4 Sheets, Sheet 1.

J. Vaughan, Jr.

Polishing Metal Tools.

No. 6,949. Patented Dec. 11, 1849.

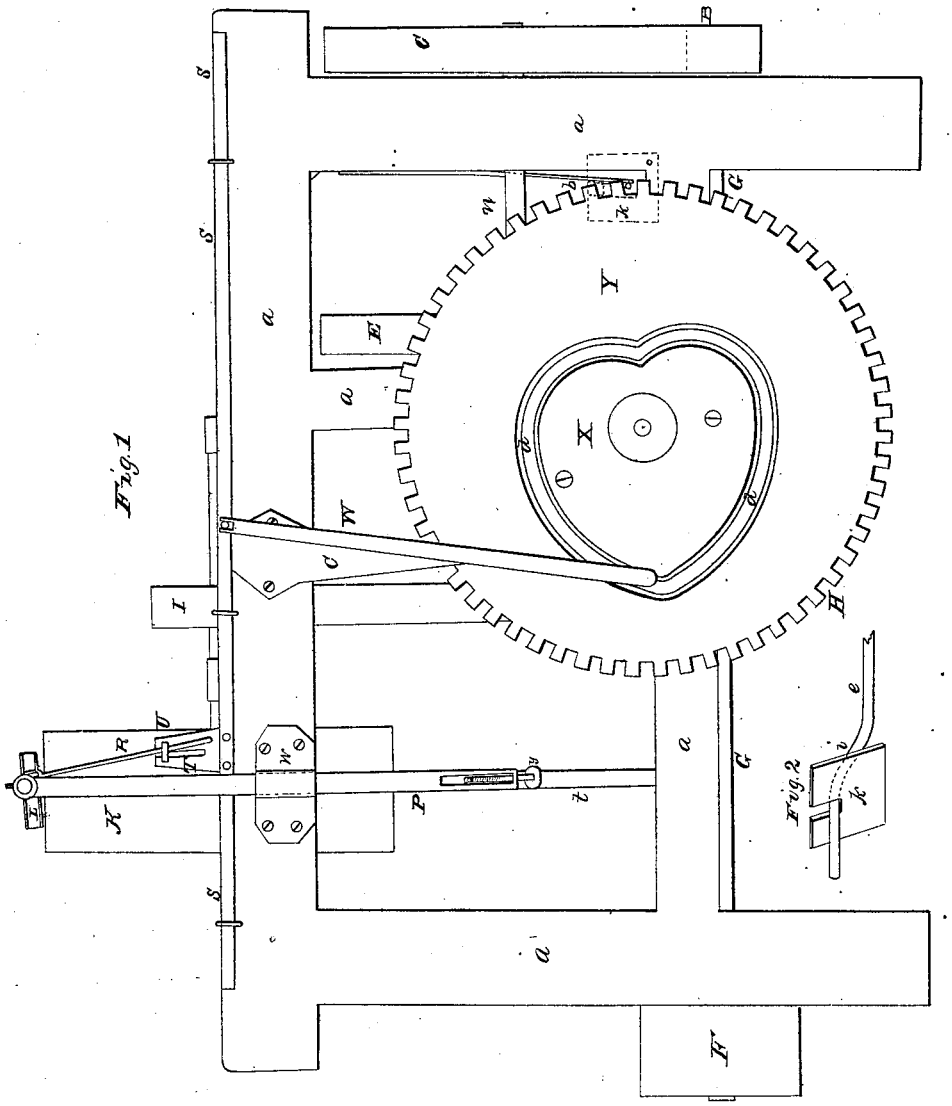

Fig. 1

Fig. 2

4 Sheets, Sheet 2.

