

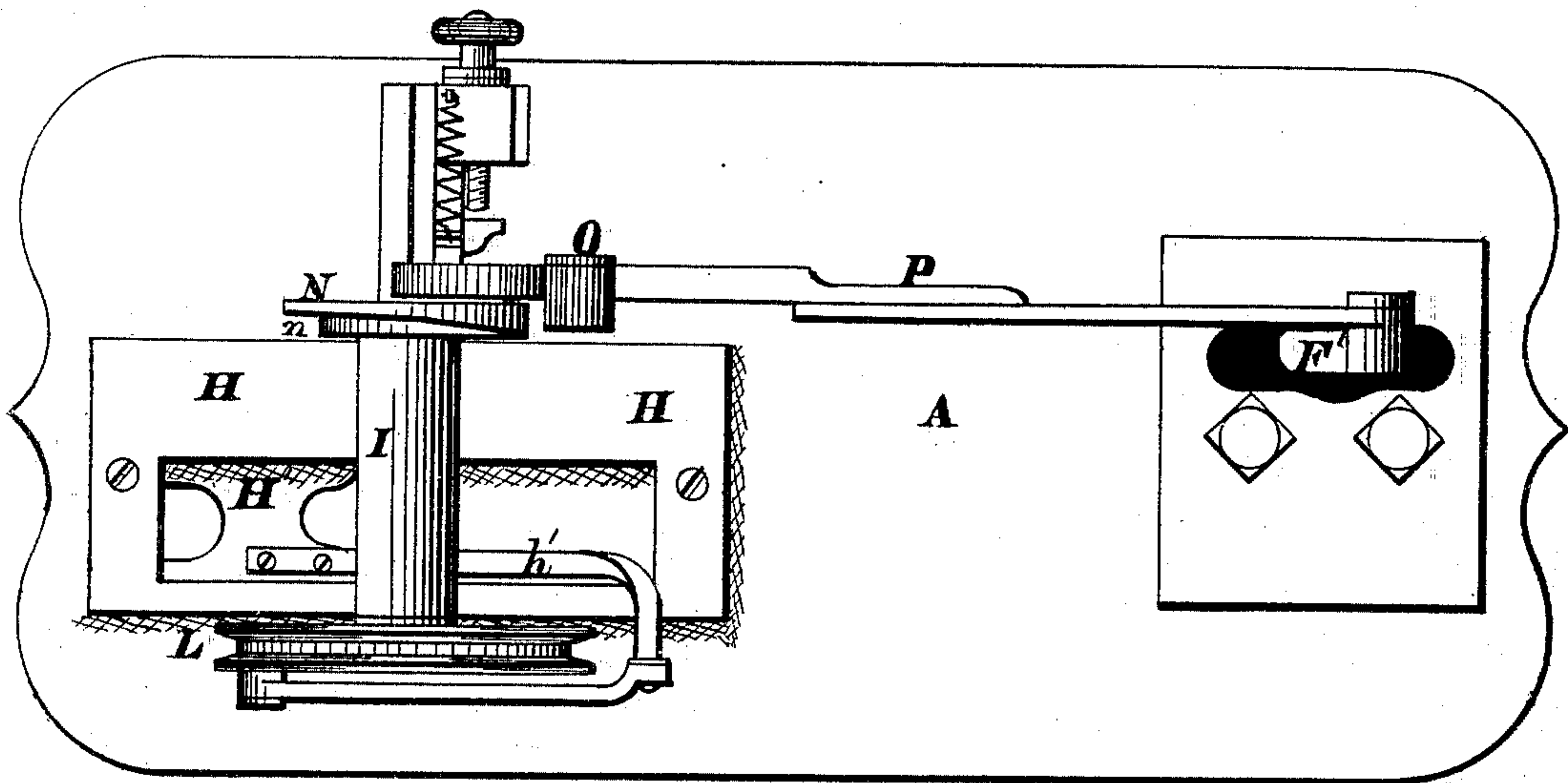
4 Sheets—Sheet 1.

A. H. WAGNER.
SEWING-MACHINE.

No. 177,041.

Patented May 2, 1876.

Fig. I.



