

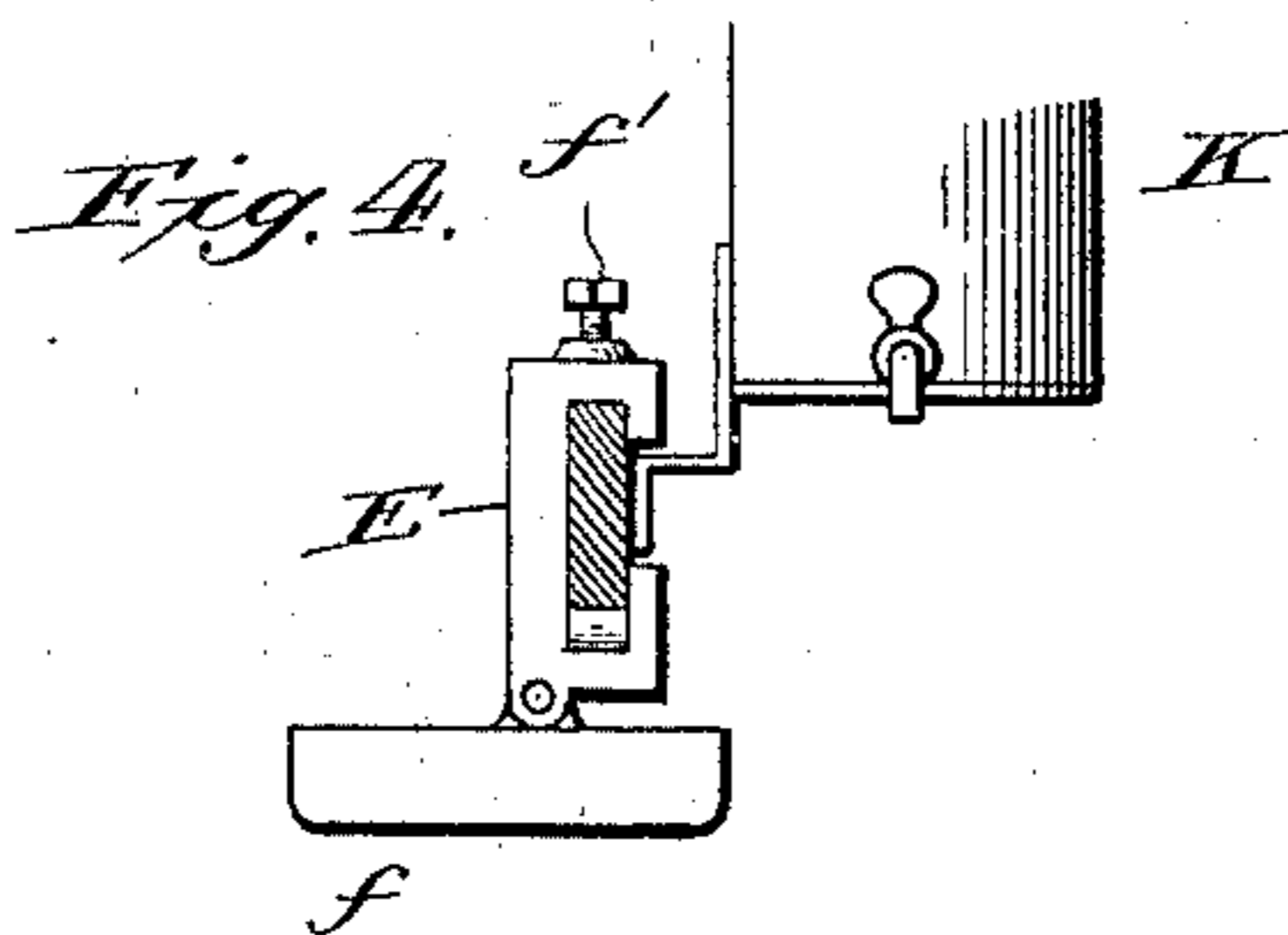
