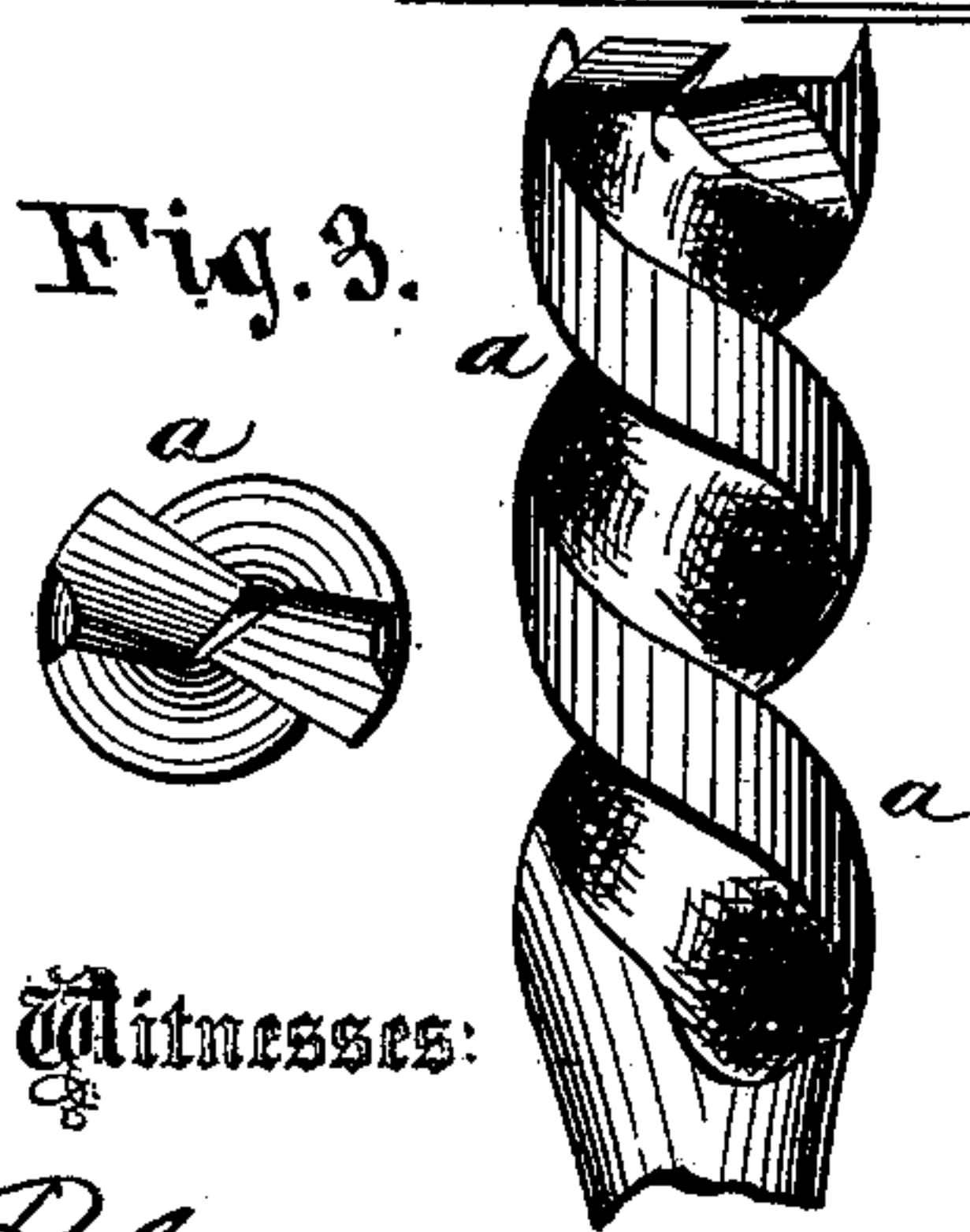
