

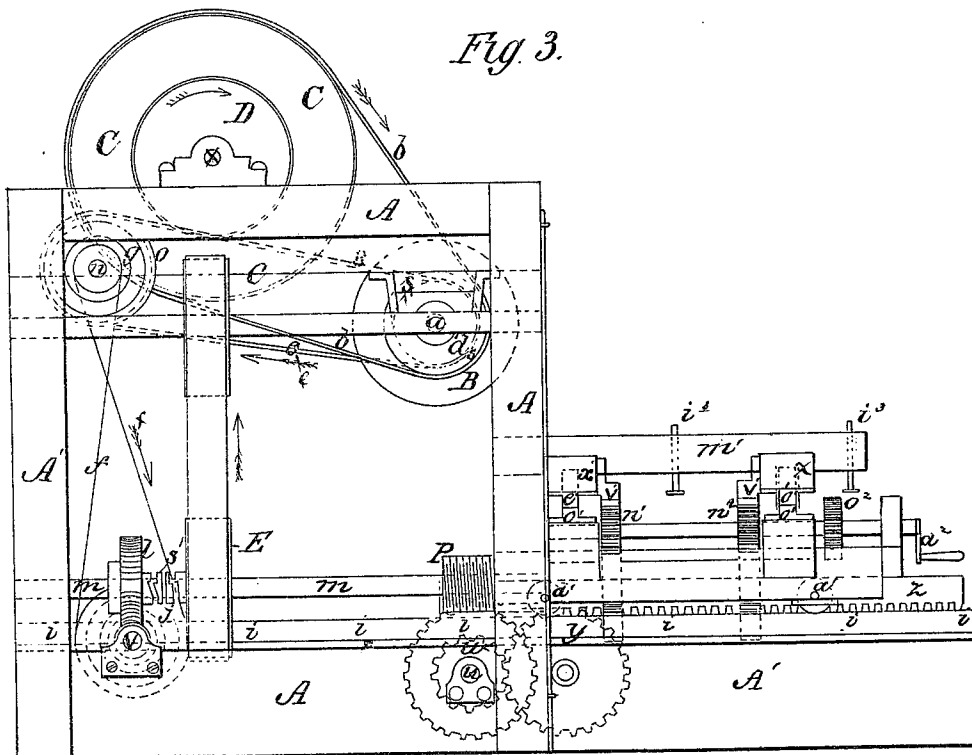
Sheet 2, 2 Sheets.

I. E. Baldwin.

Stone Sawing Mach.

N^o 91,507.

Patented Jun. 22, 1869.



Witnesses,

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LLOYD E. BALDWIN, OF WINDHAM, CONNECTICUT, ASSIGNOR TO
THE CONNECTICUT RIVER QUARRY COMPANY.

Letters Patent No. 91,507, dated June 22, 1869.

IMPROVED STONE-SAWING MACHINE.

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, LLOYD E. BALDWIN, of Windham, in the county of Windham, and State of Connecticut, have invented a new and useful Improvement in Stone-Sawing Machines; and I declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming a part of this specification.

In the drawings—

Figure 1 is a front elevation of my stone-sawing machine.

Figure 2 is a plan view.

Figure 3 is a side elevation.

The same letter indicates the same parts in all the drawings.

The letter A designates the frame.

A' designates the wooden sleepers, upon which are laid the metal tracks *i i*.

B is the saw-blade, which, for use in this machine, may be made either of iron or steel, with or without teeth, or it may be made of other metal, copper, for instance, into the edge of which may be embedded hard precious stones, preferably diamond, which, projecting from and above the edge of the metal disk, will act as teeth.

When hard precious stones are used in the manner just described, they must be so embedded in the metal disk, and of a proper size to cut a kerf in the stone wide enough to clear the body of the disk from contact with the stone.

The saw-disk B is hung up on the shaft *a*.

s is a belt-pulley upon this shaft, which is driven by the belt *b* from the wheel C, upon whose shaft *x* is the pulley D, which is belted to any motive-power.

The power which mainly runs the whole machine is applied here.

Upon the shaft *a* is a belt-wheel, *d*, which, by means of the belt *e*, drives the slightly larger belt-wheel *o*, which is fixed upon the shaft *n*.

Upon the other end of the shaft *n* is fixed the cone-pulley *g*, which, by means of the crossed belt *f*, drives the cone-pulley *j* upon the shaft *v*, to which it is fixed.

Upon the shaft *v* is fixed a worm, which drives the worm-wheel *l*, which is loose upon its shaft *m*.

s' is a clutch, which can slide sidewise upon the shaft *m*, but must always revolve with it.

It will be readily understood, without further explanation than the drawings afford, that by means of this clutch the shaft *m* can be driven by the worm-wheel *l*, or by the loose belt-wheel E, which moves in an opposite direction from the worm-wheel *l*.