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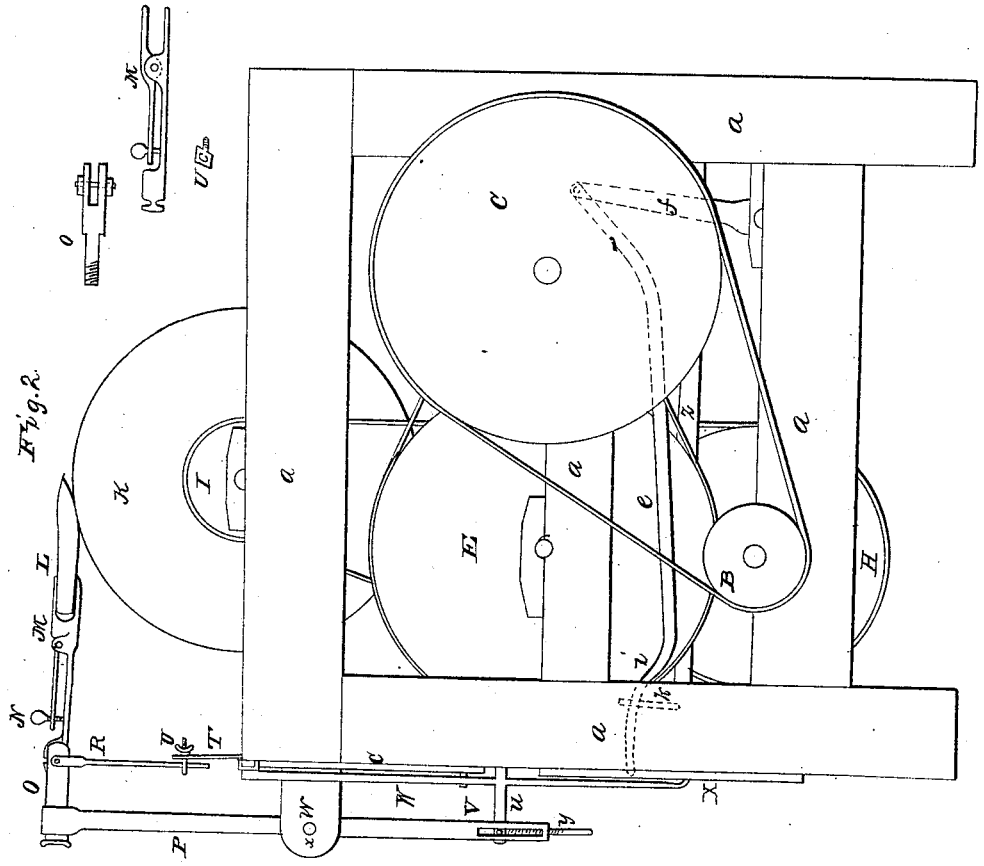
Fig. 2.



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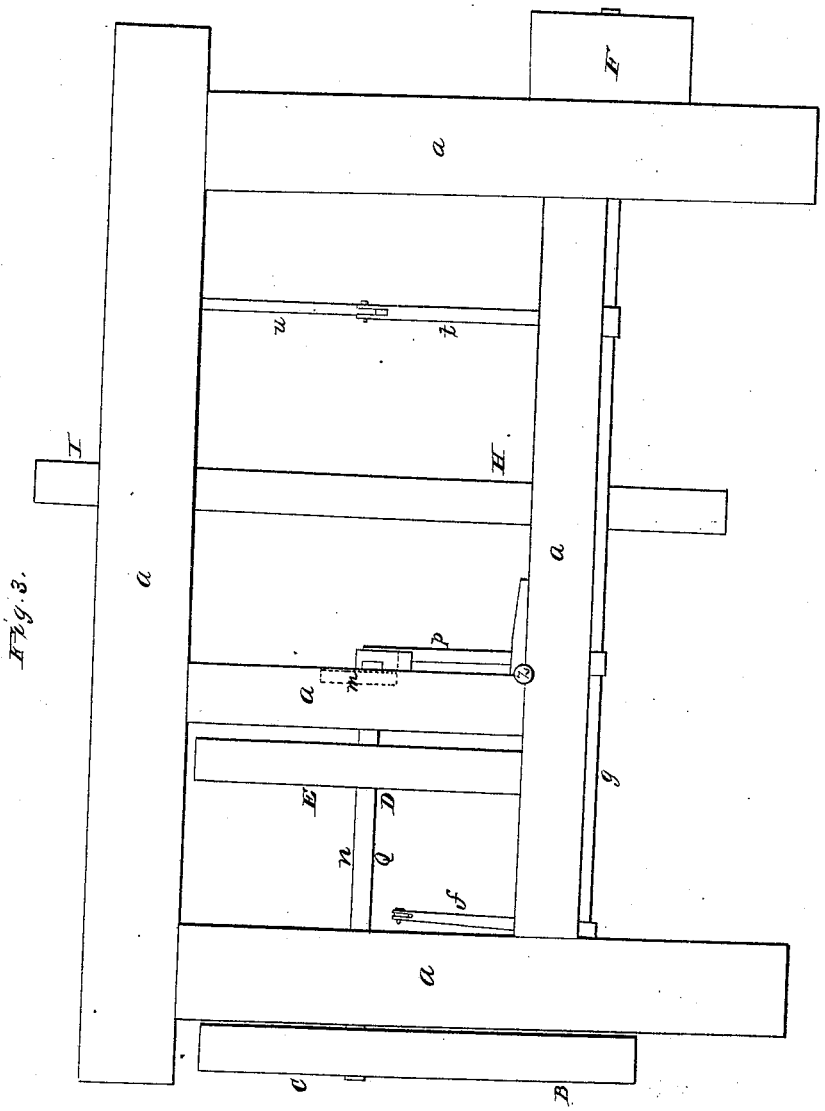

