

W.W. REYNOLDS. GRADUATING MACHINE

No. 121,420.

Patented Nov. 28, 1871.

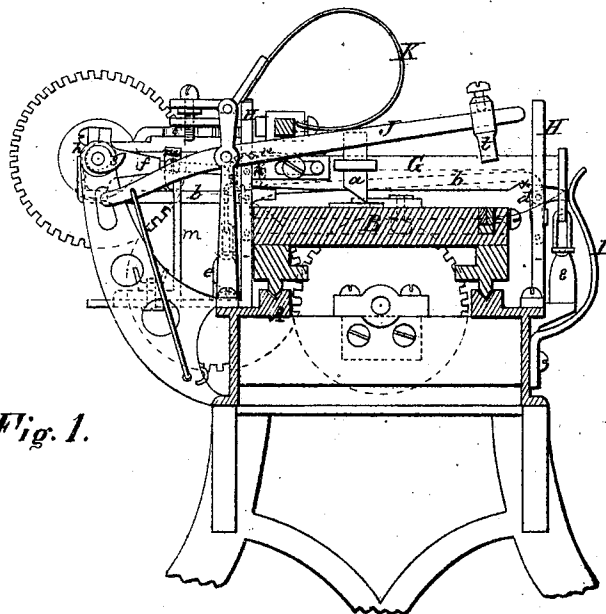


Fig. 1.

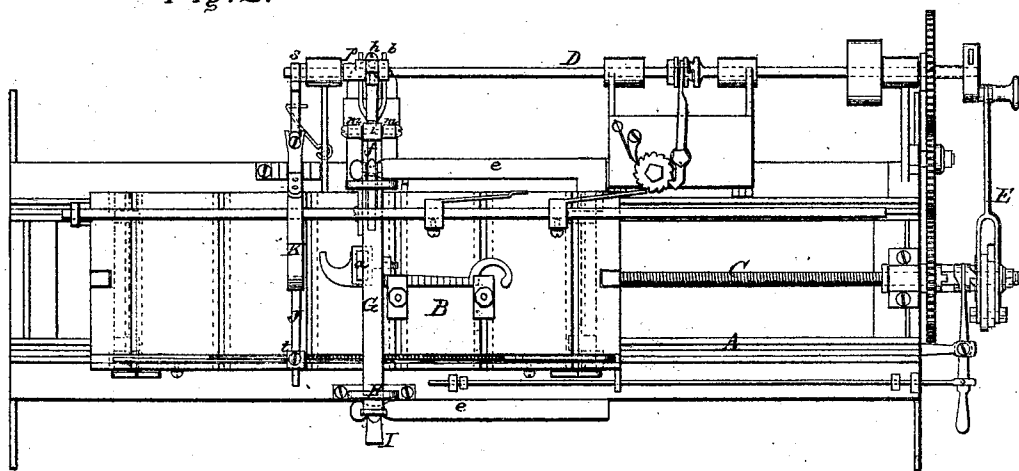


Fig. 2.

Witnesses.

Villette Anderson.
H. D. Lane

Inventor.

W. W. Reynolds,
Chipman Hosmer & Co.,
Atty.

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Fig. 3.

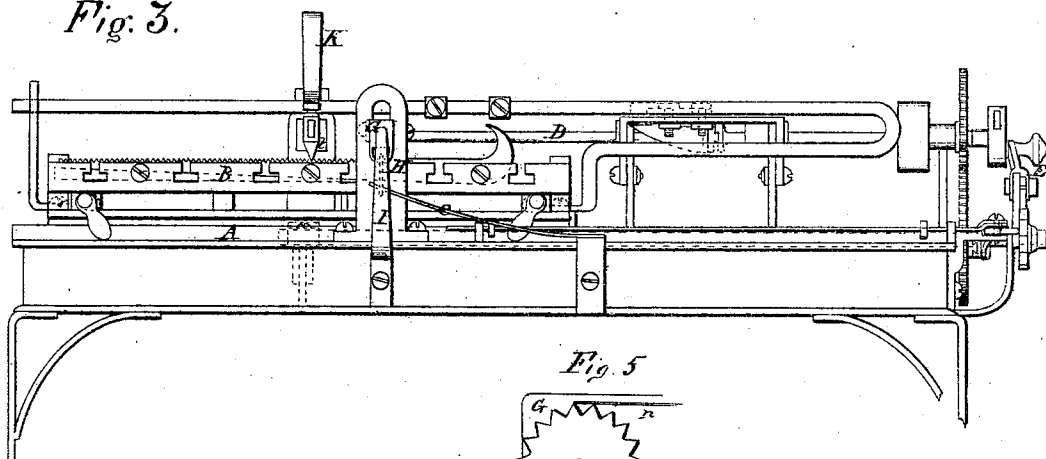


Fig. 5

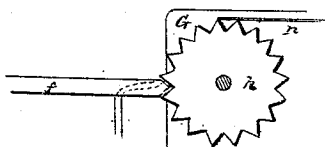


Fig. 4.

