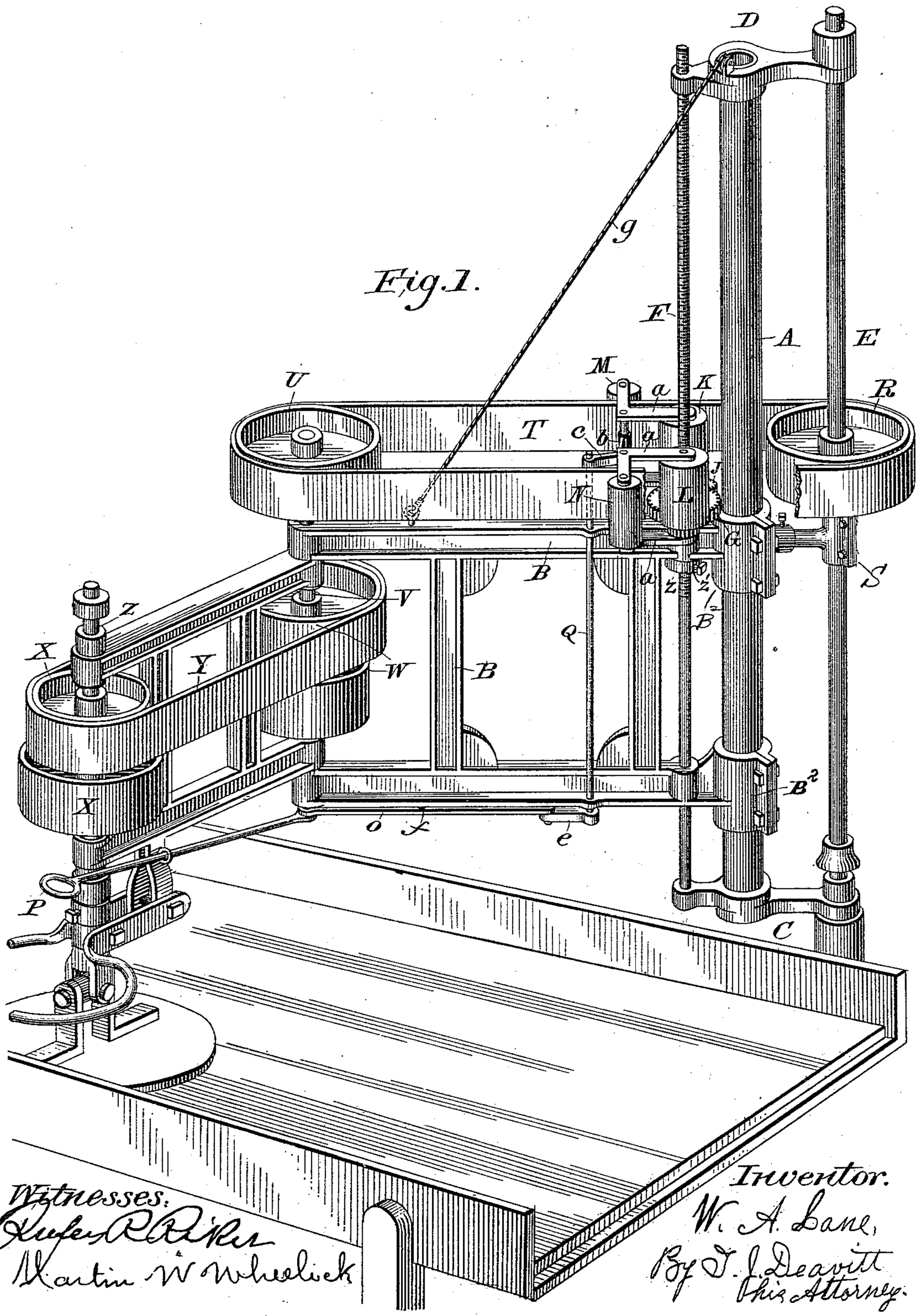
(No Model.) 2 Sheets—Sheet 1.

W. A. LANE.

STONE POLISHING MACHINE.

No. 420,203. Patented Jan. 28, 1890.

Fig. 1.



Witnesses:
Chas. R. Ricker
Martin W. Wheelock

Inventor.
W. A. Lane,
By T. J. Deavitt
his Attorney.

No Model.) 2 Sheets—Sheet 2.

