(No Model.)

3 Sheets—Sheet 1.

E. HUTCHISON.

Machine for Cleaning and Polishing Forks.

No. 237,536. **Patented Feb. 8, 1881.**

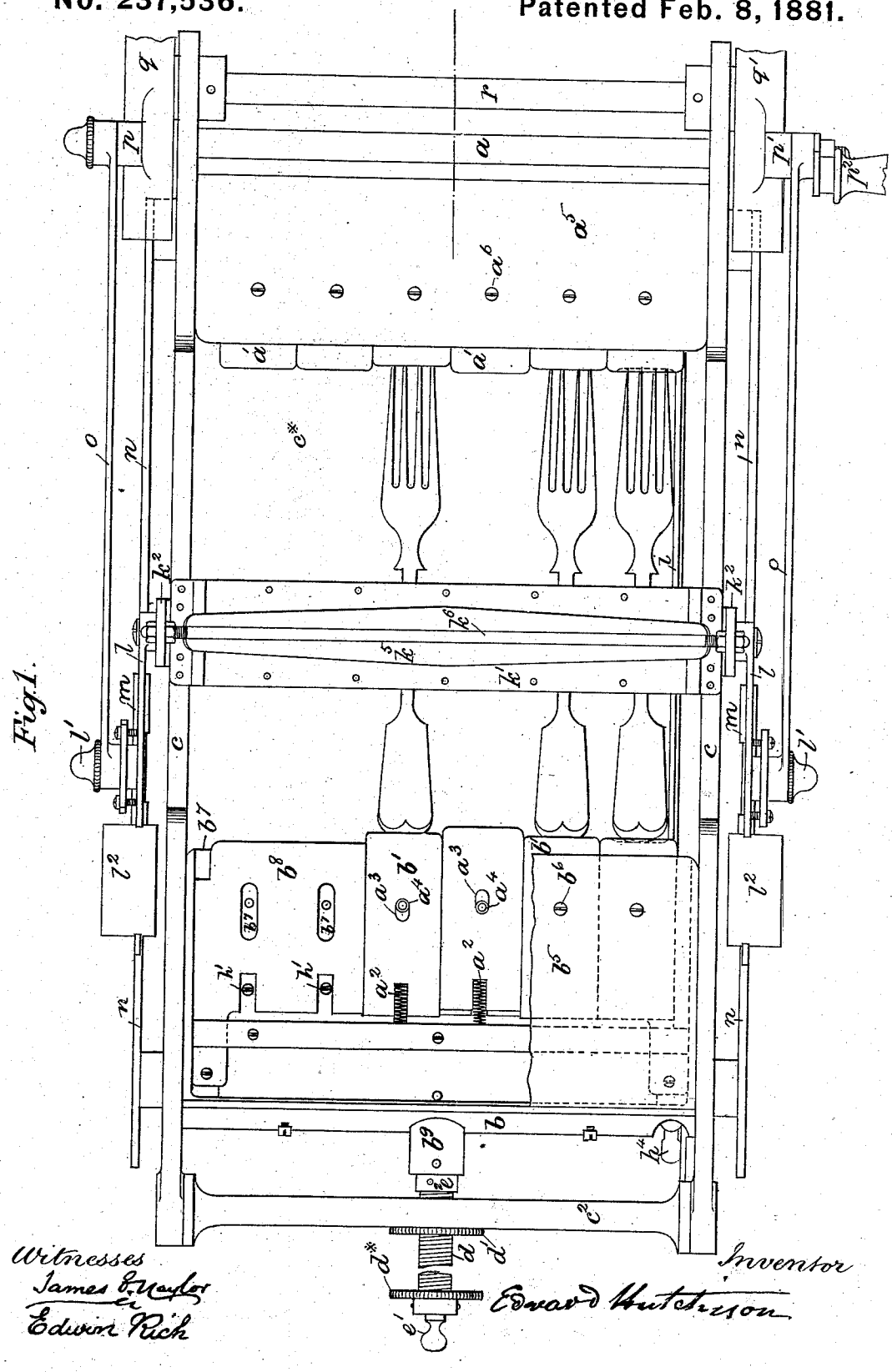


Fig. 1.

