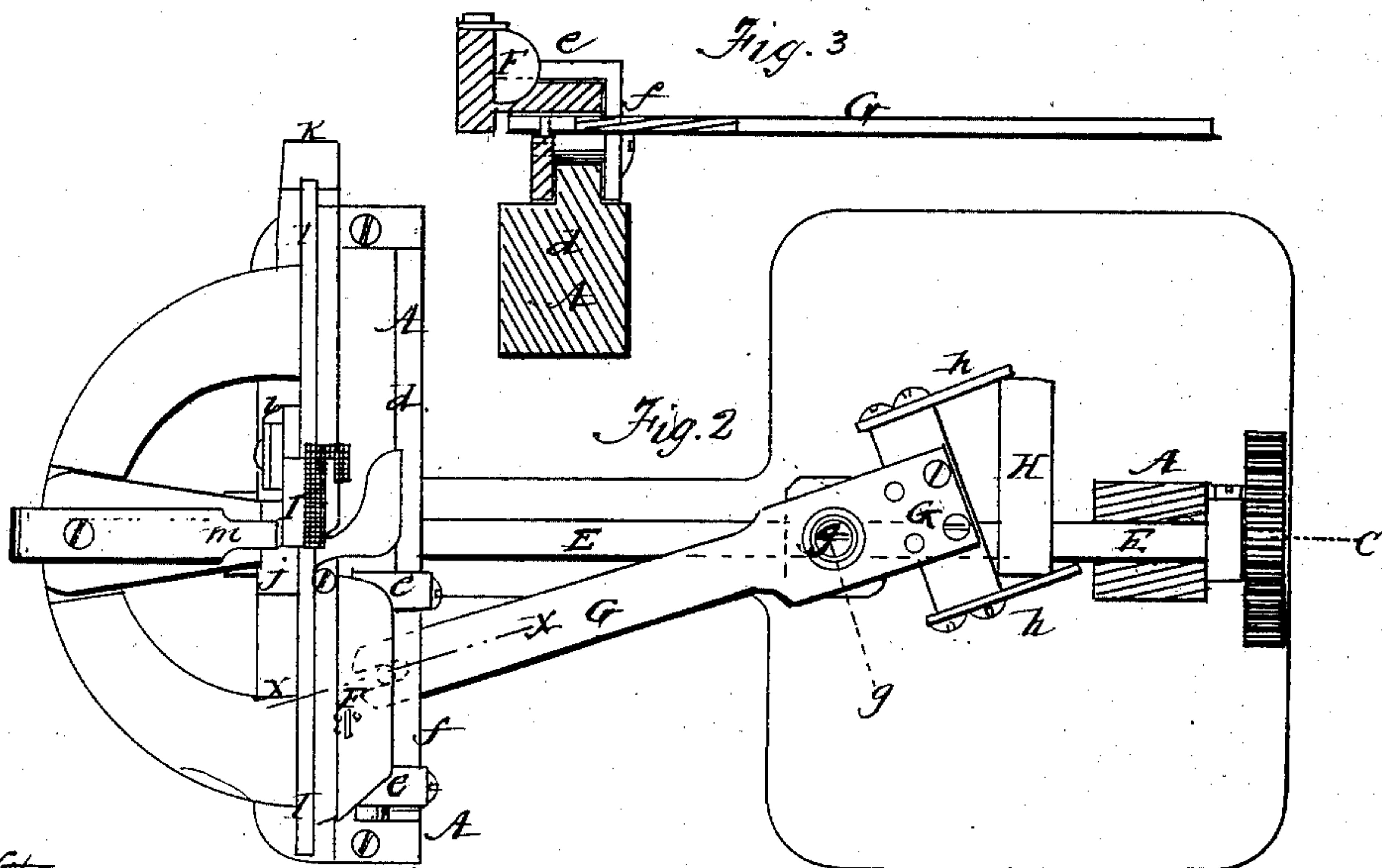
