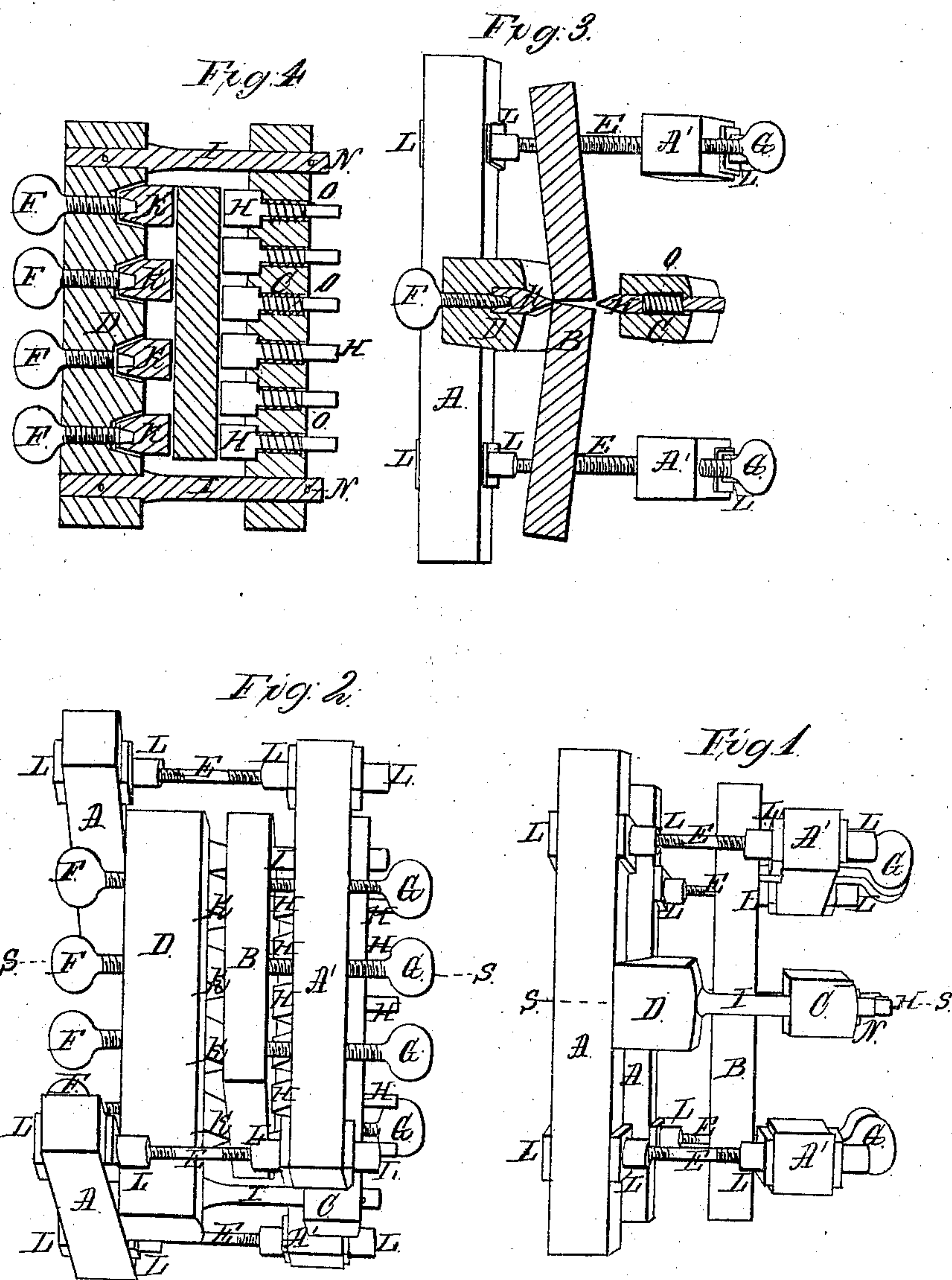


I. Merrill,
Dressing Stone.

No 16,878

Patented Mar. 24, 1857.



Witnesses:
Luther W. Packard
Ambrose Gilman

Inventor:
I. Merrill

UNITED STATES PATENT OFFICE.

