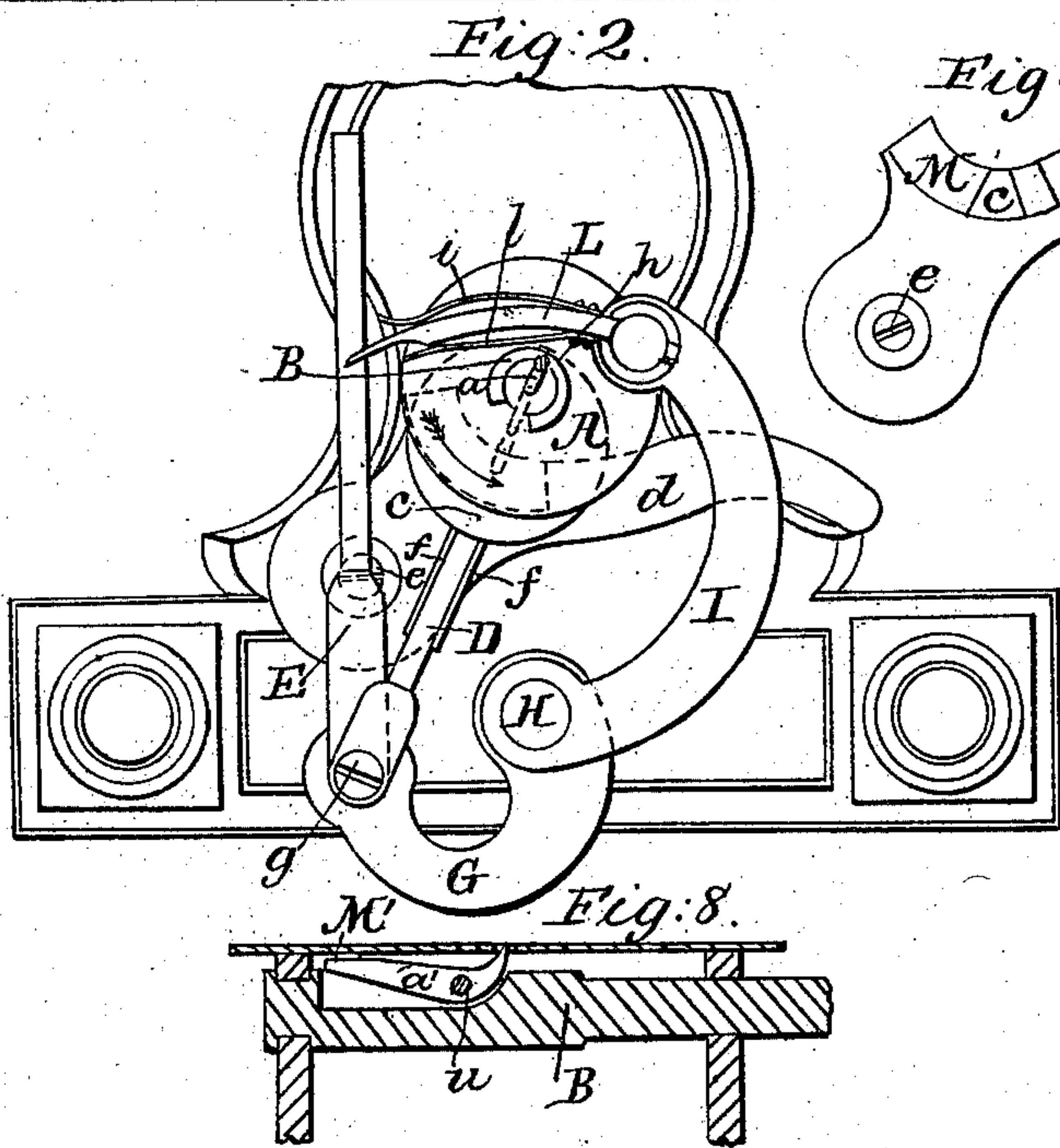
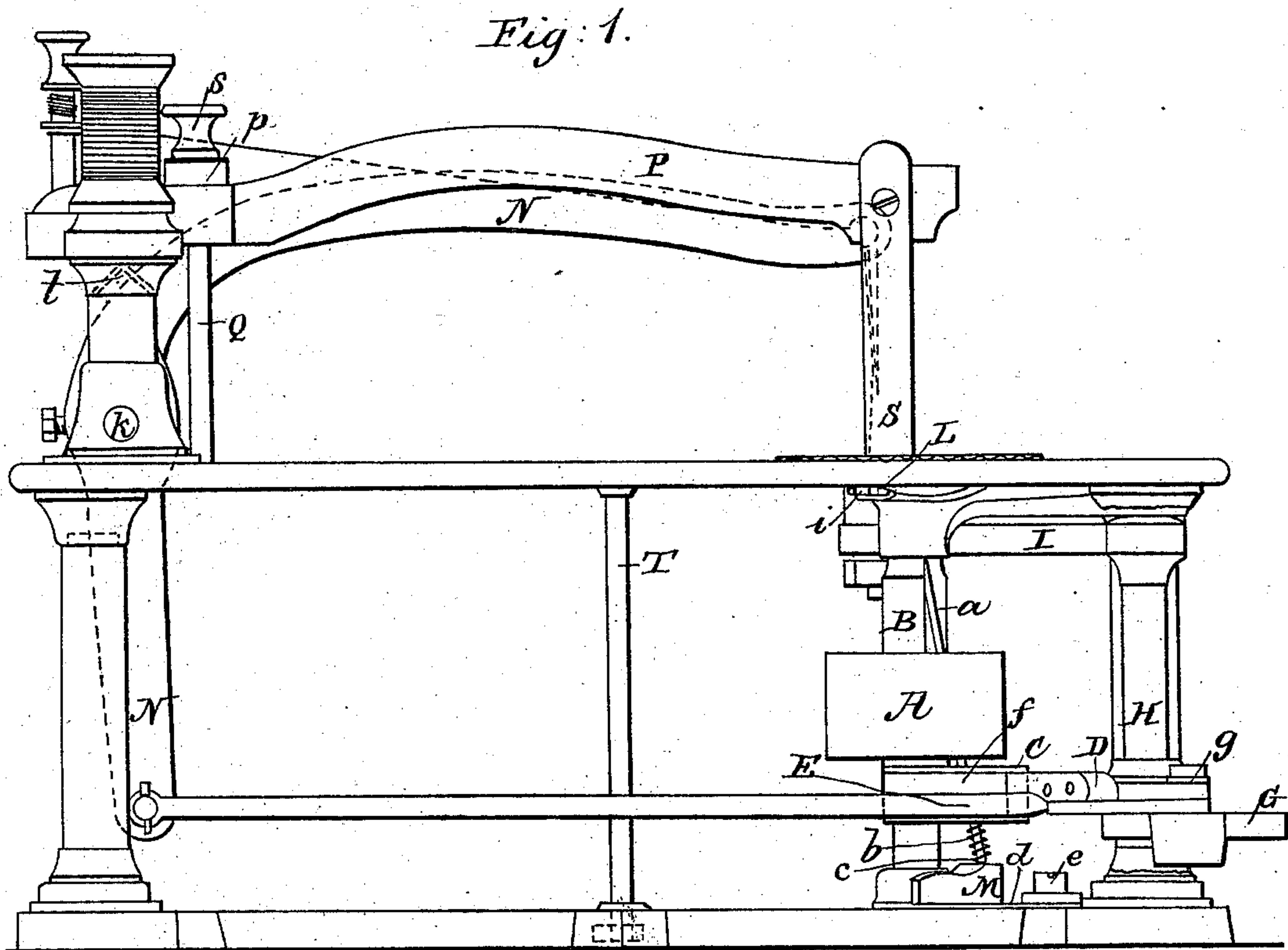