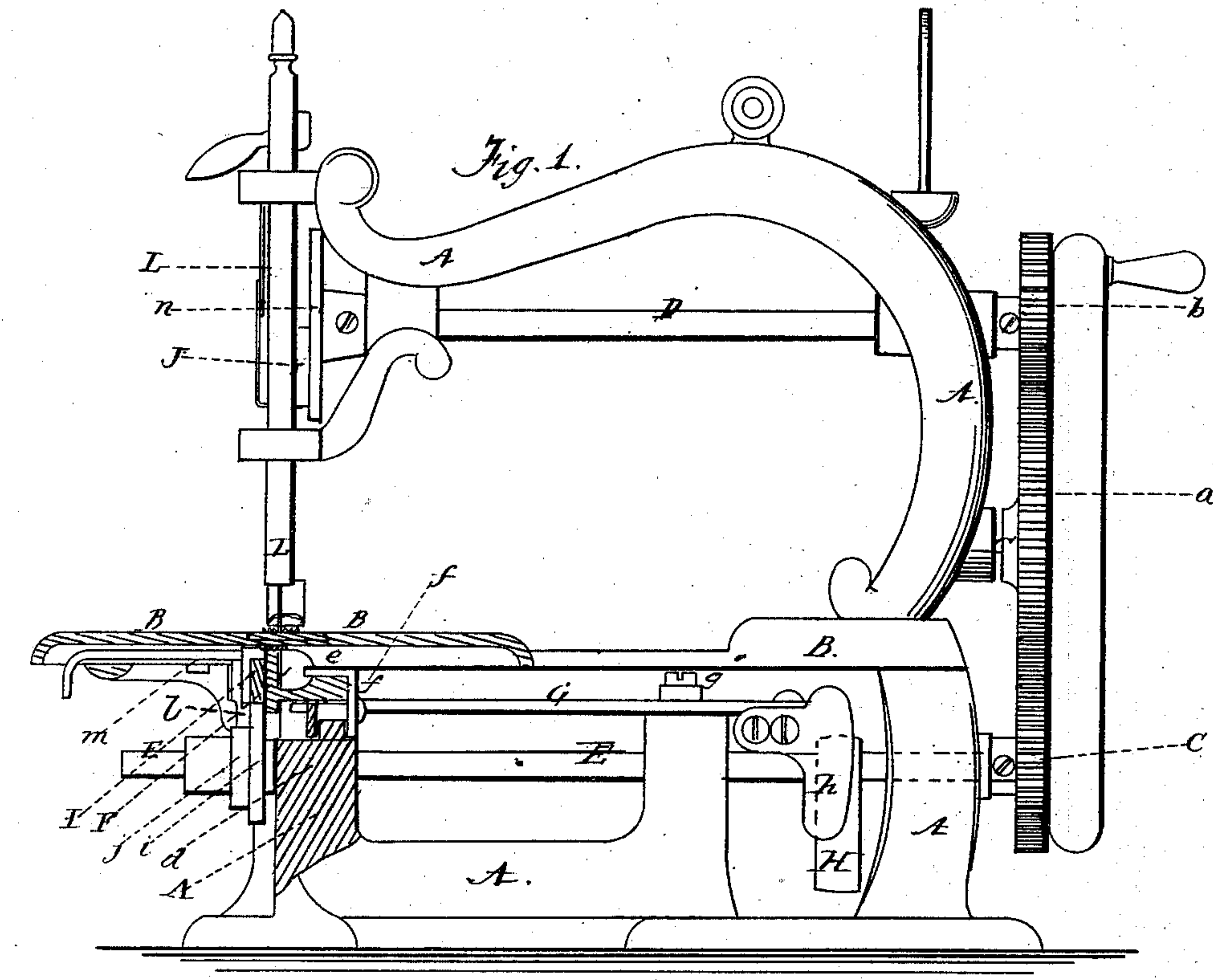


