(Model.)

3 Sheets—Sheet 1.

W. PERKINS.

STONE DRESSING MACHINE.

No. 291,078. Patented Jan. 1, 1884.

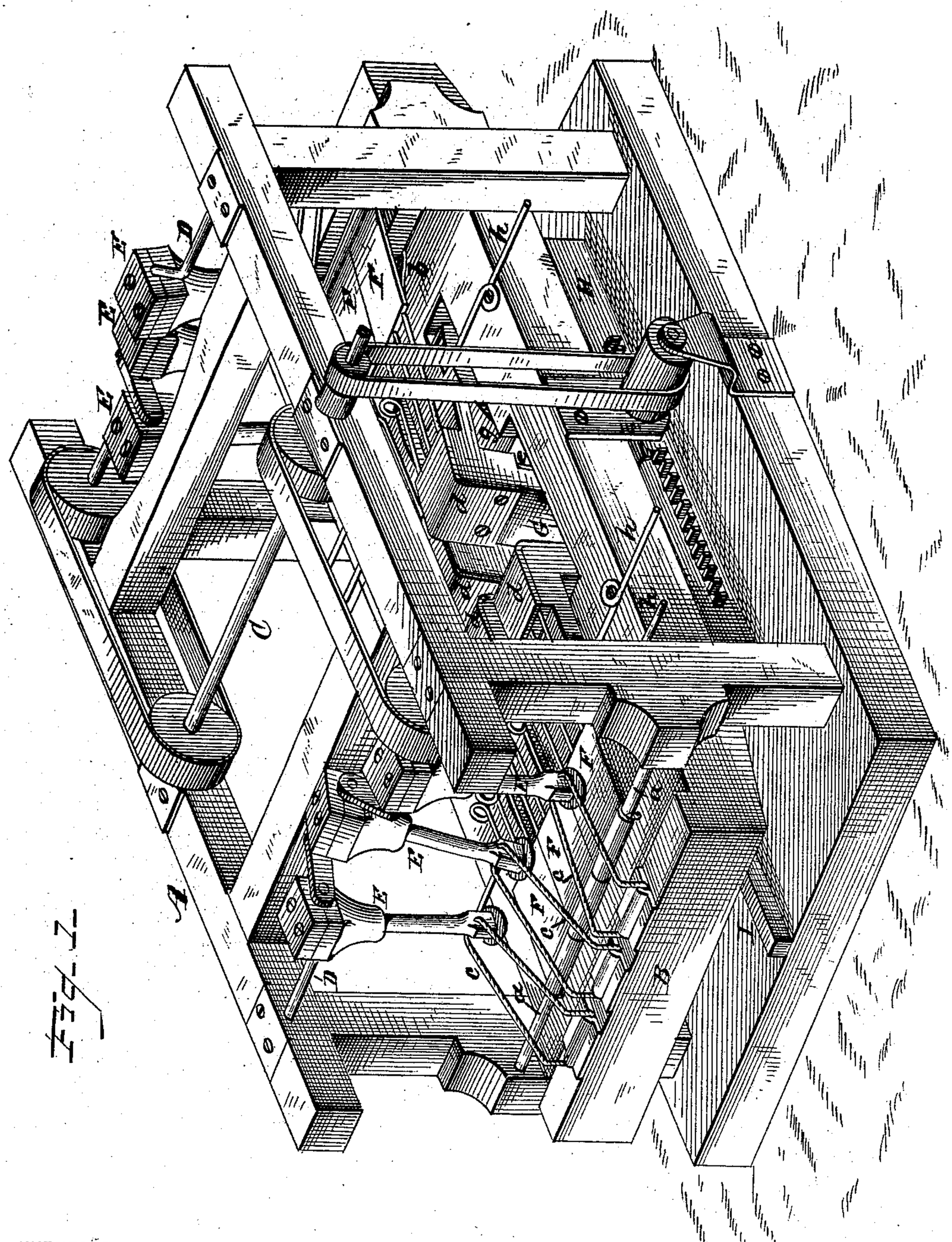

FIG. 1.