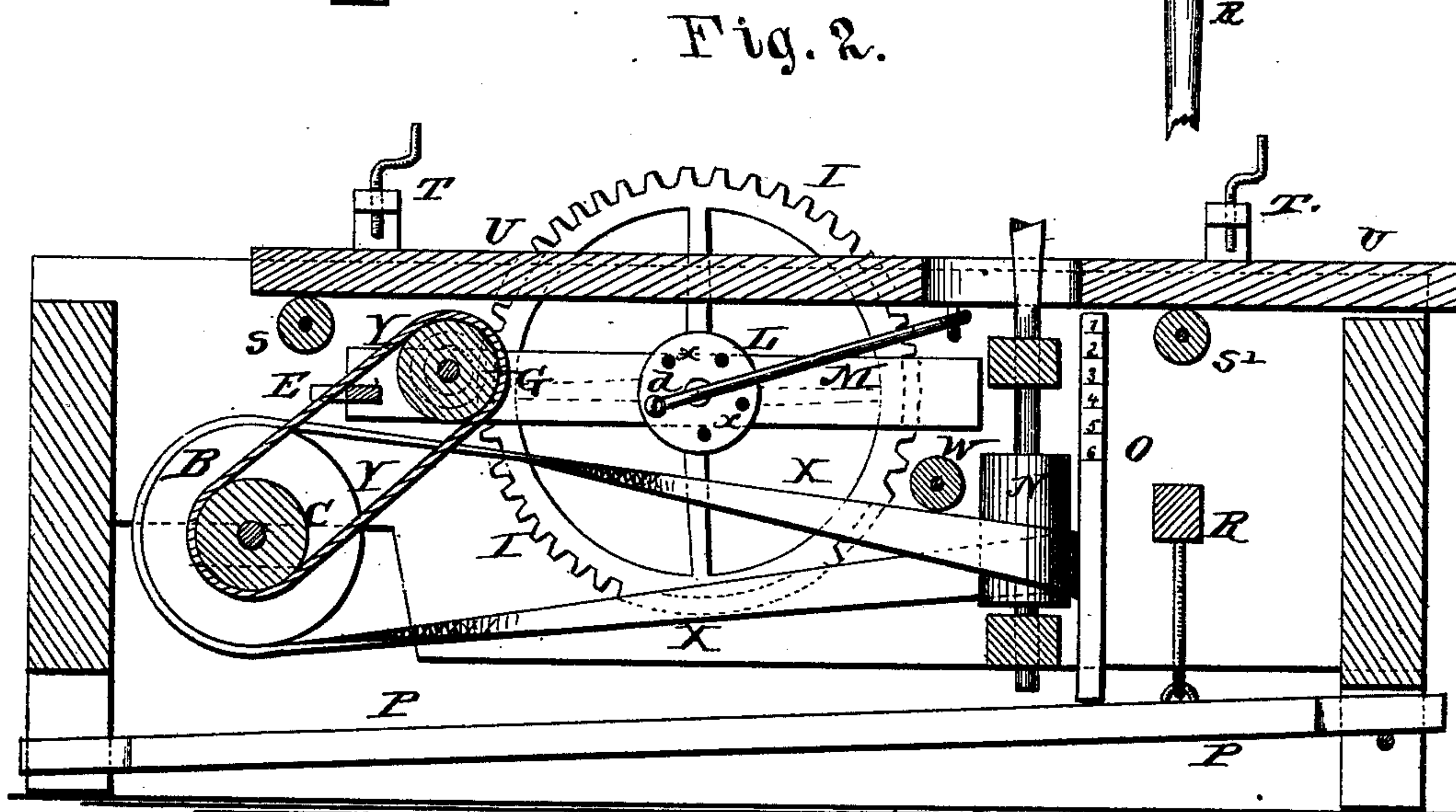