It may as well be explained here that the shaft *m* is propelled by the worm-wheel *l*, when a stone is being sawed, and that after a cut is finished, the wheel E is

made to propel the shaft, and to run back the stone for another cut, much more rapidly than it was fed up to the saw while being cut.

Upon the other end of the shaft *m* the worm *p* is fixed, which drives the worm-wheel *r* upon the shaft *u*.

Upon the further end of the shaft *u* are fixed the pinion *w* and its duplicate, which gear into and propel the gear-wheel *y* and its duplicate *y'* upon the same shaft.

These duplicate gear-wheels work, in the duplicate racks *z* and *z'*, which are fixed to the bottom of the cross-beams *c' c'*, and effect the backward and forward movement of the adjustable bed upon which the stone is laid to be sawed.

This adjustable bed runs backward and forward upon the tracks *i i*, and is supported upon the truck-wheels *a' a'*.

If desired, I can use a screw-feed here quite as well.

These truck-wheels are hung in the bottom of two stout wooden beams *b' b'*, which are fastened together by two other stout beams *c' c'*, laid across the beams *b' b'* transversely.

On the tops of the cross-beams *c' c'* are laid two metal tracks *o' o'*, upon which run the truck-wheels *e' e'*, which are hung in and support the two beams *x' x'*, which are, in their turn, joined by cross-beams.

To the beams *x' x'* are fixed the racks *v' v'*, which gear into the gear-wheels *n' n'*, which, in their turn, gear into small pinions not readily seen in the drawings upon the shaft *i'*, upon the front end of which shaft *i'* is the gear-wheel *o'*, gearing into the pinion *i'*, upon whose shaft is the handle *a''*; and it will be readily understood, without more particular description, that, by means of said handle *a''*, the top of the adjustable bed bearing the stone can be readily adjusted sidewise to the right or left.

On the tops of the beams *x' x'* are four beams, of which two, *m' m'*, are fastened to the two beams *x' x'*. The other two, *m'' m''*, are between the beams *m' m'*. They have grooves cut in their under side, which allow them to slip on the beams *x' x'* to the right or left, as convenience dictates.

In each of the beams *m' m' m'' m''* are one or more levelling-screws *i' i'*, which screw up through the beams by hand, and are used for levelling the stone and holding it in place.

The letter *x'* designates the pipes which feed water to the saw, when cutting, to keep it cool, and assist its action.

I think that without further explanation, any person fairly skilled in the business to which my improvement appertains, will understand that it is a self-feeding machine, will understand its construction and working, will understand that power is applied to the wheel D in the direction indicated by the arrow, and

that power is applied to the loose wheel E in the direction indicated by the arrow, and will understand that the clutch *s* must be operated to the one side or the other, as it is desired to reverse the motion of the adjustable bed upon the tracks *i i*; also, that the rapidity of the feed-motion can be regulated by means of the cone-pulleys *s* and *j* and the connecting-belt *f*; and, also, how to adjust a stone upon the bed.

I am well aware that each and all of the individual parts of my machine have been used for various purposes before, but my invention consists in the improved combination of the whole, and in various sub-combinations, all as applied to sawing stone and other materials.

I claim as my invention—

1. The adjustable bed or carriage running upon the tracks *i i*, being a combination of the truck-wheels *a' a'*, beams *b' b'*, cross-beams *c' c'*, with the duplicate racks *z z'* attached thereto, and gearing into the gear-wheels *y y'*, tracks *o' o'*, truck-wheels *e' e'*, beams *x' x'*, fixed top beams *m' m'*, and sliding top beams *m² m²*, containing one or more levelling-screws *i²*, the whole constructed and operating substantially as described, and applied to a machine for sawing stone or other material.

2. The combination of machinery herein described for producing an adjustable feed-motion of the adjustable bed, consisting of the cone-pulleys *g* and *j*, with the connecting-belt *f*, shaft *v*, worm *p*, upon shaft *n*, the

worm-wheel *l*, reversing-clutch *s'*, loose wheel E, shaft *m*, worm *p*, worm-wheel *r*, shaft *n*, pinion *w*, and its duplicate gear-wheels *y* and *y'*, and the racks *z* and *z'*, all constructed and operating substantially as described, for the purposes described.

3. The combination of the parts mentioned in the first and second claims, with the shaft *n*, belt-wheel *o*, belt *e*, belt-pulley *d*, shaft *a*, and a saw, B, composed of an iron or steel plate, with or without teeth, or of copper, or other suitable material, with diamonds or other hard precious stones, embedded in the edge, and acting as teeth, the whole constructed and operating substantially as described, and applied to sawing stone, or other materials.

4. The levelling-screws *i²*, more or less in number, in combination with the adjustable bed, constructed and operating as described, for the purposes described.

5. The combination of the adjustable bed and the several devices for producing feed-motion in a stone-sawing machine, as specified in claim second, substituting, if desirable, a screw and bevel-gear wheel in lieu of the rack and pinion on shaft *n*, substantially as described.

Dated April 26, 1869.

LLOYD E. BALDWIN.

Witnesses:

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