Witnesses
James B. Taylor
Edwin Rich

Inventor
Edward Hutchison

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

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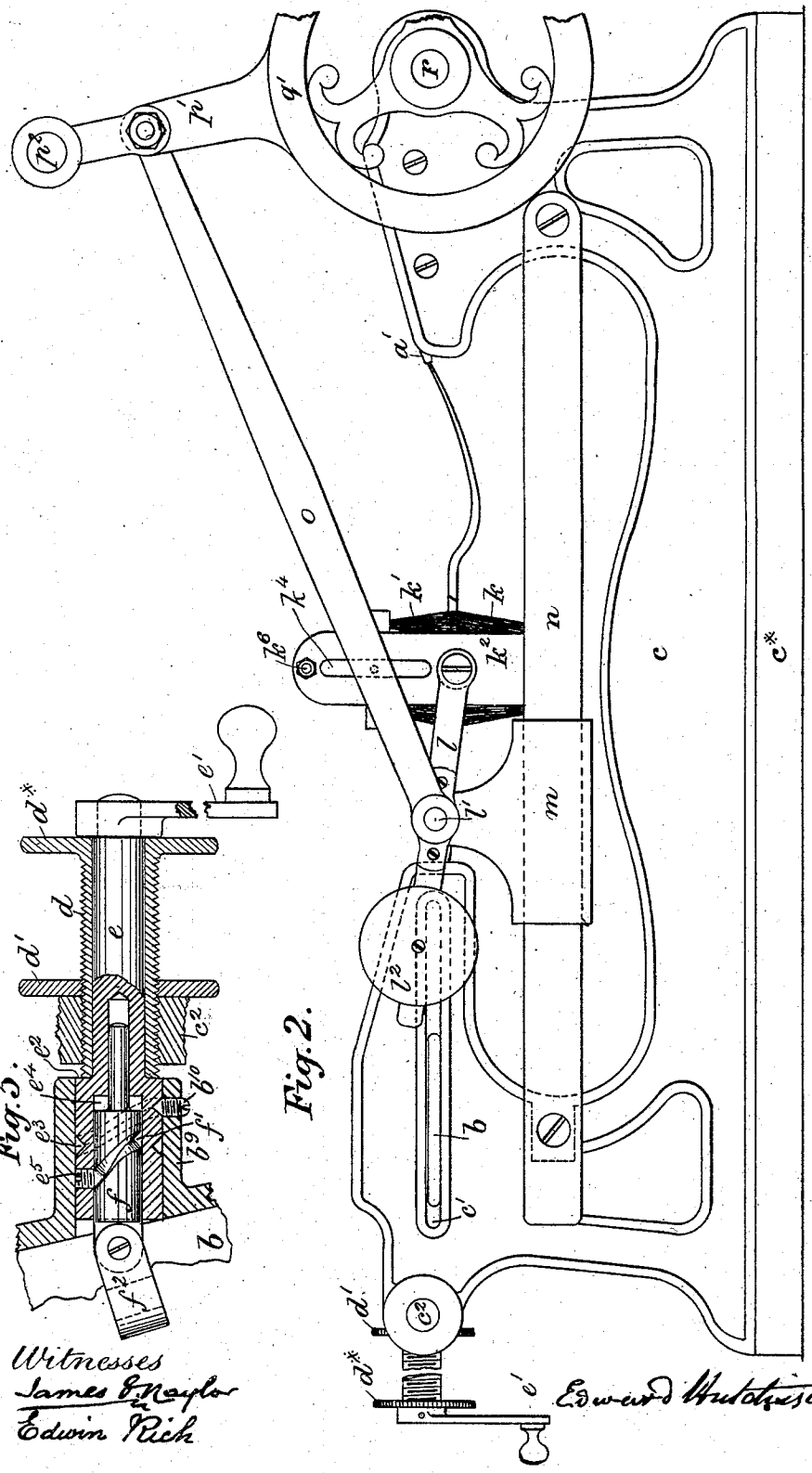


Fig. 2.

