

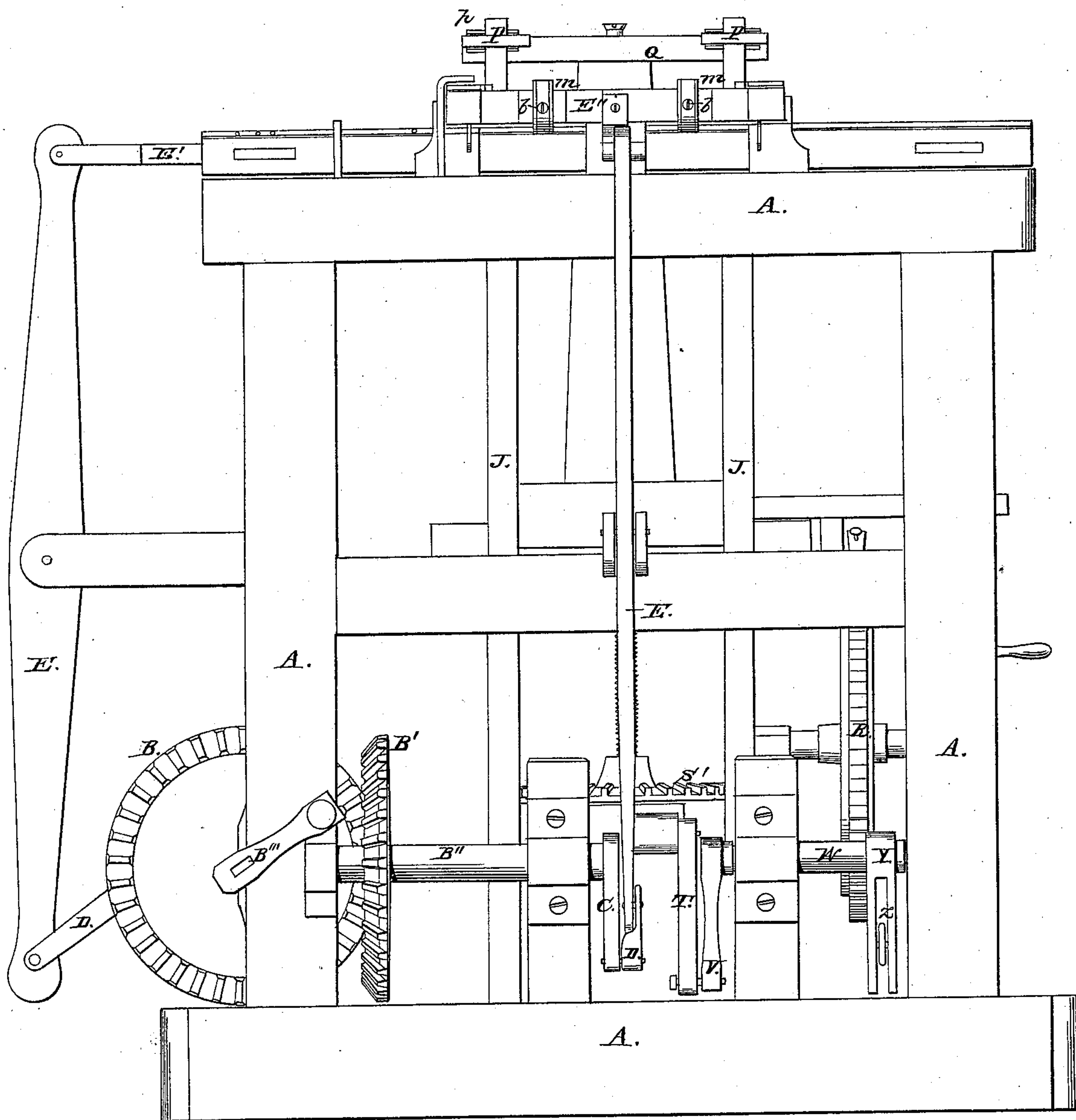
C. A. Mills,

Sawing Stone.

N^o 5,299

Patented July 8, 1856.

Fig. 1.

