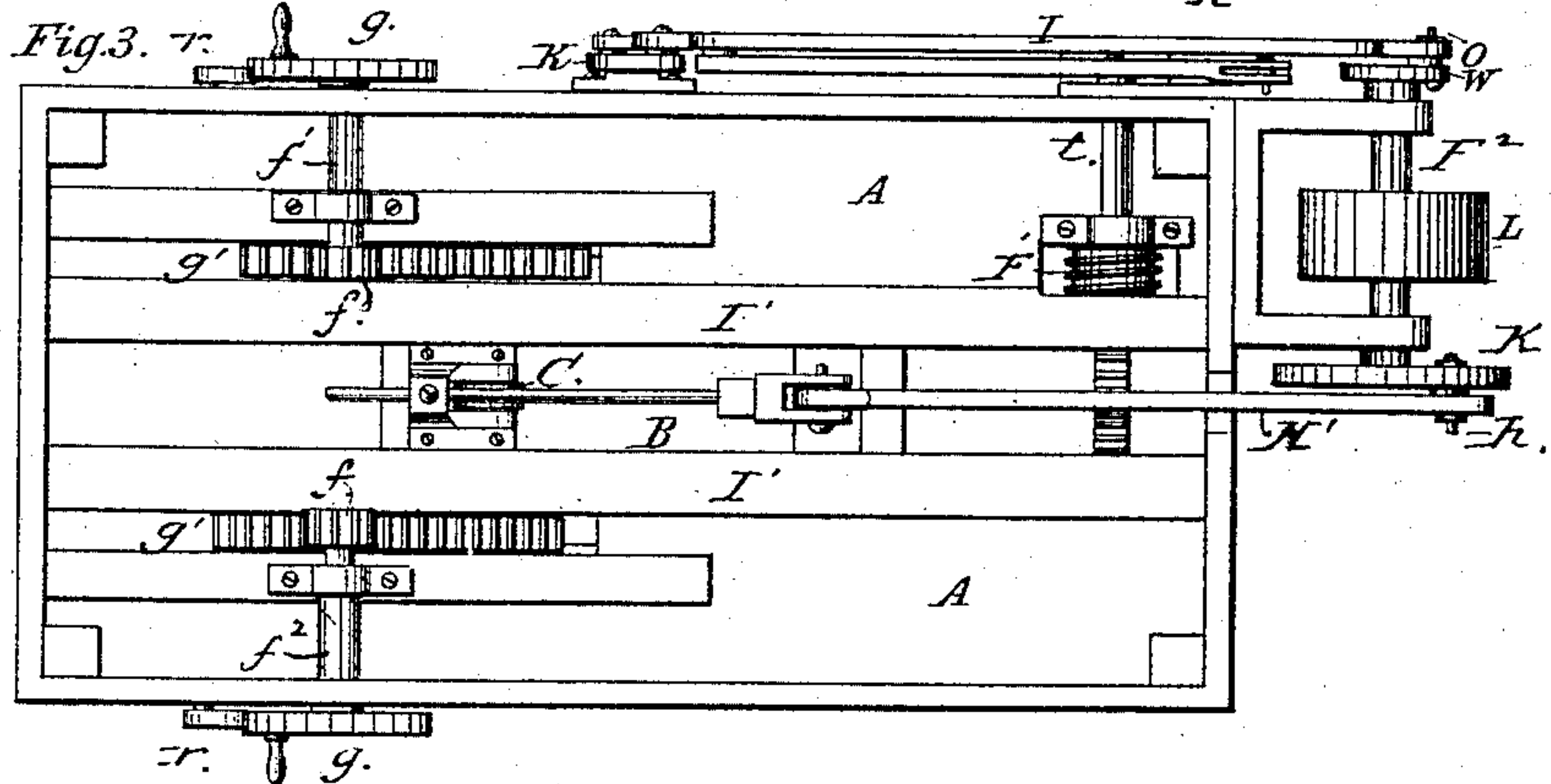
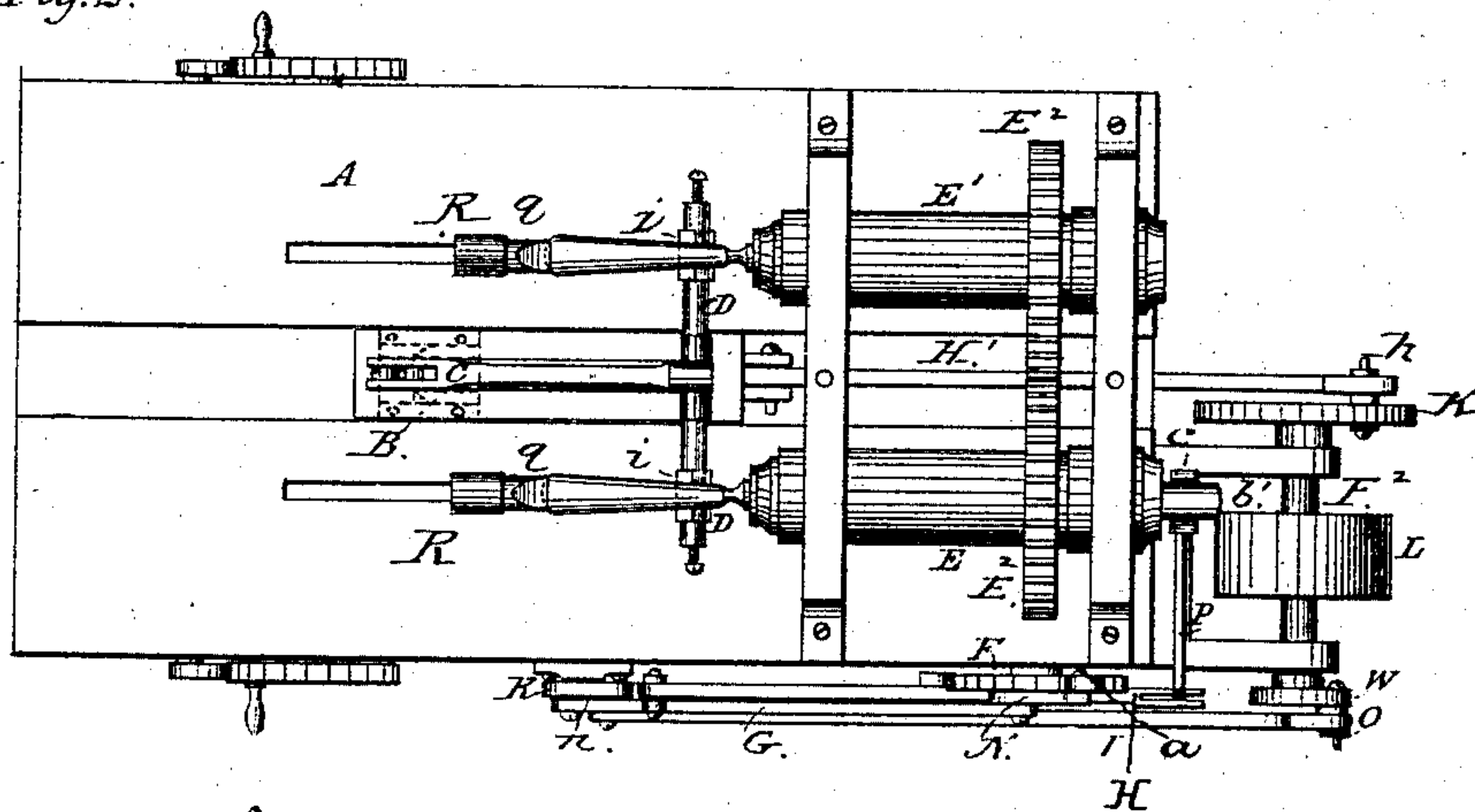


