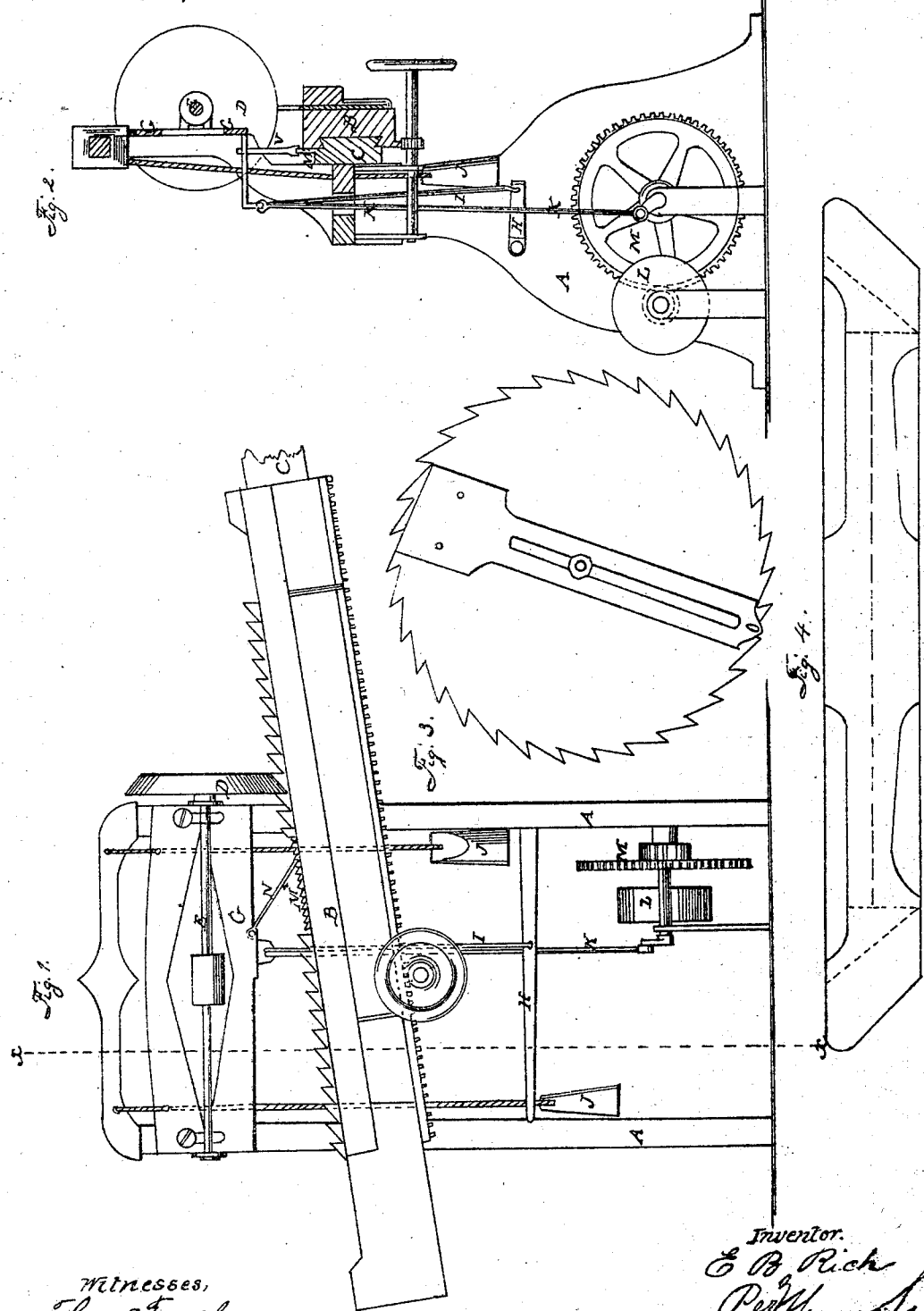


E. B. Rich.
Sharpening Saws.

N^o 72083

Patented Dec. 10, 1867.



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E. B. RICH, OF SOUTH BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND ANDRE CUSHING, OF SAME PLACE.

Letters Patent No. 72,083, dated December 10, 1867.

IMPROVEMENT IN MACHINE FOR SHARPENING SAWS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, E. B. RICH, of South Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and improved Machine for Sharpening Saws; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to a machine for the sharpening of saw-blades, whether straight or circular, the principles of which machine consist in the combination of a revolving or rotary vulcanite or other grinding-wheel, made of any suitable material, and a holder for the saw-blade, so arranged together, that as the grinding-wheel revolves, the saw will be presented to the same, or the wheel to the saw-blade, in such a manner as to produce the desired sharpening of the teeth in regular order and succession, as will be hereinafter described, reference being had to the accompanying plate of drawings, in which—

Figure 1 is an elevation or view of the front side of the machine, and

Figure 2 a transverse vertical section taken in the plane of the line *x x*, fig. 1.