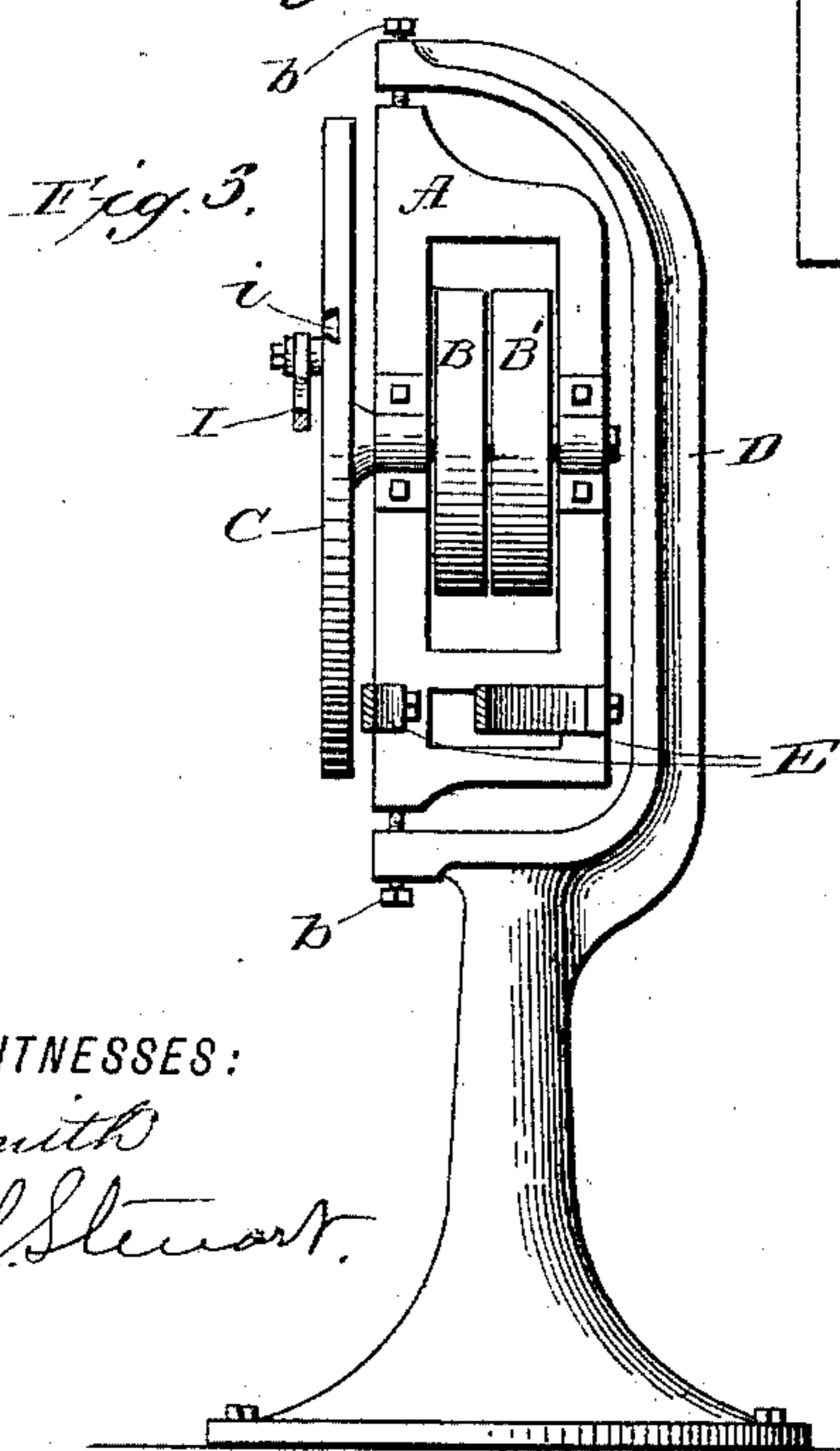
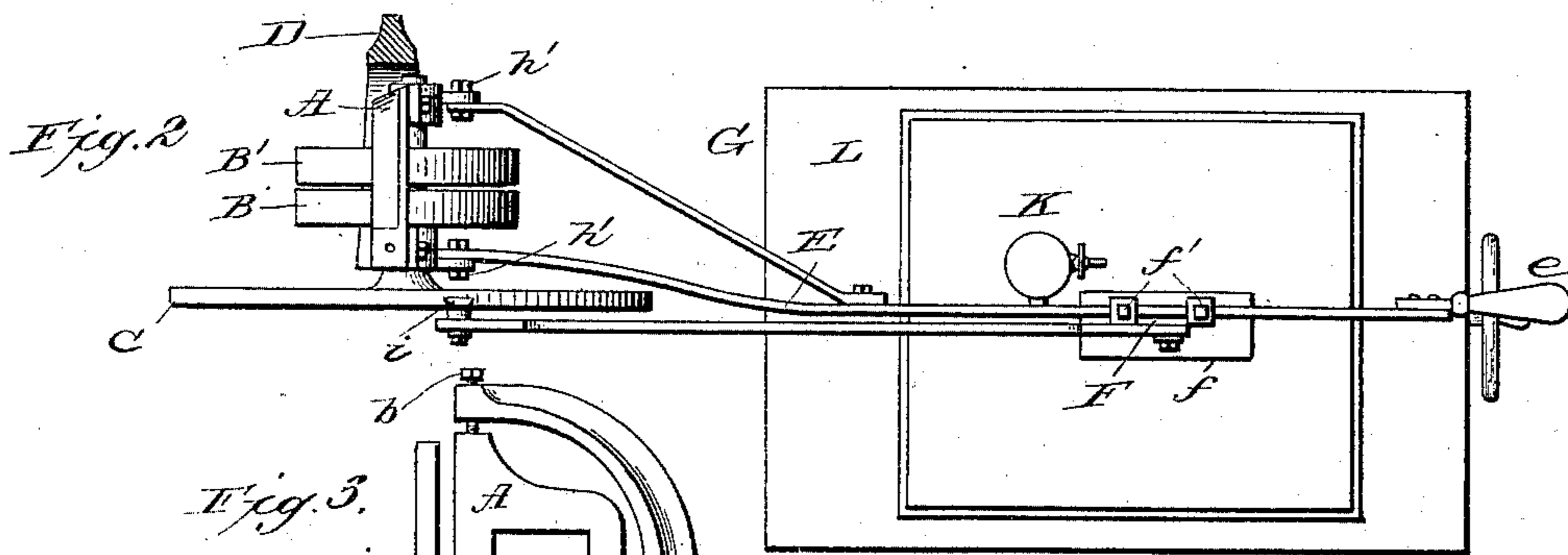
