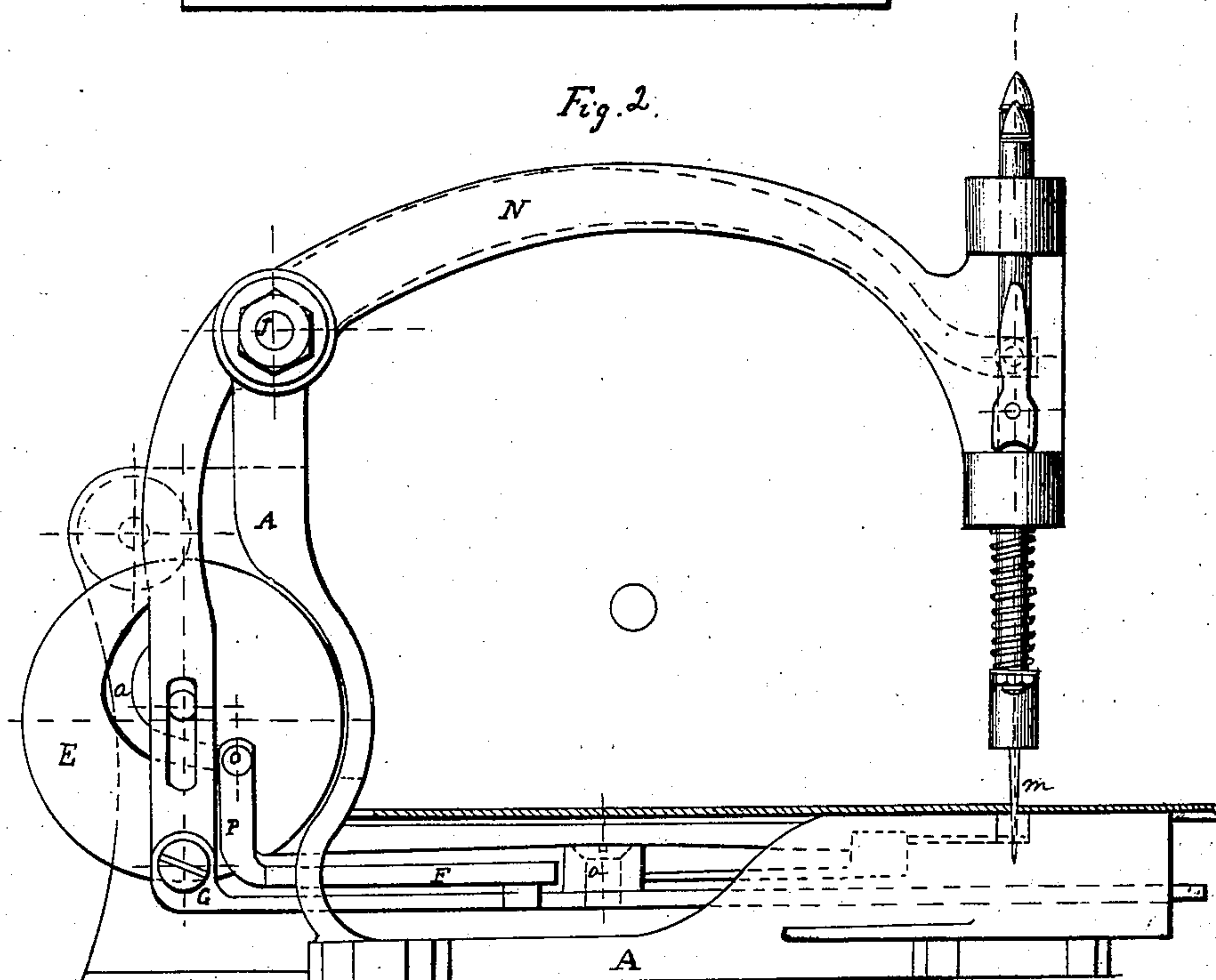
