(No Model.) 2 Sheets—Sheet 1.

W. A. SPRING & H. H. SCOVILLE.

STONE SAWING MACHINE.

No. 422,988. Patented Mar. 11, 1890.

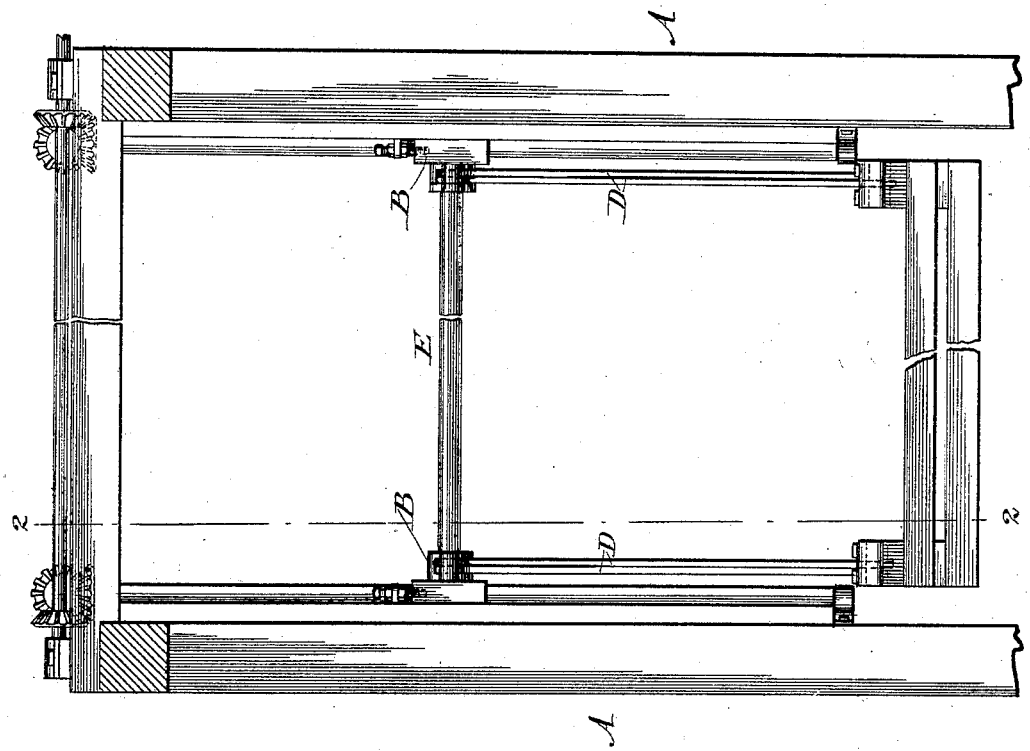

Fig. 1.

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Inventor:
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By West & Bond
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(No Model.) 2 Sheets—Sheet 2.

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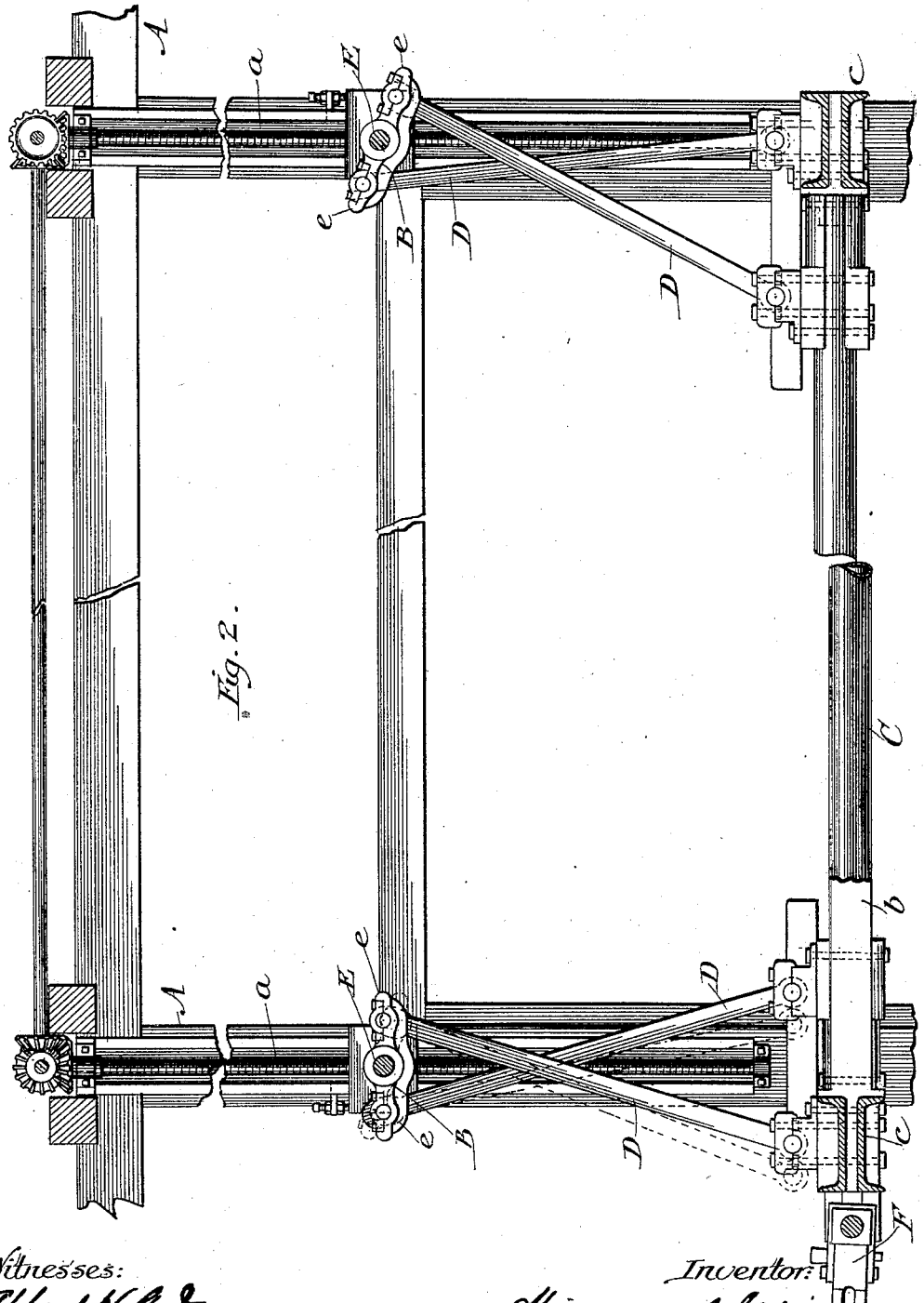

Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM A. SPRING, OF CICERO, AND HIRAM H. SCOVILLE, OF CHICAGO, ILLINOIS.

STONE-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 422,988, dated March 11, 1890.

Application filed January 31, 1890. Serial No. 338,755. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. SPRING, residing in the town of Cicero, Cook county, Illinois, and HIRAM H. SCOVILLE, residing at Chicago, county of Cook, State of Illinois, and both citizens of the United States, have invented a new and useful Improvement in Stone-Sawing Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation, and Fig. 2 is a vertical section at line 2 2 of Fig. 1.

This invention relates to stone-sawing machines of the class shown in Letters Patent of the United States No. 24,478, dated June 21, 1859, granted to A. T. Merriman, in which a reciprocating saw-sash is supported from a vertically-adjustable frame.

The object of this invention is to increase the period of operation of the stroke of the saws by providing improved means for supporting the sash, so as to give a rectilinear movement thereto during a large part of its stroke, which we accomplish as illustrated in the drawings, and as hereinafter described.

That which we claim as new will be set forth in the claim.

In the drawings, A represents the main frame of the machine, and B B sliding heads supported upon screw-threaded rods *a*, which are secured in the frame A, so that the heads B can be adjusted vertically on the frame A. This frame A may be of any desired dimensions.

C represents a sash containing a number of saws *b*, which are strained between the end pieces *c* of such sash. The sash C is reciprocated by a pitman F driven by an engine or other driving-power.

The construction above described is shown in the patent above mentioned, and we do not claim it as any part of our invention; nor do we limit the application of our invention to such construction, as other means for supporting and adjusting the sliding heads may be employed.

The sash C is supported at each end from the heads B by means of two pairs of bars D. The bars of each pair are of equal length. The several pairs of bars D are each arranged and connected in the same manner, and we will therefore describe the construction and operation of a single pair. As shown in Fig. 2, at their lower ends the bars D are pivotally attached to the sash C a distance apart, near their middle portions they cross each other, and at their upper ends they are pivotally attached to rocking arms *e* on opposite sides of a shaft E, which shaft is supported in bearings on the head or heads B. As shown at the left-hand side of Fig. 2, when the sash is in the middle of its stroke, the rocking arms *e* will be parallel to said sash, and a point midway between the points of attachment of the bars D to said sash will be in the vertical line of the shaft E. As the sash is moved toward the end of its stroke the point of attachment of one of the bars D will be moved toward the vertical line through the shaft E, and the arm to which such bar is attached will be rocked upwardly, and the point of attachment of the other bar to the sash will be moved away from such vertical line and its arm *e* will be rocked downwardly. The lengths of the arms *e* and bars D, and the distance between the points of attachment of the bars D to the sash C, we proportion so that the rocking of the arms *e* will compensate for the shortening and lengthening, respectively, of the distances between the points of attachment of the bars D to the sash and the center of the shaft, which would result from the swinging of the bars D. This gives to the sash a rectilinear movement for a limited stroke—that is, while the rocking of the arms *e* compensates for the swinging of the bars D. The position which the parts will occupy at the end of the rectilinear stroke in the proportion shown is indicated by dotted lines at the left-hand side of Fig. 2. When the stroke is increased beyond a certain point, the sash will be lifted sufficiently to allow sand to fall below the saws or blades *b*, as shown at the right of Fig. 2. The return portion of the stroke to the position shown at the left in Fig. 2 will be the reverse of that above described, and a continuation of the stroke in the opposite direction and return from that indicated in dotted lines will be the same as that already described. The sash will be lifted when it has passed the limit of the rectilinear movement in the opposite direction,

as before described. The sash being thus supported and guided by the cross-bars D and rocking arms *e*, is moved during a considerable portion of its stroke in both directions in a straight or right line, thereby increasing the period of time or length of the operative stroke of the saws or blades upon the stone, and consequently increasing their efficiency.

In a machine which we have constructed the pivots on the arms *e* are located twelve inches apart, and the pivots on the sash-heads are located twenty inches apart, and the bars D are fifty-four inches in length between the pivots. These are the best proportions for a medium-sized machine, and they give the saws or blades a straight or line stroke of about eight inches with a lift at each end. By increasing the length of the arms *e* the length of the rectilinear movement can be increased.

The number of pairs of bars D may be varied.

What we claim as new, and desire to secure by Letters Patent, is—

The combination, with a reciprocating saw-sash, of rocking arms and cross-bars pivoted thereto and to the sash, whereby a rectilinear movement is given to the saws for the required distance, substantially as specified.

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HIRAM H. SCOVILLE.

Witnesses:
HARRY T. JONES,
ALBERT H. ADAMS.