WITNESSES

H. L. Durand

N. E. Oliphant

INVENTOR

Wheeler Perkins

per Chas. H. Fowler

Attorney.

(Model.)

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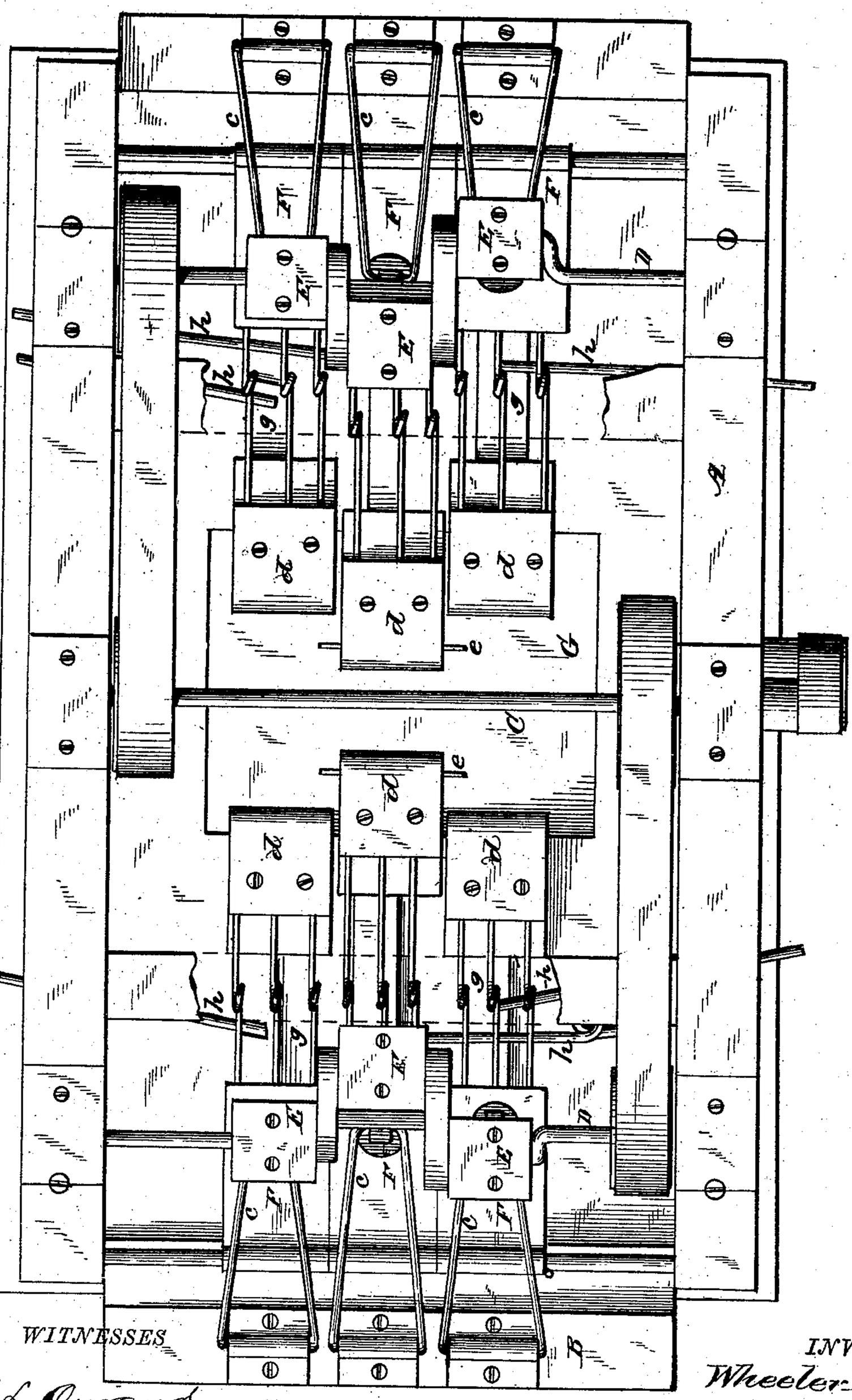

WITNESSES

F. L. Durand

N. E. Oliphant

INVENTOR

Wheeler-Perkins.

per Chas. H. Fowler

Attorney

(Model.)