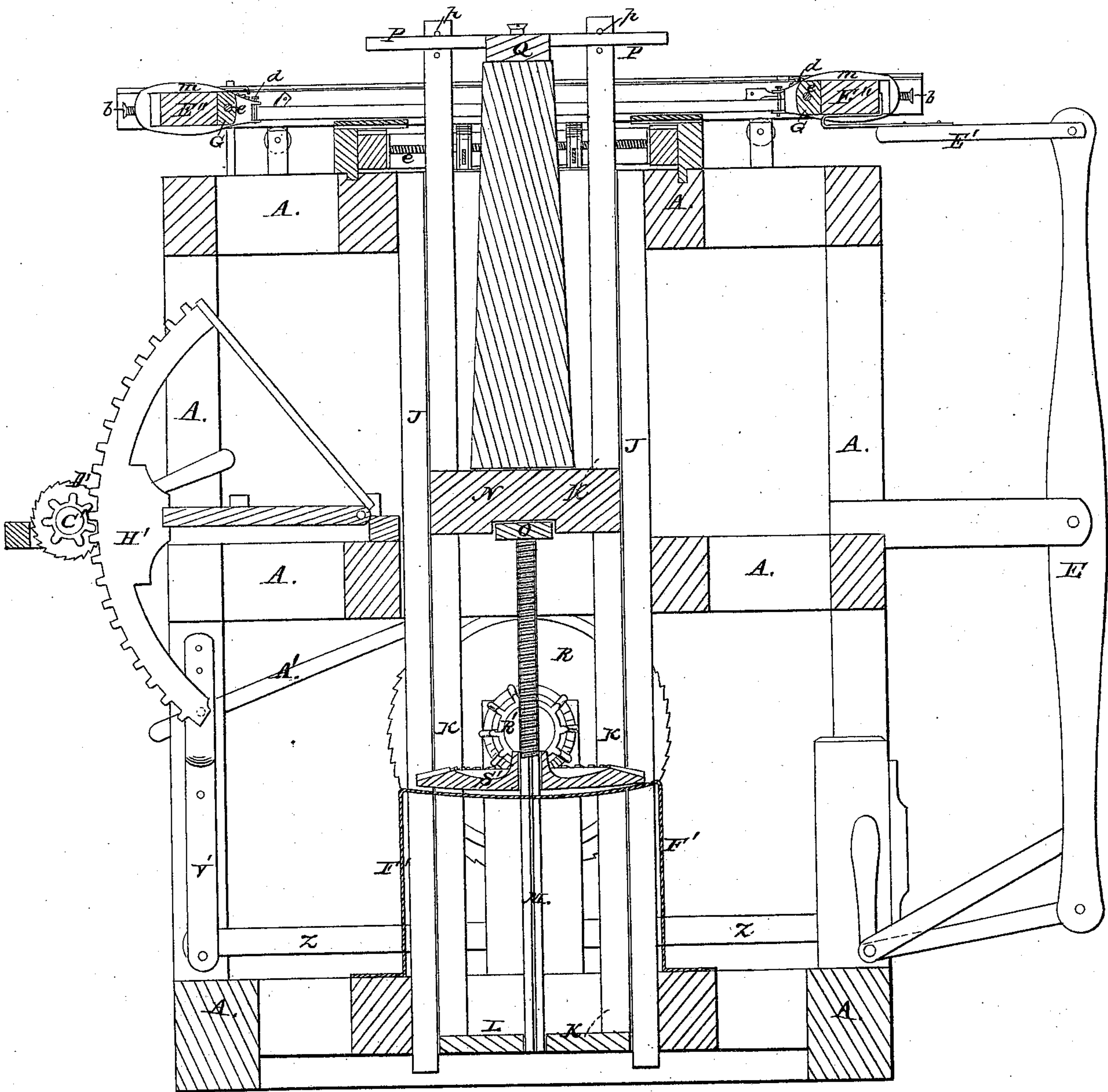


C. A. Mills,
Sawing Stone.

N^o 15,299.

Patented July 8, 1856.

Fig. 2.

