H. M. Wentworth,

Grinding Machine.

NO. 112,873. Patented Mar. 21. 1871.

Fig 1.

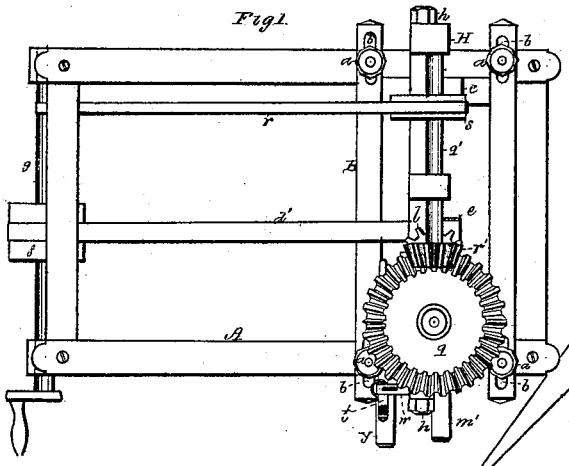


Fig 3.

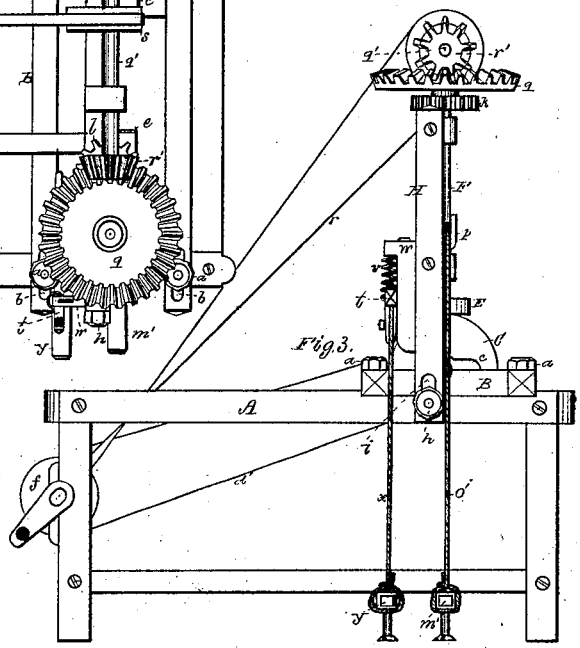


Fig 2.

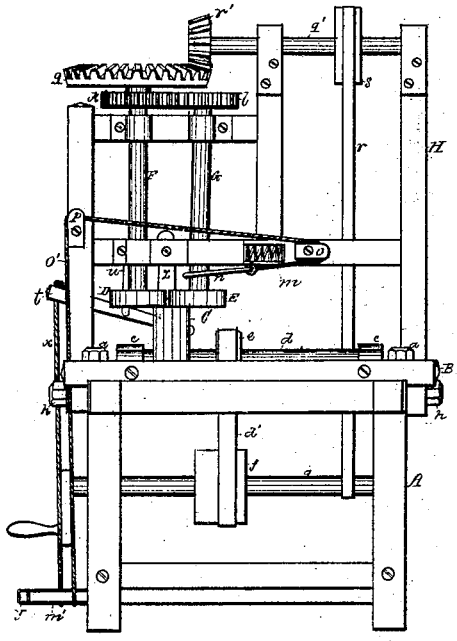
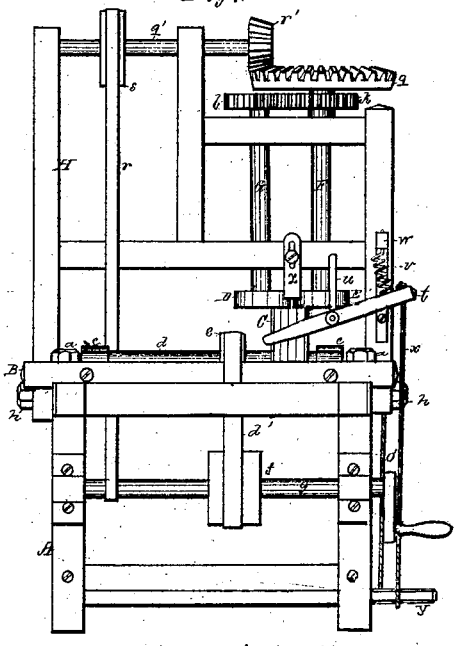


Fig 4.



Witnesses.

S. N. Piper

L. N. Müller

H. M. Wentworth

by his attorney

R. H. Eddy

United States Patent Office.

HEBRON MAYHEW WENTWORTH, OF GARDINER, MAINE.

Letters Patent No. 112,873, dated March 21, 1871.

IMPROVEMENT IN MACHINES FOR GRINDING CARRIAGE-SPRINGS.