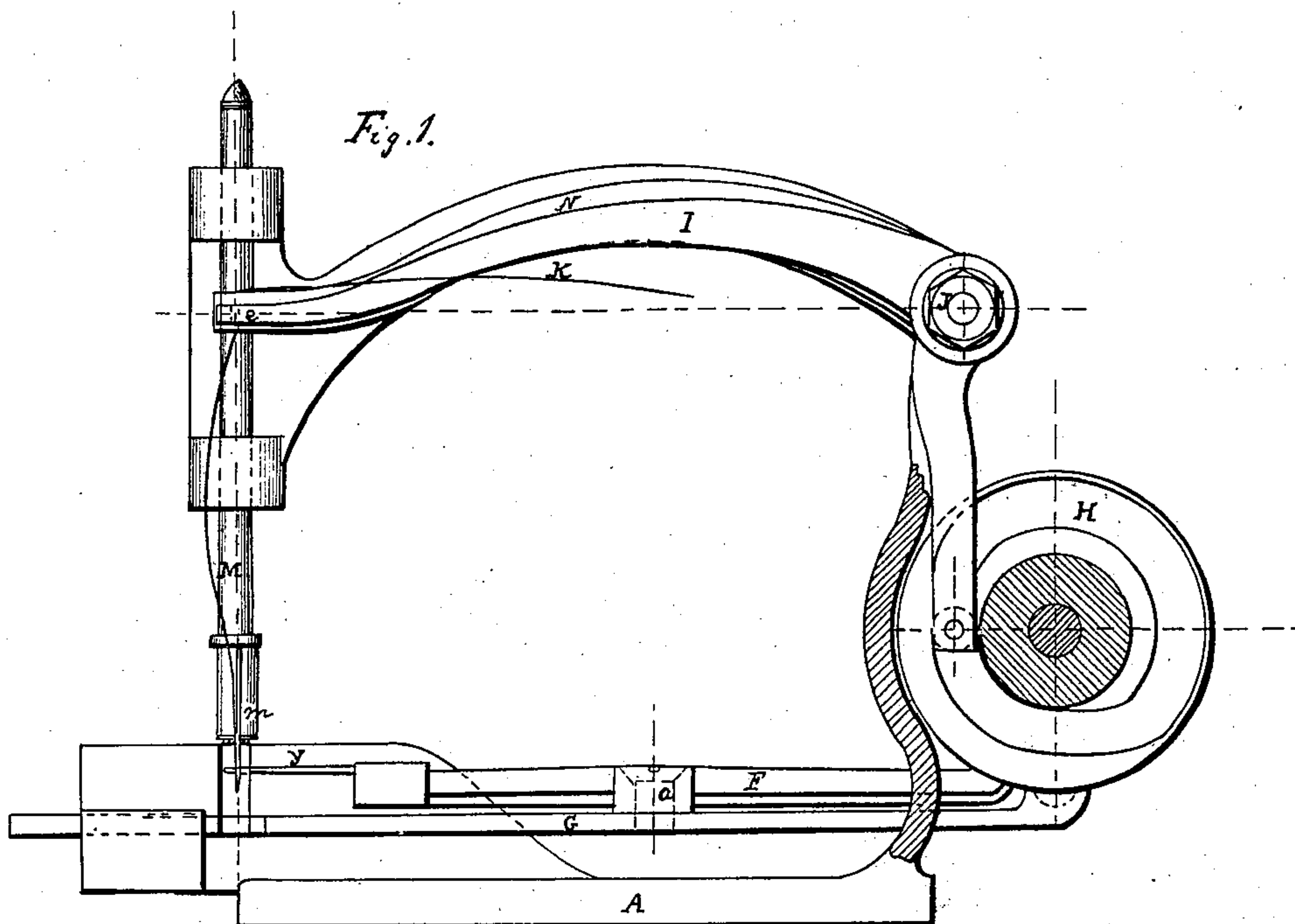