G. W. STEDMAN.

Sewing Machine.

No. 12,798.

Patented May 1, 1855.





# UNITED STATES PATENT OFFICE.

GEO. W. STEDMAN, OF VIENNA, NEW JERSEY.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 12,798, dated May 1, 1855.

*To all whom it may concern:*

Be it known that I, GEORGE W. STEDMAN, of Vienna, in the county of Warren and State of New Jersey, have invented certain new and useful Improvements in Sewing-Machines; and I 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—

Figure 1 being a side elevation of a sewing-machine constructed with my improvements; Fig. 2, a plan of one end of the machine, the upper or cloth plate being removed to show the parts beneath; Fig. 3, a vertical section of the driving-shaft, through the center of the feeding-pin and of the driving-eccentric; Fig. 4, a plan of the regulating-cam; Fig. 5, a view of the under side of the cloth-holder; Fig. 6, a plan of a portion of the cloth-plate, showing the top of the driving-shaft and of the feeding-pin below; Figs. 7 and 8, views showing modifications of the manner of arranging the feeding contrivance.

Like letters designate corresponding parts in the several figures.

The nature of my invention consists in feeding the cloth or other material along by means of a pin or its equivalent playing in a revolving shaft, which at the proper moment in each revolution brings it in contact with a stationary cam or its equivalent, whereby the pin is pressed into the cloth, but again recedes therefrom as soon as freed from said cam, the cam being arranged so that it will hold the pin against the cloth a greater or less distance at pleasure, and thus regulate the length of stitch, substantially as hereinafter set forth.