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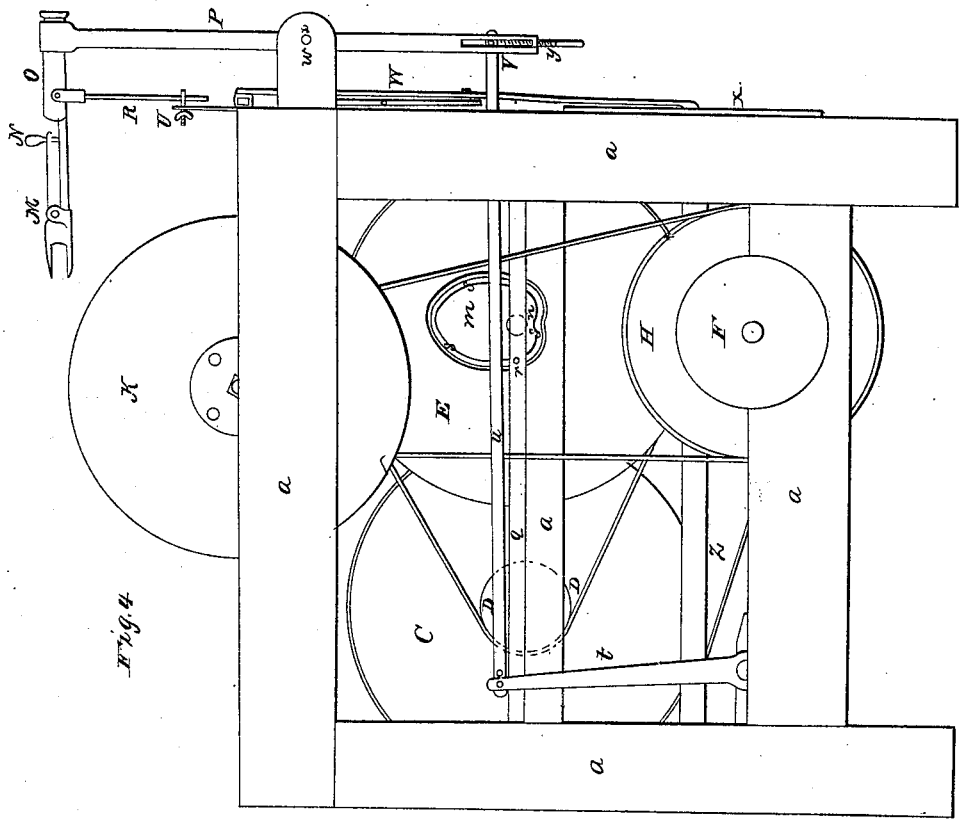

Fig. 4.

UNITED STATES PATENT OFFICE.

JOSEPH VAUGHAN, JR., OF UNION, MAINE.

MACHINE FOR GRINDING OR POLISHING TOOLS.

Specification of Letters Patent No. 6,949, dated December 11, 1849.

To all whom it may concern:

Be it known that I, JOSEPH VAUGHAN, JR., of Union, in the county of Lincoln, State of Maine, have invented a new and Improved Machine for Polishing Axes and other Tools and Implements, of which the following is a full and accurate description.

The nature of my invention consists in a machine so constructed and arranged as to hold an axe or other implement, on a polishing wheel, and give it the motion required to bring every part of the surface to be polished, in contact with the polisher, in such manner as to give every part a sufficient and uniform polish, and by means of which one man or boy may tend the polishing of a number of axes or other implements at the same time, making a great saving of labor.

The drawings, which are referred to as a part of this specification, present four different views of the machine,—front, back, right and left end views.

The reference letters used in this description will indicate the same part on each of the 4 plates.

a, *a*, *a* is the frame.

B is a pulley on the main or driving shaft and by a band gives motion to the wheel, C, on the shaft Q Pl. 3, on which is a pulley, D, seen on plate 4, which, by a band, gives motion to the wheel E.

F, is a pulley on the driving shaft G, which takes motion from a drum driven by steam, water or other power. H is a wheel on the central part of the driving shaft which by a band gives motion to the pulley I on the shaft of the polishing wheel K, and gives it rapid motion.

The axe, L to be polished is grasped by the tongs, M, which are made to fasten firmly on the axe by the thumb screw, N. The holder, O, has a round shank which passes freely through the upper end of the vertical lever, P, in which it is confined by a screw-nut on the end. It is made to rotate or turn on its axis by the lever, R, which, at its upper end, clasps the holder and is attached by a pivot passing through its center horizontally on which pivot the end of the tongs rests, being flattened to enter freely into the slot as shown in the top view of the holder, (Pl. 2, Fig. 2). That end of the tongs is notched as shown on Pl. 2, Fig. 3, where it rests on the pivot. This admits of the tongs being taken up and turned over readily to present the different sides of the axe to the polisher.