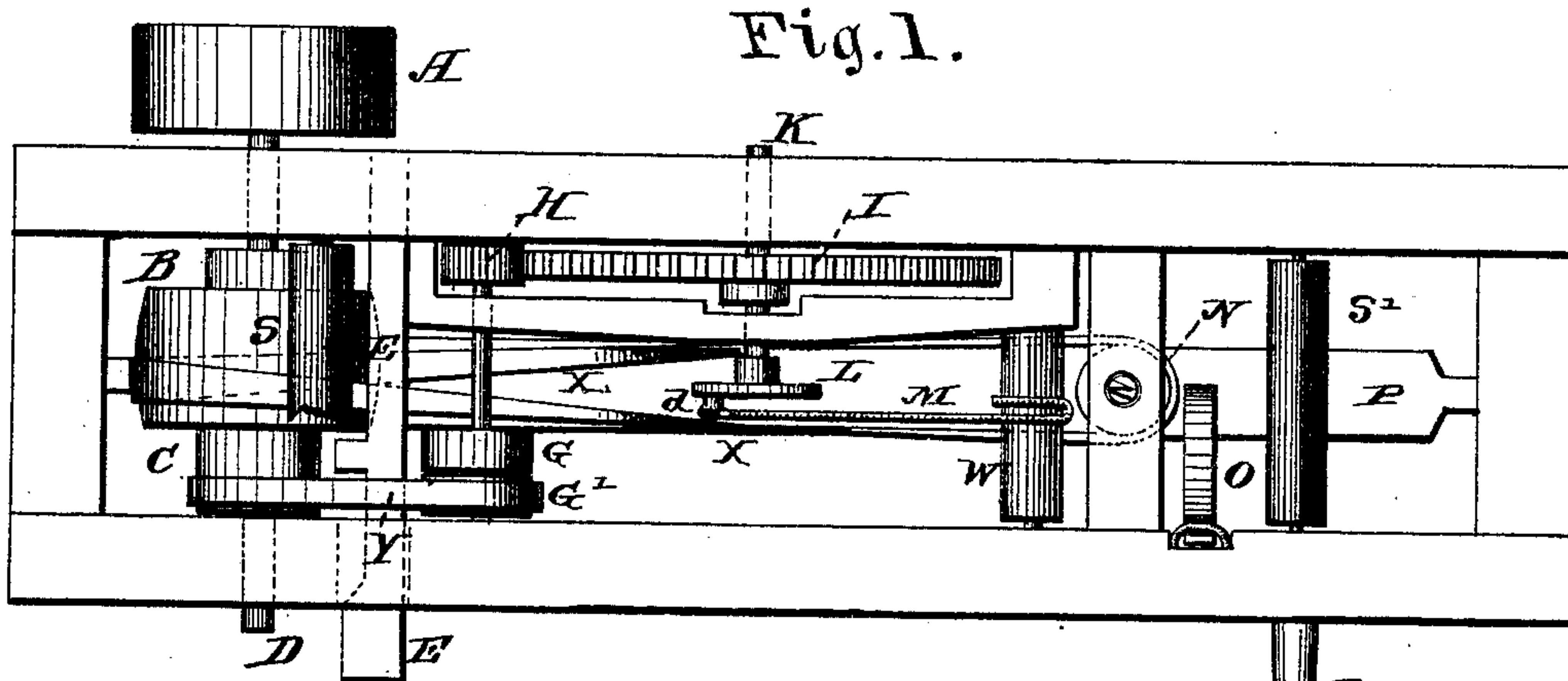