A little to one side of the position of the needle as it descends through the cloth or other material to be sewed, but as near thereto as it can conveniently be, a vertical shaft, B, is located, and is provided with a pulley, A, or its equivalent, for driving the machine. An eccentric, C, is secured to this shaft, and a rod, D, connected therewith by a collar, f. The projecting end of said rod receives a pivot, g, on the extremity of an arm, G, which vibrates on a vertical axis, H. The pivot g also passes through one end of a rod, F, the other end of which is pivoted to the vertical arm of a bent lever, N. Said lever moves on a fulcrum, k, and, being shaped and arranged substantially as shown in Fig. 1, car-

ries the needle at the extremity of its horizontal arm. As the driving-shaft B revolves, the eccentric C causes this lever to vibrate, and thus work the needle. By the same means the arm G is caused to vibrate, and another arm, I, attached to its axis H, receives a similar motion for the purpose of working the looper L, which it bears on its vibratory end. The looper L is constructed and operates substantially in the same manner as the finger or looper described in the Letters Patent for an improved sewing-machine, granted to me the 20th day of March, 1855, except that I put a second spring, l, in addition to the spring i on the opposite side thereof. These two springs perform precisely the same office as the single spring, but form the loop a little more evenly by drawing on both sides at the same time. The pin or rod a, by which the cloth or other material is fed along to the needle, is inserted nearly in a vertical position in the shaft B; but its lower end should extend away from the shaft to allow it to reach the cam M, which must be sufficiently distant from said shaft for the purpose of adjustment, as presently to be described, and the upper end of said pin should be far enough from the center of the shaft to give it sufficient sweep for moving the cloth with a cam of convenient size, and to do this with as little change of direction as practicable while acting on the cloth. When the pin is free from the cam, it drops by its own weight, or with the assistance of a slight spring, b, just enough to bring it below the plate on which the cloth rests. Then, as the shaft B revolves in the direction indicated by the arrow in Fig. 2, the lower end of the pin strikes the cam M, and is lifted endwise thereby sufficiently to push its upper end, h, which is pointed or notched, into and move along the cloth by its lateral motion. The supporting cloth-plate is provided with a curved slot, m, as shown in Fig. 6, for the pin to move in while it remains raised by its cam, and another aperture, n, is made therein for the reception of the needle, so that as small a portion of said plate as possible shall be cut away. The lower side of the pressing-plate s' may be grooved slightly in the right direction of the feeding-motion, as seen at o o in Fig. 5, in order to obviate any tendency which the curved motion of the feeding-pin may produce, to move the cloth in any other direction. The



cam M is formed and placed concentrically with the shaft B, and rests upon the bottom of the machine, or on some firm support. It is attached to a plate or lever, *d*, which moves on a screw-pivot, *c*, at one end, so situated that by vibrating the other end the cam will be moved toward or away from the shaft B. Said screw is to be tightened, so as to hold the cam in any position it may be placed in. The ridge *e* of the cam is made narrow on the inside, next to the shaft B, and uniformly widened outward from said shaft, or vice versa. The narrow end of the ridge should be of such width as to produce the shortest stitch desired by the feeding-pin passing over it, and the wide end thereof should be wide enough to produce the longest stitch ever required. To vary the length of stitch to any length required it is only necessary to move the cam-lever on its pivot *c* one way or the other, and the unequal width of the ridge produces the desired result.

Figs. 7 and 8 represent modifications which I contemplate in the manner of arranging the above-described feeding contrivance by using a horizontal instead of a vertical shaft. Thus in Fig. 7 the pin *a'* passes transversely through the shaft B' in such a direction that its lower end, as seen in the figure, will strike the end of a screw, M', while the extremity *h'*, which acts against the cloth, will pass by without touching said screw as it in turn goes round. It is evident that by moving the screw M' forward, while the shaft B' turns in the direction indicated by the arrow, the extremity of the pin *a'* will remain a longer time in contact therewith, and consequently produce a longer stitch; but by turning the screw back a shorter stitch will be produced in consequence of the diminished extent of contact between it and said pin. In Fig. 8, instead of a sliding pin, the piece *a'* is inserted longitudinally in the side of the shaft B', and vibrates on a pivot,

*u*, the end *h'*, which enters the cloth, being bent up in a vertical direction for the purpose, and the opposite end striking laterally against its cam M'.

The lever P, Fig. 1, by which the plate S is pressed down upon the cloth or other material, has its axis resting upon the pointed tops of two short supports, so that it can rock thereon, as seen at *t*, and the lever is held in place by means of a rod, Q, extending upward from the upper plate of the machine through it, and of a nut, *s*, screwed down thereon. The necessary elasticity is produced by inserting a disk, *p*, of india-rubber, under the nut *s*. The force of the spring is varied by more or less compressing the india-rubber. The upper portion or plate of the machine rests on four small columns or supports, as indicated by dotted lines *r* in Fig. 1, and secured thereby by a rod, T, passing down through both parts, and a nut screwed on the lower end thereof.

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

1. Feeding the cloth or other material along by means of a pin, *a*, or its equivalent playing in a revolving shaft, B, which at the proper moment in each revolution brings it in contact with a stationary cam, M, or its equivalent, whereby the pin is pressed into the cloth, but again recedes therefrom as soon as freed from the cam, substantially as herein set forth.

2. The cam M, constructed substantially as described, when arranged upon a movable arm or its equivalent, so that by simply adjusting its position the length of stitch can be varied at the will of the operator.

In testimony whereof I hereunto set my hand this 31st day of March, 1855.

GEO. W. STEDMAN.

In presence of—

READING BELL,

ALPHEUS CLAUSON.