A. BURGESS.

Feed Mechanism for Sewing-Machines.

No. 204,533. **Patented June 4, 1878.**

Fig. 1.

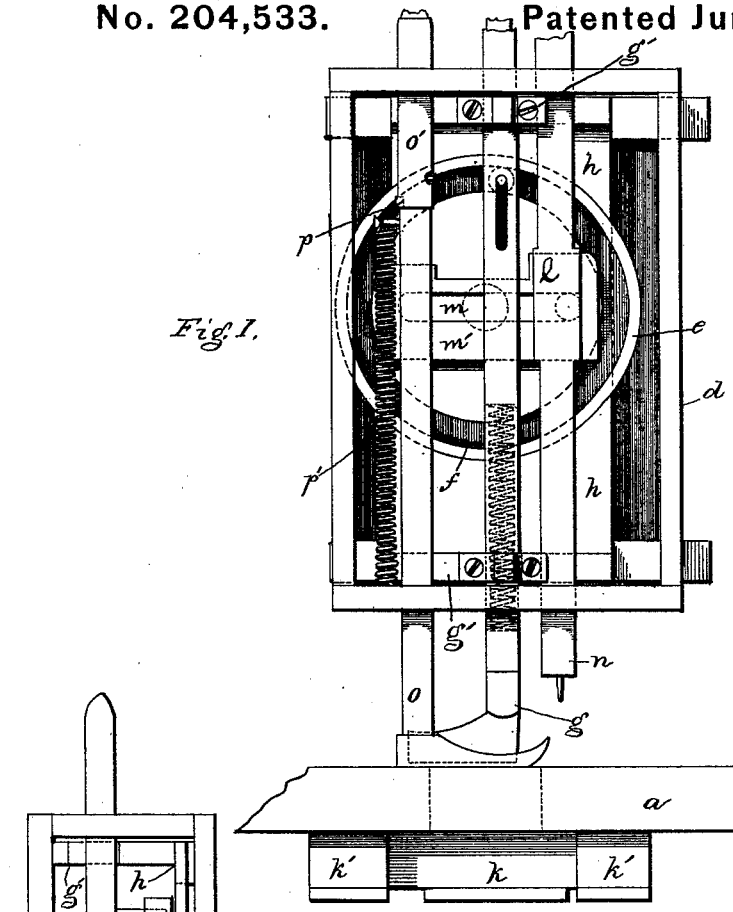
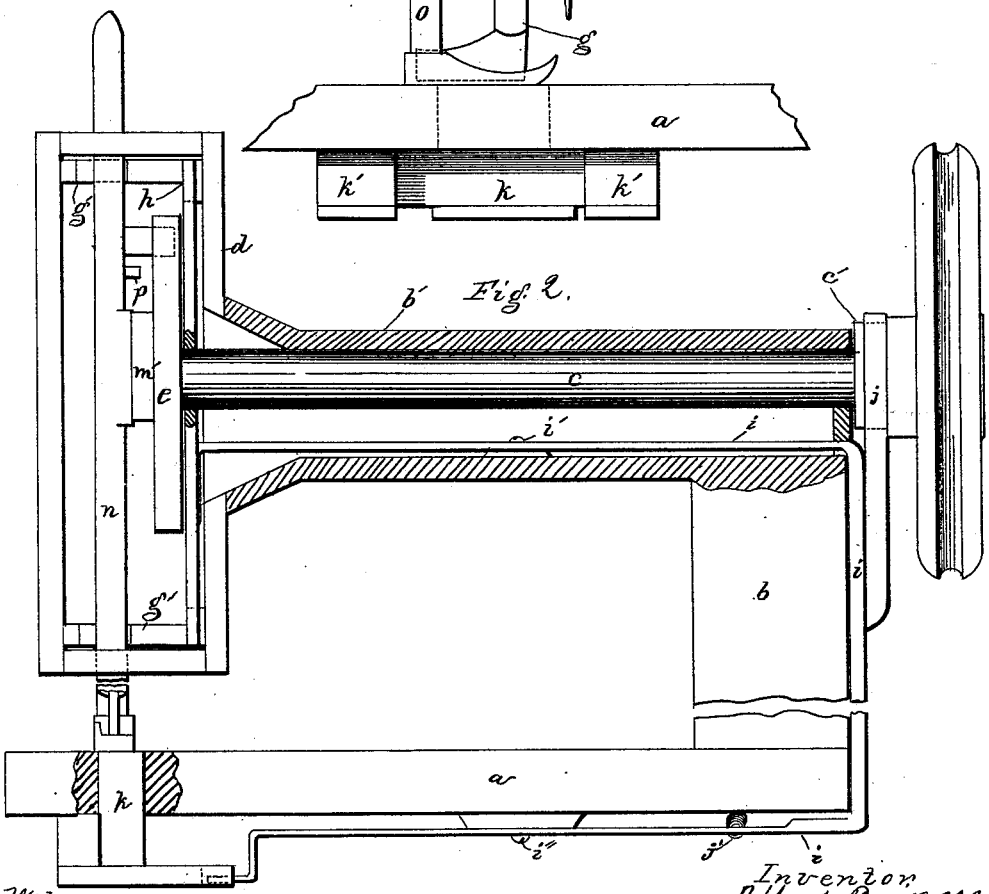