WITNESSES:

Gas. E. Hutchinson
John R. Young

INVENTOR.

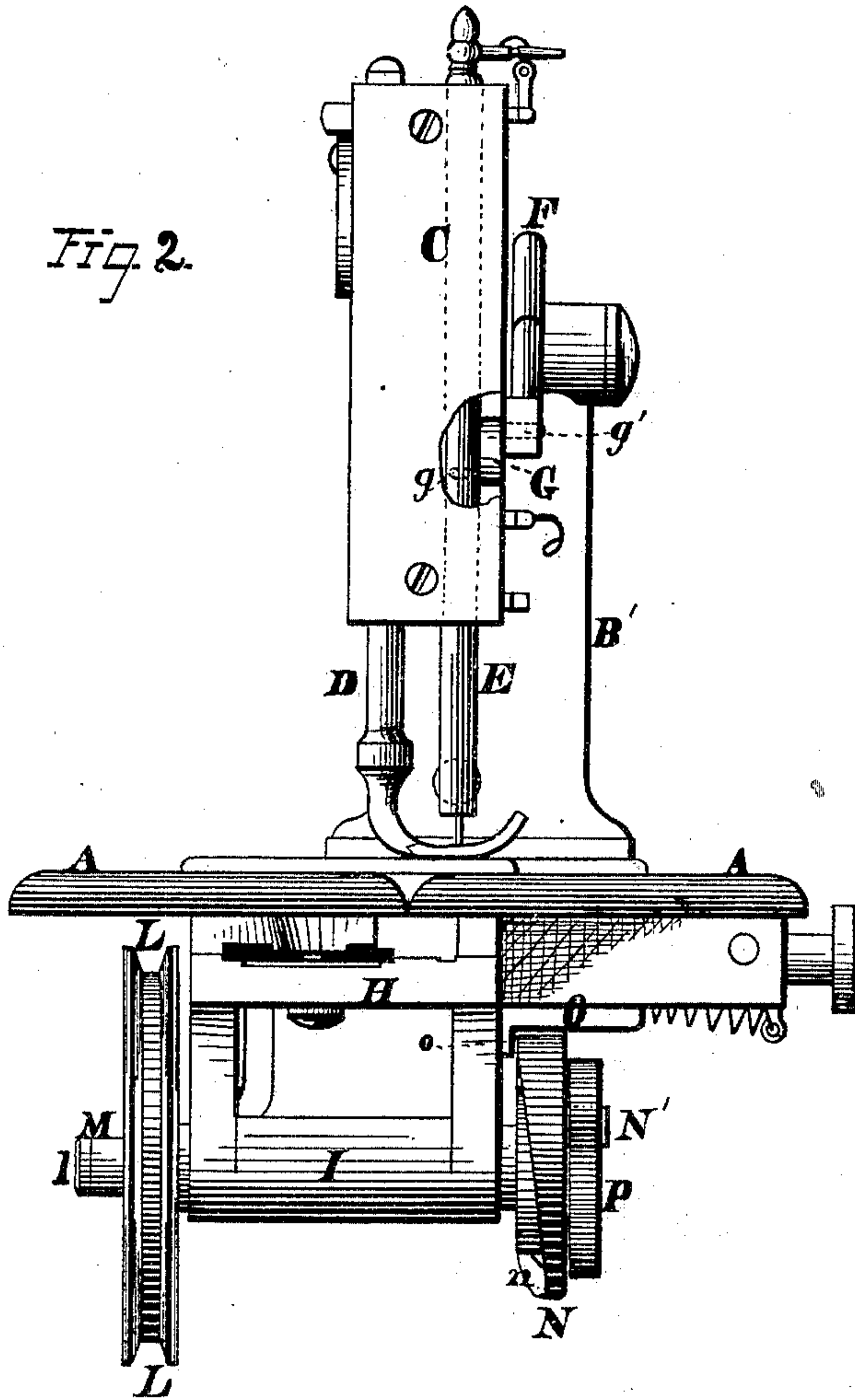
A. H. Wagner, by
Prindle and Co. his Attys

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Fig 2.



