

S. GARDINER, Jr.  
Lighting Gas by Electricity.

No. 62,125.

Patented Feb. 19, 1867.

Fig. 1.

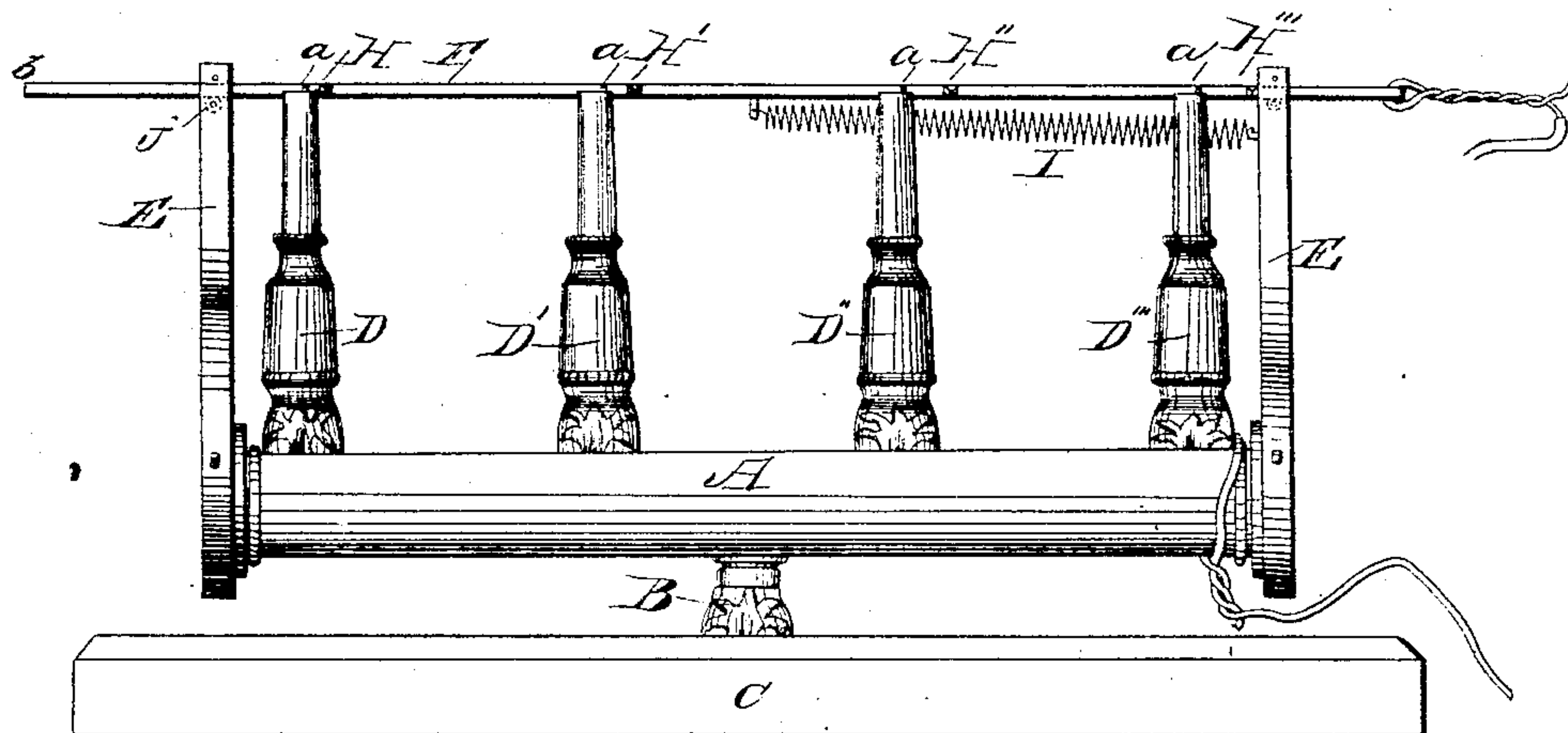