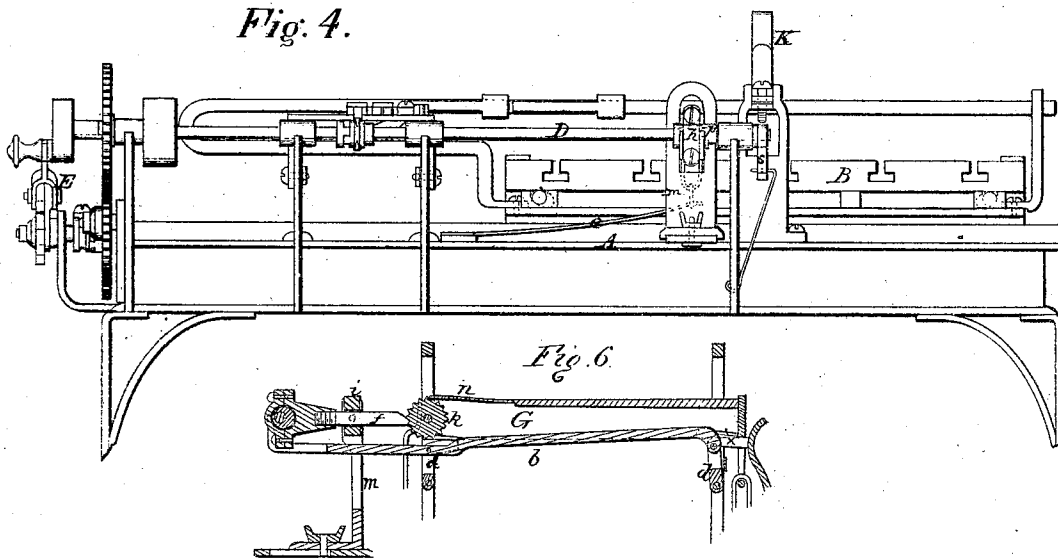
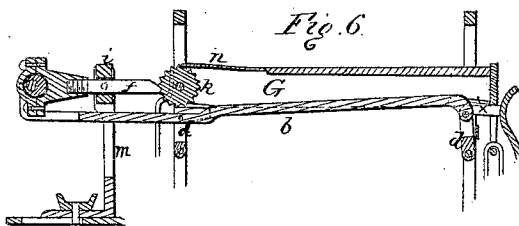


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM WELLS REYNOLDS, OF BRANDON, VERMONT.

IMPROVEMENT IN MACHINES FOR GRADUATING SCALE-BEAMS.

Specification forming part of Letters Patent No. 121,420, dated November 28, 1871.

To all whom it may concern:

Be it known that I, WILLIAM WELLS REYNOLDS, of Brandon, in the county of Rutland and State of Vermont, have invented a new and valuable Improvement in Machine for Making Scale-Beams; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a central vertical cross-section of the machine. Fig. 2 is a top view of the same. Fig. 3 is a side view. Fig. 4 is a side view. Fig. 5 is a detached view of cylinder *k* and spring *n*, hereinafter described. Fig. 6 is a detail view.

The nature of my invention consists in the construction and arrangement of a machine for making scale-beams and notching weight-masters' beams, as will be hereinafter more fully set forth.

A represents the bed of my machine, provided with a slide-table, B, moved by a screw, C, which is turned by a ratchet-and-crank motion, E, attached to the arbor D, which receives the power. This arbor D is situated at one side of the machine, and is elevated so as to be on a level with the tool-bar G over the work on the table B, where the work to be done is secured, thus enabling me to transmit the power directly to the tool-bar G from the arbor, dispensing with gear or other machinery, thereby making the whole less complicated, and, consequently, more durable, and doing the work more accurately. The tool-bar G, which has the cutter *a* attached to one side, is grooved out on the under side to admit of a rod or bar, *b*, passing across the table without interfering with the work. At each end and on each side of this groove is an inclined plane, *x*, resting on bent or elbow-levers *d d*, to which the rod or bar *b* is attached, so that when the tool-bar is propelled by its propelling-lever it is depressed gradually by the springs *e e*, making the marks deeper as it proceeds. At the back end of the tool-bar G is a propelling-lever, *f*, the end of which runs on an eccentric, *h*, on the power-arbor D, the other end engaging with a cylinder, *k*, in the end of the tool-bar, said cylinder having slots or grooves cut in its sides, of various depths, causing the different lengths of dots or marks on the side of the

scale-beam. The propelling-lever is supported by an oscillating block, *i*, through which it passes, said oscillating block being held in position by a slide-rest, *m*. The propelling-lever being supported in the middle gives the end which engages with the cylinder *k* in the end of the tool-bar an up-and-down motion sufficient to turn the cylinder, so that the next motion of the lever will engage with said cylinder in the next slot or groove, giving a different length, dot, or mark. I also place a spring, *n*, on top of the tool-bar in such a position as to engage with said cylinder and hold it at rest when the propelling-lever is disengaged. The bent or elbow-levers *d d*, under the tool-bar, are attached to upright guards H H, through which the tool-bar passes. These levers are for the purpose of raising said tool-bar from the work when the table and work is moved by the screw C, said levers being worked by means of the rod or bar *b* running inside the tool-bar G back to the power-arbor D, where it engages with an eccentric, *p*, and accomplishes the object desired, the tool-bar at the same time being forced back by a spring, I, ready for another motion from the propelling-lever *f*. To notch weight-masters' or other wrought-iron beams the tool-bar G is removed. At the end of the power-arbor D is a cam, *s*, which engages with the short end of a lever or tool-handle, J, the long end of which is provided with a cutter, *t*, suspended over the bar to be notched, and raised by means of the cam S. It is thrown back upon the beam by the use of springs K with force sufficient to cut the notch the required depth. I also use the same cutter in the same position to mark the sides of the weight-masters' beams.

I claim as my invention—

1. The adjustable bearing *m*, with oscillating block *i*, in combination with the lever *f*, eccentric *h*, notched cylinder *k*, and tool-bar G, substantially as described.

2. The tool-bar G, grooved on its under side and provided with the inclined planes *x x*, in combination with the bent or elbow-levers *d d* and bar *b*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM WELLS REYNOLDS.

Witnesses:

H. C. COPELAND,
E. H. GRISWOLD.

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