Fig. 5.

Witnesses
James E. Naylor
Edwin Rich

Inventor
Edward Hutchison

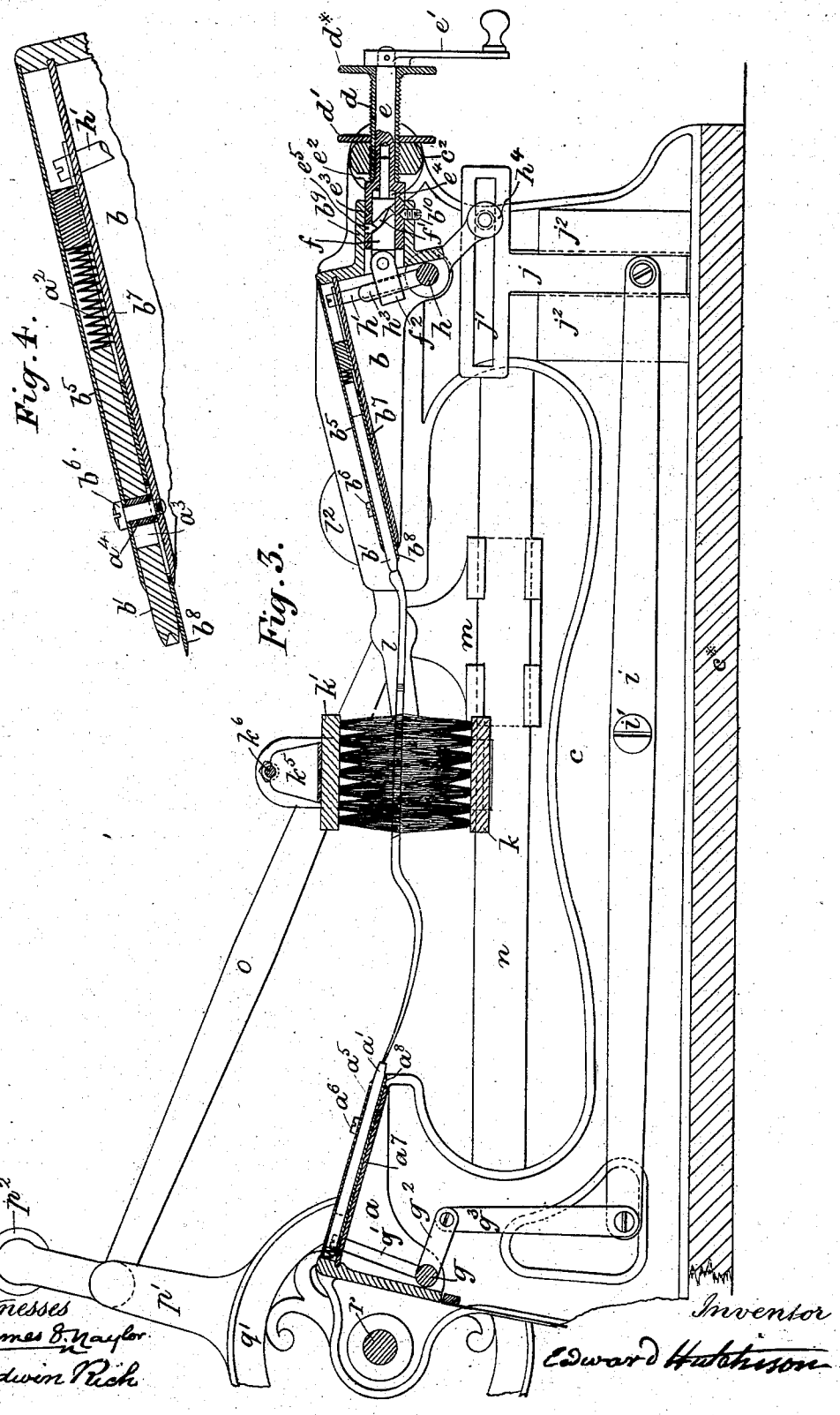
N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 3.

E. HUTCHISON.

Machine for Cleaning and Polishing Forks.

