SAMUEL BEVAN.

Improvement in Polishing-Machines.

No. 114,098. Patented April 25, 1871.

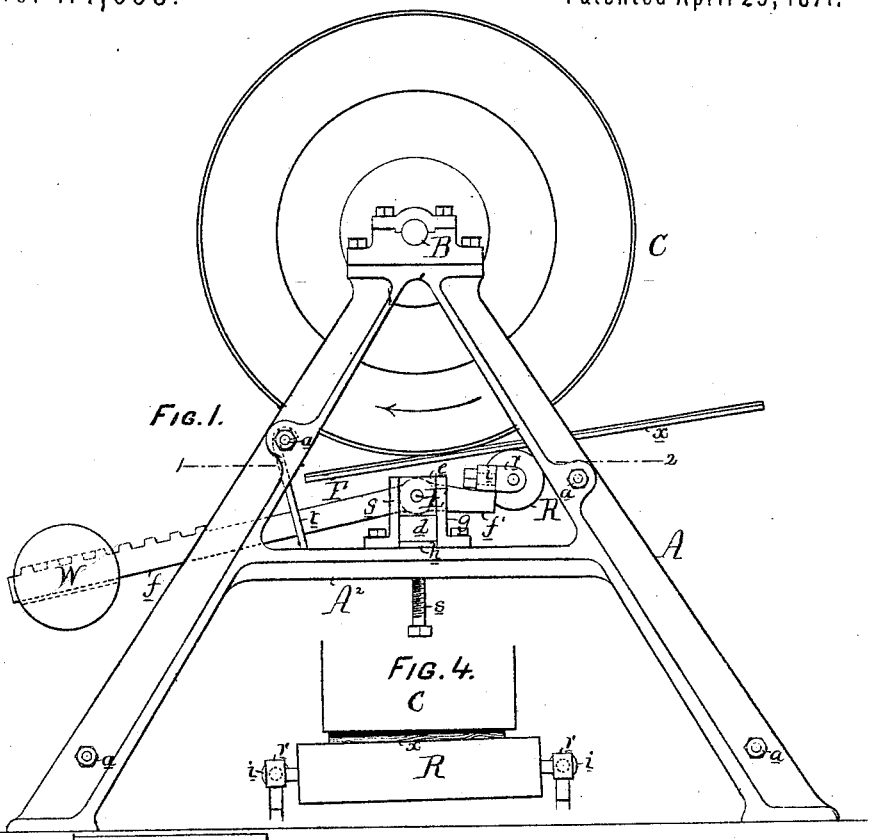

FIG. 1.

FIG. 4.

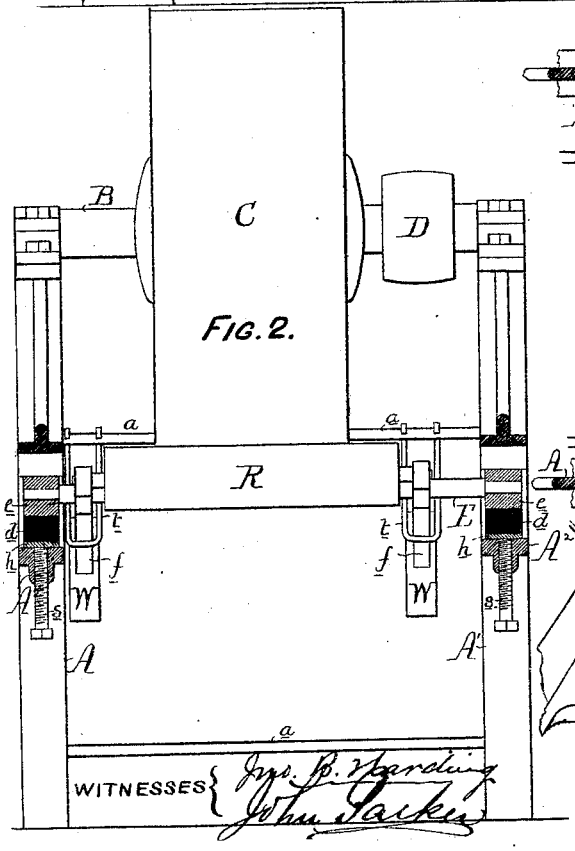

FIG. 2.

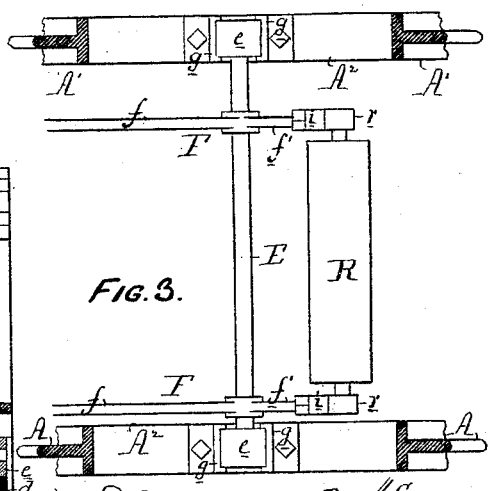

FIG. 3.