J. GRAY.
Sewing Machine.

2 Sheets—Sheet 1.

No. 95,581.

Patented Oct. 5, 1869.



Witnesses

John D. Thomson
E. B. Miller

Inventor.

Joshua Gray

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Fig. 5.

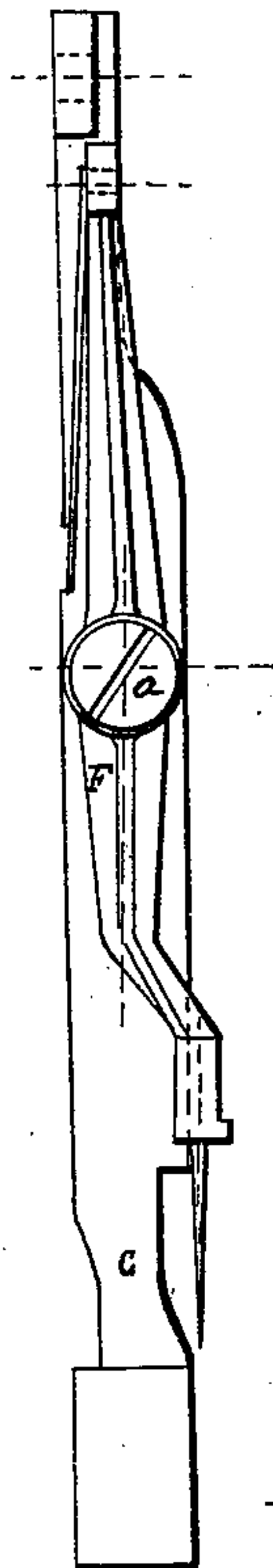


Fig. 3.