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W. PERKINS.

STONE DRESSING MACHINE.

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Fig. 3.

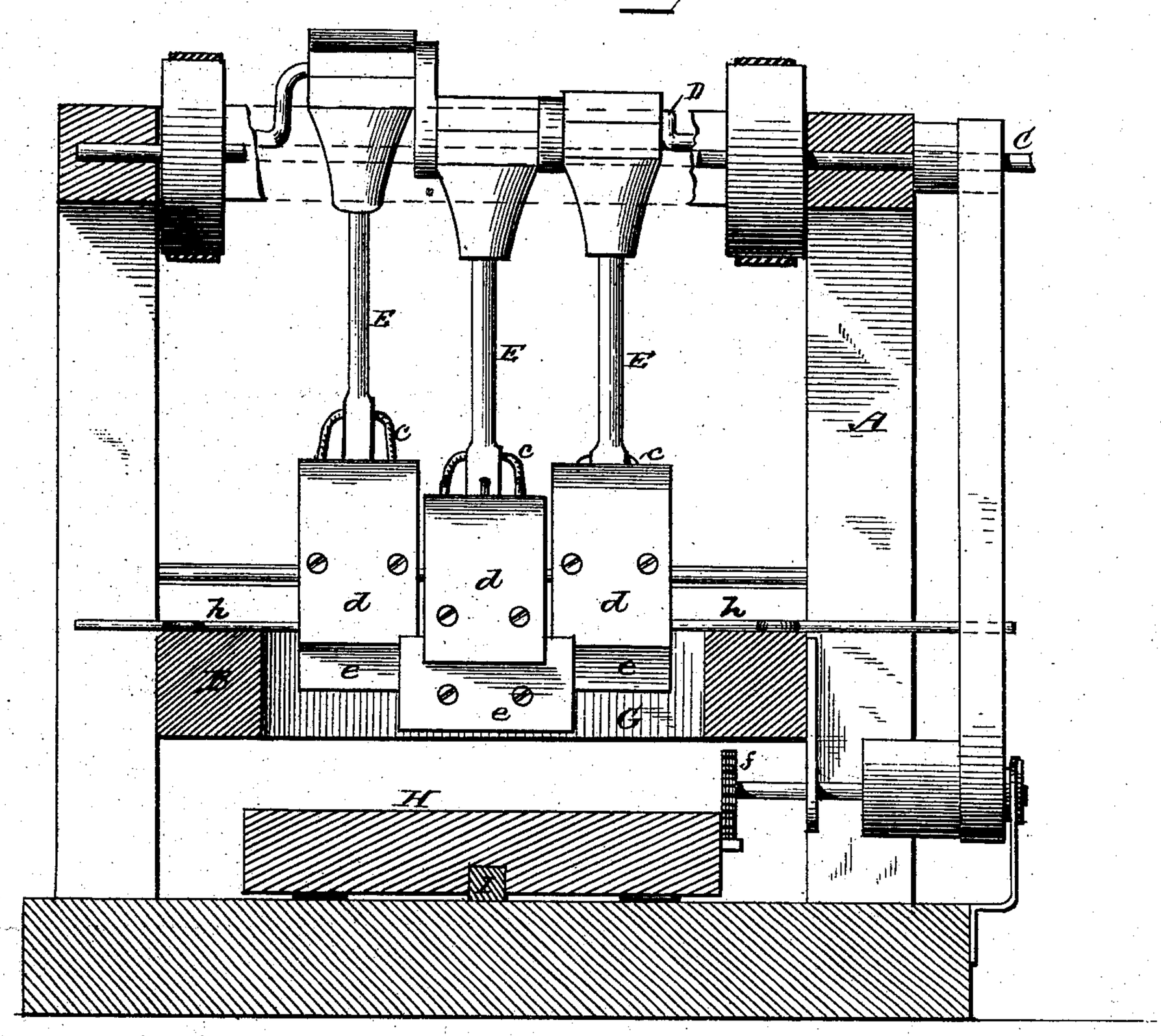
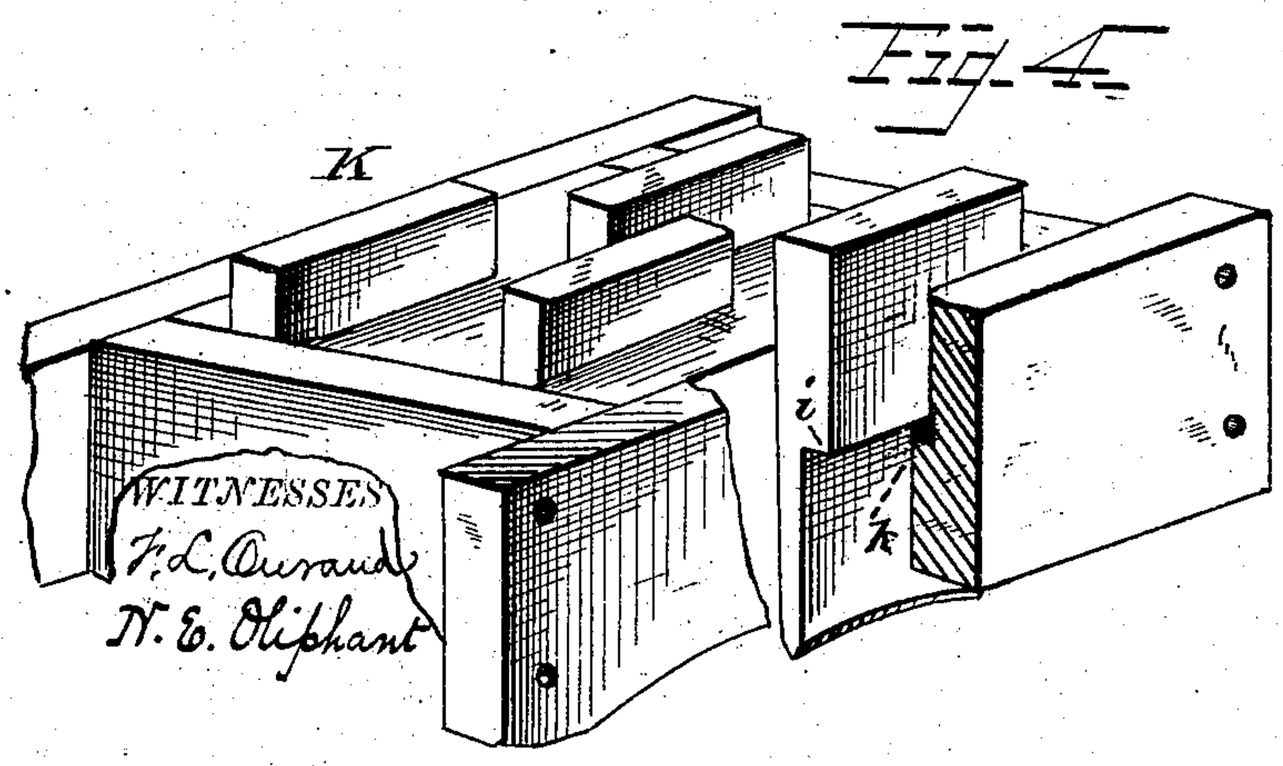