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD A. SEVERANCE, OF TURNER'S FALLS, MASSACHUSETTS.

MACHINE FOR BURNISHING THE HANDLES OF PLATED KNIVES.

SPECIFICATION forming part of Letters Patent No. 327,328, dated September 29, 1885.

Application filed April 15, 1885. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. SEVERANCE, a citizen of the United States, and a resident of Turner's Falls, in the county of Franklin and Commonwealth of Massachusetts, have invented a new and useful Improvement in Machines for Burnishing the Handles of Plated Table-Knives, of which the following is a full and true description.

My invention relates to that class of machines especially intended to burnish the handles of table-knives, particularly those which are plated on solid metal, and are usually of an ovate form as seen in cross-section.

It is well known that this work is generally done by hand, and as it must be carefully and uniformly done it is slow and constitutes no small part of the cost of finishing the work.

My invention allows this work to be done with equal exactness and with much greater rapidity than by hand, thereby saving a considerable item of expense.

Figure 1 is a side elevation of the machine. Fig. 2 is a plan or top view, and Fig. 3 is a plan or bottom view, of the same, all of which are found in the accompanying drawings, which illustrate my invention and form part of this specification.

A is the frame or table on which is the operating part of the devices, and which is to be secured on a bench, while the working parts are driven from a belt below passing over the fixed pulley L. This frame or table A has a longitudinal opening through its entire length to allow the traversing of a carriage, B, which is supported by ways I' on the under side of the frame A, and is driven rapidly to and fro by a pitman, H', from a crank-pin, h, on a wheel, K', attached to the shaft of the running-pulley L.

At the rear of the carriage B is pivoted an arm, C, which projecting forward holds a swinging cross-bar, D. In this cross-bar D, and one near each end, are fastened the burnishing-tools i, exactly under the center of the handles to be burnished. These tools, by the rapidly-moving carriage B, are swiftly passed to and fro over the surface of the handles, which are slowly turned around to receive a polish on every part.