S. FRENCH.
Sewing Machine.

No. 80,345.

Patented July 28, 1868.



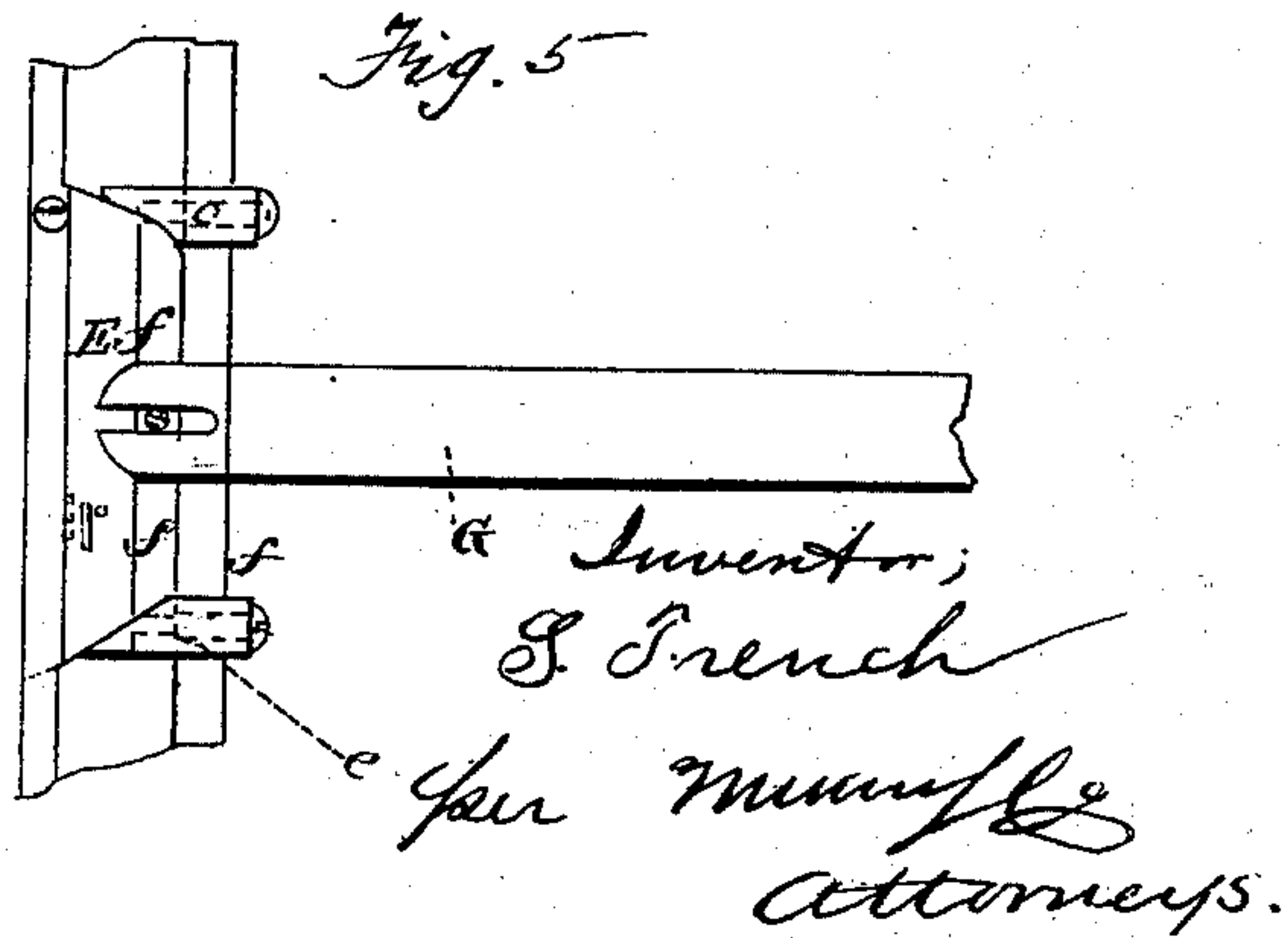
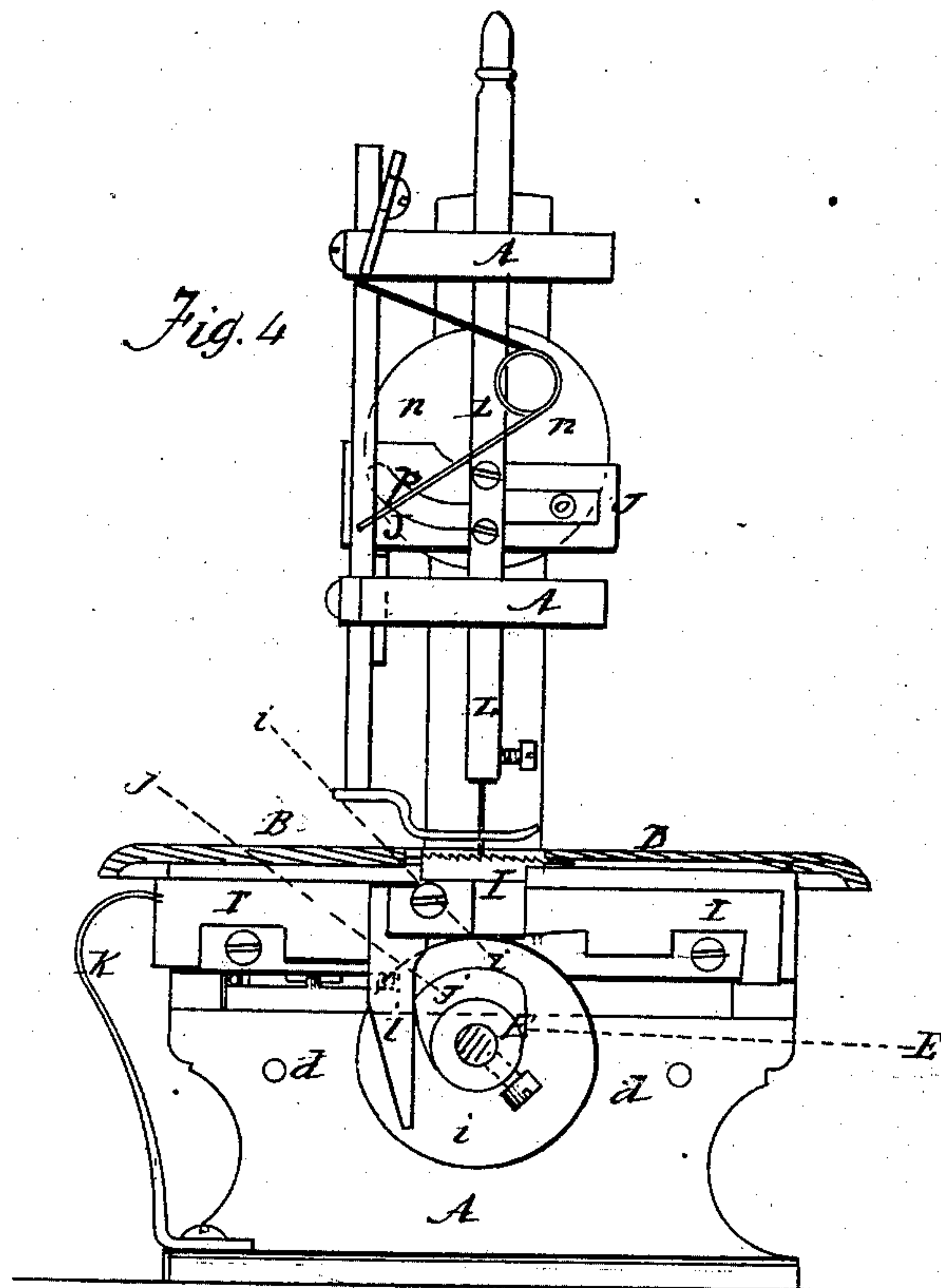
Witnesses,
H. C. Ash Kettles
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S. French
per Munn & Co
Attorneys