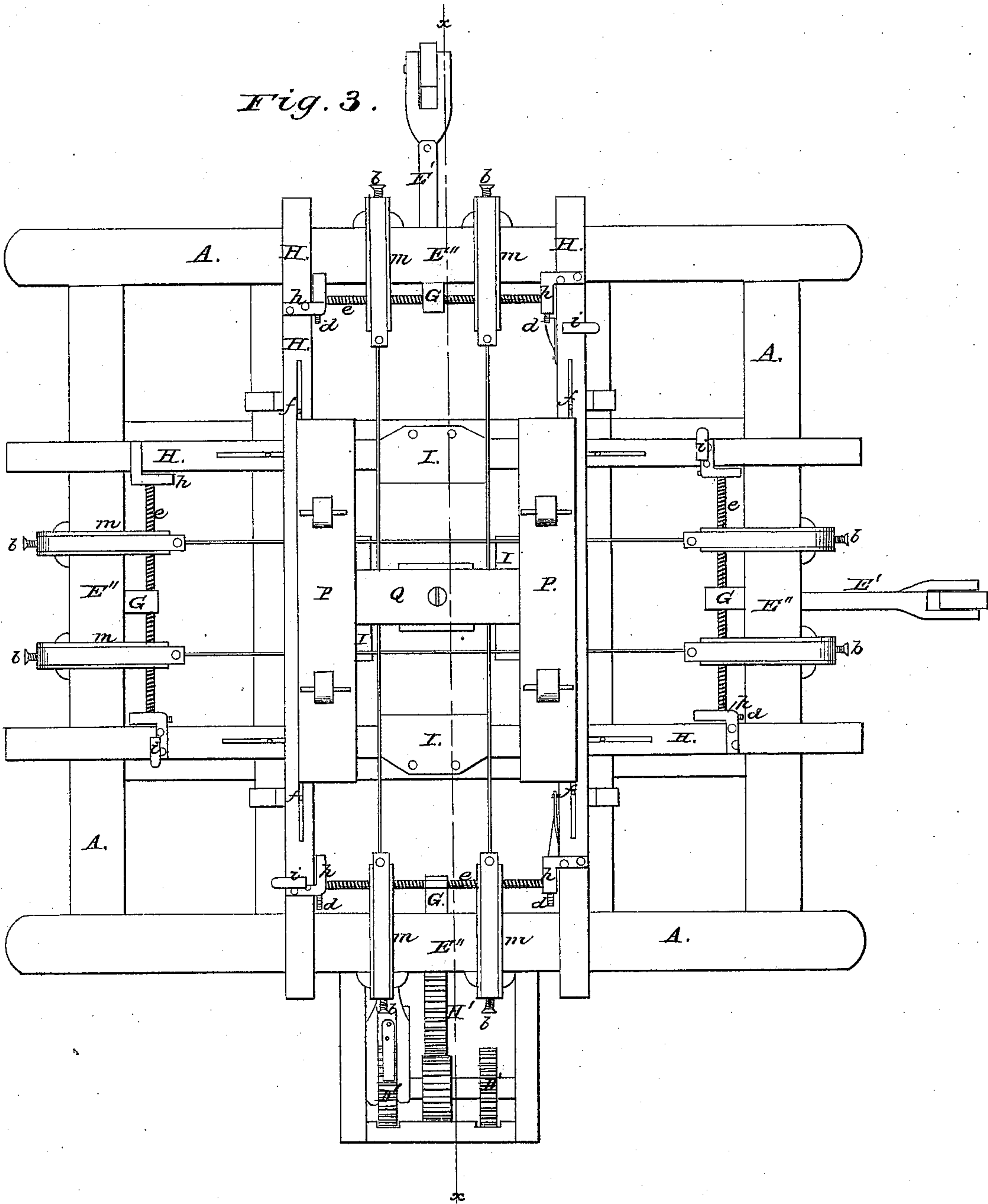


C. A. Mills,
Sawing Stone.

No. 15,299.

Patented July 8, 1856.

Fig. 3.



UNITED STATES PATENT OFFICE.

C. A. MILLS, OF DUBUQUE, IOWA.

STONE-SAWING MILL.

Specification of Letters Patent No. 15,299, dated July 8, 1856.

To all whom it may concern:

Be it known that I, C. A. MILLS, of Dubuque city, in the county of Dubuque, in the State of Iowa, have invented a new and
5 Improved Stone-Sawing Mill; and I do hereby declare the following a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in
10 which—

Figure 1, is a front elevation; Fig. 2 a vertical section through $x-x$ of Fig. 3, and Fig. 3 a plan or top view of same.

To enable others skilled in the art to make
15 and use my invention I will proceed to describe its construction and operation.

A, A, A is the frame work to which the working power is attached. Two bevel-gear wheels, B, B', are then arranged at
20 right angles to each other. At the outer ends of shafts B'' and B''' the cranks C are attached, communicating with the pitmen D and the working beams E; the working beams are hung upon their centers to
25 a part of the frame work A where the work is received and delivered when finished, their upper ends connecting with the outer ends of the saw frames by means of the connecting rod, E'. The saws, though the same
30 as generally used are attached to and braced by the frames substantially as follows. I place collars, m , on the cross pieces E'' of the saw frames, which pieces are slotted to allow their passing freely from side to side.
35 Around and upon the center of said collars are placed the stirrups or straps of attachment for each end of the saws. Near the center of the outer extremities of the collars set screws, b , work in and through said
40 straps adjusting the saws at pleasure. Through the inner ends of the collars nuts, G, are introduced for the purpose of supporting the shafts, e , of the ratchet wheels, d , said wheels being always upon the outer
45 ends of the shafts, having their boxes in the sides of the frames and firmly attached thereto. The shafts supporting the ratchet wheels have a right hand screw cut their entire length, their inner ends working by
50 journals into the boxes, G, at the inner center of the cross pieces of the saw frames. Upon the top of these frames slide the feed bars, H, slotted near their ends, within which slots are the supporting pins, f . On
55 the inner sides of said bars are firmly secured the dogs, h ; upon the outer sides the