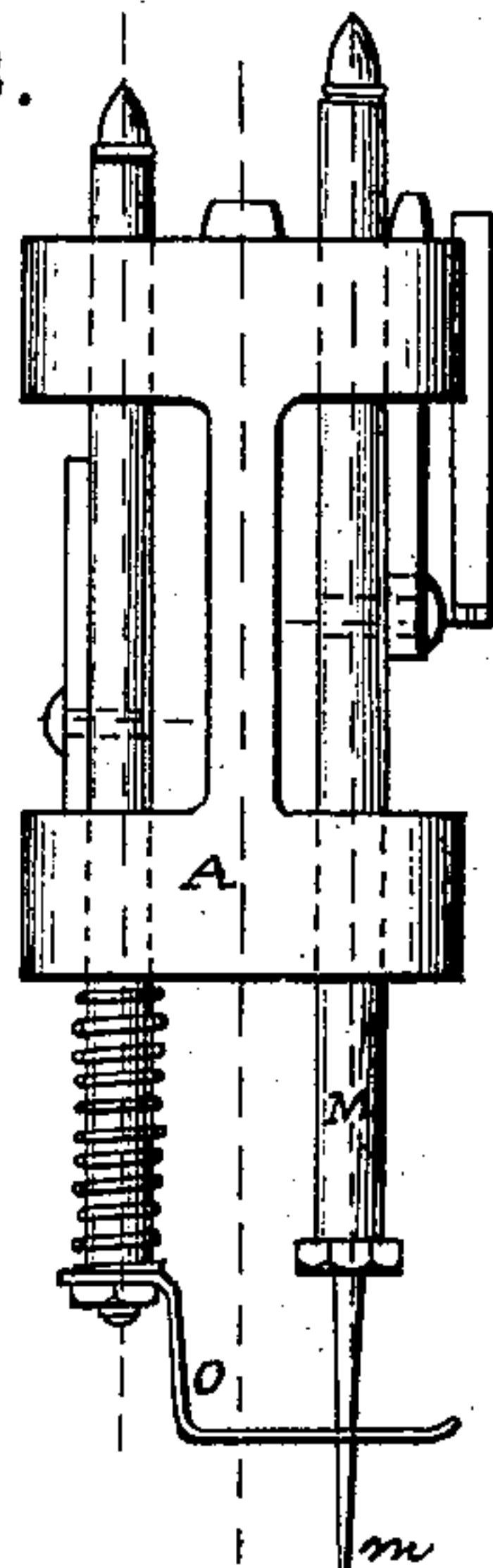
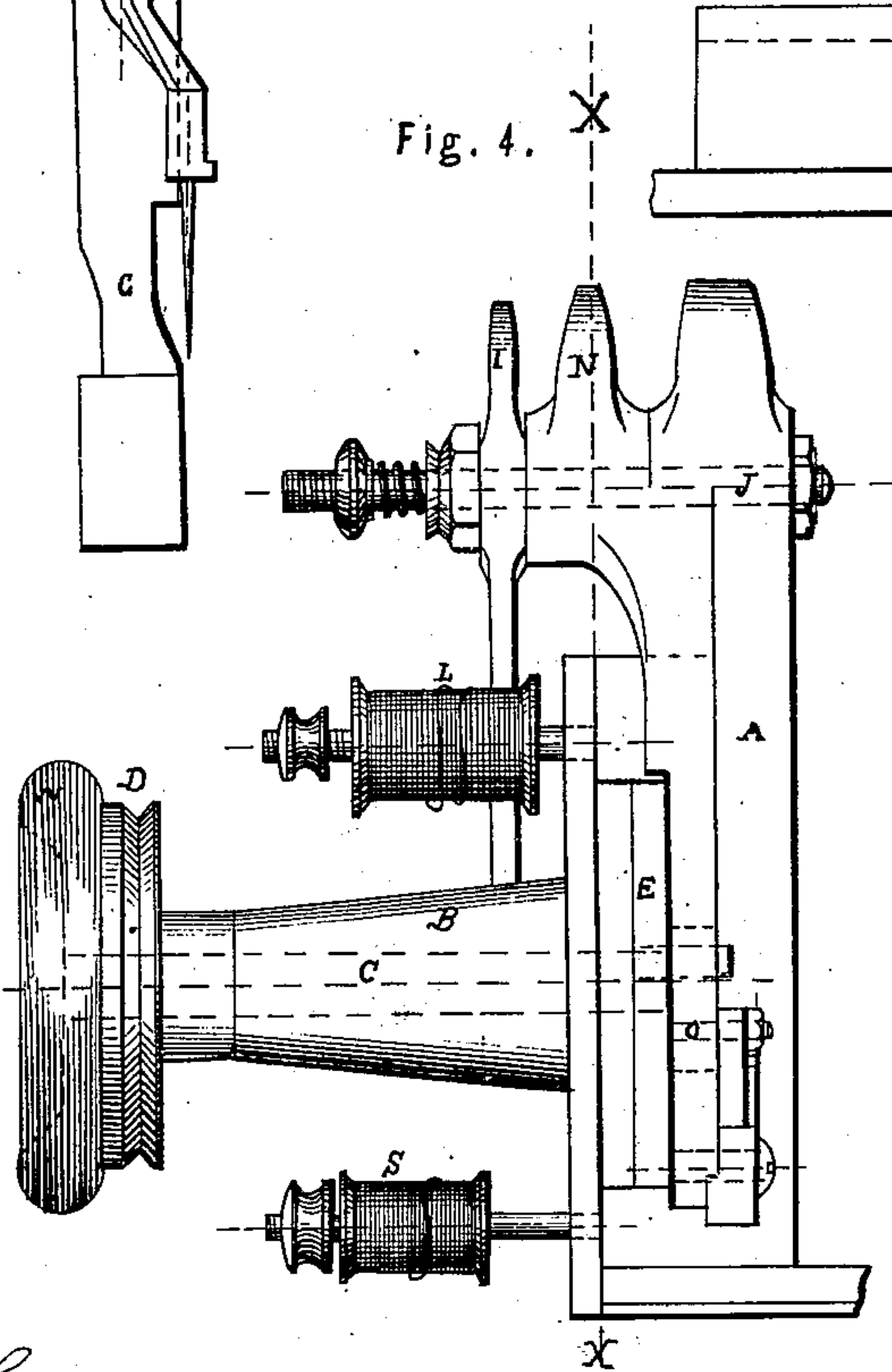


Fig. 4.