Similar letters of reference indicate like parts.

A, in the drawings, represents the framework of the machine, which may be of any suitable construction to receive the various working or operating parts of the same. B, the holder for the saw-blade to be sharpened in the machine, this holder being arranged to slide upon a guide-bar or rail, C, in the present instance affixed to the framework A in such manner that either end can be depressed or elevated to accommodate different hooks or angles of different saw-teeth. By sliding the holder B forward upon the rail C, the several teeth of the saw-blade attached to it can be presented in regular order and succession to the grinding-wheel D to be sharpened. This grinding-wheel D may be the ordinary grindstone, or an "emery vulcanite wheel," so called, or it may be made of any other material suitable for the grinding of metals. The grinding-wheel D is at one end of a horizontal shaft, E, arranged to turn in suitable bearings of a gate or frame, G, hung upon the upright portion, H, of the framework A, so as to move up and down upon the same in a vertical plane, the grinding-wheel being revolved or rotated through its shaft, E, by connecting such shaft, in any proper manner, with any suitable driving-power.

By the combination of a movable or sliding holder for the saw-blade to be sharpened, and a revolving grinding-wheel, hung in a frame or gate susceptible of being moved up and down in a vertical plane, it is plainly obvious that the teeth of the saw-blade can be each and all sharpened, as, by the up-and-down movement of the grinding-wheel, it can enter the tooth to the desired depth, the edge of the grindstone being made of a shape corresponding to that of the teeth of the saw-blade which it is intended to sharpen.

To move the frame, which the grinding-wheel is hung in, up and down, various arrangements of mechanical devices may be employed either to accomplish it automatically or by the person running the machine, through a treadle, for instance, which mode is shown in the drawings accompanying this specification, or by a lever to be worked by the hand, and situated near the hand-wheel which works the saw. But as such arrangement of devices forms no part of the present invention, I will only briefly allude to them and their connection and operation together. H is the treadle-lever, hung at one end to the framework A; I, a rod, connecting gate-frame, having grinding-wheel hung in it, as has been hereinabove explained, with treadle H, through which, as the said treadle is depressed, the gate-frame, and consequently the grinding-wheel, is carried down to the saw-blade, where it can be held by continuing the pressure upon the treadle, the said gate-frame being carried back to its original position, or, in other words, raised, when the pressure is relieved from the treadle, through the weights J, suitably hung to the gate-frame therefor.

To automatically operate the gate-frame, it is only necessary to connect it with the driving-power in any suitable manner, as, for instance, through a pitman-rod, K, the driving-power being represented as to be applied to a pulley, L, which, through gearing M, is connected with the said pitman-rod K, as is shown in the drawings.

If desired, the saw-blade may be automatically fed along to the grinding-wheel, for which purpose I have secured to the holder carrying the saw-blade a toothed rack or ratchet-bar, M², with the teeth of which, as the

gate-frame carrying the grinding-wheel descends, a pawl, N, hung to such frame, engages and carries the saw-blade holder along to the grinding-wheel.

In a machine having the features which have been hereinabove explained, circular as well as straight saw-blades may be sharpened by the revolving grinding-wheel, by simply hanging the circular saw to the holder B in a suitable position for being operated upon by the grinding-wheel, and in such a manner that the several teeth of the saw can be brought to the grinding-wheel for being acted upon by it, and giving any degree of hook or angle to the teeth.

In Figure 3 of the drawings is shown a holder for circular saws. This holder is attached to holder B, and it has a stud, upon which the saw-blade revolves, arranged to slide in its slot, by means of which any sized saw may be presented to the wheel for grinding. This holder, when secured to holder B, is vertical in position, and as the holder B is arranged to have a horizontal or lateral motion, it is readily apparent that the saw can be presented to the grinding-wheel in such a manner as to accommodate any angle of tooth. It may be also here observed that by the use of the holder B, a circular-saw blade can be readily rounded off, and the teeth made perfectly true, and of equal length, thus obviating the necessity of doing it on the saw-spindle.

In Figure 4 a section of a grinding-wheel is shown, which wheel is made with its central portion of cast iron, and its periphery surmounted by a suitable thickness of emery vulcanite to impart the proper grinding surface to the wheel.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

The sliding holder B and adjustable rail C, in combination with the grinding-wheel D, constructed and arranged to operate as herein described, for the purpose specified.

E. B. RICH.

Witnesses:

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