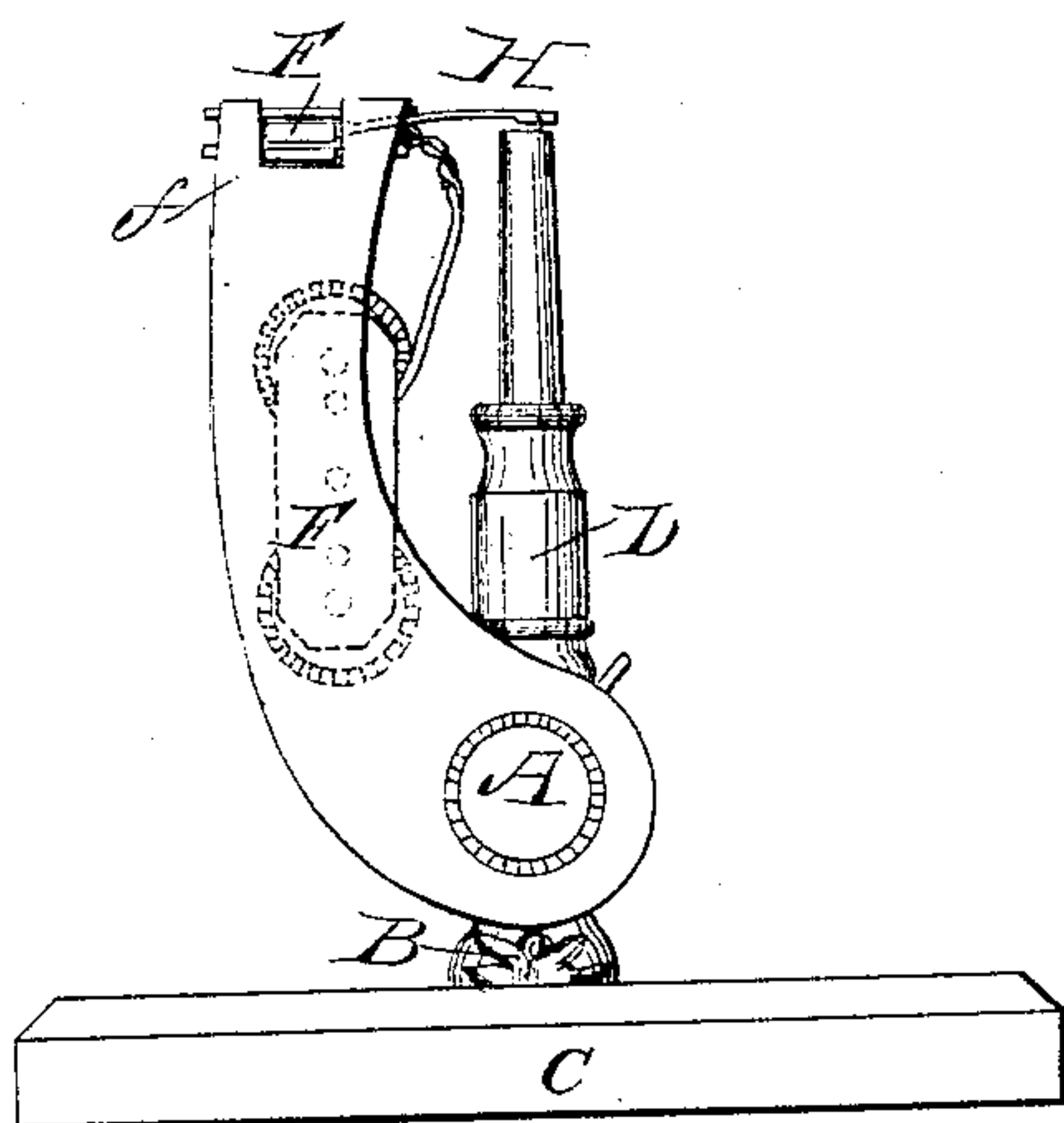
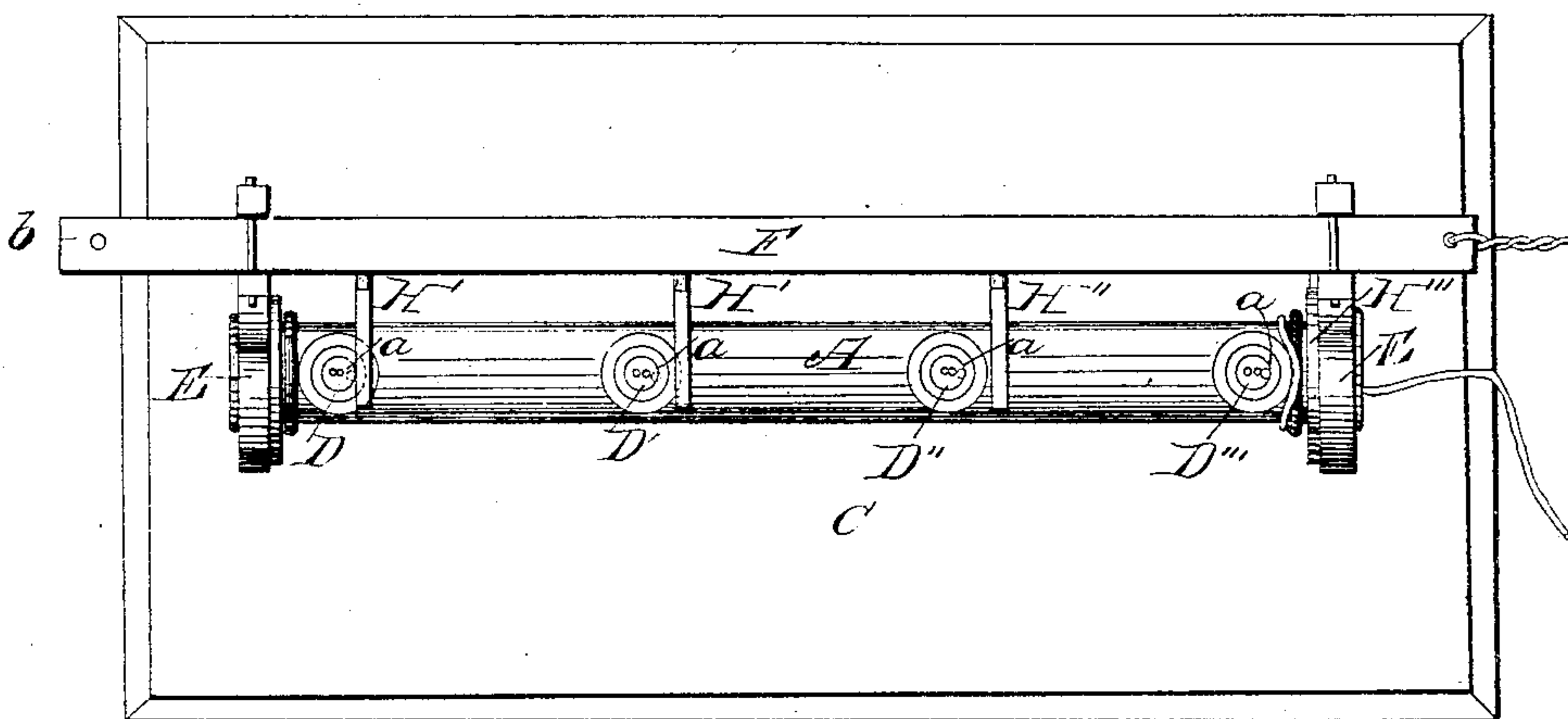