Witnesses.

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United States Patent Office.

JOSHUA GRAY, OF NEW YORK, N. Y.

Letters Patent No. 95,581, dated October 5, 1869.

IMPROVEMENT IN SEWING-MACHINE.

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, JOSHUA GRAY, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, and to the letters of reference marked thereon.

The object of my invention is the production of a cheap and efficient sewing-machine; and

The nature of my improvement will be hereinafter more fully described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure I represents a vertical sectional elevation, taken through the line X X, showing the cam.

Figure II is also a side elevation, showing the opposite side of Fig. I.

Figure III is an end elevation of the portion of the machine containing the needle-bar, and showing the arrangement of the presser-foot.

Figure IV is an elevation of the rear end of the machine.

Figure V is a plan view of the feed-operating bar, to which is attached the vibrating looping-bar for the under thread.

Letters of like name and kind indicate like parts in each of the figures.

A represents the frame of the machine, containing my improvements.

This may be made of iron or other suitable material, but I prefer to make it of iron.

One end of the frame A extends upward, and is provided with a projection, B, which forms a continuous bearing for the main shaft C, (shown in dotted lines,) upon the outer end of which is located and secured the band-wheel D, to which the power is applied for driving the machine.

At the opposite end of the main shaft C is secured a double-cam wheel, E, both cams being formed upon the sides or surfaces of the wheel. The outer one is made to operate a pivoted looping-bar or lever, F, that is attached and vibrates upon a pivot-bolt, *a*, located in the centre of the reciprocating feed-operating bar G.

The said looping-bar F is bent, so as to form an elbow, P, at the end next to the cam.

In the end of the said elbow is a pin or lug, *o*, projecting at right angles therefrom, the end of which works in the cam-groove *a'*, as seen in Fig. II.

On the inside of the cam-wheel E is the other cam H, before mentioned, formed by being raised from the surface of the wheel for the purpose of operating the take-up bar I, which works on a pivot-bolt, J.

K represents the thread passing from the upper spool L, along and through the end of the take-up bar I at *e*, to the needle *m*, in the lower end of the needle-bar M.

N is the needle-arm of the machine, of common form, and operated in the ordinary manner.

O is the presser-foot, also of the common kind.

A description of the last two is deemed unnecessary, as I claim no part of them as my invention.

At one end of the pivoted vibrating looper is attached a kind of needle, *y*, similar in form to the one used in stitching, in the end of which is an elongated slot, through which the under thread passes as it leaves the lower spool S.

W is simply a rim on the wheel D, to start the machine with.

When the needle *m* is about rising, the needle or looper *y*, carrying the under thread, and attached to the bar E, is carried forward through the loop and at one side of the needle *m*, by the reciprocating feed-operating bar G, and when the needle *m* rises above the fabric, the cam-groove *a'* acts on the screw *o'* in the arm P of the looper-arm F, and throws the looper *y* across the path of the needle, and so that the needle *m*, in its next descent, passes through the loop of the looper-thread. The take-up bar I produces the proper tension on the thread of the needle *m*, just as the needle is raised to draw up or form the stitch.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The double-faced wheel on the shaft C, provided with two cams, H *a'*, in combination with the looper and take-up bars F and I, substantially as and for the purpose described.

2. The reciprocating feed-operating bar G, in combination with the pivoted looper-bar F, pin *o*, and cam *a'*, substantially as and for the purpose described.

JOSHUA GRAY.

Witnesses:

JOHN S. THORNTON,
G. B. MILLER.