No. 237,536. **Patented Feb. 8, 1881.**



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD HUTCHISON, OF THEYDON BOIS, COUNTY OF ESSEX, ENGLAND.

MACHINE FOR CLEANING AND POLISHING FORKS.

SPECIFICATION forming part of Letters Patent No. 237,536, dated February 8, 1881.

Application filed December 6, 1880. (No model.) Patented in England January 1, 1880.

To all whom it may concern:

Be it known that I, EDWARD HUTCHISON, of Theydon Bois, in the county of Essex, England, have invented a new and useful Machine for Cleaning and Polishing Table-Forks, (for which I have obtained a patent in Great Britain, No. 7, bearing date January 1, 1880,) of which the following is a specification.

I will describe my invention with reference to the accompanying drawings, Figure 1 of which is a plan, partly in section, Fig. 2 a side elevation, and Fig. 3 a longitudinal section, of a machine constructed according to my invention. Figs. 4 and 5 are details, hereinafter referred to.

a b are two parallel frames, in which are mounted sliders a' a' b' b', having grooves formed in their protruding ends, between which sliders the forks are held when they are being cleaned. The said sliders are forced outward by springs a^2 a^2, their outward motion being limited by the engagement of slots a^3 a^3 formed therein with stops a^4 a^4, and are prevented from rising by covering-plates a^5 b^5, secured by screws a^6 b^6, which pass through the said stops and engage in tapped holes formed in the under parts, a^7 b^7, of the said frames. In the plan, Fig. 1, the covering-plate of the frame *b* is shown partly broken away, and two of the sliders and springs are omitted, in order clearly to show the arrangement of the parts. The frame *a* is affixed to the side frames, *c c*, of the machine, which are screwed to the base c^*, and the frame *b* is mounted in slots (one of which is shown at c', Fig. 2) formed in the said frames, so as to be capable of adjustment nearer to or farther from the frame *a*.

a^8 b^8 are sliding plates, which lie between the sliders a' a' b' b' and the under part of the frames *a b*. The said plates a^8 b^8 are caused to project beyond the said sliders, as shown in Fig. 4, or are withdrawn into the position shown in Fig. 3, and the frame *b* is advanced toward or withdrawn from the frame *a* by means of the following mechanism: *d* is a screwed tube, which passes through a screwed hole in a bar, c^2, which connects the side frames, *c c*. The said screwed tube *d* is provided with a milled head, d^*, and lock-nut d', and surrounds a spindle, *e*, provided with a crank-handle, e', and having formed on it a shoulder, e^2, against which the inner end of the screwed tube *d* bears. b^9 is a socket formed on the frame *b*, in which socket the larger end of the spindle *e* lies, and with which it is connected by the engagement of a screw, b^{10}, in the said socket with a spiral groove, e^3, formed in the said spindle. e^4 is a tubular recess formed in the spindle *e*, in which recess a tubular slide, *f*, lies, the said slide and spindle being connected by the engagement of a screw, e^5, secured in the latter with a spiral groove, f', in the former.

g h are rocking shafts, the ends of which work in the side frames, *c c*. The said shafts have formed on or affixed to them arms or levers g' g' h' h', the free ends of which engage in holes formed in the plates a^8 b^8, and the said shafts are connected to a rocking bar, *i*, working on a fulcrum or center, i', the shaft *g* being connected to one end of the said bar by means of an arm or lever, g^2, and link g^3, and the shaft *h* being connected to the bar by means of an arm or lever, h^4, a pin on the free end of which engages in a slot, j', formed in the upper part of a slide, *j*, working in guides j^2 j^2, to the lower end of which slide the bar *i* is jointed. The slide *f* is connected to the shaft *h* by means of a loop, f^2, on the former, which is engaged with a finger, h^3, on the latter.