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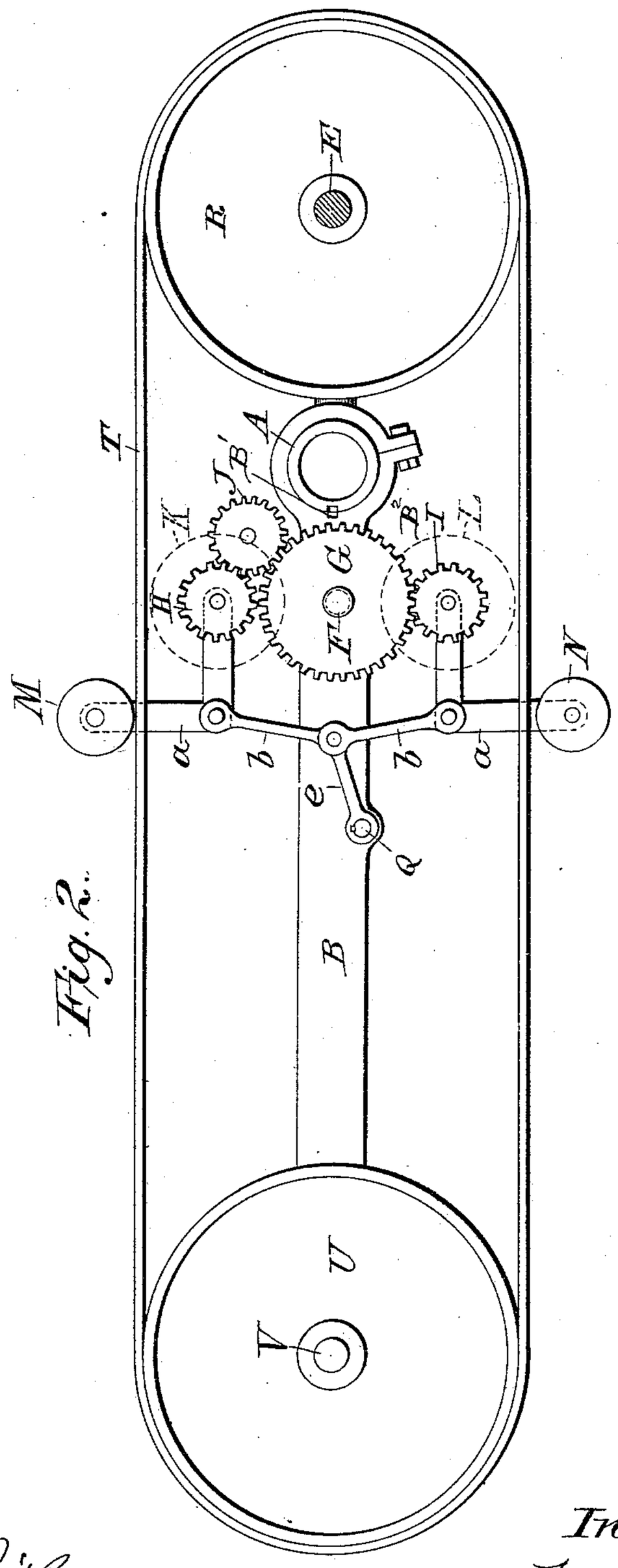

Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIS A. LANE, OF BARRE, VERMONT.

STONE-POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,203, dated January 28, 1890

Application filed October 25, 1889. Serial No. 328,199. (No model.)

To all whom it may concern:

Be it known that I, WILLIS A. LANE, a citizen of the United States, residing at Barre, in the county of Washington and State of Vermont, have invented new and useful Improvements in Stone-Polishing Machines, of which the following is a specification.

My invention relates to machines for polishing granite or other stone, or for finishing or dressing the surfaces of other material, and more particularly to machines for this purpose arranged to swing in an entire circle around their supporting-posts.

The said invention consists in the construction and combination of parts hereinafter set forth.

Reference is had to the accompanying drawings, forming a part of this specification, in which letters of reference indicate corresponding parts in both the figures.

Figure 1 is a perspective view of my improved polishing-machine as seen at work. Fig. 2 is a plan view of the belt T and gearing.

A represents a column, B the swinging frames, C and D brackets, and E upright driving-shaft in rear of column A.