WITNESSES:

*Jas. E. Hutchinson
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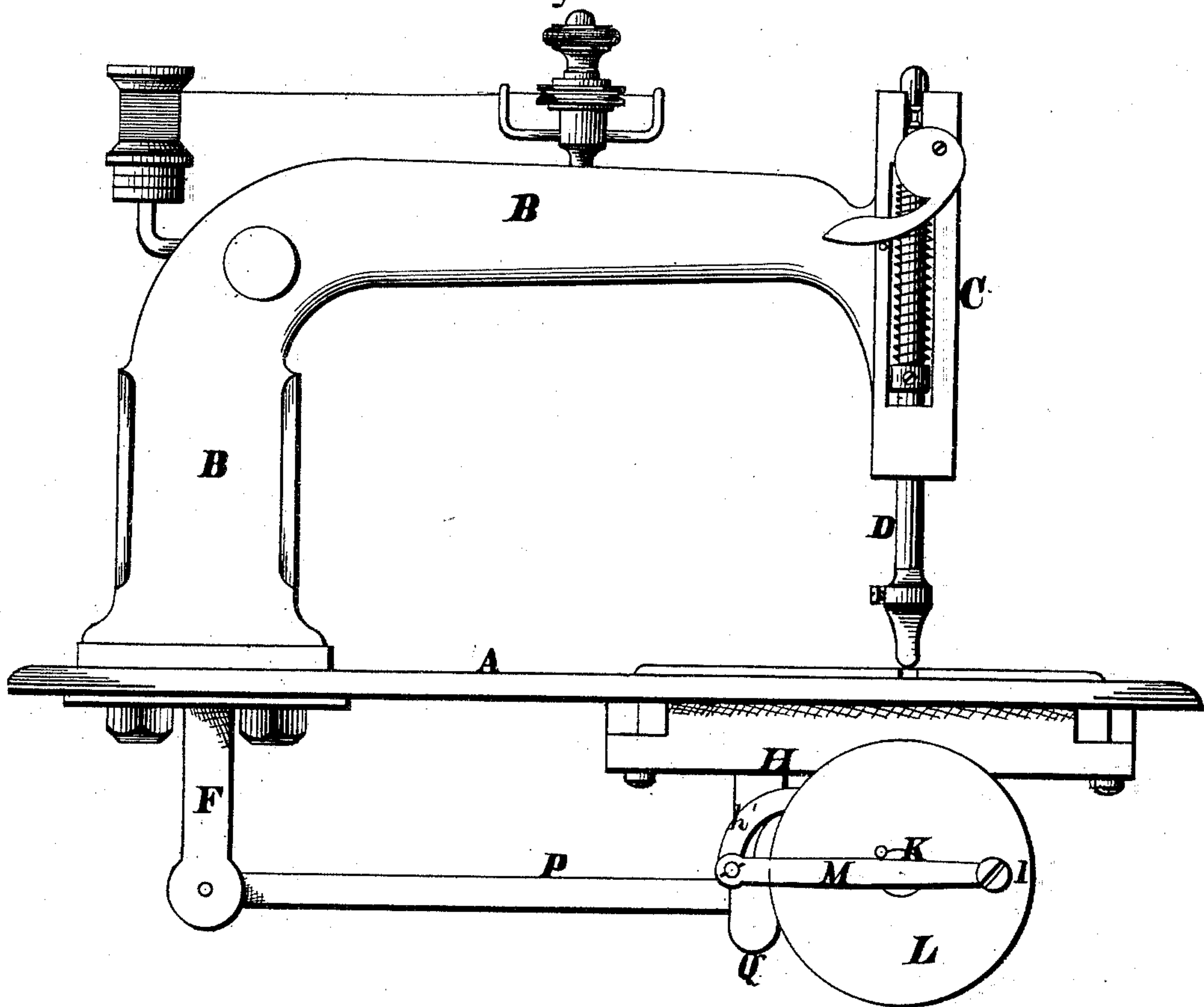
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Fig. 3.