IRA MERRILL, OF SHELBURNE FALLS, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR BREAKING SLABS OR BLOCKS OF STONE INTO REGULAR FORMS.

Specification forming part of Letters Patent No. 16,878, dated March 24, 1857.

To all whom it may concern:

Be it known that I, IRA MERRILL, of Shelburne Falls, in the town of Shelburne, in the county of Franklin and State of Massachusetts, have invented a new and useful Machine for Breaking Stone into Regular Forms for Flagging and Building Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, which are made a part of this specification, in which—

Figure 1 is an end view. Fig. 2 is a side view. Fig. 3 is a cross-section through S S of Fig. 2, and Fig. 4 is a cross-section through S S of Fig. 1.

The same letters and figures on the several drawings refer to like parts of the machine.

I construct the frame A A A A of timbers or iron of such size and strength as to sustain the power applied to it and connect the beams A' with the bed-pieces A by the iron rods E E E, set in slots in the ends of said beams and bed-pieces and held in their places by the nuts L L L L on each rod, respectively. Said rods and beams are movable when not fastened by said nuts for the purpose of adjusting the machine to the size and shape of the stone to be broken. The fulcrum-beam D is laid transversely across the bed-pieces A and is movable for the purpose of adapting it to the form and size of the stone to be broken.

Inserted into or secured to the beam D is the sectional spine or fulcrum K K K K, resting on the screws F F F F, attached to the fulcrum-beam D, and which are used to raise or depress the several sections of the fulcrum or spine, so as to adapt them to the under surface of the stone B. The lower parts of said sectional spine are beveled transversely to their upper edges, so as to permit them to rock sidewise in the direction of the length of said fulcrum-beam and adapt themselves to the unequal surfaces of the under side of the stone B.

G G G G are screws secured to the beams A', respectively, and worked by levers or wrenches in the ordinary way in sockets placed on the stone B, so as to produce a vertical pressure and leverage at the same time

on the stone B on the opposite sides of the fulcrum K K K K. The chisel-rack C is set directly above the stone B on the standards I I and parallel with the sectional fulcrum or spine and connected with the fulcrum-beam D by the standards, and so attached to them as to be easily removed or swung around when not in use. The chisels H H H H are set perpendicularly in the chisel-rack C and are held firmly against the upper surface of the stone B by spiral springs coiled around their shanks, as shown at O in Fig. 4 of the annexed drawings, the upper ends of said springs being fastened to the chisel-rack and their lower ends pressing against the shoulders of the chisels, forcing them downward.

To operate the machine, the nuts L over the screw-beam A' and the fastenings of the chisel-rack C are loosened, so as to permit the beam and rack to swing around so as more conveniently to receive the stone. The stone is then placed horizontally across the sectional spine at the place where it is intended to be broken. The screw-beam A' is then replaced and the screws G G G G, attached to each of the beams A', are turned down into the sockets placed on the stone, (not shown in the drawings,) so as to produce a powerful vertical cross-strain on the stone over the fulcrum K K K K. The chisel-rack C is then adjusted over the stone, the chisels being so placed as to be directly opposite the edges of the sectional spine vertically. They are then driven against the upper surface of the stone by percussion, the effect of which operation being to produce a lateral strain on the upper surface of the stone in a direction at right angles to the length of the fulcrum while the stone is being subjected to the vertical pressure produced by the screws G G G G and while balanced across the sectional spine, the weight of the stone assisting the force applied and at the same time to weaken the stone at the time of the greatest strain by the slight channeling produced by the action of the edges of the chisels, so as to break the stone accurately without the aid of holes or mortises and wedges, as by the ordinary method.

Having thus described my improved machine, I do not wish to be understood as claim-

ing breaking stone by pressure or percussion, or by both combined, independently of the mechanism employed; but

What I do claim as new, and for which I desire Letters Patent, is—

Breaking stone into regular forms by pressure and percussion when both are applied at

the same time to the slab or block of stone to be broken by means of the mechanism constructed and arranged as above set forth.

IRA MERRILL.

Witnesses:

LUTHER M. PACKARD,
AMBROSE GILMAN.