P. BROADBOOKS.

Mechanical Movements.

No. 166,844. Patented Aug. 17, 1875.

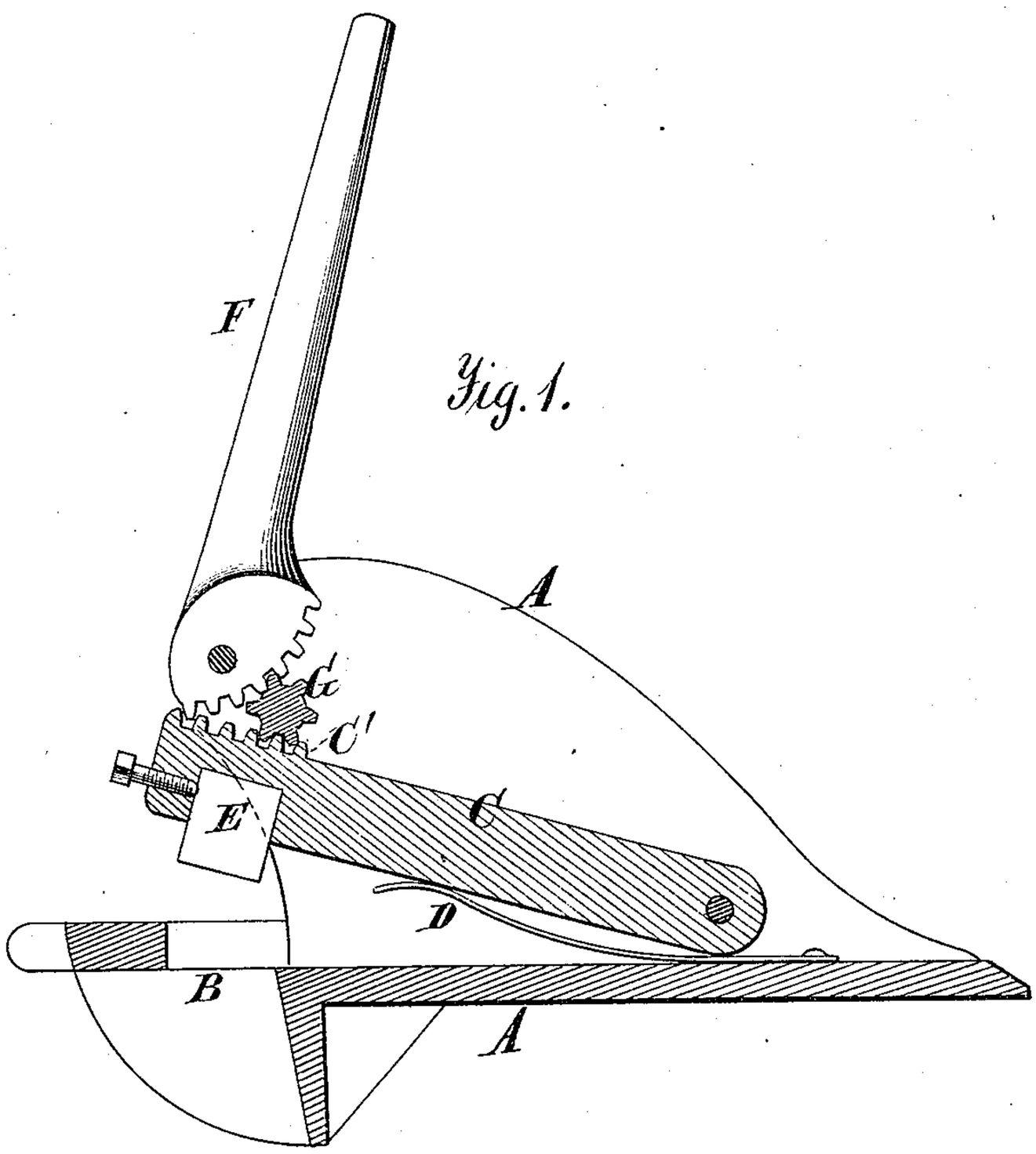
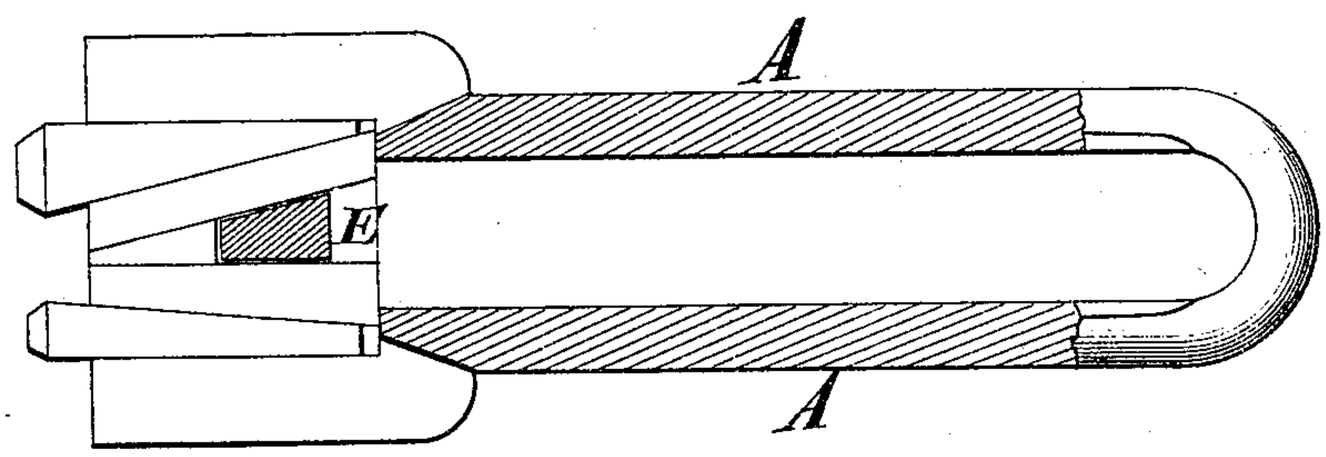