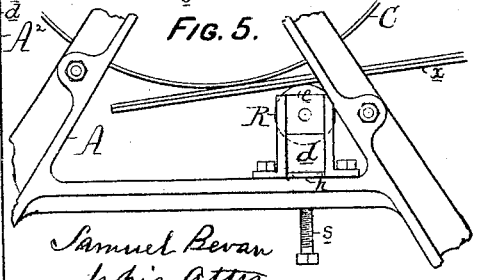

FIG. 5.

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SAMUEL BEVAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO "HENRY DISSTON & SON," OF SAME PLACE.

Letters Patent No. 114,098, dated April 25, 1871.

IMPROVEMENT IN POLISHING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, SAMUEL BEVAN, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain Mechanism for Polishing Saw-Blades, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of mechanism, too fully described hereafter to need preliminary explanation, for polishing saw-blades and other metal objects.

Description of the Accompanying Drawing.

Figure 1 is a side elevation of my improved machine for polishing saws, &c.

Figure 2, an end view, partly in section.

Figure 3, a sectional plan view on the line 1 2, fig. 1.

Figure 4, a detached view of part of the machine.

Figure 5, a view showing a modification of my invention.

General Description.

A and A^1 are the opposite side frames of the machine, and are connected together at suitable points by transverse rods *a a*.

B is a shaft, turning in suitable bearings at the top of the side frames A and A^1, and to this shaft is secured a polishing-wheel or grindstone, C, and a pulley, D, for receiving a driving-belt.

E is a spindle, turning in bearings *e e*, which are arranged to slide in vertical guides, *g g*, secured to the horizontal portion A^2 of the side frames, the said bearings resting upon springs composed of rubber blocks, *d d*, which, together with the bearings, can be adjusted vertically by a set-screw, *s*, the ends of the latter bearing against plates or washers, *h*, beneath the said blocks.

To the spindle E are loosely hung two levers, F F, the long arms *f f* of which are furnished with adjustable weights, W W, and to the short arms *f″ f′* are attached, by means of swivel-joints *i*, bearings *r r*, for the spindle of a roller, R, clothed with rubber or other suitable yielding material.

Strips of metal, *t*, bent to the staple-like form shown in fig. 2, are hooked to one of the transverse rods *a*, and serve to limit the downward movement of the long arms of the levers F F.

The saw-blade or other article of thin steel is placed on a strip, *x*, of wood, and an operator holds this strip so that it shall bear on the roller while the blade is pressed upward against the polishing-wheel with a force limited by the weighted arms; in fact, the strip, with its blade, is a lever resting on the roller R, as a fulcrum, yielding to a greater pressure than is necessary to polish the blade.

As the wheel revolves in the direction of the arrow the strip, with its blade, is carried forward as far and as fast as the operator will permit, and is then drawn back, and this is continued until the blade is completely polished by the wheel and the emery or other polishing material which may be used in conjunction with it, a uniformly-polished surface being imparted to the blade owing to the yielding fulcrum.

After the strip and blade have been withdrawn from between the roller R and the wheel the weighted levers F F will fall until arrested in their descent by the slots *t*, which prevent the roller from coming in contact with the wheel.

It has been before remarked that the levers F F are hung loosely on the spindle E, and that the bearings of the roller R are connected to said levers by swivel-joints *i*. This arrangement permits the roller to be depressed more at one end than the other, and to assume any angle which the lateral taper of a saw-plate may demand. (See fig. 4.)

The machine described above is intended more especially for polishing hand-saws; but, when a machine is required for crosscut and other heavier saws, or steel plates having little or no lateral taper, the levers F F and their weights may be dispensed with and the spindle of the fulcrum-roller may revolve in bearings adapted to the guides *g g*, and resting on rubber blocks or other equivalent springs.

It will be seen that the feeding-roller R is not placed directly below the axis of the wheel C. By this means a space is always left between the two for the introduction of the hand-board and the saw-plate carried by the same. As the upper surface of the roller is level with the lowest part of the wheel C, the plate, however thin it may be, is carried up against the wheel, and may be pressed against the latter with any required force.

Claim.

The combination, with the revolving polishing-wheel C, of a yielding roller, R, arranged below the wheel at one side of a vertical line drawn through the axis of the latter, so as to form the fulcrum of a board carrying the plate to be polished, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL BEVAN.

Witnesses:
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ARTHUR J. COOKE.