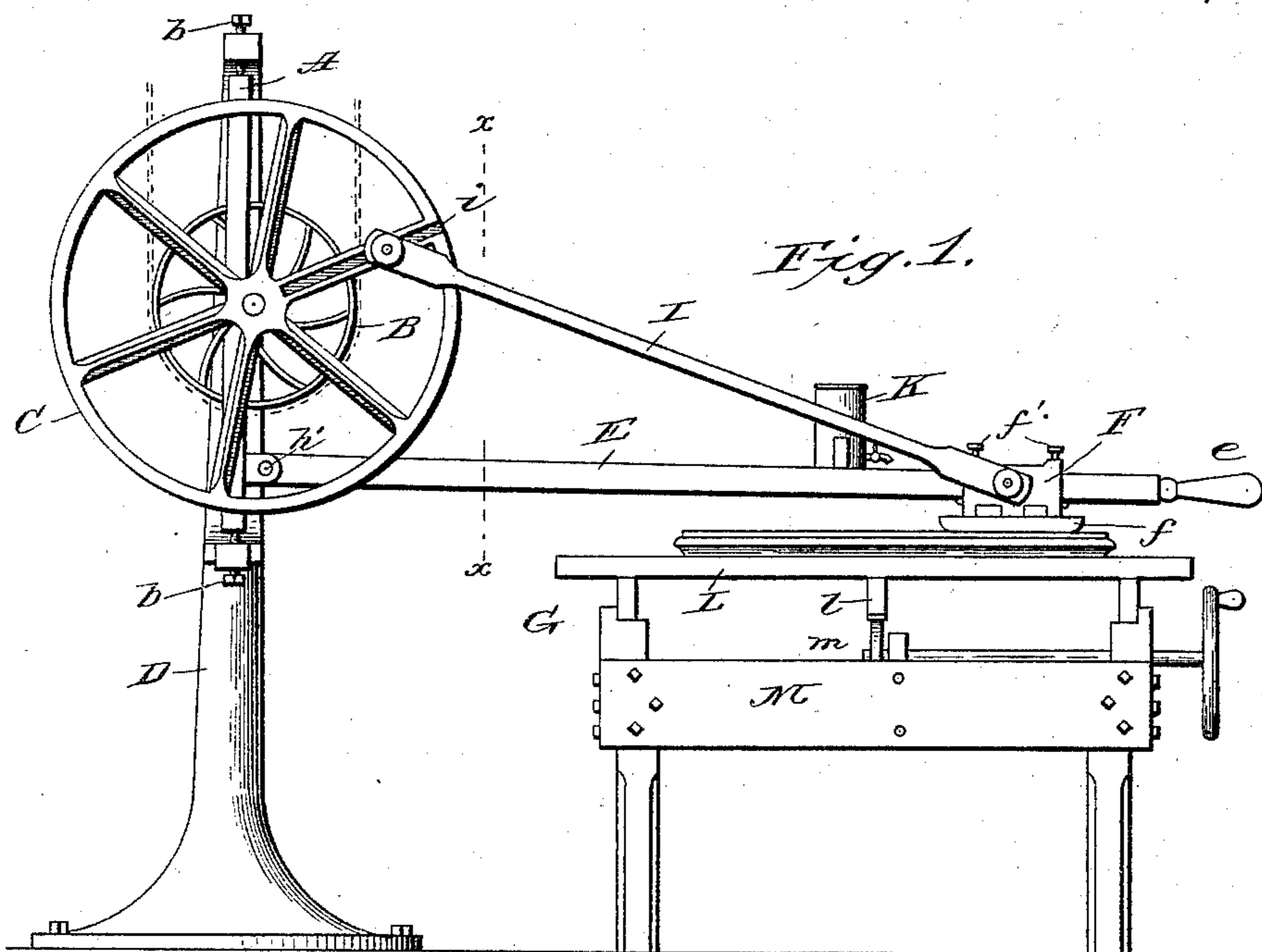
(No Model.)