Fig. 1.

Fig. 2.




Witnesses.

A. Ruppert.

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# UNITED STATES PATENT OFFICE.

PETER BROADBOOKS, OF BATAVIA, NEW YORK.

## IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **166,844**, dated August 17, 1875; application filed January 26, 1875.

*To all whom it may concern:*

Be it known that I, PETER BROADBOOKS, of Batavia, in the county of Genesee and State of New York, have invented a new and useful Improvement in Mechanical Movements, of which the following is a specification:

I have illustrated my invention as applied to a saw-gummer; but by changing the dies or cutters it may be applied to a great variety of uses, such as shears, saw-sets, bolt-cutters, presses, punches, &c.

In the annexed drawings, which make a part of this specification, Figure 1 is a vertical longitudinal section, and Fig. 2 is a horizontal section.

The same letters are employed in both figures to indicate identical parts.

A is the frame of the machine, constructed with side pieces, affording a fulcrum for the lever and inclosing the movable jaw. The lower fixed jaw is attached to the frame, but formed to receive several forms of cutting-dies, adjustably attached by wedges at B. C is the movable jaw, pivoted between the side pieces of the frame at the lower end, and supported upon a spring, C, which supports it when freed from the pressure of the lever. It is recessed to receive the upper cutter or die E, which, as illustrated, is attached by a set-screw. On the upper surface, near the upper end, is a rack, C, cast with or bolted to the jaw. Above the rack, but not engaging it, is a lever, F, the head of which is rounded eccentrically, substantially as shown, and formed with cogs, the pitch of which corresponds to that of the teeth in the rack. The lever is pivoted onto the side pieces of the frame, which form its fulcrum. Between the cam-formed head of the lever and the rack I place a free pinion, G, the teeth of which mesh into both those of the lever-head and the rack.

When the lever is raised, as shown in Fig. 1, and the pinion pushed into place, so as to engage with the rack and cam teeth, upon drawing down upon the arm of the lever not only is the pressure of the lever brought to bear on the movable jaw, but the pinion will be caused to turn and move forward in the direction of the pivot or fulcrum of the lever, and thereby, as the distance between the resistance (the pinion) and the fulcrum (the pivot) is constantly shortened, the effective pressure is constantly increased, so that the machine is made to combine the mechanical action of the lever and the wedge, so that I have denominated the machine as a rolling wedge power.

The power can be increased or diminished by setting the pinion in or out in commencing the movement.

It is also obvious that a roller can be made to take the place of the geared pinion, as the frictional adherence of the parts will cause it to be drawn forward.

I do not claim, broadly, the combination of the lever, the jaw, and the roller, for I am aware that that combination has been used as a means merely of transmitting and applying power, with a view to saving loss of power by friction.

My invention is distinguished from what has been heretofore known in the peculiar form of the lever, whereby the roller, which is interengaged with both of its adjacent parts, is, by the movement of the lever, forced toward the fulcrum, so as to give a continually-increasing force of pressure.

What I claim as my invention, and desire to secure by Letters Patent, is—

The mode of communicating forward motion to the part C by means of the cam-headed lever F and the intermediate and interengaged traveling roller G, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER BROADBOOKS.

Witnesses:
W. H. BROWN,
E. F. WHITNY.