Fig. 2.



Witnesses.  
Edward A. Knight,  
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# United States Patent Office.

SAMUEL GARDINER, JR., OF NEW YORK, N. Y.

*Letters Patent No. 62,125, dated February 19, 1867.*

## IMPROVEMENT IN APPARATUS FOR LIGHTING GAS BY ELECTRICITY.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL GARDINER, jr., of the city, county, and State of New York, have invented a new and improved Apparatus for Lighting Gas by Electricity; and I do hereby declare that the following is a full, clear, and exact description of the nature, construction, and operation of the same, sufficient to enable others skilled in the art to which it appertains to fully understand and use the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a side elevation.

Figure 2 is a top view or plan.

Figure 3 is an elevation.

Similar letters of reference indicate corresponding parts in the several figures.

The apparatus consists of a series of gas burners, and a reciprocating bar provided with spring keys, which are so spaced in reference to the distance between the burners that they are consecutively brought into electric connection therewith, not simultaneously with each burner. By this means the electric current from a small battery is made to light a large number of burners consecutively, but with extreme rapidity. For the purpose of making the electric connection distinct and instantaneous, the spring keys are made to rise and pass over platinum points upon the burners, which are so placed in relation to the orifices therein that the jet of gas is lighted by the electric spark passing from the key to the tip of the burner.

In the drawings, A is the gas pipe, shown supported by a foot, B, upon the base C. Attached to the pipe are the burners D D' D'' D''', but four of which are shown, though the number may be much increased. E E are insulating rubber brackets, attached to the pipe or any neighboring object so as to form a support for the bar F, which traverses back and forth on rollers, f, in slots in the upper portion of the brackets E. Projecting from the bar F are the keys H H' H'' H''', whose thin portion forms a spring, while underneath at the end is a prism of metal secured by one face to the spring piece, and having an edge projecting downward. On the tip of each burner is a platinum point, a, which projects upward, so as to engage with its key, H, as the bar F is moved back and forth by power applied to the end b, and returned by the force of the spring I, which is attached to the bar F and to the bracket E at its respective ends. The platinum points on the tips of the burners are placed in proximity to the gas orifices therein, so as to light the flowing gas when a spark passes from the key to the platinum point. Although the apparatus is susceptible of being arranged for a large number of burners, I have thought it sufficient to describe in reference to four which will afford a clear understanding of its operation. The burners being placed, say two inches apart, and it being required to light them consecutively by a single motion of the bar, if the latter have a longitudinal motion of half an inch, there will be two and one-eighth inches between the keys H H', two and a quarter inches between keys H' H'', two and three-eighth inches between keys H'' H''', so that when the key H is in contact with the platinum tip of burner D, the key H' would be one-eighth of an inch from burner D', and the key H'' an extra one-eighth or one-quarter inch in the rear of its burner, D'', and so on. Thus, it will be readily perceived that the keys come in contact with their respective burners in succession, and not simultaneously, and the full force of the battery is applied to each burner in succession. I have spoken of one-eighth of an inch as the successive increment of distance, but a sixteenth or a thirty-second may be sufficient; and thus a very lengthened series of burners may be lighted in a fraction of a second consecutively, for though the mind may fail to detect the distinctive impulses in the series, the energy and activity of the electric fluid are adequate to the demand. The bar F may be supported upon insulators on the level of the gas pipe, and the keys be in the form of branches, which reach up to the burner tips. The bar will take such shape as may be desired to follow the line of burners, and may be circular to light a ring of burners; or a series of bars may be moved by a metallic connection, and the power may be derived from the hand, a cord, or mechanical devices, electric or otherwise, stops being placed on the bar to limit its range of motion. One pole of the battery is connected to the gas pipe, and the other to the insulated bar F. It will be well to make the prisms under the springs of platinum, or to cover them with that metal. The device may be used for exploding charges in quick succession.

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

1. The arrangement upon a bar of a series of keys, so spaced in reference to the burners as to be consecutively brought into electric connection therewith by a single impulse, substantially as described.
2. I claim a sliding bar, with an insulating support and furnished with keys adapted to a series of gas burners, for the purpose described.

To the above specification of my apparatus for lighting gas by electricity I have signed my hand this 17th of October, 1866.

SAM'L GARDINER, JR.

Witnesses:

EDWARD H. KNIGHT,

CHAS. D. SMITH.