WITNESSES:

As. C. Hutchinson
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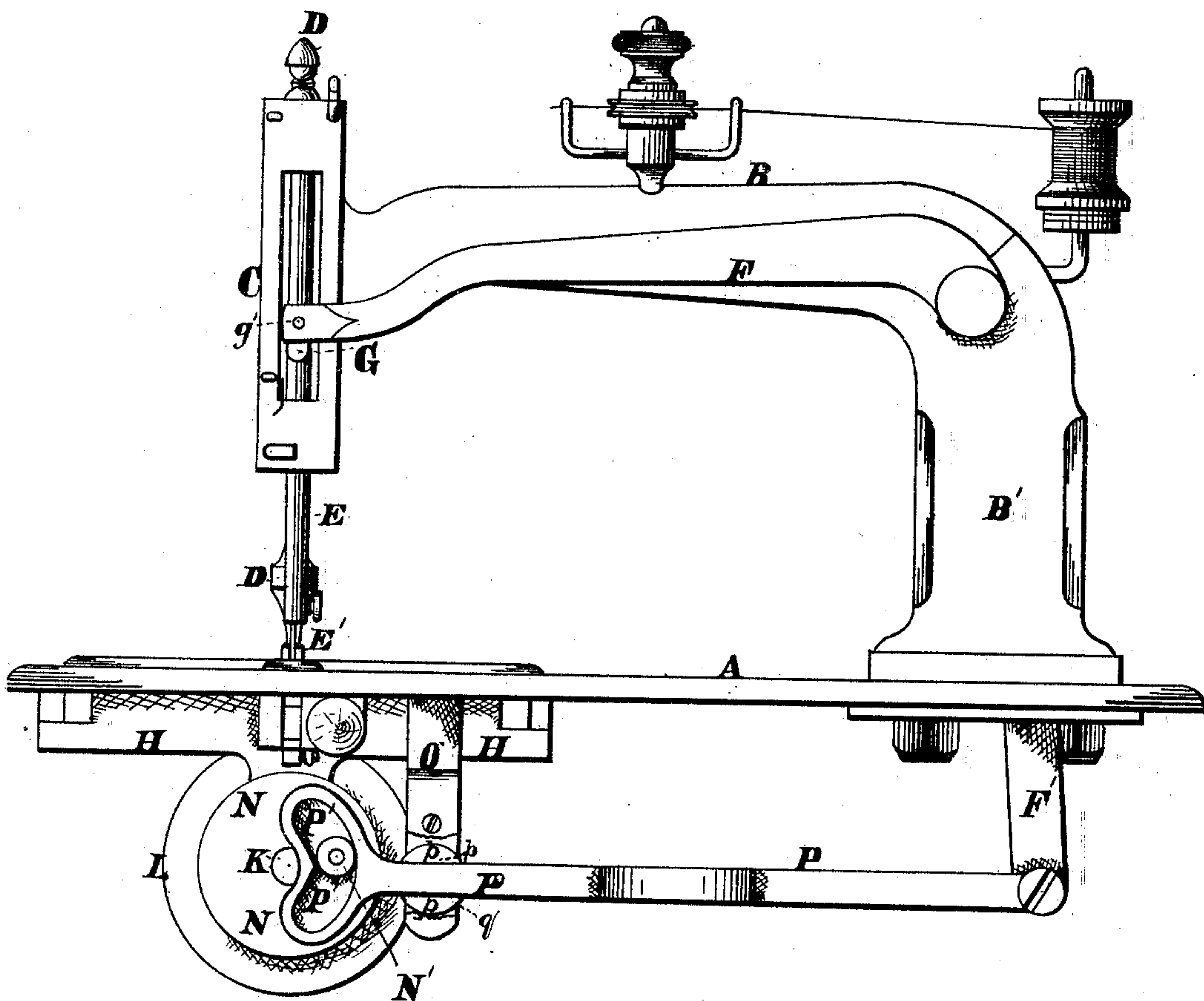
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SEWING-MACHINE.

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Fig. 4.



WITNESSES:

James E. Hutchinson
John R. Young

INVENTOR.

A. H. Wagner, by
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UNITED STATES PATENT OFFICE.

AUSBERT H. WAGNER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 177,041, dated May 2, 1876; application filed April 6, 1875.