A spring, k, under the forward part of the arm C, keeps the burnishing-tools up to their

work, allowing them to run uniformly over any irregular surface.

The arm C is hung toward its rear end in lugs l, underneath the table. In its extreme end is a cam, m, with a handle, which being turned forward raises the rear end as a lever, depressing the front of arm C and letting down the burnishing-tools when the work is to be removed. The cam being turned back depresses the rear end of the lever, consequently allowing the front end to be raised by the spring k.

On the forward part of the frame A, and longitudinally with it, are fixed on bearings two cylinders, E E', hollow, and with jaws to receive and firmly hold against the bolsters of the knives to be burnished. Each of these cylinders has near its forward end a gear-wheel, E². One of these wheels meshes into and drives the other, while itself is driven by a worm, F', underneath. This worm F' in turn receives its driving-force by being fixed on a shaft, t, attached to which is a ratchet-wheel, F.

At one end of the shaft F², on which is fixed the driving-pulley L, is a wheel, W, on the outer rim of which is loosely fastened by a pin, O, for a crank-motion, a pitman, I, which extending back meets the lower end of a slotted rocking bar, K, pivoted at n on the side of the frame A about midway its length. The upper half of this rocking bar K is slotted to hold, by means of a loose moving pin, the end of a short arm, G, which moving from the upper end of the rocking bar K has its other end attached to the lower end of a ratchet-bar, N. This bar N is loosely fastened on the end of the shaft which holds the ratchet-wheel F, which drives the worm F'. On its upper end is a pawl, a, controlled by a spring, p, secured to bar N, which engages the ratchet-wheel F, and pushes it forward, and slips freely over the ratchet-teeth as the bar N receives a reverse movement by the action of the rocking bar K through the short arm G. The ratchet-wheel is kept from following back by a spring-click, b, fastened on the side of the frame.

As the handles of the knives are not round, but ovate in cross-section, it is sometimes desirable that they should be presented to the burnishing-tools at rates of speed differing as the broad or the narrow sides of the handles

are to receive the polish, and this is done by turning the handles to the tools by the foregoing and the following devices.

In the forward end of the cylinder E, which is driven by the worm F', is inserted the model b' of a knife-handle, such as is to be burnished. Projecting out a short distance under and bearing on this is a shoe, c, supported on an arm P, and kept in place by a spring, d. This arm is bent at a right angle, and coming a little outside the frame A is attached to the short arm of a lever, H, which has its fulcrum e' under the center of the ratchet-wheel F, the end of the long arm of the lever reaching to a link, e, which connects it to the short arm G.

The result of this combination is that as the model of the handle in the end of the cylinder is turned it actuates the bent arm P, depressing it or allowing it to rise, according to its form. This acts through the lever H and link e upon the short arm G, raising or lowering it in the rocking bar K. As the stroke of the arm G is lengthened or shortened the ratchet-wheel F is driven faster or slower, and thus the handles to be burnished are turned at exactly the same speed as the model handle b' in the end of the cylinder E, which so controls them. If, however, instead of this a direct motion is preferred, it is attained by detaching the pitman I from the driving-wheel W, and also that end of the lever G attached to the lower end of the ratchet-bar N, and attaching the short pitman X (shown in dotted lines) from the crank-pin O to the lower end of the ratchet-bar N. The effect of this change is to give a direct motion forward and back, the action of the ratchet-wheel on the worm giving the cylinder holding the knives the requisite change of motion in turning the handles of the knives for burnishing.

The end of each knife-handle to be burnished is held in a socket, q, fitting it, having on the rear a pin loosely placed so as to turn in the end of a post, R. The posts R, passing down through the top of the frame, are secured to

racks g', running in ways underneath the table. These racks are actuated by pinions f on shafts f' f'', passing out of the frame and having ratchet-wheels g at their ends, controlled by pawls, by which, or some other suitable contrivance, the post bearing the socket meets the end of the handle and holds it securely in place.

I claim—

1. The combination, with the cylinders provided with means, substantially as described, for holding the knives, of the sockets and posts supporting the handles, as and for the purpose set forth.

2. The combination, with the cylinders provided with means for holding the knives, and gearing by which they may be moved, substantially as described, of the ratchet mechanism, the arm G, rocking arm K, and pitman I, all arranged as and for the purpose specified.

3. The combination, with the knife-handle form b', of the yielding bent arm P, the lever H, the pitman I, the rocking arm K, the link e, and short arm G, and the ratchet-bar N, for giving the desired change of motion, as and for the purpose set forth.

4. The combination of the cylinder, the carriage carrying the arm with the burnishing-tools, the posts and sockets for holding the knives, and the devices for producing a change of motion, all constructed and operating substantially as described.

5. The combination, with the knife-holding cylinder and gearing composed of screw and gear-wheels with which it engages, the ratchet-wheel F, and pawl and detent spring, of the alternate pitman-connection X and the crank wheel W, all arranged substantially as and for the purpose set forth.

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Witnesses:

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