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

To all persons to whom these presents may come:

Be it known that I, HEBRON MAYHEW WENTWORTH, of Gardiner, of the county of Kennebec and State of Maine, have invented a new and useful Machine for Grinding Carriage-Springs and other articles of like character; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view;

Figure 2, a front elevation;

Figure 3, a side elevation; and

Figure 4, a rear elevation of the said machine.

In such drawing—

A denotes the main frame, which supports not only the adjustable carriage B of the grinding-wheel, but the adjustable feed-wheel frame H.

The carriage B, arranged, as represented, on and across the top of the frame A, is fastened thereon by means of clamp-nuts and screws, as shown at *a a a a*, the screws being projected upward from the frame A and through slots *b*, made lengthwise on the carriage B, such admitting of the said carriage being moved and adjusted in position on the frame A transversely thereof.

The said carriage B supports in suitable boxes, *c c*, the shaft *d* of the grinding-stone or wheel C, whose periphery has formed in it a series of channels or grooves which are parallel to each other and extend entirely around the stone or wheel.

The endless belt *d'* going around a pulley, *e*, on the shaft *d*, and a pulley, *f*, on a driving-shaft, *g*, serves to transmit rotary motion from the pulley *f* to the pulley *e*, and thereby put the grinding-wheel in revolution.

Directly over the grinding-wheel are two feed-wheels, D E, fixed on the lower ends of vertical shafts, F G, supported in an upright frame, H. The said frame is to be secured to the main frame A so as to be adjustable vertically relatively to it, the two being connected by clamp-screws and nuts, shown at *h h*, each of the screws going through a slit, *i*, made in the upright frame.

The two shafts F G, at or near their upper parts, are connected by a set of spur-gears, *k l*, the shaft G being applied in its bearings so as to be capable of swinging away from the shaft F, it being pressed toward the said shaft F by a spring, *m*, and provided with means by which it may be drawn away from the said shaft F in order to move the feed-wheel E away from the feed-wheel D.

Such means consist of a yoke or link, *n*, a treadle, *m'*, and a line, *o'*, fastened to the said treadle and the yoke, and going around guides arranged as shown at *o p*.

A bevel-gear, *q*, fixed upon the upper end of the shaft F, engages with a bevel-pinion, *r'*, fixed on one end of a horizontal shaft, *q*, supported by the frame H.

An endless belt, *r*, going around a pulley, *s*, and the driving-shaft, serves to impart rotary motion to the shaft F, and, consequently, to aid in effecting rotary motion of the feed-wheel D.

At the rear of the frame H and the grinding-wheel C a lever, *t*, is arranged and supported on a pitman, *u*, as represented, the outer arm of the lever being fixed to the lower end of a spring, *v*, depending from a bracket, *w*.

A rope, *x*, extends down from the said arm of the said lever to a treadle, *y*, arranged as represented.

In rear of the bite of the feed-wheels, and fixed to the frame H so as to be capable of being adjusted vertically, is an abutment, *z*, which, with the lever *t*, serves to support and steady a spring and bear it upon the grinding-wheel. The said lever *t* I term the presser.

This machine is to grind or reduce a carriage-spring, a leaf thereof, or a long flat bar on either of its two opposite edges, generally speaking, to round such edges. To accomplish this the spring or leaf, as the case may be, to be dressed or reduced, is to be inserted in the bite of the feed-wheels, which is to be supposed to be directly over some one of the grooves of the periphery of the grinding-wheel.

As the spring may be fed along by the wheels it will pass underneath and against the abutment and over the inner arm of the presser-lever, which, by being forced upward, will force and serve to maintain the spring in contact with the grinding-wheel; such wheel being supposed to be in rapid revolution, will reduce the edge of the spring or leaf, as may be required.

When the stone may have become too much worn in one groove the supporting-carriage B may be moved laterally on the frame A, so as to bring a fresh groove of the stone underneath the bite of the feed-wheels. So, as the stone may become reduced in diameter, the feed-wheels may be lowered and adjusted to it by lowering their sustaining-frame.

From the above it will be seen that the operative parts for feeding and supporting the spring relatively to the grinding-wheel or stone are adjustable, so as to enable them to be brought into their proper relations with the stone as it may become worn from time to time.

I claim—

1. The combination and arrangement of the carriage B and the frame H, provided with adjustments, as described, with the main frame A and with the grinding and feed-wheels C D E, arranged in the adjustable carriage and frame H, as set forth.

2. The combination and arrangement of abutment *z* and the presser *t* with the grinding and feed-wheels C D E, arranged, supported, and provided with mechanism for revolving them, all being substantially as described.

HEBRON MAYHEW WENTWORTH.

Witnesses:

JOSIAH MARCY,

P. N. BARSTOW.