To all whom it may concern:

Be it known that I, AUSBERT H. WAGNER, of Chicago, in the county of Cook, and in the State of Illinois, have invented certain new and useful Improvements in Sewing-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan view of the lower side of my improved machine. Fig. 2 is an elevation of the front end of the same, and Figs. 3 and 4 are elevations of opposite sides of said machine.

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

The design of my invention is to render a sewing-machine more simple in construction, less liable to derangement, and more easy to operate; to which end it consists in the means employed for operating the vibrating arm and giving to the same a variable motion, substantially as and for the purpose hereinafter set forth.

In the annexed drawings, A represents the bed-plate of my machine, from the rear side of which extends upward, and then forward, an arm, B, that, upon its front end, is provided with a vertical housing, C, within which latter are arranged presser and needle bars D and E, respectively, of usual construction. The rear vertical portion of the fixed arm B is hollow, and contains the corresponding part of a vibrating arm, F, which latter is pivoted to the former at the intersection of their vertical and horizontal portions, and is capable of the usual motion upon its pivotal bearing. The side of the housing C is open for some distance, so as to expose the central portion of the needle-bar E, within which bar is journaled one end or bearing, *g*, of a crank, G, while the other bearing, *g'*, of said crank, is journaled within the inner side at the end of the vibrating arm F.

As thus connected, it will be seen that the vertical motion of the arm F will be communicated to the needle-bar E, while the slight fore-and-aft motion of said arm as it moves around its center of vibration will be communicated to the crank G without in any manner

affecting the free and easy operation of said needle-bar.

Secured to or upon the lower side of the bed-plate A is a shuttle-race, H, of usual form, to the lower side of which, in turn, is attached a bearing, I, that receives and contains a shaft, K, said shaft being directly beneath the needle-bar E, and in a line having a right angle to the motion of the shuttle *h*. Upon one end of the shaft K is secured a belt-pulley, L, within the outer face of which is placed a crank-pin, *l*, that serves as a pivotal bearing for one end of a bar, M. The opposite end of said bar M is pivoted to an arm, *h'*, that extends rearward and downward from the shuttle-carrier H', the arrangement being such as to cause the rotary motion of said pulley to be communicated through said connecting rod and arm to said carrier, and give to the latter the necessary horizontally-reciprocating motion. Upon the opposite end of the shaft K is attached a disk, N, which is provided upon its inner face with a cam groove or channel, *n*, that receives a shoulder or bearing, *o*, upon the feed-bar O, and gives to said bar the necessary vertical and longitudinal motion. Pivoted to or upon the lower end of the vibrating arm F is one end of a bar, P, that from thence extends horizontally forward, and near its forward end passes through a lug, Q, which is secured rigidly to and extends downward from the bed-plate A.

In order that the necessary vertical oscillation of the bar P may be provided for, said bar is contained within and works freely in a longitudinal direction through a correspondingly-shaped opening in a round disk, *p*, while the latter is, in turn, pivoted within a circular recess, *q*, that is provided in the face of the lug Q. As thus arranged, the necessary longitudinal motion of the bar P is secured by its bearing within the disk *p*, while its vertically-oscillating motion is permitted by the pivoting of said disk within the lug Q.

Upon the front end of the bar P is a vertical enlargement, which contains a heart-shaped cam-groove, P', and is arranged so as to bring its inner face parallel with and just beside the outer face of the disk N. A crank-pin, N', secured within and projecting from the face of said disk N, is contained within said cam-

groove P', and at each rotation of said disk imparts to said bar P, the vibrating arm F, and the needle bar E, the necessary variable motion to cause the needle E' to penetrate the fabric being operated upon, slightly withdraw therefrom, so as to slacken the loop of thread, then remain at rest until the shuttle has passed through said loop, and afterward rise to its highest position.

By slightly varying the lines of the cam-groove P' any desired movement of the needle-bar may be effected.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

The horizontally-moving bar P, pivoted at its rear end to or upon the lower end of the vibrating arm F, and provided at its forward end with the cam-groove P', in combination with the bearing-lug Q, provided with the disk p, and the pin or stud N', which is secured within the face of the disk N, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of October, 1873.

AUSBERT H. WAGNER.

Witnesses:

EZRA D. SWAN,
T. F. TIMBY.