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

ALBERT BURGESS, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN FEED MECHANISMS FOR SEWING-MACHINES

Specification forming part of Letters Patent No. **204,533**, dated June 4, 1878; application filed September 17, 1877.

To all whom it may concern:

Be it known that I, ALBERT BURGESS, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improved Feed-Motion for Sewing-Machines, of which the following is a specification:

The object of my invention is to provide a means, in sewing-machines, for simultaneously feeding both the upper and under surfaces of the material being operated upon.

The invention consists in certain details of construction and combinations of parts, as will be hereinafter first fully described, and then pointed out in the claims.

In the drawing, Figure 1 is a front-end view of a machine embodying my invention, with the face-plate removed. Fig. 2 is a side view of the same, showing some of the parts in section.

a represents the bed or support, at one end of which is fixed the upright *b*, having attached to its upper end the horizontal arm *b'*, through which passes the shaft *c*. On the front end of the arm *b'* is a head or frame, *d*, into which the shaft *c* projects, and upon the end of the shaft *c* is fixed a cam-wheel, *e*, having in its face a cam-groove, *f*, in which runs a roller connected to the feed-bar *g*, so as to impart to the latter the proper vertically-reciprocating motion. The feed-bar *g* reciprocates vertically in bearings *g' g'*, forming part of a carriage, *h*, arranged at the rear part of the inside of the head *d*, and behind the cam-wheel *e*. The shaft *c*, which carries the cam-wheel *e*, passes through an opening in the upright portion of the carriage *h*, the said opening being sufficiently large to admit of the horizontal movement of the carriage.

The reciprocating movement of the carriage *h* is effected by means of a bar, *i*, which is attached to the rear of the carriage, and extends through the arm *b'*, being pivoted at *i'*; then, turning down at the rear of the standard *b*, extends forward underneath the bed *a*, as shown, connecting at its front end by a loose joint to the under feed *k*, which reciprocates in bearings *k' k'*. The lower portion of the bar *i* is again pivoted at *i''*. To the rear upper portion of the bar *i* is attached an arm, *j*, which extends upward and bears against a cam, *c'*, attached to the rear of the shaft *c*, which moves the bar in one way, while it is held and brought back in the opposite direction by a spring, *j'*; or the cam may be made to move the bar in opposite directions without the aid of a spring.

It will be seen that, the continuous bar *i* being pivoted at corresponding points above and below, as shown at *i' i''*, will impart to the upper and under feed a simultaneous movement in the same direction.

To the face of the cam-wheel *e* is attached a friction-roll, *l*, which works in a slot, *m*, in a plate, *m'*, one end of which plate is rigidly fixed to the needle-bar *n*. As the cam-wheel rotates, the requisite vertical motion is communicated to the needle-bar through the medium of this friction-roll.

o is the presser-bar, which is elevated by means of a projection, *p*, coming in contact with the end of the plate *m'* attached to the needle-bar *n*, as the latter rises, the presser-bar being retracted by a spring, *p'*. The projection *p* is attached to a sleeve on the upper end of the presser-bar, and is capable of being turned so as to come into or out of contact with the plate *m'*.

The feed-bar *g* is made in two parts, connected together by means of a tube containing a spring, so as to render the feed self-adjustable to the varying thicknesses of material. The faces of the feeds are roughened in the usual manner.

The throw of the feed-bars, and consequently the length of the stitch, may be regulated by simply varying the distance between bar *j* and the axis of cam *c'*, which may be easily accomplished by a suitable set-screw passed through said bar.

What I claim as my invention is—

1. The combination of an upper and an under feed-bar, the former being caused to reciprocate within a horizontal movable carriage, which is connected with the latter by means of a pivoted bar attached to the rear of said carriage, and extending to the rear, and then

beneath the bed-plate of the machine, and an operating-cam, substantially as and for the purposes set forth.

2. The combination of the vertically and horizontally reciprocating feed-bar, the presser-bar, carriage *h*, pivoted connecting-bar *i*, and the operating-cams, the several parts being arranged substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT BURGESS.

Witnesses:
J. H. ADAMS,
J. MELLEDGE FLAGG.