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Sewing Machine.

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United States Patent Office.

STEPHEN FRENCH, OF ORANGE, MASSACHUSETTS.

Letters Patent No. 80,345, dated July 28, 1868.

IMPROVEMENT IN SEWING-MACHINES.

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, STEPHEN FRENCH, of Orange, in the county of Franklin, and State of Massachusetts, have invented a new and improved Sewing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1, Sheet I, represents a side elevation, partly in section, of my improved sewing-machine.

Figure 2, Sheet I, is a horizontal section of the same.

Figure 3, Sheet I, is a detail sectional view of the same, taken on the plane of the line *x x*, fig. 2.

Figure 4, Sheet II, is a front elevation, partly in section, of the same.

Figure 5, Sheet II, is a detail plan or top view of the lever by which the shuttle is moved.

Similar letters of reference indicate corresponding parts.

This invention relates to a new sewing-machine, of the shuttle class, and consists in combining with each other an oscillating shuttle-driver, a double-cam feed-motion, and a slotted plate for moving the needle up and down, so that in one machine the main advantages of many different kinds of sewing-machines are contained, whereby a complete and satisfactory operation, as well as great simplicity of construction, can be obtained.

A, in the drawing, represents the frame of a sewing-machine.

B is the platform of the same.

C is the horizontal driving-shaft, receiving rotary motion by suitable mechanism. On the shaft is mounted a toothed wheel, *a*, which meshes into two pinions, *b* and *c*, of which one is above and the other below the axle C, as shown. The upper pinion, *b*, is mounted on the rear end of a horizontal shaft, D, by which shaft reciprocating motion is imparted to the needle, as will be hereinafter more fully described.

The lower pinion, *c*, is mounted on the rear end of a horizontal shaft, E, which extends below the entire platform B, as is indicated in fig. 1.

On the front upright portion, *d*, of the lower frame A is arranged a race for a reciprocating shuttle, F, as shown in figs. 2 and 3. The shuttle is held between two arms, *e e*, of a frame, *f*, sliding transversely on the rear corner of the upright portion *d* of the frame A.

The slide *f* receives its motion by means of an oscillating-lever, G, with the front end of which it is connected, and which is, at or near its middle, pivoted by a pin, *g*, to an upright part of the frame A, as in fig. 1, and which has, near its rear end, two wings, *h h*, that fit over the edge of a cam, H, mounted on the shaft E. As the shaft E revolves, the rear end of the lever G will be moved back and forth by means of the cam H, and the front end of the lever will thereby also vibrate and throw the slide *f* to and fro, the slide *f* carrying the shuttle with it. By this arrangement, the shuttle receives the necessary motion by the most simple devices, which cannot easily get out of order.

In front of the upright portion, *d*, of the frame A are mounted on the shaft E two cams, *i* and *j*, of which one serves to impart up-and-down and the other reciprocating motion to the feed-bar I.

The feed-bar is of ordinary or suitable construction, and is guided on the front face of the upright, *d*. By means of a spring, *k*, it is forced back, after it has moved the cloth, a downward-projecting lug, *l*, on it being by the spring constantly held against the edge of the cam *j*. The feed-bar rests upon the edge of the cam *i*, and is by the rotation of the same raised and lowered, while the cam *j* and spring *k* impart lateral motion to it.

The length of feed and with it that of stitch is defined by means of an oscillating-stop, *m*, which may be so turned that the lug *l* will not be held against the cam *j* by the spring *k*, but will only be reached by the projecting portion of the cam once during every rotation of the shaft E.

On the front end of the shaft D is mounted a disk, *n*, from the face of which an eccentric-pin, *o*, projects. This pin fits through a slotted plate, J, that is attached to and forms part of the needle-holder L.

The slot in the plate J is horizontal, with an upward bend, *p*, at one end. As the shaft D is revolved, the pin *o* will carry the plate J up and down with it, and will, when the needle is quite down, be in the middle of

the slot, then not moving the plate again, at least not perceptibly, until it has reached the highest end, *p*, of the slot. This is for the purpose of holding the needle down while the shuttle passes through the loop of the needle-thread. The upward bend *p* of the slot is, therefore, of great importance.

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

The arrangement of the cams *H*, *i*, *j*, upon shaft *E*; the pivoted lever *G*, having wings, *h*; the shuttle-slide *f*, spring *k*, feed *I*, having lug *l*, and adjustable stop *m*, all constructed to operate in the manner and for the purposes substantially as herein set forth and shown, for the purposes specified.

STEPHEN FRENCH.

Witnesses:

A. J. CLARK,
JOHN W. WHEELER.