D. E. HENDERSON.
Mortising-Machine.

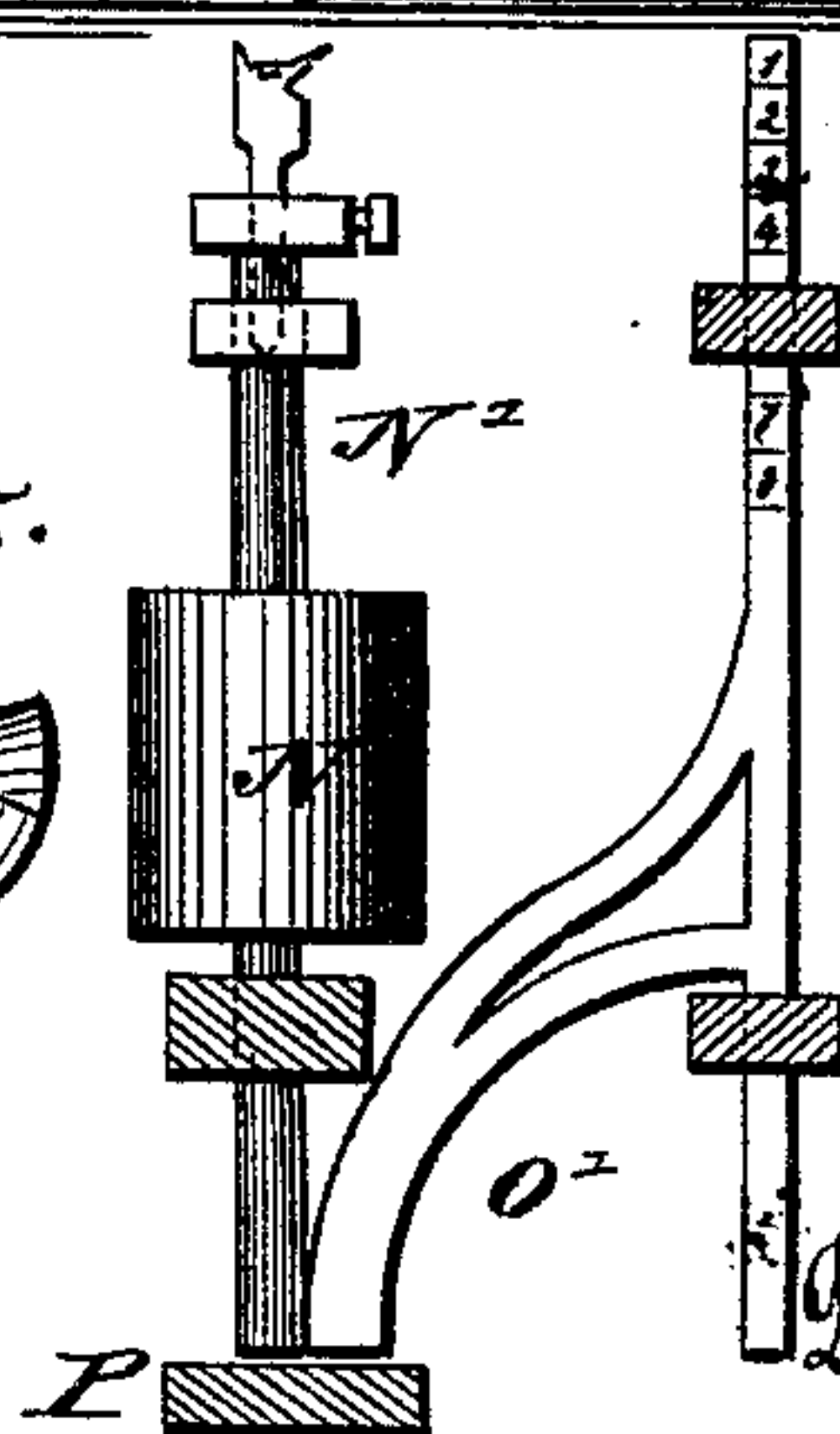
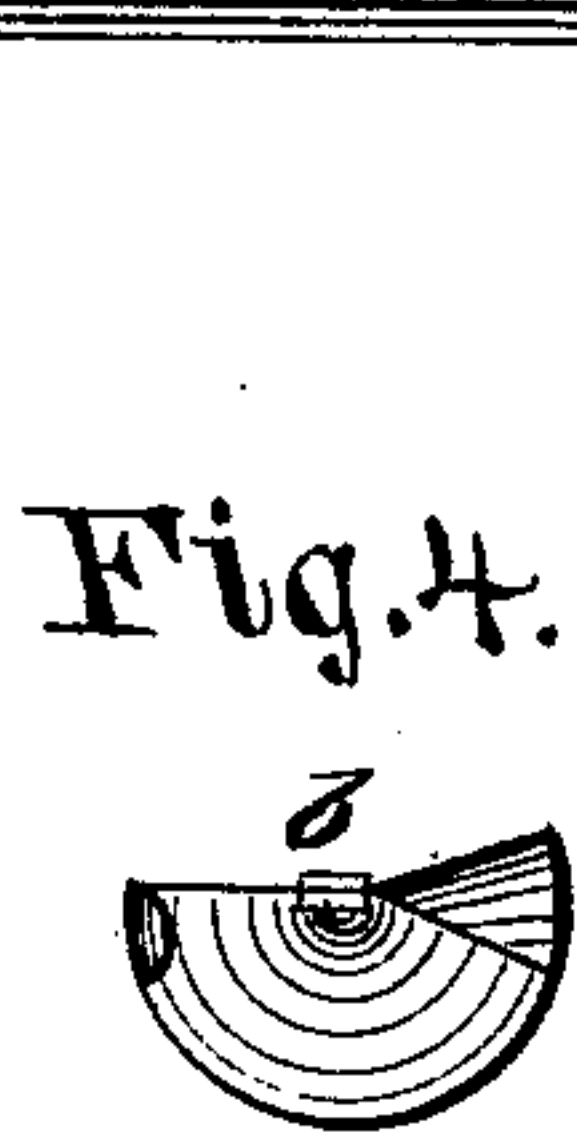
No. 204,569.