F is a long upright screw in front of column A, and attached to step-bracket C at the bottom and to bracket D at the top, as shown in Fig. 1.

G is a large gear, and H, I, and J are smaller gears, as shown in Fig. 2.

K and L are pulleys, and M and N are tightening-pulleys.

O is a lever, P a handle attached to it, and Q a rock-shaft.

R is a pulley on the back shaft, and S a sliding box on back shaft that raises and lowers pulley R.

T is a belt; U, pulley on elbow; V, a shaft carrying pulleys W W and U; Y, a belt running on pulleys W W and on pulleys X X, the latter on standard Z, to the lower end of which is attached, by a universal joint of any approved construction, the polishing head or wheel which is to be revolved on the face of a block or piece of granite or other material requiring a finish.

The hubs of arms B sliding up and down on column A are slotted, so as to be at all times adjusted properly to the shaft or column, thus preventing the hub from becoming loose on the shaft on account of loss from any wear of the parts. The hub B^2 of arms B is secured by a spline or key B′ of Fig. 2 against turning on shaft A. On the driving-shaft E is sliding box S, attached to the upper hub of frame B, and slides up and down the back shaft the same as hub B slides up and down on column A, carrying with it the driving-pulley R, which is kept on a level with the pulleys attached to arms B of the first gate, so that the belt T is kept in place on the pulleys wherever the machine is placed up and down on the shaft. The outer ends or hubs of arms B are connected with the inner ends of hubs of the second gate by pulley-shaft V or boxes, as shown in Fig. 1, forming a joint enabling the two parts of the frame to be freely swung in a horizontal plane by taking hold the handle near the polishing wheel or head.

The construction of my machine with iron brackets C and D, as shown in the drawings, enables it to swing the entire circle on the back shaft-boxes, thus enabling a small-sized machine to cover every part of a large stone, leaving the back shaft to run free and easy.

The hubs of arms B slide up and down on column A to accommodate the machine to any thickness of stone to be polished and to raise the polishing-wheel for removing the stone when polished, and for inserting a new stone for polishing or for cleaning the machine when a different grinding or polishing material is used.

One great advantage I claim for my machine is the easy manner in which it may be raised or lowered by the application of power in the manner shown. F, the upright screw, passes through arms B, as shown. At the top of the arm is a gear G, with a hub Z passing through the frame, with a collar Z′ fastened on under side to hold it in place. In the hub to the gear is a thread to match the thread on the screw. On one side of this gear is a small gear meshing into the first gear. On the other side are two small gears, as shown, set so as to reverse the motion. On either side is a small pulley attached to small gear, so placed as to clear the belt coming from pulley on back shaft to pulley on center shaft. Attached to spindle that the pulleys and gears

run on at top and bottom on either side are angle-irons running to outside of belt and holding a tightener, which, when drawn against the belt, causes the inside pulleys to revolve, thus turning the small gear, which in turn runs the center gear which raises or lowers the arms on the screw-shaft F. The angle-irons are connected together in line of gate by iron casting *b* with joint. Connected with this joint is short lever *c*, connected with rod Q running to under side of gate to short lever *e* connected with long lever O, running to the elbow and hung to the gate by set-screw *f*. Connected to this lever at the center of elbow-joint is rod P, running to the front of the machine with a handle for operating. Pushing or pulling on rod P throws tighteners N or M against belt T, causing pulley K or L, with gears attached, to revolve in connection with gear G, which revolves on screw-shaft F for raising or lowering the machine.

g is a wire rope passing over a pulley at the bracket D, one end attached to a weight in column A and the other end attached to frame B near pulley U, forming a counterbalance for the weight of frame B.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. In a polishing-machine, column A, with sliding arms B B, attached to driving-shaft E by brackets C and D, belt T, in connection with pulleys N and R, and sliding box S, swinging on the bearings of shaft E, substantially as described and set forth.

2. In combination with the arms B, the screw F, attached to brackets C and D, operated by gears G, H, I, and J, with pulleys K and L, and tighteners M and N for raising and lowering the said arms, substantially as set forth.

3. The lever O, handle P, and rock-shaft Q, arranged to operate tighteners M and N on belt T, substantially as shown, and for the purposes described.

WILLIS A. LANE.

Witnesses:
T. J. DEAVITT,
W. ELLIS.