W. J. MADDOX.

SANDPAPERING, RUBBING, AND POLISHING MACHINE.

No. 448,721.

Patented Mar. 24, 1891.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM J. MADDOX, OF JAMESTOWN, NEW YORK.

## SANDPAPERING, RUBBING, AND POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 448,721, dated March 24, 1891.

Application filed November 6, 1890. Serial No. 370,508. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. MADDOX, of Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Sandpapering, Rubbing, and Polishing Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates particularly to that class of machines employed for sandpapering, rubbing, and polishing various articles manufactured of wood and other substances, the object being to provide a machine capable of universal use which will permit any portion of the surface being operated upon to be dressed at will without disturbing the remaining portion, or the rubbing devices to be thrown out of operation without arresting the movement of the machine.

The invention consists, broadly stated, in a machine having a reciprocating rubber working on a vertically-movable guide provided with a handle for controlling the same, the mechanism for driving said rubber and the fulcrum of the handle being mounted on a horizontally-swinging frame, whereby the rubber is capable of having a universal movement. Further than this, the invention consists in certain novel details of construction and combinations and arrangements of parts to be hereinafter more fully described, and pointed out particularly in the claims at the end of this specification.

Referring to the accompanying drawings, Figure 1 is a side elevation of a machine constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional view on the line  $xx$ , Fig. 1. Fig. 4 is a detail of the rubber and its carriage.

Similar letters of reference in the several figures indicate the same parts.

In the embodiment of the invention shown in the drawings a frame A is provided, upon or within which are mounted drive-pulley B and loose pulley B', and upon the same shaft therewith a drive-wheel C. This frame A is pivoted to swing horizontally on the verti-

cally-arranged centers formed by the pivotal set-screws  $b$ , working through a standard or frame D, and in order that the power transmitted to the pulleys may not be affected by the horizontal swinging of the frame A the belt passing from the pulleys B extends vertically, as indicated in Fig. 1, to any suitable source of power. At the bottom of the frame A is pivotally connected so as to swing vertically a guide frame or bar E, having a handle  $e$  at the outer end adapted to be grasped by the operator to manipulate the rubber, as will presently appear.

The rubber consists of a block  $f$ , covered with a suitable rubbing material—such as sand-paper—and mounted on a carriage F, guided and supported by the guide-bar E, immediately over a table G or other support for the work, said carriage being connected to a crank-pin on the drive-wheel C, by which means it is given a reciprocation back and forth along the guide-bar, and the operator by manipulating the bar can regulate the application of the rubbing-surface according to the necessity of the work being operated upon. The preferred construction of block  $f$  is loosely mounted on the carriage, as by a pin-connection, in order that it may have a slight independent movement and adapt itself to any inequalities or irregularities in the surface being operated upon, and, in order to take up any wear between the carriage and guide-bar, the carriage is provided with set-screws  $f'$  at the top. A pitman I preferably connects the carriage and crank-pin, and in order to permit of the regulation of the stroke of the rubber the crank-pin is adjustably connected to the wheel by being mounted in a radial slot  $i$ , as will be readily understood by those of ordinary mechanical education.