Patented June 4, 1878.



Witnesses:

P. Dieterich.
Frank H. Duffey



Inventor:

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UNITED STATES PATENT OFFICE.

DAVID E. HENDERSON, OF LEETOWN, WEST VIRGINIA.

IMPROVEMENT IN MORTISING-MACHINES.

Specification forming part of Letters Patent No. **204,569**, dated June 4, 1878; application filed December 5, 1877.

To all whom it may concern:

Be it known that I, DAVID E. HENDERSON, of Leetown, in the county of Jefferson and State of West Virginia, have invented certain new and useful Improvements in Mortising-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention relates to mortising-machines; and it consists in the construction and combination of parts, as will be hereinafter more fully set forth, and pointed out in the claims.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which forms a part of this specification, and in which—

Figure 1 is a plan view of my improved mortising-machine with the movable table removed. Fig. 2 is a side elevation of the same with the table in position. Figs. 3 and 4 show the bits employed in the machine, and Fig. 5 shows the construction of the gage.

E' represents the frame of the machine, near one end of which is a horizontal shaft, D, carrying at one end the pulley A, for connection with the motive power for running the machine. The shaft D is within the frame, provided with two pulleys, B and C. The pulley B is, by a belt, X, connected with a pulley, N, on the vertical auger-shaft, N'. The upper end of this shaft is made hollow to receive the shanks of the auger-bits, which are fastened therein by a set-screw or other suitable or convenient means.

W is a tightening-pulley for keeping the belt X taut during the upward and downward movements of the auger-shaft.

The pulley C is, by a belt, Y, connected with a tight pulley, G, on a counter-shaft, F. This shaft is also provided with a loose pulley, G', to which the belt Y may be shifted by means of a slide, E, as shown.

On the shaft F is a pinion, H, which meshes with a cog-wheel, I, on a second counter-shaft, K, and on this shaft is secured a disk, L, having a series of holes, *x x*, at unequal

distances from the center, for the adjustment of a wrist-pin, *d*, on which a pitman, M, is placed, so as to make the stroke of said pitman longer or shorter, as desired. The pitman M connects with the table U, which is supported upon rollers S S, so as to give said table a reciprocating motion. The wood to be mortised is fastened on the table U by suitable clamp-screws T.

By the adjustment of the pitman M in the wheel or disk L the length of the mortise is regulated, the auger-bit passing up through a slot in the table.

P is a lever in the lower part of the frame, pivoted or hinged at one end of the frame, and operated by means of a hand-lever, R, as shown. The auger-shaft N' rests on the lever P, so that by means of the lever R the auger will be raised as high up as may be desired. The lever P also raises a gage, O, having its upper end graduated. This gage moves vertically in suitable guides on the frame, and has an arm, O', which rests upon the lever P. By this means the operator can at all times see the distance the auger-bit has entered the wood.

In a full-sized machine the operating mechanism will be so arranged that the auger-shaft will make four or more revolutions while the table is moving the distance of the diameter of the bit or auger.

The augers are shown in Figs. 3 and 4, and marked *a* and *b*, respectively. They are constructed with a central depression, instead of a projecting point, as is usually the case. This depression leaves a point of wood in the center, which prevents the bit from taking a deeper hole than is wanted. When a round hole is wanted, the broad cutting-edges cross each other diagonally, and are cut out in the center, as shown in Fig. 3, which enables the bit or auger to be run at a high rate of speed.

I am aware that it is not new in mortising-machines to provide an index or gage operating in conjunction with the auger; and I do therefore not claim such, broadly, as my invention. Neither do I claim, broadly, the idea of operating a reciprocating table and a rotating auger from one shaft, as I am aware such has been done before.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. The vertically-movable gage O, provided with the arm O', which rests upon the lever P, in combination with the auger-shaft N', also resting on said lever, and the operating-lever R, connected to the lever P, substantially in the manner and for the purposes herein set forth.

2. The combination, with the main shaft D, pulleys B C, and belts X Y, of the auger-

shaft N', shaft F, with pulleys G G', gears H I, shaft K, disk L, with adjustable crank-pin d, pitman M, and slotted table U, resting on the rollers S, all constructed and arranged to operate substantially as and for the purposes herein set forth.

DAVID E. HENDERSON.

Witnesses:

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