knuckles, i , holding the feed bars firmly to their places. The outer edges of these bars have holes at or about one inch apart for the regulation of the entire stroke of the frames. 60 Said holes knuckle and pin are diagonally opposite the sides and ends of the frames. Directly beneath and upon separate frames are the troughs, I, for holding sand, as hereafter described. 65

Through the center of the frame work, A, pass the fenders or guides, J, for the stone supporting carriage K, K, K, K; said carriage is of an oblong square form, the corner timbers acting as guide rods and extend- 70 ing above the saw frames. The bottom end of the carriage has a plate, L, filling the entire space of the carriage, in the center of which works the perpendicular elevating feed shaft M, the upper part of which is a 75 screw working through the beam, O, hereafter described. Near the center of and firmly attached to the carriage is the plate N; directly beneath this plate passes the beam, O, through the center of which by 80 means of a nut works the elevating shaft.

N is the platform upon which rests the stone to be worked. I now put across the upper ends of the guide bars, J, of the supporting carriage the cross bars, P, with 85 guide pins, p , to raise and lower the same at pleasure. At the center of these bars I attach them together by a third bar Q. Through or near the middle of this bar one or more set screws are used for the purpose 90 of holding firmly the upper end or slide of the stone to be worked or sawed. Upon the bottom of the main frame is the ratchet wheel R; on the inner end of the shaft supporting this wheel works the small beveled 95 pinion, R' into another corresponding bevel wheel S' about three times the diameter of the first. The wheel S' is hung upon the upright elevating shaft M, the lower half of which is grooved. This horizontal wheel 100 works freely upon the lower half of the elevating shaft having a box and tongue on its inside, the latter working into the groove on said shaft, so that the wheel and shaft will revolve together. I then attach to the 105 working beam, E, a pitman T connecting with the crank V, upon a rock shaft W. On the outer end of this shaft, I attach the arm V, slotted nearly its entire length, through which pass a grade pin and connecting rod Z. This rod passes under the 110 ratchet wheel to the opposite side of the

frame, and connecting therewith the upright arm V' slotted at each end with gage pins at the upper end. At this end is the dog A' working the ratchet wheel which
5 moves the carriage.

I erect upon the frame the segment jack H', and its frame work with pinion C' and ratchets D' for the purpose of receiving the stone and elevating it to a perpendicular
0 position when desired, or letting it down to a horizontal position to be removed from the mill. Now by turning the shafts upon which the bevel wheels are attached, being the power wheels, the cranks and pitmen are
5 put into action; the working beams with the connecting rods at the upper ends put the saw frames into motion; then the feed plates upon the frames are brought into contact with the feed knuckles, the pins f'
0 in the sides of the plates coming against said knuckles i, bring the dogs, h, on the inner side into action with the ratchet wheels and screwed shafts, e; they acting upon the collar by their nuts draw the saws
5 outward to any point desired, only one plate acting at a time the motion being alternate, the saws working through the sand troughs,

I, so as to receive fresh sand at each half stroke. The stone is moved up to the saws by the rock shaft, having its motion com- 30 municated to it by the working beam E. The connecting rod, Z, upon its arm puts the upright arm in motion, by which the ratchet wheel and pinion are moved by the dog, A'. This operates the horizontal wheel, 35 S', supported in position by the frame F'. This wheel then turns the screwed shaft by which the stone is fed to the saws at pleasure.

What I claim as new and desire to secure 40 by Letters Patent is—

Operating the saws when arranged upon the top of the frame, A, so as to work at right angles to each other as above set forth, by means of the feed plates, H, and 45 knuckles, i, in combination with the mechanism for elevating the block of stone—when the same is constructed, arranged and operated in the manner and for the purpose above described.

C. A. MILLS.

Witnesses:

JOHN S. HOLLINGSHEAD,
W. A. BOSS.