The use of the lever, R, is to cant or turn the axe, so as to bring all parts of its rounded surface in contact with the polisher. This is effected by means of the slide, S, S, moved back and forward endwise in staples which hold it to the frame. It has a projection upward, T, with a vertical slot in which the gage, M, (shown in Fig. 1, Pl. 2) moves up and down being fastened with a thumb screw. The lever is thus made shorter or longer and its motion increased or diminished, by which means the axe is made to turn or cant more or less to present the rounded corners to the action of the polisher. The slide S, S, is moved by means of the lever, W, having its pivot or fulcrum at, *b*, by which it is secured to the plate, *c*, pendent from the frame, as shown on Pl. 1. At the upper end is a slot to embrace a pin in the slide. This lever receives its peculiar motion from the eccentric, X, secured to the face of the ratchet wheel, Y, there being a pin projecting from the lower end of the lever entering and moving in the eccentric groove *d d d*, as the ratchet wheel revolves. This eccentric is so shaped as that the axe is held longest in that position in which the greatest amount of surface is in contact with the polisher.

The ratchet wheel revolves on an arbor or shaft, Z, and is moved by the reciprocating lever, *e* seen in Pl. 2, which itself receives motion endwise from the arm, *f*, attached to the shaft *g*. The end of this lever in its forward motion enters between the teeth of the ratchet wheel, Y, in which the pawl, *h* rests, and being beveled wedge-like, it enters between the lip of the pawl and the wheel, presses back the pawl, and in its further advance turns the wheel till the pawl springs into the next notch of the wheel. The motion the lever gives to the wheel is due to the crooked and inclined part of the lever at, *i*, sliding upon the guide, *k*, attached to the inside of the frame, in the top of which is a deep notch or slot, serving as a guide to the lever. This is seen in Fig. 2, Pl. I. When the lever is drawn back it falls again to the bottom of the notch and is again thrust between the pawl and the wheel as before. A suitable motion to the ratchet wheel, may also be given by means of an endless screw applied in the common way.

The shaft, g, takes its motion from the eccentric, m, on the end of the shaft, n being the axis of the wheel, E. The arm, p, attached to the shaft, has a slot at the top which engages a pin projecting from the side of the sliding bar, q seen in Pl. 4, and which moves endwise in guides attached to the frame. It is moved as the eccentric revolves by means of a pin projecting from the side of the bar at r, which enters the groove s, s, s, of the eccentric, which gives it a reciprocating motion.

The axe while polishing must be moved from the edge toward the head as far as it is required to be polished. This is effected by means of another vertical arm, t, fixed to the shaft, g, connected at its upper end with the rod, u, the other end of which enters a slot in the lower end of the vertical lever P, at v in which it is held by a pin which moves in a side slot as shown in Pls. 2 and 4. This lever, P, moves on a pivot at x in a support w attached to the frame as shown in plates 1, 2 and 4. The upper end of the lever receives the holder, O, as before described, and in the lower end is a thumbscrew, y, by which the end of the rod, u, is elevated or depressed at pleasure to give the axe a greater or less movement on the polisher.

This machine may be constructed so as to admit the polishing of a number of axes or other implements at the same time—as many as one or more men or boys can tend—by extending the frame in length and giving corresponding extension to the slide, s, s, the shafts, G and g, and to that on which the polishing wheel is fixed, multiplying thereon the number of polishers at pleasure, and that part of the machinery immediately connected with the holding and moving of the axe. It will be apparent that the eccentrics and the motive parts immediately connected with them will not need to be multiplied.

This invention may be applied to the polishing of chisels and other tools and implements, by changing the eccentrics for those of a form adapted to the motion the implement is required to take to present its whole surface to the polisher.

What I claim as my invention is the following, to wit.

1. That part of the above described machinery by which an axe or other implement to be polished, receives a reciprocating motion and by which that motion is regulated, in combination with that part of the machinery by which it is made to cant or rotate at the same time, sufficiently to present all parts of the surface to be polished, to the polishing wheel.

2. The machinery above described for holding and giving motion to the axe of other implement while being polished, in combination with the polishing wheel moved and kept in motion in the manner described in the above specification.

In witness whereof I have hereunto set my hand this tenth day of February A. D. 1849.

JOSEPH VAUGHAN, Jr.

Witnesses:
JOHN RUGGLES,
ALBERT THURSTON.