The action of this arrangement is as follows: When the screw *d* is turned in one or other direction the frame *b* is adjusted either nearer to or farther from the frame *a*, and when brought to the required position is secured by the lock-nut d'. When the handle e' is turned to the left the engagement of the screw e^5 with the spiral groove f' in the slide *f* causes the said slide to advance, and through its connection with the rocking shaft *h* and the connection of the said shaft with the plate b^8 the latter is thrown forward into the position shown in Fig. 4, (which is a section of the frame *b* and parts carried by it, drawn of the full size,) and at the same time the arm or lever h^4 on the said shaft raises the slide *j* and the end of the bar *i*, with which it is connected, and the opposite end of the said bar being consequently depressed, the plate a^8 is, through its connection with the shaft *g*, also thrown forward. The turning of the spindle *e* also

slightly withdraws the frame *b*, owing to the engagement of the screw b^{10} with the spiral groove e^3 in the said spindle. Fig. 5 is a section of the parts *d' e f* and a portion of the frame *b*, drawn of the full size, and shown in the positions to which they are brought by turning the handle *e'* to the left. When the handle *e'* is turned to the right the plates a^8 b^8 are withdrawn and the frame *b* is slightly advanced.

k k' are brushes by which the forks are cleaned. To the brush *k* brackets k^2 k^2 are secured, the said brackets being supported by levers *l l*, jointed at *l'* to sliders *m m* working on bars *n n*. The brush *k'* is connected to the said brackets by the engagement of lugs on its ends with slots in the said brackets, one of which slots is shown at k^4, Fig. 2. k^5 is a spring, which is compressed between the back of the brush *k'* and the rod k^6, which connects the upper ends of the brackets k^2 k^2, by means of which spring the brushes *k k'* are kept pressed together. The brushes are counterbalanced by weights l^2 l^2. The slides *m m* are connected by bars or rods *o o* with cranks *p p'*, formed on fly-wheels *q q'*, secured to a rotatory shaft, *r*, mounted in the side frames, *c c*, of the machine. p^2 is a handle on the crank *p'*, by turning which reciprocatory motion is imparted to the brushes when the machine is worked.

The method of using the machine is as follows: The plates a^8 b^8 are projected by turning the handle *e'* to the left, and the screw *d* is turned in one or other direction until the frame *b* is adjusted to such a distance from the frame *a* as will admit of the forks to be cleaned resting at their extremities on the projecting ends of the said plates. The forks, after being smeared with a suitable polishing material, are then placed in the machine, and the handle *e'* is turned to the right, which causes the frame *b* to advance slightly, the advance of the said frame causing the forks to be securely griped between the ends of the spring-sliders *a' a' b' b'*. The turning of the handle *e'* also causes the plates a^8 b^8 to be withdrawn under the said sliders during the advance of the frame *b'*. The brushes *k k'* are then caused to move to and fro (by turning the handle p^2) until the forks are cleaned and polished, when they are released by turning the handle *e'* to the left, and are then removed from the machine.

In the drawings I have illustrated the machine so formed as to be capable of being screwed to a table or dresser; but, if preferred, legs or standards may be formed on or secured to it, so as to raise it to a convenient height, and, if desired, a drawer or receptacle may be arranged below the brushes to receive the powder falling from them when the machine is being worked.

Having now described the nature of my invention and the manner in which it is to be performed, I wish it to be understood that I do not limit myself to the precise details herein before described, and illustrated in the accompanying drawings, as they may be varied without departing from the nature of my invention; but

I claim as my said invention—

1. A machine for cleaning and polishing forks, comprising parallel frames carrying spring-sliders for grasping the extremities of the forks to be cleaned, and reciprocating brushes, substantially as described.

2. The combination of supporting devices for holding forks by their extremities with one or more brushes or polishers and operating mechanism, substantially as described, so that the forks, while held by said supporting devices, are operated upon by said brushes or polishers, substantially as described.

3. In a machine of the character described, the combination of the spring-sliders having grooved ends, and the supporting-plates, as and for the purposes set forth.

4. The combination of a stationary and an adjustable frame, spring-sliders, and supporting-plates carried by said frames, means, as indicated, for advancing said sliders and withdrawing said plates, brushes, or polishing devices, and means for operating the same, substantially as described.

EDWARD HUTCHISON. [L. S.]

Witnesses:
JAMES E. NAYLOR,
EDWIN RICH.