The guide-bar or frame E may be of any preferred construction, although it is found desirable to have a wide bearing at the pivotal end in order to resist the horizontal strains incident to the lateral movement of the same, which bearing has been secured, in the present instance, by bifurcating the frame at the inner end and connecting the arms to lugs or ears on the frame A by means of bolts  $h'$ .

When the character of the work is such that

it becomes necessary to employ water, as in rubbing down varnish, it may be dripped from a cup or reservoir K, attached at one side of the guide-bar, and the portion of the carriage 5 embracing the guide-bar is cut away, as indicated in Fig. 4, to permit the same to pass the reservoir-support.

The work-table may be of any desired kind, although the one shown has some advantages, 10 in that the top L is movably mounted upon the supporting-base M, and is adapted to be moved from right to left by means of the shaft having the crank-handle and pinion *m* engaging the rack *l* on the under side of the 15 table. The table-top, of course, is mounted in suitable guideways, and has means for clamping or holding the work in place, such as are ordinarily employed.

With a machine such as described it is possible to sand-paper or dress fine-polished surfaces without forming ridges or grooves on the same, as the cut is diagonal to the work, and the control of the whole machine being 20 located in the handle *e* permits the operator to rub either end or center of the work to be finished without touching any other portion of the surface, if desired, and this is very essential in rubbing varnish, as it is found that 25 some portions of a surface always require more or less rubbing than others. The vertical movement of the guide-bar and the horizontal movement of the frame A permit the rubber to have a universal movement in any and every direction while being reciprocated, 30 and the pressure exerted on the rubber may be varied as desired by the operator himself.

Having thus described my invention, what I claim as new is—

1. In a machine such as described, the combination, with the frame mounted on vertically-arranged centers to swing horizontally and having the drive-wheel and pulleys thereon mounted in bearings at right angles to the centers on which the frame is hung, of the 40 guide bar or frame pivotally connected thereto to swing vertically, the reciprocating rubber mounted on said bar or frame, and means, substantially as described, for communicating motion from the drive-wheel to said rubber, substantially as set forth. 50

2. In a machine such as described, the com-

bination, with the frame having the drive and power wheels thereon, mounted on vertically-disposed centers to swing horizontally, of the guide bar or frame pivotally connected to the 55 bottom of said first-mentioned frame to swing vertically, the handle on the outer end of said bar, the reciprocatory rubber mounted on said bar, the crank-pin on the drive-wheel, and the pitman connecting the reciprocatory rubber 60 and crank-pin, substantially as described.

3. In a machine such as described, the combination, with the frame having the drive and power wheels thereon, mounted on vertically-disposed centers to swing horizontally, of the 65 guide bar or frame pivotally connected to the bottom of said first-mentioned frame to swing vertically, the handle on the outer end of said bar, the reciprocatory rubber mounted on said bar, the adjustable crank-pin on the drive- 70 wheel, and the pitman connecting the reciprocatory rubber and crank-pin, substantially as described.

4. In a machine such as described, the combination, with the horizontally-swinging frame 75 carrying the drive-wheel, the guide bar or frame pivoted thereto to swing vertically, the carriage mounted on said bar, the crank-pin, and pitman connecting said crank-pin and carriage to reciprocate the latter, of the rub- 80 ber loosely connected to said carriage, whereby it may accommodate itself to inequalities in the surface being operated upon, and the handle on the guide bar or frame for controlling the rubber, substantially as described. 85

5. In a machine such as described, the combination, with the standard having the vertically-disposed set-screws, the frame held between said screw to swing horizontally, and the power and drive wheels mounted on said 90 frame, of the bifurcated guide bar or frame pivoted to said first-mentioned frame to swing vertically, the rubber-carriage mounted on said bar or frame, the adjustable crank on the drive-wheel, the pitman connecting said 95 crank-pin and carriage, and the handle on the end of said guide bar or frame for moving the same, substantially as described.

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Witnesses:

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