Fig. 4.



WITNESSES
F. L. Durand
N. E. Oliphant

INVENTOR
Wheeler Perkins
per Chas. H. Fowler
Attorney

UNITED STATES PATENT OFFICE.

WHEELER PERKINS, OF METHUEN, MASSACHUSETTS.

STONE-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 291,078, dated January 1, 1884.

Application filed June 23, 1883. (Model.)

To all whom it may concern:

Be it known that I, WHEELER PERKINS, a citizen of the United States, residing at Methuen, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Stone-Dressing Machines; 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, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a perspective view of my invention; Fig. 2, a top plan view; Fig. 3, a cross-section, and Fig. 4 a detail view of a box for tools employed in cutting rounded surfaces.

This invention relates to certain new and useful improvements in stone-cutting machines, the object thereof being to provide such a device, simple in its construction and effective in its operation, that will be applicable for work upon either plain or rounded surfaces, the stone being automatically fed to the cutters, and their stroke easily regulated, one, two, or more cutters being employed to strike the stone, as the necessities of the work may require. These objects I attain by the construction substantially as shown in the accompanying drawings, and hereinafter more fully described.

In the drawings, A represents a suitable frame, having secured thereto a bed, B. Centrally hung in this frame is a driving-shaft, C, provided with suitable pulleys, over which work belts communicating with pulleys on eccentric shafts D, hung at the ends of the frame, these eccentric shafts operating hammers E, which strike the spring cutter-arms F, loosely hung upon shafts *a*. A flat spring, *b*, located under each cutter-arm, serves to lift the same after being struck with its respective hammer, and suitable yokes, *c*, secured at one end to the bed B, and connected at the other with their individual hammers, serve to guide said hammers, and add to the effectiveness of their stroke.

Secured to the free ends of the spring cutter-arms F are suitable heads, *d*, to which are removably connected the cutters or chisels *e*, which strike the stone through an opening, G, made in the center of the bed B, said stone being mounted on a carriage, H, running on a central track, I, and operated by any suitable feed-motion to bring the stone under the cutters, and automatically move the same at each revolution of the driving-shaft C. The feed-motion in this instance consists of a pinion, *f*, meshing with teeth or projections upon the side of the carriage, said pinion being driven by a belt connecting with the driving-shaft.

Working in suitable grooves formed in the upper surface of the bed B are sliding blocks *g*, arranged under the spring cutter-arms F, and operated by levers *h*, said sliding blocks serving to regulate the depth of the cut by having their upper faces inclined toward the opening G of the bed, and thus when moved forward prevent the cutter-heads from being driven down farther than such inclination will admit, their incline commencing on a level with and terminating some distance above the upper surface of said bed, so as to come directly under the rear portion of the cutter-heads *d* when their levers *h* are operated.

In the operation of my invention the stone is placed upon the carriage H, and the depth of the cut regulated by the sliding blocks *g*. Power being suitably applied to the driving-shaft C, the feed mechanism is operated to move the stone under the cutters or chisels *e*, and at the same time the spring-arms F, having attached thereto these cutters, are operated by the hammers E, connected to the eccentric shafts D, driven by suitable belt-connection with the driving-shaft. The hammers E being thus eccentrically operated admits of a great number of cuts being made per minute, with no two at the same time, and the stone being automatically fed to the cutting apparatus, a uniform and even cutting is obtained upon its surface, the number of cutters being arranged to suit the surface-area of said stone.

To apply my invention to the cutting of rounded surfaces, I employ a box or tool-holder, K, as shown in Fig. 4, adapted to be bolted in the opening G of the bed B, the cutters or chisels being placed in slots arranged in said box, so that the heads *d* of the cutter-arms will strike thereon, the faces of the cutters or chisels being made to conform with the surface to be operated upon, and the chisels or cutters for plain surface cutting removed from their heads. These cutters or chisels are so formed

as to have shoulders *i*, which come against projections in the slots, to prevent them from dropping through when the stone is not in position to be operated upon.

As the cutters are struck by the hammer very rapidly their rebound will carry them up sufficiently above the stone as not to interfere with its forward movement; but, if desired to increase this rebound, springs *k* may be interposed between the shoulders of said cutters and the projections in the slots.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a stone-cutting machine, the bed B, having a central opening, G, and the sliding blocks *g*, operated by levers *h*, in combination with the pivoted spring cutter-arms F, provided with heads *d*, and carrying the cutters or chisels, and the springs *b*, located under said arms, the hammers E, connected to the bed by pivoted yokes *c*, and constructed to operate substantially as and for the purpose set forth.

2. The combination, with a stone-cutting machine, having secured thereto a bed, B, provided with a central opening, spring-arms F, hammers E, and sliding blocks *g*, of the tool-holder K, having springs *k*, and the cutters or chisels, having shoulders *i*, substantially as and for the purpose set forth.

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

WHEELER PERKINS.

Witnesses:

JAMES B. CROSSLEY,

CHARLES U. BELL.